

People's Dossier: FERC's Abuses of Power and Law  
→ **Climate Change** and Drilling Impacts Ignored

**FERC Fails to Give Due Consideration to the Climate Change and Drilling Impacts of Pipeline Projects**

Despite the mandate of the National Environmental Policy Act (NEPA) that federal agencies take environmental considerations into account in their decision-making “to the fullest extent possible” (42 U.S.C. § 4332; 40 C.F.R. § 1500.2; *Fla. Audubon Soc. v. Bentsen*, 94 F.3d 658,684 (D.C. Cir.)) and FERC’s obligation under the Natural Gas Act (NGA) to protect the public interest, FERC routinely fails to meet its obligation to consider foreseeable impacts, both direct and indirect, resulting from its pipeline approvals, including effects on climate change, water impacts, air impacts, community impacts, and the ramifications of increased drilling and fracking operations.

**FERC’s NEPA Requirements and Violations Regarding Climate Change Impacts**

NEPA is our “basic national charter for protection of the environment.” 40 C.F.R. § 1500.1(a). As such, it makes environmental protection a part of the mandate of every federal agency. *See* 42 U.S.C. § 4332.<sup>1</sup> NEPA requires that federal agencies take environmental considerations into account in their decision-making “to the fullest extent possible.” 42 U.S.C. § 4332. Federal agencies must consider environmental harms and the means of preventing them in a “detailed statement” before approving any “major federal action significantly affecting the quality of the human environment.” *Id.* § 4332(2)(C). FERC must consider past, present and “reasonably foreseeable” cumulative impacts caused by its decisions and actions.

Construction and operation of fracked gas pipelines, compressors and infrastructure are a direct, indirect and foreseeable cause of increased greenhouse gas (GHG) emissions, increased drilling and fracking for gas from shale, and all the associated environmental impacts, including climate change, pollution, environmental degradation, and a variety of community and economic harms. NEPA requires FERC to consider these foreseeable direct and indirect impacts in its review of proposed natural gas infrastructure projects.

On August 1, 2016, The Council on Environmental Quality (CEQ) issued final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews. This Guidance offered direction on how FERC and other agencies could consider the climate change impacts of its decisions. While this guidance has been rolled back by the Trump administration,<sup>2</sup> the obligation to review the climate changing impacts of agency decision-making still exists as a mandate under NEPA.<sup>3</sup> The rollback

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<sup>1</sup> See R. Howarth, D Shindell, R. Santoro, A. Ingraffea, N. Phillips, A Townsend-Small, *Methane Emissions from Natural Gas Systems*, Background Paper Prepared for the National Climate Assessment, Reference number 2011-0003, Feb. 25, 2012.

<sup>2</sup> Climate Change & Drilling Impacts Ignored Attachment 1, Presidential Executive Order on Promoting Energy Independence and Economic Growth, March 28, 2017.

<sup>3</sup> Climate Change & Drilling Impacts Ignored Attachment 2, Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National



of the guidance does not change the NEPA obligation to consider the climate changing impacts of pipeline infrastructure approvals.

### **Consideration of Downstream Impacts Ignored**

The Court of Appeals for the DC Circuit in *Sierra Club v. FERC*, regarding the Sabal Trail Pipeline, made clear that an analysis of the downstream impacts of GHG emissions is reasonably foreseeable and required pursuant to NEPA.<sup>4</sup> It held that:

“... greenhouse-gas emissions are an indirect effect of authorizing this [pipeline] project, which FERC could reasonably foresee, and which the agency has legal authority to mitigate. See 15 U.S.C. § 717f(e). The EIS accordingly needed to include a discussion of the “significance” of this indirect effect, see 40 C.F.R. § 1502.16(b), as well as “the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions,” see *WildEarth Guardians*, 738 F.3d at 309 (quoting 40 C.F.R. § 1508.7).”<sup>5</sup>

The obligation to consider the impacts of the downstream use of gas when approving pipeline projects, as made clear by the plain language of NEPA and the Sabal Trail decision, has been consistently circumvented by the Commission in its review and approval of pipeline projects. In a blatant refutation of the Sabal Trail decision, the Commission issued the blanket determination that:

“... to avoid confusion as to the scope of our obligations under NEPA and the factors that we find should be considered under NGA section 7(c) [...] the upstream production and downstream use of natural gas are not cumulative or indirect impacts of the proposed pipeline project, and consequently are outside the scope of our NEPA analysis.”<sup>6</sup>

However, this refusal to follow the law has come with regular dissenting opinions from both Commissioner Glick and Commissioner LaFleur, stating that:

“pipelines are driving the throughput of natural gas, connecting increased upstream resources to downstream consumption. With respect to downstream impacts, I believe it is reasonably foreseeable, in the vast majority of cases, that the gas being transported by pipelines we authorize will be burned for electric generation or residential, commercial, or industrial end uses. In those circumstances, there is a reasonably close causal relationship between the

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Environmental Policy Act Reviews, Christina Goldfuss, Council on Environmental Quality, August 1, 2016.

<sup>4</sup> See *Sierra Club v. FERC*, 867, F.3d 1357, 1373 (D.C. Cir. 2017) (“... greenhouse-gas emissions are an indirect effect of authorizing this [pipeline] project, which FERC could reasonably foresee, and which the agency has legal authority to mitigate. See 15 U.S.C. § 717f(e). The EIS accordingly needed to include a discussion of the “significance” of this indirect effect, see 40 C.F.R. § 1502.16(b), as well as “the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions,” see *WildEarth Guardians*, 738 F.3d at 309 (quoting 40 C.F.R. § 1508.7). “)

<sup>5</sup> See decision rendered by the Court of Appeals for the DC Circuit on August 22, 2017 in *Sierra Club v. FERC*, 867, F.3d 1357, 1373 (D.C. Cir. 2017).

<sup>6</sup> Climate Change & Drilling Impacts Ignored Attachment 3, Order Denying Rehearing for Dominion Transmission, Inc., FERC Docket No. CP14-497-001, May 18, 2018.

Commission’s action to authorize a pipeline project that will transport gas and the downstream GHG emissions that result from burning the transported gas. We simply cannot ignore the environmental impacts associated with those downstream emissions.”<sup>7 8</sup>

In addition, the U.S. Environmental Protection Agency has explicitly commented that FERC should consider impacts from the development and production of natural gas being transported through a proposed pipeline, as well as impacts associated with the end use of the gas, particularly with regards to greenhouse gas emissions and climate change effects.<sup>9</sup>

### **Consideration of Upstream Impacts Ignored**

FERC also comprehensively excludes from its NEPA review consideration of the GHG and other environmental harms that result from induced gas drilling, despite acknowledging that increased gas production will result from the pipeline construction it is reviewing and approving.

This failure to consider the impacts of induced shale gas production as well as the end uses of the fracked gas is particularly troubling given that FERC has explicitly recognized that “upstream development and production of natural gas may be a ‘reasonably foreseeable’ effect of a proposed action,” and that a new pipeline would “alleviate some of the constraints on...natural gas production”.<sup>10</sup> Despite these recognitions, and others, FERC asserts that “the actual scope and extent of potential GHG emissions from upstream natural gas production is not reasonably foreseeable” and therefore no consideration pursuant to NEPA is necessary. Through this circular logic of recognizing induced drilling but then discounting it because FERC has failed to assess the extent of the GHG emissions that will occur, FERC ignores its NEPA obligation to consider the impacts.

The direct and indirect connection between FERC’s approval of shale gas infrastructure and climate change impacts resulting from upstream production of shale gas has been recognized by at least two FERC commissioners. Commissioner Glick recently stated:

“It is particularly important for the Commission to use its “best efforts” to identify and quantify the full scope of the environmental impacts of its pipeline certification decisions given that these pipelines are expanding the nation’s capacity to carry natural gas from the wellhead to end-use consumers. Adding capacity has the potential to “spur demand” and, for that reason, an agency conducting a NEPA review must, at the very least, examine the effects that an expansion of pipeline capacity might have on production and consumption. Indeed, if a proposed pipeline neither increases the

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<sup>7</sup> Climate Change & Drilling Impacts Ignored Attachment 4, Statement of Commissioner Cheryl A. LaFleur on Dominion Transmission, Inc., FERC Docket No. CP14-497-001, May 18, 2018.

<sup>8</sup> See Footnote Number 6 in Statement of Commissioner Cheryl LaFleur on Millennium Pipeline, FERC Docket No. CP16-486, July 24, 2018.

<sup>9</sup> Climate Change & Drilling Impacts Ignored Attachment 5, U.S. EPA Detailed Comments on the DEIS for the Leach Xpress Pipeline and Rayne Xpress Expansion Project, June 13, 2016.

<sup>10</sup> Climate Change & Drilling Impacts Ignored Attachment 14, Mountain Valley Pipeline DEIS at 3-1, FERC Docket No. CP16-10.



supply of natural gas available to consumers nor decreases the price that those consumers would pay, it is hard to imagine why that pipeline would be “needed” in the first place.”<sup>11</sup> (citations omitted)

The only reason why FERC deems such impacts unforeseeable is because the agency itself chooses to remain purposefully blind. This kind of doublespeak – that shale gas production is reasonably foreseeable but at the same time it is not reasonably foreseeable – is used by FERC to arbitrarily limit its review of impacts. In a recent order, FERC attempted to cement this contradictory policy in order to evade its legal review obligations by falsely asserting:

“Even if a causal relationship between the proposed action here and upstream production was presumed, the scope of the impacts from any such production is too speculative and thus not reasonably foreseeable.”<sup>12</sup>

However, as Commissioner Glick clarified in his dissent:

“The fact that the pipeline’s exact effect on the demand for natural gas may be unknown is no reason not to consider the type of effect it is likely to have. As the United States Court of Appeals for the Eighth Circuit explained in *Mid States*—a case that also involved the downstream emissions from new infrastructure to transport fossil fuels—“if the *nature* of the effect” (i.e., increased emissions) is clear, the fact that “the *extent* of the effect is speculative” does not excuse an agency from considering that effect in its NEPA analysis.”<sup>13</sup>

In fact, the relationship between FERC approved pipeline projects and upstream production is foreseeable, direct and demonstrable, as the Delaware Riverkeeper Network has demonstrated on the PennEast pipeline docket. For example, in the case of the PennEast Pipeline (*FERC Docket CP15-558*) FERC failed to consider the emissions and other harms that will result from the shale gas production necessary to fulfill the claimed “need” for the project and to carry the volumes of gas proposed. The PennEast pipeline will likely induce the drilling of 3,000 new wells in Northeast Pennsylvania, in Bradford, Susquehanna, Lycoming, and Tioga counties.<sup>14</sup> Given recent estimates that “during the life cycle of an average shale-gas well, 3.6 to 7.9% of the total production of the well is emitted to the atmosphere as methane” (1), this failure to consider the GHG and climate changing impacts of the induced drilling operations and end uses of the gas these pipelines deliver is significant.

It is not just climate change that induced drilling and fracking operations seriously affect. Fracking operations are known to have severe impacts on water quality including drinking water, air quality,

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<sup>11</sup> Climate Change & Drilling Impacts Ignored Attachment 7, Statement of Commissioner Richard Glick on Dominion Transmission, Inc., FERC Docket No. CP14-497-001, May 18, 2018.

<sup>12</sup> Climate Change & Drilling Impacts Ignored Attachment 3, Order Denying Rehearing for Dominion Transmission, Inc., FERC Docket No. CP14-497-001, May 18, 2018.

<sup>13</sup> Climate Change & Drilling Impacts Ignored Attachment 7, Statement of Commissioner Richard Glick on Dominion Transmission, Inc., FERC Docket No. CP14-497-001, May 18, 2018.

<sup>14</sup> Climate Change & Drilling Impacts Ignored Attachment 8, Delaware Riverkeeper Network Comment regarding PennEast DEIS, Sept 12, 2016.

property values, human health, public parks, farming and land use patterns. These impacts are known, quantifiable, and scientifically demonstrated through peer review articles. For example, the *Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking*<sup>15</sup> is a fully updated and referenced scientific resource that can be used to assess the many direct and indirect effects of pipeline-induced-fracking.

FERC's self-inflicted ignorance on the subject does not alleviate the agency of its obligation to undertake an assessment of greenhouse gas emissions and other environmental and community impacts resulting from induced shale gas production associated with the infrastructure projects it reviews and approves.

### **Natural Gas Act Requirements Violated**

In addition to the requirements of NEPA, the NGA requires FERC to consider the climate changing ramifications of its pipeline and infrastructure decisions. As required by the NGA, FERC must consider "all factors bearing on the public interest," and, prior to issuing a certificate for new pipeline or compressor station construction, must find the project's benefits outweigh its harms.

Given that:

- science conclusively demonstrates that human release of greenhouse gas emissions including methane are a direct cause of climate change,
- natural gas pipelines and compressors are directly and indirectly a source of climate changing emissions,
- climate change has serious and significant environmental, economic and safety impacts, and
- as a result of its harmful impacts on our communities and environment, climate change poses one of the most extreme existential threats facing humanity,

FERC's consideration of the impacts resulting from the GHG of shale gas pipelines and compressors are clearly required as a result of the NGA.

The United Nations IPCC Report and the US 4<sup>th</sup> National Climate Assessment all make clear the grave consequences of climate change and reaching a 1.5 degree tipping point – the ramifications are to health, safety, our environment and our economy. NASA has determined, through its data gathering and research, that methane is responsible for about a quarter of the human induced climate effects and that the fossil fuel industry is responsible for most of the dramatic rise in methane emissions in the past 10 years.<sup>16</sup> Pipelines and fracking are a big part of this equation. FERC's refusal to consider the GHG emissions and the climate changing impacts, as well as other environmental harms associated with approval of pipelines, compressor stations and related infrastructure, brings with it dire consequences for the public interest of our communities and nation.

Commissioner Glick has clearly outlined FERC's NGA mandate to consider climate change impacts resulting from its actions and decisions in recent statements:

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<sup>15</sup> See *Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking*, Physicians for Social Responsibility, March 2018, available at: [https://concernedhealthny.org/wp-content/uploads/2018/03/Fracking\\_Science\\_Compndium\\_5FINAL.pdf](https://concernedhealthny.org/wp-content/uploads/2018/03/Fracking_Science_Compndium_5FINAL.pdf)

<sup>16</sup> See *Nasa Led Study Solves a Methane Puzzle*, NASA, January 2, 2018, available at: <https://www.nasa.gov/feature/jpl/nasa-led-study-solves-a-methane-puzzle>

“Climate change poses an existential threat to our security, economy, environment, and, ultimately, the health of individual citizens. Unlike many of the challenges that our society faces, we know with certainty what causes climate change: It is the result of GHG emissions, including carbon dioxide and methane, which can be released in large quantities through the production and consumption of natural gas. Congress determined under the NGA that no entity may transport natural gas interstate, or construct or expand interstate natural gas facilities, without the Commission first determining the activity is in the public interest. This requires the Commission to find, on balance, that a project’s benefits outweigh the harms, including the environmental impacts from climate change that result from authorizing additional transportation. Accordingly, it is critical that, as an agency of the federal government, the Commission comply with its statutory responsibility to document and consider how its authorization of a natural gas pipeline facility will lead to the emission of GHGs, contributing to the existential threat of climate change.”<sup>17</sup>

Commissioner LaFleur has also referred to this legal obligation in recent statements:

“...deciding whether a project is in the public interest requires a careful balancing of the economic need for the project and all of its environmental impacts. Climate change impacts of GHG emissions are environmental effects of a project and are part of my public interest determination.”<sup>18</sup> (citations omitted)

### **FERC’s Refusal to Consider the Social Cost of Carbon in Its Climate Change Analysis**

Despite its claim to the contrary, FERC has many tools that would allow it to consider the climate changing ramifications of its pipeline decisions. Among the most readily available is the social cost of carbon. Despite court mandate, FERC has refused to avail itself of information and tools such as these to aid in its project reviews.

The social cost of carbon (SCC)— “a measure, in dollars, of the long-term damage done by a ton of carbon dioxide (CO<sub>2</sub>) emissions in a given year”<sup>19</sup>—is a tool that would allow FERC to measure economic impacts of climate change that would result from proposed pipelines as required by its NEPA and NGA mandates. Despite the fact that a federal court recently upheld the legitimacy of using the social cost of carbon as a viable statistic in climate change regulations,<sup>20</sup> and that the CEQ had recommended its use in its final guidance for federal agencies to consider climate change when evaluating proposed Federal actions,<sup>21</sup> the Commission continues to contend that it “has not

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<sup>17</sup> Climate Change & Drilling Impacts Ignored Attachment 9, Statement of Commissioner Richard Glick on Texas Eastern Transmission, LP, FERC Docket No. CP18-10, July 19, 2018.

<sup>18</sup> Climate Change & Drilling Impacts Ignored Attachment 4, Statement of Commissioner Cheryl A. LaFleur on Dominion Transmission, Inc., FERC Docket No. CP14-497-001, May 18, 2018.

<sup>19</sup> See EPA Fact Sheet, Social Cost of Carbon, December 2016, available at:

[https://www.epa.gov/sites/production/files/2016-12/documents/social\\_cost\\_of\\_carbon\\_fact\\_sheet.pdf](https://www.epa.gov/sites/production/files/2016-12/documents/social_cost_of_carbon_fact_sheet.pdf)

<sup>20</sup> See Susanne Brooks, Environmental Defense Fund, *In Win for Environment, Court Recognizes Social Cost of Carbon*, August 29, 2016, available at: <http://blogs.edf.org/markets/2016/08/29/in-win-for-environment-court-recognizes-social-cost-of-carbon/>

<sup>21</sup> Climate Change & Drilling Impacts Ignored Attachment 2, Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National

identified a suitable method' for determining the impact from the Projects' contribution to climate change and, absent such a method, it simply 'cannot make a finding whether a particular quantity of [GHG] emissions poses a significant impact on the environment and how that impact would contribute to climate change.'"<sup>22</sup>

However, as Commissioners Glick and LaFleur have pointed out in response to multiple recent certificate order decisions, FERC is incorrect in its claims that there is "no widely accepted standard to ascribe significance to a given rate or volume of GHG emissions"<sup>23</sup> and that "it cannot 'determine how a project's contribution to GHG emissions would translate into physical effects on the environment.'"<sup>24</sup> As Commissioner Glick explains<sup>25</sup>:

"That is precisely what the Social Cost of Carbon provides. It translates the long-term damage done by a ton of carbon dioxide into a monetary value, thereby providing a meaningful and informative approach for satisfying an agency's obligation to consider how its actions contribute to the harm caused by climate change."<sup>26</sup>

"the Commission has the tools needed to evaluate the Projects' impacts on climate change. It simply refuses to use them."<sup>27</sup>

**Despite these clear mandates from NEPA, the Natural Gas Act, and the Courts, FERC continues to illegally narrow its consideration of climate change and the other community and environmental ramifications of its pipeline, compressor and related infrastructure decisionmaking.**

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Environmental Policy Act Reviews, Christina Goldfuss, Council on Environmental Quality, August 1, 2016.

<sup>22</sup> Climate Change & Drilling Impacts Ignored Attachment 9, Statement of Commissioner Richard Glick on Texas Eastern Transmission, LP, FERC Docket No. CP18-10, July 19, 2018.

<sup>23</sup> *Id.* P 27. *Florida Southeast Connection, LLC*, 162 FERC ¶ 61,233, at 2, 5–8 (2018) (Glick, Comm'r, dissenting).

<sup>24</sup> Climate Change & Drilling Impacts Ignored Attachment 10, Statement of Commissioner Cheryl LaFleur on Texas Eastern Transmission, LP, FERC Docket No. CP18-10, July 19, 2018.

<sup>25</sup> Climate Change & Drilling Impacts Ignored Attachment 11, Statement of Commissioner Richard Glick on Northwest Pipeline, LLC, FERC Docket Nos. CP17-441-000, CP17-441-001, July 19, 2018. See also Climate Change & Drilling Impacts Ignored Attachment 9, Statement of Commissioner Richard Glick on Texas Eastern Transmission, LP, FERC Docket No. CP18-10, July 19, 2018; Climate Change & Drilling Impacts Ignored Attachment 12, Statement of Commissioner Richard Glick on Columbia Gas Transmission, L.L.C., July 19, 2018, Docket No.: CP17-80-000; Climate Change & Drilling Impacts Ignored Attachment 11, Statement of Commissioner Richard Glick on Northwest Pipeline, LLC, FERC Docket Nos. CP17-441-000, CP17-441-001, July 19, 2018.

<sup>26</sup> *Id.* at 5 (Glick, Comm'r, dissenting) (citing cases that discuss the Social Cost of Carbon when evaluating whether an agency complied with its obligation under NEPA to evaluate the climate change impacts of its decisions).

<sup>27</sup> Climate Change & Drilling Impacts Ignored Attachment 13, Statement of Commissioner Richard Glick on Mountain Valley Pipeline, LLC, FERC Docket Nos. CP16-10-000 and CP16-13-000, June 15, 2018.

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**Attachments:**

Climate Change & Drilling Impacts Ignored Attachment 1, Presidential Executive Order on Promoting Energy Independence and Economic Growth, March 28, 2017.

Climate Change & Drilling Impacts Ignored Attachment 2, Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, Christina Goldfuss, Council on Environmental Quality, August 1, 2016.

Climate Change & Drilling Impacts Ignored Attachment 3, Order Denying Rehearing for Dominion Transmission, Inc., FERC Docket No. CP14-497-001, May 18, 2018.

Climate Change & Drilling Impacts Ignored Attachment 4, Statement of Commissioner Cheryl A. LaFleur on Dominion Transmission, Inc., FERC Docket No. CP14-497-001, May 18, 2018.

Climate Change & Drilling Impacts Ignored Attachment 5, U.S. EPA Detailed Comments on the DEIS for the Leach Xpress Pipeline and Rayne Xpress Expansion Project, June 13, 2016.

Climate Change & Drilling Impacts Ignored Attachment 6, Draft Environmental Impact Statement for the PennEast Pipeline Project, FERC Docket No. CP15-558, July 2016.

Climate Change & Drilling Impacts Ignored Attachment 7, Statement of Commissioner Richard Glick on Dominion Transmission, Inc., FERC Docket No. CP14-497-001, May 18, 2018.

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Climate Change & Drilling Impacts Ignored Attachment 12, Statement of Commissioner Richard Glick on Columbia Gas Transmission, L.L.C., FERC Docket No. CP17-80-000, July 19, 2018.

Climate Change & Drilling Impacts Ignored Attachment 13, Statement of Commissioner Richard Glick on Mountain Valley Pipeline, LLC, FERC Docket Nos. CP16-10-000 and CP16-13-000, June 15, 2018.

Climate Change & Drilling Impacts Ignored Attachment 14, Mountain Valley Pipeline DEIS at 3-1, FERC Docket No. CP16-10.

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**Climate Change & Drilling Impacts Ignored**  
**Attachment 1**, Presidential Executive Order on  
Promoting Energy Independence and Economic Growth,  
March 28, 2017.

## EXECUTIVE ORDERS

# Presidential Executive Order on Promoting Energy Independence and Economic Growth

— ENERGY & ENVIRONMENT | Issued on: March 28, 2017



By the authority vested in me as President by the Constitution and the laws of the United States of America, it is hereby ordered as follows:

Section 1. Policy. (a) It is in the national interest to promote clean and safe development of our Nation's vast energy resources, while at the same time avoiding regulatory burdens that unnecessarily encumber energy production, constrain economic growth, and prevent job creation. Moreover, the prudent development of these natural resources is essential to ensuring the Nation's geopolitical security.

(b) It is further in the national interest to ensure that the Nation's electricity is affordable, reliable, safe, secure, and clean, and that it can be produced from coal, natural gas, nuclear material, flowing water, and other domestic sources, including renewable sources.

(c) Accordingly, it is the policy of the United States that executive departments and agencies (agencies) immediately review existing regulations that potentially burden the development or use of domestically produced energy resources and appropriately suspend, revise, or rescind those that unduly burden the development of domestic energy resources beyond the degree necessary to protect the public interest or otherwise comply with the law.

(d) It further is the policy of the United States that, to the extent permitted by law, all agencies should take appropriate actions to promote clean air and clean water for the American people, while also respecting the proper roles of the Congress and the States concerning these matters in our constitutional republic.

(e) It is also the policy of the United States that necessary and appropriate environmental regulations comply with the law, are of greater benefit than cost, when permissible, achieve environmental improvements for the American people, and are developed through transparent processes that employ the best available peer-reviewed science and economics.

Sec. 2. Immediate Review of All Agency Actions that Potentially Burden the Safe, Efficient Development of Domestic Energy Resources. (a) The heads of agencies shall review all existing regulations, orders, guidance documents, policies, and any other similar agency actions (collectively, agency actions) that potentially burden the development or use of domestically produced energy resources, with particular attention to oil, natural gas, coal, and nuclear energy resources. Such review shall not include agency actions that are mandated by law, necessary for the public interest, and consistent with the policy set forth in section 1 of this order.

(b) For purposes of this order, “burden” means to unnecessarily obstruct, delay, curtail, or otherwise impose significant costs on the siting, permitting, production, utilization, transmission, or delivery of energy resources.

(c) Within 45 days of the date of this order, the head of each agency with agency actions described in subsection (a) of this section shall develop and submit to the Director of the Office of Management and Budget (OMB Director) a plan to carry out the review required by subsection (a) of this section. The plans shall also be sent to the Vice President, the Assistant to the President for Economic Policy, the Assistant to the President for Domestic Policy, and the Chair of the Council on Environmental Quality. The head of any agency who determines that such agency does not have agency actions described in subsection (a) of this section shall submit to the OMB Director a written statement to that effect and, absent a determination by the OMB Director that such agency does have agency actions described in subsection (a) of this section, shall have no further responsibilities under this section.

(d) Within 120 days of the date of this order, the head of each agency shall submit a draft final report detailing the agency actions described in subsection (a) of this section to the Vice

President, the OMB Director, the Assistant to the President for Economic Policy, the Assistant to the President for Domestic Policy, and the Chair of the Council on Environmental Quality. The report shall include specific recommendations that, to the extent permitted by law, could alleviate or eliminate aspects of agency actions that burden domestic energy production.

(e) The report shall be finalized within 180 days of the date of this order, unless the OMB Director, in consultation with the other officials who receive the draft final reports, extends that deadline.

(f) The OMB Director, in consultation with the Assistant to the President for Economic Policy, shall be responsible for coordinating the recommended actions included in the agency final reports within the Executive Office of the President.

(g) With respect to any agency action for which specific recommendations are made in a final report pursuant to subsection (e) of this section, the head of the relevant agency shall, as soon as practicable, suspend, revise, or rescind, or publish for notice and comment proposed rules suspending, revising, or rescinding, those actions, as appropriate and consistent with law. Agencies shall endeavor to coordinate such regulatory reforms with their activities undertaken in compliance with Executive Order 13771 of January 30, 2017 (Reducing Regulation and Controlling Regulatory Costs).

Sec. 3. Rescission of Certain Energy and Climate-Related Presidential and Regulatory Actions. (a) The following Presidential actions are hereby revoked:

(i) Executive Order 13653 of November 1, 2013 (Preparing the United States for the Impacts of Climate Change);

(ii) The Presidential Memorandum of June 25, 2013 (Power Sector Carbon Pollution Standards);

(iii) The Presidential Memorandum of November 3, 2015 (Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment); and

(iv) The Presidential Memorandum of September 21, 2016 (Climate Change and National Security).

(b) The following reports shall be rescinded:

(i) The Report of the Executive Office of the President of June 2013 (The President's Climate Action Plan); and

(ii) The Report of the Executive Office of the President of March 2014 (Climate Action Plan Strategy to Reduce Methane Emissions).

(c) The Council on Environmental Quality shall rescind its final guidance entitled "Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews," which is referred to in "Notice of Availability," 81 Fed. Reg. 51866 (August 5, 2016).

(d) The heads of all agencies shall identify existing agency actions related to or arising from the Presidential actions listed in subsection (a) of this section, the reports listed in subsection (b) of this section, or the final guidance listed in subsection (c) of this section. Each agency shall, as soon as practicable, suspend, revise, or rescind, or publish for notice and comment proposed rules suspending, revising, or rescinding any such actions, as appropriate and consistent with law and with the policies set forth in section 1 of this order.

#### Sec. 4. Review of the Environmental Protection Agency's "Clean Power Plan" and Related Rules and Agency Actions.

(a) The Administrator of the Environmental Protection Agency (Administrator) shall immediately take all steps necessary to review the final rules set forth in subsections (b)(i) and (b)(ii) of this section, and any rules and guidance issued pursuant to them, for consistency with the policy set forth in section 1 of this order and, if appropriate, shall, as soon as practicable, suspend, revise, or rescind the guidance, or publish for notice and comment proposed rules suspending, revising, or rescinding those rules. In addition, the Administrator shall immediately take all steps necessary to review the proposed rule set forth in subsection (b)(iii) of this section, and, if appropriate, shall, as soon as practicable, determine whether to revise or withdraw the proposed rule.

(b) This section applies to the following final or proposed rules:

(i) The final rule entitled "Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units," 80 Fed. Reg. 64661 (October 23, 2015) (Clean Power Plan);

(ii) The final rule entitled “Standards of Performance for Greenhouse Gas Emissions from New, Modified, and Reconstructed Stationary Sources: Electric Utility Generating Units,” 80 Fed. Reg. 64509 (October 23, 2015); and

(iii) The proposed rule entitled “Federal Plan Requirements for Greenhouse Gas Emissions From Electric Utility Generating Units Constructed on or Before January 8, 2014; Model Trading Rules; Amendments to Framework Regulations; Proposed Rule,” 80 Fed. Reg. 64966 (October 23, 2015).

(c) The Administrator shall review and, if appropriate, as soon as practicable, take lawful action to suspend, revise, or rescind, as appropriate and consistent with law, the “Legal Memorandum Accompanying Clean Power Plan for Certain Issues,” which was published in conjunction with the Clean Power Plan.

(d) The Administrator shall promptly notify the Attorney General of any actions taken by the Administrator pursuant to this order related to the rules identified in subsection (b) of this section so that the Attorney General may, as appropriate, provide notice of this order and any such action to any court with jurisdiction over pending litigation related to those rules, and may, in his discretion, request that the court stay the litigation or otherwise delay further litigation, or seek other appropriate relief consistent with this order, pending the completion of the administrative actions described in subsection (a) of this section.

Sec. 5. Review of Estimates of the Social Cost of Carbon, Nitrous Oxide, and Methane for Regulatory Impact Analysis. (a) In order to ensure sound regulatory decision making, it is essential that agencies use estimates of costs and benefits in their regulatory analyses that are based on the best available science and economics.

(b) The Interagency Working Group on Social Cost of Greenhouse Gases (IWG), which was convened by the Council of Economic Advisers and the OMB Director, shall be disbanded, and the following documents issued by the IWG shall be withdrawn as no longer representative of governmental policy:

(i) Technical Support Document: Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866 (February 2010);

(ii) Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis (May 2013);

(iii) Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis (November 2013);

(iv) Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis (July 2015);

(v) Addendum to the Technical Support Document for Social Cost of Carbon: Application of the Methodology to Estimate the Social Cost of Methane and the Social Cost of Nitrous Oxide (August 2016); and

(vi) Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis (August 2016).

(c) Effective immediately, when monetizing the value of changes in greenhouse gas emissions resulting from regulations, including with respect to the consideration of domestic versus international impacts and the consideration of appropriate discount rates, agencies shall ensure, to the extent permitted by law, that any such estimates are consistent with the guidance contained in OMB Circular A-4 of September 17, 2003 (Regulatory Analysis), which was issued after peer review and public comment and has been widely accepted for more than a decade as embodying the best practices for conducting regulatory cost-benefit analysis.

Sec. 6. Federal Land Coal Leasing Moratorium. The Secretary of the Interior shall take all steps necessary and appropriate to amend or withdraw Secretary's Order 3338 dated January 15, 2016 (Discretionary Programmatic Environmental Impact Statement (PEIS) to Modernize the Federal Coal Program), and to lift any and all moratoria on Federal land coal leasing activities related to Order 3338. The Secretary shall commence Federal coal leasing activities consistent with all applicable laws and regulations.

Sec. 7. Review of Regulations Related to United States Oil and Gas Development. (a) The Administrator shall review the final rule entitled "Oil and Natural Gas Sector: Emission Standards for New, Reconstructed, and Modified Sources," 81 Fed. Reg. 35824 (June 3, 2016), and any rules and guidance issued pursuant to it, for consistency with the policy set forth in section 1 of this order and, if appropriate, shall, as soon as practicable, suspend, revise, or rescind the guidance, or publish for notice and comment proposed rules suspending, revising, or rescinding those rules.

(b) The Secretary of the Interior shall review the following final rules, and any rules and

guidance issued pursuant to them, for consistency with the policy set forth in section 1 of this order and, if appropriate, shall, as soon as practicable, suspend, revise, or rescind the guidance, or publish for notice and comment proposed rules suspending, revising, or rescinding those rules:

(i) The final rule entitled “Oil and Gas; Hydraulic Fracturing on Federal and Indian Lands,” 80 Fed. Reg. 16128 (March 26, 2015);

(ii) The final rule entitled “General Provisions and Non-Federal Oil and Gas Rights,” 81 Fed. Reg. 77972 (November 4, 2016);

(iii) The final rule entitled “Management of Non Federal Oil and Gas Rights,” 81 Fed. Reg. 79948 (November 14, 2016); and

(iv) The final rule entitled “Waste Prevention, Production Subject to Royalties, and Resource Conservation,” 81 Fed. Reg. 83008 (November 18, 2016).

(c) The Administrator or the Secretary of the Interior, as applicable, shall promptly notify the Attorney General of any actions taken by them related to the rules identified in subsections (a) and (b) of this section so that the Attorney General may, as appropriate, provide notice of this order and any such action to any court with jurisdiction over pending litigation related to those rules, and may, in his discretion, request that the court stay the litigation or otherwise delay further litigation, or seek other appropriate relief consistent with this order, until the completion of the administrative actions described in subsections (a) and (b) of this section.

Sec. 8. General Provisions. (a) Nothing in this order shall be construed to impair or otherwise affect:

(i) the authority granted by law to an executive department or agency, or the head thereof;  
or

(ii) the functions of the Director of the Office of Management and Budget relating to budgetary, administrative, or legislative proposals.

(b) This order shall be implemented consistent with applicable law and subject to the availability of appropriations.

(c) This order is not intended to, and does not, create any right or benefit, substantive or procedural, enforceable at law or in equity by any party against the United States, its departments, agencies, or entities, its officers, employees, or agents, or any other person.

DONALD J. TRUMP

THE WHITE HOUSE,  
March 28, 2017.

**People's Dossier: FERC's Abuses of Power and Law  
→ Climate Change & Drilling Impacts Ignored**

**Climate Change & Drilling Impacts Ignored**  
**Attachment 2**, Final Guidance for Federal Departments  
and Agencies on Consideration of Greenhouse Gas  
Emissions and the Effects of Climate Change in National  
Environmental Policy Act Reviews, Christina Goldfuss,  
Council on Environmental Quality, August 1, 2016.



EXECUTIVE OFFICE OF THE PRESIDENT  
COUNCIL ON ENVIRONMENTAL QUALITY  
WASHINGTON, D.C. 20503

August 1, 2016

MEMORANDUM FOR HEADS OF FEDERAL DEPARTMENTS AND AGENCIES

FROM:

CHRISTINA GOLDFUSS  
COUNCIL ON ENVIRONMENTAL QUALITY

SUBJECT:

Final Guidance for Federal Departments and Agencies on  
Consideration of Greenhouse Gas Emissions and the Effects of  
Climate Change in National Environmental Policy Act Reviews

I. INTRODUCTION

The Council on Environmental Quality (CEQ) issues this guidance to assist Federal agencies in their consideration of the effects of greenhouse gas (GHG) emissions<sup>1</sup> and climate change when evaluating proposed Federal actions in accordance with the National Environmental Policy Act (NEPA) and the CEQ Regulations Implementing the Procedural Provisions of NEPA (CEQ Regulations).<sup>2</sup> This guidance will facilitate compliance with existing NEPA requirements, thereby improving the efficiency and consistency of reviews of proposed Federal actions for agencies, decision makers, project proponents, and the public.<sup>3</sup> The guidance provides Federal agencies a common

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<sup>1</sup> For purposes of this guidance, CEQ defines GHGs in accordance with Section 19(m) of Exec. Order No. 13693, Planning for Federal Sustainability in the Next Decade, 80 Fed. Reg. 15869, 15882 (Mar. 25, 2015) (carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, nitrogen trifluoride, and sulfur hexafluoride). Also for purposes of this guidance, "emissions" includes release of stored GHGs as a result of land management activities affecting terrestrial GHG pools such as, but not limited to, carbon stocks in forests and soils, as well as actions that affect the future changes in carbon stocks. The common unit of measurement for GHGs is metric tons of CO<sub>2</sub> equivalent (mt CO<sub>2</sub>-e).

<sup>2</sup> See 42 U.S.C. 4321 et seq.; 40 CFR Parts 1500–1508.

<sup>3</sup> This guidance is not a rule or regulation, and the recommendations it contains may not apply to a particular situation based upon the individual facts and circumstances. This guidance does not change or substitute for any law, regulation, or other legally binding

approach for assessing their proposed actions, while recognizing each agency's unique circumstances and authorities.<sup>4</sup>

Climate change is a fundamental environmental issue, and its effects fall squarely within NEPA's purview.<sup>5</sup> Climate change is a particularly complex challenge given its global nature and the inherent interrelationships among its sources, causation, mechanisms of action, and impacts. Analyzing a proposed action's GHG emissions and the effects of climate change relevant to a proposed action—particularly how climate change may change an action's environmental effects—can provide useful information to decision makers and the public.

CEQ is issuing the guidance to provide for greater clarity and more consistency in how agencies address climate change in the environmental impact assessment process. This guidance uses longstanding NEPA principles because such an analysis should be similar to the analysis of other environmental impacts under NEPA. The guidance is intended to assist agencies in disclosing and considering the reasonably foreseeable effects of proposed actions that are relevant to their decision-making processes. It confirms that agencies should provide the public and decision makers with explanations of the basis for agency determinations.

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requirement, and is not legally enforceable. The use of non-mandatory language such as “guidance,” “recommend,” “may,” “should,” and “can,” is intended to describe CEQ policies and recommendations. The use of mandatory terminology such as “must” and “required” is intended to describe controlling requirements under the terms of NEPA and the CEQ regulations, but this document does not affect legally binding requirements.

<sup>4</sup> This guidance also addresses recommendations offered by a number of stakeholders. See President's State, Local, and Tribal Leaders Task Force on Climate Preparedness and Resilience, *Recommendations to the President* (November 2014), p. 20 (recommendation 2.7), available at [www.whitehouse.gov/sites/default/files/docs/task\\_force\\_report\\_0.pdf](http://www.whitehouse.gov/sites/default/files/docs/task_force_report_0.pdf); U.S. Government Accountability Office, *Future Federal Adaptation Efforts Could Better Support Local Infrastructure Decision Makers*, (Apr. 2013), available at <http://www.gao.gov/assets/660/653741.pdf>. Public comments on drafts of this guidance document are available at <http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa/comments>.

<sup>5</sup> NEPA recognizes “the profound impact of man's activity on the interrelations of all components of the natural environment.” (42 U.S.C. 4331(a)). It was enacted to, *inter alia*, “promote efforts which will prevent or eliminate damage to the environment and biosphere and stimulate the health and welfare of man.” (42 U.S.C. 4321).

Focused and effective consideration of climate change in NEPA reviews<sup>6</sup> will allow agencies to improve the quality of their decisions. Identifying important interactions between a changing climate and the environmental impacts from a proposed action can help Federal agencies and other decision makers identify practicable opportunities to reduce GHG emissions, improve environmental outcomes, and contribute to safeguarding communities and their infrastructure against the effects of extreme weather events and other climate-related impacts.

Agencies implement NEPA through one of three levels of NEPA analysis: a Categorical Exclusion (CE); an Environmental Assessment (EA); or an Environmental Impact Statement (EIS). This guidance is intended to help Federal agencies ensure their analysis of potential GHG emissions and effects of climate change in an EA or EIS is commensurate with the extent of the effects of the proposed action.<sup>7</sup> Agencies have discretion in how they tailor their individual NEPA reviews to accommodate the approach outlined in this guidance, consistent with the CEQ Regulations and their respective implementing procedures and policies.<sup>8</sup> CEQ does not expect that implementation of this guidance will require agencies to develop new NEPA implementing procedures. However, CEQ recommends that agencies review their NEPA procedures and propose any updates they deem necessary or appropriate to facilitate their consideration of GHG emissions and climate change.<sup>9</sup> CEQ will review agency

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<sup>6</sup> The term “NEPA review” is used to include the analysis, process, and documentation required under NEPA. While this document focuses on NEPA reviews, agencies are encouraged to analyze GHG emissions and climate-resilient design issues early in the planning and development of proposed actions and projects under their substantive authorities.

<sup>7</sup> See 40 CFR 1502.2(b) (Impacts shall be discussed in proportion to their significance); 40 CFR 1502.15 (Data and analyses in a statement shall be commensurate with the importance of the impact...).

<sup>8</sup> See 40 CFR 1502.24 (Methodology and scientific accuracy).

<sup>9</sup> See 40 CFR 1507.3. Agency NEPA implementing procedures can be, but are not required to be, in the form of regulation. Section 1507.3 encourages agencies to publish explanatory guidance, and agencies also should consider whether any updates to explanatory guidance are necessary. Agencies should review their policies and implementing procedures and revise them as necessary to ensure full compliance with NEPA.

proposals for revising their NEPA procedures, including any revision of CEs, in light of this guidance.

As discussed in this guidance, when addressing climate change agencies should consider: (1) The potential effects of a proposed action on climate change as indicated by assessing GHG emissions (e.g., to include, where applicable, carbon sequestration);<sup>10</sup> and, (2) The effects of climate change on a proposed action and its environmental impacts.

This guidance explains the application of NEPA principles and practices to the analysis of GHG emissions and climate change, and

- Recommends that agencies quantify a proposed agency action’s projected direct and indirect GHG emissions, taking into account available data and GHG quantification tools that are suitable for the proposed agency action;
- Recommends that agencies use projected GHG emissions (to include, where applicable, carbon sequestration implications associated with the proposed agency action) as a proxy for assessing potential climate change effects when preparing a NEPA analysis for a proposed agency action;
- Recommends that where agencies do not quantify a proposed agency action’s projected GHG emissions because tools, methodologies, or data inputs are not reasonably available to support calculations for a quantitative analysis, agencies include a qualitative analysis in the NEPA document and explain the basis for determining that quantification is not reasonably available;

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<sup>10</sup> Carbon sequestration is the long-term carbon storage in plants, soils, geologic formations, and oceans.

- Discusses methods to appropriately analyze reasonably foreseeable direct, indirect, and cumulative GHG emissions and climate effects;
- Guides the consideration of reasonable alternatives and recommends agencies consider the short- and long-term effects and benefits in the alternatives and mitigation analysis;
- Advises agencies to use available information when assessing the potential future state of the affected environment in a NEPA analysis, instead of undertaking new research, and provides examples of existing sources of scientific information;
- Counsels agencies to use the information developed during the NEPA review to consider alternatives that would make the actions and affected communities more resilient to the effects of a changing climate;
- Outlines special considerations for agencies analyzing biogenic carbon dioxide sources and carbon stocks associated with land and resource management actions under NEPA;
- Recommends that agencies select the appropriate level of NEPA review to assess the broad-scale effects of GHG emissions and climate change, either to inform programmatic (e.g., landscape-scale) decisions, or at both the programmatic and tiered project- or site-specific level, and to set forth a reasoned explanation for the agency's approach; and
- Counsels agencies that the "rule of reason" inherent in NEPA and the CEQ Regulations allows agencies to determine, based on their expertise and

experience, how to consider an environmental effect and prepare an analysis based on the available information.

## II. BACKGROUND

### A. NEPA

NEPA is designed to promote consideration of potential effects on the human environment<sup>11</sup> that would result from proposed Federal agency actions, and to provide the public and decision makers with useful information regarding reasonable alternatives<sup>12</sup> and mitigation measures to improve the environmental outcomes of Federal agency actions. NEPA ensures that the environmental effects of proposed actions are taken into account before decisions are made and informs the public of significant environmental effects of proposed Federal agency actions, promoting transparency and accountability concerning Federal actions that may significantly affect the quality of the human environment. NEPA reviews should identify measures to avoid, minimize, or mitigate adverse effects of Federal agency actions. Better analysis and decisions are the ultimate goal of the NEPA process.<sup>13</sup>

Inherent in NEPA and the CEQ Regulations is a “rule of reason” that allows agencies to determine, based on their expertise and experience, how to consider an environmental effect and prepare an analysis based on the available information. The usefulness of that information to the decision-making process and the public, and the

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<sup>11</sup> 40 CFR 1508.14 (“‘Human environment’ shall be interpreted comprehensively to include the natural and physical environment and the relationship of people with that environment.”).

<sup>12</sup> 40 CFR 1508.25(b) (“Alternatives, which include: (1) No action alternative. (2) Other reasonable courses of actions. (3) Mitigation measures (not in the proposed action).”).

<sup>13</sup> 40 CFR 1500.1(c) (“Ultimately, of course, it is not better documents but better decisions that count. NEPA’s purpose is not to generate paperwork—even excellent paperwork—but to foster excellent action. The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment.”).

extent of the anticipated environmental consequences are important factors to consider when applying that “rule of reason.”

## B. Climate Change

Climate change science continues to expand and refine our understanding of the impacts of anthropogenic GHG emissions. CEQ’s first Annual Report in 1970 referenced climate change, indicating that “[m]an may be changing his weather.”<sup>14</sup> At that time, the mean level of atmospheric carbon dioxide (CO<sub>2</sub>) had been measured as increasing to 325 parts per million (ppm) from an average of 280 ppm pre-Industrial levels.<sup>15</sup> Since 1970, the concentration of atmospheric carbon dioxide has increased to approximately 400 ppm (2015 globally averaged value).<sup>16</sup> Since the publication of CEQ’s first Annual Report, it has been determined that human activities have caused the carbon dioxide content of the atmosphere of our planet to increase to its highest level in at least 800,000 years.<sup>17</sup>

It is now well established that rising global atmospheric GHG emission concentrations are significantly affecting the Earth’s climate. These conclusions are built upon a scientific record that has been created with substantial contributions from the

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<sup>14</sup> See CEQ, *Environmental Quality – The First Annual Report*, p. 93 (August 1970); available at [https://ceq.doe.gov/ceq\\_reports/annual\\_environmental\\_quality\\_reports.html](https://ceq.doe.gov/ceq_reports/annual_environmental_quality_reports.html).

<sup>15</sup> See USGCRP, *Climate Change Impacts in the United States – The Third National Climate Assessment* (Jerry M. Melillo, Terese (T.C.) Richmond, & Gary W. Yohe eds., 2014) [hereinafter “Third National Climate Assessment”], *Appendix 3 – Climate Science Supplement*, p. 739; EPA, April 2015: *Inventory of U.S. Greenhouse Emissions and Sinks 1990-2013*, available at <https://www3.epa.gov/climatechange/Downloads/ghgemissions/US-GHG-Inventory-2015-Main-Text.pdf>. See also Hartmann, D.L., A.M.G. Klein Tank, M. Rusticucci, et al., 2013 *Observations Atmosphere and Surface*. In *Climate Change 2013 The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Stocker, T.F., D. Qin, G.-K., et al. (eds)]. Cambridge University Press: Cambridge, United Kingdom and New York, NY, USA. Available at [http://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5\\_Chapter02\\_Final.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/wg1/WG1AR5_Chapter02_Final.pdf).

<sup>16</sup> See Ed Dlugokencky & Pieter Tans, National Oceanic and Atmospheric Administration/Earth System Research Laboratory, <http://www.esrl.noaa.gov/gmd/ccgg/trends/global.html>.

<sup>17</sup> See <http://earthobservatory.nasa.gov/Features/CarbonCycle>; University of California Riverside, National Aeronautics and Space Administration (NASA), and Riverside Unified School District, *Down to Earth Climate Change*, <http://globalclimate.ucr.edu/resources.html>; USGCRP, *Third National Climate Assessment, Appendix 3 – Climate Science Supplement*, p. 736 (“Although climate changes in the past have been caused by natural factors, human activities are now the dominant agents of change. Human activities are affecting climate through increasing atmospheric levels of heat-trapping gases and other substances, including particles.”).

United States Global Change Research Program (USGCRP), which informs the United States’ response to global climate change through coordinated Federal programs of research, education, communication, and decision support.<sup>18</sup> Studies have projected the effects of increasing GHGs on many resources normally discussed in the NEPA process, including water availability, ocean acidity, sea-level rise, ecosystem functions, energy production, agriculture and food security, air quality and human health.<sup>19</sup>

Based primarily on the scientific assessments of the USGCRP, the National Research Council, and the Intergovernmental Panel on Climate Change, in 2009 the Environmental Protection Agency (EPA) issued a finding that the changes in our climate caused by elevated concentrations of greenhouse gases in the atmosphere are reasonably anticipated to endanger the public health and public welfare of current and future generations.<sup>20</sup> In 2015, EPA acknowledged more recent scientific assessments that “highlight the urgency of addressing the rising concentration of CO<sub>2</sub> in the atmosphere,” finding that certain groups are especially vulnerable to climate-related effects.<sup>21</sup> Broadly

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<sup>18</sup> See Global Change Research Act of 1990, Pub. L. 101–606, Sec. 103 (November 16, 1990). For additional information on the United States Global Change Research Program [hereinafter “USGCRP”], visit <http://www.globalchange.gov>. The USGCRP, formerly the Climate Change Science Program, coordinates and integrates the activities of 13 Federal agencies that conduct research on changes in the global environment and their implications for society. The USGCRP began as a Presidential initiative in 1989 and was codified in the Global Change Research Act of 1990 (Public Law 101–606). USGCRP-participating agencies are the Departments of Agriculture, Commerce, Defense, Energy, Interior, Health and Human Services, State, and Transportation; the U.S. Agency for International Development, the Environmental Protection Agency, NASA, the National Science Foundation, and the Smithsonian Institution.

<sup>19</sup> See USGCRP, *Third National Climate Assessment*, available at [http://nca2014.globalchange.gov/system/files\\_force/downloads/low/NCA3\\_Climate\\_Change\\_Impacts\\_in\\_the\\_United%20States\\_Low\\_Res.pdf?download=1](http://nca2014.globalchange.gov/system/files_force/downloads/low/NCA3_Climate_Change_Impacts_in_the_United%20States_Low_Res.pdf?download=1); IPCC, *Climate Change 2014 Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* (R.K. Pachauri, & L.A. Meyer eds., 2014), available at [https://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR\\_AR5\\_FINAL\\_full.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/syr/SYR_AR5_FINAL_full.pdf); see also <http://www.globalchange.gov>; 40 CFR 1508.8 (effects include ecological, aesthetic, historic, cultural, economic, social, and health effects); USGCRP, *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment*, available at <https://health2016.globalchange.gov/>.

<sup>20</sup> See generally *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act*, 74 Fed. Reg. 66496 (Dec. 15, 2009). (For example, at 66497–98: “[t]he evidence concerning how human-induced climate change may alter extreme weather events also clearly supports a finding of endangerment, given the serious adverse impacts that can result from such events and the increase in risk, even if small, of the occurrence and intensity of events such as hurricanes and floods. Additionally, public health is expected to be adversely affected by an increase in the severity of coastal storm events due to rising sea levels”).

<sup>21</sup> See EPA, *Final Rule for Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units*, 80 Fed. Reg. 64661, 64677 (Oct. 23, 2015) (“Certain groups, including children, the elderly, and the poor, are most vulnerable to climate-related effects. Recent studies also find that certain communities, including low-income communities and some communities of color ... are disproportionately affected by certain climate change related impacts—including heat waves, degraded air quality, and

stated, the effects of climate change observed to date and projected to occur in the future include more frequent and intense heat waves, longer fire seasons and more severe wildfires, degraded air quality, more heavy downpours and flooding, increased drought, greater sea-level rise, more intense storms, harm to water resources, harm to agriculture, ocean acidification, and harm to wildlife and ecosystems.<sup>22</sup>

### III. CONSIDERING THE EFFECTS OF GHG EMISSIONS AND CLIMATE CHANGE

This guidance is applicable to all Federal actions subject to NEPA, including site-specific actions, certain funding of site-specific projects, rulemaking actions, permitting decisions, and land and resource management decisions.<sup>23</sup> This guidance does not – and cannot – expand the range of Federal agency actions that are subject to NEPA.

Consistent with NEPA, Federal agencies should consider the extent to which a proposed action and its reasonable alternatives would contribute to climate change, through GHG emissions, and take into account the ways in which a changing climate may impact the proposed action and any alternative actions, change the action’s environmental effects over the lifetime of those effects, and alter the overall environmental implications of such actions.

This guidance is intended to assist agencies in disclosing and considering the effects of GHG emissions and climate change along with the other reasonably foreseeable environmental effects of their proposed actions. This guidance does not establish any

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extreme weather events—which are associated with increased deaths, illnesses, and economic challenges. Studies also find that climate change poses particular threats to the health, well-being, and ways of life of indigenous peoples in the U.S.”).

<sup>22</sup> See <http://www.globalchange.gov/climate-change/impacts-society> and Third National Climate Assessment, Chapters 3-15 (Sectors) and Chapters 16-25 (Regions), available at <http://nca2014.globalchange.gov/downloads>.

<sup>23</sup> See 40 CFR 1508.18.

particular quantity of GHG emissions as “significantly” affecting the quality of the human environment or give greater consideration to the effects of GHG emissions and climate change over other effects on the human environment.

A. GHG Emissions as a Proxy for the Climate Change Impacts of a Proposed Action

In light of the global scope of the impacts of GHG emissions, and the incremental contribution of each single action to global concentrations, CEQ recommends agencies use the projected GHG emissions associated with proposed actions as a proxy for assessing proposed actions’ potential effects on climate change in NEPA analysis.<sup>24</sup> This approach, together with providing a qualitative summary discussion of the impacts of GHG emissions based on authoritative reports such as the USGCRP’s National Climate Assessments and the Impacts of Climate Change on Human Health in the United States, a Scientific Assessment of the USGCRP, allows an agency to present the environmental and public health impacts of a proposed action in clear terms and with sufficient information to make a reasoned choice between no action and other alternatives and appropriate mitigation measures, and to ensure the professional and scientific integrity of the NEPA review.<sup>25</sup>

Climate change results from the incremental addition of GHG emissions from millions of individual sources,<sup>26</sup> which collectively have a large impact on a global scale.

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<sup>24</sup> See 40 CFR 1502.16, 1508.9.

<sup>25</sup> See 40 CFR 1500.1, 1502.24 (requiring agencies to use high quality information and ensure the professional and scientific integrity of the discussions and analyses in environmental impact statements).

<sup>26</sup> Some sources emit GHGs in quantities that are orders of magnitude greater than others. See EPA, *Greenhouse Gas Reporting Program 2014 Reported Data*, Figure 2: Direct GHG Emissions Reported by Sector (2014), available at <https://www.epa.gov/ghgreporting/ghgrp-2014-reported-data> (amounts of GHG emissions by sector); *Final Rule for Carbon Pollution Emission Guidelines for Existing Stationary Sources Electric Utility Generating Units*, 80 Fed. Reg. 64661, 64663, 64689 (Oct. 23, 2015) (regulation of GHG emissions from fossil fuel-fired electricity generating power plants); *Oil and Natural Gas Sector Emission Standards for New, Reconstructed, and Modified Sources*, 81 Fed. Reg. 34824, 35830 (June 3, 2016) (regulation of GHG emissions from oil and gas sector).

CEQ recognizes that the totality of climate change impacts is not attributable to any single action, but are exacerbated by a series of actions including actions taken pursuant to decisions of the Federal Government. Therefore, a statement that emissions from a proposed Federal action represent only a small fraction of global emissions is essentially a statement about the nature of the climate change challenge, and is not an appropriate basis for deciding whether or to what extent to consider climate change impacts under NEPA. Moreover, these comparisons are also not an appropriate method for characterizing the potential impacts associated with a proposed action and its alternatives and mitigations because this approach does not reveal anything beyond the nature of the climate change challenge itself: the fact that diverse individual sources of emissions each make a relatively small addition to global atmospheric GHG concentrations that collectively have a large impact. When considering GHG emissions and their significance, agencies should use appropriate tools and methodologies for quantifying GHG emissions and comparing GHG quantities across alternative scenarios. Agencies should not limit themselves to calculating a proposed action's emissions as a percentage of sector, nationwide, or global emissions in deciding whether or to what extent to consider climate change impacts under NEPA.

#### 1. GHG Emissions Quantification and Relevant Tools

This guidance recommends that agencies quantify a proposed agency action's projected direct and indirect GHG emissions. Agencies should be guided by the principle that the extent of the analysis should be commensurate with the quantity of projected GHG emissions and take into account available data and GHG quantification tools that

are suitable for and commensurate with the proposed agency action.<sup>27</sup> The rule of reason and the concept of proportionality caution against providing an in-depth analysis of emissions regardless of the insignificance of the quantity of GHG emissions that would be caused by the proposed agency action.

Quantification tools are widely available, and are already in broad use in the Federal and private sectors, by state and local governments, and globally.<sup>28</sup> Such quantification tools and methodologies have been developed to assist institutions, organizations, agencies, and companies with different levels of technical sophistication, data availability, and GHG source profiles. When data inputs are reasonably available to support calculations, agencies should conduct GHG analysis and disclose quantitative estimates of GHG emissions in their NEPA reviews. These tools can provide estimates of GHG emissions, including emissions from fossil fuel combustion and estimates of GHG emissions and carbon sequestration for many of the sources and sinks potentially affected by proposed resource management actions.<sup>29</sup> When considering which tool(s) to employ, it is important to consider the proposed action's temporal scale, and the availability of input data.<sup>30</sup> Examples of the kinds of methodologies agencies might consider using are presented in CEQ's 2012 Guidance for Accounting and Reporting GHG Emissions for a wide variety of activities associated with Federal agency operations.<sup>31</sup> When an agency determines that quantifying GHG emissions would not be

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<sup>27</sup> See 40 CFR 1500.1(b) ("Most important, NEPA documents must concentrate on the issues that are truly significant to the action in question, rather than amassing needless detail."); 40 CFR 1502.2(b) (Impacts shall be discussed in proportion to their significance); 40 CFR 1502.15 (Data and analyses in a statement shall be commensurate with the importance of the impact...).

<sup>28</sup> See [https://ceq.doe.gov/current\\_developments/GHG-accounting-tools.html](https://ceq.doe.gov/current_developments/GHG-accounting-tools.html).

<sup>29</sup> For example, USDA's COMET-Farm tool can be used to assess the carbon sequestration of existing agricultural activities along with the reduction in carbon sequestration (emissions) of project-level activities, <http://cometfarm.nrel.colostate.edu/>. Examples of other tools are available at [https://ceq.doe.gov/current\\_developments/GHG-accounting-tools.html](https://ceq.doe.gov/current_developments/GHG-accounting-tools.html).

<sup>30</sup> See 40 CFR 1502.22.

<sup>31</sup> See

[https://www.whitehouse.gov/sites/default/files/microsites/ceq/revised\\_federal\\_greenhouse\\_gas\\_accounting\\_and\\_reporting\\_guidance\\_](https://www.whitehouse.gov/sites/default/files/microsites/ceq/revised_federal_greenhouse_gas_accounting_and_reporting_guidance_)

warranted because tools, methodologies, or data inputs are not reasonably available, the agency should provide a qualitative analysis and its rationale for determining that the quantitative analysis is not warranted. A qualitative analysis can rely on sector-specific descriptions of the GHG emissions of the category of Federal agency action that is the subject of the NEPA analysis.

When updating their NEPA procedures<sup>32</sup> and guidance, agencies should coordinate with CEQ to identify 1) the actions that normally warrant quantification of their GHG emissions, and consideration of the relative GHG emissions associated with alternative actions and 2) agency actions that normally do not warrant such quantification because tools, methodologies, or data inputs are not reasonably available. The determination of the potential significance of a proposed action remains subject to agency practice for the consideration of context and intensity, as set forth in the CEQ Regulations.<sup>33</sup>

## 2. The Scope of the Proposed Action

In order to assess effects, agencies should take account of the proposed action – including “connected” actions<sup>34</sup> – subject to reasonable limits based on feasibility and practicality. Activities that have a reasonably close causal relationship to the Federal action, such as those that may occur as a predicate for a proposed agency action or as a consequence of a proposed agency action, should be accounted for in the NEPA analysis.

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060412.pdf. Federal agencies’ Strategic Sustainability Performance Plans reflecting their annual GHG inventories and reports under Executive Order 13514 are available at <https://www.performance.gov/node/3406/view?view=public#supporting-info>.

<sup>32</sup> See 40 CFR 1507.3.

<sup>33</sup> 40 CFR 1508.27 (“‘Significantly’ as used in NEPA requires considerations of both context and intensity: (a) Context. This means that the significance of an action must be analyzed in several contexts such as society as a whole (human, national), the affected region, the affected interests, and the locality. . . . (b) Intensity. This refers to the severity of impact.”).

<sup>34</sup> 40 CFR 1508.25(a) (Actions are connected if they: (i) Automatically trigger other actions which may require environmental impact statements; (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously, or; (iii) Are interdependent parts of a larger action and depend on the larger action for their justification.).

For example, NEPA reviews for proposed resource extraction and development projects typically include the reasonably foreseeable effects of various phases in the process, such as clearing land for the project, building access roads, extraction, transport, refining, processing, using the resource, disassembly, disposal, and reclamation. Depending on the relationship between any of the phases, as well as the authority under which they may be carried out, agencies should use the analytical scope that best informs their decision making.

The agency should focus on significant potential effects and conduct an analysis that is proportionate to the environmental consequences of the proposed action.<sup>35</sup> Agencies can rely on basic NEPA principles to determine and explain the reasonable parameters of their analyses in order to disclose the reasonably foreseeable effects that may result from their proposed actions.<sup>36</sup>

### 3. Alternatives

Considering alternatives, including alternatives that mitigate GHG emissions, is fundamental to the NEPA process and accords with NEPA Sections 102(2)(C) and 102(2)(E).<sup>37</sup> The CEQ regulations emphasize that the alternatives analysis is the heart of the EIS under NEPA Section 102(2)(C).<sup>38</sup> NEPA Section 102(2)(E) provides an independent requirement for the consideration of alternatives in environmental documents.<sup>39</sup> NEPA calls upon agencies to use the NEPA process to “identify and assess the reasonable alternatives to proposed actions that will avoid or minimize adverse effects of these actions upon the quality of the human environment.”<sup>40</sup> The requirement to

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<sup>35</sup> See 40 CFR 1501.7(a)(3), 1502.2(b), and 1502.15.

<sup>36</sup> See 40 CFR 1502.16.

<sup>37</sup> 42 U.S.C. 4332(2)(C), 4332(2)(E); 40 CFR 1502.14, 1508.9(b).

<sup>38</sup> 40 CFR 1502.14.

<sup>39</sup> See 40 CFR 1500.2, 1508.9(b).

<sup>40</sup> 40 CFR 1500.2(e).

consider alternatives ensures that agencies account for approaches with no, or less, adverse environmental effects for a particular resource.

Consideration of alternatives also provides each agency decision maker the information needed to examine other possible approaches to a particular proposed action (including the no action alternative) that could alter the environmental impact or the balance of factors considered in making the decision. Agency decisions are aided when there are reasonable alternatives that allow for comparing GHG emissions and carbon sequestration potential, trade-offs with other environmental values, and the risk from – and resilience to – climate change inherent in a proposed action and its design.

Agencies must consider a range of reasonable alternatives consistent with the level of NEPA review (e.g., EA or EIS) and the purpose and need for the proposed action, as well as reasonable mitigation measures if not already included in the proposed action or alternatives.<sup>41</sup> Accordingly, a comparison of these alternatives based on GHG emissions and any potential mitigation measures can be useful to advance a reasoned choice among alternatives and mitigation actions. When conducting the analysis, an agency should compare the anticipated levels of GHG emissions from each alternative – including the no-action alternative – and mitigation actions to provide information to the public and enable the decision maker to make an informed choice.

Agencies should consider reasonable alternatives and mitigation measures to reduce action-related GHG emissions or increase carbon sequestration in the same fashion as they consider alternatives and mitigation measures for any other environmental effects. NEPA, the CEQ Regulations, and this guidance do not require the decision

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<sup>41</sup> See 42 U.S.C. 4332(2)(C), 4332(2)(E), and 40 CFR 1502.14(f), 1508.9(b). The purpose and need for action usually reflects both the extent of the agency's statutory authority and its policies.

maker to select the alternative with the lowest net level of emissions. Rather, they allow for the careful consideration of emissions and mitigation measures along with all the other factors considered in making a final decision.

#### 4. Direct and Indirect Effects

If the direct and indirect GHG emissions can be quantified based on available information, including reasonable projections and assumptions, agencies should consider and disclose the reasonably foreseeable direct and indirect emissions when analyzing the direct and indirect effects of the proposed action.<sup>42</sup> Agencies should disclose the information and any assumptions used in the analysis and explain any uncertainties.

To compare a project's estimated direct and indirect emissions with GHG emissions from the no-action alternative, agencies should draw on existing, timely, objective, and authoritative analyses, such as those by the Energy Information Administration, the Federal Energy Management Program, or Office of Fossil Energy of the Department of Energy.<sup>43</sup> In the absence of such analyses, agencies should use other available information. When such analyses or information for quantification is unavailable, or the complexity of comparing emissions from various sources would make quantification overly speculative, then the agency should quantify emissions to the extent that this information is available and explain the extent to which quantified emissions information is unavailable while providing a qualitative analysis of those emissions. As

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<sup>42</sup> For example, where the proposed action involves fossil fuel extraction, direct emissions typically include GHGs emitted during the process of exploring for or extracting the fossil fuel. The indirect effects of such an action that are reasonably foreseeable at the time would vary with the circumstances of the proposed action. For actions such as a Federal lease sale of coal for energy production, the impacts associated with the end-use of the fossil fuel being extracted would be the reasonably foreseeable combustion of that coal.

<sup>43</sup> For a current example, see Office of Fossil Energy, Nat'l Energy Tech. Lab., U.S. Dep't of Energy, *Life Cycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States*, Pub. No. DOE/NETL-2014/1649 (2014), available at <http://energy.gov/sites/prod/files/2014/05/f16/Life%20Cycle%20GHG%20Perspective%20Report.pdf>.

with any NEPA analysis, the level of effort should be proportionate to the scale of the emissions relevant to the NEPA review.

## 5. Cumulative Effects

“Cumulative impact” is defined in the CEQ Regulations as the “impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”<sup>44</sup> All GHG emissions contribute to cumulative climate change impacts. However, for most Federal agency actions CEQ does not expect that an EIS would be required based *solely* on the global significance of cumulative impacts of GHG emissions, as it would not be consistent with the rule of reason to require the preparation of an EIS for every Federal action that may cause GHG emissions regardless of the magnitude of those emissions.

Based on the agency identification and analysis of the direct and indirect effects of its proposed action, NEPA requires an agency to consider the cumulative impacts of its proposed action and reasonable alternatives.<sup>45</sup> As noted above, for the purposes of NEPA, the analysis of the effects of GHG emissions is essentially a cumulative effects analysis that is subsumed within the general analysis and discussion of climate change impacts. Therefore, direct and indirect effects analysis for GHG emissions will adequately address the cumulative impacts for climate change from the proposed action and its alternatives and a separate cumulative effects analysis for GHG emissions is not needed.

## 6. Short- and Long-Term Effects

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<sup>44</sup> 40 CFR 1508.7.

<sup>45</sup> See 40 CFR 1502.16, 1508.7, 1508.8. See also CEQ Memorandum to Heads of Federal Agencies, *Guidance on the Consideration of Past Actions in Cumulative Effects Analysis*, June 24, 2005, available at [https://ceq.doe.gov/nepa/regs/Guidance\\_on\\_CE.pdf](https://ceq.doe.gov/nepa/regs/Guidance_on_CE.pdf).

When considering effects, agencies should take into account both the short- and long-term adverse and beneficial effects using a temporal scope that is grounded in the concept of reasonable foreseeability. Some proposed actions will have to consider effects at different stages to ensure the direct effects and reasonably foreseeable indirect effects are appropriately assessed; for example, the effects of construction are different from the effects of the operations and maintenance of a facility.

Biogenic GHG emissions and carbon stocks from some land or resource management activities, such as a prescribed burn of a forest or grassland conducted to limit loss of ecosystem function through wildfires or insect infestations, may result in short-term GHG emissions and loss of stored carbon, while in the longer term a restored, healthy ecosystem may provide long-term carbon sequestration. Therefore, the short- and long-term effects should be described in comparison to the no action alternative in the NEPA review.

## 7. Mitigation

Mitigation is an important component of the NEPA process that Federal agencies can use to avoid, minimize, and compensate for the adverse environmental effects associated with their actions. Mitigation, by definition, includes avoiding impacts, minimizing impacts by limiting them, rectifying the impact, reducing or eliminating the impacts over time, or compensating for them.<sup>46</sup> Consequently, agencies should consider reasonable mitigation measures and alternatives as provided for under existing CEQ Regulations and take into account relevant agency statutory authorities and policies. The NEPA process is also intended to provide useful advice and information to State, local

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<sup>46</sup> See 40 CFR 1508.20, 1508.25 (Alternatives include mitigation measures not included in the proposed action).

and tribal governments and private parties so that the agencies can better coordinate with other agencies and organizations regarding the means to mitigate effects of their actions.<sup>47</sup> The NEPA process considers the effects of mitigation commitments made by project proponents or others and mitigation required under other relevant permitting and environmental review regimes.<sup>48</sup>

As Federal agencies evaluate potential mitigation of GHG emissions and the interaction of a proposed action with climate change, the agencies should also carefully evaluate the quality of that mitigation to ensure it is additional, verifiable, durable, enforceable, and will be implemented.<sup>49</sup> Agencies should consider the potential for mitigation measures to reduce or mitigate GHG emissions and climate change effects when those measures are reasonable and consistent with achieving the purpose and need for the proposed action. Such mitigation measures could include enhanced energy efficiency, lower GHG-emitting technology, carbon capture, carbon sequestration (e.g., forest, agricultural soils, and coastal habitat restoration), sustainable land management practices, and capturing or beneficially using GHG emissions such as methane.

Finally, the CEQ Regulations and guidance recognize the value of monitoring to ensure that mitigation is carried out as provided in a record of decision or finding of no significant impact.<sup>50</sup> The agency's final decision on the proposed action should identify those mitigation measures that the agency commits to take, recommends, or requires

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<sup>47</sup> NEPA directs Federal agencies to make "advice and information useful in restoring, maintaining, and enhancing the quality of the environment" available to States, Tribes, counties, cities, institutions and individuals. NEPA Sec. 102(2)(G).

<sup>48</sup> See CEQ Memorandum to Heads of Federal Agencies, *Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact*, 76 FR 3843 (Jan. 21, 2011) available at [https://ceq.doe.gov/current\\_developments/docs/Mitigation\\_and\\_Monitoring\\_Guidance\\_14Jan2011.pdf](https://ceq.doe.gov/current_developments/docs/Mitigation_and_Monitoring_Guidance_14Jan2011.pdf).

<sup>49</sup> See Presidential Memorandum: *Mitigating Impacts on Natural Resources from Development and Encouraging Related Private Investment* (<https://www.whitehouse.gov/the-press-office/2015/11/03/mitigating-impacts-natural-resources-development-and-encouraging-related>) defining "durability" and addressing additionality.

<sup>50</sup> See 40 CFR 1505.2(c), 1505.3. See also CEQ Memorandum to Heads of Federal Agencies, *Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact*, 76 FR 3843 (Jan. 21, 2011) available at [https://ceq.doe.gov/current\\_developments/docs/Mitigation\\_and\\_Monitoring\\_Guidance\\_14Jan2011.pdf](https://ceq.doe.gov/current_developments/docs/Mitigation_and_Monitoring_Guidance_14Jan2011.pdf).

others to take. Monitoring is particularly appropriate to confirm the effectiveness of mitigation when that mitigation is adopted to reduce the impacts of a proposed action on affected resources already increasingly vulnerable due to climate change.

## B. CONSIDERING THE EFFECTS OF CLIMATE CHANGE ON A PROPOSED ACTION AND ITS ENVIRONMENTAL IMPACTS

According to the USGCRP and others, GHGs already in the atmosphere will continue altering the climate system into the future, even with current or future emissions control efforts.<sup>51</sup> Therefore, a NEPA review should consider an action in the context of the future state of the environment. In addition, climate change adaptation and resilience — defined as adjustments to natural or human systems in response to actual or expected climate changes — are important considerations for agencies contemplating and planning actions with effects that will occur both at the time of implementation and into the future.<sup>52</sup>

### 1. Affected Environment

An agency should identify the affected environment to provide a basis for comparing the current and the future state of the environment as affected by the proposed action or its reasonable alternatives.<sup>53</sup> The current and projected future state of the environment without the proposed action (i.e., the no action alternative) represents the reasonably foreseeable affected environment, and this should be described based on

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<sup>51</sup> See Third National Climate Assessment, *Appendix 3 Climate Science Supplement 753-754*, available at [http://s3.amazonaws.com/nca2014/low/NCA3\\_Full\\_Report\\_Appendix\\_3\\_Climate\\_Science\\_Supplement\\_LowRes.pdf?download=1](http://s3.amazonaws.com/nca2014/low/NCA3_Full_Report_Appendix_3_Climate_Science_Supplement_LowRes.pdf?download=1).

<sup>52</sup> See Third National Climate Assessment, Chapter 28, “Adaptation” and Chapter 26, “Decision Support: Connecting Science, Risk Perception, and Decisions,” available at <http://www.globalchange.gov/nca3-downloads-materials>; see also, Exec. Order No. 13653, 78 Fed. Reg. 66817 (Nov. 6, 2013) and Exec. Order No. 13693, *Planning for Federal Sustainability in the Next Decade*, 80 Fed. Reg. 15869 (Mach 25, 2015) (defining “climate-resilient design”).

<sup>53</sup> See 40 CFR 1502.15 (providing that environmental impact statements shall succinctly describe the environmental impacts on the area(s) to be affected or created by the alternatives under consideration).

authoritative climate change reports,<sup>54</sup> which often project at least two possible future scenarios.<sup>55</sup> The temporal bounds for the state of the environment are determined by the projected initiation of implementation and the expected life of the proposed action and its effects.<sup>56</sup> Agencies should remain aware of the evolving body of scientific information as more refined estimates of the impacts of climate change, both globally and at a localized level, become available.<sup>57</sup>

## 2. Impacts

The analysis of climate change impacts should focus on those aspects of the human environment that are impacted by both the proposed action and climate change. Climate change can make a resource, ecosystem, human community, or structure more susceptible to many types of impacts and lessen its resilience to other environmental impacts apart from climate change. This increase in vulnerability can exacerbate the effects of the proposed action. For example, a proposed action may require water from a stream that has diminishing quantities of available water because of decreased snow pack in the mountains, or add heat to a water body that is already warming due to increasing atmospheric temperatures. Such considerations are squarely within the scope of NEPA and can inform decisions on whether to proceed with, and how to design, the proposed action to eliminate or mitigate impacts exacerbated by climate change. They can also

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<sup>54</sup> See, e.g., Third National Climate Assessment (Regional impacts chapters) available at <http://www.globalchange.gov/nca3-downloads-materials>.

<sup>55</sup> See, e.g., Third National Climate Assessment (Regional impacts chapters, considering a low future global emissions scenario, and a high emissions scenario) available at <http://www.globalchange.gov/nca3-downloads-materials>.

<sup>56</sup> CEQ, *Considering Cumulative Effects Under the National Environmental Policy Act* (1997), [https://ceq.doe.gov/publications/cumulative\\_effects.html](https://ceq.doe.gov/publications/cumulative_effects.html). Agencies should also consider their work under Exec. Order No. 13653, *Preparing the United States for the Impacts of Climate Change*, 78 Fed. Reg. 66817 (Nov. 6, 2013), that considers how capital investments will be affected by a changing climate over time.

<sup>57</sup> See, e.g., <http://nca2014.globalchange.gov/report/regions/coasts>.

inform possible adaptation measures to address the impacts of climate change, ultimately enabling the selection of smarter, more resilient actions.

### 3. Available Assessments and Scenarios

In accordance with NEPA's rule of reason and standards for obtaining information regarding reasonably foreseeable effects on the human environment, agencies need not undertake new research or analysis of potential climate change impacts in the proposed action area, but may instead summarize and incorporate by reference the relevant scientific literature.<sup>58</sup> For example, agencies may summarize and incorporate by reference the relevant chapters of the most recent national climate assessments or reports from the USGCRP.<sup>59</sup> Particularly relevant to some proposed actions are the most current reports on climate change impacts on water resources, ecosystems, agriculture and forestry, health, coastlines, and ocean and arctic regions in the United States.<sup>60</sup> Agencies may recognize that scenarios or climate modeling information (including seasonal, inter-annual, long-term, and regional-scale projections) are widely used, but when relying on a single study or projection, agencies should consider their limitations and discuss them.<sup>61</sup>

### 4. Opportunities for Resilience and Adaptation

As called for under NEPA, the CEQ Regulations, and CEQ guidance, the NEPA review process should be integrated with agency planning at the earliest possible time that would allow for a meaningful analysis.<sup>62</sup> Information developed during early

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<sup>58</sup> See 40 CFR 1502.21 (material may be incorporated by reference if it is reasonably available for inspection by potentially interested persons during public review and comment).

<sup>59</sup> See <http://www.globalchange.gov/browse/reports>.

<sup>60</sup> See Third National Climate Assessment, *Our Changing Climate*, available at <http://nca2014.globalchange.gov/report>. Agencies should consider the latest final assessments and reports when they are updated.

<sup>61</sup> See 40 CFR 1502.22. Agencies can consult [www.data.gov/climate/portals](http://www.data.gov/climate/portals) for model data archives, visualization tools, and downscaling results.

<sup>62</sup> See 42 U.S.C. 4332 (“agencies of the Federal Government shall ... utilize a systematic, interdisciplinary approach which will insure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision-making”); 40 CFR 1501.2 (“Agencies shall integrate the NEPA process with other planning at the earliest possible time...”); See also CEQ Memorandum

planning processes that precede a NEPA review may be incorporated into the NEPA review. Decades of NEPA practice have shown that integrating environmental considerations with the planning process provides useful information that program and project planners can consider in the design of the proposed action, alternatives, and potential mitigation measures. For instance, agencies should take into account increased risks associated with development in floodplains, avoiding such development wherever there is a practicable alternative, as required by Executive Order 11988 and Executive Order 13690.<sup>63</sup> In addition, agencies should take into account their ongoing efforts to incorporate environmental justice principles into their programs, policies, and activities, including the environmental justice strategies required by Executive Order 12898, as amended, and consider whether the effects of climate change in association with the effects of the proposed action may result in a disproportionate effect on minority and low income communities.<sup>64</sup> Agencies also may consider co-benefits of the proposed action, alternatives, and potential mitigation measures for human health, economic and social stability, ecosystem services, or other benefit that increases climate change preparedness or resilience. Individual agency adaptation plans and interagency adaptation strategies, such as agency Climate Adaptation Plans, the National Fish, Wildlife and Plants Climate Adaptation Strategy, and the National Action Plan: Priorities for Managing Freshwater

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for Heads of Federal Departments and Agencies, *Improving the Process for Preparing Efficient and Timely Environmental Reviews under the National Environmental Policy Act*, 77 Fed. Reg. 14473 (Mar. 12, 2012), available at [https://ceq.doe.gov/current\\_developments/docs/Improving\\_NEPA\\_Efficiencies\\_06Mar2012.pdf](https://ceq.doe.gov/current_developments/docs/Improving_NEPA_Efficiencies_06Mar2012.pdf).

<sup>63</sup> See Exec. Order No. 11988, "Floodplain Management," 42 Fed. Reg. 26951 (May 24, 1977), available at <http://www.archives.gov/federal-register/codification/executive-order/11988.html>; Exec. Order No. 13690, *Establishing a Federal Flood Risk Management Standard and a Process for Further Soliciting and Considering Stakeholder Input*, 80 Fed. Reg. 6425 (Jan. 30, 2015), available at <https://www.gpo.gov/fdsys/pkg/FR-2015-02-04/pdf/2015-02379.pdf>.

<sup>64</sup> See Exec. Order No. 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, 59 Fed. Reg. 7629 (Feb. 16, 1994), available at <https://ceq.doe.gov/nepa/regs/eos/ii-5.pdf>; CEQ, *Environmental Justice Guidance Under the National Environmental Policy Act* (Dec. 1997), available at <http://ceq.doe.gov/nepa/regs/ej/justice.pdf>.

Resources in a Changing Climate, provide other good examples of the type of relevant and useful information that can be considered.<sup>65</sup>

Climate change effects on the environment and on the proposed project should be considered in the analysis of a project considered vulnerable to the effects of climate change such as increasing sea level, drought, high intensity precipitation events, increased fire risk, or ecological change. In such cases, a NEPA review will provide relevant information that agencies can use to consider in the initial project design, as well as alternatives with preferable overall environmental outcomes and improved resilience to climate impacts. For example, an agency considering a proposed long-term development of transportation infrastructure on a coastal barrier island should take into account climate change effects on the environment and, as applicable, consequences of rebuilding where sea level rise and more intense storms will shorten the projected life of the project and change its effects on the environment.<sup>66</sup> Given the length of time involved in present sea level projections, such considerations typically will not be relevant to short-term actions with short-term effects.

In addition, the particular impacts of climate change on vulnerable communities may be considered in the design of the action or the selection among alternatives to

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<sup>65</sup> See <http://sustainability.performance.gov> for agency sustainability plans, which contain agency adaptation plans. See also <http://www.wildlifeadaptationstrategy.gov>; [http://www.whitehouse.gov/sites/default/files/microsites/ceq/2011\\_national\\_action\\_plan.pdf](http://www.whitehouse.gov/sites/default/files/microsites/ceq/2011_national_action_plan.pdf); and <https://www.epa.gov/greeningepa/climate-change-adaptation-plans>

<sup>66</sup> See U.S. Department of Transportation, Gulf Coast Study, Phase 2, *Assessing Transportation Vulnerability to Climate Change Synthesis of Lessons Learned and Methods Applied*, FHWA-HEP-15-007 (Oct. 2014) (focusing on the Mobile, Alabama region), available at [http://www.fhwa.dot.gov/environment/climate\\_change/adaptation/ongoing\\_and\\_current\\_research/gulf\\_coast\\_study/phase2\\_task6/fhwahep15007.pdf](http://www.fhwa.dot.gov/environment/climate_change/adaptation/ongoing_and_current_research/gulf_coast_study/phase2_task6/fhwahep15007.pdf); U.S. Climate Change Science Program, Synthesis and Assessment Product 4.7, *Impacts of Climate Change and Variability on Transportation Systems and Infrastructure: Gulf Coast Study, Phase I* (Mar. 2008) (focusing on a regional scale in the central Gulf Coast), available at <https://downloads.globalchange.gov/sap/sap4-7/sap4-7-final-all.pdf>. Information about the Gulf Coast Study is available at [http://www.fhwa.dot.gov/environment/climate\\_change/adaptation/ongoing\\_and\\_current\\_research/gulf\\_coast\\_study](http://www.fhwa.dot.gov/environment/climate_change/adaptation/ongoing_and_current_research/gulf_coast_study). See also Third National Climate Assessment, Chapter 28, “Adaptation,” at 675 (noting that Federal agencies in particular can facilitate climate adaptation by “ensuring the establishment of federal policies that allow for “flexible” adaptation efforts and take steps to avoid unintended consequences”), available at <http://nca2014.globalchange.gov/report/response-strategies/adaptation#intro-section-2>.

assess the impact, and potential for disproportionate impacts, on those communities.<sup>67</sup> For example, chemical facilities located near the coastline could have increased risk of spills or leakages due to sea level rise or increased storm surges, putting local communities and environmental resources at greater risk. Increased resilience could minimize such potential future effects. Finally, considering climate change preparedness and resilience can help ensure that agencies evaluate the potential for generating additional GHGs if a project has to be replaced, repaired, or modified, and minimize the risk of expending additional time and funds in the future.

### C. Special Considerations for Biogenic Sources of Carbon

With regard to biogenic GHG emissions from land management actions – such as prescribed burning, timber stand improvements, fuel load reductions, scheduled harvesting, and livestock grazing – it is important to recognize that these land management actions involve GHG emissions and carbon sequestration that operate within the global carbon and nitrogen cycle, which may be affected by those actions. Similarly, some water management practices have GHG emission consequences (e.g., reservoir management practices can reduce methane releases, wetlands management practices can enhance carbon sequestration, and water conservation can improve energy efficiency).

Notably, it is possible that the net effect of ecosystem restoration actions resulting in short-term biogenic emissions may lead to long-term reductions of atmospheric GHG concentrations through increases in carbon stocks or reduced risks of future emissions. In the land and resource management context, how a proposed action affects a net carbon sink or source will depend on multiple factors such as the climatic region, the distribution

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<sup>67</sup> For an example, see [https://www.blm.gov/epl-front-office/projects/nepa/5251/42462/45213/NPR-A\\_FINAL\\_ROD\\_2-21-13.pdf](https://www.blm.gov/epl-front-office/projects/nepa/5251/42462/45213/NPR-A_FINAL_ROD_2-21-13.pdf).

of carbon across carbon pools in the project area, and the ongoing activities and trends. In addressing biogenic GHG emissions, resource management agencies should include a comparison of estimated net GHG emissions and carbon stock changes that are projected to occur with and without implementation of proposed land or resource management actions.<sup>68</sup> This analysis should take into account the GHG emissions, carbon sequestration potential, and the changes in carbon stocks that are relevant to decision making in light of the proposed actions and timeframes under consideration.

One example of agencies dealing with biogenic emissions and carbon sequestration arises when agencies consider proposed vegetation management practices that affect the risk of wildfire, insect and disease outbreak, or other disturbance. The public and the decision maker may benefit from consideration of the influence of a vegetation management action that affects the risk of wildfire on net GHG emissions and carbon stock changes. NEPA reviews should consider whether to include a comparison of net GHG emissions and carbon stock changes that are anticipated to occur, with and without implementation of the proposed vegetation management practice, to provide information that is useful to the decision maker and the public to distinguish between alternatives. The analysis would take into account the estimated GHG emissions (biogenic and fossil), carbon sequestration potential, and the net change in carbon stocks relevant in light of the proposed actions and timeframes under consideration. In such cases the agency should describe the basis for estimates used to project the probability or likelihood of occurrence or changes in the effects or severity of wildfire. Where such

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<sup>68</sup> One example of a tool for such calculations is the Carbon On Line Estimator (COLE), which uses data based on USDA Forest Service Forest Inventory & Analysis and Resource Planning Assessment data and other ecological data. COLE began as a collaboration between the National Council for Air and Stream Improvement, Inc. (NCASI) and USDA Forest Service, Northern Research Station. It currently is maintained by NCASI. It is available at <http://www.fs.usda.gov/ccrc/tools/cole>.

tools, methodologies, or data are not yet available, the agency should provide a qualitative analysis and its rationale for determining that the quantitative analysis is not warranted. As with any other analysis, the rule of reason and proportionality should be applied to determine the extent of the analysis.

CEQ acknowledges that Federal land and resource management agencies are developing agency-specific principles and guidance for considering biological carbon in management and planning decisions.<sup>69</sup> Such guidance is expected to address the importance of considering biogenic carbon fluxes and storage within the context of other management objectives and ecosystem service goals, and integrating carbon considerations as part of a balanced and comprehensive program of sustainable management, climate change mitigation, and climate change adaptation.

#### IV. TRADITIONAL NEPA TOOLS AND PRACTICES

##### A. Scoping and Framing the NEPA Review

To effectuate integrated decision making, avoid duplication, and focus the NEPA review, the CEQ Regulations provide for scoping.<sup>70</sup> In scoping, the agency determines the issues that the NEPA review will address and identifies the impacts related to the proposed action that the analyses will consider.<sup>71</sup> An agency can use the scoping process to help it determine whether analysis is relevant and, if so, the extent of analysis

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<sup>69</sup> See Council on Climate Change Preparedness and Resilience, *Priority Agenda Enhancing the Climate Resilience of America's Natural Resources*, at 52 (Oct. 2014), available at [http://www.whitehouse.gov/sites/default/files/docs/enhancing\\_climate\\_resilience\\_of\\_americas\\_natural\\_resources.pdf](http://www.whitehouse.gov/sites/default/files/docs/enhancing_climate_resilience_of_americas_natural_resources.pdf).

<sup>70</sup> See 40 CFR 1501.7 (“There shall be an early and open process for determining the scope of issues to be addressed and for identifying the significant issues related to a proposed action. This process shall be termed scoping.”); see also CEQ Memorandum for Heads of Federal Departments and Agencies, *Improving the Process for Preparing Efficient and Timely Environmental Reviews under the National Environmental Policy Act*, March 6, 2012, available at [https://ceq.doe.gov/current\\_developments/docs/Improving\\_NEPA\\_Efficiencies\\_06Mar2012.pdf](https://ceq.doe.gov/current_developments/docs/Improving_NEPA_Efficiencies_06Mar2012.pdf) (the CEQ Regulations explicitly require scoping for preparing an EIS, however, agencies can also take advantage of scoping whenever preparing an EA).

<sup>71</sup> See 40 CFR 1500.4(b), 1500.4(g), 1501.7.

appropriate for a proposed action.<sup>72</sup> When scoping for the climate change issues associated with the proposed agency action, the nature, location, timeframe, and type of the proposed action and the extent of its effects will help determine the degree to which to consider climate projections, including whether climate change considerations warrant emphasis, detailed analysis, and disclosure.

Consistent with this guidance, agencies may develop their own agency-specific practices and guidance for framing the NEPA review. Grounded on the principles of proportionality and the rule of reason, such aids can help an agency determine the extent to which an analysis of GHG emissions and climate change impacts should be explored in the decision-making process and will assist in the analysis of the no action and proposed alternatives and mitigation.<sup>73</sup> The agency should explain such a framing process and its application to the proposed action to the decision makers and the public during the NEPA review and in the EA or EIS document.

#### B. Frame of Reference

When discussing GHG emissions, as for all environmental impacts, it can be helpful to provide the decision maker and the public with a recognizable frame of reference for comparing alternatives and mitigation measures. Agencies should discuss relevant approved federal, regional, state, tribal, or local plans, policies, or laws for GHG emission reductions or climate adaptation to make clear whether a proposed project's

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<sup>72</sup> See 40 CFR 1501.7 (The agency preparing the NEPA analysis must use the scoping process to, among other things, determine the scope and identify the significant issues to be analyzed in depth) and CEQ, *Memorandum for General Counsels, NEPA Liaisons, and Participants in Scoping*, April 30, 1981, available at <https://ceq.doe.gov/nepa/regs/scope/scoping.htm>.

<sup>73</sup> See, e.g., Matthew P. Thompson, Bruce G. Marcot, Frank R. Thompson, III, Steven McNulty, Larry A. Fisher, Michael C. Runge, David Cleaves, and Monica Tomosy, *The Science of Decisionmaking Applications for Sustainable Forest and Grassland Management in the National Forest System* (2013), available at [http://www.fs.fed.us/rm/pubs\\_other/rmrs\\_2013\\_thompson\\_m004.pdf](http://www.fs.fed.us/rm/pubs_other/rmrs_2013_thompson_m004.pdf); U.S. Forest Service Comparative Risk Assessment Framework And Tools, available at [http://www.fs.fed.us/psw/topics/fire\\_science/craft/craft/](http://www.fs.fed.us/psw/topics/fire_science/craft/craft/); and Julien Martin, Michael C. Runge, James D. Nichols, Bruce C. Lubow, and William L. Kendall, *Structured decision making as a conceptual framework to identify thresholds for conservation and management* (2009), *Ecological Applications* 19:1079–1090, available at <http://www.esajournals.org/doi/abs/10.1890/08-0255.1>.

GHG emissions are consistent with such plans or laws.<sup>74</sup> For example, the Bureau of Land Management has discussed how agency actions in California, especially joint projects with the State, may or may not facilitate California reaching its emission reduction goals under the State's Assembly Bill 32 (Global Warming Solutions Act).<sup>75</sup> This approach helps frame the policy context for the agency decision based on its NEPA review.

### C. Incorporation by Reference

Incorporation by reference is of great value in considering GHG emissions or where an agency is considering the implications of climate change for the proposed action and its environmental effects. Agencies should identify situations where prior studies or NEPA analyses are likely to cover emissions or adaptation issues, in whole or in part. When larger scale analyses have considered climate change impacts and GHG emissions, calculating GHG emissions and carbon stocks for a specific action may provide only limited information beyond the information already collected and considered in the larger scale analyses. The NEPA reviews for a specific action can incorporate by reference earlier programmatic studies or information such as management plans, inventories, assessments, and research that consider potential changes in carbon stocks, as well as any relevant programmatic NEPA reviews.<sup>76</sup>

Accordingly, agencies should use the scoping process to consider whether they should incorporate by reference GHG analyses from other programmatic studies, action

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<sup>74</sup> See 40 CFR 1502.16(c), 1506.2(d) (where an inconsistency exists, agencies should describe the extent to which the agency will reconcile its proposed action with the plan or law). See also Exec. Order No. 13693, 80 Fed. Reg. 15869 (Mar. 25, 2015) (establishing GHG emission and related goals for agency facilities and operations. Scope 1, 2, and 3 emissions are typically separate and distinct from analyses and information used in an EA or EIS.).

<sup>75</sup> See, e.g., U.S. Bureau of Land Management, Desert Renewable Energy Conservation Plan Proposed Land Use Plan Amendment and Final Environmental Impact Statement, Vol. I, § I.3.3.2, at 12, available at <http://drecp.org/finaldrecp/>.

<sup>76</sup> See 40 CFR 1502.5, 1502.21.

specific NEPA reviews, or programmatic NEPA reviews to avoid duplication of effort. Furthermore, agencies should engage other agencies and stakeholders with expertise or an interest in related actions to participate in the scoping process to identify relevant GHG and adaptation analyses from other actions or programmatic NEPA documents.

#### D. Using Available Information

Agencies should make decisions using current scientific information and methodologies. CEQ does not expect agencies to fund and conduct original climate change research to support their NEPA analyses or for agencies to require project proponents to do so. Agencies should exercise their discretion to select and use the tools, methodologies, and scientific and research information that are of high quality and available to assess the impacts.<sup>77</sup>

Agencies should be aware of the ongoing efforts to address the impacts of climate change on human health and vulnerable communities.<sup>78</sup> Certain groups, including children, the elderly, and the poor, are more vulnerable to climate-related health effects, and may face barriers to engaging on issues that disproportionately affect them. CEQ recommends that agencies periodically engage their environmental justice experts, and the Federal Interagency Working Group on Environmental Justice,<sup>79</sup> to identify approaches to avoid or minimize impacts that may have disproportionately high and

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<sup>77</sup> See 40 CFR 1502.24 (requiring agencies to ensure the professional and scientific integrity of the discussions and analyses in environmental impact statements).

<sup>78</sup> USGCRP, *The Impacts of Climate Change on Human Health in the United States: A Scientific Assessment* (Apr. 2016), available at <https://health2016.globalchange.gov/downloads>.

<sup>79</sup> For more information on the Federal Interagency Working Group on Environmental Justice co-chaired by EPA and CEQ, see <http://www.epa.gov/environmentaljustice/interagency/index.html>.

adverse human health or environmental effects on minority and low-income populations.<sup>80</sup>

#### E. Programmatic or Broad-Based Studies and NEPA Reviews

Agency decisions can address different geographic scales that can range from the programmatic or landscape level to the site- or project-specific level. Agencies sometimes conduct analyses or studies that are not NEPA reviews at the national level or other broad scale level (e.g., landscape, regional, or watershed) to assess the status of one or more resources or to determine trends in changing environmental conditions.<sup>81</sup> In the context of long-range energy, transportation, and resource management strategies an agency may decide that it would be useful and efficient to provide an aggregate analysis of GHG emissions or climate change effects in a programmatic analysis and then incorporate by reference that analysis into future NEPA reviews.

A tiered, analytical decision-making approach using a programmatic NEPA review is used for many types of Federal actions<sup>82</sup> and can be particularly relevant to addressing proposed land, aquatic, and other resource management plans. Under such an approach, an agency conducts a broad-scale programmatic NEPA analysis for decisions such as establishing or revising USDA Forest Service land management plans, Bureau of Land Management resource management plans, or Natural Resources Conservation Service conservation programs. Subsequent NEPA analyses for proposed site-specific

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<sup>80</sup> *President's Memorandum for the Heads of All Departments and Agencies, Executive Order on Federal Actions to Address Environmental Justice in Minority and Low-Income Populations* (Feb. 11, 1994), available at <https://ceq.doe.gov/nepa/regs/eos/ii-5.pdf>; CEQ, *Environmental Justice Guidance Under the National Environmental Policy Act*, available at <https://ceq.doe.gov/nepa/regs/ej/justice.pdf>.

<sup>81</sup> Such a programmatic study is distinct from a programmatic NEPA review which is appropriate when the action under consideration is itself subject to NEPA requirements. See CEQ, *Memorandum for Heads of Federal Departments and Agencies, Effective Use of Programmatic NEPA Reviews*, Dec. 18, 2014, § 1(A), p. 9, available at [https://www.whitehouse.gov/sites/default/files/docs/effective\\_use\\_of\\_programmatic\\_nepa\\_reviews\\_final\\_dec2014\\_searchable.pdf](https://www.whitehouse.gov/sites/default/files/docs/effective_use_of_programmatic_nepa_reviews_final_dec2014_searchable.pdf) (discussing non-NEPA types of programmatic analyses such as data collection, assessments, and research, which previous NEPA guidance described as joint inventories or planning studies).

<sup>82</sup> See 40 CFR 1502.20, 1508.28. A programmatic NEPA review may be appropriate when a decision is being made that is subject to NEPA, such as establishing formal plans, programs, and policies, and when considering a suite of similar projects.

decisions – such as proposed actions that implement land, aquatic, and other resource management plans – may be tiered from the broader programmatic analysis, drawing upon its basic framework analysis to avoid repeating analytical efforts for each tiered decision. Examples of project- or site-specific actions that may benefit from being able to tier to a programmatic NEPA review include: constructing transmission lines; conducting prescribed burns; approving grazing leases; granting rights-of-way; issuing leases for oil and gas drilling; authorizing construction of wind, solar or geothermal projects; and approving hard rock mineral extraction.

A programmatic NEPA review may also serve as an efficient mechanism in which to assess Federal agency efforts to adopt broad-scale sustainable practices for energy efficiency, GHG emissions avoidance and emissions reduction measures, petroleum product use reduction, and renewable energy use, as well as other sustainability practices.<sup>83</sup> While broad department- or agency-wide goals may be of a far larger scale than a particular program, policy, or proposed action, an analysis that informs how a particular action affects that broader goal can be of value.

#### F. Monetizing Costs and Benefits

NEPA does not require monetizing costs and benefits. Furthermore, the weighing of the merits and drawbacks of the various alternatives need not be displayed using a monetary cost-benefit analysis and should not be when there are important qualitative considerations.<sup>84</sup> When an agency determines that a monetized assessment of the impacts of greenhouse gas emissions or a monetary cost-benefit analysis is appropriate and

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<sup>83</sup> See Exec. Order No. 13693, 80 Fed. Reg. 15869 (Mar. 25, 2015).

<sup>84</sup> See 40 CFR 1502.23.

relevant to the choice among different alternatives being considered, such analysis may be incorporated by reference<sup>85</sup> or appended to the NEPA document as an aid in evaluating the environmental consequences.<sup>86</sup> For example, a rulemaking could have useful information for the NEPA review in an associated regulatory impact analysis which could be incorporated by reference.<sup>87</sup> When using a monetary cost-benefit analysis, just as with tools to quantify emissions, the agency should disclose the assumptions, alternative inputs, and levels of uncertainty associated with such analysis. Finally, if an agency chooses to monetize some but not all impacts of an action, the agency providing this additional information should explain its rationale for doing so.<sup>88</sup>

## V. CONCLUSION AND EFFECTIVE DATE

Agencies should apply this guidance to all new proposed agency actions when a NEPA review is initiated. Agencies should exercise judgment when considering whether to apply this guidance to the extent practicable to an on-going NEPA process. CEQ does not expect agencies to apply this guidance to concluded NEPA reviews and actions for

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<sup>85</sup> See 40 CFR 1502.21 (material may be cited if it is reasonably available for inspection by potentially interested persons within the time allowed for public review and comment).

<sup>86</sup> When conducting a cost-benefit analysis, determining an appropriate method for preparing a cost-benefit analysis is a decision left to the agency's discretion, taking into account established practices for cost-benefit analysis with strong theoretical underpinnings (for example, see OMB Circular A-4 and references therein). For example, the Federal social cost of carbon (SCC) estimates the marginal damages associated with an increase in carbon dioxide emissions in a given year. Developed through an interagency process committed to ensuring that the SCC estimates reflect the best available science and methodologies and used to assess the social benefits of reducing carbon dioxide emissions across alternatives in rulemakings, it provides a harmonized, interagency metric that can give decision makers and the public useful information for their NEPA review. For current Federal estimates, see Interagency Working Group on Social Cost of Carbon, United States Government, *Technical Support Document Technical Update of the Social Cost of Carbon for Regulatory Impact Analysis Under Executive Order 12866* (revised July 2015), available at <https://www.whitehouse.gov/omb/oira/social-cost-of-carbon>.

<sup>87</sup> For example, the regulatory impact analysis was used as a source of information and aligned with the NEPA review for Corporate Average Fuel Economy (CAFE) standards, see National Highway Traffic Safety Administration, Corporate Average Fuel Economy Standards, Passenger Cars and Light Trucks, Model Years 2017-2025, Final Environmental Impact Statement, Docket No. NHTSA-2011-0056 (July 2012), § 5.3.2, available at <http://www.nhtsa.gov/Laws+&+Regulations/CAFE+-+Fuel+Economy/Environmental+Impact+Statement+for+CAFE+Standards,+2017-2025>.

<sup>88</sup> For example, the information may be responsive to public comments or useful to the decision maker in further distinguishing between alternatives and mitigation measures. In all cases, the agency should ensure that its consideration of the information and other factors relevant to its decision is consistent with applicable statutory or other authorities, including requirements for the use of cost-benefit analysis.

which a final EIS or EA has been issued. Agencies should consider applying this guidance to projects in the EIS or EA preparation stage if this would inform the consideration of differences between alternatives or address comments raised through the public comment process with sufficient scientific basis that suggest the environmental analysis would be incomplete without application of the guidance, and the additional time and resources needed would be proportionate to the value of the information included.

# # #

People's Dossier: FERC's Abuses of Power and Law  
→ Climate Change & Drilling Impacts Ignored

**Climate Change & Drilling Impacts Ignored**  
**Attachment 3, Order Denying Rehearing for Dominion**  
**Transmission, Inc., FERC Docket No. CP14-497-001,**  
**May 18, 2018.**

163 FERC ¶ 61,128  
UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Kevin J. McIntyre, Chairman;  
Cheryl A. LaFleur, Neil Chatterjee,  
Robert F. Powelson, and Richard Glick.

Dominion Transmission, Inc.

Docket No. CP14-497-001

ORDER DENYING REHEARING

(Issued May 18, 2018)

1. On April 28, 2016, the Commission issued Dominion Transmission, Inc. (Dominion) a certificate of public convenience and necessity under section 7(c) of the Natural Gas Act (NGA)<sup>1</sup> and Part 157 of the Commission's regulations<sup>2</sup> to construct and operate certain compression and related facilities in Chemung, Herkimer, Madison, Montgomery, Schenectady, and Tompkins Counties, New York (New Market Project).<sup>3</sup> On May 31, 2016, Otsego 2000, Inc. (Otsego) filed a timely request for rehearing. This order denies Otsego's request for rehearing.

**I. Background**

2. The April 28 Order authorized the New Market Project, consisting of: (1) the construction and operation of two new compressor stations (Horseheads Compressor Station in Chemung County, and Sheds Compressor Station in Madison County); (2) upgrading of and modifications to three existing compressor stations (Brookman Corners Compressor Station in Montgomery County, Borger Compressor Station in Tompkins County, and Utica Compressor Station in Herkimer County); and (3) upgrading of and modifications to one meter and regulating station (West Schenectady Meter and Regulating Station in Schenectady County).<sup>4</sup> The New Market Project will provide for 112,000 dekatherms per day of firm transportation service for The Brooklyn Union Gas Company d/b/a National

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<sup>1</sup> 15 U.S.C. § 717f(c) (2012).

<sup>2</sup> 18 C.F.R. pt. 157 (2017).

<sup>3</sup> *Dominion Transmission, Inc.*, 155 FERC ¶ 61,106 (2016) (April 28 Order).

<sup>4</sup> A more detailed Project description appears in the April 28 Order, 155 FERC ¶ 61,106 at P 3.

Grid NY (Brooklyn Union) and Niagara Mohawk Power Corporation d/b/a National Grid (Niagara Mohawk). Dominion will receive the gas at its existing Leidy interconnections with Texas Eastern Transmission, LP (Texas Eastern) or Transcontinental Gas Pipe Line Company, LLC (Transco) in Clinton County, Pennsylvania, and transport the gas to Brooklyn Union at its existing Brookman Corners Interconnection in Montgomery County, New York, and to Niagara Mohawk at its West Schenectady Interconnection near Schenectady, New York.

3. The Commission found that the benefits the Project will provide to the market outweigh any adverse effects on existing shippers, on other pipelines and their captive customers, and on landowners and surrounding communities.<sup>5</sup> In addition, Commission staff prepared an Environmental Assessment (EA). Based on Commission staff's EA, the Commission found that, if constructed and operated in accordance with Dominion's application and supplements and the conditions imposed by the April 28 Order, the Project will not have a significant impact on the environment.<sup>6</sup>

4. In its May 31 request for rehearing, Otsego argues that the Commission erred by: (1) failing to prepare an environmental impact statement (EIS); (2) failing to require Dominion to obtain local siting review; (3) treating modifications to the Brookman Corner's Compression Station as an expansion proposal and not a new facility; (4) not evaluating the upstream and downstream impacts of the New Market Project; and (5) adopting findings in the EA that were not supported by substantial evidence (May 31 Request for Rehearing).

5. On June 2, 2016, Otsego, Mohawk Valley Keeper, and John and Maryann Valentine filed a request to amend Otsego's May 31 Request for Rehearing (Amended Request for Rehearing). The parties state that they inadvertently filed the May 31 Request for Rehearing in a draft form and assert that the June 2 filing should be treated as timely because "the amendment to the filing are not extensive."<sup>7</sup>

6. On June 14, 2016, Dominion filed an answer opposing the Amended Request for Rehearing and asks the Commission to reject Otsego's Amended Request for Rehearing as untimely and statutorily barred by section 19 of the NGA.<sup>8</sup> Dominion states that the Amended Request for Rehearing contains significant substantive changes, including the addition of two additional parties (Mohawk Valley Keeper and John and Maryann

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<sup>5</sup> *Id.* P 18.

<sup>6</sup> *Id.* P 142.

<sup>7</sup> *See* June 2, 2016 Letter from C. Elefant at 1.

<sup>8</sup> Dominion's June 14, 2016 Answer at 3 (citing 15 U.S.C. § 717r(a) (2012)).

Valentine), the addition of two new arguments regarding “Socioeconomics and Environmental Justice” and “Historic Assets,” a more expansive discussion of alternatives, and additional references to commitments regarding local siting approvals.<sup>9</sup>

7. On June 23, 2016, Otsego, Mohawk Valley Keeper, and John and Maryann Valentine filed an answer to Dominion’s answer stating that the Amended Request for Rehearing does not add new parties because the May 31 Request for Rehearing states that it was filed on behalf of Otsego, Mohawk Valley Keeper, and John and Maryann Valentine in compliance with Rule 203 of the Commission Rules of Practice and Procedure.<sup>10</sup>

## II. Procedural Issues

### A. Answers to Answers and Requests for Rehearing

8. Rule 213(a)(2) of our regulations prohibits answers to answers and requests for rehearings unless otherwise ordered by a decisional authority.<sup>11</sup> Thus, we reject Otsego’s, Mohawk Valley Keeper’s, and John and Maryann Valentine’s answer. However, the Commission finds good cause to waive Rule 213(a)(2) and admit Dominion’s answer because the answer provides procedural information regarding Otsego’s motion to amend its rehearing that has assisted in our decision-making process and admitting this answer will not cause undue delay.

### B. Otsego’s Motion to Amend Its May 31 Request for Rehearing

9. Section 19 of the NGA<sup>12</sup> and Rule 713(b) of the Commission’s Rules of Practice and Procedure<sup>13</sup> require parties to file a request for rehearing within 30 days after issuance date of any final decision or other final order in a proceeding. In this case, that date was no later than May 31, 2016. Both the Commission and the courts have consistently held that the 30-day requirement in section 19(a) is a jurisdictional requirement that the Commission

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<sup>9</sup> *Id.* at 3.

<sup>10</sup> Otsego’s June 23, 2016 Answer at 1 (citing 18 C.F.R. § 385.203 (2017)).

<sup>11</sup> 18 C.F.R. § 385.213(a)(2) (2017).

<sup>12</sup> 15 U.S.C. § 717r(a) (2012).

<sup>13</sup> 18 C.F.R. § 385.713(b) (2017).

does not have the discretion of waiving, even for good cause.<sup>14</sup> Further, the Commission has interpreted this jurisdictional limitation as precluding it from considering a late-filed supplement or amendment to a timely filed request for rehearing.<sup>15</sup> Thus, we reject Otsego's motion to amend its request for rehearing and will base our decision solely on the arguments advanced in Otsego's May 31 Request for Rehearing.

10. Additionally, we agree with Dominion that Otsego is the only party to the May 31 Request for Rehearing. Rule 2002 of the Commission's Rules of Practice and Procedure require a filing's caption to include, among other things, the names of the participants for whom the filing is made.<sup>16</sup> Otsego was the only party identified in the caption of the

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<sup>14</sup> See, e.g., *Associated Gas Distributors v. FERC*, 824 F.2d 981, 1005 (D.C. Cir. 1987) (stating that "the Commission cannot waive the jurisdictional bar of [section] 19" of the Natural Gas Act.); *City of Campbell v. FERC*, 770 F.2d 1180, 1183 (D.C. Cir. 1985) (holding that an identical 30-day time requirement to file a request for rehearing in the Federal Power Act (FPA) "is as much a part of the jurisdictional threshold as the mandate to file for a rehearing."); *Boston Gas Co. v. FERC*, 575 F.2d 975, 979 (1st Cir. 1978) (holding that the rehearing provision of the NGA is "a tightly structured and formal provision. Neither the Commission nor the courts are given any form of jurisdictional discretion."); *PJM Interconnection, L.L.C.*, 138 FERC ¶ 61,160, at P 3 (2012); *Louisiana Energy and Power Authority*, 117 FERC ¶ 61,258, at 62,301 (2006); *Midwest Independent Transmission System Operator, Inc.*, 112 FERC ¶ 61,211, at P 10 (2005); *Texas-New Mexico Power Company v. El Paso Electric Company*, 107 FERC ¶ 61,316, at P 22 (2004); *California Independent System Operator Corporation*, 105 FERC ¶ 61,322, at P 9 (2003); *Tennessee Gas Pipeline Company*, 95 FERC ¶ 61,169, at 61,546-47 (2001); *Columbia Gas Transmission Corp.*, 40 FERC ¶ 61,195, at 61,655 (1987). Although some of these cases were decided under the Federal Power Act, the rehearing provisions in the FPA and the NGA are identical and read in *pari materia*. See *Federal Power Commission v. Sierra Pacific Power Co.*, 350 U.S. 348 (1956); *United Gas Pipe Line Co. v. Mobil Gas Service Corp.*, 350 U.S. 332 (1956).

<sup>15</sup> See *Old Dominion Electric Cooperative*, 154 FERC ¶ 61,155, at P 8 (2016) (citing *CMS Midland, Inc.*, 56 FERC ¶ 61,177, at 61,623 (1991) ("any subsequent filing supplementing or revising the request for rehearing is in essence a new request for rehearing and thereby precluded under section 313(a) of the [Federal Power] Act."); *Pub. Serv. Co. of New Hampshire*, 56 FERC ¶ 61,105, at 61,403 (1991) ("Commission precedent is clear that supplements to timely filed requests for rehearing, when filed after the expiration of the statutory [30]-day period, will be rejected.")).

<sup>16</sup> 18 C.F.R. § 385.2002(e) (2017).

May 31 Request for Rehearing.<sup>17</sup> Otsego was the only party discussed in the introductory section of the May 31 Request for Rehearing.<sup>18</sup> The body of the May 31 Request for Rehearing makes no reference to Mohawk Valley Keeper or John and Mary Valentine, nor does it identify any specifications of error as to them. And in the document's signature block, counsel only identified herself as "FERC Counsel to Otsego 2000."<sup>19</sup>

11. To the extent Mohawk Valley Keeper and/or John and Mary Valentine intended to participate in the May 31 Request for Rehearing, the filing fails to comply with the dictates of Rule 203, which requires "[t]he name of each participant for whom the filing is made or, if the filing is made for a group of participants, the name of the group, provided that the name of each member of the group is set forth in a previously filed document which is identified in the filing being made."<sup>20</sup> Indeed, this conclusion is illustrated by the fact that the Amended Request for Rehearing lists both Mohawk Valley Keeper and John and Mary Valentine in the caption, throughout the amendment, and is signed on their behalf. The only reference to Mohawk Valley Keeper or John and Mary Valentine in the May 31 filing appears in the filing's concluding sentence, where they are identified as a joint petitioners with Otsego. Accordingly, we find that the Amended Request for Rehearing improperly sought to add Mohawk Valley Keeper and John and Mary Valentine to Otsego's May 31 Request for Rehearing.

12. We also decline the parties' alternative request that the Amended Rehearing Request be treated as a request for reconsideration. Granting such a request would in effect treat the Amended Rehearing Request as if it had been timely filed.<sup>21</sup>

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<sup>17</sup> May 31 Request for Rehearing at 1.

<sup>18</sup> *Id.*

<sup>19</sup> *Id.* at 33.

<sup>20</sup> 18 C.F.R. § 385.203(a)(2) (2017).

<sup>21</sup> *See, e.g., Midwest Indep. Transmission Sys. Operator, Inc.*, 112 FERC ¶ 61,211, P 10 (2005) (declining to treat a late-filed rehearing request as a request for reconsideration); *Houston Lighting & Power Co.*, 84 FERC ¶ 61,183 (1998) (rejecting a request for reconsideration as an untimely request for rehearing).

### III. Discussion

#### A. Need for an EIS

13. Under the National Environmental Policy Act (NEPA), agencies must prepare an EIS for major federal actions that may significantly impact the environment.<sup>22</sup> However, if an agency determines that a federal action is not likely to have significant adverse effects, it may rely on an EA for compliance with NEPA.<sup>23</sup> The April 28 Order rejected Otsego's contention that Commission staff should have prepared an EIS rather than an EA for the New Market Project.<sup>24</sup>

14. On rehearing, Otsego contends that expansion of the Brookman Corners Compressor Station (Brookman Corners Station) would result in significant environmental impacts; therefore, the Commission should have prepared an EIS for the Project rather than an EA. In support, Otsego cites the factors that the Council on Environmental Quality (CEQ) provided in section 1508.27 of its regulations for considering whether an effect is significant.<sup>25</sup> Otsego maintains that three of these factors preclude the Commission from making a finding of no significant impact; specifically, the Commission should have considered: (1) the unique characteristics of the geographic scope of the Project such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas;<sup>26</sup> (2) the degree to which the effects on the

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<sup>22</sup> 42 U.S.C. § 4332(2)(C) (2012); 40 C.F.R. § 1502.4 (2017).

<sup>23</sup> 40 C.F.R. § 1501.3-1501.4 (2017). An EA is meant to be a "concise public document . . . that serves to . . . [b]riefly provide sufficient evidence and analysis for determining whether to prepare an [EIS] or finding of no significant impact." 40 C.F.R. § 1508.9(a) (2017). Pursuant to the Commission's regulations, if an EA is prepared first, "[d]epending on the outcome of the environmental assessment, an [EIS] may or may not be prepared." 18 C.F.R. § 380.6(b) (2017).

<sup>24</sup> April 28 Order, 155 FERC ¶ 61,106 at PP 34-37.

<sup>25</sup> 40 C.F.R. § 1508.27 (2017).

<sup>26</sup> *Id.* § 1508.27(b)(3).

quality of the human environment are likely to be highly controversial;<sup>27</sup> and (3) whether the action threatens a violation of state or local law.<sup>28</sup>

**1. The Project is Not Located in a Unique Geographic Area**

15. Otsego argues that the expansion of the Brookman Corners Station alone required the preparation of an EIS for the New Market Project because the compressor station is located in an area with unique geographic characteristics.<sup>29</sup> In particular, Otsego states that the compressor station's location: (1) in Otsquago Valley in Central New York State will limit the dispersion of emissions and increase the Project's impacts on air quality; (2) next to Otsego Creek will cause emissions to settle in the valley due to air stabilization above the creek's cooler waters; and (3) near Amish and Mennonite families will expose children to environmental contaminants.<sup>30</sup>

16. We disagree. The EA found that modeled hazardous air pollutant emissions from normal operations and blowdown events at the Brookman Corners Station are below a level of health concern.<sup>31</sup> In addition, the air quality model took into consideration the site-specific topography of the area near the Brookman Corners Station. Although Otsego may be correct that context is important in determining the severity of an impact, the EA provides a comprehensive analysis of the potential impacts on each resource, and appropriately concludes that the expansion of the Brookman Corners Station and the construction and operation of the New Market Project as a whole, with the environmental conditions set forth in the certificate, will not have a significant impact on the environment.

17. In any event, we do not find it reasonable to conclude that the mere fact that a proposed action occurs in a unique geographic area is dispositive of "significance" as contemplated by NEPA and CEQ's regulations, nor do we find that preparing an EIS here would have provided any additional meaningful information to assist in our decision-making process.

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<sup>27</sup> *Id.* § 1508.27(b)(4).

<sup>28</sup> *Id.* § 1508.27(b)(10).

<sup>29</sup> May 31 Request for Rehearing at 7.

<sup>30</sup> *Id.* at 7-8.

<sup>31</sup> EA at 89.

## 2. The Project's Potential Impacts on Environment are Not Highly Controversial

18. Otsego disagrees with the Commission's finding that the New Market Project is not "highly controversial."<sup>32</sup> Otsego asserts that the Commission should have found the Project highly controversial due to its impacts on emissions, noise, lighting, climate change, and safety.<sup>33</sup> Otsego contends that unspecified emerging research regarding the project's impacts upon climate change and health and safety of residents are particularly controversial and require the preparation of an EIS.<sup>34</sup>

19. For an action to qualify as highly controversial for NEPA purposes, there must be a "dispute over the size, nature, or effect of the action, rather than the existence of opposition to it."<sup>35</sup> A "controversy does not exist merely because individuals or groups vigorously oppose, or have raised questions about, an action."<sup>36</sup> Although the April 28 Order acknowledges that parties and commenters have concerns about the Project, those concerns have been addressed through scoping meetings, extensive comments, and other filings from all parties. The fact that Otsego may disagree with the Commission's findings regarding these issues does not constitute a "controversy" as contemplated by CEQ's regulations.<sup>37</sup>

## 3. The Project Does Not Threaten Violation of State and Local Law

20. The CEQ regulations provide that an EIS may be warranted where "the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment."<sup>38</sup> Otsego states that the project may violate the Code of the

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<sup>32</sup> See April 28 Order, 155 FERC ¶ 61,106 at P 37.

<sup>33</sup> May 31 Request for Rehearing at 8.

<sup>34</sup> *Id.*

<sup>35</sup> April 28 Order, 155 FERC ¶ 61,106 at P 37.

<sup>36</sup> *Elba Liquefaction Co., LLC*, 157 FERC ¶ 61,195, at P 29 (2016) (citing *Friends of the Ompompanoosuc v. FERC*, 968 F.2d 1549, 1557 (2d Cir. 1992); *Dominion Cove Point LNG, LP*, 151 ¶ 61,095, at P 82 (2015); *Cheniere Creole Trail Pipeline, L.P.*, 145 FERC ¶ 61,074, at P 23 (2013)).

<sup>37</sup> Otsego's specific disagreements with the Commission's analysis of air quality, greenhouse gases, noise, lighting and safety are addressed in Part E below.

<sup>38</sup> 40 C.F.R. § 1508.27(b)(10) (2017).

Town of Minden (where the Brookman Corners Station is located) and the New York Department of Environmental Conservation's policy, which call for the mitigation of noise impacts at a property line. By contrast, the April 28 Order requires Dominion to mitigate noise impacts at the nearest residence.<sup>39</sup>

21. We disagree. As discussed below, the April 28 Order requires Dominion to ensure that its predicted noise levels are not exceeded at nearby noise-sensitive areas.<sup>40</sup> Further, although the Commission encourages cooperation between interstate pipelines and local authorities, this does not mean that state and local agencies, through application of state and local laws, may prohibit or unreasonably delay the construction of facilities approved by the Commission.<sup>41</sup>

#### **4. Conclusion: The Project's Impacts Do Not Meet the Threshold Test of Significance**

22. Based on our review, we conclude that the potential environmental impacts of the New Market Project do not rise to a level of significance that would require preparation of an EIS. Accordingly, we affirm that preparation of a thorough, detailed EA was appropriate in this case and deny Otsego's request for rehearing on this issue. We note further that Otsego makes no effort to explain how an EIS would provide any additional information beyond that already provided by our comprehensive, 190-page EA.

#### **B. The NGA Preempts Local Law**

23. On rehearing, Otsego argues that the April 28 Order should have required Dominion to obtain local siting review from the Town of Minden.<sup>42</sup> Otsego recognizes that the April 28 Order encouraged cooperation between Dominion and state and local agencies,

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<sup>39</sup> May 31 Request for Rehearing at 8-9.

<sup>40</sup> April 28 Order, 155 FERC ¶ 61,106 at Environmental Condition No. 16. *See also infra* PP 71-76.

<sup>41</sup> *Id.* P 141. As discussed in more detail below, Otsego did not provide the Commission with a copy of the Town of Minden's Code or the New York Department of Environmental Conservation's policy concerning noise mitigation. *See infra* P 72. The EA cited only the Town of Dryden (near the Borger Compressor Station) as having a noise ordinance limits and evaluated the Project's compliance with this ordinance. EA at 90.

<sup>42</sup> May 31 Request for Rehearing at 9.

so long as the local authorities do not unreasonably delay construction of the facilities.<sup>43</sup> On rehearing, Otsego contends that the Commission should have expressly required Dominion to honor what it characterizes as the company's commitment to comply with and receive approval from the Town of Minden's Planning Board before constructing the Project.<sup>44</sup> In particular, Otsego is concerned with ensuring that Dominion adopt the lighting plan it submitted to the Town of Minden during the local siting review process.<sup>45</sup>

24. We reiterate here our expectation that Dominion will cooperate with the Town of Minden and other state and local authorities to receive input on the New Market Project. We decline, however, to amend the April 28 Order to affirmatively require Dominion to comply with whatever conditions may be imposed by local authorities to the maximum extent possible. Again, any state or local permits issued with respect to the jurisdictional facilities authorized herein must be consistent with the conditions of Dominion's certificate.<sup>46</sup> The Commission's authority under the NGA preempts county zoning ordinances.<sup>47</sup>

25. Moreover, we find, that the certificate, as conditioned, adequately addresses any lighting impacts on visual resources caused by the expansion of the Brookman Corners Station. The EA found that the expansion would not result in any additional lighting impacts on visual resources.<sup>48</sup> Further, the April 28 Order encouraged Dominion to explore additional lighting options at the Brookman Corners Station, as recommended by Otsego, at which point Otsego may provide Dominion with feedback.<sup>49</sup> Due to our findings that there

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<sup>43</sup> *Id.* at 10.

<sup>44</sup> *Id.* at 9-10.

<sup>45</sup> *Id.* 10-11.

<sup>46</sup> April 28 Order, 155 FERC ¶ 61,106 at P 141.

<sup>47</sup> *Id.* n.215 (citing *Schneidewind v. ANR Pipeline Co.*, 485 U.S. 293 (1988); *Dominion Transmission, Inc. v. Summers*, 723 F.3d 238, 243 (D.C. Cir. 2013) (holding state and local regulation is preempted by the NGA to the extent it conflicts with federal regulation, or would delay the construction and operation of facilities approved by the Commission); *Iroquois Gas Transmission System, L.P.*, 52 FERC ¶ 61,091 (1990), *order on reh'g*, and 59 FERC ¶ 61,094 (1992)).

<sup>48</sup> EA at 48.

<sup>49</sup> *See* April 28 Order, 155 FERC ¶ 61,106 at P 129.

will be no additional visual impacts from the Brookman Corners Station, we find no cause to require additional mitigation.

**C. Existing Facilities at the Brookman Corners Station Are Outside of Our Scope of Review**

26. Otsego argues that the Commission arbitrarily disregarded certain impacts and failed to consider additional mitigation measures for the Brookman Corners Station's existing facilities. Otsego explains that the Commission required more stringent mitigation at the new greenfield Horseheads and Sheds Compressor Stations but failed to impose the same measures at the Brookman Corners Station because the Commission claimed that requiring additional mitigation "would go beyond the scope of the proposal."<sup>50</sup>

27. In evaluating expansions of existing facilities, the Commission does not reopen the record in past proceedings<sup>51</sup> to further evaluate matters no longer before the Commission.<sup>52</sup> Thus, we affirm our finding that Dominion's existing compression facilities at the Brookman Corners Station are beyond the scope of the instant proceeding.<sup>53</sup>

28. Further, we disagree with Otsego's contention that because the Brookman Corners Station modifications will work in unison with the existing facilities, the Commission must reevaluate the environmental impacts of the existing facilities. Under Otsego's logic, every modification to a transmission facility would open the entire facility to the Commission's review (e.g., a company's proposal to provide looping would open the entire mainline to environmental review). This is not the Commission's or NEPA's intention. The

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<sup>50</sup> Otsego Request for Rehearing at 11 (citing April 28 Order, 155 FERC ¶ 61,106 at n.197).

<sup>51</sup> The Commission conducted an environmental review and conditioned the approval of the existing Brookman Corners Station facilities (among other proposed looping and compression facilities) subject to nine environmental conditions. *Dominion Transmission, Inc.*, 93 FERC ¶ 61,095 (2000).

<sup>52</sup> See *ANR Pipeline Company*, 86 FERC ¶ 61,039, at 61,152 (1999) ("ANR's existing pipelines are beyond the scope of the instant proceeding. In evaluating proposals for new facilities, the Commission does not reopen the record in past proceedings to further evaluate matters which are no longer before the Commission.").

<sup>53</sup> April 28 Order, 155 FERC ¶ 61,106 at n.197 ("The Brookman Corners Compressor Station is an existing station and requiring the modification of existing lighting would go beyond the scope of the project proposal.").

Commission's review is limited to the company's proposal<sup>54</sup> and does not impose measures beyond the proposed facilities. However, as discussed below, the Commission must, and did, evaluate the cumulative impacts of the new compression facilities and the existing facilities at the Brookman Corners Station.<sup>55</sup>

29. To the extent that Otsego is seeking to call into question the Commission's action in approving the existing Brookman Corners Station facilities, Otsego's argument constitutes an impermissible collateral attack on a closed proceeding, to which no parties sought rehearing.

**D. The EA Appropriately Excluded an Analysis of Upstream and Downstream Impacts**

30. On rehearing, Otsego reiterates its comments on the EA and claims that the cumulative impacts analysis failed to properly evaluate the impacts of upstream and downstream activities in combination with the impacts of the New Market Project.<sup>56</sup> Specifically, Otsego states that we arbitrarily limited our review of upstream (increased gas extraction and hydraulic fracturing) and downstream (development of additional infrastructure, e.g., power plants, storage facilities, and distribution networks) impacts by limiting the Project's geographic scope. Otsego also contends that the Commission erroneously relies on the assertion that these upstream and downstream activities are not "reasonably foreseeable."<sup>57</sup>

31. We disagree. CEQ defines cumulative impacts as "the impact on the environment that results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions."<sup>58</sup> The requirement that an impact must be "reasonably foreseeable" to be considered in a NEPA analysis applies to both indirect and cumulative impacts. Courts have found that an impact is reasonably foreseeable if it is "sufficiently likely to occur that a person of ordinary prudence would take it into account in

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<sup>54</sup> See 42 U.S.C. § 4332 (C)(i) (2012) (agencies must analyze the environmental impact of the *proposed* action) (emphasis added).

<sup>55</sup> EA at 104-08.

<sup>56</sup> May 31 Request for Rehearing at 13-14; Otsego's Comments on the EA at 17-18.

<sup>57</sup> May 31 Request for Rehearing at 14.

<sup>58</sup> 40 C.F.R. § 1508.7 (2017).

reaching a decision.”<sup>59</sup> While courts have held that NEPA requires “reasonable forecasting,” an agency is not required “to engage in speculative analysis” or “to do the impractical, if not enough information is available to permit meaningful consideration.”<sup>60</sup>

32. The “determination of the extent and effect of [cumulative impacts], and particularly identification of the geographic area within which they may occur, is a task assigned to the special competency of the appropriate agencies.”<sup>61</sup> CEQ has explained that “it is not practical to analyze the cumulative effects of an action on the universe; the list of environmental effects must focus on those that are truly meaningful.”<sup>62</sup> Further, a cumulative impact analysis need only include “such information as appears to be reasonably necessary under the circumstances for evaluation of the Project rather than to be so all-encompassing in scope that the task of preparing it would become either fruitless or well-nigh impossible.”<sup>63</sup> An agency’s analysis should be proportional to the magnitude of the environmental impacts of a proposed action; actions that will have no significant direct and indirect impacts usually require only a limited cumulative effects analysis.<sup>64</sup>

33. In considering cumulative impacts, CEQ advises that an agency first identify the cumulative effects issues associated with a proposed action.<sup>65</sup> The agency should then

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<sup>59</sup> *EarthReports, Inc. v. FERC*, 828 F.3d 949, 955 (D.C. Cir. 2016) (citations omitted); *see also Sierra Club v. Marsh*, 976 F.2d 763, 767 (1st Cir. 1992).

<sup>60</sup> *N. Plains Res. Council v. Surface Transp. Board*, 668 F.3d 1067, 1078 (9th Cir. 2011).

<sup>61</sup> *Kleppe v. Sierra Club*, 427 U.S. 390, 414 (1976) (*Kleppe*).

<sup>62</sup> CEQ, *Considering Cumulative Effects Under the National Environmental Policy Act*, at 8 (January 1997), [https://energy.gov/sites/prod/files/nepapub/nepa\\_documents/RedDont/G-CEQ-ConsidCumulEffects.pdf](https://energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-ConsidCumulEffects.pdf), (1997 CEQ Guidance).

<sup>63</sup> *Natural Res. Def. Council, Inc. v. Callaway*, 524 F.2d 79, 88 (2d Cir. 1975).

<sup>64</sup> *See* CEQ, *Memorandum on Guidance on Consideration of Past Actions in Cumulative Effects Analysis*, at 2-3 (June 24, 2005), [http://energy.gov/sites/prod/files/nepapub/nepa\\_documents/RedDont/G-CEQ-PastActsCumulEffects.pdf](http://energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-PastActsCumulEffects.pdf), (2005 CEQ Guidance).

<sup>65</sup> 1997 CEQ Guidance at 11.

establish the geographic scope for analysis.<sup>66</sup> Next, the agency should establish the time frame for analysis, equal to the timespan of a proposed project's direct and indirect impacts.<sup>67</sup> Finally, the agency should identify other actions that potentially affect the same resources, ecosystems, and human communities that are affected by the proposed action.<sup>68</sup> As noted above, CEQ advises that an agency should relate the scope of its analysis to the magnitude of the environmental impacts of the proposed action.<sup>69</sup>

34. The geographic scope of our cumulative impacts analysis varies from case to case, and resource to resource, depending on the facts presented. Further, where the Commission lacks meaningful information about potential future natural gas production within the geographic scope of a project-affected resource, then production-related impacts are not reasonably foreseeable so as to be included in a cumulative impacts analysis.<sup>70</sup> As we have explained, the record before the Commission generally does not reflect sufficient information to determine the origin of the gas that will be transported on a pipeline, and that is the case here.<sup>71</sup> This same reasoning applies to potential future downstream impacts – if

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<sup>66</sup> *Id.*

<sup>67</sup> *Id.*

<sup>68</sup> *Id.*

<sup>69</sup> See 2005 CEQ Guidance at 2-3, n.89.

<sup>70</sup> See, e.g., *Columbia Gas Transmission, LLC*, 149 FERC 61,255, at P 120 (2014).

<sup>71</sup> *Habitat Education Center v. U.S. Forest Service*, 609 F.3d 897, 902 (7th Cir. 2010) (finding that impacts that cannot be described with enough specificity to make their consideration meaningful need not be included in the environmental analysis). See also *Sierra Club v. DOE*, 867 F.3d 189, 200 (D.C. Cir. 2017) (accepting DOE's "reasoned explanation" as to why the indirect effects pertaining to induced natural gas production were not reasonably foreseeable where DOE noted the difficulty of predicting both the incremental quantity of natural gas that might be produced and where at the local level such production might occur, and that an economic model estimating localized impacts would be far too speculative to be useful). Although not useful to the Commission in its project-specific review, we note that for parties who are interested, there is publically available information that identifies, on a generic, high-level basis, potential environmental impacts associated with unconventional natural gas production and natural gas power generation. See Dep't. of Energy and Nat'l Energy Tech. Laboratory, *Life Cycle Analysis of Natural Gas Extraction and Power Generation*, DOE/NETL-2015/1714 (August 30, 2016), [https://www.netl.doe.gov/energy-analyses/temp/LifeCycleAnalysisofNaturalGasExtractionandPowerGeneration\\_083016.pdf](https://www.netl.doe.gov/energy-analyses/temp/LifeCycleAnalysisofNaturalGasExtractionandPowerGeneration_083016.pdf); U.S. Dep't of Energy, *Addendum to Environmental Review Documents Concerning Exports*

the Commission does not have meaningful information about future power plants, storage facilities, or distribution networks, within the geographic scope of a project-affected resource, then these impacts are not reasonably foreseeable for inclusion in the cumulative impacts analysis.

35. CEQ notes that agencies have substantial discretion in determining the appropriate level of their cumulative impact assessments and that agencies should relate the scope of their analyses to the magnitude of the environmental impacts of the proposed action.<sup>72</sup> Otsego attempts to argue that the Commission should determine the magnitude of the project based on the amount of gas that will be transported through interstate commerce as a result of the project, rather than the specific project effects. We disagree. The EA appropriately established various regions of influence depending on the resource area that might be cumulatively impacted, because the nature, magnitude, and duration of these impacts vary.<sup>73</sup>

36. As described in the EA, because the project consists entirely of construction and modification of compressor stations – not construction of linear pipeline – the project impacts will be confined to discrete areas.<sup>74</sup> The EA identified projects that might cumulatively impact resource areas, but found that many of these fell outside the defined

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*of Natural Gas from the United States*, 79 Fed. Reg. 48,132 (Aug. 15, 2014) (DOE Addendum), <http://energy.gov/sites/prod/files/2014/08/f18/Addendum.pdf>; and Dep't of Energy and Nat'l Energy Tech. Laboratory, *Environmental Impacts of Unconventional Natural Gas Development and Production*, DOE/NETL-2014/1651, (May 29, 2014), [https://www.netl.doe.gov/File%20Library/Research/Oil-Gas/publications/NG\\_Literature\\_Review3\\_Post.pdf](https://www.netl.doe.gov/File%20Library/Research/Oil-Gas/publications/NG_Literature_Review3_Post.pdf).

<sup>72</sup> *Id.*

<sup>73</sup> April 28 Order, 155 FERC ¶ 61,106 at P 90. For example, the New Market EA establishes a geographic scope for most resource areas of 0.5 mile, but for air quality and noise impacts associated with the construction of the Project the EA uses a 0.25 mile geographic scope. For noise impacts and air impacts associated with the operation of the Project, the EA uses a 1-mile geographic scope and a 31-mile geographic scope, respectively.

<sup>74</sup> EA at 108.

geographic scope,<sup>75</sup> with the exception of cumulative air quality impacts.<sup>76</sup> The geographic scope of the cumulative impact analysis was appropriately reflective of the magnitude of the proposed Project's direct and indirect environmental impacts.<sup>77</sup> We affirm the April 28 Order's and the EA's chosen geographic scopes for each affected resource.<sup>78</sup> The EA appropriately quantified the potential for cumulative impacts to the extent practicable, and otherwise describes it qualitatively.<sup>79</sup> The EA appropriately explained that actions outside the chosen geographic scope of analysis are in most cases not assessed because their impacts would tend to be localized and not contribute significantly to the impacts of the proposed Project.<sup>80</sup> The EA's analysis is consistent with the CEQ Guidance and case law.<sup>81</sup>

37. The impacts from natural gas development and from natural gas consumption on a broader scale are appropriately omitted from the EA. With respect to upstream gas development activities, given the large geographic scope of the Marcellus and Utica Shale natural gas production areas,<sup>82</sup> the magnitude of analysis requested by Otsego bears no relationship to the limited magnitude of the New Market Project's 65.4 acres for operation of the facilities. Moreover, the project is located entirely within the state of New York, which has banned hydraulic fracturing. As the EA notes, the nearest land eligible for natural gas drilling is at least 20 miles south of the project area.<sup>83</sup>

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<sup>75</sup> The EA refers to the geographic scope of the cumulative impacts analysis as the "region of influence."

<sup>76</sup> EA at 104-08.

<sup>77</sup> *Kleppe*, 427 U.S. at 413 (The "determination of the extent and effect of [cumulative impacts], and particularly identification of the geographic area within which they may occur, is a task assigned to the special competency of the appropriate agencies.").

<sup>78</sup> April 28 Order, 155 FERC ¶ 61,106 at PP 90-91; EA at 103-08.

<sup>79</sup> EA at 106-08.

<sup>80</sup> *Id.* at 104-05.

<sup>81</sup> 1997 CEQ Guidance at 15; *Kleppe*, 427 U.S. at 414-15.

<sup>82</sup> Natural gas is extracted from the Marcellus and Utica Shale formation through hydraulic fracturing.

<sup>83</sup> EA at 108.

38. Even if the Commission were to vastly expand the geographic scope of the cumulative effects analysis, which would be inappropriate, the impacts from such development are not reasonably foreseeable. As we stated above, although NEPA requires “reasonable forecasting,” an agency is not required “to engage in speculative analysis” or “to do the impractical, if not enough information is available to permit meaningful consideration.”<sup>84</sup> The Commission does not have information on the general supply area for the gas that will be transported on the project. Dominion states that the project will transport gas from Dominion’s existing interconnections with Texas Eastern’s or Transco’s pipeline transmission systems; both of these systems traverse several states and have supply interconnections in multiple natural gas basins.<sup>85</sup> Furthermore, the Commission does not have more detailed information regarding the number, location, and timing of wells, roads, gathering lines, and other appurtenant facilities, as well as details about production methods. Thus, there are no forecasts in the record that would enable the Commission to meaningfully predict production-related impacts, many of which are highly localized.

39. Similarly with respect to downstream activities, e.g. the potential for induced development of power plants, storage facilities, and distribution networks, there is nothing in the record that identifies any specific end use or new incremental load downstream of the New Market Project, much less an end use or new incremental load within the geographic area of where the impacts from the New Market Project will be felt. Contrary to Otsego’s contentions, knowledge of these and other facts would indeed be necessary in order for the Commission to fully analyze the effects related to the production and consumption of natural gas.

40. In short, the incremental upstream and downstream activities that are the subject of Otsego’s rehearing request do not meet the definition of cumulative impacts. Accordingly, the April 28 Order and the EA appropriately excluded potential upstream and downstream activities related to the production and consumption of natural gas.<sup>86</sup>

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<sup>84</sup> *N. Plains Res. Council, Inc. v. Surface Transp. Bd.*, 668 F.3d 1067, 1078 (9th Cir. 2011).

<sup>85</sup> Texas Eastern’s system extends from Texas, Louisiana, and the offshore Gulf of Mexico area, through Alabama, Arkansas, Delaware, Indiana, Illinois, Kentucky, Mississippi, Missouri, Maryland, New Jersey, Ohio, Pennsylvania, Tennessee, West Virginia, to its principal terminus in the New York City area. Transco’s system extends from Texas, Louisiana, and the offshore Gulf of Mexico area, through Mississippi, Alabama, Georgia, South Carolina, North Carolina, Virginia, Maryland, Pennsylvania, and New Jersey, to its termini in the New York City metropolitan area.

<sup>86</sup> Nonetheless, the April 28 Order identified studies and reports developed by other federal agencies that discuss potential environmental impacts associated with

41. NEPA also requires agencies to consider indirect impacts that are “caused by the action and are later in time or farther removed in distance, but still are reasonably foreseeable.”<sup>87</sup> No party in this proceeding has argued that either the upstream or downstream activities are sufficiently casually connected to the New Market Project to be indirect impacts of the project. Nevertheless, in examining the issue, we are unable to find based on the record that the potential increase in greenhouse gas emissions associated with production, non-project transport, and non-project combustion are causally related to our action in approving this Project. Production and end-use consumption of natural gas will likely occur regardless of the Commission’s approval of the New Market Project. For a short time, the Commission went beyond that which is required by NEPA, providing the public with information regarding the potential impacts associated with unconventional natural gas production and downstream combustion of natural gas, even where such production and downstream use was not reasonably foreseeable nor causally related to the proposals at issue.<sup>88</sup> That information was generic in nature and inherently speculative, providing upper-bound estimates of upstream and downstream effects using general shale gas well information and worst-case scenarios of peak use.<sup>89</sup>

42. However, providing a broad analysis based on generalized assumptions rather than reasonably specific information does not meaningfully inform the Commission’s project-specific review.<sup>90</sup> Nor is it helpful to the public if the Commission provides such broad and

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unconventional natural gas production activities, including hydraulic fracturing. *See* April 28 Order, 155 FERC ¶ 61,106, at P 73 (citing, in part, DOE Addendum, 79 Fed. Reg. 48,132 (analyzing air quality, water resource, greenhouse gas emissions, induced seismicity, and land use impacts from unconventional natural gas production activities in the lower 48 states)).

<sup>87</sup> 40 C.F.R. § 1508.8 (2017).

<sup>88</sup> *See, e.g., PennEast Pipeline Co., LLC*, 160 FERC ¶ 61,053, at PP 193-210 (2018); *Millennium Pipeline Co., LLC*, 161 FERC ¶ 61,229 at PP 151-165 (2017).

<sup>89</sup> More specific information was not available because the Commission generally lacks information about the specific upstream production or downstream uses of the gas, as gas production and consumption activities fall outside of the Commission’s jurisdiction.

<sup>90</sup> *See, e.g., DTE Midstream Appalachia*, 162 FERC ¶ 61,238, at P 54 (2018) (“A broad analysis, based on generalized assumptions rather than reasonably specific information, will not provide meaningful assistance to the Commission in its decision making, e.g., evaluating potential alternatives to a specific proposal.”). *See also Sierra Club v. U.S. Department of Energy*, 867 F.3d 189, 198 (D.C. Cir. 2017) (holding that the dividing line between what is reasonable forecasting and speculation is the “usefulness of any new potential information to the decision-making process”).

imprecise information. Rather, doing so muddles the scope of our obligations under NEPA and the factors that we find should be considered under NGA section 7(c). It is the Commission's policy to analyze upstream and downstream environmental effects when those effects are indirect or cumulative impacts as contemplated by CEQs regulations. When those effects are not indirect or cumulative effects, and thus are not environmental effects of the proposed action, the Commission is not required to consider them under NEPA.<sup>91</sup>

43. We are not aware of any basis that indicates the Commission is required to consider environmental effects that are outside of our NEPA analysis of the proposed action in our determination of whether a project is in the public convenience and necessity under section 7(c). Although the Commission has the authority to consider all factors bearing on the public interest,<sup>92</sup> the Supreme Court has stated the presence of the words “‘public interest’ in a regulatory statute is not a broad license to promote the general public welfare.”<sup>93</sup> In *NAACP v. FERC*, the Supreme Court stated,

in order to give content and meaning to the words ‘public interest’ as used in the Power and Gas Acts, it is necessary to look to the purposes for which the Acts were adopted. In the case of the Power and Gas Acts it is clear that the principal purpose of those Acts was to encourage the orderly development of plentiful supplies of electricity and natural gas at reasonable prices.<sup>94</sup>

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<sup>91</sup> NEPA requires agencies to “include in every . . . major Federal action[] significantly affecting the quality of the human environment, a detailed statement . . . on (i) the environmental impact of the proposed action . . . .” 42 U.S.C. § 4332(2)(C)(i) (2012). Under NEPA, agencies are only required to disclose environmental effects when those effects “bear on decisions to take particular actions that significantly affect the environment.” *Baltimore Gas & Elec. Co. v. Natural Resources Def. Council, Inc.*, 462 U.S. 87, 96 (1983). Arguably, including information extraneous to the Commission’s decision would be contrary to CEQ regulations, which require the agencies to “implement procedures to make the NEPA process more useful to decision makers and the public; to reduce paperwork and the accumulation of extraneous background data; and to emphasize real environmental issues and alternatives.” 40 C.F.R. § 1500.2 (2017).

<sup>92</sup> *Atlantic Refining Co. v. Public Service Commission*, 360 U.S. 378, 391 (1959).

<sup>93</sup> *NAACP v. FERC*, 425 U.S. 662, 669-70 (1976).

<sup>94</sup> *Id.*

Though the Court stated that there are “undoubtedly other subsidiary purposes contained in those Acts,”<sup>95</sup> the Commission is not aware of any court precedent, statutory provision, or legislative history that indicates the Commission is required to consider environmental effects beyond those which are required by NEPA.<sup>96</sup> Moreover, the Commission does not control the production or consumption of natural gas.<sup>97</sup> Producers, consumers, and their intermediaries respond freely to market signals about location-specific supply and location-specific demand. The Commission certifies proposals by private entities to transport natural gas between those locations. Environmental effects that are not effects of the proposed project are extraneous to our consideration of whether a “*proposed . . . operation, construction, [or] extension, to the extent authorized by the certificate, is or will be required by the present or future public convenience and necessity.*”<sup>98</sup>

44. Accordingly, to avoid confusion as to the scope of our obligations under NEPA and the factors that we find should be considered under NGA section 7(c), we will no longer prepare upper-bound estimates described *supra* at P 42, where, as here, the upstream production and downstream use of natural gas are not cumulative or indirect impacts of the proposed pipeline project, and consequently are outside the scope of our NEPA analysis. The dissent mischaracterizes this decision as changing the Commission’s public interest and environmental review. Our decision does not in any way indicate that the Commission does

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<sup>95</sup> *Id.*

<sup>96</sup> In *Sierra Club v. FERC*, the court found that because the pipeline project delivered gas to identifiable gas-fired electric generating plants, the downstream use of the gas was foreseeable and so the Commission should consider and quantify the greenhouse gas emissions of that downstream use in its NEPA analysis. *Sierra Club v. FERC*, 867 F.3d 1357 (D.C. Cir. 2017). Nothing in *Sierra Club v. FERC* requires the Commission to consider environmental effects beyond that which is required by NEPA.

<sup>97</sup> NGA section 1(b) states that, “the provisions of this Act . . . shall not apply . . . to the local distribution of natural gas or to the facilities used for such distribution or the production . . . of natural gas.” 15 U.S.C. § 717(b) (2012). Further, section 201 of the Federal Power Act states, “[t]he Commission . . . shall not have jurisdiction, except as specifically provided in this Part and the Part next following, over facilities used for the generation of electric energy.” 16 U.S.C. § 824 (2012). *See also Fla. Gas Transmission Co. v. FERC*, 604 F.3d 636, 646-47 (D.C. Cir. 2010) (the Commission’s pipeline certificate authority does not provide it with jurisdiction to control non-jurisdictional parties including “electric generators and local distribution companies.”).

<sup>98</sup> 16 U.S.C. § 717f(e) (2012).

not consider, or is not cognizant of the potentially severe consequences of climate change.<sup>99</sup> In fact, as stated below, the EA considered direct greenhouse gas emissions from the construction and operation of the project and recommended mitigation measures to reduce greenhouse gas emissions.<sup>100</sup> We will continue to analyze upstream and downstream environmental effects when those effects are sufficiently causally connected to and are reasonably foreseeable effects of the proposed action, as contemplated by CEQ's regulations.

**E. The EA's Findings Were Supported by Substantial Evidence**

45. On rehearing, Otsego asserts that the Commission adopted certain findings in the EA and ignored contrary perspectives that would have yielded different results pertaining to the Commission's Human Health Risk Assessment and air quality, greenhouse gases, noise, lighting, pipeline safety, and alternatives. We disagree.

46. In considering applications for new projects, the Commission must conduct an environmental review under NEPA.<sup>101</sup> NEPA imposes "a set of action-forcing procedures that require that agencies take a hard look at environmental consequences, and that provide for broad [public] dissemination of relevant environmental information."<sup>102</sup> The statute does not, however, mandate particular results, but rather "simply prescribes the necessary

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<sup>99</sup> Nor does this order prejudice or preclude the Commission's from considering the questions on greenhouse gas emissions posed in the Notice of Inquiry (NOI) on the Certification of New Interstate Natural Gas Facilities in Docket No. PL18-1-000. The Commission stated in the NOI that, "[d]uring the pendency of [the NOI] proceeding, the Commission intends to continue to process natural gas facility matters before it consistent with the Policy Statement, and to make determinations on the issues raised in those proceedings on a case-by-case basis." *Certification of New Interstate Natural Gas Facilities*, 163 FERC ¶ 61,042 (2018).

<sup>100</sup> EA at 64-86, 108.

<sup>101</sup> 42 U.S.C. § 4321, *et seq.* (2012).

<sup>102</sup> *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) (*Robertson*) (internal quotation marks and citation omitted).

process.”<sup>103</sup> NEPA ensures that federal agencies make informed decisions as to the potential environmental impacts of federal actions; it prohibits uninformed, “rather than unwise,” agency decisions.<sup>104</sup>

47. Otsego disagrees with the Commission’s EA, both as to its conclusions and its analysis of the environmental impacts. However, those disagreements do not show that the Commission’s decision-making process here was uninformed, much less arbitrary and capricious. “The Commission’s factual findings are conclusive if supported by substantial evidence.”<sup>105</sup> “Substantial evidence is such relevant evidence as a reasonable mind might accept as adequate to support a conclusion, and requires more than a scintilla but less than a preponderance of evidence.”<sup>106</sup> When considering the Commission’s “evaluation of scientific data within its expertise,” the courts afford the Commission “an extreme degree of deference.”<sup>107</sup> As more fully discussed below, we find that the EA’s conclusions were supported by substantial evidence and affirm the Commission’s findings in the April 28 Order.

### 1. Human Health Risk Assessment and Air Quality

48. In response to concerns expressed by agencies and stakeholders, Commission staff included a Human Health Risk Assessment within the EA to estimate the nature and probability of adverse health effects in humans who may be exposed to chemicals in contaminated environmental media. Staff estimated the inhalation risks from airborne exposure to hazardous air pollutant emissions from operation of the proposed new and

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<sup>103</sup> *Id.* See also *Myersville Citizens for a Rural Cmty., Inc. v. FERC*, 783 F.3d 1301, 1322 (D.C. Cir. 2015) (*Myersville*) (“NEPA does not require any particular substantive result.”).

<sup>104</sup> *Robertson*, 490 U.S. at 351.

<sup>105</sup> *S. Carolina Pub. Serv. Auth. v. FERC*, 762 F.3d 41, 54 (D.C. Cir. 2014) (citing 16 U.S.C. § 825l(b) (2012)).

<sup>106</sup> *Id.* (internal quotation and citation omitted).

<sup>107</sup> *Myersville*, 783 F.3d at 1308 (internal quotation marks omitted); see also *Marsh v. Oregon Nat. Res. Council*, 490 U.S. 360, 377 (1989) (“Because analysis of the relevant documents requires a high level of technical expertise, we must defer to the informed discretion of the responsible federal agencies.”) (internal quotation marks omitted).

modified compressor stations and found that such operations would not cause significant impacts on health from inhalation of emissions in the Project areas.<sup>108</sup>

49. Otsego argues that the EA inappropriately limited its analysis of compressor station pollutants to those stations located in gas production areas, rather than analyzing compressor stations located on transmission lines.<sup>109</sup> Otsego misreads the EA. As explained in the April 28 Order, the EA did not analyze pollutants of compressor stations located in gas production areas. Rather, as the EA and the Order make clear, the EA analyzed the effects of pollutants from compressor stations located along transmission lines, because as the April 28 Order states, hazardous air pollutant concentrations documented in communities located close to natural gas production areas “are not comparable to gas handled by transmission pipeline compressor stations ....”<sup>110</sup> During gas processing, most of the hazardous air pollutants and other air toxics (such as benzene, toluene, ethylbenzene, and xylene) are stripped from the natural gas. Thus, pre-processed natural gas will have higher levels of these air contaminants (both from fugitive gas emissions and stack emissions) than transmission-quality post-processed gas, like the gas compressed at the New Market Compressor Station. It is primarily for this reason that we conclude that compressor stations located in gas production areas transporting pre-processed gas, and compressor stations along transmission lines transporting post-processed gas are not comparable.<sup>111</sup>

50. Otsego states that “elevated levels of hazardous pollutants” and “health problems” have been documented around Millennium Pipeline Company, L.L.C.’s Minisink Compressor Station, in Orange County, New York,<sup>112</sup> which, like the compressor stations proposed in this proceeding, is located along a transmission line and not in a gas-production area. However, in its rehearing request, Otsego does not cite to any specific health problem

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<sup>108</sup> See April 28 Order, 155 FERC ¶ 61,106 at P 31 and n.31; EA Appendix B.

<sup>109</sup> May 31 Request for Rehearing at 16-17.

<sup>110</sup> April 28 Order, 155 FERC ¶ 61,106 at P 108. See also EA Appendix B at 1 (declining to apply studies from production facilities/compressor stations to the proposed transmission compressor station).

<sup>111</sup> See EA Appendix B at 6 (citing Evan Branosky et al., *Defining the Shale Gas Life Cycle: A Framework for Identifying and Mitigating Environmental Impacts* (World Resources Institute, 2012); Christopher W. Moore, *Air Impacts of Increased Natural Gas Acquisition, Processing, and Use: A Critical Review*, 48 *Envtl. Sci. Tech.* 8349–8359 (2014)).

<sup>112</sup> *Millennium Pipeline Company, L.L.C.*, 140 FERC ¶ 61,045, *reh’g denied*, 141 FERC ¶ 61,198 (2012), *reh’g denied*, 142 FERC ¶ 61,077 (2013).

around the Minisink Compressor Station. Further, Otsego fails to identify any areas of specific concern or evidence of how the New Market Compressor Stations' emissions levels could cause the same unspecified effects as those alleged to occur around the Minisink Compressor Station. Commission staff's Human Health Risk Assessment found that hazardous air pollutants from normal operations and events at the proposed compressor stations are below a level of human health concern.<sup>113</sup>

51. Otsego also contends that the Commission should have required Dominion to install an oxidation catalyst on the Brookman Corners Station's existing Taurus 60 turbine in order to further protect air quality.<sup>114</sup> Otsego explains that oxidation catalysts are standard for newly constructed compressor stations and will be installed on the compressor units at the new Horseheads and Sheds Stations.<sup>115</sup> As we previously stated, the Brookman Corners Station's existing Taurus 60 combustion turbines are beyond the scope of this proceeding.<sup>116</sup> Moreover, Otsego's concerns were adequately addressed in the underlying order, and we affirm the April 28 Order's analysis that additional mitigation measures are not required to reduce air quality impacts.<sup>117</sup> In addition, Otsego's concerns are now moot because the New York Department of Environmental Conservation issued Dominion an air quality permit that requires Dominion to install an oxidation catalyst on its existing Taurus 60 unit at the Brookman Corners Station.<sup>118</sup>

52. Otsego states that the EA erred by using wind data from a weather station located over 40 miles away from the Brookman Corners Station to evaluate air dispersion at the site of the station.<sup>119</sup> Otsego states that the Commission's conclusion that the local weather station is in the same climatological region as the Brookman Corners Station does not account for the impacts of the local topography and a nearby creek on air dispersion at the

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<sup>113</sup> EA Appendix B at 33-34.

<sup>114</sup> May 31 Request for Rehearing at 17.

<sup>115</sup> *Id.* at 17-18.

<sup>116</sup> *See supra* P 27.

<sup>117</sup> April 28 Order, 155 FERC ¶ 61,106 at P 101.

<sup>118</sup> *See* New York Department of Environmental Conservation Air Quality Permit issued on January 1, 2017, for the Brookman Corners Station at 39-40, [http://www.dec.ny.gov/dardata/boss/afs/permits/427300003800001\\_r1.pdf](http://www.dec.ny.gov/dardata/boss/afs/permits/427300003800001_r1.pdf).

<sup>119</sup> May 31 Request for Rehearing at 18.

Brookman Corners Station.<sup>120</sup> We disagree. The EA disputed a similar assertion that air dispersion modeling is only accurate in flat terrain, under consistent conditions, and that as Otsego requests, complex terrain (like Otsego explains exists around the Brookman Corners Station) requires on-site measurements, complex computer modeling, and empirical cross-referencing. We affirm the EA's conclusion that Commission staff's use of the EPA-recommended AERMOD model is suitable for both simple and complex terrain to predict the peak ground-level concentrations for compliance with air quality regulations.<sup>121</sup>

53. Otsego asserts that the EA erred when it determined that the stack heights at the Brookman Corners Station would not affect air quality. Otsego states that the EA ignored the fact that the Brookman Corners Station is located at the base of a valley when it found that the Brookman Corners Station's stacks are taller than nearby structures.<sup>122</sup> We disagree. The EA evaluated whether the proposed stack heights on the new compressor stations, including the Brookman Corners Station, would provide sufficient plume for gas to rise and mix in higher levels of the atmosphere. The EA found that the new 15-meter-high stacks are taller than nearby structures and would provide sufficient plume rising and mixing.<sup>123</sup> Additionally, as identified, AERMOD uses terrain data for the modeling impacts that accounts for elevation differences. As stated in the EA, AERMOD results for the Brookman Corners Station demonstrate that modeled concentrations of pollutants resulting from operation of the Station plus background concentrations fall under the applicable National Ambient Air Quality Standards outside of the Station's fence-line boundary.<sup>124</sup>

54. Otsego disagrees with the Commission's findings that vapor recovery systems were not necessary for the proposed compressor stations.<sup>125</sup> Otsego states that the Commission ignored its comments that up to 29 percent of emissions from reciprocating engines (like those proposed at the Brookman Corners Station) are not the product of combustion, but of fugitive emissions from unburned gas; these fugitive emissions are not properly vented into the atmosphere, like the combusted gas, so they could increase the potential for public

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<sup>120</sup> *Id.*

<sup>121</sup> EA at 86.

<sup>122</sup> May 31 Request for Rehearing at 19.

<sup>123</sup> EA at 86.

<sup>124</sup> EA at 83.

<sup>125</sup> May 31 Request for Rehearing at 20.

exposure.<sup>126</sup> We disagree. The Commission addressed general leak emissions (or fugitive emissions) of methane and other components of natural gas and determined that these emissions from valves, flanges, etc. may be possible.<sup>127</sup> However, the EA found that, under normal operations, impacts of fugitive emissions and venting from the compressor stations would be below a level of health concern.<sup>128</sup> We agree and affirm the Commission's finding that vapor recovery systems are not required.

55. The EA considered blowdown and venting emissions from an acute perspective, rather than considering chronic effects because "full station blowdowns will likely occur no more frequently than once every five years."<sup>129</sup> Otsego takes issue with this analysis, contending that emergency or maintenance blowdowns occur much more frequently.<sup>130</sup> We disagree. Otsego's argument in this regard is unsupported by any evidence or specific studies supporting the notion that full station blowdown events occur more frequently than once a year. The EA explained that the U.S. Department of Transportation's (DOT) regulations require companies to test their emergency shutdown systems each year. The full station must be blown down to atmosphere once every five years. In other years, a capped test (full activation of the emergency shutdown systems with the blowdown vent capped to prevent the release of natural gas into the atmosphere) may be conducted in lieu of a full station blowdown.<sup>131</sup> As Otsego suggests, a company may perform a full station blowdown in emergency situations, but Otsego did not present any evidence that Dominion has performed these events at its existing systems with such regularity to require a chronic health analysis or field studies. In any event, as the Commission already explained, the Human Health Risk Assessment averaged out routine venting and includes these emissions as part of the chronic risk assessment.<sup>132</sup>

56. Finally, Otsego states that the EA's comparison of compressor station emissions to everyday combustion sources makes a compelling argument that better emissions controls

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<sup>126</sup> *Id.*

<sup>127</sup> April 28 Order, 155 FERC ¶ 61,106 at P 103.

<sup>128</sup> EA Appendix B at 34.

<sup>129</sup> April 28 Order, 155 FERC ¶ 61,106 at P 105 (citing EA at 88 and Appendix B at section 2.2).

<sup>130</sup> May 31 Request for Rehearing at 21.

<sup>131</sup> EA Appendix B at 4.

<sup>132</sup> April 28 Order, 155 FERC ¶ 61,106 at P 105 and EA Appendix B at section 2.2.

are needed at Dominion's compressor stations. Table 16 and 17 of the EA compare emissions from the compressor stations to common everyday combustion sources.<sup>133</sup> The EA found that, in some cases, potential emissions from the compressor stations would be considerably higher than the common everyday combustion sources. The New York Department of Environmental Conservation has authority under the Clean Air Act to impose additional emission controls through its Title V permit program. We acknowledge that the magnitude of the emissions from these sources would be some of the largest point sources in the area. However, the concentrations of these criteria pollutants will be below the National Ambient Air Quality Standards, based on air modeling, and therefore not considered a significant impact on human health and the environment.

## 2. Climate Change

57. Otsego disputes our finding that "neither the no-action alternative nor any system alternative was found to have significant environmental advantage over the Project while meeting Dominion's stated purpose and need for the Project."<sup>134</sup> It states that the Commission's finding places climate change on equal footing with Dominion's desire to build the Project, in violation of the Commission's statutory obligation under NEPA to evaluate the environmental impacts of climate change. Otsego asks the Commission to provide a comprehensive analysis of lifecycle emissions, including production, processing, distribution, and consumption of gas.<sup>135</sup>

58. With respect to impacts from greenhouse gases, the EA discusses the direct greenhouse gas emissions from construction and operation of the Project<sup>136</sup> and quantified the greenhouse gas emissions from New Market Project construction (8,085 metric tons per year, CO<sub>2</sub>-equivalent [metric tpy CO<sub>2</sub>e]) and operation (185,920 metric tpy CO<sub>2</sub>e).<sup>137</sup> The

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<sup>133</sup> EA Appendix B at Tables 16 and 17.

<sup>134</sup> May 31 Request for Rehearing at 22 (citing April 28 Order, 155 FERC ¶ 61,106 at P 123).

<sup>135</sup> *Id.* at 23.

<sup>136</sup> *See* EA at 71-79.

<sup>137</sup> *See* EA at 64-86, 108. These estimates include new project components, as well as existing jurisdictional pipelines.

EA also includes a discussion of climate change impacts in the region and the regulatory structure for greenhouse gases under the Clean Air Act.<sup>138</sup>

59. Otsego baldly asserts that “a comprehensive analysis of lifecycle emissions, including emissions relating to the production, processing, distribution, and consumption of gas associated with Dominion’s New Market Project, should be performed.”<sup>139</sup> However, Otsego fails to show that greenhouse gas emissions from upstream production activities or downstream use of natural gas are an indirect impact of the New Market Project. As we have previously concluded in natural gas infrastructure proceedings, the environmental effects resulting from natural gas production are generally neither caused by a proposed pipeline project nor are they reasonably foreseeable consequences of our approval of an infrastructure project, as contemplated by CEQ regulations.<sup>140</sup> A causal relationship sufficient to warrant Commission analysis of the non-pipeline activity as an indirect impact would only exist if the proposed pipeline would transport new production from a specified production area and that production would not occur in the absence of the proposed pipeline (i.e., there will be no other way to move the gas).<sup>141</sup>

60. Nothing in the record supports the dissent’s assertion that approval of transportation projects spurs the production of natural gas. The fact that natural gas production and transportation are both components of the general supply chain required to bring natural gas to market is not in dispute. However, this does not mean that the Commission’s action of approving a particular pipeline project will cause or induce the effect of additional shale gas

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<sup>138</sup> See EA at 66, 71, and 108.

<sup>139</sup> May 31 Request for Rehearing at 23.

<sup>140</sup> See, e.g., *Central New York Oil and Gas Co., LLC*, 137 FERC ¶ 61,121, at PP 81-101 (2011), *order on reh’g*, 138 FERC ¶ 61,104, at PP 33-49 (2012), *petition for review dismissed sub nom. Coal. for Responsible Growth v. FERC*, 485 Fed. Appx. 472, 474-75 (2012) (unpublished opinion).

<sup>141</sup> See *cf. Sylvester v. U.S. Army Corps of Engineers*, 884 F.2d 394, 400 (9th Cir. 1989) (upholding the environmental review of a golf course that excluded the impacts of an adjoining resort complex project). See also *City of Carmel-by-the-Sea v. U.S. Dep’t of Transportation*, 123 F.3d 1142, 1162 (9th Cir. 1997) (acknowledging that existing development led to planned freeway, rather than the reverse, notwithstanding the proposed freeway’s potential to induce additional development); *Laguna Greenbelt, Inc. v. USDOT*, 42 F.3d 517, 525 (9th Cir. 1994) (upholding the EIS’s determination that the proposed highway would not result in further growth because the surrounding land was already developed or otherwise committed to uses not contingent on highway construction).

production. Rather, a number of factors, such as domestic natural gas prices and production costs, drive new drilling.<sup>142</sup>

61. Even if a causal relationship between the proposed action here and upstream production was presumed, the scope of the impacts from any such production is too speculative and thus not reasonably foreseeable.<sup>143</sup> As we have explained,<sup>144</sup> neither the Commission nor the applicant generally has sufficient information to determine the origin of the gas that will be transported onto a pipeline. We disagree with the dissent's assertion that we lack information about specific upstream production or downstream uses simply because we "did not ask for it." To be clear, the Commission only has jurisdiction over the pipeline applicant, whose sole function is to transport gas from and to the contracted for delivery and receipt points. While the shippers might contract with a specific producer<sup>145</sup> for their gas supply, the shipper would not know the source of the producer's gas, and, for that matter, producers are not required to dedicate supplies to a particular shipper and thus likely will not know in advance the exact source of production. In short, "just ask[ing] for it" would be an exercise in futility.<sup>146</sup> Moreover, there are no forecasts in the record which would enable

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<sup>142</sup> See, e.g., *Rockies Express Pipeline LLC*, 150 FERC ¶ 61,161, at P 39 (2015) (*Rockies Express*). See also *Sierra Club v. Clinton*, 746 F. Supp. 2d 1025, 1045 (D. Minn. 2010) (holding that the U.S. Department of State, in its environmental analysis for an oil pipeline permit, properly decided not to assess the transboundary impacts associated with oil production because, among other things, oil production is driven by oil prices, concerns surrounding the global supply of oil, market potential, and cost of production); *Florida Wildlife Fed'n v. Goldschmidt*, 506 F. Supp. 350, 375 (S.D. Fla. 1981) (ruling that an agency properly considered indirect impacts when market demand, not a highway, would induce development).

<sup>143</sup> "Reasonable foreseeability" does not include "highly speculative harms" that "distort[] the decisionmaking process" by emphasizing consequences beyond those of "greatest concern to the public and of greatest relevance to the agency's decision." *Robertson*, 490 U.S. at 355-56, 109 S.Ct. 1835 (internal quotation marks and citations omitted).

<sup>144</sup> See *supra*. P 38.

<sup>145</sup> Conversely the shippers may purchase gas from marketers at a hub.

<sup>146</sup> Not even the states, which have jurisdiction over the production of natural gas, would have information regarding where (other than in a general region) gas that will be delivered into a particular new pipeline will be produced, or whether the gas will come from existing or new wells. See generally *Sierra Club v. U.S. Department of Energy*, 867 F.3d 189, 200 (D.C. Cir. 2017) (DOE's obligation under NEPA to "drill down into increasingly speculative projections about regional environmental impacts [of induced natural gas

the Commission to meaningfully predict production-related impacts, many of which are highly localized.<sup>147</sup> In a proceeding such as this one, where the shippers are local distribution companies, contrary to the dissent's assertion, it would be nearly impossible for the applicant or even the shipper to construct such forecasts. Here, Dominion holds contracts with two downstream local distribution companies for transportation capacity, neither of which control production. The specific source of natural gas to be transported via the Project is currently unknown and will likely change throughout the Project's operation. Furthermore, where the project adds compression to an existing mainline, like this one, and there is not even an identified general supply area for the gas that will be transported on the project, any analysis of production impacts would be so generalized it would be meaningless.<sup>148</sup> NEPA does not require the impractical.<sup>149</sup> Accordingly, even assuming that natural gas production is induced by the New Market Project, the impacts of that production are not reasonably foreseeable because they are "so nebulous" that we "cannot forecast [their] likely effects."<sup>150</sup>

62. Furthermore, we do not find that approval of the New Market Project will spur additional identifiable gas consumption. The D.C. Circuit Court of Appeals in

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production] is also limited by the fact that it lacks any authority to control the locale or amount of export-induced gas production, much less any of its harmful effects") (citing *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 768 (2004) (*Pub. Citizen*)).

<sup>147</sup> The dissent cites to *Del. Riverkeeper Network v. FERC*, 753 F.3d at 1310 (D.C. Cir. 2014), to support its argument that where a developer cannot provide the specific source of natural gas or the ultimate end use, the Commission must evaluate reasonable forecasts of greenhouse gas emissions from production and consumption. This would be true only if the impacts from greenhouse gas emissions would be a reasonably foreseeable result of our action in approving the New Market Project, which we have explained is not the case. We find the connection between our approval of this project and the impacts resulting from production or consumption to be too tenuous to warrant consideration of comparative information.

<sup>148</sup> Even where there is a general source area, the Commission would still need more detailed information regarding the number, location, and timing of wells, roads, gathering lines, and other appurtenant facilities, as well as details about production methods, which can vary per producer and depending on the applicable regulations in the various states, to develop a meaningful impacts analysis.

<sup>149</sup> *Kleppe*, 427 U.S. at 414 (noting that "practical considerations of feasibility might well necessitate restricting the scope of comprehensive statements").

<sup>150</sup> *See supra* n.71.

*Sierra Club v. FERC*,<sup>151</sup> held that where it is known that the natural gas transported by a project will be used for end-use combustion, the Commission should “estimate[] the amount of power-plant carbon emissions that the pipelines will make possible.”<sup>152</sup> However, we note that the SMP Projects at issue in *Sierra Club v. FERC* are factually distinct from the New Market Project. The record in the SMP Projects indicated that the natural gas would be delivered to specific customers – power plants in Florida – such that the court concluded that the consuming of gas by those power plants was reasonably foreseeable and the impacts of that activity warranted environmental examination.<sup>153</sup> Here, although the gas to be transported by the New Market Project will be received by two local distribution companies, no party – including Otsego, Dominion, or the shippers – has identified what the specific end use of the transported natural gas will be. Presuming the local distribution company shippers do not resell the gas into the market and instead use the gas to serve their industrial and residential customers, the range of possibilities include substitution for higher-emitting fuels, industrial feedstock for existing or potentially new customers, or other combustion. Moreover, the consumed volume is also unknown because the project’s transportation capacity is designed for intermittent peak use. Thus, the Commission does not know where the gas will ultimately be consumed or what fuels it will displace.

63. The record in this case does not support a finding that the potential increase of greenhouse gas emissions associated with the production, processing, distribution, or consumption of gas are causally related to our action approving this Project, as required by CEQ regulations, despite the dissent’s claim otherwise.<sup>154</sup> Companies will continue to

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<sup>151</sup> 867 F.3d 1357 (D.C. Cir. 2017).

<sup>152</sup> *Id.* at 1371.

<sup>153</sup> *Id.*

<sup>154</sup> Although the dissent asserts that we generally could obtain more information, it does not explain how any particular information would alter our conclusion regarding causation, as opposed to simply providing more detail on environmental impacts of upstream production and downstream greenhouse gas emissions, which we have determined, consistent with CEQ regulations and case law, are not caused by the New Market Project. Further, contrary to the dissent’s suggestion, the “reasonably close causal relationship” required under NEPA is analogous but not identical to proximate causation from tort law. As courts have noted: “We ‘look to the underlying policies or legislative intent in order to draw a manageable line between those causal changes that may make an actor responsible for an effect and those that do not.’” *Sierra Club v. DOE*, 867 F.3d 189, 198 (D.C. Cir. 2017) (quoting *Pub. Citizen*, 541 U.S. at 767 (quoting *Metro. Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 774, 103 S.Ct. 1556, 75 L.Ed.2d 534 (1983))). See also *New Jersey Dep’t of Env’tl. Prot. v. U.S. Nuclear Regulatory Comm’n*,

negotiate for and find natural gas supplies; end use consumption of natural gas will occur regardless of whether the project before us is approved. With respect to climate change impacts of upstream production and downstream use, we are again unable to predict the nature and extent of the climate change impacts associated with upstream production and downstream use.<sup>155</sup>

64. The dissent relies on *Mid States Coalition for Progress v. Surface Transportation Board*<sup>156</sup> and *Barnes v. Department of Transportation*<sup>157</sup> to argue that “[t]he fact that the pipeline’s exact effect on the demand for gas may be unknown is no reason not to consider the type of effect it is likely to have” on downstream gas emissions. *Mid States* and *Barnes* are distinguishable from the circumstances here.

65. In *Mid States*, petitioners argued that the projected availability of 100 million tons of low-sulfur coal per year at reduced rates would increase the consumption by existing power plants of low-sulfur coal vis-à-vis other fuels (e.g., natural gas).<sup>158</sup> The court found that the likely increased consumption of low-sulfur coal by power plants would be an indirect impact of construction of a shorter, more direct rail line to transport the low-sulfur coal from the mining area to existing coal-burning power plants.<sup>159</sup> Thus, the Surface Transportation Board was required to consider the effects on air quality of such consumption.<sup>160</sup> As we

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561 F.3d 132, 141 (3d Cir. 2009) (quoting *Metropolitan Edison* for the proposition that the agency must “draw a manageable line between those causal changes that may make an actor responsible for an effect and those that do not,” and observing that “this line appears to approximate the limits of an agency’s area of control”).

<sup>155</sup> See *supra* P 37.

<sup>156</sup> 345 F.3d 520, 549 (8th Cir. 2003) (*Mid States*).

<sup>157</sup> 655 F.3d 1124, 1138 (9th Cir. 2011) (*Barnes*).

<sup>158</sup> *Mid States*, 345 F.3d at 548.

<sup>159</sup> *Id.* at 550 (finding compelling the fact that while the Board’s draft EIS had stated that it would consider potential air quality impacts associated with the anticipated increased use of the transported coal, the final EIS failed to do so).

<sup>160</sup> However, the court did not require the Board to consider the impacts that would be associated with potential construction of any new power plants that might be “induced” as the result of the availability of inexpensive coal, because those impacts were speculative and not reasonably foreseeable. *Id.* at 549 (noting that where and what size additional

explained in the April 28 Order,<sup>161</sup> in *Mid States* it was undisputed that the proposed project would increase the use of coal for power generation. Here, it is unknown where and how the transported gas will be used and there is no identifiable end-use as there was in *Mid States* or in *Sierra Club v. FERC*.<sup>162</sup> Further, unlike the case here, the Surface Transportation Board had stated that approval of the rail line would lead to increased coal production.<sup>163</sup> It is primarily for this reason that the dissent's reliance on *Mid States* is "misplaced since the agency in *Mid States* stated that a particular outcome was reasonably foreseeable and that it would consider its impact, but then failed to do so," and the Commission did neither of those things.<sup>164</sup> In *Barnes*, the agencies argued that the proposal to add a third runway to a two-runway airport would not have growth-inducing effects on aviation activity as they anticipated that aviation activity at the airport was expected to increase at the same rate regardless of whether a new runway was built.<sup>165</sup> The court disagreed, finding that the case involved a major ground capacity expansion project with unique potential to create demand. The court therefore concluded that the EA was insufficient for failing to (i) to conduct a demand forecast based on three, rather than two runways, and (ii) discuss the impact of a third runway on aviation demand.<sup>166</sup> In contrast, here, the New Market Project is adding a small amount of incremental capacity on Dominion's existing 7,700 mile interstate pipeline system, compared to the addition of a runway at an airport that has only two runways, and there is no basis in the record for a conclusion that the project will increase demand.

66. As we have explained, the link here between the pipeline and the local distribution company shippers on one hand, and between the pipeline and the producer on the other, is much more attenuated than the links in *Mid States* and *Barnes*.<sup>167</sup> The Commission has

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power plants may be built is speculative and "hardly the reasonably foreseeable significant impacts that must be analyzed under NEPA").

<sup>161</sup> April 28 Order, 155 FERC ¶ 61,106 at P 79.

<sup>162</sup> 867 F.3d 1357.

<sup>163</sup> *Mid States*, 345 F.3d at 549.

<sup>164</sup> See *Ark. Wildlife Fed'n v. U.S. Army Corps of Eng'rs*, 431 F.3d 1096, 1102 (8th Cir. 2005).

<sup>165</sup> *Barnes*, 655 F.3d at 1136.

<sup>166</sup> *Id.* at 1136, 1138-39.

<sup>167</sup> April 28 Order, 155 FERC ¶ 61,106 at P 79 (distinguishing *Mid States*).

found that downstream local distribution companies will continue to negotiate for and find natural gas supplies. The dissent emphasizes the warning in *Mid States* that “if the *nature* of the effect is reasonably foreseeable but its *extent* is not . . . the agency may not simply ignore the effect.”<sup>168</sup> The Commission has not ignored the impacts of end use greenhouse gas emissions. We have explained the lack of causation and reasonable foreseeability of effects related to the production and consumption of natural gas. The EA’s discussion of climate change impacts in the region and the regulatory structure for greenhouse gases under the Clean Air Act<sup>169</sup> satisfy the directive to analyze the nature of an impact whose extent cannot be known. NEPA’s hard look and the NGA’s public interest standards require no more.

67. Otsego objects to the Commission’s statement in the April 28 Order that no standard methodology exists to determine how a project’s contribution to greenhouse gas emissions would translate into physical effects on the environment for the purposes of evaluating the Project’s impacts on climate change.<sup>170</sup> But Otsego does not offer any such methodology and we continue to find that the EA correctly concluded that no standard methodology exists.<sup>171</sup> Without an accepted methodology, the Commission cannot make a finding whether a particular quantity of greenhouse gas emissions poses a significant impact on the environment, whether directly or cumulatively with other sources, and how that impact would contribute to climate change.<sup>172</sup>

68. Further, we cannot find a suitable method to attribute discrete environmental effects to greenhouse gas emissions. Integrated assessment models were developed to estimate certain global and regional physical climate change impacts due to incremental greenhouse gas emissions under specific socioeconomic scenarios. It would be inappropriate to run the

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<sup>168</sup> *Mid States*, 345 F.3d at 549 (emphasis in original).

<sup>169</sup> See EA at 66, 71, and 108.

<sup>170</sup> May 31 Request for Rehearing at 14.

<sup>171</sup> EA at 108. See also *DTE Midstream Appalachia, LLC*, 162 FERC ¶ 61,238, at P 79 (2018) (explaining that “[t]he Commission’s policy on the use of the Social Cost of Carbon has been to recognize the availability of this tool, while concluding that it is not appropriate for use in project-level NEPA reviews”); *Florida Southeast Connection, LLC*, 162 FERC ¶ 61,233, at PP 30-51 (2018) (discussing determination not to employ the Social Cost of Carbon in FERC proceedings); *Western Organization of Resource Councils v. U.S. Bureau of Land Management*, CV 16-21-GF-BMM, slip op. at 36 (D. Mon. Mar. 23, 2018) (“Plaintiffs identify no case, and the Court has discovered none, that supports the assertion that NEPA requires the agency to use the global carbon budget analysis.”).

<sup>172</sup> See *National Fuel Gas Supply Corp.*, 158 FERC ¶ 61,145, at P 187 (2017).

integrated assessment models to estimate global and broad regional physical climate change impacts from the project-related greenhouse gas emissions. This is because we would have to arbitrarily determine whether the models' outputs of the potential increase in atmospheric greenhouse gas concentration, rise in sea level, rise in sea water temperatures, or other calculated physical impacts would be significant for that particular pipeline project. We are not aware of a widely accepted standard – which was established by international or federal policy, or by a recognized scientific body – to ascribe significance to a given rate or volume of greenhouse gas emissions.

69. Other models, such as atmospheric modeling used by the Intergovernmental Panel on Climate Change, Environmental Protection Agency, National Aeronautics and Space Administration, and others are not reasonable for project-level analysis. The ability to determine localized impacts from greenhouse gases by use of these models is not possible at this time. Contrary to Otsego's suggestions, appropriate scientific methodologies are necessary in order for the Commission to analyze the related climate change effects.

70. Our decision not to use integrated assessment models or other atmospheric modeling methods does not in any way indicate that the Commission is not cognizant of the potentially severe consequences of climate change, undermine our hard look at the effects of the New Market Project and our disclosure of these effects to the public, or undermine informed public comment or informed decision making. The Commission is committed to monitoring climate science, state and national targets, and climate models that may inform our decision making.<sup>173</sup>

### 3. Noise

71. Otsego questions the Commission's use of a day-night sound level ( $L_{dn}$ ) threshold of 55 decibels on an A-weighted scale (dBA)<sup>174</sup> to determine whether a company must mitigate noise impacts from a compressor station. Otsego states that EPA developed the 55 dBA standard as a maximum threshold for urban areas, not for rural areas where the noise

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<sup>173</sup> See *WildEarth Guardians v. Jewell*, 738 F.3d 298, 309 (D.C. Cir. 2013) (“Because current science does not allow for the specificity demanded . . . , the BLM was not required to identify specific effects on the climate in order to prepare an adequate EIS.”).

<sup>174</sup> The A-weighted scale is an expression on the relative loudness of sounds perceived by the human ear. The A-weighted system reduces the decibel values of sounds at low frequencies because the human ear is less sensitive to low and high frequencies and more sensitive to mid-range frequencies.

thresholds are much lower.<sup>175</sup> As explained in the EA,<sup>176</sup> our selected noise criterion is based on a 1974 EPA study that identified an  $L_{dn}$  of 55 dBA as protecting the public from indoor and outdoor activity interference.<sup>177</sup> The projected noise levels at all of the New Market Project's compressor stations will be well below this level at all noise sensitive areas. We recognize that when the expanded Brookman Corners Station is operating, it will increase the ambient noise levels. However, the potential increase in ambient noise due to the expansion of the Brookman Corners Station is projected to be between 0.7 and 1.1 decibels (dB) at the nearest noise sensitive areas.<sup>178</sup> The noticeable noise increase threshold for humans is about 3 dB; thus, the increase associated with the proposed expansion will be barely, if at all, noticeable.

72. On rehearing, Otsego contends that Dominion must mitigate any noise impacts at the existing property line, as required by the Town of Minden's Code (where the Brookman Corners Station is located), not at the nearest noise-sensitive area, as required by Environmental Condition No. 16. The EA summarized the applicable local noise ordinances where Dominion proposed to locate each of its proposed and modified compressor stations for the New Market Project.<sup>179</sup> The EA specified that the Town of Dryden (near the Borger Compressor Station) was the only locality in the immediate Project area with an applicable noise ordinance and found that our criterion of 55 dBA as an  $L_{dn}$  was more restrictive than the Town of Dryden's limits. Otsego did not previously dispute this analysis, nor did Otsego provide us with a copy of the Town of Minden's Code. In the absence of evidence to the contrary, we find that our  $L_{dn}$  of 55 dBA criterion at the existing noise-sensitive area is sufficient to mitigate against adverse noise impacts.

73. We disagree with Otsego's assertions that the April 28 Order failed to respond to comments Otsego submitted from a noise consultant who found flaws with Dominion's noise analysis. As the Commission stated, Otsego's comments, which did not include a cover letter, appeared to be from a noise consultant who asked questions and received

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<sup>175</sup> May 31 Request for Rehearing at 25.

<sup>176</sup> EA at 90.

<sup>177</sup> EPA, *Information on Levels of Environmental Noise Requisite to Protect Public Health and Welfare with an Adequate Margin of Safety* (1974) (identifying an  $L_{dn}$  of 55 dBA as necessary to protect against speech interference and sleep disturbance for residential, educational, and healthcare activities). The 1974 EPA study did not distinguish between rural and urban areas.

<sup>178</sup> EA at 92-93, Tables 16 and 17.

<sup>179</sup> EA at 90.

answers from Dominion. However, the Commission could not ascertain how Otsego's consultant asked and received the questions and answers from Dominion.<sup>180</sup> On rehearing, Otsego does not provide any clarity regarding this matter. In any event, the April 28 Order responded to the concerns raised by Otsego's consultant<sup>181</sup> and we will address those issues in this order as well.

74. We affirm the April 28 Order's findings that the noise analysis prepared for the Brookman Corners Station is sound.<sup>182</sup> We reject Otsego's contention that conclusions in the EA regarding anticipated noise levels at noise-sensitive areas near the Brookman Corners Compressor Station are invalid because the existing Brookman Corners Compressor Station was operational when ambient noise levels were recorded.<sup>183</sup> Otsego presents no evidence to change our finding that the noise analysis provided in the Project's application utilized proper engineering practice and followed American National Standards Institute standards applicable to a study of this type. As discussed in the April 28 Order and the EA, the Commission requires that noise levels generated by a proposed compressor station or, if existing, noise from the existing station and expansion combined, may not exceed an  $L_{dn}$  of 55 dBA at any pre-existing noise-sensitive areas.<sup>184</sup> The analysis conducted demonstrates that the proposed expansion Project would meet this requirement.

75. Historically, it is rare that an applicant is unable to demonstrate compliance with our  $L_{dn}$  of 55 dBA requirement upon commercial operation and would need to take additional mitigation measures. However, in such cases, depending on the cause of the excess noise, it may take up to a year to identify and install additional mitigation or rectify compressor station noise levels, even when applicants begin working to resolve the issue immediately. It is for this reason that the Commission included Environmental Condition No. 16, requiring Dominion to conduct noise surveys within 60 days at its new and modified compressor stations and to mitigate any exceedance of an  $L_{dn}$  of 55 dBA levels within one year of the compressor stations' in-service dates.<sup>185</sup>

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<sup>180</sup> April 28 Order, 155 FERC ¶ 61,106 at n.194.

<sup>181</sup> *Id.* PP 127-28.

<sup>182</sup> *Id.* P 127.

<sup>183</sup> May 31 Request for Rehearing at 24-25.

<sup>184</sup> April 28 Order, 155 FERC ¶ 61,106 at P 127; EA at 91-95.

<sup>185</sup> April 28 Order, 155 FERC ¶ 61,106 at Environmental Condition No. 16.

76. Finally, we disagree with Otsego's contention that Dominion did not conduct a low frequency noise analysis. The EA discussed the impacts of low frequency noise generated by the Project on noise-sensitive areas.<sup>186</sup> Section 380.12 of the Commission's regulations requires that the operation of compressor stations not result in any perceptible increase in vibration at noise-sensitive areas. The EA explained that, generally, low frequency octave bands should be below 70 dB to prevent low frequency induced noise vibrations in residential structures. An analysis of all of the noise-sensitive areas at Dominion's New Market Project compressor stations found that all of the stations will operate below 70 dB at all noise-sensitive areas.<sup>187</sup> Otsego did not submit evidence to dispute this finding. Therefore, we affirm the April 28 Order's finding that operation of the New Market Project, including the expansion of the Brookman Corners Station, will not result in significant noise impacts.<sup>188</sup>

#### 4. Lighting

77. In response to Otsego's comments, the April 28 Order encouraged Dominion to investigate ways to minimize the Brookman Corners Station's lighting impacts, particularly to minimize impacts on nighttime skies.<sup>189</sup> On rehearing, Otsego reiterates these concerns. Specifically, Otsego asks that the Commission require Dominion to commit to "full-cutoff"<sup>190</sup> and "dark sky" lighting at the Brookman Corners Station to protect wildlife and ensure no light intrusion for wildlife protection and surrounding property owners.

78. To the extent that Otsego seeks to require additional lighting measures at the existing light sources at the Brookman Corners Station, as we previously explained, requiring the modification of existing lighting would go beyond the scope of the Project proposal.<sup>191</sup> The EA found that the indirect impacts on wildlife from Dominion's proposed nighttime security lighting at the new and modified compressor stations would be minimal.<sup>192</sup> The EA also

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<sup>186</sup> EA at 93-94.

<sup>187</sup> *Id.* at 94, Table 18.

<sup>188</sup> April 28 Order, 155 FERC ¶ 61,106 at P 128.

<sup>189</sup> *Id.* P 129.

<sup>190</sup> Otsego explains that "full-cutoff" lighting directs light downward and shields the light source from direct view. May 31 Request for Rehearing at 27.

<sup>191</sup> *See supra* P 27; April 28 Order, 155 FERC ¶ 61,106 at n.197.

<sup>192</sup> EA at 38 and 40.

found that the modified Brookman Corners Station will not result in a significant impact on visual resources, as there is active agriculture on station property and few visual receptors in view of the existing station.<sup>193</sup> Thus, we see no need to require further measures here. However, we continue to encourage Dominion to look at opportunities to reduce any lighting impacts from the modified Brookman Corners Station.

## 5. Pipeline Safety

79. On rehearing, Otsego asks that the Commission require Dominion to conduct a thorough inspection of its existing facilities to identify any safety risks and determine an appropriate maximum allowable operating pressure.<sup>194</sup> Further, Otsego asserts that the Commission disregarded its concerns over pipeline safety.<sup>195</sup> We disagree. As the Commission explained, pipeline safety standards are mandated by regulations adopted by DOT's Pipeline and Hazardous Material Safety Administration.<sup>196</sup> DOT has the exclusive authority to promulgate federal safety standards used in the transportation of natural gas.<sup>197</sup> These regulations are protective of public safety. As detailed in the EA, Dominion has designed and will construct, operate, and maintain the Project in accordance with DOT's pipeline safety regulations.<sup>198</sup> DOT also prescribes the minimum standards for operating and maintaining pipeline facilities, including the requirement to establish emergency plans, maintain liaison with appropriate fire, police and public officials, and establish a continuing education program.<sup>199</sup> Otsego does not provide any explanation regarding how Dominion's New Market Project will not comply with these mandatory standards.

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<sup>193</sup> *Id.* at 48.

<sup>194</sup> May 31 Request for Rehearing at 29.

<sup>195</sup> *Id.* at 28-29.

<sup>196</sup> April 28 Order, 155 FERC ¶ 61,106 at P 133 (citing 49 C.F.R. pt. 192 (2017)).

<sup>197</sup> *See Memorandum of Understanding Between the Department of Transportation and FERC Regarding Natural Gas Transportation Facilities* (Jan. 15, 1993), <http://www.ferc.gov/legal/mou/mou-9.pdf>.

<sup>198</sup> April 28 Order, 155 FERC ¶ 61,106 at P 133; EA at 16-17, 32, and 96-102.

<sup>199</sup> *See* 49 C.F.R. § 192.615 (2017) (requiring emergency plans).

## 6. Alternatives

80. Otsego contends that the Commission should not have dismissed the use of electric compressors as a viable alternative to the proposed gas-fired units at the Brookman Corners Station. Otsego states that a 230-kilovolt powerline crosses the Brookman Corners Station's property; thus, the EA should not have dismissed electric compressors as a viable alternative because adequate high voltage powerlines are not available at the compressor station's site.<sup>200</sup>

81. The EA did not dismiss electric compressors as a viable alternative to gas-fired compressors for the sole reason that there are not adequate powerlines at the compressor station sites; rather, the EA and the April 28 Order dismissed this alternative because, in addition to the lack of electric units at some sites, the increase in air pollutant emissions at the point of electric generation did not make electric compressors a viable alternative. As the EA explained "a transfer of air pollutants from one geographical location to another ... would not necessarily result in any net benefit for regional air quality."<sup>201</sup> Otsego presents no evidence to dispute this finding; thus, we affirm the Commission's finding that the use of electric motor-driven compressor units would not offer a significant environmental advantage over Dominion's proposal.<sup>202</sup>

### The Commission orders:

- (A) Otsego's June 2, 2016 request to amend its rehearing request is rejected.
- (B) Otsego's request that its June 2, 2016 amended rehearing request be treated as a request for reconsideration is denied.
- (C) Dominion's June 14, 2016 answer is granted.
- (D) Otsego's, Mohawk Valley Keeper's, and John and Maryann Valentine's June 23, 2016 answer is rejected.

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<sup>200</sup> Otsego Request for Rehearing at 30-31.

<sup>201</sup> EA at 110. *See* April 28 Order, 155 FERC ¶ 61,106 at P 116.

<sup>202</sup> April 28 Order, 155 FERC ¶ 61,106 at P 120.

(E) Otsego's May 31 Request for Rehearing is denied.

By the Commission. Commissioners LaFleur and Glick are dissenting in part with separate statements attached.

( S E A L )

Nathaniel J. Davis, Sr.,  
Deputy Secretary.

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Dominion Transmission, Inc.

Docket No. CP14-497-001

(Issued May 18, 2018)

LaFLEUR, Commissioner, *dissenting in part*:

Today's order denies rehearing of the order on Dominion's New Market Project. I supported our original authorization of this project because I believed that the project was in the public interest. I write separately to comment on the policy change announced in this order limiting the Commission's review and disclosure of upstream and downstream greenhouse gas (GHG) impacts as part of our responsibilities under the National Environmental Policy Act (NEPA) and the Natural Gas Act (NGA). I am particularly troubled that this policy shift is occurring a few weeks after we initiated a generic proceeding to look broadly at the Commission's pipeline review, and more specifically at the Commission's current policy regarding consideration of upstream and downstream impacts.<sup>1</sup> If not for this policy shift that has little bearing on the record developed in this case, I would support today's order as I continue to believe that this project is in the public interest. However, for the reasons set forth below, I am dissenting in part.

As I have said repeatedly, deciding whether a project is in the public interest requires a careful balancing of the economic need for the project and all of its environmental impacts.<sup>2</sup> Climate change impacts of GHG emissions are environmental effects of a project and are part of my public interest determination.

Since late 2016, the Commission has included increasing amounts of information on upstream and downstream GHG emissions in our pipeline orders. Initially, the Commission estimated downstream GHG emissions by assuming the full combustion of

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<sup>1</sup> *Certification of New Interstate Natural Gas Facilities*, Notice of Inquiry, 163 FERC ¶ 61,042 (2018).

<sup>2</sup> *See, e.g., Atlantic Coast Pipeline, LLC*, 161 FERC ¶ 61,042 (2017) (LaFleur, Comm'r, *dissenting*).

the total volume of gas being transported by the project. This downstream information was included in certificate orders in instances when a project's environmental impact statement (EIS) or environmental assessment (EA) was already finalized without that information, and in later cases was both detailed in NEPA documents and discussed in orders.<sup>3</sup> The Commission placed caveats on the information and analysis, stating generally that the downstream impacts do not meet the definition of an indirect impact and are not mandated as part of the Commission's NEPA review.<sup>4</sup> The Commission nonetheless made a full-burn calculation to determine an upper-bound GHG emissions amount, unless it had specific information to calculate net and gross GHG emissions.

With respect to upstream impacts, the Commission has relied on recent DOE studies<sup>5</sup> to provide generic estimates of impacts associated with upstream natural gas production, including production related GHG emissions.<sup>6</sup> Commission orders that

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<sup>3</sup> Recent Commission orders include the full-burn calculation. *E.g.*, *Columbia Gas Transmission, LLC*, 158 FERC ¶ 61,046, at P 120 (2017); *Algonquin Gas Transmission, LLC*, 158 FERC ¶ 61,061, at P 121 (2017); *Rover Pipeline LLC*, 158 FERC ¶ 61,109, at P 274 (2017); *Tennessee Gas Pipeline Co., L.L.C.*, 158 FERC ¶ 61,110, at P 104 (2017); *Nat'l Fuel Gas Supply Corp.*, 158 FERC ¶ 61,145, at P 189 (2017); *Dominion Carolina Gas Transmission, LLC*, 158 FERC ¶ 61,126, at P 81 (2017); *Nexus Gas Transmission, LLC*, 160 FERC ¶ 61,022, at P 173 (2017); *Atlantic Coast Pipeline, LLC*, 161 FERC ¶ 61,042, at P 298 (2017); *Millennium Pipeline Co., L.L.C.*, 161 FERC ¶ 61,229, at P 164 (2017); *Penneast Pipeline Co., LLC*, 162 FERC ¶ 61,053, at P 208 (2018); *Florida Southeast. Connection, LLC*, 162 FERC ¶ 61,233, at P 22 (2018); and *DTE Midstream Appalachia, LLC*, 162 FERC ¶ 61,238, at P 56 (2018).

<sup>4</sup> *See, e.g.*, *Columbia Gas Transmission, LLC*, 158 FERC ¶ 61,046, at P 116 (2017).

<sup>5</sup> Dep't of Energy and Nat'l Energy Tech. Laboratory, *Life Cycle Analysis of Natural Gas Extraction and Power Generation*, DOE/NETL-2015/1714 (Aug. 30, 2016) (2016 DOE/NETL Study); U.S. Energy Info. Admin., *The Growth of U.S. Natural Gas: An Uncertain Outlook for U.S. and World Supply* (June 15, 2015), <http://www.eia.gov/conference/2015/pdf/presentations/staub.pdf>; Dep't of Energy and Nat'l Energy Tech. Laboratory, *Environmental Impacts of Unconventional Natural Gas Development and Production*, DOE/NETL-2014/1651, (May 29, 2014) (2014 DOE/NETL Study).

<sup>6</sup> Recent Commission orders used the DOE studies to identify potential environmental impacts associated with unconventional natural gas production related to the proposed project. *E.g.*, *NEXUS Gas Transmission, LLC*, 160 FERC ¶ 61,022 (2017); *National Fuel Gas Supply Corporation*, 158 FERC ¶ 61,145 (2017); *Tennessee Gas*

contained this generic upstream information acknowledged the limitations of providing such data since we did not have more detailed information like the number, location, and timing of the wells, roads, and gathering lines as well as details about production methods.

The landscape changed in 2017 when the United States Court of Appeals for the District of Columbia Circuit in *Sabal Trail* found that the downstream GHG emissions that result from burning the natural gas transported by the Commission authorized SMP Project are an indirect impact of the project.<sup>7</sup> This decision clearly signaled that the Commission should be doing more as part of its environmental reviews.

Today, however, the majority has changed the Commission's approach for environmental reviews to do the exact opposite. Rather than taking a broader look at upstream and downstream impacts, the majority has decided as a matter of policy to remove, in most instances, any consideration of upstream or downstream impacts associated with a proposed project. The majority's reasoning for excluding the information and calculations is generally that it is inherently speculative and does not meaningfully inform the Commission's project-specific review. I disagree.

Prior to *Sabal Trail*, I strongly supported the Commission's efforts to disclose upstream and downstream information in response to increased concerns cited in our dockets regarding the climate change impacts associated with pipeline infrastructure. As I said in my dissent from the *Sabal Trail* remand order, I believe that, given *Sabal Trail*'s finding that downstream GHGs in that case were indirect impacts, the Commission must now quantify and consider those impacts as part of its NEPA review.<sup>8</sup>

More broadly, pipelines are driving the throughput of natural gas, connecting increased upstream resources to downstream consumption. With respect to downstream impacts, I believe it is reasonably foreseeable, in the vast majority of cases, that the gas being transported by pipelines we authorize will be burned for electric generation or residential, commercial, or industrial end uses. In those circumstances, there is a reasonably close causal relationship between the Commission's action to authorize a

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*Pipeline Company, LLC*, 158 FERC ¶ 61,110 (2017); *Rover Pipeline LLC*, 158 FERC ¶ 61,109 (2017); *Algonquin Gas Transmission, LLC*, 158 FERC ¶ 61,061 (2017); and *Columbia Gas Transmission, LLC*, 158 FERC ¶ 61,046 (2017).

<sup>7</sup> *Sierra Club v. FERC*, 867 F.3d 1357, 1374 (D.C. Cir. 2017) (*Sabal Trail*).

<sup>8</sup> *Florida Southeast Connection, LLC*, 162 FERC ¶ 61,233 (2018) (LaFleur, Comm'r, *dissenting in part*).

pipeline project that will transport gas and the downstream GHG emissions that result from burning the transported gas. We simply cannot ignore the environmental impacts associated with those downstream emissions. Yet, that is precisely what the majority is choosing to do with its new policy regarding downstream impacts.

I agree that an identified end-use would enable the Commission to more accurately assess downstream GHG emissions by calculating gross and net GHG emissions as we did in *Sabal Trail*.<sup>9</sup> However, I reject the view that if a specified end-use is not discernible, we should simply ignore such environmental impacts.<sup>10</sup> In that case, we should disclose what we can, such as a full-burn calculation of GHG emissions.

While the majority attempts to distinguish *Mid States Coalition for Progress v. Surface Transportation Board*<sup>11</sup> to justify its new approach regarding consideration of upstream and downstream impacts, I believe that the majority misapplies *Mid States*, which in fact supports my view. In *Mid States*, the Court considered whether the Surface Transportation Board performed a sufficient environmental review associated with the construction of rail lines intended to transport coal. The Court concluded that the Surface Transportation Board erred by failing to consider the downstream impacts of the burning of transported coal. Even though the record lacked specificity regarding the extent to which transported coal would be burned, the Court concluded that the nature of the impact was clear. Similarly, I believe we simply cannot ignore the downstream GHG emissions associated with the burning of natural gas, even in those circumstances where the record is incomplete regarding a specific end-use.<sup>12</sup>

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<sup>9</sup> See *Sabal Trail* Supplemental Environmental Impact Statement (SEIS) at 4-5. Commission staff quantified the gross, net, and full burn of downstream GHG emissions. The gross total represents the expected use of the downstream power plant facilities. The net total includes the gross total minus the offset from coal-fired generating facility retirements. The full burn estimate is the calculation of the complete combustion of the total pipeline capacity.

<sup>10</sup> 40 C.F.R. § 1502.22 (2017) (explaining what an agency shall include in an EIS when there is incomplete or unavailable information relevant to reasonably foreseeable significant adverse impacts).

<sup>11</sup> 345 F.3d 520, 549 (8th Cir. 2003) (*Mid States*). I recognize that I have voted for past orders that distinguish *Mid States* in order to justify limiting the Commission's NEPA responsibilities. Upon further reflection, and after *Sabal Trail*, I believe my views articulated above are a better reading of *Mid States*.

<sup>12</sup> *Id.*

As the majority correctly notes, in *Mid States* the Court's primary basis for requiring the Surface Transportation Board to consider downstream emissions associated with the rail lines was that the Surface Transportation Board had concluded that the rail lines would increase coal production and usage. While the Commission has historically not found that new pipeline infrastructure increases production and/or consumption, if the facts present themselves, there is nothing preventing the Commission from doing so. The majority's reasoning becomes somewhat circular here, as they are essentially arguing that we are not obligated to consider upstream and downstream impacts because there is a lack of causation and reasonable foreseeability of the effects. However, a key reason the Commission lacks the specificity of information to determine causation and reasonable foreseeability is because we have not asked applicants to provide this sort of detail in their pipeline applications.<sup>13</sup>

The majority states that if upstream and downstream effects are not indirect or cumulative as contemplated by CEQ's regulations, then they are not environmental effects of the proposed project, and thus the Commission is not required to consider them under NEPA's hard look or the NGA's public interest standard. I disagree. I consider the downstream information relevant to our public interest determination under the NGA.<sup>14</sup> NEPA does not circumscribe the public interest standard under the NGA. Even assuming that the majority is correctly interpreting the Commission's NEPA responsibilities, I believe the Commission has broad discretion in considering factors bearing on our public interest determination.

As for the majority's announcement of a change in policy on upstream impacts, I also do not support the decision to simply exclude all generic upstream information by deeming this information as irrelevant. While it is less clear that upstream effects are caused by the pipeline, I would respond to upstream GHG comments by disclosing whatever data we have using the best available information, such as the DOE studies cited in past orders.

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<sup>13</sup> I note that some of the questions in the notice of inquiry on pipeline review ask commenters to weigh in on the types of information the Commission should seek as part of its pipeline review process. I am hopeful we will have more information included in the record to consider when reviewing a project proposal.

<sup>14</sup> See *NAACP v. FPC*, 425 U.S. 662, 670 & n.6 (1976) (noting that, in addition to "encourag[ing] the orderly development of plentiful supplies of electricity and natural gas at reasonable prices," the Commission has the authority to consider "conservation, environmental, and antitrust" concerns as relevant to the Commission's statutory authority").

At a time when we are grappling with increasing concern regarding the climate impacts of pipeline infrastructure projects, the Commission should not change its policy on upstream and downstream impacts to provide less information and be less responsive. Rather, I believe the Commission should proactively seek and disclose in pipeline proceedings more information regarding both upstream production and downstream end-use. I hope that the ongoing generic inquiry on the Certificate Policy Statement will provide an opportunity for additional consideration of what information the Commission should require in its pipeline applications and how it should factor into our analysis. In this way, we can work to ensure that our environmental reviews and public interest determinations, including consideration of climate change impacts, are robust and complete.

For all of these reasons, I respectfully dissent in part.

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Cheryl A. LaFleur  
Commissioner

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Dominion Transmission, Inc.

Docket No. CP14-497-001

(Issued May 18, 2018)

GLICK, Commissioner, *dissenting in part*:

Today, the Commission adopts a new policy regarding its consideration of how pipeline permitting decisions under section 7<sup>1</sup> of the Natural Gas Act (NGA) contribute to climate change. In particular, the Commission now concludes that the NGA and the National Environmental Policy Act<sup>2</sup> (NEPA) do not require that the Commission consider greenhouse gas emissions from the production or consumption of natural gas that may be the reasonably foreseeable result of the Commission's certification decisions.<sup>3</sup> Because I disagree with the Commission's interpretation of our obligations under the NGA and NEPA, I dissent in part from today's order, which I might otherwise join were it not for this new policy.<sup>4</sup> I find it particularly disappointing that the Commission is adopting this new policy just as it embarks on a broad review of the Commission's process for certifying new natural gas pipelines, which will include how greenhouse gas emissions are assessed.<sup>5</sup>

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<sup>1</sup> 15 U.S.C. 717f (2012).

<sup>2</sup> National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852.

<sup>3</sup> *Dominion Transmission, Inc.* 163 FERC ¶ 61,128 (2018) (*New Market*).

<sup>4</sup> I agree that the record in this particular proceeding does not contain "meaningful information," *New Market*, 163 FERC ¶ 61,128 at P 34, sufficient to identify the reasonably foreseeable effects of the New Market Project on greenhouse gas emissions associated with the production and consumption of natural gas. I disagree, however, with other conclusions that the Commission reaches and, therefore, cannot join today's order.

<sup>5</sup> *Certification of New Interstate Natural Gas Facilities*, Notice of Inquiry, 163 FERC ¶ 61,042 (2018).

Climate change poses an existential threat to our security, economy, environment, and, ultimately, the health of individual citizens.<sup>6</sup> Unlike many of the challenges that our society faces, we know with certainty what causes climate change: It is the result of greenhouse gas emissions, including carbon dioxide and methane—which can be released in large quantities through the production and the consumption of natural gas. Accordingly, it is critical that, as an agency of the federal government, the Commission comply with its statutory responsibility to document and consider how its authorization of a natural gas pipeline facility will lead to the emission of greenhouse gases, contributing to climate change.

In today's order on rehearing, the Commission argues that it cannot consider the New Market Project's effect on climate change because the record does not include information regarding the specific nature and extent of the impact that authorizing the new pipeline facilities will have on the production and consumption of natural gas.<sup>7</sup> The Commission contends that whatever effect the New Market Project has on the production and consumption of natural gas will not be reasonably foreseeable and, therefore, not something that the Commission must address in its NEPA analysis.<sup>8</sup> In so doing, the Commission is adopting a remarkably narrow view of its responsibilities under NEPA and the NGA's public interest standard. Under this view, even if the Commission knows that new pipeline facilities would have an environmental impact—in this case, causing greenhouse gas emissions by facilitating additional production and consumption of natural gas—the Commission is not obligated to consider those impacts unless the Commission knows definitively that the production and consumption would not occur absent the pipeline.<sup>9</sup>

That approach violates NEPA's requirement that federal agencies take “a hard look at [the] environmental consequences” of their decisions.<sup>10</sup> As an initial matter, the principal reason that the Commission does not have this “meaningful information” is that the Commission does not *ask* for it. But NEPA does not permit agencies to so easily

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<sup>6</sup> *Fla. Se. Connection, LLC*, 162 FERC ¶ 61,233, at 2 & n.9 (2018) (Glick, Comm'r, dissenting).

<sup>7</sup> *New Market*, 163 FERC ¶ 61,128 at PP 38–42, 59–63.

<sup>8</sup> *Id.*

<sup>9</sup> *See id.* PP 38, 59.

<sup>10</sup> *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) (internal quotation marks omitted).

shirk their responsibilities to consider environmental consequences. Rather, NEPA requires that an agency “must use its best efforts to find out all that it reasonably can.”<sup>11</sup> The Commission has several opportunities throughout the pre-filing and formal application processes to issue a data request to the pipeline developer seeking information about the source of the gas to be transported as well as its ultimate end use.<sup>12</sup> A simple data request would seem to fall easily within what constitutes the Commission’s “best efforts.” In the absence of any such efforts, the Commission should not be able to rely on the lack of “meaningful information” to satisfy its obligations under NEPA and the NGA to identify the reasonably foreseeable consequences of its actions.<sup>13</sup>

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<sup>11</sup> *Barnes v. Dep’t of Transp.*, 655 F.3d 1124, 1136 (9th Cir. 2011) (internal quotation marks omitted).

<sup>12</sup> The Commission asserts that it is excused from asking these questions because there is no indication that the pipeline applicant will have that information and, in any case, it is the states that have jurisdiction over the production of natural gas. *New Market*, 163 FERC ¶ 61,128 at P 61; *see id.* P 41 n.89. Regarding the first point, there may be cases in which the upstream consequences of the Commission’s permitting decisions will not be reasonably foreseeable. But it does not follow that the Commission must conclude, generically, that the environmental effects of upstream production will never be reasonably foreseeable because information about the exact source of natural gas is not specified. Rather, as discussed below, the question of what is reasonably foreseeable under NEPA is one that should be answered following a record-by-record inquiry. Regarding the second point, the natural gas sector is replete with overlapping state and federal authority and there is nothing surprising or uncommon about a state action affecting matters subject to federal authority and vice-a-versa. *See infra* n.24 and accompanying text. What NEPA requires is that the Commission consider the reasonably foreseeable environmental consequences of its permitting decisions and that it make its best efforts to gather the information needed to do so. The mere fact that other aspects of the causal chain are subject to state regulation, does not vitiate the Commission’s obligation to consider those consequences. *See Sierra Club v. FERC*, 867 F.3d 1357, 1373 (D.C. Cir. 2017) (*Sabal Trail*).

<sup>13</sup> Contrary to the suggestion in the Commission order, in concluding that there may be circumstances in which the upstream and downstream impacts of a pipeline facility are reasonably foreseeable results of the constructing and operating the proposed facility, I am relying on precisely the sort of “reasonably close causal relationship” that Supreme Court has required in the NEPA context and analogized to proximate cause. *See Federal Motor Carrier Safety Admin. v. Pub. Citizen*, 541 U.S. 752, 767 (2004) (“NEPA requires a ‘reasonably close causal relationship’ between the environmental effect and the alleged cause. The Court [has] analogized this requirement to the ‘familiar

The Commission responds that this information will rarely be relevant because upstream and downstream emissions generally are not reasonably foreseeable consequences of building the proposed project.<sup>14</sup> In reality, that depends on the record that the Commission compiles. There will undoubtedly be some cases where those emissions are, in fact, too speculative to be considered “reasonably foreseeable.” But there may also be others, such as *Sabal Trail*, where an adequate record would provide sufficient information to make those emissions reasonably foreseeable.<sup>15</sup> Consistent with *Sabal Trail*, the determination of what environmental effects must be considered under NEPA should turn on a record-by-record inquiry of what effects are reasonably foreseeable, not on generic pronouncements divorced from the facts of any specific case. And unless the Commission makes its “best efforts” and asks the necessary questions, that record is unlikely to exist and Congress’ purposes in enacting NEPA will be undermined.

In addition, even where exact information regarding the source of the gas to be transported and the ultimate end use is not available to the pipeline developer, the Commission will often be able to produce comparably useful information based on reasonable forecasts of the greenhouse gas emissions associated with production and

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doctrine of proximate cause from tort law.” (quoting *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 774 (1983)); see also *Paroline v. United States*, 134 S. Ct. 1710, 1719 (2014) (“Proximate cause is often explicated in terms of foreseeability or the scope of the risk created by the predicate conduct.”); *Staelens v. Dobert*, 318 F.3d 77, 79 (1st Cir. 2003) ([I]n addition to being the cause in fact of the injury [the but for cause], the plaintiff must show that the negligent conduct was a proximate or legal cause of the injury as well. To establish proximate cause, a plaintiff must show that his or her injuries were within the reasonably foreseeable risks of harm created by the defendant’s negligent conduct.” (internal quotation marks and citations omitted)).

<sup>14</sup> See *New Market*, 163 FERC ¶ 61,128 at PP 41 n.89, 63; *id.* P 43 (suggesting that greenhouse gas emissions from the production and consumption of natural gas are “extraneous” to the Commission’s public interest determination because the Commission does not control the production or consumption of natural gas).

<sup>15</sup> In response to this point, the Commission contends that NEPA does not require the consideration of “speculative harms” or “consequences beyond those of greatest concern to the public and of greatest relevance to the agency’s decision.” *Id.* P 61 & n.143 (internal quotation marks omitted). I am not aware of any harm more “concerning” or “relevant” than the threat posed by climate change.

consumption.<sup>16</sup> Forecasting environmental impacts is a regular component of NEPA reviews and a reasonable estimate may inform the federal decisionmaking process even where the agency is not completely confident in the results of its forecast.<sup>17</sup> For instance, in *Sabal Trail*, the United States Court of Appeals for the District of Columbia Circuit interpreted NEPA to require that the Commission attempt to quantify the greenhouse gas emissions associated with the Sabal Trail pipeline, even though the Commission could not know the actual greenhouse gas impact before the project entered operation.<sup>18</sup> Similar forecasts can play a useful role in the Commission’s evaluation of the public interest, even in those instances when the Commission must make a number of assumptions in its forecasting process.<sup>19</sup>

It is particularly important for the Commission to use its “best efforts” to identify and quantify the full scope of the environmental impacts of its pipeline certification decisions given that these pipelines are expanding the nation’s capacity to carry natural gas from the wellhead to end-use consumers. Adding capacity has the potential to “spur demand” and, for that reason, an agency conducting a NEPA review must, at the very least, examine the effects that an expansion of pipeline capacity might have on production and consumption.<sup>20</sup> Indeed, if a proposed pipeline neither increases the

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<sup>16</sup> *Del. Riverkeeper Network v. FERC*, 753 F.3d 1304, 1310 (2014) (quoting *Scientists’ Inst. for Pub. Info., Inc. v. Atomic Energy Comm’n*, 481 F.2d 1079, 1092 (D.C. Cir. 1973)); see *Sierra Club v. Dep’t of Energy*, 867 F.3d 189, 198 (D.C. Cir. 2017) (“In determining what effects are ‘reasonably foreseeable,’ an agency must engage in ‘reasonable forecasting and speculation.’” (quoting *Del. Riverkeeper*, 753 F.3d at 1310)).

<sup>17</sup> In determining what constitutes reasonable forecasting, it is relevant to consider the “usefulness of any new potential information to the decisionmaking process.” *Sierra Club*, 867 F.3d at 198 (citing *Pub. Citizen*, 541 U.S. at 767).

<sup>18</sup> *Sabal Trail*, 867 F.3d at 1373–74.

<sup>19</sup> As Commission LaFleur aptly explains in her separate statement, prior to the policy change announced today, the Commission previously determined that forecasts of GHG emissions from production and consumption are both available and useful to affected parties, including the public.

<sup>20</sup> See *Barnes*, 655 F.3d at 1138; *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549 (8th Cir. 2003) (*Mid States*) (“[T]he proposition that the demand . . . will be unaffected by an increase in availability and a decrease in price . . . is illogical at best.”). The Commission attempts to distinguish these cases chiefly by contending that “a number of factors, such as domestic natural gas prices and production costs, drive new

supply of natural gas available to consumers nor decreases the price that those consumers would pay, it is hard to imagine why that pipeline would be “needed” in the first place.

The fact that the pipeline’s exact effect on the demand for natural gas may be unknown is no reason not to consider the type of effect it is likely to have.<sup>21</sup> As the United States Court of Appeals for the Eighth Circuit explained in *Mid States*—a case that also involved the downstream emissions from new infrastructure to transport fossil fuels—“if the *nature* of the effect” (i.e., increased emissions) is clear, the fact that “the *extent* of the effect is speculative” does not excuse an agency from considering that effect in its NEPA analysis.<sup>22</sup> And while natural gas pipelines can benefit the nation—including by, in some cases, providing natural gas supplies that can displace older, more greenhouse gas-intensive methods of electricity generation—any “hard look” at incremental pipeline capacity should also consider the environmental consequences associated with that additional capacity.

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drilling.” *New Market*, 163 FERC ¶ 61,128 at P 60. Although sales price and production costs are, undoubtedly, factors that influence natural gas production, that is no answer to the argument that the Commission must at least consider the demand-inducing effects of new capacity. After all, surely the sales prices and production costs associated with air travel and coal mining affected demand in *Barnes* and *Mid States*, respectively.

<sup>21</sup> In the Commission’s 1999 Policy Statement it provided the following illustrative list of the “public benefits”: “meeting unserved demand, eliminating bottlenecks, access to new supplies, lower costs to consumers, providing new interconnects that improve the interstate grid, providing competitive alternatives, increasing electric reliability, or advancing clean air objectives.” *Certification of New Interstate Natural Gas Pipeline Facilities*, 88 FERC ¶ 61,227, 61,748 (1999). All of those examples, with the exception of the last two, are benefits that could “spur demand” for natural gas. *Cf. Mid States*, 345 F.3d at 549.

<sup>22</sup> *Id.* The Commission attempts to distinguish *Mid States* on the basis that the agency in that case conceded that the harm in question was reasonably foreseeable. *New Market*, 163 FERC ¶ 61,128 at P 65. I agree that where an agency finds that a harm is reasonably foreseeable, but nevertheless fails to consider that harm, it invites *vacatur*. But while that concession may be sufficient, it is not necessary. As noted above, whether a particular harm is reasonably foreseeable should be a record-by-record determination and, accordingly, there may be instances in which an agency contends that a harm is not reasonably foreseeable, but the record indicates otherwise. *See Sabal Trail*, 867 F.3d at 1371–72.

I recognize that, even if the Commission were to try, there may be instances in which it will not have sufficient information to assess the consequences that issuing a particular certificate may have for climate change. But, in that scenario, it is the fact that the Commission made every effort to identify the climate-change impacts that satisfies the Commission's obligation to consider those impacts as indirect or cumulative effects under NEPA. The mere fact that the record does not contain specific information regarding the greenhouse gas emissions associated with increased production or consumption from a particular natural gas pipeline cannot excuse the Commission from considering those effects under NEPA when the Commission has not seriously attempted to gather that information in the first place.

As stated earlier, anthropogenic climate change is among the most serious threats we face as a nation. For that reason, the Commission cannot determine whether a natural gas pipeline is in the "public interest" without considering the effect that granting a certificate will have on climate change. I certainly cannot support issuing a certificate where the Commission has not made its best effort to collect information regarding those emissions. Accordingly, I believe that the NGA's public interest standard requires the Commission to consider greenhouse gas emissions associated with the incremental production and consumption of natural gas caused by a new pipeline.<sup>23</sup>

The fact that individual states and other federal agencies may consider, and even regulate, some of the environmental impacts from the pipeline, does not limit the Commission's responsibility to consider these impacts when evaluating the public interest.<sup>24</sup> Indeed, the certificate process is replete with overlapping jurisdiction:

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<sup>23</sup> The Court has explained that the NGA's purposes are multi-faceted. *See NAACP v. FPC*, 425 U.S. 662, 670 & n.6 (1976) (noting that, in addition to "encourag[ing] the orderly development of plentiful supplies of electricity and natural gas at reasonable prices," the Commission has the authority to consider "conservation, environmental, and antitrust" concerns as relevant to the Commission's statutory authority). Congress' instruction that the Commission consider "the public convenience and necessity" is plenty broad enough to permit the Commission to balance these different purposes when exercising its statutory authority under the NGA. *Cf. Atl. Ref. Co. v. Pub. Serv. Comm'n*, 360 U.S. 378, 391 (1959) (holding that NGA section 7 requires the Commission to consider "all factors bearing on the public interest").

<sup>24</sup> The order appears to suggest that the allocation of jurisdiction in NGA section 1(b) implies a limit on the Commission's authority, or even its ability, to consider environmental effects under the NGA. That provision does no such thing. In considering the reasonably foreseeable consequences of its certification decisions, the Commission is not regulating, much less directly regulating, areas reserved for exclusive state jurisdiction. Although the Commission's evaluation of the public interest could,

numerous federal and state agencies consider a pipeline's impact on natural resources under parallel and complementary statutes, including potential effects on endangered species, air quality, water bodies, and wetlands. Rather than indicating a problem with or a limit on the Commission's authority, these overlapping interests merely reflect the broad scope of the Commission's authority to evaluate the public interest and the sweeping impacts that a pipeline can have on the environment, communities, and individuals.

\* \* \*

Today's order, following the Commission's recent order in *Sabal Trail*,<sup>25</sup> represents another step toward drastically limiting the Commission's consideration of climate change in the section 7 certification process. As I have explained, the Commission's consideration of climate change falls short of our statutory responsibilities under NEPA and the NGA. To be clear, I am not suggesting that the Commission should issue no new section 7 certificates. Pipeline facilities may have benefits that outweigh their costs. What I am arguing is that, as a result of the Commission's new policy, we frequently will not know whether the benefits outweigh the costs because the Commission is not asking enough questions or doing enough analysis.

For these reasons, I respectfully dissent.

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Richard Glick  
Commissioner

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theoretically, affect matters subject to state jurisdiction, as long as the Commission is acting pursuant to its statutory authority and not directly regulating matters subject to state jurisdiction, the Commission will “not run afoul of [the NGA's jurisdiction limitations] just because it affects—even substantially—the” matters left for the states to decide. *FERC v. Elec. Power Supply Ass'n*, 136 S. Ct. 760, 776 (2016), as revised (Jan. 28, 2016); *Hughes v. Talen Energy Mktg., LLC*, 136 S. Ct. 1288, 1292 (2016); *see also FPC v. Transcontinental Gas Pipe Line Corp.*, 365 U.S. 1, 30–31 (1961) (recognizing the Commission's authority to consider the impact of air pollution from industrial boilers under NGA section 7).

<sup>25</sup> *Fla. Se. Connection, LLC*, 162 FERC ¶ 61,233.

People's Dossier: FERC's Abuses of Power and Law  
→ Climate Change & Drilling Impacts Ignored

**Climate Change & Drilling Impacts Ignored**  
**Attachment 4**, Statement of Commissioner Cheryl A.  
LaFleur on Dominion Transmission, Inc., FERC Docket  
No. CP14-497-001, May 18, 2018.



# STATEMENT

## Statement of Commissioner Cheryl A. LaFleur on Dominion Transmission, Inc.

Date: May 18, 2018

Docket No.: CP14-497-001

"Today's order denies rehearing of the order on Dominion's New Market Project. I supported our original authorization of this project because I believed that the project was in the public interest. I write separately to comment on the policy change announced in this order limiting the Commission's review and disclosure of upstream and downstream greenhouse gas (GHG) impacts as part of our responsibilities under the National Environmental Policy Act (NEPA) and the Natural Gas Act (NGA). I am particularly troubled that this policy shift is occurring a few weeks after we initiated a generic proceeding to look broadly at the Commission's pipeline review, and more specifically at the Commission's current policy regarding consideration of upstream and downstream impacts.<sup>1</sup> If not for this policy shift that has little bearing on the record developed in this case, I would support today's order as I continue to believe that this project is in the public interest. However, for the reasons set forth below, I am dissenting in part.

"As I have said repeatedly, deciding whether a project is in the public interest requires a careful balancing of the economic need for the project and all of its environmental impacts.<sup>2</sup> Climate change impacts of GHG emissions are environmental effects of a project and are part of my public interest determination.

"Since late 2016, the Commission has included increasing amounts of information on upstream and downstream GHG emissions in our pipeline orders. Initially, the Commission estimated downstream GHG emissions by assuming the full combustion of the total volume of gas being transported by the project. This downstream information was included in certificate orders in instances when a project's environmental impact statement (EIS) or environmental assessment (EA) was already finalized without that information, and in later cases was both detailed in NEPA documents and discussed in orders.<sup>3</sup> The Commission placed caveats on the information and analysis, stating generally that the downstream impacts do not meet the definition of an indirect impact and are not mandated as part of the

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<sup>1</sup> *Certification of New Interstate Natural Gas Facilities*, Notice of Inquiry, 163 FERC ¶ 61,042 (2018).

<sup>2</sup> See, e.g., *Atlantic Coast Pipeline, LLC*, 161 FERC ¶ 61,042 (2017) (LaFleur, Comm'r, dissenting).

<sup>3</sup> Recent Commission orders include the full-burn calculation. E.g., *Columbia Gas Transmission, LLC*, 158 FERC ¶ 61,046, at P 120 (2017); *Algonquin Gas Transmission, LLC*, 158 FERC ¶ 61,061, at P 121 (2017); *Rover Pipeline LLC*, 158 FERC ¶ 61,109, at P 274 (2017); *Tennessee Gas Pipeline Co., L.L.C.*, 158 FERC ¶ 61,110, at P 104 (2017); *Nat'l Fuel Gas Supply Corp.*, 158 FERC ¶ 61,145, at P 189 (2017); *Dominion Carolina Gas Transmission, LLC*, 158 FERC ¶ 61,126, at P 81 (2017); *Nexus Gas Transmission, LLC*, 160 FERC ¶ 61,022, at P 173 (2017); *Atlantic Coast Pipeline, LLC*, 161 FERC ¶ 61,042, at P 298 (2017); *Millennium Pipeline Co., L.L.C.*, 161 FERC ¶ 61,229, at P 164 (2017); *Penneast Pipeline Co., LLC*, 162 FERC ¶ 61,053, at P 208 (2018); *Florida Southeast. Connection, LLC*, 162 FERC ¶ 61,233, at P 22 (2018); and *DTE Midstream Appalachia, LLC*, 162 FERC ¶ 61,238, at P 56 (2018).



# STATEMENT

Commission's NEPA review.<sup>4</sup> The Commission nonetheless made a full-burn calculation to determine an upper-bound GHG emissions amount, unless it had specific information to calculate net and gross GHG emissions.

"With respect to upstream impacts, the Commission has relied on recent DOE studies<sup>5</sup> to provide generic estimates of impacts associated with upstream natural gas production, including production related GHG emissions.<sup>6</sup> Commission orders that contained this generic upstream information acknowledged the limitations of providing such data since we did not have more detailed information like the number, location, and timing of the wells, roads, and gathering lines as well as details about production methods.

"The landscape changed in 2017 when the United States Court of Appeals for the District of Columbia Circuit in *Sabal Trail* found that the downstream GHG emissions that result from burning the natural gas transported by the Commission authorized SMP Project are an indirect impact of the project.<sup>7</sup> This decision clearly signaled that the Commission should be doing more as part of its environmental reviews.

"Today, however, the majority has changed the Commission's approach for environmental reviews to do the exact opposite. Rather than taking a broader look at upstream and downstream impacts, the majority has decided as a matter of policy to remove, in most instances, any consideration of upstream or downstream impacts associated with a proposed project. The majority's reasoning for excluding the information and calculations is generally that it is inherently speculative and does not meaningfully inform the Commission's project-specific review. I disagree.

"Prior to *Sabal Trail*, I strongly supported the Commission's efforts to disclose upstream and downstream information in response to increased concerns cited in our dockets regarding the climate change impacts associated with pipeline infrastructure. As I said in my dissent from the *Sabal Trail* remand order, I believe that, given *Sabal Trail*'s finding that downstream GHGs in that case were indirect impacts, the Commission must now quantify and consider those impacts as part of its NEPA review.<sup>8</sup>

More broadly, pipelines are driving the throughput of natural gas, connecting increased upstream resources to downstream consumption. With respect to downstream impacts, I believe it is reasonably foreseeable, in the vast

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<sup>4</sup> See, e.g., *Columbia Gas Transmission, LLC*, 158 FERC ¶ 61,046, at P 116 (2017).

<sup>5</sup> Dep't of Energy and Nat'l Energy Tech. Laboratory, *Life Cycle Analysis of Natural Gas Extraction and Power Generation*, DOE/NETL-2015/1714 (Aug. 30, 2016) (2016 DOE/NETL Study); U.S. Energy Info. Admin., *The Growth of U.S. Natural Gas: An Uncertain Outlook for U.S. and World Supply* (June 15, 2015), <http://www.eia.gov/conference/2015/pdf/presentations/staub.pdf>; Dep't of Energy and Nat'l Energy Tech. Laboratory, *Environmental Impacts of Unconventional Natural Gas Development and Production*, DOE/NETL-2014/1651, (May 29, 2014) (2014 DOE/NETL Study).

<sup>6</sup> Recent Commission orders used the DOE studies to identify potential environmental impacts associated with unconventional natural gas production related to the proposed project. E.g., *NEXUS Gas Transmission, LLC*, 160 FERC ¶ 61,022 (2017); *National Fuel Gas Supply Corporation*, 158 FERC ¶ 61,145 (2017); *Tennessee Gas Pipeline Company, LLC*, 158 FERC ¶ 61,110 (2017); *Rover Pipeline LLC*, 158 FERC ¶ 61,109 (2017); *Algonquin Gas Transmission, LLC*, 158 FERC ¶ 61,061 (2017); and *Columbia Gas Transmission, LLC*, 158 FERC ¶ 61,046 (2017).

<sup>7</sup> *Sierra Club v. FERC*, 867 F.3d 1357, 1374 (D.C. Cir. 2017) (*Sabal Trail*).

<sup>8</sup> *Florida Southeast Connection, LLC*, 162 FERC ¶ 61,233 (2018) (LaFleur, Comm'r, *dissenting in part*).



# STATEMENT

majority of cases, that the gas being transported by pipelines we authorize will be burned for electric generation or residential, commercial, or industrial end uses. In those circumstances, there is a reasonably close causal relationship between the Commission's action to authorize a pipeline project that will transport gas and the downstream GHG emissions that result from burning the transported gas. We simply cannot ignore the environmental impacts associated with those downstream emissions. Yet, that is precisely what the majority is choosing to do with its new policy regarding downstream impacts.

"I agree that an identified end-use would enable the Commission to more accurately assess downstream GHG emissions by calculating gross and net GHG emissions as we did in *Sabal Trail*.<sup>9</sup> However, I reject the view that if a specified end-use is not discernible, we should simply ignore such environmental impacts.<sup>10</sup> In that case, we should disclose what we can, such as a full-burn calculation of GHG emissions.

"While the majority attempts to distinguish *Mid States Coalition for Progress v. Surface Transportation Board*<sup>11</sup> to justify its new approach regarding consideration of upstream and downstream impacts, I believe that the majority misapplies *Mid States*, which in fact supports my view. In *Mid States*, the Court considered whether the Surface Transportation Board performed a sufficient environmental review associated with the construction of rail lines intended to transport coal. The Court concluded that the Surface Transportation Board erred by failing to consider the downstream impacts of the burning of transported coal. Even though the record lacked specificity regarding the extent to which transported coal would be burned, the Court concluded that the nature of the impact was clear. Similarly, I believe we simply cannot ignore the downstream GHG emissions associated with the burning of natural gas, even in those circumstances where the record is incomplete regarding a specific end-use.<sup>12</sup>

"As the majority correctly notes, in *Mid States* the Court's primary basis for requiring the Surface Transportation Board to consider downstream emissions associated with the rail lines was that the Surface Transportation Board had concluded that the rail lines would increase coal production and usage. While the Commission has historically not found that new pipeline infrastructure increases production and/or consumption, if the facts present themselves, there is nothing preventing the Commission from doing so. The majority's reasoning becomes somewhat circular here, as they are essentially arguing that we are not obligated to consider upstream and downstream impacts because there is a lack of causation and reasonable foreseeability of the effects. However, a key reason the Commission lacks the

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<sup>9</sup> See *Sabal Trail* Supplemental Environmental Impact Statement (SEIS) at 4-5. Commission staff quantified the gross, net, and full burn of downstream GHG emissions. The gross total represents the expected use of the downstream power plant facilities. The net total includes the gross total minus the offset from coal-fired generating facility retirements. The full burn estimate is the calculation of the complete combustion of the total pipeline capacity.

<sup>10</sup> 40 C.F.R. § 1502.22 (2017) (explaining what an agency shall include in an EIS when there is incomplete or unavailable information relevant to reasonably foreseeable significant adverse impacts).

<sup>11</sup> 345 F.3d 520, 549 (8th Cir. 2003) (*Mid States*). I recognize that I have voted for past orders that distinguish *Mid States* in order to justify limiting the Commission's NEPA responsibilities. Upon further reflection, and after *Sabal Trail*, I believe my views articulated above are a better reading of *Mid States*.

<sup>12</sup> *Id.*



# STATEMENT

specificity of information to determine causation and reasonable foreseeability is because we have not asked applicants to provide this sort of detail in their pipeline applications.<sup>13</sup>

"The majority states that if upstream and downstream effects are not indirect or cumulative as contemplated by CEQ's regulations, then they are not environmental effects of the proposed project, and thus the Commission is not required to consider them under NEPA's hard look or the NGA's public interest standard. I disagree. I consider the downstream information relevant to our public interest determination under the NGA.<sup>14</sup> NEPA does not circumscribe the public interest standard under the NGA. Even assuming that the majority is correctly interpreting the Commission's NEPA responsibilities, I believe the Commission has broad discretion in considering factors bearing on our public interest determination.

"As for the majority's announcement of a change in policy on upstream impacts, I also do not support the decision to simply exclude all generic upstream information by deeming this information as irrelevant. While it is less clear that upstream effects are caused by the pipeline, I would respond to upstream GHG comments by disclosing whatever data we have using the best available information, such as the DOE studies cited in past orders.

"At a time when we are grappling with increasing concern regarding the climate impacts of pipeline infrastructure projects, the Commission should not change its policy on upstream and downstream impacts to provide less information and be less responsive. Rather, I believe the Commission should proactively seek and disclose in pipeline proceedings more information regarding both upstream production and downstream end-use. I hope that the ongoing generic inquiry on the Certificate Policy Statement will provide an opportunity for additional consideration of what information the Commission should require in its pipeline applications and how it should factor into our analysis. In this way, we can work to ensure that our environmental reviews and public interest determinations, including consideration of climate change impacts, are robust and complete.

"For all of these reasons, I respectfully dissent in part."

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<sup>13</sup> I note that some of the questions in the notice of inquiry on pipeline review ask commenters to weigh in on the types of information the Commission should seek as part of its pipeline review process. I am hopeful we will have more information included in the record to consider when reviewing a project proposal.

<sup>14</sup> See *NAACP v. FPC*, 425 U.S. 662, 670 & n.6 (1976) (noting that, in addition to "encourag[ing] the orderly development of plentiful supplies of electricity and natural gas at reasonable prices," the Commission has the authority to consider "conservation, environmental, and antitrust" concerns as relevant to the Commission's statutory authority").

**People's Dossier: FERC's Abuses of Power and Law  
→ Climate Change & Drilling Impacts Ignored**

**Climate Change & Drilling Impacts Ignored**  
**Attachment 5, U.S. EPA Detailed Comments on the**  
**DEIS for the Leach Xpress Pipeline and Rayne Xpress**  
**Expansion Project, June 13, 2016.**



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY**

REGION 5  
77 WEST JACKSON BOULEVARD  
CHICAGO, IL 60604-3590

**JUN 13 2016**

**FILED  
SECRETARY OF THE  
COMMISSION**

**2016 JUN 17 P 2:36**

REPLY TO THE ATTENTION OF **FELISA J. GIBSON**  
E-19 **REGULATORY COMMISSION**

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First St., N.E., Room 1A  
Washington, DC 20426

**ORIGINAL**

Re: FERC Draft Environmental Impact Statement (DEIS) for the Columbia Gas Transmission – Leach Xpress Pipeline Project and Columbia Gulf Transmission – Rayne Xpress Expansion Project, (FERC Docket Nos. CP15-514-000, CP15-539-000, Respectively) (CEQ No. 20160089)

Dear Ms. Bose:

In accordance with our responsibilities under Section 309 of the Clean Air Act, the National Environmental Policy Act (NEPA), and the Council on Environmental Quality (CEQ) regulations for implementing NEPA, the United States Environmental Protection Agency (EPA) has completed its review of the Federal Energy Regulatory Commission's (FERC) draft environmental impact statement (DEIS) for the Leach Xpress Pipeline (LX) and Rayne Xpress Expansion (RXE) Projects (Projects), proposed by Columbia Gas Transmission (Columbia Gas) and Columbia Gulf Transmission (Columbia Gulf) (Projects Proponents), respectively.

Projects Proponents request FERC authorization to construct, abandon in-place, replace, and/or operate certain interstate natural gas pipeline facilities in Ohio, Pennsylvania, West Virginia, and Kentucky. Columbia Gas proposes to transport/deliver “about” 1.5 million dekatherms (Dth/d) of natural gas per day of firm transportation service to natural gas consumers served by Columbia Gas pipeline systems. Columbia Gulf requests authorization to add new compression and provide 621 dekatherms per day of firm transportation on Columbia Gulf's system.

EPA has rated the DEIS EC-2 Environmental Concerns, Insufficient Information. The EC-2 rating indicates that we have concerns that the document does not contain enough information to fully assess the environmental impacts that should be avoided in order to fully protect the environment. EPA has identified several potential reasonably available alternatives which might reduce the environmental impacts of the action. See the enclosed Summary of Rating Definitions for a detailed explanations of EPA's ratings.

EPA concerns are primarily due to insufficient information regarding: 1) identification and evaluation of alternatives, 2) avoidance of and minimization of impacts to streams and wetlands, 3) impacts to upland forest, core forest and associated wildlife, 3) identification of environmental justice populations, 4) potential noise impacts on noise-sensitive areas (NSAs), such as residences, 5) greenhouse gas emissions and climate change, and 6) mitigation. In addition, the

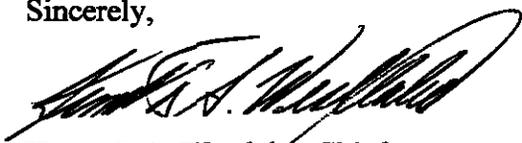
DEIS does not include: 1) a wetland/stream mitigation plan, 2) upland/core forest mitigation plan, nor 3) Columbia Gas's and Columbia Gulf's emergency response plans. Enclosed are our detailed comments, which include recommendations for additional information to include in the Final EIS (FEIS). These comments are consolidated from reviews done by EPA regional offices that cover the affected states.

When FERC submits the FEIS to EPA headquarters, also send paper copies and CDs of the Final EIS to EPA Regional Offices as follows:

- EPA Region 5 (Chicago): one (1) paper copy and three (3) sets of CDs,
- EPA Region 4 (Atlanta): one (1) set of CDs, and
- EPA Region 3 (Philadelphia): one (1) set of CDs.

If you or your staff have any questions or concerns, I can be reached at 312-886-2910, or contact Virginia Laszewski of my staff at [laszewski.virginia@epa.gov](mailto:laszewski.virginia@epa.gov) or 312-886-7501.

Sincerely,



Kenneth A. Westlake, Chief  
NEPA Implementation Section  
Office of Enforcement and Compliance Assurance

Enclosures: Summary of Rating Definitions  
EPA Detailed Comments

Cc (email): Federal Energy Regulatory Commission, Juan Polit, Environmental Project Manager, [juan.polit@ferc.gov](mailto:juan.polit@ferc.gov)  
U.S. Army Corps of Engineers, Michael Hatten, Chief, Energy Resources, Huntington District, [Michael.E.Hatten@usace.army.mil](mailto:Michael.E.Hatten@usace.army.mil)  
U.S. Army Corps of Engineers, Scott Hans, Chief Regulatory, Pittsburgh District, [Scott.A.Hans@usace.army.mil](mailto:Scott.A.Hans@usace.army.mil)  
U.S. Fish and Wildlife Service, Lynn Lewis, Assistant Regional Director, Midwest Region Ecological Services, Bloomington, MN [Lynn\\_Lewis@fws.gov](mailto:Lynn_Lewis@fws.gov)  
U.S. Fish and Wildlife Service Deborah Rocque, Deputy Regional Director, Northeast Region Ecological Services, Hadley, MA, [deborah\\_rocque@fws.com](mailto:deborah_rocque@fws.com)  
US Fish and Wildlife Service, Region 4 Southeast, Atlanta, GA, Cindy Dohner, [cindy\\_dohner@fws.com](mailto:cindy_dohner@fws.com)  
U.S. Fish and Wildlife Service Region 3, Angela Boyer, Endangered Species Coordinator, Ohio Field Office, [angela\\_boyer@fws.gov](mailto:angela_boyer@fws.gov)  
U.S. Fish and Wildlife Service, Lora Zimmerman, Project Leader/Supervisor, Pennsylvania Ecological Services Field Office, [lora\\_zimmerman@fws.gov](mailto:lora_zimmerman@fws.gov)  
U.S. Fish and Wildlife Service, West Virginia Field Office, John Schmidt, Project Leader, [John\\_Schmidt@fws.gov](mailto:John_Schmidt@fws.gov)  
U.S. Fish and Wildlife Service, Kentucky Field Office, Field Supervisor, Lee Andrews, [Lee\\_Andrews@fws.gov](mailto:Lee_Andrews@fws.gov)

## **\*SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION\***

### **Environmental Impact of the Action**

#### **LO-Lack of Objections**

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

#### **EC-Environmental Concerns**

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

#### **EO-Environmental Objections**

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

#### **EU-Environmentally Unsatisfactory**

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the CEQ.

### **Adequacy of the Impact Statement**

#### **Category 1-Adequate**

The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

#### **Category 2-Insufficient Information**

The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

#### **Category 3-Inadequate**

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

\*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment

**U. S. EPA DETAILED COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE LEACH XPRESS PIPELINE (LX) PROJECT AND RAYNE EXPRESS EXPANSION (RXE) PROJECT, MICHIGAN, OHIO, PENNSYLVANIA, WEST VIRGINIA, KENTUCKY, APRIL 6, 2016 (CEQ NO. 20160089)**

Columbia Gas Transmission (Columbia Gas and Columbia Gulf Transmission (Columbia Gulf) (Projects Proponents) propose to construct and operate the following natural gas facilities/components (Projects):

- Columbia Gas – Leach Xpress Pipeline (LX): 133 miles of new 30- and 36-inch-diameter natural gas pipeline, 27 miles of 36-inch-diameter looping pipeline, 28 miles of 20-inch-diameter pipeline to be abandoned in place, 3 new compressor stations, and appurtenant facilities including 3 existing compressor station modifications, 4 new and 1 modified regulator stations, 13 pig launcher and receiver facilities, 9 mainline valves and 4 odorization facilities in Ohio, West Virginia and Pennsylvania; and
- Columbia Gulf – Rayne Xpress Expansion (RXE): two new compressor stations, and modify an existing measurement and regulation station in Kentucky.

The majority of the following comments follow the numbered topic order as presented in the Draft Environmental Impact Statement (DEIS).

### **Executive Summary**

#### **Proposed Action (Page ES-1)**

**Recommendation:** EPA recommends the Executive Summary include a more detailed description of the Leach Xpress Pipeline (LX) Project. We recommend the summary include the lengths of pipeline construction and abandonment.

#### **Vegetation, Wildlife, Fisheries, and Federally Listed and State-Sensitive Species (Pages ES-6 and ES-7)**

The DEIS (Page ES-7) states: “*WVDEP recommended that water withdrawn from the Ohio River either be discharged back into the Ohio River or be treated with a WVDEP-recommended biocide prior to discharge.*” Water discharged from hydrostatic testing should not be treated with certain biocides and could impact fish and aquatic vegetation.

**Recommendation:** We recommend the FEIS clarify whether a biocide will be used for hydrostatic testing. If a biocide will be used, then further describe it in Section 2.3.1.7, in the Hydrostatic Testing process.

### **1.0 Introduction**

#### **1.1 Project Purpose and Need (Page 1.2)**

The description of the project purpose is based on the information provided by the Project Proponents, Columbia Gas and Columbia Gulf. The purpose is to transport natural gas to meet market demand. Specific dekatherm capacities are provided, although it is unclear how these

units were determined or generated. In the absence of this type of supporting documentation, it is unclear if the stated purpose and need is too narrow, thereby limiting the available range of alternatives.

**Recommendation:** EPA suggests that a broader purpose and need statement be developed which would allow for a broader range of alternatives to be considered in the EIS.

Binding precedent agreements support the LX Project and Rayne Express Expansion (RXE) Project, which are able to be terminated if certain conditions are not met, including regulatory approvals.

**Recommendation:** Please clarify if these agreements are duplicative of other agreements entered into by the Project Proponents for other pipeline projects in this region.

### 1.2 Purpose and Scope of the EIS (Pages 1-2 and 1-3)

The purpose and scope of the EIS includes describing and evaluating reasonable alternatives that would avoid or have substantially less adverse effects on the environment while still meeting project objectives.

**Recommendation:** EPA recommends expanding the alternatives analysis and consider our recommendations regarding alternatives below under “Alternatives.”

### 1.4 Non-Jurisdictional Facilities (Pages 1-11 - 1-13)

The DEIS (Page 1-11) states: “*Non-jurisdictional facilities necessary to operate the LX Project are anticipated to include two new Point of Receipt (POR) facilities located near Majorsville, West Virginia and Clarington, Ohio, as well as the addition of new power supplies and other utilities at the new compressor stations [CS] and new regulator stations (RS). . . . Non-jurisdictional facilities necessary to operate the RXE Project are limited to the addition of new power and water supply at the Grayson CS and Means CS.*”

The DEIS (Page 1-13) states: “*Though construction of the non-jurisdictional electrical facilities may overlap with the construction of the projects, construction of these facilities would result in negligible environmental impacts due to sufficient extension of the existing power service to the proposed facilities; therefore, these facilities are not included in the cumulative impacts analysis in section 4.13.*” The DEIS does not include the supporting analysis and documentation that demonstrates these facilities would result in negligible environmental impacts.

**Recommendations:** EPA recommends the impacts associated with the construction and operation of the new electrical facilities necessary to supply power to operate the LX and RXE Projects be evaluated in the EIS. Explain how connection locations and sources were determined. At a minimum, EPA suggests that these impacts be evaluated under the cumulative impact analysis.

### 1.5 Permits, Approvals, Consultations, and Regulatory Review (Pages 1-13 – 1-17)

Table 1.5-2 (Page 1-17), covers applicable major permits, licenses, authorizations, and clearances for the RXE Project. For the Kentucky area, the Clean Water Act Section 401 Water Quality

Certification, the status column shows the anticipated submittal as August 2015. We were unable to locate the certification or any information that such permit has been pursued.

**Recommendation:** EPA highly recommends that the Project Proponents contact Quality Certification Section of the Kentucky Division of Water prior to the submission of the application. The State of Kentucky has guidelines for stream relocation/mitigation.

## **2.0 Projects Description**

### **2.1 Proposed Facilities**

#### **2.1.2.1 New Aboveground Facilities (Pages 2-5 to 2.10)**

*Table 2.1.2-1 Above Ground Facilities for the LX Project, and*

*Table 2.1.2-2 Above Ground Facilities for the RXE Project*

**Recommendation:** Include acres associated with each aboveground facility in Tables 2.1.2-1 and Table 2.1.2-2.

#### **2.3.2 Special Construction Techniques (Pages 2-23 – 2-30)**

##### **2.3.2.6 Road Crossings (Page 2-29)**

**Recommendation:** We recommend Section 2.3.2.6 of the FEIS discuss the number of roads that will be crossed, the amount of material that will be waste, how waste will be shipped out, and if any of the road material will be recycled.

## **2.6 Operation, Maintenance, and Safety Controls (Pages 2-34 – 2-35)**

### **2.6.1 Permanent Safety Controls (Page 2-34)**

**Recommendation:** We recommend Section 2.6.1 of the FEIS discuss how long the permanent erosion controls will be maintained and the frequency of maintenance. Sedimentation from erosion has a large impact on surface water; these controls have the ability to reduce these long term impacts.

## **3.0 Alternatives (Pages 3-1 – 3-18)**

The DEIS (Page 3-1) states: *“It is important to note that not all conceivable alternatives are technically feasible or practical. Some alternatives may be incapable of being implemented due to limits on existing technologies, constraints of system capacities, or logistical considerations, while others may be impractical because sites are unavailable or cannot be developed for the proposed use.”* EPA agrees; however, it is still necessary for the alternatives analysis to present the alternatives considered as well as the rationale for each alternative’s dismissal from further consideration.

**Recommendation:** Please include the various alternatives to the proposed action that may have been considered but were dismissed from further consideration, including alternatives that were considered but dismissed during FERC’s pre-filing process. Provide the rationale for those alternatives dismissed from further consideration.

The DEIS (Page 3-1) continues: *“Additionally, it is necessary to recognize the environmental advantages and disadvantages of the proposed action in order to focus the analysis on reasonable alternatives with the potential to provide a significant environmental advantage over the LX and RXE Projects.”*

**Recommendations:**

- Clarify how the potential to provide a significant environmental advantage is determined and if this determination is made within the context of the NEPA document.
- State/explain why it is assumed that significant environmental advantages over the proposed action do not occur.
- Present the differences in impacts between alternatives, particularly for alternatives that may have similar impacts, alongside those of the applicant’s proposed/preferred alternative’s impacts.
- Include, if applicable, an expanded alternatives analysis of additional alternatives that may have been prematurely dismissed from consideration.
- We suggest that the distinction be made between route modifications made during the FERS’s pre-filing process and alternatives which go beyond modifications at the landowner level and may be at the landscape scale or system scale.
- Please clarify how the start and end point locations for the proposed project were determined. Consider if system alternatives that utilize different start or end points may meet the project purpose and need.
- If screening criteria were used in evaluating the system alternatives present, please detail those in the FEIS.
- If different screening criteria were used to evaluate different system alternatives, please clarify these discrepancies.

**3.2 System Alternatives (Pages 3-2 - 3-6)**

**3.2.1.2 Expansion of Existing Pipeline System (Pages 3-3 – 3-5)**

An expansion of Columbia’s existing T- and SM-80 systems is mentioned in Section 3.2.1.2. It appears to be the only system alternative identified. It is not clear why the T- and SM-80 systems were specifically identified for possible expansion.

**Recommendations:** We recommend the FEIS clarify how and why the T- and SM-80 systems were identified for consideration as a possible LX system alternative. We also recommend the FEIS identify whether other systems were also considered. Please provide a map that clearly shows the location of the T- and SM-80 systems, Line BM-111 and the R-System. Describe the existing diameter, lengths, etc. of these lines/systems.

DEIS Page 3-5 notes that additional compression would be required for the T- and SM-80 expansion alternative, including 12,600 horsepower (hp) expansion of the Smithfield Compressor Station (CS), 20,200 hp at the Clendenin CS, an unspecified amount at the Crawford CS, and 14,100 of new compression along the R-System.

**Recommendation:** Please include the amount of compression needed at the Crawford CS.

The DEIS (Page 3-5) states that the T- and SM-80 expansion system alternative would be 148.5 miles longer than the proposed route and increase land disturbance. However, expansions of existing facilities may require less additional land disturbance to add hp, and other associated connecting infrastructure than the proposed project.

**Recommendations:** Please clarify the length of pipeline looping that is included in the T- and SM-80 expansion alternative, as well as the percentage of the route that is greenfield, percentage collocated, and percentage that occurs on/within existing pipeline right of way. Clarify whether these estimates are based on efforts to avoid and minimize adverse impacts, as was done for the proposed/preferred alternative.

#### Potential Additional Viable Alternatives

There may be viable alternatives to the applicant's proposed/preferred alternative that have not been considered, evaluated or presented in the LX and RXE DEIS. For example, the applicant has other pipeline projects in the same area that are under FERC consideration. One of these projects is the Mountaineer Xpress Pipeline (MXP), which connects to LX. The recently released final Resource Reports for MXP include several systems and legacy alternatives.

**Recommendations:** Include relevant portions of the analysis presented in MXP Resource Report 10 Alternatives (RR10) in the LX alternatives analysis. Identify, consider and include other similar legacy alternatives specific to LX.

The MXP RR10 also presents an LX alternative and a MXP without LX alternative. It appears that if LX was not constructed, only 26 miles and 25,000 hp would need to be constructed in addition to the proposed MXP. It is unclear why or if the applicant has dismissed this alternative as unviable. All viable alternatives should be evaluated, particularly if there is the potential to drastically reduce the combined adverse impacts of MXP and LX.

**Recommendations:** These additional alternatives should also be included and presented in the EIS for LX. In particular, the MXP without LX alternative should be further evaluated in the EIS.

### **3.3 Major Route Alternatives and Minor Route Alternatives (Pages 3-6 – 3-10)**

#### **3.3.1 Major Route Alternatives**

##### **3.3.1.1 Alternative 1, and 3.3.1.2 Alternative 2 (Pages 3-8 – 3-10)**

**Recommendations:** We recommend that the FEIS include maps that depict the route alternatives, including the proposed alternative, in relation to the resources impacted. This will help the reader better understand the impacts and why the proposed/preferred alternative was chosen.

### **3.4 Above-ground Facility Alternatives (Pages 3-17 – 3-18)**

**Recommendations:**

- Identify the siting criteria used for aboveground facilities, including compressor stations.
- Include a map of the alternate aboveground facility locations that were considered.
- Explain how the evaluation of aerial photography, mapping, and field work mentioned on Page 3-17 informed the above-ground facility alternative analysis.
- Please provide additional information on the alternatives evaluation process.
- Identify and consider alternate locations for compressor stations beyond those included in the proposed action.
- Provide the rationale for each alternative site dismissed from further consideration.
- Explain how the amount of horsepower needed at each compressor station was determined, as well as how the spacing and distribution of stations along the proposed route was determined.

The DEIS (Page 3-18) discloses that the locations of the Lone Oak and Summerfield CSs and other associated infrastructure are environmentally preferable based on the conclusion that they would not result in any significant environmental impact and due to the lack of comments requesting for the stations to be relocated.

**Recommendation:** The lack of comments or concerns about station locations during FERC's pre-filing process does not eliminate the separate need for a fair alternatives analysis for above-ground facilities to take place. We recommend that an alternatives analysis for above-ground facilities, including compressor stations, be conducted and included in the FEIS.

Limited environmental information is presented in the brief discussion on the Oak Hill CS and alternative locations. It is unclear if alternate locations are viable alternatives. In addition, it is not clear why the Oak Hill CS locations were dismissed from consideration. It is stated that the alternative sites do not offer a significant environmental advantage.

**Recommendations:** Based on the information presented, we recommend that further consideration of the compressor station locations be evaluated and included in the FEIS. Please provide a map of the compressor station alternative locations that were considered for the Oak Hill CS.

#### **4.0 Environmental Impact Analysis (Pages 4-1 – 4-208)**

##### **4.1 Geology**

##### **4.1.1 Existing Resources**

##### **4.1.1.1 Geologic Setting**

*The DEIS (Page 4-1) states: "The USDA Soil Conservation Survey (SCS) County soil survey information indicates there are restrictive layers (potentially shallow bedrock) within the upper five feet of the ground surface at both CS locations (USDA SCS, 1974 and 1983)."*

**Recommendation:** EPA recommends the FEIS identify the specific construction measures that will be taken when shallow bedrock is encountered. For example, special consideration

should be given when discharging water or rerouting runoff due to the reduction of infiltration by this type of bedrock.

#### **4.1.1.2 Mineral Resources (Page 4-3)**

There is no description or evidence in the body of the DEIS that document the conclusions on mining and impacts stated in the report. It will help the reader better understand the conclusions if there were graphs and descriptions of how close the mines (past, present and future) are or will be located to the above ground facilities (e.g., compressor stations) and the pipelines of the Projects.

**Recommendation:** EPA recommends the FEIS provide a short description of the types of mines in the LX and RXE project areas that addresses how: 1) construction of the two Projects will affect the mines in close proximity, and 2) how the mines in close proximity will be affected by project construction.

#### **4.1.1.3 Geologic Hazards (Page 4-5 – 4-9)**

##### **Seismicity (Pages 4-5 – 4-6)**

The DEIS does not describe how certain seismic quakes will impact the Projects.

**Recommendation:** We recommend the FEIS: 1) discuss the hazardous scale for earthquakes, 2) identify the scale number that will impact the pipeline and/or above ground facilities, 3) identify the earthquakes (within the scale of impact) that have occurred in the last two decades in the Projects' area, and 4) identify the pipelines in the area that have been impacted by earthquakes.

##### **Landslides (Pages 4-6 – 4-8)**

The DEIS does not disclose the amount of acres or linear feet the Projects intersect with areas identified on the USGS Landslide Overview Maps.

**Recommendation:** EPA recommends the FEIS disclose the amount of acres and linear feet (or miles, if applicable) of the proposed Projects that are located within the areas identified by the USGS Landslide Overview Maps. Include a map in the FEIS that depicts the location of the proposed Projects in relation to the steep slopes in the landslide hazard areas, and identify the specific mitigation for each landslide area.

#### **4.1.2 General Impacts and Mitigation (Pages 4-9 – 4-12)**

##### **4.1.2.2 Blasting and Rock Removal (Page 4-11)**

The DEIS briefly discusses mitigation measures and operating procedures of potential blasting for the project. A better level of detail into the blasting plan for the Projects is warranted.

**Recommendation:** We recommend the Projects' blasting plan be included in an FEIS appendix. We recommend the blasting plan provide maps, give details regarding potential locations for blasting, and identify all the safety measures that will be undertaken.

#### **4.2 Soils (Pages 4-13 – 4-20)**

##### **4.2.1.1 Erosion (Page 4-13)**

The DEIS (page 4-13) states: *"The majority of lands within each project areas has low or moderate erosion potential."* However, the DEIS does not provide supporting documentation to support this statement.

**Recommendation:** EPA recommends the FEIS include additional information to support the above statement. Suggested information would include map overlays of the project and the Natural Resources Conservation Service (NRCS) maps, field surveys, and maps showing where steep slopes are in the project area.

#### 4.2.1.5 Prime Farmland

**Recommendation:** We recommend this section of the FEIS mention if state agricultural agency information was included in calculating the number of historic farms or farms of statewide importance. Also, present the number of historic farms or farms of statewide importance affected by the project for each state (by county).

#### 4.2.1.6 Contaminated Soils (Page 4-15)

The DEIS (Page 4-15) states: *"Areas of contamination, including polychlorinated biphenyl (PCB), hydrocarbon, mercury, and heavy metals, were previously identified within the Ceredo CS, Crawford CS, Benton CS, and Sugar Grove Office Area (partially located within the LX Project area near LEX milepost 128.3 in Fairfield County, Ohio). Columbia Gas performed a comprehensive site-wide assessment and soil remediation to remove or contain the sources of contamination at the Benton CS and the Sugar Grove Office Area in 2002, as well as at the Ceredo CS (May through October 2012) and the Crawford CS (February through September 2012). Although response actions have been conducted to remove PCB contamination at these compressor station sites, some sources of PCBs have been encapsulated and left in-situ in accordance with the Toxic Substances Control Act (TSCA) of 1976."*

**Recommendations:** Actions by the Projects' proponents concerning PCBs should be included in the appendix of the FEIS. This should include a discussion/description of what the Projects' proponents have done to clean-up PCB's and provide the details of any remedy. Correspondence with regulatory agencies regarding these remediations should also be included. For the existing compressor stations that would be upgraded as part of the proposed Project, the FEIS should explain how the proposed upgrades will or won't impact the in-situ portions of PCBs.

Additionally, the DEIS (Page 4-14) states: *"In addition to the leaking underground storage tanks, an existing source of contamination was identified as the Rhall Transportation site. This source is located 0.8 mile from MP 0.8 on the BM-111 Loop, and was evaluated in 2009 for the presence of volatile organic compounds, semi-volatile organic compounds, metals and other contaminants (WVDEP, 2014; Ohio Department of Commerce, 2014, PADEP, 2015; EPA, 2015; EPA, 2014). Although no remediation activities have been completed at this site, it is also not located within the LX Project area."*

**Recommendation:** EPA recommends the FEIS provide information (or citation) that confirms the LX Project will not be affected by the contaminated Rhall Transportation

site. Provide a better description of type/s and location/s of contamination at the site, identify whether the contamination is downgradient of the proposed Project, and identify what the current actions for removal of the contamination are. Correspondence with regulatory agencies regarding these remediations should also be included.

### **4.3 Water Resources**

#### **4.3.1.5 Contaminated Groundwater (Pages 4-26 – 4-27)**

DEIS (Page 4-26) discloses there is one remaining leaking underground storage tank (LUST) site within the project area located within the workspace of Pipe Yard 36.

**Recommendation:** We recommend the FEIS describe this LUST site in more detail. Identify the mile post number closest to the LUST site, the state and county it is located in, and if any communication with the state environmental agencies or the landowner has been made.

#### **4.3.2 Surface Water Resources (Pages 4-29 – 4-45)**

##### **4.3.2.1 Existing Surface Water Resources**

The DEIS (Page 4-29) refers the reader to Appendix K-1 to garner information regarding the 1,083 waterbodies that would be crossed by the LX Project.

**Recommendations:** We recommend the FEIS include a discussion in Section 4.3.2.1 of the key information in Appendix K regarding the existing conditions of surface water in the Projects area. Also identify the specific measures that will be taken to protect surface water quality and quantity during project construction and operation. Identify whether or not a stream compensation plan is proposed for stream impacts that cannot be avoided or further minimized by using construction stream crossing best management practices (BMPs).

The DEIS is not clear if LX or RXE would require stream relocations.

**Recommendations:** We recommend the FEIS specifically identify whether there will be any stream relocations associated with construction of LX or RXE. If applicable, identify any areas that may no longer receive a stream's waters, discuss the consequences to resources in those areas and identify proposed mitigation, if applicable.

#### **4.3.2 Surface Water Resources (Pages 4-29 – 4-45)**

##### **4.3.2.2 Public Watersheds (Page 4-33)**

DEIS Section 4.3.2.2 addresses public water supplies, not watersheds.

**Recommendations:** We recommend Section 4.3.2.2 be re-titled to better identify the subject of discussion (i.e., public water supply). Add a section titled: "Watersheds" and provide figures/maps that clearly depict the major watersheds and the 8-digit hydrologic unit code (HUC) watershed and the proposed locations for the components of the LX and RXE Projects.

*Table 4.3.3-1 Watersheds Crossed by the LX Project (Pages 4-30 – 4-31)*

**Table 4.3.2-2 Waterbodies Affected by the RXE Project (Page 4-32)**

**Recommendation:** Watershed information for RXE is not included in either of the above tables. EPA recommends either Table 4.3.3-1 be re-titled and include watershed information for the RXE project, or Table 4.3.2-2 be re-titled and include RXE watershed information as well as the waterbodies information.

In addition, it appears that the DEIS does not include the source of the waterbody identification numbers (IDs) listed in Table 4.3.2-2. We were unsuccessful on locating/matching the stream waterbody IDs used by KY DEP or the USGS against the IDs used in the DEIS in order to attest stream classification.

**Recommendation:** We recommend the FEIS identify the source of the stream identification numbers in Table 4.3.2-2. Also, consider including the stream ID source information as a footnote in Table 4.3.2-2.

**4.3.2.4 Sensitive Waterbodies****Flood Hazard Zones (Pages 4-38 – 4-39)****Table 4.3.2-5 – Areas Within the 100-year Floodplain Crossed by the LX Project (Page 4-39)**

**Recommendations:** In order to get a better understanding of the amount and location of flood areas that the LX and RXE Projects will be located in, we recommend Table 4.3.2-5 be modified to include the number of acres within each designated area/segment as identified in the table by beginning and ending mile post numbers (MPs).

The increase of impervious area during construction and operation of the project will increase flooding potentially impacting areas surrounding the project.

**Recommendation:** EPA recommends the FEIS discuss how LX and RXE will reduce the potential for flooding areas surrounding the projects.

**DEIS (Page 4-38) states:** *“The Grayson CS associated with the RXE Project occurs within the 100-year floodplain, and the Means CS does not. Columbia Gas’ and Columbia Gulf’s ECSs outline measures to protect from flooding during construction, and all structures would be constructed in accordance with federal and state building codes.”*

**Recommendation:** The DEIS is not clear if flood proofing measures, such as elevation or dry flood-proofing, were considered for the Grayson compressor station’s long term operation. We recommend the FEIS identify whether such measures are being considered. FEMA offers excellent resources regarding flood mitigation at: <http://www.fema.gov>.

**4.3.2.6 Hydrostatic Testing (Pages 4-40 – 4-42)**

*“Columbia Gas proposes to withdraw approximately 42 million gallons of test water from four local surface waters for pipeline facilities and approximately 1 million gallons of test water from municipal and possible existing water sources for aboveground facilities, as depicted in table 4.3.2-6 and table 4.3.2-7. The RXE Project would use municipal sources for water withdrawals.*

*Columbia Gas and Columbia Gulf would be required to obtain permits from the municipalities for water use prior to withdrawing the water. These permits would confirm that the municipalities have required capacity to supply Columbia Gas with hydrostatic test waters.”*  
(Page 4-40)

**Recommendation:** We recommend the FEIS mention why hydrostatic testing is the preferred method of testing pressure and why other, non-resource intensive methods are not being proposed, such as pneumatic pressure testing.

The DEIS does not disclose whether the pipes need to be cleaned prior to (pre-cleaning) hydrostatic testing.

**Recommendation:** We recommend the FEIS identify whether pre-cleaning will take place and what it entails. How much water does it use? Is this in addition to the amount of water used for the actual hydrostatic test? What chemicals, if any, are used in the pre-cleaning process?

**Recommendation:** We recommend that the Final EIS explain what happens inside the pipe after hydrostatic test water has been discharged. Is the pipe dried? If so, are any chemicals used in the pipe drying process? How will pre-cleaning and hydrostatic test waters be treated, if necessary, prior to discharge?

*Table 4.3.2-6 Proposed Hydrostatic Test Water Source and Discharge Locations for Pipeline Facilities* (Page 4-41)

*Table 4.3.2-7 Proposed Hydrostatic Test Water Source and Discharge Locations for Above-ground Facilities* (Page 4-42)

**Recommendations:** We recommend *Table 4.3.2-6* and *Table 4.3.2-7* include additional categories to identify: 1) daily water flow amounts for each water intake, 2) where water will be recycled from one segment to another, and 3) the amount of water that will be recycled in each segment. Include the water source and discharge locations for the Grayson and Means Compressor Stations hydrostatic test. Also, in the footnotes to *Table 4.3.2-7* explain what is meant by “*Various*” when used under the column headings titled: “*Source*” and “*On-Site Discharge Location (MP)*.”

The DEIS does not provide evidence confirming that the water use capacity requirements can be met by the municipalities during hydrostatic testing activities.

**Recommendation:** Where project proponents propose to use municipal sources of water, we recommend the FEIS provide documentation that each municipality identified as potential water providers has the capacity to furnish the amounts proposed.

The DEIS (Page 4-45) states: “*As per recommendations from WVDEP, water withdrawn from the Ohio River would either discharge back into the Ohio River or undergo treatment with a*

*WVDEP-recommended biocide prior to discharge. Excluding potential WVDEP-recommended biocides, additives would not be added to the hydrostatic test water."*

**Recommendation:** EPA recommends the FEIS explain the type and concentrations of biocides that may be used in hydrostatic testing water discharge.

The DEIS does not address the specific requirements for the disposal of test water associated with the various components of the proposed Projects.

**Recommendation:** We recommend the FEIS address specific requirements for the disposal of all test waters.

**Recommendation:** EPA also recommends the FEIS identify all BMPs that will be used for: 1) water withdrawal in hydrostatic testing to prevent the entrainment of fish and other aquatic organisms, and 2) to dissipate waters after testing to prevent/minimize erosion and sediment movement.

#### **4.3.2.7 General Impacts and Mitigation (Pages 4-42 – 4-45)**

Section 4.3.2.7 of the DEIS identifies BMPs proposed by Columbia Gas, under stream bank erosion, turbidity and sedimentation; it is not clear if these practices also apply to Columbia Gulf's RXE Project.

**Recommendation:** EPA recommends the FEIS identify if RXE will be covered by the Columbia Gas practices or any other BMPs. If not, the FEIS should discuss why these practices do not pertain to RXE and identify those practices that pertain to RXE.

### **4.4 Wetlands**

#### **4.4.2 Wetland Construction Procedures**

Section 4.4.2 (Page 4-47) states: *"A total of 301 wetlands would be affected by the LX Project, described in appendix L. In Ohio, the LX Project, including aboveground facilities, access roads, and contractor yards, would cross 257 wetlands, including 20 forested, 21 scrub-shrub, and 216 emergent wetlands. In West Virginia, the LX Project would cross 32 wetlands, including 6 forested, 1 scrub-shrub, and 32 emergent wetlands. The LX Project would cross five emergent wetlands in Pennsylvania. In the RXE Project area, Columbia Gulf delineated one emergent wetland within the 64-acre survey area at the Means CS site . . . no wetlands were delineated at the Grayson CS site."*

**Recommendation:** The above DEIS text identifies the total number of wetland crossing in West Virginia as 32; however, the number of crossings of the various types of wetlands in West Virginia add up to 39. We recommend the FEIS clarify this discrepancy.

#### **4.4.3 General Impacts and Mitigation**

Section 4.4.3 (Page 4-48) discloses that construction of LX would affect a total of 15.2 acres of wetlands. This includes about 1.4 acres of forested wetlands, 0.8 acre of scrub-shrub wetlands, and 12.9 acres of emergent wetlands. No wetland impacts are expected for the RXE Project.

**DEIS Section 1.2.3 U.S. Army Corps of Engineers Purpose and Role (Page 1-4)** identifies that Columbia Gas believes the proposed project meets the criteria of the Nationwide General Permit 12 (NWP 12) under Section 404 of the Clean Water Act (CWA). It is correctly stated that the nationwide permit cannot authorize more than minimal adverse impacts to aquatic resources. It may be inappropriate at this time to make this determination.

**Recommendation:** We recommend the FEIS include supporting materials documenting that NWP 12 criteria are met. Please document the avoidance and minimization measures that have been taken in the context of the Clean Water Act Section 404 to reduce adverse impacts to aquatic resources. Any correspondence with the Corps on Section 404 permitting should be included in the FEIS.

The DEIS (Page 1-4) also discloses that the preconstruction notification for impacts to waters of the United States were submitted to the Corps in July 2015 for LX and in August 2015 for RXE.

**Recommendation:** EPA recommends completing the NEPA process in advance of obtaining permits. NEPA is meant to inform the decision making process, not to justify a decision that has already been made. We recommend moving through the NEPA process in a fair, equal and transparent manner with regard to project analysis and decision making.

#### **4.4.1 Existing Wetland Resources (Pages 4-46)**

There is little information in the DEIS regarding the existing conditions (quality) of the wetlands that would be impacted by the Projects. The DEIS (Page 4-46) states: *“Additional information on the existing conditions of wetlands surveyed is available in Resource Reports and permitting conducted with cooperating agencies in FERC Docket No. CP15-514-000.”*

**Recommendation:** EPA recommends that existing conditions (quality) of the wetlands in the project area be disclosed and discussed in the body of the FEIS. Also include the Resource Report that identifies the existing wetland conditions in an FEIS appendix and/or provide the web address as a direct link to the wetlands Resource Report.

Additionally, the DEIS mentions (Page 4-46) that portions of the project routes were not reviewed.

**Recommendations:** We recommend the FEIS describe when field reviews were done and how much of the project was field-reviewed. Include any additional field review information since the DEIS. If this information is in the DEIS and/or located on a website, provide a citation and/or the direct link to the website to help the reader easily locate this information.

#### **4.4.4 Alternative Measures (Pages 4-52 – 4-53)**

*TABLE 4.4.4-1 Areas Where Columbia Gas Requested Additional Extra Workspace in Relation to Wetlands for the LX Project.* Table 4.4.4-1 shows that some additional temporary workspace (ATWS) areas where additional extra workspace is requested will impact wetlands.

**Recommendation:** Avoidance of wetlands is almost always preferred over compensation mitigation for impacts. EPA recommends that Section 4.4.4 identify how ATWS locations

were chosen to first avoid wetland impacts and then minimize those impacts that cannot be avoided for the ATWS locations in Table 4.4.4-1 that will impact wetlands.

#### **4.4.5 Compensatory Mitigation (Page 4-53)**

DEIS Chapter 5 states that prior to construction, Columbia Gas shall provide its final wetland compensation plan. EPA is interested in reviewing this plan before it is finalized.

**Recommendation:** EPA recommends the FEIS include the proposed wetland compensation mitigation plan for the LX and RXE Projects. Provide an update on the status of plan reviews and approvals by the Corps and the state permitting agency.

### **4.5 Vegetation**

#### **4.5.4 Interior Forest Habitat (Pages 4-57 4-59)**

The DEIS (Page 4-57) states: *"The LX Project would affect 1,380.6 acres of upland forests and 1.1 acres of wetland forest during construction. . . . The acres of impacted interior forest blocks were calculated; we determined that approximately 1,142.9 acres of interior forest block habitat would be impacted by the proposed LX Project."*

**Recommendation:** We recommend Section 4.5.4 reference the wildlife section(s) describing interior forest species and list potential species that would be affected by the reduction of forest acres. Also, identify if there are any endangered species habitat that would be impacted by the reduction of interior forests.

In addition to providing valuable wildlife habitat and protecting water quality and quantity in the watershed, forests also have a role in carbon capture/sequestration to help ameliorate global warming/climate change.

**Recommendation:** We recommend the FEIS identify and discuss the role forests play in carbon capture/sequestration to help ameliorate global warming/climate change. Please estimate how much carbon capture will be lost due to the removal of forest for construction/operation of LX/RXE. Identify any compensatory mitigation the Project Proponents intend to undertake for the loss of forest due to their proposal.

#### **4.5.5 Noxious Weeds and Other Invasive Plant Species (Page 4-59)**

**Recommendation:** We recommend the FEIS include the project proponents Invasive Species Management Plans for LX and RXE Projects.

#### **4.5.6 General Impacts and Mitigation (Page 4-59)**

**Recommendation:** We recommend the FEIS identify in section 4.5.6 the length of time it takes for a mature forest to develop. Also mention how long the project will be monitored for successful regrowth of forests to pre-construction conditions.

**Recommendation:** We recommend the FEIS include documentation that demonstrates that the project proponents commit to applying seed mixes that contain native pollinator plant species so as to benefit pollinating insect, bird and bat species (page 4-63).

#### 4.6.2 Aquatic Resources

##### 4.6.2.1 Existing Aquatic Resources (Pages 4-77 – 4-79)

###### Kentucky

The DEIS mentions five stream to be impacted by the RXE project. Table 4.3.2-2 identifies these five streams and some characteristics. Regarding these impacts, the DEIS mentions:

*“...waterbodies will be crossed by means of temporary bridges or culverts. Permanent culverts or bridges may be installed to allow for permanent access to the facilities over S014/S013 at the Means CS. At the Grayson CS, Columbia Gulf is proposing to relocate S041, an ephemeral channel, permanently to the south to accommodate design restrictions.”* (Page 4-79)

**Recommendation:** We recommend the FEIS clarify information regarding the “flow regime” of each stream. The DEIS (see above insert) mentions the proposed relocation of stream S041 (ID) and classified it as ephemeral channel/stream. However, Table 4.3.2-2 has the classification of stream S041 as intermittent. Recommend this information be rectified in the FEIS.

#### 4.9 Socioeconomics

##### 4.9.7 Environmental Justice (Pages 4-143 – 4-146)

The DEIS focused Environmental Justice (EJ) analysis primarily on low-income populations. But, *“Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies”* (EPA website).

**Recommendation:** EJ is more than the income factor. The EJ analysis should discuss all factors, not solely income. EPA developed a free tool to help users to identify areas with EJ population: <https://www.epa.gov/ejscreen>. Additionally please refer to this document for EJ analysis in NEPA reviews: <https://www.epa.gov/environmentaljustice/ej-iwg-promising-practices-ej-methodologies-nepa-reviews>.

An important reason for identifying communities with environmental justice (EJ) concerns in the EIS is to use this information to communicate the impacts of the project.

Regarding the LX and RXE Projects the DEIS (page 4-145) states: *“Many of the counties crossed by the LX and RXE Projects have poverty rates higher than the national average. Six counties have poverty rates that are meaningfully greater (i.e., over 20 percent higher) than rates for their respective states: Jackson, Morgan, Perry and Vinton Counties in Ohio and Menifee and Montgomery Counties in Kentucky. In addition several places have very high poverty rates: Sugar Grove Village, Rockbridge CDP, Oak Hill Village and McArthur Village. Several of these counties and places would have the pipeline and/or pipeline facilities (such as regulator stations and compressor facilities).”*

The DEIS lacks information that demonstrates specific efforts FERC and Project Proponents made to further identify/locate and contact communities with environmental justice concerns regarding the Proposed Projects. The DEIS does not demonstrate that proposed locations for the LX pipeline, LX facilities and/or the RXE facilities would not have disproportionate adverse effects, such as noise, on these populations. The DEIS does not identify opportunities there may be for training and hiring low-income populations for Projects' construction and/or operation and maintenance.

**Recommendations:** EPA recommends the FEIS:

- 1) Identify the areas where noise will be an impact to communities of concern. Further, include a plan that identifies how FERC and the Projects Proponents will communicate with the identified communities concerning the environmental (noise) concerns.
- 2) Identify the number/percentage of low-income/minority individuals/populations in relation to the general population that live (own/rent/reside) within or near the Projects' areas that would be at risk of injury due to unexpected pipeline and/or associated facilities failure;
- 3) Identify the specific efforts FERC and Projects Proponents made and will make to further identify/locate and contact communities with EJ concerns regarding the proposed Projects.
- 4) Identify and discuss any opportunities there may be to train and employ low-income individuals for Projects' construction and/or operation and maintenance.
- 5) Demonstrate how construction or operational impacts in these communities are not disproportionately high compared to impacts to other communities.
- 6) Incorporate new/additional EJ information and analysis into the FEIS cumulative impacts analysis, if applicable.

## **4.11 Air Quality and Noise**

### **4.11.1 Air Quality**

#### **4.11.1.2 Air Regulatory Requirements**

The DEIS (page 4-158) states: *"Table 4.11.1-6 identifies the nonattainment and maintenance areas for the LX and RXE Projects and the associated construction emissions compared to the applicability threshold levels. Detailed emission calculations for the construction activities identified in table 4.11.1-6 were filed on the record on October 2015. As presented in table 4.11.1-6, emissions during construction of the LX and RXE Projects would not exceed General Conformity applicability thresholds for any nonattainment or maintenance area, and a general conformity determination is not required."*

**Recommendation:** We recommend the FEIS provide a direct link to the detailed emission calculations in the file on record for the construction activities identified in *Table 4.11.1-6 - Comparison of Construction Emissions to General Conformity De Minimis Thresholds*.

### Greenhouse Gas Emissions

The Draft EIS (Pages 4-154 through 4-164) includes a helpful discussion of the greenhouse gas (GHG) emissions associated with construction of the LX and RXE Projects, and annual emissions from the operation of the compressor stations, but did not include estimates of the GHG emissions associated with the production, leakage, and combustion of the natural gas transported by this proposal. Because of the causal relationship between this project and the emissions, it is appropriate and consistent with NEPA and CEQ regulations to consider and disclose the emissions levels in NEPA analyses.

**Recommendations:** We recommend that the FEIS include estimates of emissions from production, leakage, and combustion of the natural gas transported by the proposal.

In the DEIS, Table 4.11.1-8 (Page 4-164), FERC includes comparisons of project-level greenhouse gas emissions to State-wide emissions. We do not recommend comparing GHG emissions from a proposed action to global emissions, total state, or U.S. emissions, as these comparisons obscure rather than illuminate consideration of GHG emissions under NEPA.

**Recommendation:** We recommend that FERC remove comparisons of the proposed project's estimated emissions to aggregate emissions.

### Methane Leakage

The DEIS does not contain estimates of methane leakage from the proposed expansion. EPA has compiled useful information on technologies and practices that can help reduce methane emissions from natural gas systems, including specific information regarding emission reduction options for natural gas transmission operations. This information may be found at <http://www3.epa.gov/gasstar/methaneemissions/index.html>.

**Recommendations:** We recommend that FERC estimate expected GHG emissions from leakage and consider potential BMPs to reduce leakage of methane associated with operation of the expansion facilities.

The DEIS does not describe measures to avoid, reduce, or compensate for GHG emissions from operation of the proposed pipeline expansions.

**Recommendation:** EPA recommends that the FEIS describe measures to reduce GHG emissions associated with the proposal including reasonable alternatives and other practicable mitigation opportunities, and disclose the estimated GHG reductions. For example, the FEIS could include consideration of more efficient compressor stations or purchase of renewable energy to power the stations. The EPA further recommends that the FEIS and Record of Decision (ROD) commit to implementation of reasonable mitigation measures that would reduce project-related GHG emissions. (Also see additional comments under 4.13.5.11 Climate Change.)

#### 4.11.2 Noise (Pages 4-167 – 4-176)

*Table 4.11.2-3 Calculated Operational Noise Levels for New and Existing Compressor Stations (DEIS Pages 4-171 and 4-172)*

##### Compressor Stations

Some of the distances in the figures/maps used in the *Appendixes Q Noise Sensitive Areas (NSAs) Associated with the Projects* are different from those on Table 4.11.2-3. Specifically, Appendix Q-4 identifies NSA #1 as 400 feet from the Crawford Compressor Station and the table states that it is 250 feet. Additionally, the table shows that there is no potential increase above ambient noise levels. This does not seem correct considering how close the nearest NSA is to the station.

**Recommendation:** We recommend FERC review the NSA distance information on Table 4.11.2-3 and the information provided in Appendix Q, and rectify any discrepancies accordingly in the FEIS documentation. In addition, we recommend the FEIS Table 4.11.2-3 include corrected potential noise increases above ambient levels as applicable.

For the Oakhill Compressor Station, though Table 4.11.2-3 shows noise levels under the 55 dB threshold, there is an increase greater than 10 dB shown for NSA 1 and NSA 2.

**Recommendation:** We recommend that the increase in noise levels greater than 10 dB shown for NSA 1 and NSA 2 be recognized in the text of the DEIS. In addition, we suggest that some public outreach be done to communicate with the public regarding this increase and potential mitigation.

##### Blowdown Events – Compressor Stations and Pipelines

The DEIS (Page 4-173) states: *“In addition to the operational noise discussed above, blowdown events would also generate noise impacts. The duration of a blowdown depends on factors such as the extent of the maintenance activity and the gas pressure, and would generally last between 20 minutes and 2 hours.”*

**Recommendations:** In the description for blowdown events, we recommend the FEIS explain the frequency of maintenance activities that cause the blowdown events. Also, provide the expected frequency (number of times per/day, month and/or years) that unplanned pipeline blowdown events typically occur.

##### Regulator Stations

*Table 4.11.2-4 – Calculated Operation Noise Levels for New and Existing Regulator Stations (Page 4-174)*

Table 4.11.2-4 shows the increase in ambient levels are not above 55 dB for the McArthur Regulator Station; however, it does show an increase greater than 10 dB for NSA 1 above ambient noise levels.

**Recommendation:** We recommend as suggested earlier that the community be informed of this increase in noise and potential mitigation.

### Odorization Stations

*Table 4.11.2-5 Calculated Operation Noise Levels for New Odorization Stations (Page 4-176):* The increase in ambient levels for the R-130 Odorization Station, though not above 55 dB threshold, has a significant increase.

**Recommendation:** The significant increase in noise should be recognized and further explained of its impact in the body of the document. It is suggested that the community/NSA be informed of the increase in noise and potential mitigation.

## **4.12 Reliability and Safety**

### **4.12.1 Safety Standards (Pages 4-176 – 4-181)**

The DEIS (Page 4-181) states: *“Columbia Gas would prepare an emergency response plan that would provide procedures to be followed in the event of an emergency that would meet the requirements of 49 CFR 192.615. The plan would include the procedures for communicating with emergency services departments, prompt responses for each type of emergency, logistics, emergency shut down and pressure reduction, emergency service department notification, and service restoration.”*

**Recommendation:** We recommend the FEIS include Columbia Gas’ emergency response plan for LX and Columbia Gulf’s emergency response plan for RXE, if available. At a minimum include the drafts of the emergency response plans in the FEIS.

### **4.12.2 Pipeline Accident Data (Pages 4-181 – 4-183)**

As mentioned in Section 4.12.2, the highest risk to pipeline safety is equipment failure, with corrosion being the leading cause of pipeline failure.

**Recommendation:** We recommend the FEIS discuss how the Projects will reduce the incident rate of failure. Though the number of fatalities from pipeline failures are few, explain the safety mechanisms used to reduce failures/fatalities and how it will do so for the life of the project.

## **4.13 Cumulative Impacts (Pages 4-148 - 4-208)**

EPA is concerned that the temporal and geographic scope of the study is narrow, which has led to a limited analysis of cumulative impacts. Defining the geographic and temporal framework is the starting point of a cumulative impacts analysis. Establishing appropriate spatial and temporal boundaries is at the very core of the study. Selection of inappropriate boundaries subsequently leads to a fundamentally flawed analysis and documentation. It is critical to assess past and future impacts.

The DEIS analysis appears to only consider impacts that occur during construction of LX and RXE as the temporal boundary (approximately 1 ½ years). However cumulative impacts can occur to resources even if impacts do not occur concurrently. Though construction impacts can be short-termed, there are likely prolonged impacts for instance associated with forest

fragmentation, invasive species, etc. Even projects that do not overlap geographically can contribute to cumulative impacts to streams, wetlands, forests, habitat and other resources.

For example, as large forested blocks are bisected by LXP and RXE, the interior forest habitat for those blocks is decreased. The remaining blocks in combination with other actions, including other pipeline projects, are further reduced. The interior forest habitat is greatly reduced for wildlife and forest interior dwelling species. These types of long-term cumulative impacts on wildlife and habitat should be considered.

Cumulative impacts temporal boundaries are often set a few decades into the past and future to include appropriate trend and facility life expectancy. It is typical to use a baseline time frame of 30 to 50 years past, prior to sprawl and extensive highway networks. It is important to analyze the trends in resources, to identify if there have been repeated impacts or degradation of the resources. A thorough analysis of impacts could help guide the selection or placement of appropriate mitigation for LX impacts or highlight areas where additional avoidance and minimization may be warranted. EPA would be interested in discussing the selection of a more appropriate and inclusive boundary with FERC.

**Recommendations:** EPA recommends FERC consider expanding the cumulative impacts study beyond what is currently considered in the DEIS. Consider projects that do not necessarily overlap directly with LX and RXE construction boundaries. Include a map(s) to show the various spatial/geographic boundaries used for the cumulative impact assessment.

EPA is concerned about cumulative impacts to aquatic resources, groundwater, and water quality.

**Recommendations:** We recommend that the cumulative impact analysis of surface and groundwater be expanded, including cumulative impacts to water quality, headwater streams, high quality and/or sensitive aquatic resources. Aquatic resources have the potential to be cumulatively impacted by many factors, including waterbody crossings, change in recharge patterns, clearing, blasting, and water withdraws for hydrostatic testing. It may be prudent to consider these impacts in combination with other past, present and reasonably foreseeable actions at the watershed scale.

We recommend that FERC's cumulative impact analysis present potential cumulative impacts regardless of the various prepared or required plans to be implemented by LX, any implementation of construction, restoration or mitigation plans from other actions, or permits or regulatory thresholds. While it may be appropriate to recognize or consider the relation to these, please keep in mind that this is not sufficient to determine potential effects of past, current and reasonably foreseeable future activities to resources or if/ how project impacts can be mitigated.

#### **4.13.5.11 Climate Change (Pages 4-206 – 4-208)**

DEIS (Pages 4-206 and 4-207), discusses the U.S. Global Change Research Program's (USGCRP) May 2014 report *Climate Change Impacts in the United States* and lists eleven observations of environmental impacts with a high or very high level of confidence that may be

attributed to climate change in the Midwest region. One observation listed is: “*annual precipitation has increased by about 20 percent over the past century, particularly from increased high intensity rainfall events, and this trend is projected to continue.*”

**Recommendation:** EPA recommends the FEIS discuss the Projects Proponents’ and FERC’s consideration of the Projects’ susceptibility to impacts associated with climate change and identify mitigation measures. For example, discuss the risk of the Projects’ pipelines being exposed due to increases in flooding, scouring, and/or upland erosion due to expected heavy precipitation events associated with climate change. (Also see our comments regarding Greenhouse Gas Emissions and Methane Leakage above under 4.11.1.2 Air Regulatory Requirements.)

### 5.0 Conclusions and Recommendations

The DEIS Page 5-1) states: “*The conclusions and recommendations presented in this section are those of FERC environmental staff. Our conclusions and recommendations were developed with input from the EPA, COE, FWS, OEPA, PADEP, PADCNR, WVDEP, WVDNR, and KYDEP as cooperating agencies.*”

**Recommendation:** This chapter of the FEIS will need to be updated after consideration of additional input provided by the cooperating agencies/resources agencies and others since FERC’s release of the DEIS for public and agency review and comment.

#### Additional EPA Recommendations:

- For those facilities that will be equipped with emergency generator(s). EPA wants to make you aware that there are two specific rules for new source engines. One of these rules would apply to generators at the facilities. In order to learn and comply with these rules please visit: <http://www.epa.gov/region1/rice/>.
- EPA has issued three final rules that together will curb emissions of methane, smog-forming volatile organic compounds (VOCs) and toxic air pollutants such as benzene from new, reconstructed and modified oil and gas sources, while providing greater certainty about Clean Air Act permitting requirements for the industry. To comply with these rules please go to: <https://www3.epa.gov/airquality/oilandgas/actions.html>
- EPA recommends that for new equipment utilize contract specifications requiring advanced pollution controls and clean fuels: <http://www.northeastdiesel.org/pdf/NEDC-Construction-Contract-Spec.pdf> and <http://www.epa.gov/cleandiesel/technologies/index.htm>  
Implement diesel controls, cleaner fuel, and cleaner construction practices for on-road and off-road equipment used for transportation, soil movement, or other construction activities, including:
  - ✓ Strategies and technologies that reduce unnecessary idling, including auxiliary power units, the use of electric equipment, and strict enforcement of idling limits; and

- ✓ **Use of clean diesel through add-on control technologies like diesel particulate filters and diesel oxidation catalysts, repowers, or newer, cleaner equipment.**

**For more information on diesel emission controls in construction projects, please see: <http://www.northeastdiesel.org/pdf/NEDC-Construction-Contract-Spec.pdf>**

- **EPA recommends the use of low maintenance trees (reduces pollutants emissions from maintenance activities) and the construction of Rain Gardens for erosion and runoff mitigation while decreasing impervious surfaces to improve ground water quality. By adopting these low-cost easy to achieve suggestions, extra enhancements will be achieved such as noise reduction and aesthetics improvement.**

Document Content(s)

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**People's Dossier: FERC's Abuses of Power and Law  
→ Climate Change & Drilling Impacts Ignored**

**Climate Change & Drilling Impacts Ignored**  
**Attachment 6, Draft Environmental Impact Statement for**  
**the PennEast Pipeline Project, FERC Docket No. CP15-**  
**558, July 2016.**

# PENNEAST PIPELINE PROJECT

## *Draft Environmental Impact Statement*

### Volume I

PennEast Pipeline Company, LLC

Docket No. CP15-558-000

**FERC\EIS: 0271D**



### Federal Energy Regulatory Commission

Office of Energy Projects

Washington, DC 20426



### Cooperating Agencies



**US Army Corps  
of Engineers**



**July 2016**



FERC\EIS: 0271D

Volume I

**PENNEAST PIPELINE PROJECT**  
*Draft Environmental Impact Statement*

Docket No.  
CP15-558-000

**July 2016**

FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:

OEP/DG2E/Gas 2

PennEast Pipeline Company, LLC

Docket No. CP15-558-000

FERC/EIS-0271D

TO THE PARTY ADDRESSED:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared a draft environmental impact statement (EIS) for the PennEast Pipeline Project (Project), proposed by PennEast Pipeline Company, LLC (PennEast) in the above-referenced docket. PennEast requests authorization to construct and operate the Project for the purpose of providing about 1.1 million dekatherms per day (MMDth/d) of year-round natural gas transportation service from northern Pennsylvania to markets in eastern and southeastern Pennsylvania, New Jersey, and surrounding states.

The draft EIS assesses the potential environmental effects of the construction and operation of the Project in accordance with the requirements of the National Environmental Policy Act. The FERC staff concludes that approval of the Project would result in some adverse environmental impacts; however, most of these impacts would be reduced to less-than-significant levels with the implementation of PennEast's proposed mitigation and the additional recommendations in the draft EIS.

The U.S. Army Corps of Engineers, U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, and U.S. Department of Agriculture Natural Resources Conservation Service participated as cooperating agencies in the preparation of the EIS. Cooperating agencies have jurisdiction by law or special expertise with respect to resources potentially affected by the proposal and participate in the National Environmental Policy Act analysis. Although these agencies provided input to the conclusions and recommendations presented in the draft EIS, the agencies will present their own conclusions and recommendations in any respective record of decision or determination for the Project.

The draft EIS addresses the potential environmental effects of the construction and operation of about 118.8 miles of natural gas pipeline and

associated equipment and facilities in Pennsylvania and New Jersey. The 118.8 miles would consist of the following facilities:

- 115.1 miles of new 36-inch-diameter pipeline extending from Luzerne County, Pennsylvania to Mercer County, New Jersey;
- the 2.1-mile Hellertown Lateral consisting of 24-inch-diameter pipe in Northampton County, Pennsylvania;
- the 0.1-mile Gilbert Lateral consisting of 12-inch-diameter pipe in Hunterdon County, New Jersey; and
- the 1.5-mile Lambertville Lateral consisting of 36-inch-diameter pipe in Hunterdon County, New Jersey.

In addition to the pipeline facilities, PennEast would construct a new 47,700 horsepower compressor station in Kidder Township, Carbon County, Pennsylvania. The Project would also include the construction of eight metering and regulating stations for the Project interconnects, eleven mainline valves, and four pig launcher/receivers.

The FERC staff mailed copies of the draft EIS to federal, state, and local government representatives and agencies; elected officials; environmental and public interest groups; Native American tribes; potentially affected landowners and other interested individuals and groups; and newspapers and libraries in the Project area. Paper copy versions of this draft EIS were mailed to those specifically requesting them; all others received a CD version. In addition, the draft EIS is available for public viewing on the FERC's website ([www.ferc.gov](http://www.ferc.gov)) using the eLibrary link. A limited number of copies are available for distribution and public inspection at:

Federal Energy Regulatory Commission  
Public Reference Room  
888 First Street NE, Room 2A  
Washington, DC 20426  
(202) 502-8371

Any person wishing to comment on the draft EIS may do so. To ensure consideration of your comments on the proposal in the final EIS, it is important that the Commission receive your comments on or before **September 5, 2016**.

For your convenience, there are four methods you can use to submit your comments to the Commission. In all instances, please reference the Project's docket number (CP15-558-000) with your submission. The Commission

encourages electronic filing of comments and has expert staff available to assist you at (202) 502-8258 or [efiling@ferc.gov](mailto:efiling@ferc.gov).

- 1) You can file your comments electronically using the eComment feature on the Commission's website ([www.ferc.gov](http://www.ferc.gov)) under the link to Documents and Filings. This is an easy method for submitting brief, text-only comments on a project.
- 2) You can file your comments electronically by using the eFiling feature on the Commission's website ([www.ferc.gov](http://www.ferc.gov)) under the link to Documents and Filings. With eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on “eRegister.” If you are filing a comment on a particular project, please select “Comment on a Filing” as the filing type.
- 3) You can file a paper copy of your comments by mailing them to the following address:

Nathaniel J. Davis, Sr., Deputy Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1A  
Washington, DC 20426

- 4) In lieu of sending written or electronic comments, the Commission invites you to attend one of the public comment meetings its staff will conduct in the Project area to receive comments on the draft EIS. We<sup>1</sup> encourage interested groups and individuals to attend and present oral comments on the draft EIS at any of the meeting locations.

**The dates and locations of the public comment meetings will be provided in a future notice.** There will not be a formal presentation by Commission staff, but FERC staff will be available throughout the meetings to answer your questions about the environmental review process. The meetings will be scheduled from 6:00pm to 10:00pm. The primary goal will be to have your verbal environmental comments on the draft EIS documented in the public record.

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<sup>1</sup> “We,” “us,” and “our” refer to the environmental staff of the FERC's Office of Energy Projects.

Verbal comments will be recorded by court reporter(s) and transcriptions will be placed into the docket for the Project and made available for public viewing on FERC's eLibrary system (see below for instructions on using eLibrary). If a significant number of people are interested in providing verbal comments, a time limit of 3 to 5 minutes may be implemented for each commenter. It is important to note that verbal comments hold the same weight as written or electronically submitted comments.

Any person seeking to become a party to the proceeding must file a motion to intervene pursuant to Rule 214 of the Commission's Rules of Practice and Procedures (Title 18 Code of Federal Regulations Part 385.214).<sup>2</sup> Only intervenors have the right to seek rehearing of the Commission's decision. The Commission grants affected landowners and others with environmental concerns intervenor status upon showing good cause by stating that they have a clear and direct interest in this proceeding that no other party can adequately represent. **Simply filing environmental comments will not give you intervenor status, but you do not need intervenor status to have your comments considered.**

### **Questions?**

Additional information about the Project is available from the Commission's Office of External Affairs, at **(866) 208-FERC**, or on the FERC website ([www.ferc.gov](http://www.ferc.gov)) using the eLibrary link. Click on the eLibrary link, click on "General Search," and enter the docket number excluding the last three digits in the Docket Number field (i.e., CP15-558). Be sure you have selected an appropriate date range. For assistance, please contact FERC Online Support at [FercOnlineSupport@ferc.gov](mailto:FercOnlineSupport@ferc.gov) or toll free at (866) 208-3676; for TTY, contact (202) 502-8659. The eLibrary link also provides access to the texts of formal documents issued by the Commission, such as orders, notices, and rulemakings.

In addition, the Commission offers a free service called eSubscription that allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to [www.ferc.gov/docs-filing/esubscription.asp](http://www.ferc.gov/docs-filing/esubscription.asp).

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<sup>2</sup> See the previous discussion on the methods for filing comments.

## **EXECUTIVE SUMMARY**

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### **INTRODUCTION**

On September 24, 2015, PennEast Pipeline Company, LLC (PennEast) filed an application with the Federal Energy Regulatory Commission (Commission or FERC) under section 7(c) of the Natural Gas Act and Parts 157 and 284 of the Commission's regulations. The application was assigned Docket No. CP15-558-000 and a Notice of Application was issued on October 8, 2015 and noticed in the Federal Register on October 15, 2015. PennEast is seeking a Certificate of Public Convenience and Necessity (Certificate) from the FERC to construct, operate, and maintain a new natural gas pipeline system, including pipeline facilities, a compressor station, metering and regulating stations, and appurtenant facilities in Pennsylvania and New Jersey, referred to as the PennEast Pipeline Project, or Project.

The purpose of this environmental impact statement (EIS) is to inform FERC decision-makers, the public, and the permitting agencies about the potential adverse and beneficial environmental impacts of the Project and its alternatives, and recommend mitigation measures that would reduce adverse impacts, to the extent practicable. We<sup>3</sup> prepared this EIS to assess the environmental impacts associated with construction and operation of the Project as required under the National Environmental Policy Act of 1969 (NEPA), as amended. Our analysis was based on information provided by PennEast and further developed from data requests; field investigations; scoping; literature research; contacts with or comments from federal, state, and local agencies; and comments from individual members of the public.

The FERC is the lead agency for the preparation of the EIS. The U.S. Army Corps of Engineers, U.S. Environmental Protection Agency (EPA), U.S. Fish and Wildlife Service (FWS), and U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) participated in the NEPA review as a cooperating agencies.<sup>4</sup>

### **PROPOSED ACTION**

The Project includes about 118.8 miles of pipeline composed of the following facilities:

- 115.1 miles of new, 36-inch-diameter pipeline extending from Luzerne County, Pennsylvania to Mercer County, New Jersey;
- the 2.1-mile Hellertown Lateral consisting of 24-inch-diameter pipe in Northampton County, Pennsylvania;
- the 0.1-mile Gilbert Lateral consisting of 12-inch-diameter pipe in Hunterdon County, New Jersey; and
- the 1.5-mile Lambertville Lateral consisting of 36-inch-diameter pipe in Hunterdon County, New Jersey.

In addition to the pipeline facilities, PennEast would construct a new 47,700 horsepower compressor station in Kidder Township, Carbon County, Pennsylvania. The Project would also

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<sup>3</sup> "We," "us," and "our" refer to the environmental staff of the FERC's Office of Energy Projects.

<sup>4</sup> A cooperating agency is an agency that has jurisdiction over all or part of a project area and must make a decision on a project, and/or an agency that provides special expertise with regard to environmental or other resources.

include the construction of eight metering and regulating stations for the Project interconnects, 11 mainline valve (MLV) sites, and four pig launcher/receiver sites.

Subject to the receipt of FERC authorization and all other applicable permits, authorizations, and approvals, PennEast anticipates starting construction as soon as possible to meet its projected in-service date of November 2017.

The Project would provide about 1.1 million dekatherms per day of year-round natural gas transportation service from northern Pennsylvania to markets in New Jersey, eastern and southeastern Pennsylvania, and surrounding states.

## **PUBLIC INVOLVEMENT**

On October 10, 2014, the FERC staff began its pre-filing review of the Project and established pre-filing Docket No. PF15-1-000 to place information related to the Project into the public record. The U.S. Army Corps of Engineers agreed at that time to conduct its environmental review of the Project in conjunction with the Commission's environmental review process.

On January 13, 2015, FERC issued a *Notice of Intent to Prepare an Environmental Impact Statement for the Planned PennEast Pipeline Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meetings*. On January 21, 2014, we issued a *Notice of Extension of Comment Period and Clarification of Location of Public Comment Meetings for the PennEast Pipeline Project*. Public scoping meetings were held from February 10-12 and 25-26, 2015 in Bethlehem, Northampton County, Pennsylvania; Jim Thorpe, Carbon County, Pennsylvania; Wilkes-Barre, Luzerne County, Pennsylvania; Trenton, Mercer County, New Jersey; and Hampton, Hunterdon County, New Jersey. FERC sent an additional scoping letter on August 19, 2015 to landowners affected by the significant route modifications and opened an additional 30-day comment period.

Substantive environmental issues identified through this public review process are addressed in this EIS. The transcripts of the public scoping meetings and all written comments are part of the FERC's public record for the Project and are available for viewing using the appropriate docket number.

## **ENVIRONMENTAL IMPACTS AND MITIGATION**

We evaluated the potential impacts of construction and operation of the Project on geology; soils; water resources; wetlands; aquatic resources; vegetation and wildlife; threatened, endangered, and special status species; land use, recreation, and visual resources; socioeconomics; cultural resources; air quality and noise; reliability and safety; and cumulative impacts. In Section 3 of this EIS, we summarized the evaluation of alternatives to the Project, including the no-action alternative, system alternatives, major route alternatives, minor route variations, and an alternative compressor station location. Where necessary, we are recommending additional mitigation measures to minimize or avoid these impacts. Sections 5.1 and 5.2 of the EIS contain our conclusions and a compilation of our recommended mitigation measures, respectively.

Construction of the Project would affect about 1,613.5 acres of land, including the pipeline facilities, aboveground facilities, pipe and contractor ware yards and staging areas, and access roads. Permanent operations would require about 784 acres of land, of which 715 acres would be for the pipeline right-of-way, 61 acres would be affected by aboveground facilities, and 8 acres

would be affected by new permanent access roads. The remaining 829.5 acres of land disturbed during construction would be restored and allowed to revert to its former use.

### Geology

Mineral resources in the Project area include crushed stone, cement, tripoli, lime, and sand and gravel production. There are 27 abandoned or reclaimed mines along the route, all located within Luzerne County. We are recommending that PennEast provide the results of its ongoing evaluation of potential presence of working and abandoned mines near the proposed crossing of the Susquehanna River. There are two active quarries within 0.25 mile of the Project area and two active industrial mineral quarries about 4 miles from the Project, all located in Luzerne County. PennEast has contacted the quarry owners and aligned the pipeline to avoid future expansion plans of these quarries. There are no mines or quarries located within 0.25 mile of the Project in New Jersey. There are no mapped locations of oil and gas wells within 0.25 mile of the Project.

Seismic hazards with potential to affect the pipeline include earthquakes, surface faults, and soil liquefaction. The pipeline would be designed in accordance with all applicable federal and state safety codes, which would govern pipeline thickness, welding standards for joints, and pipeline strength. We conclude that this would allow the pipeline to withstand nearly all ground shaking that could be anticipated to occur from an earthquake.

The Project would be located in an area considered to have a low incidence of landslides for the New Jersey portion of the Project. In Pennsylvania, however, portions of the Project are susceptible to landslides. Site-specific evaluations of landslide risks are ongoing. In Phase 1 of its Terrain Mapping and Geohazard Risk Evaluation Report PennEast identified the areas where it would conduct further field investigation and analysis during Phase 2 and 3 of the Geohazard Risk Evaluation to be used in the final design. We are recommending that PennEast include in its pipeline design geotechnical report an evaluation of liquefaction hazards along the pipeline route and at the compressor station site, a final landslide hazard inventory, as well as necessary mitigation measures and a post-construction monitoring plan. We are also recommending that PennEast include in its pipeline design geotechnical report the results of ongoing evaluations necessary to support final pipeline routing/mitigation measures through geologically hazardous areas, a final landslide inventory, specific landslide mitigation measures with locations, and a post-construction landslide monitoring plan.

PennEast would implement mitigation measures to control waterbody flow increases during pipeline installation activities in accordance with PennEast's Erosion and Sediment Control Plan (E&SCP). No permanent aboveground facilities are located within 100-year floodplains as reported by the Federal Emergency Management Agency. Aboveground facilities located near floodplains and pipeline stream crossings would be designed to prevent potential impacts from high-velocity flows, largely by controlling erosion, in accordance with PennEast's E&SCP.

The portions of the Project with potential karst impacts include sections of the Project in Carbon, Northampton, and Bucks Counties in Pennsylvania and Hunterdon County in New Jersey, totaling about 13.8 miles. PennEast continues to complete additional geophysical investigations as landowner permissions become available, and would incorporate this work into a final Karst Mitigation Plan. We are recommending that PennEast file a final Karst Mitigation Plan.

Naturally occurring arsenic is present in trace amounts in the rocks for the Newark Basin of southeastern Pennsylvania and New Jersey. PennEast conducted a leachability evaluation of rock samples collected along the proposed pipeline route. Based on the results of this study, we conclude that no mitigation measures related to arsenic mobilization are necessary during Project construction and operation. PennEast has prepared a well testing plan and proposes to conduct groundwater quality testing of potentially affected wells prior to construction that would provide a baseline to determine whether any arsenic increases in groundwater occur after the pipeline is installed and operational. In the unlikely event that construction results in any impacts on a water-supply well, PennEast would provide a treatment system to remove arsenic from the drinking water at individual properties or find an alternative water source.

PennEast is conducting geotechnical investigations at 11 proposed horizontal direction drill (HDD) crossings. The purpose of the geotechnical investigations is to understand if the existing condition would be suitable to use the HDD method and to help design each HDD crossing. Some field analysis is incomplete due to lack of permission to access the right-of-way to install borings, changes in the proposed alignment and design, and variation in geologic materials encountered requiring modifications in the drilling program. PennEast has also developed a HDD Drilling Plan for Karst Terrain, to be included as part of the Karst Mitigation Plan, as several of the crossings would be performed in carbonate rock. We are recommending that PennEast file the results of all outstanding geotechnical investigations in karst areas and the final planned design of each HDD crossing prior to construction.

We conclude that the Project would not have significant impacts on geologic resources. In addition, with the implementation of PennEast's proposed mitigation measures as well as its Blasting Plan, Karst Mitigation Plan, and E&SCP, and our recommendations, the geologic risk to Project facilities would be minimized.

### Soils

Areas with shallow depth to bedrock crossed by the pipeline pose a risk of introducing rock into the topsoil in agricultural and residential areas. Minimization efforts would include topsoil segregation and protection along the trench, rock backfill in residential and agricultural areas only to the top of the existing bedrock profile, and disposal of excess rock fragments in an approved manner so as to not incorporate rock fragments into topsoil layers.

PennEast would minimize soil compaction and rutting, erosion, impacts on prime farmland and drainage tiles and increase revegetation potential by following its E&SCP and FERC's Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) and Wetland and Waterbody Construction and Mitigation Procedures (Procedures). If contaminated soils or groundwater are encountered during construction, PennEast would follow protocol in its Unexpected Contamination Encounter Procedures.

Implementation of PennEast's E&SCP, FERC's Plan and Procedures and other project-specific plans would adequately avoid, minimize, or mitigate construction impacts on soil resources. Permanent impacts on soils would mainly occur at the aboveground facilities where the sites would be converted to industrial use. Based on our analysis, we conclude that potential impacts on soils would be avoided or effectively minimized or mitigated.

## Water Resources and Wetlands

Groundwater in the Project area includes four principal bedrock aquifer systems as well as a number of surficial unconsolidated aquifers in Pennsylvania and New Jersey. In addition, the Project would cross two EPA-designated sole source aquifers. The Project would cross three wellhead protection areas, the Riegelsville Borough Zone III in Pennsylvania and two well head protection areas in Milford Borough and Alexandria Township, New Jersey.

There are no public and/or private water supply wells or springs that would be located within 150 feet of the pipeline construction workspace in Pennsylvania. Two public supply wells were identified within 150 feet of the pipeline construction workspace in Hunterdon County, New Jersey. Because surveys along the Project route are not yet complete, we are recommending that, prior to construction, PennEast provide a revised list of water wells and springs within 150 feet of any construction workspace (500 feet in areas characterized by Karst terrain) based on completed surveys. PennEast has prepared a Well Monitoring Plan to outline procedures for pre- and post-construction monitoring of all identified drinking water supply wells, including private, community, municipal/public wells, and springs, within 150 feet of the proposed construction workspace (500 feet in areas characterized by Karst terrain).

PennEast identified areas of potential groundwater contamination and prepared an Unanticipated Discovery of Contamination Plan that includes measures it would follow if any unanticipated contaminated soils are encountered during construction. We have reviewed the Unanticipated Discovery of Contamination Plan and find it acceptable; however, we are recommending that PennEast identify the management and field environmental professionals responsible for notification for contaminated sites. Accidental spills during construction and operations would be prevented or adequately minimized through implementation of PennEast's Spill Prevention, Control, and Countermeasures Plan.

In areas where blasting or rock hammering may be needed to excavate the trench to proper depth, fracturing of the bedrock may result in shallow groundwater infiltration in these areas. Blast charges would be limited to that needed to fracture rock to the required trench depth, and fracturing of bedrock would therefore be limited to within several feet of the pipeline trench. All blasting would be performed in a manner consistent with the guidance in PennEast's Project-specific Blasting Plan that includes measures to minimize groundwater impacts.

The Project would cross 255 waterbodies (159 perennial, 45 intermittent, 40 ephemeral, and 11 open water), 11 of which are classified as major waterbodies that are over 100 feet in width. PennEast proposes to cross waterbodies using a combination of HDD, bores, and dry-crossing methods to minimize in-stream turbidity impacts. Beltzville Lake, the Lehigh River/Lehigh Canal the Delaware River/Delaware Canal, Locketong Creek (at two locations), and an unnamed tributary to Woolsey Brook would be crossed using the HDD method. We have reviewed PennEast's HDD Inadvertent Returns and Contingency Plan and HDD profiles; however, we are recommending that PennEast file results of all outstanding geotechnical investigations and file final planned designs for each HDD crossing.

PennEast is proposing to use both surface water and municipal water sources for hydrostatic testing that would ensure the safe integrity of pipeline operations. In total, PennEast anticipates withdrawing about 18 million gallons of water for hydrostatic testing. Because

PennEast has not identified the final hydrostatic test water withdrawal locations, we are recommending that, prior to construction, PennEast provide documentation of the final hydrostatic test water withdrawal sources and locations, and provide documentation that all necessary permits and approval have been obtained for withdrawal from each source.

Construction of the Project would temporarily impact about 56 acres of wetlands (26 acres in Pennsylvania and 30 acres in New Jersey) and permanently impact about 35 acres of wetlands (17 acres in Pennsylvania and 18 acres in New Jersey). In emergent wetlands, the impact of the construction and permanent rights-of-way would be relatively brief because the emergent vegetation would regenerate quickly, typically within one to three years. In scrub-shrub and forested wetlands, PennEast would maintain a 10-foot-wide corridor centered over the pipeline in an herbaceous state and would selectively cut trees within a 30-foot-wide corridor centered over the pipeline. The remainder of forested and scrub-shrub vegetation would be allowed to return to preconstruction conditions and would not be affected during operation. No permanent fill or loss of wetland area would result from construction and operation of the Project.

Construction and operation-related impacts on wetlands would be mitigated by PennEast's compliance with the conditions of permits issued under sections 401 and 404 of the Clean Water Act, by implementing the wetland protection and restoration measures contained in its E&SCP, and through measures determined during consultation with federal and state agencies. Because at least one wetland with extremely saturated soils has been identified along the Project route, we are recommending that PennEast identify special construction methods for construction in extremely saturated wetlands as well as justification of any resulting required additional workspace.

Vernal pools are considered to be communities of special concern in both Pennsylvania and New Jersey and the Project would impact several vernal pool areas within the proposed pipeline right-of-way. Based on current information, approximately 0.13 acre of vernal pool habitats would be impacted by construction of the Project, with 0.11 acre permanently impacted during operation. Because surveys along the Project route are not yet complete, we are recommending that, prior to construction, PennEast provide a revised table of impacts on vernal pools within or near the proposed workspace based on completed surveys.

Based on our analysis, we conclude that the Project is not expected to significantly impact groundwater, surface water, or wetland quality or quantity during construction or operation with implementation of PennEast's proposed mitigation measures as well as our recommendations.

### Aquatic Resources

The Project would cross multiple waterbodies, thereby potentially affecting aquatic biological resources (e.g., invertebrates and fish) during the initial crossing of these waterbodies during construction, as well as during the operation of the Project. Different crossing methods, including conventional dry ditch, conventional bore, and HDD, would be used during these crossings depending upon the sensitivity and environmental characteristics of the resource that would be affected at each individual crossing.

Construction of the pipeline could have both direct and indirect impacts on aquatic biological resources. In-stream pipeline construction could remove habitat, temporarily increase sedimentation and turbidity in the water column, increase the potential for streambank erosion, temporarily disturb streambed foraging areas, and temporarily increase the potential for fuel or

chemical spills. To minimize the extent and duration of these potential impacts, PennEast would implement the requirements and Best Management Practices found in its E&SCP and FERC's Upland Erosion Control, Revegetation, and Maintenance Plan (Plan) and Wetland and Waterbody Construction and Mitigation Procedures (Procedures).

The Project has the potential to restrict the flow of water as well as the movement of aquatic organisms within the waterbody during both construction and operation of the Project if the crossing is not constructed correctly. The conventional bore and HDD crossing method would involve installing the pipeline segment beneath the waterbody which would prevent disturbance of bottom sediments and avoid altering the flow of water within the waterbody. The conventional dry-ditch method would use flumes or dam-and-pumps to move water around the open trench. To ensure that the flow of water and movement of fish is not impacted on a long-term basis at the proposed crossings, PennEast would ensure that the depth of the pipe through waterbodies would prevent the pipe from becoming perched within the waterbody, and install culverts and/or bridges used at the proposed permanent access road crossings in compliance with all state and federal requirements.

PennEast would comply with all waterbody crossing windows established by state and federal permits in order to avoid or minimize impacts on aquatic biological resources. In accordance with the FERC Procedures, to minimize impact on fisheries resources, all in-stream work would be performed between June 1 and September 30 to protect cold water fisheries and between June 1 and November 30 to protect warm water fisheries, unless other more stringent agency timing restrictions would apply to the affected waterbody.

With the implementation of these measures, as well as the requirements found in FERC's Plan and Procedures, we conclude that overall impacts on aquatic resources would be adequately minimized.

### Vegetation and Wildlife

Direct impacts on wildlife during construction could include the displacement of wildlife from the Project area, as well as direct mortality of some individuals. Some species are likely to be displaced from habitats that are cleared of vegetation as well as from areas adjacent to construction sites due to construction noise and visual disturbances.

Impacts on forest habitat could include fragmentation and edge effects. The proposed pipeline route was sited to avoid areas containing large, interior forested stands where possible. When forests could not be avoided, proposed routing through a forest was accomplished by locating the pipeline as far from the interior portion of the forest as practicable to maximize preservation of interior forest habitat. About 44.3 miles (26.8 miles in Pennsylvania and 17.5 miles in New Jersey), or about 37 percent, of the 115.1-mile-long pipeline route would be constructed adjacent to existing rights-of-way (see section 2.2.1) to further minimize habitat impacts.

Following construction, all temporarily disturbed areas would be restored in accordance with our Plan and Procedures. Impacts on forested habitats would be considered long-term because of the time required to restore woody vegetation to preconstruction conditions. During operation, routine vegetation maintenance of the right-of-way would be required to allow access for pipeline patrols, and to maintain access in the event of emergency repairs. In upland areas, maintenance of the right-of-way would involve periodic vegetation maintenance within the entire

permanent right-of-way, and a 10-foot-wide strip centered on the pipeline would be mowed annually.

The Project would cross areas identified as unique or exemplary wildlife habitats, including the Bear Creek Preserve, Sourland Mountain Region, State Game Lands, Deer Management Areas, and Important Bird Areas (including Hickory Run State Park, Kittatinny Ridge, Musconetcong Gorge, Everittstown Grassland, Baldpate Mountain, and Pole Farm).

PennEast would work with the appropriate regulatory agencies as part of the permitting process to minimize the potential that invasive or noxious plant species spread during construction of the Project. We are recommending that PennEast file an Invasive Plant Species Management Plan that would be implemented during construction and operation.

PennEast would implement restrictions on the locations and timing of construction activities, as required by state and federal agencies, in order to avoid or minimize impacts on wildlife species and their habitats. Furthermore, PennEast is required to develop a Migratory Bird Conservation Plan and implement measures recommended by the FWS to protect bald eagles in order to comply with the Migratory Bird Treaty Act and Bald and Golden Eagle Protection Act. In addition, PennEast would work with the local soil conservation district as well as land management agencies to determine the appropriate seed mixes that should be used during revegetation efforts.

With the implementation of these measures, as well as the requirements found in FERC's Plan and Procedures, we conclude that overall impacts on vegetation and wildlife would be adequately minimized.

#### Threatened, Endangered, and Special Status Species

The species included in the Threatened, Endangered, and Special Status Species section of this EIS include those species that are federally listed under the Endangered Species Act (ESA), those that are listed under applicable state endangered species laws (e.g., the Pennsylvania Endangered Species Coordination Act and the New Jersey Endangered Species Conservation Act), and those that are considered Species of Special Concern in New Jersey.

Through informal consultation with the FWS and National Marine Fisheries Service (NMFS), five federally listed threatened or endangered species have been identified as potentially occurring in the Project area. These species include two mammals (Indiana bat and northern long-eared bat), one reptile (bog turtle), one invertebrate (dwarf wedgemussel), and one plant species (northeastern bulrush). The Pennsylvania Fish and Boat Commission (PFBC) further identified two fish species that are listed under both the ESA and the two applicable state endangered species laws (the Atlantic sturgeon and shortnose sturgeon) as potentially occurring downstream of the Project area; although the NMFS stated that these listed fish species do not occur in the Project area and would not be impacted by the Project. Due to this comment by the PFBC, analysis of these two listed fish species was included in this EIS.

PennEast has attempted to avoid habitats and known occurrences of ESA listed species, and has committed to avoidance and minimization measures related to these species, including 1) timing restrictions on tree clearing in areas identified by the FWS as important to listed bat species; 2) implementation of a 300-foot no disturbance buffer around wetlands and 150-foot no

disturbance buffer around waterways that support listed species; 3) use of a HDD crossing method for waterbodies suspected of supporting listed species; and 4) the implementation of surveys for listed species in all suitable habitats crossed by the Project. Furthermore, consultation with the FWS is ongoing regarding ESA listed species, and as part of this ongoing consultation process the FWS may develop additional measures beyond those described in this EIS to avoid or minimize impacts on ESA listed species. The implementation of these measures would likely avoid or minimize some of the potential impacts that could occur on ESA listed species. All areas of potential suitable habitats have not been surveyed to date (indicating that additional occurrences of these species is possible along the Project).

Therefore, our preliminary determination for the Indiana bat, northern long-eared bat, bog turtle, dwarf wedgemussel, and northeastern bulrush is that the Project “*may affect and is likely to adversely affect*” these species. Our preliminary determination for the Atlantic sturgeon and shortnose sturgeon is “*no effect*”, as these species occur approximately 20 river-miles downstream of the Project and the implementation of the Project’s design features (e.g., the proposed HDD crossing of the Delaware River/Delaware Canal, as well as the requirements found in PennEast’s E&SCP and FERC’s Plan and Procedures) would prevent any Project related effects from occurring in waters 20 miles downstream. We have further recommended that PennEast complete all surveys of potential suitable habitats for special status species in the Project area, and not construct any portion of the Project until formal consultation with the FWS is complete.

FERC requests that the FWS consider this EIS as the Biological Assessment.

The Project has the potential to impact multiple state listed species, as well as New Jersey Species of Special Concern. PennEast has stated that it would adhere to the recommendations and requirements of the respective state agencies with jurisdiction over state listed species and state species of concern in order to avoid or minimize impacts on these species. PennEast has also indicated that ongoing permit review by Pennsylvania and New Jersey may result in the identification of additional avoidance, minimization, or mitigation measures that would be included as part of the Project’s permit conditions. In general, we conclude that relying on state-level experts for the development of measures that would minimize impacts on state listed species and state species of concern would appropriately avoid or reduce impact on these species. As a result, we have recommended that PennEast continue to work with the state agencies on measures to avoid or minimize impacts on these state species.

#### Land Use, Recreation, and Visual Resources

Construction of the Project would impact about 1,613.5 acres. About 66 percent of this acreage would be utilized for the pipeline facilities, including the construction right-of-way and additional temporary work space (ATWS). The remaining acreage affected during construction would be associated with aboveground facilities (4 percent), pipe and contractor ware yards (23 percent), and access roads (7 percent). During operation, the new permanent pipeline right-of-way, aboveground facilities, and permanent access roads would encumber 784 acres.

The maintained right-of-way would be mowed no more than once every three years, but a 10-foot-wide strip centered over the pipeline might be mowed annually to facilitate corrosion and other operational surveys. The construction of permanent structures or the planting of trees, would be prohibited within the permanent right-of-way. To facilitate pipeline inspection, operation, and

maintenance, the entire permanent right-of-way in upland areas would be maintained in an herbaceous/scrub-shrub vegetated state.

Based on field surveys conducted by PennEast where access was available, and review of aerial photography in other locations, PennEast's proposed construction work areas would be located within 50 feet of 462 structures (i.e., houses and apartment buildings, commercial or industrial facilities, sheds, garages), with 298 structures within 25 feet of PennEast's proposed construction work area. A total of 66 of these structures within 25 feet of PennEast's proposed construction work area are residential structures. PennEast has provided site-specific construction plans for some residences within 25 feet of the construction work areas. We are recommending that PennEast provide any remaining site-specific construction plans for all residences within 25 feet of the construction right-of-way and ATWS including landowner approval.

Thirteen planned residential and commercial development projects have been identified within 0.25 mile of the proposed Project facilities, including seven residential developments, three commercial developments, two municipal developments, and one hospital expansion. We are recommending that PennEast continue to consult with landowners for several of these planned developments, and file any mitigation measures that PennEast would implement to minimize impacts on the developments prior to the end of the draft EIS comment period.

PennEast would require about 104 acres of agricultural land in Pennsylvania and 100 acres in New Jersey as new permanent right-of-way, but operation of the proposed pipeline would not affect the continuing use of these areas for agricultural activities after construction is complete. Following construction, all affected agricultural land would be restored to preconstruction conditions to the extent possible, in accordance with PennEast's E&SCP and Agricultural Impact Minimization Plan, and with any specific requirements identified by landowners or state or federal agencies with appropriate jurisdiction.

In general, the effects of the Project on recreational and special interest areas occurring outside of forestland would be temporary and limited to the period of active construction, which typically lasts several weeks or months in any one area. These effects would be minimized by implementing the measures in PennEast's E&SCP, Best Management Practices, and other project-specific construction plans. In addition, PennEast would continue to consult with the owners and managing agencies of recreation and special interest areas regarding the need for specific construction mitigation measures. PennEast considered several alternative crossing locations of the Appalachian National Scenic Trail, and has developed a site-specific crossing plan at this location, after considering comments and perspectives shared by the National Park Service, Appalachian Trail Conservancy, Pennsylvania Game Commission, and other stakeholders. We have reviewed this crossing plan and find it acceptable. However, PennEast is responsible for obtaining the pertinent permits from the appropriate authorities for crossing the Appalachian National Scenic Trail at this location. To further minimize effects on other recreation and special interest areas crossed by the Project, we are recommending that PennEast file an update on the status of development of the site-specific crossing plans for each of the recreation and special interest areas listed as being crossed or otherwise affected, including site-specific timing restrictions, proposed closure details and notifications, specific safety measures, and other mitigation to be implemented.

The Project would cross a number of areas enrolled in a variety of conservation programs. Although there would be temporary impacts and potential disruption during construction, following pipeline installation all activities and accesses currently available to the public would be returned to their original state. We are recommending that PennEast file the results of consultations with the NRCS and the landowner of the one known USDA easement crossed, any proposed mitigation measures to be implemented, and copies of correspondence prior to the end of the draft EIS comment period. The limited permanent easement area that PennEast would acquire for pipeline installation and operation would lose its conservation status, but only in that PennEast would acquire the development rights to install and maintain the pipeline in this easement. The majority of the land area that is subject to conservation easement restrictions would retain its conservation restriction status outside of PennEast's permanent right-of-way.

The Project would not cross any known landfills or hazardous waste sites, although portions of the Project, between mileposts 47 and 52 would occur within a 1-mile buffer from the Palmerton Zinc Pile Superfund site. The pipeline would not impact existing and/or on-going Superfund site remedies, and levels of contamination, if existing outside of the Superfund site boundary, would be within an acceptable risk threshold and remedial action would not be required.

Visual resources along the proposed pipeline route are a function of geology, climate, and historical processes, and include topographic relief, vegetation, water, wildlife, land use, and human uses and development. A portion of the new pipeline (about 37 percent) would be installed within or parallel to existing rights-of-way. As a result, the visual resources along these portions of the Project have been previously affected by other similar activities. Impacts in other areas would be greatest where the pipeline route would parallel or cross roads and the pipeline right-of-way may be seen by passing motorists; from residences where vegetation used for visual screening or for ornamental value is removed; and where the pipeline is routed through forested areas.

After construction, all disturbed areas, including forested areas, would be restored in compliance with PennEast's E&SCP; federal, state, and local permits; landowner agreements; and easement requirements. Generally this would include seeding the restored areas with grasses and other herbaceous vegetation, after which trees would be allowed to regenerate within the temporary workspaces. The visual effects of construction on forested areas would be permanent on the maintained right-of-way where the regrowth of trees would not be allowed, and would be long term, lasting several years or longer, in the temporary workspaces. The greatest potential visual effect would result from the removal of large specimen trees, but the visual effects of removing smaller trees would even last for several years. PennEast proposes to reseed with native plants to revegetate the construction right-of-way which would result in the establishment of native wildflowers for pollinators along the maintained right-of-way.

The compressor station would be located in previously logged, disturbed forest in Carbon County, Pennsylvania. Visual disturbance would be limited to vegetation clearance for the access road off Pennsylvania Route 940 and partial views of the site from Interstate 80. We conclude that the retention of trees and shrubs around the perimeter of the compressor station site would provide sufficient cover to avoid any significant adverse visual impacts.

With implementation of PennEast's proposed impact avoidance, minimization, and mitigation plans, and our recommendations, we conclude that overall impacts on land use and visual resources would be adequately minimized.

## Socioeconomics

Construction of the Project would result in minor beneficial socioeconomic impacts due to increases in construction jobs, payroll taxes, purchases made by the workforce, and expenses associated with the acquisition of material goods and equipment. Operation of the Project would have a minor to moderate positive effect on the local governments' tax revenues due to the increase in property taxes that would be collected from PennEast.

## Cultural Resources

A sizeable portion of the Project has not been investigated for cultural resources. Where PennEast had been granted right of entry, it conducted cultural resources identification surveys on approximately 3,110 acres in Pennsylvania and 587 acres in New Jersey. The surveys identified 14 archaeological sites in Pennsylvania and six sites in New Jersey. Additionally there were 110 aboveground historic resources identified in Pennsylvania and 41 in New Jersey. PennEast has recommended avoiding a number of these resources and conduct resource evaluations, where necessary. Although the Pennsylvania and New Jersey State Historic Preservation Offices (SHPOs) concurred with some of the recommendations, they did not agree with all of the recommendations by PennEast. Consultation is ongoing with the Pennsylvania and New Jersey SHPOs. We are recommending that PennEast provide documentation of Pennsylvania and New Jersey SHPOs' concurrence with PennEast's proposed avoidance, resource identification/recommendations, updated documentation, avoidance plans, and evaluation reports/treatment plans, when necessary. If National Register of Historic Places-eligible archaeological sites cannot be protected from Project impacts, PennEast would develop a treatment plan or mitigation of adverse effects.

The National Park Service expressed concerns regarding potential Project effects to trails and cultural resources. PennEast has ongoing consultation with the National Park Service regarding these potential effects. Additionally, we are recommending that PennEast develop a vibration monitoring plan and modify its blasting plan to include a review of potential effects to cultural resources.

To ensure that our responsibilities under section 106 of the National Historic Preservation Act are met, we are recommending that PennEast not begin construction until any additional required surveys are completed, survey reports and treatment plans (if necessary) have been reviewed by the consulting parties, and we provide written notification to proceed. The studies and impact avoidance, minimization, and measures proposed by PennEast, and our recommendation, would ensure that any adverse effects on cultural resources would be appropriately mitigated.

## Air Quality and Noise

Construction of the Project components would result in short-term increases in emissions of some air pollutants due to the use of equipment powered by diesel fuel or gasoline engines and the generation of fugitive dust due to the disturbance of soil and other dust-generating activities. Such air quality impacts would generally be temporary and localized, and are not expected to cause or contribute to a violation of applicable air quality standards. Local emissions may be elevated, and nearby residents may notice elevated levels of fugitive dust, but these would not be significant. Pipeline construction is anticipated to occur in four separate spreads, each of which is estimated

to result in 6.5 months of emission-generating activities, while construction activities at the Kidder Compressor Station would take 6 months. Preparation of access roads and pipeyards would generate emissions for an estimated 3 months, including laying of gravel, and then removal of gravel at the end of construction. Construction staging areas would produce emissions for an estimated 10 months.

During operation of the pipeline and the Kidder Compressor Station, emissions of criteria pollutants, greenhouse gases (GHGs), and hazardous air pollutants would occur. Estimated emissions from the proposed Kidder Compressor Station are below all Prevention of Significant Deterioration (PSD) thresholds except for GHG. However, the requirements of PSD are not triggered if GHG is the only pollutant above the PSD threshold. Along the pipeline route, leaks and venting could occur at the compressor station and potentially from small leaks at flanges and valves. Emissions expected during operation of the pipeline would be relatively minor. No Federal Class I Areas would be impacted.

PennEast would be required to meet all federal and state air quality permitting requirements prior to construction and operation of the Project. PennEast would comply with federal and state air quality permitting rules, including the installation of mitigation measures and technologies required to meet federal and state air quality regulations. Therefore, we conclude that the Project would not result in significant air quality impacts.

Because the construction of the compressor station would exceed FERC's threshold at several noise-sensitive areas (NSAs), PennEast has agreed to implement mitigation measures, as necessary, such as use of temporary noise barriers. For NSAs that are closer to pipeline-related construction activity, such as the Econolodge, Pizza Residence, and Golf Course, mitigation may be needed depending on the construction activity. Depending on the listener proximity to the Project right-of-way, pipeline construction noise may also be audible to recreationists at Hickory Run State Park and the eastern end of Beltzville State Park. During construction, PennEast would employ a combination of noise mitigation methods, including equipment noise controls, temporary noise barriers, and administrative measures including temporary relocation of residents, to minimize noise related to construction activity at NSAs near the Project. These would include appropriate mitigation measures to achieve compliance during HDD installation operations and equipping haul trucks and other engine-powered equipment with adequate mufflers. PennEast would restrict timing of noisy construction or demolition work to 7 a.m. to 10 p.m. We are recommending that PennEast file a noise mitigation plan prior to construction and implement this plan during HDD or direct pipe construction activities.

The Project would likely require blasting in some areas of the proposed route to dislodge bedrock resulting in potential noise and vibration impacts. PennEast's Blasting Plan includes mitigation measures related to blasting activity. Blasting would be conducted in accordance with applicable agency regulations, including advance public notification and mitigation measures as necessary.

The primary source of operational noise for the Project would be the Kidder Compressor Station. PennEast would be required to meet the most restrictive noise level limits established by jurisdictional agencies. The FERC limit of 55 decibel-A weighted (dBA) day-night sound level, which is equivalent to a continuous noise level of 49 dBA, would be the governing limit for those areas where a more restrictive county, local, or station-specific regulation does not exist. PennEast

would implement mitigation measures to ensure that the applicable standards are met at the nearest NSA, including installing the turbines in acoustically insulated and treated buildings and, if possible, locating the inlet silencer inside the compressor building. We are recommending that PennEast conduct noise surveys after completing the compressor station construction to confirm that noise standards are met.

If blow-off valves are to be used during planned maintenance, PennEast would affix a silencer to the blow-off valve to minimize noise impacts. Maintenance blowdown events would typically occur only during daytime hours and PennEast plans to notify all landowners in the immediate area. Due to the infrequency and short duration of the blowdown events, noise impacts are expected to be minimal; however, we are recommending that PennEast identify mitigation measures to minimize noise levels associated with emergency or maintenance MLV blowdown events.

Based on the analyses conducted, the proposed mitigation measures, and our recommendations, we concluded that construction and operation of the Project would not result in significant noise impacts on residents and the surrounding environment.

### Reliability and Safety

The pipeline and aboveground facilities associated with the Project would be designed, constructed, operated, and maintained to meet the U.S. Department of Transportation (DOT)'s Minimum Federal Safety Standards in Title 49 Code of Federal Regulations part 192 and other applicable federal and state regulations. These regulations include specifications for material selection and qualification; minimum design requirements; and protection of the pipeline from internal, external, and atmospheric corrosion. The DOT rules require regular inspection and maintenance, including repairs as necessary, to ensure the pipeline has adequate strength to transport the natural gas safely. Further, although regulations requiring remote control shut-off valves have not yet gone into effect and would apply to pipelines built in the future, PennEast committed to the use of remote control shut-off valves for the proposed pipelines.

We conclude that PennEast's implementation of the above measures would ensure compliance with the DOT's regulations regarding public safety and the integrity of the proposed facilities.

### Cumulative Impacts

A majority of the impacts associated with the Project in combination with other projects such as residential developments, utility lines, and transportation projects, would be temporary and relatively minor overall. However, some long-term cumulative impacts would occur on wetland and forested vegetation and associated wildlife habitats. Some long-term cumulative benefits to the community would be realized from the increased tax revenues. Short-term cumulative benefits would also be realized through jobs, wages, and purchases of goods and materials. Emissions associated with the Project would contribute to cumulative air quality impacts. There is also the potential, however, that the Project would contribute to a cumulative improvement in regional air quality if a portion of the natural gas associated with the Project displaces the use of other more polluting fossil fuels. With implementation of specialized construction techniques, the relatively short construction timeframe in any one location, and carefully developed resource protection and mitigation plans designed to minimize and control environmental impacts for the Project as a

whole, we conclude that the cumulative impacts associated with the Project, when combined with other known or reasonably foreseeable projects, would be effectively limited.

## **ALTERNATIVES CONSIDERED**

As an alternative to the proposed action, we evaluated the no-action alternative, energy alternatives, and system alternatives. We also evaluated pipeline routing alternatives and an alternative compressor station location.

While the no-action alternative would eliminate the short- and long-term environmental impacts identified in the EIS, the stated objectives of PennEast's proposal would not be met. We evaluated the use of alternative energy sources and the potential effects of energy conservation, but these measures similarly would not satisfy the objectives of the Project, provide an equivalent supply of energy, or meet the demands of the Project shippers.

Our analysis of system alternatives included an evaluation of whether existing or proposed natural gas pipeline systems could meet PennEast's objectives while offering an environmental advantage. There is no available capacity for existing pipeline systems to transport the required volumes of natural gas to the range of delivery points proposed by PennEast. Moreover, with the exception of the Transco Leidy Line, none of these existing pipeline systems are in close proximity to the production areas of northern Pennsylvania. We determined that an expansion of the existing Transco Leidy Line as an alternative would not be feasible due to densely populated areas along the line that would prevent looping. Expansion of the Transco Leidy Line would also not provide access to the delivery points proposed by PennEast. Other existing systems in the area of the Project would require significant expansions to meet the objectives of the Project, which would result in environmental impacts similar to or greater than the Project.

We evaluated whether an expansion of the proposed Atlantic Sunrise Project could serve as a system alternative. Approximately 100 percent of capacity for the Atlantic Sunrise Project, and 90 percent for the PennEast Project, has been contracted, therefore, there is customer demand for both projects. The Atlantic Sunrise Project would also not provide for the same delivery points for customers that have been identified for the PennEast Project. Consequently, there are no practicable existing or proposed system alternatives that are environmentally preferable to the Project.

We evaluated four major route alternatives to the proposed pipeline route. Because none of these would offer major environmental advantages over the proposed pipeline route, we do not consider the route alternatives to be preferable to the proposed route. During the Project review process we evaluated 83 route variations that were identified by PennEast or suggested by landowners, municipalities, and other stakeholders. The variations were identified to avoid or reduce effects on environmental or other resources at specific locations, resolve engineering or constructability issues, address specific landowner requests, or address other stakeholder concerns. We evaluated route variations as summarized in section 3 of this EIS. Of the 83 variations, PennEast has incorporated 39 into the proposed route. We have reviewed the route variations incorporated into the proposed route and agree with PennEast's conclusions regarding incorporation of the 39 route variations into the proposed route.

We evaluated one alternative site for the proposed Kidder Compressor Station and do not consider the alternative site to be preferable to the proposed site. We also evaluated the feasibility

of installing electric motor driven compressor units at the Kidder Compressor Station instead of the proposed natural gas-fired compressor turbines. We found that this alternative would result in higher overall emissions due to emissions created by generation of the needed electricity, and this alternative would result in additional impacts from construction of the needed electric transmission service to the site. We do not consider electric motor driven compressor units to be preferable to the proposed natural gas-fired compressor turbines.

## CONCLUSIONS

We determined that construction and operation of the Project would result in some adverse environmental impacts, but impacts would be reduced to less-than-significant levels with the implementation of PennEast's proposed and our recommended mitigation measures. This determination is based on a review of the information provided by PennEast and further developed from data requests; field investigations; scoping; literature research; alternatives analysis; and contacts with federal, state, and local agencies as well as Indian tribes and individual members of the public.

Although many factors were considered in this determination, the principal reasons are:

- About 44.3 miles (26.8 miles in Pennsylvania and 17.5 miles in New Jersey), or about 37 percent, of the 115.1-mile-long pipeline route would be constructed adjacent to existing rights-of-way.
- PennEast would minimize impacts on natural and cultural resources during construction and operation of the Project by implementing its E&SCP, FERC's Plan and Procedures, and other Project-specific plans (Unanticipated Discovery Plan, Agricultural Impact Minimization Plan, Karst Mitigation Plan, HDD Drilling Plan for Karst Terrain, HDD Inadvertent Returns and Contingency Plan, Unexpected Contamination Encounter Procedures, Spill Prevention Control and Countermeasures Plan, Blasting Plan, Invasive Plant Species Control Plan, Well Monitoring Plan, and Compensatory Wetland Mitigation Plan).
- The FERC staff would complete the process of complying with section 7 of the ESA prior to construction.
- The FERC staff would complete consultation under section 106 of the National Historic Preservation Act and implementing regulations at 36 CFR 800.
- PennEast would comply with all applicable air and noise regulatory requirements during construction and operation of the Project.
- An environmental inspection program and a third-party monitoring oversight program would be implemented to ensure compliance with the mitigation measures that become conditions of the FERC authorization.

In addition, we developed Project-specific mitigation measures that PennEast should implement to further reduce the environmental impacts that would otherwise result from construction and operation of the Project. We determined that these measures are necessary to reduce adverse impacts associated with the Project and, in part, are basing our conclusions on implementation of these measures. Therefore, we are recommending that these mitigation measures be attached as conditions to any authorization issued by the Commission. These recommended mitigation measures are presented in section 5.2 of the EIS.

**PENNEAST PIPELINE PROJECT  
DRAFT ENVIRONMENTAL IMPACT STATEMENT**

**TABLE OF CONTENTS**

<b>EXECUTIVE SUMMARY .....</b>	<b>ES-1</b>
<b>TABLE OF CONTENTS.....</b>	<b>i</b>
<b>LIST OF APPENDICES .....</b>	<b>iv</b>
<b>LIST OF FIGURES .....</b>	<b>v</b>
<b>LIST OF TABLES .....</b>	<b>vi</b>
<b>TECHNICAL ACRONYMS AND ABBREVIATIONS.....</b>	<b>ix</b>
<b>1.0 INTRODUCTION.....</b>	<b>1-1</b>
<b>1.1 PROJECT PURPOSE AND NEED .....</b>	<b>1-3</b>
<b>1.2 PURPOSE AND SCOPE OF THIS EIS .....</b>	<b>1-4</b>
1.2.1 Federal Energy Regulatory Commission .....	1-4
1.2.2 U.S. Army Corps of Engineers .....	1-5
1.2.3 U.S. Environmental Protection Agency.....	1-5
1.2.4 U.S. Fish and Wildlife Service .....	1-6
1.2.5 U.S. Department of Transportation – Pipeline and Hazardous Materials Safety Administration .....	1-6
1.2.6 U.S. Department of Agriculture – Natural Resource Conservation Service.....	1-6
<b>1.3 PERMITS, APPROVALS, AND REGULATORY REQUIREMENTS.....</b>	<b>1-7</b>
1.3.1 Federal Permits.....	1-10
<b>1.4 PUBLIC REVIEW AND COMMENT .....</b>	<b>1-14</b>
1.4.1 Notices and Meetings.....	1-14
1.4.2 Scoping Comments .....	1-14
1.4.3 Comments Outside the Scope of This EIS.....	1-17
<b>1.5 NONJURISDICTIONAL FACILITIES .....</b>	<b>1-18</b>
<b>2.0 DESCRIPTION OF PROPOSED ACTION .....</b>	<b>2-1</b>
<b>2.1 PROJECT FACILITIES.....</b>	<b>2-1</b>
2.1.1 Pipeline Facilities.....	2-1
2.1.2 Aboveground Facilities.....	2-1
2.1.3 Other Aboveground Facilities.....	2-2
<b>2.2 LAND REQUIREMENTS .....</b>	<b>2-3</b>
2.2.1 Pipeline Facilities.....	2-4
2.2.2 Aboveground Facilities.....	2-4
2.2.3 Access Roads .....	2-5
2.2.4 Pipe and Contractor Ware Yards .....	2-5
<b>2.3 CONSTRUCTION PROCEDURES .....</b>	<b>2-5</b>
2.3.1 Pipeline Facilities.....	2-6
2.3.2 Aboveground Facilities Construction Procedures .....	2-14
<b>2.4 CONSTRUCTION SCHEDULE AND WORKFORCE .....</b>	<b>2-14</b>
<b>2.5 ENVIRONMENTAL COMPLIANCE INSPECTION AND MITIGATION MONITORING .....</b>	<b>2-14</b>
<b>2.6 OPERATION, MAINTENANCE AND SAFETY CONTROLS .....</b>	<b>2-15</b>
<b>3.0 ALTERNATIVES.....</b>	<b>3-1</b>
<b>3.1 NO ACTION ALTERNATIVE .....</b>	<b>3-2</b>
<b>3.2 SYSTEM ALTERNATIVES.....</b>	<b>3-3</b>

	3.2.1	Existing Systems.....	3-4
	3.2.2	Other Proposed Systems .....	3-7
<b>3.3</b>		<b>ROUTE ALTERNATIVES AND VARIATIONS .....</b>	<b>3-7</b>
	3.3.1	Route Alternatives .....	3-8
	3.3.2	Route Variations .....	3-19
<b>3.4</b>		<b>ABOVEGROUND FACILITY ALTERNATIVES .....</b>	<b>3-24</b>
	3.4.1	Compressor Station Site Alternative.....	3-25
	3.4.2	Compressor Station Design Alternative.....	3-27
<b>4.0</b>		<b>ENVIRONMENTAL ANALYSIS.....</b>	<b>4-1</b>
<b>4.1</b>		<b>GEOLOGY.....</b>	<b>4-1</b>
	4.1.1	Geologic Setting.....	4-1
	4.1.2	Surficial Geology.....	4-2
	4.1.3	Bedrock Geology .....	4-3
	4.1.4	Mineral Resources .....	4-3
	4.1.5	Geologic Hazards.....	4-6
	4.1.6	Rock Removal and Blasting.....	4-13
	4.1.7	Geotechnical Investigations for the Proposed HDDs .....	4-13
	4.1.8	Paleontological Resources .....	4-14
<b>4.2</b>		<b>SOILS.....</b>	<b>4-15</b>
	4.2.1	Existing Soil Resources .....	4-15
	4.2.2	General Impacts and Mitigation.....	4-22
<b>4.3</b>		<b>WATER RESOURCES.....</b>	<b>4-26</b>
	4.3.1	Groundwater Resources .....	4-26
	4.3.2	Surface Water Resources .....	4-35
	4.3.3	Aquatic Resources .....	4-58
<b>4.4</b>		<b>WETLANDS.....</b>	<b>4-65</b>
	4.4.1	Existing Wetland Resources .....	4-65
	4.4.2	Wetland Impacts and Mitigation.....	4-69
	4.4.3	Conclusions.....	4-73
<b>4.5</b>		<b>VEGETATION AND WILDLIFE .....</b>	<b>4-74</b>
	4.5.1	Vegetation .....	4-74
	4.5.2	Wildlife .....	4-81
<b>4.6</b>		<b>THREATENED, ENDANGERED AND SPECIAL STATUS SPECIES... 4-93</b>	
	4.6.1	Federally Listed Species .....	4-94
	4.6.2	State-listed Species and State Species of Concern .....	4-105
<b>4.7</b>		<b>LAND USE, RECREATION, AND VISUAL RESOURCES.....</b>	<b>4-119</b>
	4.7.1	Land Use .....	4-119
	4.7.2	Federal and State Lands and Easement Requirements .....	4-126
	4.7.3	Existing Residences, Commercial and Industrial Facilities, and Planned Developments.....	4-127
	4.7.4	Coastal Zone Management .....	4-136
	4.7.5	Other Special Interest Areas .....	4-136
	4.7.6	Hazardous Waste Sites.....	4-147
	4.7.7	Visual Resources.....	4-147
<b>4.8</b>		<b>SOCIOECONOMICS.....</b>	<b>4-151</b>
	4.8.1	Population .....	4-151
	4.8.2	Economy and Employment.....	4-154
	4.8.3	Housing.....	4-160
	4.8.4	Public Services.....	4-162

4.8.5	Public Utilities and Related Infrastructure.....	4-164
4.8.6	Transportation and Traffic .....	4-165
4.8.7	Displacement of Residences and Businesses .....	4-166
4.8.8	Property Values and Insurance .....	4-166
4.8.9	Tax Revenues.....	4-168
4.8.10	Environmental Justice.....	4-170
<b>4.9</b>	<b>CULTURAL RESOURCES.....</b>	<b>4-176</b>
4.9.1	Consultations.....	4-176
4.9.2	Results of Surveys.....	4-183
4.9.3	Outstanding Cultural Resource Investigations.....	4-198
4.9.4	Unanticipated Discoveries Procedures .....	4-199
4.9.5	General Impact and Mitigation .....	4-199
4.9.6	Compliance with NHPA .....	4-200
<b>4.10</b>	<b>AIR QUALITY AND NOISE.....</b>	<b>4-201</b>
4.10.1	Air Quality .....	4-201
4.10.2	Noise .....	4-226
<b>4.11</b>	<b>RELIABILITY AND SAFETY .....</b>	<b>4-255</b>
4.11.1	Safety Standards for Pipelines .....	4-255
4.11.2	Pipeline Accident Data .....	4-260
4.11.3	Impact on Public Safety .....	4-262
4.11.4	Terrorism.....	4-264
<b>4.12</b>	<b>CUMULATIVE IMPACTS .....</b>	<b>4-265</b>
4.12.1	Marceullus Shale Development .....	4-273
4.12.2	FERC-Jurisdictional Natural Gas Pipeline Projects .....	4-274
4.12.3	Other Actions.....	4-276
4.12.4	Potential Cumulative Resource Impacts of the Proposed Action .....	4-278
4.12.5	Conclusion .....	4-287
<b>5.0</b>	<b>CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>5-1</b>
<b>5.1</b>	<b>SUMMARY OF THE FERC STAFF ENVIRONMENTAL ANALYSIS ....</b>	<b>5-1</b>
5.1.1	Geological Resources.....	5-1
5.1.2	Soils.....	5-3
5.1.3	Water Resources .....	5-4
5.1.4	Wetlands .....	5-6
5.1.5	Vegetation and Wildlife.....	5-7
5.1.6	Threatened, Endangered, and Other Special Status Species.....	5-9
5.1.7	Land Use, Recreation, and Visual Resources .....	5-10
5.1.8	Socioeconomics .....	5-13
5.1.9	Cultural Resources.....	5-14
5.1.10	Air Quality and Noise .....	5-14
5.1.11	Reliability and Safety.....	5-16
5.1.12	Cumulative Effects.....	5-17
5.1.13	Alternatives .....	5-18
<b>5.2</b>	<b>FERC STAFF’S RECOMMENDED MITIGATION.....</b>	<b>5-19</b>

TABLE 4.12.4-1	
Project Facility and Pipeline Construction Activity Combined GHG Emissions	
Source Category	Emissions (Total Tons)
	CO <sub>2</sub> e
Pipeline Diesel Non-Road Equipment Totals	31,476
Diesel and Gas On-Road	1,690
Construction Activity Fugitive Dust	-
Roadway Fugitive Dust	-
Comp. Station Construction Sub-Total	1,712
<b>Total</b>	<b>34,878</b>

TABLE 4.12.4-2	
Operational Phase GHG Emissions	
Source Category	Emissions (Tons Per Year)
	CO <sub>2</sub> e
Compressor Station	191,785
PA Pipeline Total	11,450
NJ Pipeline Total	70,823
<b>Total</b>	<b>274,057</b>

We have received comments from EPA recommending that we also estimate GHG emissions from the development and production of natural gas being transported through the proposed pipeline, as well as estimate the GHG emissions associated with the end use of the gas. FERC has in the past ruled that while upstream development and production of natural gas might be a “reasonably foreseeable” effect of a proposed action, the actual scope and extent of potential GHG emissions from upstream natural gas production is not reasonably foreseeable (FERC 2015). CEQ’s draft guidance on evaluating GHG impacts does not require NEPA analyses to include such unforeseeable effects.

However, GHG impacts from end use of the gas transported by the Project are reasonably foreseeable. The proposed transmission capacity of the Project is 1.1 million dekatherms per day (MMDth/d). A dekatherm is equal to 10 therms, or 1,000,000 Btus, of heat content. Using the GHG emission factors and global warming potentials published in 40 CFR 98 for emissions of CO<sub>2</sub>, CH<sub>4</sub>, and N<sub>2</sub>O from combustion of natural gas, potential end-use GHG emissions would be 23,500,000 tons per year during the expected lifetime of the Project.

In May 2014, the USGCRP issued a report, Climate Change Impacts in the United States: The Third National Climate Assessment, summarizing the impacts that climate change has already had on the United States and what projected impacts climate change may have in the future (USGCRP 2014). The report includes a breakdown of overall impacts by resource and impacts described for various regions of the United States. Although climate change is a global concern, for this cumulative analysis we focus on the potential cumulative impacts of climate change in the PennEast Pipeline Project area.

**People's Dossier: FERC's Abuses of Power and Law  
→ Climate Change & Drilling Impacts Ignored**

**Climate Change & Drilling Impacts Ignored**  
**Attachment 7**, Statement of Commissioner Richard Glick  
on Dominion Transmission, Inc., FERC Docket No.  
CP14-497-001, May 18, 2018.



# STATEMENT

## Statement of Commissioner Richard Glick on Dominion Transmission, Inc.

Date: May 18, 2018

Docket No.: CP14-497-001

"Today, the Commission adopts a new policy regarding its consideration of how pipeline permitting decisions under section 7<sup>1</sup> of the Natural Gas Act (NGA) contribute to climate change. In particular, the Commission now concludes that the NGA and the National Environmental Policy Act<sup>2</sup> (NEPA) do not require that the Commission consider greenhouse gas emissions from the production or consumption of natural gas that may be the reasonably foreseeable result of the Commission's certification decisions.<sup>3</sup> Because I disagree with the Commission's interpretation of our obligations under the NGA and NEPA, I dissent in part from today's order, which I might otherwise join were it not for this new policy.<sup>4</sup> I find it particularly disappointing that the Commission is adopting this new policy just as it embarks on a broad review of the Commission's process for certifying new natural gas pipelines, which will include how greenhouse gas emissions are assessed.<sup>5</sup>

"Climate change poses an existential threat to our security, economy, environment, and, ultimately, the health of individual citizens.<sup>6</sup> Unlike many of the challenges that our society faces, we know with certainty what causes climate change: It is the result of greenhouse gas emissions, including carbon dioxide and methane—which can be released in large quantities through the production and the consumption of natural gas. Accordingly, it is critical that, as an agency of the federal government, the Commission comply with its statutory responsibility to document and consider how its authorization of a natural gas pipeline facility will lead to the emission of greenhouse gases, contributing to climate change.

"In today's order on rehearing, the Commission argues that it cannot consider the New Market Project's effect on climate change because the record does not include information regarding the specific nature and extent of the impact

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<sup>1</sup> 15 U.S.C. 717f (2012).

<sup>2</sup> National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852.

<sup>3</sup> *Dominion Transmission, Inc.* 163 FERC ¶ 61,128 (2018) (*New Market*).

<sup>4</sup> I agree that the record in this particular proceeding does not contain "meaningful information," *New Market*, 163 FERC ¶ 61,128 at P 34, sufficient to identify the reasonably foreseeable effects of the New Market Project on greenhouse gas emissions associated with the production and consumption of natural gas. I disagree, however, with other conclusions that the Commission reaches and, therefore, cannot join today's order.

<sup>5</sup> *Certification of New Interstate Natural Gas Facilities*, Notice of Inquiry, 163 FERC ¶ 61,042 (2018).

<sup>6</sup> *Fla. Se. Connection, LLC*, 162 FERC ¶ 61,233, at 2 & n.9 (2018) (Glick, Comm'r, dissenting).



# STATEMENT

that authorizing the new pipeline facilities will have on the production and consumption of natural gas.<sup>7</sup> The Commission contends that whatever effect the New Market Project has on the production and consumption of natural gas will not be reasonably foreseeable and, therefore, not something that the Commission must address in its NEPA analysis.<sup>8</sup> In so doing, the Commission is adopting a remarkably narrow view of its responsibilities under NEPA and the NGA's public interest standard. Under this view, even if the Commission knows that new pipeline facilities would have an environmental impact—in this case, causing greenhouse gas emissions by facilitating additional production and consumption of natural gas—the Commission is not obligated to consider those impacts unless the Commission knows definitively that the production and consumption would not occur absent the pipeline.<sup>9</sup>

"That approach violates NEPA's requirement that federal agencies take "a hard look at [the] environmental consequences" of their decisions.<sup>10</sup> As an initial matter, the principal reason that the Commission does not have this "meaningful information" is that the Commission does not ask for it. But NEPA does not permit agencies to so easily shirk their responsibilities to consider environmental consequences. Rather, NEPA requires that an agency "must use its best efforts to find out all that it reasonably can."<sup>11</sup> The Commission has several opportunities throughout the pre-filing and formal application processes to issue a data request to the pipeline developer seeking information about the source of the gas to be transported as well as its ultimate end use.<sup>12</sup> A simple data request would seem to fall easily within what constitutes the Commission's "best efforts." In the absence of any such efforts, the Commission should not be able to rely on the lack of "meaningful information" to satisfy its obligations under NEPA and the NGA to identify the reasonably foreseeable consequences of its actions.<sup>13</sup>

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<sup>7</sup> *New Market*, 163 FERC ¶ 61,128 at PP 38-42, 59-63.

<sup>8</sup> *Id.*

<sup>9</sup> *See id.* PP 38, 59.

<sup>10</sup> *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989) (internal quotation marks omitted).

<sup>11</sup> *Barnes v. Dep't of Transp.*, 655 F.3d 1124, 1136 (9th Cir. 2011) (internal quotation marks omitted).

<sup>12</sup> The Commission asserts that it is excused from asking these questions because there is no indication that the pipeline applicant will have that information and, in any case, it is the states that have jurisdiction over the production of natural gas. *New Market*, 163 FERC ¶ 61,128 at P 61; *see id.* P 41 n.89. Regarding the first point, there may be cases in which the upstream consequences of the Commission's permitting decisions will not be reasonably foreseeable. But it does not follow that the Commission must conclude, generically, that the environmental effects of upstream production will never be reasonably foreseeable because information about the exact source of natural gas is not specified. Rather, as discussed below, the question of what is reasonably foreseeable under NEPA is one that should be answered following a record-by-record inquiry. Regarding the second point, the natural gas sector is replete with overlapping state and federal authority and there is nothing surprising or uncommon about a state action affecting matters subject to federal authority and vice-versa. *See infra* n.24 and accompanying text. What NEPA requires is that the Commission consider the reasonably foreseeable environmental consequences of its permitting decisions and that it make its best efforts to gather the information needed to do so. The mere fact that other aspects of the causal chain are subject to state regulation, does not vitiate the Commission's obligation to consider those consequences. *See Sierra Club v. FERC*, 867 F.3d 1357, 1373 (D.C. Cir. 2017) (*Sabal Trail*).

<sup>13</sup> Contrary to the suggestion in the Commission order, in concluding that there may be circumstances in which the upstream and downstream impacts of a pipeline facility are reasonably foreseeable results of the constructing and operating the proposed facility, I am relying on precisely the sort of "reasonably close causal relationship" that Supreme Court has required in the NEPA context and analogized to proximate cause. *See Federal Motor Carrier Safety Admin. v. Pub. Citizen*, 541 U.S. 752, 767 (2004) ("NEPA requires a 'reasonably close causal relationship' between the environmental effect and the alleged cause. The Court



# STATEMENT

"The Commission responds that this information will rarely be relevant because upstream and downstream emissions generally are not reasonably foreseeable consequences of building the proposed project.<sup>14</sup> In reality, that depends on the record that the Commission compiles. There will undoubtedly be some cases where those emissions are, in fact, too speculative to be considered "reasonably foreseeable." But there may also be others, such as *Sabal Trail*, where an adequate record would provide sufficient information to make those emissions reasonably foreseeable.<sup>15</sup> Consistent with *Sabal Trail*, the determination of what environmental effects must be considered under NEPA should turn on a record-by-record inquiry of what effects are reasonably foreseeable, not on generic pronouncements divorced from the facts of any specific case. And unless the Commission makes its "best efforts" and asks the necessary questions, that record is unlikely to exist and Congress' purposes in enacting NEPA will be undermined.

"In addition, even where exact information regarding the source of the gas to be transported and the ultimate end use is not available to the pipeline developer, the Commission will often be able to produce comparably useful information based on reasonable forecasts of the greenhouse gas emissions associated with production and consumption.<sup>16</sup> "Forecasting environmental impacts is a regular component of NEPA reviews and a reasonable estimate may inform the federal decisionmaking process even where the agency is not completely confident in the results of its forecast.<sup>17</sup> For instance, in *Sabal Trail*, the United States Court of Appeals for the District of Columbia Circuit interpreted NEPA to require that the Commission attempt to quantify the greenhouse gas emissions associated with the Sabal Trail pipeline, even though the Commission could not know the actual greenhouse gas impact before the project entered operation.<sup>18</sup>

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[has] analogized this requirement to the 'familiar doctrine of proximate cause from tort law.'" (quoting *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 774 (1983)); see also *Paroline v. United States*, 134 S. Ct. 1710, 1719 (2014) ("Proximate cause is often explicated in terms of foreseeability or the scope of the risk created by the predicate conduct."); *Staelens v. Dobert*, 318 F.3d 77, 79 (1st Cir. 2003) ([I]n addition to being the cause in fact of the injury [the but for cause], the plaintiff must show that the negligent conduct was a proximate or legal cause of the injury as well. To establish proximate cause, a plaintiff must show that his or her injuries were within the reasonably foreseeable risks of harm created by the defendant's negligent conduct." (internal quotation marks and citations omitted)).

<sup>14</sup> See *New Market*, 163 FERC ¶ 61,128 at PP 41 n.89, 63; *id.* P 43 (suggesting that greenhouse gas emissions from the production and consumption of natural gas are "extraneous" to the Commission's public interest determination because the Commission does not control the production or consumption of natural gas).

<sup>15</sup> In response to this point, the Commission contends that NEPA does not require the consideration of "speculative harms" or "consequences beyond those of greatest concern to the public and of greatest relevance to the agency's decision." *Id.* P 61 & n.143 (internal quotation marks omitted). I am not aware of any harm more "concerning" or "relevant" than the threat posed by climate change.

<sup>16</sup> *Del. Riverkeeper Network v. FERC*, 753 F.3d 1304, 1310 (2014) (quoting *Scientists' Inst. for Pub. Info., Inc. v. Atomic Energy Comm'n*, 481 F.2d 1079, 1092 (D.C. Cir. 1973)); see *Sierra Club v. Dep't of Energy*, 867 F.3d 189, 198 (D.C. Cir. 2017) ("In determining what effects are 'reasonably foreseeable,' an agency must engage in 'reasonable forecasting and speculation.'" (quoting *Del. Riverkeeper*, 753 F.3d at 1310)).

<sup>17</sup> In determining what constitutes reasonable forecasting, it is relevant to consider the "usefulness of any new potential information to the decisionmaking process." *Sierra Club*, 867 F.3d at 198 (citing *Pub. Citizen*, 541 U.S. at 767).

<sup>18</sup> *Sabal Trail*, 867 F.3d at 1373-74.



# STATEMENT

Similar forecasts can play a useful role in the Commission's evaluation of the public interest, even in those instances when the Commission must make a number of assumptions in its forecasting process.<sup>19</sup>

"It is particularly important for the Commission to use its "best efforts" to identify and quantify the full scope of the environmental impacts of its pipeline certification decisions given that these pipelines are expanding the nation's capacity to carry natural gas from the wellhead to end-use consumers. Adding capacity has the potential to "spur demand" and, for that reason, an agency conducting a NEPA review must, at the very least, examine the effects that an expansion of pipeline capacity might have on production and consumption.<sup>20</sup> Indeed, if a proposed pipeline neither increases the supply of natural gas available to consumers nor decreases the price that those consumers would pay, it is hard to imagine why that pipeline would be "needed" in the first place.

"The fact that the pipeline's exact effect on the demand for natural gas may be unknown is no reason not to consider the type of effect it is likely to have.<sup>21</sup> As the United States Court of Appeals for the Eighth Circuit explained in *Mid States*—a case that also involved the downstream emissions from new infrastructure to transport fossil fuels—"if the nature of the effect" (i.e., increased emissions) is clear, the fact that "the extent of the effect is speculative" does not excuse an agency from considering that effect in its NEPA analysis.<sup>22</sup> And while natural gas pipelines can benefit the nation—including by, in some cases, providing natural gas supplies that can displace older, more greenhouse gas-intensive methods of electricity generation—any "hard look" at incremental pipeline capacity should also consider the environmental consequences associated with that additional capacity.

"I recognize that, even if the Commission were to try, there may be instances in which it will not have sufficient information to assess the consequences that issuing a particular certificate may have for climate change. But, in that

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<sup>19</sup> As Commission LaFleur aptly explains in her separate statement, prior to the policy change announced today, the Commission previously determined that forecasts of GHG emissions from production and consumption are both available and useful to affected parties, including the public.

<sup>20</sup> See *Barnes*, 655 F.3d at 1138; *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549 (8th Cir. 2003) (*Mid States*) ("[T]he proposition that the demand . . . will be unaffected by an increase in availability and a decrease in price . . . is illogical at best."). The Commission attempts to distinguish these cases chiefly by contending that "a number of factors, such as domestic natural gas prices and production costs, drive new drilling." *New Market*, 163 FERC ¶ 61,128 at P 60. Although sales price and production costs are, undoubtedly, factors that influence natural gas production, that is no answer to the argument that the Commission must at least consider the demand-inducing effects of new capacity. After all, surely the sales prices and production costs associated with air travel and coal mining affected demand in *Barnes* and *Mid States*, respectively.

<sup>21</sup> In the Commission's 1999 Policy Statement it provided the following illustrative list of the "public benefits": "meeting unserved demand, eliminating bottlenecks, access to new supplies, lower costs to consumers, providing new interconnects that improve the interstate grid, providing competitive alternatives, increasing electric reliability, or advancing clean air objectives." *Certification of New Interstate Natural Gas Pipeline Facilities*, 88 FERC ¶ 61,227, 61,748 (1999). All of those examples, with the exception of the last two, are benefits that could "spur demand" for natural gas. Cf. *Mid States*, 345 F.3d at 549.

<sup>22</sup> *Id.* The Commission attempts to distinguish *Mid States* on the basis that the agency in that case conceded that the harm in question was reasonably foreseeable. *New Market*, 163 FERC ¶ 61,128 at P 65. I agree that where an agency finds that a harm is reasonably foreseeable, but nevertheless fails to consider that harm, it invites *vacatur*. But while that concession may be sufficient, it is not necessary. As noted above, whether a particular harm is reasonably foreseeable should be a record-by-record determination and, accordingly, there may be instances in which an agency contends that a harm is not reasonably foreseeable, but the record indicates otherwise. See *Sabal Trail*, 867 F.3d at 1371-72.



# STATEMENT

scenario, it is the fact that the Commission made every effort to identify the climate-change impacts that satisfies the Commission's obligation to consider those impacts as indirect or cumulative effects under NEPA. The mere fact that the record does not contain specific information regarding the greenhouse gas emissions associated with increased production or consumption from a particular natural gas pipeline cannot excuse the Commission from considering those effects under NEPA when the Commission has not seriously attempted to gather that information in the first place.

"As stated earlier, anthropogenic climate change is among the most serious threats we face as a nation. For that reason, the Commission cannot determine whether a natural gas pipeline is in the "public interest" without considering the effect that granting a certificate will have on climate change. I certainly cannot support issuing a certificate where the Commission has not made its best effort to collect information regarding those emissions. Accordingly, I believe that the NGA's public interest standard requires the Commission to consider greenhouse gas emissions associated with the incremental production and consumption of natural gas caused by a new pipeline.<sup>23</sup>

"The fact that individual states and other federal agencies may consider, and even regulate, some of the environmental impacts from the pipeline, does not limit the Commission's responsibility to consider these impacts when evaluating the public interest.<sup>24</sup> Indeed, the certificate process is replete with overlapping jurisdiction: numerous federal and state agencies consider a pipeline's impact on natural resources under parallel and complementary statutes, including potential effects on endangered species, air quality, water bodies, and wetlands. Rather than indicating a problem with or a limit on the Commission's authority, these overlapping interests merely reflect the broad scope of the Commission's authority to evaluate the public interest and the sweeping impacts that a pipeline can have on the environment, communities, and individuals.

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"Today's order, following the Commission's recent order in *Sabal Trail*,<sup>25</sup> represents another step toward drastically limiting the Commission's consideration of climate change in the section 7 certification process. As I have explained,

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<sup>23</sup> The Court has explained that the NGA's purposes are multi-faceted. See *NAACP v. FPC*, 425 U.S. 662, 670 & n.6 (1976) (noting that, in addition to "encourag[ing] the orderly development of plentiful supplies of electricity and natural gas at reasonable prices," the Commission has the authority to consider "conservation, environmental, and antitrust" concerns as relevant to the Commission's statutory authority). Congress' instruction that the Commission consider "the public convenience and necessity" is plenty broad enough to permit the Commission to balance these different purposes when exercising its statutory authority under the NGA. Cf. *Atl. Ref. Co. v. Pub. Serv. Comm'n*, 360 U.S. 378, 391 (1959) (holding that NGA section 7 requires the Commission to consider "all factors bearing on the public interest").

<sup>24</sup> The order appears to suggest that the allocation of jurisdiction in NGA section 1(b) implies a limit on the Commission's authority, or even its ability, to consider environmental effects under the NGA. That provision does no such thing. In considering the reasonably foreseeable consequences of its certification decisions, the Commission is not regulating, much less directly regulating, areas reserved for exclusive state jurisdiction. Although the Commission's evaluation of the public interest could, theoretically, affect matters subject to state jurisdiction, as long as the Commission is acting pursuant to its statutory authority and not directly regulating matters subject to state jurisdiction, the Commission will "not run afoul of [the NGA's jurisdiction limitations] just because it affects—even substantially—the" matters left for the states to decide. *FERC v. Elec. Power Supply Ass'n*, 136 S. Ct. 760, 776 (2016), as revised (Jan. 28, 2016); *Hughes v. Talen Energy Mktg., LLC*, 136 S. Ct. 1288, 1292 (2016); see also *FPC v. Transcontinental Gas Pipe Line Corp.*, 365 U.S. 1, 30-31 (1961) (recognizing the Commission's authority to consider the impact of air pollution from industrial boilers under NGA section 7).

<sup>25</sup> *Fla. Se. Connection, LLC*, 162 FERC ¶ 61,233.



# STATEMENT

the Commission's consideration of climate change falls short of our statutory responsibilities under NEPA and the NGA. To be clear, I am not suggesting that the Commission should issue no new section 7 certificates. Pipeline facilities may have benefits that outweigh their costs. What I am arguing is that, as a result of the Commission's new policy, we frequently will not know whether the benefits outweigh the costs because the Commission is not asking enough questions or doing enough analysis.

"For these reasons, I respectfully dissent."

**People's Dossier: FERC's Abuses of Power and Law  
→ Climate Change & Drilling Impacts Ignored**

**Climate Change & Drilling Impacts Ignored**  
**Attachment 8, Delaware Riverkeeper Network Comment**  
regarding PennEast DEIS, Sept 12, 2016.



September 12, 2016

Kimberly Bose, Secretary  
Nathaniel J. Davis, Sr., Deputy Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1A  
Washington, DC 20426

RE: OEP/DG2E/Gas 2  
PennEast Pipeline Company, LLC  
FERC Docket No. CP15558000  
FERC/EIS0271D

Secretary Bose:

On Friday, July 22, 2016, the Federal Energy Regulatory Commission (FERC) issued a Draft Environmental Impact Statement (DEIS) for the PennEast Pipeline project that is 1,174 pages long giving September 5, 2016 as the deadline for comments (only changing the deadline to September 12, 2016 partway through the comment cycle).

A 45-52 day comment period, most of which fell during the end of July and the month of August, which is among the highest vacation times in our region, displays an offensive and unnecessary abuse of power clearly designed to serve the goals of the PennEast Pipeline Company to get a quick answer rather than showing fairness to the people who want and need to comment on the PennEast Pipeline proposal because they are going to be deeply and irreparably harmed.

FERC owes the communities at least (at the very least) a full 120 days (an additional 68 days) to review the information and maps provided by PennEast. In order to provide informed comment not only do people need to review the voluminous DEIS, but we need to assess the information and data behind it, verify the information asserted, identify any potential data gaps that exist, and engage the experts necessary to provide the detailed comprehensive review that a project of this size needs and deserves. To even suggest 45 days (52 with the extra week FERC was forced to provide given that originally the comment period ended on a federal holiday) is a significant insult to those who want to meaningfully participate and have their voices heard, but also demonstrates to our communities that FERC lifts the needs of the pipeline industry over those directly impacted by the proposed Project.

DELAWARE RIVERKEEPER NETWORK  
925 Canal Street, Suite 3701  
Bristol, PA 19007  
Office: (215) 369-1188  
fax: (215) 369-1181  
dm@delawareriverkeeper.org  
www.delawareriverkeeper.org

The DEIS, states that the PennEast Pipeline involves:

- 115.1 miles 36-inch diameter pipeline from Luzerne County, PA to Mercer County, NJ
- 2.1 mile Hellertown lateral, a 12 inch diameter pipe in Northampton County, PA
- 0.1 mile Gilbert lateral, a 12 inch diameter pipe in Hunterdon County, NJ
- 1.5 mile Lambertville lateral, a 36 inch diameter pipe in Hunterdon County, NJ
- 47,700 horsepower compressor station in Kidder Township, Carbon County, PA driven by 3 gas powered Solar Mars 100 units rated at 15,900 hp each
- 8 meter and regulator stations for interconnects
- 11 mainline valve sites
- 4 pig launcher/receiver sites

According to the DEIS, construction of the project will impact 1,613.5 acres of land (1,065.2 acres for pipeline facilities, 110.1 acres for access roads; 372.3 acres for pipe and contractor ware yards, 31.1 acres for above ground facilities). According to the DEIS the project will at least cut through 255 waterbodies (including 159 perennial, 45 intermittent, 40 ephemeral, 11 open water), 633 acres of forest, 91 acres of wetlands, impact “several” vernal pools, and infringe upon and damage habitat for threatened and endangered species of bat, sturgeon, snake, turtle, mussels and more. This comment and others will prove that these impacts are sorely understated, incomplete, and misrepresent the footprint and damage that would be inflicted if the PennEast pipeline were built.

This comment, along with others, demonstrates that the DEIS issued by FERC cannot be said to fulfill its legal obligations pursuant to the National Environmental Policy Act (NEPA), that a new or supplemental Complete DEIS with associated comment period and public hearings is required, and that absent taking such a step FERC will be in violation of the law. Specifically, the DEIS fails establish an accurate baseline from which a determination can be made regarding the significance of the impacts resulting from construction and operational activity of the Project, the DEIS fails to examine the cumulative and induced development that would result from the approval of the Project, the DEIS improperly segments its environmental analysis with regard to other interdependent projects, the DEIS does not sufficiently account for climate change impacts, the DEIS’s alternatives analysis is unlawfully narrow, and the DEIS fails to sufficiently establish need for the Project. Additional deficiencies are noted throughout this comment letter, and the attached expert reports.

Given the lack of need, the self-serving interests of the PennEast companies (AGL Resources; NJR Pipeline Company; PSEG Power; SJI Midstream; Spectra Energy Partners; UGI Energy Services) to advance this project, the high level of environmental, community and economic harm that will be inflicted, the use of eminent domain purely for private gain, the threat and harms to the health, safety and natural resources of the communities impacted as well as to future generations, this project cannot be said to meet the standards for FERC to issue a Certificate of Public Convenience and Necessity.

**The DEIS is unable to support its conclusion that construction of PennEast as proposed by the company and FERC will not have significant adverse environmental impacts**

FERC asserts in its DEIS:

“We determined that construction and operation of the PennEast Project would result in some adverse environmental impacts. Most of these impacts would be temporary or short-term during construction and operation, but long-term and potentially

permanent environmental impacts on vegetation, wetlands, and individual fish and wildlife species would also occur as part of the Project. However, if the Project is constructed and operated in accordance with applicable laws and regulations, the mitigating measures discussed in this EIS, and our recommendations, most of the adverse impacts would be reduced to less than significant levels.”

While FERC argues that it used information from outside sources to reach this conclusion, it is clear on the record that FERC adopted, whole cloth, PennEast Company’s information, filings, characterizations, language, assertions, information and conclusions. FERC did not conduct the kind of independent, rigorous review anticipated or mandated by NEPA.

NEPA is our “basic national charter for protection of the environment.” 40 C.F.R. § 1500.1(a). As such, it makes environmental protection a part of the mandate of every federal agency. *See* 42 U.S.C. § 4332(1). NEPA requires that federal agencies take environmental considerations into account in their decision-making “to the fullest extent possible.” 42 U.S.C. § 4332. Federal agencies must consider environmental harms and the means of preventing them in a “detailed statement” before approving any “major federal action significantly affecting the quality of the human environment.” *Id.* § 4332(2)(C). When preparing an Environmental Impact Statement (EIS), an agency must take a detailed, “hard look” at the environmental impact of and alternatives to the proposed action. *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 350 (1989). This required analysis serves to ensure that “the agency will not act on incomplete information, only to regret its decision after it is too late to correct.” *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 371 (1979).

NEPA also “guarantees that the relevant information [concerning environmental impacts] will be made available to the larger audience,” including the public, “that may also play a role in the decision-making process and the implementation of the decision.” *Robertson*, 490 U.S. at 349. As NEPA’s implementing regulations explicitly provide, “public scrutiny [is] essential to implementing NEPA.” 40 C.F.R. § 1500.1(b). The opportunity for public participation guaranteed by NEPA ensures that agencies will not take final action until after their analysis of the environmental impacts of their proposed actions has been subject to public scrutiny. *See N. Plains Res. Council v. Surface Transp. Bd.*, 668 F.3d 1067, 1085 (9th Cir. 2011) (noting that where “data is not available during the EIS process and is not available to the public for comment,” the process “cannot serve its larger informational role, and the public is deprived of their opportunity to play a role in the decision-making process”) (quoting *Robertson*, 490 U.S. at 349).

An EIS must fully assess and disclose the complete range of environmental consequences of the proposed action, including “ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, [and] cultural” impacts, “whether direct, indirect, or cumulative.” 40 C.F.R. §§ 1502.16(a), (b); 1508.8. Direct effects are “caused by the action and occur at the same time and place.” 40 C.F.R. § 1508.8(a). Indirect effects are those impacts that are caused by the action, but occur “later in time or farther removed in distance, but are still reasonably foreseeable,” and may include “growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.” 40 C.F.R. § 1508.8. Cumulative impacts are “impact[s] on the environment which result[] from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.” 40 C.F.R. § 1508.7 (emphasis added). As the regulations make clear, “[c]umulative impacts can result from individually

minor but collectively significant actions taking place over a period of time.” *Id.* In addition, NEPA requires FERC to take a hard look at the ways to avoid or mitigate the Projects’ impacts.

NEPA is an “environmental full disclosure law.” *Monroe Cnty. Conservation Council, Inc. v. Volpe*, 472 F.2d 693, 697 (2d Cir. 1972). It requires that an agency obtain and consider detailed information concerning environmental impacts, and it “ensures that an agency will not act on incomplete information, at least in part, by ensuring that the public will be able to analyze and comment on an action’s environmental implications.” *Ohio Valley Envtl. Coal. v. U.S. Army Corps of Eng’rs*, 674 F. Supp. 2d 783, 792 (S.D. W. Va. 2009) (internal quotation marks and citations omitted). The information provided to the public “must be of high quality” because “[a]ccurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA.” 40 C.F.R. § 1500.1(b). The potential adverse effects of the PennEast Project cannot be adequately analyzed without complete data on all affected resources. However, as described below the DEIS falls short in a significant number of areas.

As evidenced by this comment and the attached expert reports, the DEIS does not contain the complete or accurate information required to reach this asserted conclusion, or any meaningful conclusion for that matter. The DEIS is filled with key data gaps, misrepresentations, misinformation, missing information, inaccurate information, false information, and conflicting information and is likewise based on submissions from PennEast that are filled with data gaps, misrepresentations, misinformation, missing information, inaccurate information, false information, and conflicting information. The quality of the DEIS is so poor that it cannot support any conclusion whatsoever, other than there is a need for a supplemental DEIS that is subject to the rigors of the public process prior to advancement to the final EIS stage.

In addition, it is clear that this DEIS cannot be relied upon by any government agency, not FERC, not the US Fish & Wildlife Service, not the U.S. Army Corps of Engineers, not the U.S. Environmental Protection Agency, not the NJ Department of Environmental Protection, not the PA Department of Environmental Protection, not the Delaware River Basin Commission for evaluation or decision-making purposes. And for any agency to do so would subject them to successful legal challenge.

In addition to the immense deficiencies and inaccuracies in the FERC DEIS, it is unbelievable that FERC determines the PennEast Pipeline will not have a significant impact on the environment and communities, with or without the mitigation FERC postures given the reality of the harms to be inflicted which include, by way of a short list:

- The PennEast pipeline will likely induce the drilling of 3,000 new wells in Pennsylvania (from a combination of wells that have been drilled but are not yet producing and wells not yet drilled) in Northeast Pennsylvania, in Bradford, Susquehanna, Lycoming, and Tioga counties. The DEIS ignores analysis of the resulting impacts. (See discussion below)
- The DEIS fails to properly respond to the Counsel on Environmental Quality’s new guidance regarding consideration of the greenhouse gas emissions of the proposed PennEast pipeline project and its climate changing ramifications. (See discussion below)
- In Carbon County, 560 people live within 2 miles of the proposed compressor station. From existing experience we can anticipate “504 people experiencing odor events, 398 people

experiencing respiratory impacts, 325 people experiencing sinus problems, and 218 people experiencing sleep disturbances and/or severe headaches.”<sup>1</sup>

- “PennEast, LLC estimates the pipeline would transport 401,500,000 dekatherms annually, contributing to an equivalent of 20.1 metric tons of CO2 emitted per year (U.S. EPA, 2016a). Using the most conservative estimate of the cost per metric ton of carbon (U.S. EPA, 2016b), the additional emission of CO2 would cost \$252.4 million annually.”<sup>2</sup>
- Using “conservative assumptions, the Kidder compressor station would reduce the value of 43 properties by a total of \$1.9 million dollars.”<sup>3</sup>
- While the DEIS considers all presumed benefits advanced by PennEast, it ignores the economic damage inflicted to public health, property values, jobs, businesses and from the loss of ecosystem services.<sup>4</sup>
- While 75% of the stream crossings will be undertaken using open cut methods, only 26% of the 189 road crossings will be open cut with horizontal directional drilling used to avoid impacts on 74% of the roadways crossed – demonstrating that both FERC and PennEast place a higher priority on avoiding disturbance of roadways than protecting streams, including streams of the highest quality in Pennsylvania and New Jersey.<sup>5</sup>
- The single largest land use to be disturbed in Pennsylvania is forest -- 59% of the pipeline length in Pennsylvania.<sup>6</sup>
- The PennEast pipeline would cause an initial loss of \$7.3 million in ecosystem services during a one year construction period. For each year the pipeline is in operation, the pipeline would induce an additional loss of \$2.4 million in ecosystem services due to conversion of land in the ROW. Land converted for use as permanent pipeline related infrastructure would mean an

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<sup>1</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

<sup>2</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

<sup>3</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

<sup>4</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

<sup>5</sup> Adams, Michelle and Henderson, Marc, Water Resources Engineers, Meliora Design, LLC, *Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, September 2016.

<sup>6</sup> Adams, Michelle, and Henderson, Marc, Water Resources Engineers, Meliora Design, LLC, *Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, September 2016.

additional loss of \$218,200 each year. Such losses are not accounted for in the DEIS or FERC's balancing of the economic costs of the project.<sup>7</sup>

- Key-Log Economics estimates that construction of the PennEast pipeline would result in a loss of \$158.3 to \$176.0 million in property value in the right of way and evacuation zone.<sup>8</sup>
- 44 dry stream crossings will impact Conservation Areas and Public Lands, and 14 dry stream crossings will impact areas held in private conservation easement.<sup>9</sup>
- Shallow bedrock is a common feature along 33 miles and 302 sections of the route that likely would require blasting (Table G-3) - 69% of Hunterdon Co., 35% of Northampton Co., 28% of Carbon Co., 25% of Luzerne County, and 23% of Mercer County have shallow bedrock.
- Spot checks and field-truthing indicate inadequate and incomplete mapping of sensitive wetlands along the proposed ROW. Along one 0.5 mile of the proposed route in sensitive State Gamelands, at least 12 vernal pool complexes or groundwater seeps were identified while PennEast tables only indicate 2 vernal pool habitats along the same proposed route and no groundwater seeps.<sup>10</sup>
- At least 43 waterbody crossings have steep slopes that would be cut by the pipeline. These 43 crossings are proposed to have additional temporary work spaces (ATWS) within 50 ft. of sensitive water features, adding to the potential erosion threats to these steep banks and the nearby sensitive streams where sediment pollution can cause long term harm.<sup>11</sup>
- "Pennsylvania was already grossly over-supplied and that the proposed additional 1 Bcf/d supply would result in an over-supply for New Jersey of approximately 53%," and there is no evidence that PennEast will result in lowered costs for consumers.<sup>12</sup>
- A total of 8 NJ state threatened, endangered, or special concern mussel species are completely left out of the EIS. These species are as follows: triangle floater (threatened), brook floater (endangered), yellow lampmussel (threatened), eastern lampmussel (threatened), green floater (endangered), tidewater mucket (threatened), eastern pondmussel (threatened), and creeper (species of special concern). All eight of these species may potentially occur in various

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<sup>7</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

<sup>8</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

<sup>9</sup> Adams, Michelle, and Henderson, Marc, Water Resources Engineers, Meliora Design, LLC, *Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, September 2016.

<sup>10</sup> Delaware Riverkeeper Network. *Field-Truthing and Monitoring of the Proposed PennEast Pipeline, FERC Draft EIS, Docket No. CP15-558*, September 2016.

<sup>11</sup> Delaware Riverkeeper Network. *Field-Truthing and Monitoring of the Proposed PennEast Pipeline, FERC Draft EIS, Docket No. CP15-558*, September 2016.

<sup>12</sup> Berman, Arthur. *Professional Opinion on the PennEast Pipeline*, Labrynth Consulting Services, Inc. February 2015 and September 11, 2016.

waterbodies crossed by the project, based on the GIS range maps created by the Conserve Wildlife Foundation of New Jersey

- “Pennsylvania was already grossly over-supplied and that the proposed additional 1 Bcf/d supply would result in an over-supply for New Jersey of approximately 53%,” and there is no evidence that PennEast will result in lowered costs for consumers.<sup>13</sup>
- “72% of the proposed pipeline alignment in New Jersey and 23% in Pennsylvania has not yet been field investigated for wetlands and other water resources.”<sup>14</sup>
- Investigation is incomplete for vernal pools; in Pennsylvania, survey work is 21% **incomplete**; in New Jersey, it is 74% **incomplete**.
- FERC's statement that "there are no private water supply wells or springs located within 150 feet of the pipeline construction workspace in Pennsylvania" (DEIS, page ES-5) is false. Delaware Riverkeeper Network experts have “identified properties and specific landowners in Pennsylvania where there are (confirmed), or where there are likely to be, springs or drinking water wells located within 150 feet of the proposed pipeline construction workspace.”

The information that has been garnered from the DEIS materials, the filed resource reports, filings with other regulatory agencies, that were then vetted, analyzed and in some cases field verified by third party experts and DRN demonstrates that this project will inflict substantial adverse environmental and community impacts regardless of implementation of the supposed mitigation recommended by FERC. In addition to the comments specifically discussed here, the expert reports filed herewith include a number of other factual and legal deficiencies that are adopted by DRN and incorporated by reference.

**DEIS assertion of need is contradicted by the preponderance of the evidence and is largely a statement of industry desires rather than public need**

The DEIS asserts the proposed pipeline is necessary to serve New Jersey and eastern Pennsylvania communities and some unidentified “surrounding states”. It is asserted that the project is needed to “provide low cost natural gas produced from the Marcellus Shale region”. The DEIS asserts that there is a need to displace Gulf Coast gas with cheaper and reliable access to Marcellus shale gas. It is asserted that there is a need for the project in order to “provide enhanced competition among natural gas suppliers and pipeline transportation providers.” The DEIS asserts there is a need in order to allow “supply flexibility”, “diversity”, “reliability”, better pricing, and to allow direct access to long lived dry gas reserves.

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<sup>13</sup> Berman, Arthur. *Professional Opinion on the PennEast Pipeline*, Labrynth Consulting Services, Inc. February 2015 and September 11, 2016; Berman, Arthur. *PennEast Updated Opinion*, September 11, 2016.

<sup>14</sup> *The Effects of the Proposed PennEast Pipeline on Exceptional Value Wetlands in Pennsylvania*, Prepared for the Delaware Riverkeeper Network, Schmid and Company, July 2016; Letter dated September 9, 2016 written by Schmid & Company, Consulting Ecologists to Maya K. van Rossum, the Delaware Riverkeeper.

However, none of these are “needs”. These are industry desires, goals, hopes, dreams, wishes and wants. However you look at it, these claims do not assert a “need” for the gas. They assert a desire by the pipeline company to be able to provide a different source of gas so it can make money. These are very clearly private corporate goals and gains. These are not “needs” of the public; they are desires of private industry.

In fact, there is no need for the gas PennEast would carry to New Jersey and Pennsylvania; both states are fully supplied. And to the degree that PennEast wants to assert it is delivering the gas to other unknown, unidentified states -- in order to substantiate this claim and subject it to the public process that is required by NEPA, more detail is required that actually identifies the states and the users.

As noted in the attached expert report from Arthur Berman<sup>15</sup>:

“Natural gas consumption for New Jersey has been relatively flat for the past four years at average rate of 1.8 billion cubic feet of gas per day (Bcf/d), somewhat below the higher levels of the late 1990s. Although consumption increased slightly in 2013 compared to the three previous years, New Jersey cannot be called a growth market....”

“The proposed PennEast Pipeline would deliver an additional 1 Bcf/d of natural gas to New Jersey potentially creating a 53% supply surplus above the current level of consumption.” and “...Pennsylvania has no unfulfilled demand...”

“Because of the lack of demand for Marcellus gas in Pennsylvania and adjacent New Jersey, it is possible that PennEast and its committed suppliers have an unstated intent to send gas to other markets not specified in their proposal....”

“There is no evidence...that more gas supply [would] result[] in lower costs to consumers” “All leading companies in the Marcellus and Utica plays reported net losses for the second quarter of 2015”.

A second report issued by Arthur Berman further clarifies that<sup>16</sup>:

“There is no evidence...that more gas supply [would] result[] in lower costs to consumers”

“All leading companies in the Marcellus and Utica plays reported net losses for the second quarter of 2015”

“U.S. gas production is declining and shale gas output is down almost 2.5 Bcf per day”

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<sup>15</sup> Berman, Arthur, *Professional Opinion of Proposed PennEast Pipeline Project*, Petroleum Geologist, Labyrinth Consulting Services, Inc., February 26, 2015

<sup>16</sup> Berman, Arthur, *PennEast Opinion Updated*, Petroleum Geologist, Labyrinth Consulting Services, Inc., September 11, 2016

An additional expert report generated by Skipping Stone (already on the record but also attached) similarly finds a lack of need for the capacity of PennEast. According to this report, PennEast obtains many of its clients by commitments to switch from one pipeline to the other, which means unfilled excess capacity, not more needed gas delivered. According to Skipping Stone, similar to Labyrinth Consulting:<sup>17</sup>

“Local gas distribution companies in the Eastern Pennsylvania and New Jersey market have more than enough firm capacity to meet the needs of customers during peak winter periods. Our analysis shows there is currently *49.9% more capacity than needed to meet even the harsh winter experienced in 2013*”

This demonstration of a lack of need is complimented by the predictions and concerns of experts that the industry is proposing an “overbuild” of pipelines from the Marcellus and Utica shales:<sup>18</sup>

“Speaking to attendees at the 21st Annual LDC Gas Forums Northeast conference in Boston Tuesday, Braziel said an evaluation of price and production scenarios through 2021 suggests the industry is planning too many pipelines to relieve the region’s current capacity constraints.”

“What we’re really seeing is the tail end of a bubble, and what’s actually happened is that bubble attracted billions of dollars’ worth of infrastructure investment that now has to be worked off,” Braziel said.

Lack of “need” for gas in Pennsylvania is also asserted by a Labrynth Consulting reaction to a recently released report advocating for more pipelines for similar goals, to fulfill an asserted need for gas and to reduce prices in the region. In this responsive analysis the assertion of a need for the gas was proven false with facts:

“First, Pennsylvania exported 3.23 Bcfd to other regions of the country in 2015 an amount almost equal to its 2014 consumption of 3.3 Bcfd. There is plenty of existing pipeline capacity to meet Pennsylvania’s demand and enough left over to send out of the state.”<sup>19</sup>

The assertion that PennEast is intended to provide “enhanced competition” and cheaper pricing for industry users is not a need – it is a corporate desire, but it is not a need. It is an abuse of process and power for FERC to allow PennEast to claim that cheaper prices and setting the PennEast companies up to better compete with other industries fulfills the requirement of “need”. Approving construction of a pipeline project, granting it exemption from state and local laws, giving it the power of eminent domain, so it can take private property, so it can take publicly preserved parks, forests and natural lands, in order to inflict un-mitigatable and irreparable harms, all so the pipeline company can achieve its independent goal of greater profits and other industries can save a buck on the backs of the rest of us, subjecting communities to the threat and reality of pipeline accidents, incidents and

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<sup>17</sup> *Analysis of Public Benefit Regarding PennEast*, Skipping Stone, March 9, 2016

<sup>18</sup> *Marcellus/Utica on Pace for Pipeline Overbuild*, Says Braziel, Natural Gas Intelligence, June 8, 2016

<sup>19</sup> Labrynth Consulting responding to “A Pipeline For Growth Report”

explosions (which happen with concerning regularity) does not characterize a legitimate need that warrants the property takings and associated harms.

The assertion that PennEast is necessary to provide greater reliability is also not a “need”. There is no evidence that New Jersey, Pennsylvania, and the undisclosed other states do not have reliable access to energy sources, gas or otherwise. The reports above document that in fact both states are already fully and reliably served. It is incumbent upon PennEast to demonstrate there is a reliability problem, and that the proposed project will necessarily ameliorate this problem. They have not done so.

Regarding the claim that PennEast is “needed” to provide direct access to long lived reserves, this claim is neither explored nor demonstrated by the DEIS document. In fact, there is a wealth of analysis which documents that shale gas will soon be on a swift decline and as such is not in fact a long term reliable source of energy; to the contrary it is a short term fix that will quickly run dry and require replacement with other energy sources. As the Post Carbon Institute’s *Drilling Deeper* report fully documents, the shale gas and tight oil industries have a short life, one that is only a few decades long.<sup>20</sup> Multiple experts reach similar conclusions when reflecting on EIA figures, current production rates, and other objective data, e.g. findings of Labrynth consulting when reacting to a recently released report titled, “A Pipeline For Growth” found:

Official EIA proven developed producing shale gas reserves for the Marcellus Shale are 84.5 trillion cubic feet (Tcf) and, for the Utica Shale, 6.4 Tcf (Table 1). That suggests approximately 18 years of supply at current production rates. There are approximately 27 years of supply including proven undeveloped reserves (PUD).<sup>21</sup>

Construction of a 40 year pipeline for an energy source that will peak by 2020 and be on decline thereafter is irrational and cannot be said to fulfill the definition of a “need”.

The claim that this pipeline is “needed” in order to provide lower cost gas to New Jersey and Pennsylvania customers is not a “need” (as discussed above and in the attached expert reports) but in addition, it cannot be an expected outcome of this project. The construction of the PennEast pipeline may, to the contrary, contribute to an increase in gas prices for many in PennEast’s identified service area.

Natural gas prices are lowest in the regions in which gas is produced. For many years, the lowest natural gas prices in the East were found at Henry Hub, located near the Gulf of Mexico where much of the natural gas in the United States was produced. With the increase in shale gas production, however, the lowest natural gas prices in the country are now found at trading points in and around the Marcellus and Utica shale plays in Pennsylvania, West Virginia, and Ohio. Availability of pipeline infrastructure to send natural gas to other regions has a direct impact on the price of natural gas in those regions—greater gas take-away capacity allows more natural gas to be produced, and an increase in supply will lead to a decline in price in those regions that receive additional gas. The improved access to higher priced markets via additional pipeline infrastructure will raise the price of natural gas in the producing region, which also will increase production – in this case the producing region is Pennsylvania, therefore it is not a given that prices would in fact reduce. In addition, while

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<sup>20</sup> <http://www.postcarbon.org/publications/drillingdeeper/>

<sup>21</sup> Labrynth Consulting responding to “A Pipeline For Growth Report”

generally speaking increasing the supply in a nonproducing region (such as NJ) from a lower cost producing region (Pennsylvania) may be expected to lower prices in the downstream market, one recent study that was specific to the PennEast Pipeline showed how gas rates for some customers in NJ may increase due to other pipelines increasing their transportation rates.<sup>22</sup>

The claim that increased pipeline capacity will necessarily result in reduced gas prices is challenged by other experts considering the issue when responding to claims that pipeline capacity is needed to reduce prices for Eastern Pennsylvania end users:

“The correlation between volume of gas production and the price of gas for power generation is poor because there are other factors besides production volume that affect the price of gas. Still it seems unlikely that more gas production in Pennsylvania would result in a cost reduction since production already exceeds consumption by almost 100%.”<sup>23</sup>

Further, as information regarding actual asserted customers for PennEast is revealed, it is increasingly clear that the claim of need is largely self-manufactured. For example, Spectra Energy Partners is a “member company” in PennEast Pipeline Company, LLC and 10% owner of the PennEast Pipeline proposal. Spectra Energy is currently planning for and proposing a new project called the Texas Eastern Marcellus to Market project (M2M). Spectra has made clear that the proposed PennEast pipeline will be the primary source of gas that the M2M project will transport. Specifically, according to the Spectra Energy website, the new M2M pipeline would receive the majority of its gas, 62.5%, (up to 125,000 dekatherms per day (Dth/d)) from the PennEast pipeline (this equates to over 11% of PennEast’s anticipated capacity). In other words, Spectra, as part of PennEast, is asserting the PennEast pipeline needs to be built in order to service the Texas Eastern M2M customer which is, in fact, Spectra. The end users of the M2M project are not identified in the DEIS or anywhere else in the record, and have not, in fact, demonstrated a need for that project. Again we are dealing with self-serving speculation of need rather than a demonstration of a genuine public need for the project. Of the 12 shippers PennEast identifies as demonstrating a need for the pipeline and thereby helping to game the system in this way, at least five are PennEast owners: PSEG, Spectra (Texas Eastern Transmission), South Jersey Gas, UGI, and Elizabethtown Gas (Pivotal Utility Holdings).

Making the artificial argument of “need” for the PennEast project is used to craft an artificial justification for imposing extreme and unnecessary harm on the environment and communities. The asserted “need” for PennEast is really an argument for a project that will allow the PennEast companies to achieve their private goals of generating a profit – it does not support a genuine “need” for the PennEast pipeline. Given the significant level of impacts that will be inflicted by the PennEast pipeline on the water resources of Pennsylvania and New Jersey, and that the project will necessarily result in unavoidable and unmitigatable harm to the environment and communities, this lack of need for the PennEast pipeline project is a fatal flaw. It is improper for the DEIS to presume “need” rather than require the project applicant to affirmatively demonstrate it.

FERC has made it clear that it does not “look behind the contracts to determine whether the customer commitments represent genuine growth in market demand” or need. *See also NE Hub*

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<sup>22</sup> Lander, Gregg. “*Analysis of Public Benefit Regarding PennEast Pipeline*”, New Jersey Conservation Foundation. March 9, 2016. Available at: <http://njconservation.org/docs/PennEastNotNeeded.pdf>

<sup>23</sup> Labrynth Consulting responding to “A Pipeline For Growth Report”

*Partners, L.P.*, 90 FERC ¶ 61,142 (2000). Such an arbitrary review process, when taken to its logical conclusion, leads to absurd results. Indeed, to the extent the contracts are artificially manufactured and do not represent “genuine growth in market demand” FERC essentially admits that such fraudulent representations to FERC are sufficient for a decision approving the certificate. Here, substantial questions have been raised regarding the underlying contracts, and to the extent FERC fails to make a determination on “genuine market growth” and subsequent approval provided by FERC is arbitrary and capricious.

Furthermore, eminent domain originated as a way for governments to build necessary public infrastructure projects such as national highways and public buildings. It also enables governments to create parks and other public recreation areas. While eminent domain is considered an inherent power, it is subject to constitutional limitations. Among those limitations is that the land acquisition must be for “public use”.<sup>24</sup> The power of eminent domain is abused when it is used to benefit powerful interest groups at the expense of the less powerful; Supreme Court justices have recognized that the beneficiaries of this abuse “are likely to be those...with disproportionate influence and power in the political process, including large corporations and development firms.”<sup>25</sup> At its best, eminent domain allows for the acquisition of private property to create national parks for all to enjoy, and at worst, it exploits less politically and economically powerful groups. In the latter instance, the government acts as a henchman for private corporations, and this is not the intent of eminent domain. However, this is precisely what is happening at the behest of pipeline companies including PennEast. As noted, there is no genuine need for this project; the true goals are not to serve the public but to help the six companies that comprise the PennEast Pipeline LLC to meet their corporate goals and to generate profits. This amounts to a government subsidization of a private company’s profits, at the expense of the public.

FERC has stated that “[e]ven though the compensation received in [an eminent domain proceeding] . . . is deemed legally adequate, the dollar amount received as a result of eminent domain may not provide a satisfactory result to the landowner and this is a valid factor to consider in balancing the adverse effects of a project against the public benefits.” *See Order Clarifying Statement of Policy*, 90 FERC ¶ 61,128, at 61,398. FERC has made clear that “[u]nder the Certificate Policy Statement, FERC will not authorize the construction of a project, with the concomitant right to obtain the necessary rights-of-way through either negotiation or the eminent domain process, unless it first finds that the overall public (not private) benefits of the project will outweigh the potential adverse consequences.” *See Order Clarifying Statement of Policy*, 88 FERC ¶ 61,748, at 50. Here, a significant portion of the landowners have refused PennEast access to their property, which will require PennEast to acquire vast tracts of property via eminent domain. As such, this significant adverse impact supports a finding that the adverse effects of the Project outweigh its questionable benefits to the public.

### **The DEIS fails to consider cumulative impacts across the Project and across multiple other projects, including the source and end use of the natural gas**

NEPA prohibits FERC from ignoring the ‘indirect’ impacts of its export-facility approval on the production and use of natural gas within the United States. The DEIS cumulative impacts assessment fails to fulfill the requirements of NEPA.

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<sup>24</sup> U.S. Const. Amend. V

<sup>25</sup> *Kelo v. City of New London*, 545 U.S. 469 (2005), O’Connor Dissent

Cumulative impacts caused by “reasonably foreseeable” future actions are recognizable under NEPA and must be considered through the NEPA process. Additionally, FERC must consider the cumulative effects of actions similar to the proposed action, whether existing or reasonably foreseeable. Cumulative impacts include impact[s] on the environment which result from the incremental impact of the action “when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”<sup>26</sup> Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.<sup>27</sup> Cumulative effects include “direct and indirect effects, on a given resource, ecosystem, and human community of all actions taken, no matter who has taken the actions.”<sup>28</sup> A cumulative effects analysis focuses on resource sustainability, and has expanded geographic and time boundaries.

FERC has framed its cumulative impact analysis too narrowly as well as mischaracterizing the degree of harm that will result from approval and construction of the proposed PennEast pipeline project. The cumulative impact assessment neglects reasonably foreseeable future actions that will directly and indirectly result from approval of this proposed project and are clearly causally related.

Upstream natural gas production, and its subsequent impacts, are among the ‘effects’ that NEPA requires FERC to consider, in determining whether its action will have a significant impact. NEPA’s implementing regulations define, as “[i]ndirect effects,” those “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.” 40 C.F.R. § 1508.8(b). The Project’s takeaway capacity will necessarily lead to additional demand for natural gas, with consequences for its price, production, and use, is eminently foreseeable. This Court has recently held that such “generally applicable economic principles,” as the relationship between the price of a good and its production and consumption, are “sufficiently ‘self-evident’ ” to “require ‘no evidence outside the administrative record.’” *Airlines for Am. v. Transp. Sec. Admin.*, 780 F.3d 409, 410-11 (D.C. Cir. 2015) (finding standing based on “basic proposition that ‘increasing the price of an activity ... will decrease the quantity of that activity demanded in the market’ ” (omission in original and citation omitted)). The results of “generally applicable” economics are all the more foreseeable here - because the administrative record does contain “evidence” specifically foreseeing them.

NEPA's implementing regulations provide illustrative examples of indirect effects that are closely analogous to those at issue here: “growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate.” 40 C.F.R. § 1508.8(b). Like impacts on gas production and use, ‘growth inducing effects’ and ‘induced changes in the pattern of land use’ reflect responses - generally, market-based - to changes in the supply and demand for various resources. Further reflecting the need to consider such impacts, the regulations include

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<sup>26</sup> 40 C.F.R. § 1508.7 (2010).

<sup>27</sup> 40 C.F.R. § 1508.7 (2010).

<sup>28</sup> From: [http://energy.gov/sites/prod/files/nepapub/nepa\\_documents/RedDont/G-CEQ-ConsidCumulEffects.pdf](http://energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-ConsidCumulEffects.pdf)

“economic” as well as environmental impacts among those that an agency must consider. 40 C.F.R. § 1508.8.

For that reason, courts have consistently required that agencies extend the ambit of their analysis to include effects akin to those that FERC ignored here. The Eighth Circuit has addressed circumstances that closely parallel those here, holding that when an agency approves a rail-line extension that would result in “an increase in availability and a decrease in price” of coal, NEPA demands that the agency examine the environmental “effects that may occur as a result of the reasonably foreseeable increase in coal consumption.” *Mid-States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549-50 (8th Cir. 2003) (requiring that agency address air pollution resulting from increased coal use). In *Mid-States*, the agency's decision enabled an increase in the supply of coal to the domestic market; here, as described below, FERC has enabled an increase in demand for natural gas. In *Mid-States*, that decision had foreseeable effects on the price of coal, its production, and its use.

FERC's decision has foreseeable impacts on natural gas's price, production, and use. In *Mid-States*, the Eighth Circuit held that the agency could not responsibly or lawfully ignore those effects under NEPA. *Id.* Likewise, neither could FERC do so here. Other Circuits have reached similar results. When authorizing a runway that would expand capacity and “spur demand,” the Ninth Circuit has held that the Department of Transportation must examine the increased usage that will result from that demand. *Barnes v. U.S. Dep't of Transp.*, 655 F.3d 1124, 1138-9 (9th Cir. 2011). The First Circuit has refused to let an agency construct a causeway and port, without examining the “industrial development” that would be enabled by that construction. *Sierra Club v. Marsh*, 769 F.2d 868, 877-79 (1st Cir. 1985). See also *Friends of the Earth v. U.S. Army Corps of Eng'rs*, 109 F. Supp. 2d 30, 39-40 (D.D.C. 2000) (invalidating agency decision approving casino, without considering economic development that would result). Those cases establish that when an Agency approves infrastructure that will increase demand for a resource, it cannot ignore the effects of that increased demand.

NEPA does not require agencies to consider only those effects whose specifics are known and certain. As the Eighth Circuit held, “when the *nature* of the effect is reasonably foreseeable but its *extent* is not ... [an] agency may not simply ignore the effect.” *Mid-States Coal. for Progress*, 345 F.3d at 549-50 (when agency permits rail extension that will increase “availability of coal,” it may not ignore “the construction of additional [coal-fired] power plants” that may result merely because agency does not “know where those plants will be built, and how much coal these new unnamed power plants would use”).

Indeed, where an action's effects are not precisely known, the Council on Environmental Quality's regulations suggest that the action is more - not less - likely to warrant an environmental impact statement. See 40 C.F.R. § 1508.27(b)(5) (intensity depends upon “[t]he degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks”); *Found. on Econ. Trends*, 756 F.2d at 154-55 (It is not “sufficient for the agency merely to state that the environmental effects are currently unknown,” because uncertainty is “one of the specific criteria for deciding whether an [environmental impact statement] is necessary”).

NEPA's implementing regulations provide detailed instructions as to how such uncertainty is to be addressed in an environmental impact statement. 40 C.F.R. § 1502.22(b) (specifying how agency should proceed when “the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known.”).

That the precise location of natural gas production is unknown, therefore, does not render such production unforeseeable, or allow FERC to dismiss its effects as insignificant. “It is well recognized that a lack of certainty concerning prospective environmental impacts cannot relieve an agency of responsibility for considering reasonably foreseeable contingencies.” *Potomac Alliance v. U.S. Nuclear Reg. Comm'n*, 682 F.2d 1030, 1036-37 (D.C. Cir. 1982). Rather, “[a]t the threshold stage of the NEPA inquiry ... an agency must determine, to the extent feasible, whether the sum of all reasonably foreseeable effects, discounted by the probability of their occurrence, represent a ‘significant’ effect on the environment.” *Id.* If so, the “agency must issue an [environmental impact statement] analyzing the probabilistic facets of the prospective environmental impact.” *Id.* Here, record evidence shows that not only will additional drilling be necessary to support the Project over the lifespan of its contracts, but furthermore, it is shown where the new wells are likely to be located, and how many wells will be needed to support the Project.

#### Cumulative Impacts Assessment must consider reasonably foreseeable shale gas production.

Pursuant to NEPA, the DEIS must include existing and reasonably foreseeable shale development/production that will be advanced, induced and supported if the PennEast pipeline were to be approved by FERC and built. Among the reasonably foreseeable actions whose environmental and community impacts must be considered include the construction, operation and maintenance of the shale gas wells that will be the source of the gas carried by PennEast, which will be carrying that gas in interstate commerce – both the new wells that will be constructed and the production that will be induced at pre-existing wells by the proposed PennEast pipeline. The analysis of impact for these gas wells which will be producing gas for the purposes of delivering it through the PennEast pipeline system in interstate commerce must include the associated gathering pipelines, access roads, gathering lines, compressor stations, and other supporting infrastructure which is necessary for the construction and development of these wells.

Given that shale gas production activities for delivery of gas into interstate commerce through the PennEast Pipeline are “sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision” *City of Shoreacres v. Waterworth*, 420 F.3d 440, 453 (5th Cir. 2005) (quoting *Sierra Club v. Marsh*, 976 F.2d 763, 767 (1st Cir. 1992)), and given that FERC’s approval of this project is a legally relevant cause resulting in the induced new, expanded, extended, and ongoing production of shale gas through construction of new gas wells and well pads, and inducing new production at pre-existing wells, FERC is obligated to consider their impacts in its NEPA analysis of the project.

FERC arbitrarily limits the scope of its review by failing to require the disclosure of the readily available, and reasonable and attainable, analyses, projections and assumptions that would inform the agency of the scope and extent of the foreseeable induced natural gas production upon which it can base its cumulative impact analysis across the broad range of environmental and community harms

(e.g. air, water, wetlands, habitat, forest, floodplain, water quality, drinking water supplies, health, safety, climate change). FERC's self-inflicted ignorance of the extent of induced shale gas production does not alleviate the agency of its obligation to undertake these assessments of significant impacts that will, reasonably and foreseeably, and predictably result.

Analysts, experts, and modelers use the location of interstate transmission gas lines as a predictor of where gas production will take place. The reality of the industry is that gas is produced for transmission through interstate commerce, and that there is a direct relationship between the siting and construction of well pads and the location of existing or proposed interstate pipelines.

Cumulative Impact Assessment must consider the reasonably foreseeable outcome of natural gas exports.

The direct, cumulative, and foreseeable impacts resulting from the exportation of the PennEast transported gas must also be considered. The DEIS fails to identify where exactly any of the end-users of the natural gas are located.

Facts are clear; PennEast will interconnect with a pipeline system that could transport its shale gas to the recently approved Cove Point LNG export facility. Specifically, PennEast will have an interconnect with Transco's mainline in Mercer County, NJ, a pipeline that intersects with the Pleasant Valley interconnect in Fairfax County Virginia, which in turn could deliver the gas to Dominion's Cove Point Pipeline. Given that natural gas can sell at a significantly higher price overseas as compared to domestically, it is both reasonable and foreseeable that PennEast transported gas will be transported to Cove Point for export. Furthermore, it is likely that natural gas that is displaced by the PennEast line will likely be exported as well. There is no information in the DEIS examining this issue.

Cumulative impacts of multiple linear projects must be considered.

Additionally, the DEIS needed to examine the cumulative impact of the multiple utility and other linear projects that are being proposed or constructed in the Delaware River watershed, in each subwatershed, and in each unique ecological community and human community.

For example, there are significant concerns related to the cumulative impacts of the continuous water crossings and wetlands disturbances that pipeline construction activity has on the health and vitality of the Delaware River basin and its tributaries. This is particularly a concern with the PennEast Pipeline, as many of the same subwatersheds subject to development as a result of PennEast were recently, or could be in the future, impacted by construction activity from other pipelines. Among the pipeline projects that are, will, or have impacted the same subwatersheds as PennEast, are Transco's Leidy line system upgrade projects which include the Northeast Supply Link project, the Southeast Leidy Expansion project, and the Atlantic Sunrise project. These projects all upgrade portions of Transco's Leidy line system, which parallels PennEast's proposed project.

Indeed, it is unclear why an entire new right of way would need to be cleared for this project when there is a parallel right of way within several miles of the proposed right of way. Also, in addition to Transco's previous and proposed pipeline projects, there are several other pipeline projects that have been concentrated in the same subwatersheds as the PennEast line, such as: Texas Eastern's TEAM 2014 Project, Buckeye Pipeline, and Columbia's East Side Expansion Project. Large

high tension ROW's and the Buckeye pipeline are other older ROWs that cut across and have already made lasting and sustained impacts to many of the subwatersheds that PennEast would cut.

“[W]ith each of these projects comes some combination of stream impact, core forests destruction, wetland and riparian corridor disturbance, and clearing of steeply sloped lands. As such, each project has caused or will cause its own unique set of impacts and add another layer of acute and long-term assaults to the environment. Additionally, each new project magnifies the project specific impacts of each prior project. When dealing with environmental impact assessment, each project is evaluated independently; the cumulative impacts of multiple linear development projects are not assessed and the additive long-term impacts of past and future linear projects fail to be recognized.”<sup>29</sup>

Another example of the kind of cumulative assessment that is obviously required within this category of harms relates to the Buckeye Oil Gas Transmission ROW in the Blue Mountains. Sensitive glacial soils, extreme compaction, continued and repeated ATV traffic and pipeline maintenance, lack of diverse growth, bare soils, and thermal heat and fragmentation impacts to the ROW and within the mature forest paralleling the Buckeye ROW were observed by DRN.<sup>30</sup>

Consideration of the multiple cuts proposed by PennEast in subwatersheds also needs study and consideration. For example, the Harihokake watershed, a C-1 waterbody in NJ would be inflicted with 7 different pipeline cuts for PennEast (Table G-6: MP 85.4, 85.6, 85.8, 85.9, 86, 86.3, 86.7) , which poses a threat to this watershed individually and cumulatively. The Alexauken Creek, another NJ C-1 stream would be cut 7 times by PennEast (Table G-6: MP 99.6, 100, 100, 100.1, 100.4, 100.9, 101). FERC has not assessed the cumulative impact of all of these multiple cuts on a subwatershed scale.

These are among the impacts that must be assessed as part of a cumulative impact statement – acknowledging the accumulation of harm that will result to these ecological resources and recreational and cultural assets given that PennEast would be cutting through these same natural resources and inflicting similar harms.

These projects do not occur in a vacuum. Each project individually depletes the natural and scenic resources of the region, and the combined impact becomes increasingly severe, unavoidable, unmitigatable, and irreversible. As such, the DEIS needs to examine these projects holistically in order to satisfy the requirements of NEPA.

Cumulative impacts of the pipeline construction, operation, and maintenance on impacted ecological systems must be considered by the DEIS

The DEIS does not consider the cumulative impacts to key ecological systems, over the lifetime of the pipeline, from construction through operation and including maintenance activities.

For example, forest ecological systems would experience enduring but also fresh impacts throughout the life and presence of the pipeline. The initial impact will include the removal of the forest and understory vegetation, coupled with the changes in light, moisture, wind, etc. impacting

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<sup>29</sup> Princeton Hydro, *Technical Review of Volume I FERC Draft Environmental Impact Statement Submitted for PennEast Pipeline Project*, September 2016

<sup>30</sup> Delaware Riverkeeper Network. *Field-Truthing and Monitoring of the Proposed PennEast Pipeline, FERC Draft EIS, Docket No. CP15-558*, September 2016.

300 feet into the forest on either side of the ROW footprint. There will be enduring compacted soils, and dramatically altered vegetative composition along the ROW and along that forest edge that will increase volume and alter the timing of stormwater runoff, reduce groundwater recharge, change/take habitats for species of all kinds. There will then be the influx of invasive plant and animal species that will have cascading impacts on the forest ecosystem, which will spread along the ROW and back into the core of the adjacent forest.

There are the impacts of the fragmentation of the forest by PennEast but also by other cuts in the same region by other pipelines and/or linear projects. Over the life of the pipeline will be the maintenance of the ROW which will include the prevention of tree growth and maintenance of low growing vegetation only – this will be accomplished by periodic mowing and the use of herbicides. The mowing will disturb the vegetation and habitats that were allowed to encroach on the ROW. The herbicides will include impacts for non-target species, and could have implications for soil microbes and nearby wetland, vernal pool and stream ecosystems. Maintenance activities will involve periodic trimming, pruning, cutting back and removal of trees and woody vegetation growing along the perimeter of the ROW. “The inspection and maintenance of the ROW means the repetitive access and traverse of the ROW by inspection vehicles and maintenance equipment. This increases overall soil compaction and because there are no stabilized access-ways, it also creates repeated opportunity for soil erosion.” PennEast will only be required to “ensure that the soils are stable and is under no regulatory obligation to restore soil to pre-construction conditions.” “[T]hese changes in the properties of the soils along the pipeline and within the pipeline ROW will contribute to the predicted increases in the volume and rate of runoff. Along the entire length of the 115.1-mile long pipeline, these changes in the post-construction hydrology of the affected lands (especially the steeper sloped areas) will invariably alter runoff properties. The end result will be impacts to the streams, wetlands and riparian areas traversed by the pipeline and pipeline ROW and increased opportunity for erosion along the steeper segments of the pipeline and pipeline ROW. Because PennEast is not required to implement any of the conventionally utilized best management measures to collect, treat and control ROW runoff, there is no way to mitigate for these changes other than to revegetate. However, once again the cover type will be different pre to post-construction (e.g. trees to grass) and PennEast is only obligated to achieve 80% post-revegetation coverage with the vegetation type it is using.”<sup>31</sup>

FERC states that completed E&S Control Plans by agencies will adequately avoid harms but this is a false conclusion as can be seen on other pipeline projects where severe sediment pollution harmed local waterbodies, many of which had special protection designations<sup>32</sup>. Most agencies require quick establishment of groundcover to stabilize soils which takes the place of establishing more desired and diverse native habitats, biodiversity and soil health is lost. Once soil chemistry, soil porosity, and soil layering (horizons) that took eons to form are destroyed by the construction process, erosion control measures usually require lime and fertilizer to be applied so that seed mixes grow rapidly. The addition of lime and fertilizer are like poison to what were once forest soils of low pH and low nutrients. This essentially ruins the chance that the soil will ever revert to a native plant community again. Alien invasive weeds of all kinds thrive on the nutrient-enriched, topsy-turvy soil layers in the aftermath of construction. Native herbaceous plants and shrubs almost never outcompete weeds in these altered, nutrient-enriched, high pH soils. Just like on abandoned farmland,

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<sup>31</sup> Princeton Hydro, *Technical Review of Volume I FERC Draft Environmental Impact Statement Submitted for PennEast Pipeline Project*, September 2016

<sup>32</sup> Delaware Riverkeeper Network *Field Monitoring Report, Pipeline Construction & Maintenance Irreparably Harms Rivers, Wetlands and Streams. Addendum to Comment for the PennEast Pipeline* Page **18** of **80**

these construction sites act as "post-agricultural soils," and just like our abundant forests on post-agricultural soils, the herbaceous and shrub layers will be dominated by alien weeds virtually forever, especially with over-abundant deer in the equation.<sup>33</sup>

As documented in the comment from Meliora Design,<sup>34</sup> the DEIS fails to consider cumulative impacts in an ecological system and fails to consider the multiple elements of specific site conditions that impact one another synergistically to determine what will be the impact that results from development of that site, with and/or without mitigation – e.g. pre and post vegetation composition, soils, slope etc. This missing component of the DEIS is massive and seriously undermines any of the conclusions reached regarding ecological impacts:

- “The DEIS and supporting materials provided by PennEast fail to consider the unique, site specific conditions at each individual proposed stream and wetland crossing, and the corresponding potential adverse water quality impacts associated with stream crossings, including open cut crossings. The DEIS fails to comprehensively evaluate each stream crossing with regards to conditions such as water quality, erosive soils, existing land use and forested areas, existing slopes, riparian buffers, and the potential need for in-stream blasting. Lacking consideration of the site specific conditions at each crossing, the DEIS fails to require adequate location and construction recommendations to protect water quality, as well as construction techniques specific to conditions at each crossing. The proposed stream and wetland crossing locations, methods of construction, and long-term land use conditions appear to be based on the needs and preferences of PennEast and not informed by site specific conditions.”

- “Importantly, the supporting documentation provided by PennEast fails to provide stream and wetland crossing information in a manner that allows FERC and other reviewing agencies to evaluate the site specific conditions at each stream crossing, including information discussed further in this memo. Important site specific information is located in different Resource Report volumes and other documents, and not easily correlated or evaluated. Much of the information discussed in this memo was compiled from multiple volumes, documents, and updates and is not readily reviewed by FERC or other reviewing agencies in a comprehensive manner. The project selection of stream and wetland crossing locations and construction methods cannot be clearly evaluated in the form in which it is presented in the DEIS and supporting documents.”

The cumulative assessment, considering near term and long term impacts, cumulative impacts resulting from the damage done near term and long term to a resource, including the lasting implications even with mitigation measures undertaken and full compliance with the law (let alone acknowledgement of the violations that are documented to take place as a matter of course during pipeline construction, operation and maintenance) needs to be, and is not, conducted by the DEIS. The forest example above is but one kind of resource that experiences these multi-pronged impacts in need of cumulative assessment by the DEIS – vernal pools, wetlands, streams, aquatic life, avian life,

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<sup>33</sup> Dr. Emile DeVito, New Jersey Conservation Foundation, Email Correspondence Re: Tennessee Gas Pipeline practices. July 14, 2015.

<sup>34</sup> Adams, Michelle and Henderson, Marc, Water Resources Engineers, Meliora Design, LLC, *Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, September 2016.

amphibian life, soil life, and wildlife all need an assessment of the cumulative impacts that will be visited upon them by PennEast if it were to be constructed.

Expansion of PennEast is a foreseeable impact that must be considered by the DEIS

Furthermore, by creating an entirely new ROW for this Project FERC is creating a new industrial corridor that will foreseeably be used in future PennEast pipeline upgrades. A quick review of other major pipeline corridors in the region support this assertion as natural gas pipeline operators including Columbia, Tennessee Gas Pipeline, Texas Eastern, and Transcontinental have all, within the last three years, added looping segments to their pipelines. As such, the DEIS analysis must account for the foreseeable expansion of the ROW to accommodate future upgrades. Indeed, there are no existing large scale, natural gas transmission lines that are not looped and/or being proposed for expansion in some capacity in the Delaware River watershed. As such, future looping and additional compressor stations is all but assured.

Looping is a common practice to expand the capacity of an existing pipeline by laying additional pipelines along the same right-of-way. Looped pipelines can be used to increase the distance between compressor stations or to provide additional storage capacity within the pipeline itself.

Compression is another way to increase throughput capacity on an existing pipeline. Upgrading existing compressor stations with additional or higher powered compressors or adding new compressor stations can significantly increase pipeline capacity. PennEast, as a new greenfield pipeline, would have significant opportunities for low-cost expansion through the addition of compression. Table 5 shows capacity expansions that have occurred shortly after new pipelines have commenced operations but prior to the consideration of looping, which can be a more costly alternative or supplement to additional compression. Table 2 shows several recent and proposed projects that have used compression, and notes if these projects also incorporate compression as an element of the capacity expansion.

**Table 1: New Pipeline Compressor-Based Expansions**

	Capacity (Dth/day)	In Service Date
<b>Millennium Pipeline</b>		
Initial Capacity	450,000	2008
Minisink Compressor	225,000	2013
Hancock Compressor	107,500	2014
	<hr/>	
	782,500	
Percent Change	74%	
<b>Maritimes &amp; Northeast</b>		
Initial Capacity	361,575	2000
Compressor Upgrade	78,425	2001
Phase IV Expansion	393,000	2009
	<hr/>	
	833,000	
Percent Change	130%	
<b>Vector Pipeline</b>		

Initial Capacity	925,200	2000
2007 Expansion	245,400	2007
Athens Expansion	105,000	2009
	<u>1,275,600</u>	
Percent Change	38%	

**Table 2: Recent and Proposed Pipeline Looping Projects<sup>35</sup>**

	Initial Pipeline Completion	In-Service Date	Looping	Compression
Transco Leidy Southeast Tennessee	Late 1950	Jan-16	30 miles	Yes <sup>36</sup>
Susquehanna West Tennessee Orion	2011	2017	8 miles	Yes
Millenium Eastern Upgrade	2011	2018	13 miles	No
Northeast Upgrade Project	2008	2018	7 miles	Yes
Triad Project	2011	Nov-13	40 miles	Yes
East Side Expansion	2011	2017	7 miles	No
	Late 1940	Nov-15	19 miles	Yes

Under NEPA guidance, the environmental review area must include all the subwatersheds through which the pipeline crosses. A critical consideration in determining the cumulative environmental effects must be the interaction of runoff, lost recharge, deforestation, damaged habitat, compacted soils, air pollution, water pollution, methane emissions, and all other harms impacted by the proposed PennEast pipeline along with the other past, present, and reasonably foreseeable future actions, whether federal, non-federal, or private that are connected to and/or would be the result of construction of the proposed PennEast pipeline.<sup>37</sup>

The DEIS asserts positive cumulative benefits, asserting jobs, air benefits and tax receipts but fails to assess the negative ramifications from construction of PennEast on all of these fronts. This is a crucial deficiency in the NEPA analysis. The adverse air quality impacts of PennEast are largely avoided by failing to do an appropriate cumulative impacts analysis that includes the induced and supported drilling, fracking, and other associated activities that would result from approval of a PennEast pipeline. The jobs and economic harms are overlooked in their entirety – there is no discussion of the reduced crop production for farmers, the adverse impacts to businesses along or near the pipeline right of way, the implications for ecotourism and related businesses and jobs, etc.

<sup>35</sup> Properties of these projects are available in the respective FERC dockets: Transco Leidy Southeast (CP13-551), Tennessee Susquehanna West (CP15-148), Tennessee Orion (CP16-4), and Millenium Eastern Upgrade (PF 16-3).

<sup>36</sup> Susquehanna West, Orion, Northeast upgrade, and Triad are all expansions to the TN 300 line, which is itself an expansion of a 1950s era TGP line.

<sup>37</sup> 40 C.F.R. §§ 1508.7-8, 1508.27 (2010).

As is shown by the economic analysis undertaken by Key-Log Economics and discussed elsewhere in this comment, the job and economic harms as a result of this project skyrocket and the supposed benefits are so flawed as to be indefensible.

### **Induced shale gas production and impacts must be considered by the DEIS**

The PennEast pipeline will result in new production of shale gas. Construction of the PennEast pipeline will cause industry to undertake and pursue new shale gas production – both by drilling new wells for production of shale gas and by pursuing production from wells that have been drilled but for which production was not pursued due to lacking pipeline capacity. Determining the shale gas production that will be induced and supported by the PennEast pipeline for delivery into interstate commerce is achievable using readily available data, methodologies, modeling, knowledge, resources and tools. Assessing the direct and indirect impacts from shale gas production and drilling that will result from construction of the PennEast pipeline is required by NEPA.

#### Pipelines can result in new shale gas production and drilling in several ways

Regardless of whether there is an actual need for the gas that would be transported in interstate commerce to the areas identified by PennEast in its application, once the project is constructed there will be shale gas production that will feed the pipeline which could then redirect it to other markets such as to LNG export facilities that can take the gas overseas for sale to foreign nations and users.

While FERC continues to try and ignore the connection between natural gas infrastructure investments and increased production, for producers, industry experts, and other government agencies, the effect is clear. With limitations on the ability to deliver gas to high-value markets, the economics do not favor increased drilling. In the last year or so, due to low gas prices and constrained delivery systems, many drillers have cut back on drilling; total production in the Marcellus actually declined for the first time since the shale boom began in 2008.<sup>38,39</sup>

Currently, there are at least 12 projects proposed or under construction that would either expand existing pipeline capacity or add new pipelines for the purpose of delivering shale gas from the Marcellus region into markets in the Northeast, South, and beyond.<sup>40</sup> The map below shows some of the recent proposals to expand take-away capacity from the Marcellus (notably, this map does not include the PennEast or the Atlantic Sunrise pipeline projects).

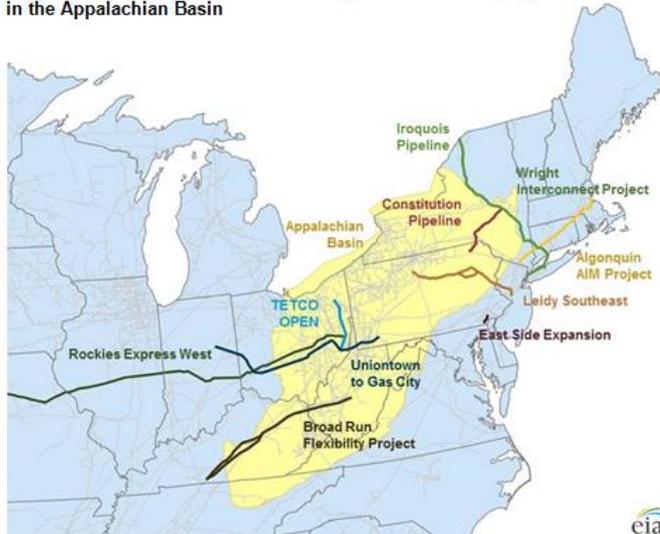
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<sup>38</sup> Bloomberg. *"America's Biggest Shale Gas Field Is Choking on Its Own Supply."* October 14, 2015. Available at: <http://www.bloomberg.com/news/articles/2015-10-14/america-s-biggest-shale-gas-field-is-choking-on-its-own-supply>

<sup>39</sup> EIA Drilling Productivity Report. August 2016. Available at: <https://www.eia.gov/petroleum/drilling/pdf/dpr-full.pdf>

<sup>40</sup> Northeast Gas Association. *"Planned Enhancements, Northeast Natural Gas Pipeline Systems"*. August 2016. Available at: [http://www.northeastgas.org/pdf/system\\_enhance0816.pdf](http://www.northeastgas.org/pdf/system_enhance0816.pdf)

**Selected existing and planned natural gas infrastructure projects  
in the Appalachian Basin**



Reproduced from EIA, January 2016. Available at:  
<http://www.eia.gov/todayinenergy/detail.cfm?id=24732>

These new pipelines, including PennEast, will unlock additional production potential in the Marcellus region, both directly by providing additional takeaway capacity from the region and indirectly by resulting in higher regional prices. Natural gas prices in the Marcellus region have been trading at a significant discount to national benchmark prices for several years, as discussed elsewhere in this comment. Growth in gas production slowed in Pennsylvania in 2015, and local prices dropped significantly.

As a result of the recent slowdown in production, there are numerous well sites that are permitted but have not yet been drilled. For example, a subsidiary of the Natural Fuel Gas Company, Seneca Resources, stated in a presentation to its investors earlier this year that it had “[l]imited development drilling [in its Eastern Development Area in northeastern Pennsylvania] until firm transportation on [the proposed] Atlantic Sunrise (190 MDth/d) is available in late 2017” and that it had “50-60 remaining Marcellus [drilling] locations” and “100-120 [Geneseo shale] locations” that could not be developed until that pipeline project was underway.<sup>41</sup>

Other producers in the region have similarly stated that they require additional pipeline capacity to develop new production capacity. Argus Media, a leading provider of data on prices and fundamentals for the natural gas industry, reported that “Antero Resources is waiting on the 3.25 Bcf/d Energy Transfer Rover pipeline to come online in the second half of 2017 before it increases drilling activity,” while “Northern Fuel Gas [in July 2016] said it was waiting on its own 475mn cf/d Northern Access to come online in the second half of 2017 before it raises its production levels.”<sup>42</sup> Argus also reported that “Range Resources plans to drill a seven-well pad in the Appalachian shale region this year, and could quickly drill up to 42 more laterals. The producer is expecting the 628mn cf/d (18mn m<sup>3</sup>/d) Spectra Gulf Markets project to facilitate some of its increased output when it

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<sup>41</sup> National Fuel. Investor Presentation: Q2 Fiscal 2016 Update April 2016. Slide 10. Available at: [http://s2.q4cdn.com/766046337/files/doc\\_presentations/2016/April/20160428\\_NFG-IR-Presentation.pdf](http://s2.q4cdn.com/766046337/files/doc_presentations/2016/April/20160428_NFG-IR-Presentation.pdf)

<sup>42</sup> Argus Media. August 29, 2016. “US gas producers boost output ahead of expansions.” Available at: <http://www.argusmedia.com/news/article/?id=1302610>

begins flowing in the fourth quarter [of 2016].”<sup>43</sup> In their 2015 Annual Report, Cabot Oil & Gas noted that drilling activity in the Marcellus region had been reduced to a single rig, in response to “the market environment.” Cabot further noted that the company plans to “exit 2016 with between 45 and 50 drilled uncompleted wells, which will allow for operational flexibility into 2017.”<sup>44</sup> New pipeline capacity such as the PennEast pipeline would enable Cabot and other operators to complete additional wells and begin to further accelerate their production in the state – Cabot is among the shippers identified in the DEIS as being an anticipated customer of PennEast.

A recent report<sup>45</sup> issued by the Greater Philadelphia Energy Action Team advocates for more pipelines in order to induce and support more and new shale gas production:

“In creating an Energy Hub, the goal, first and foremost, is to expand the market for the Marcellus/Utica natural gas and NGLs to increase the economic benefits that will come to the Commonwealth and the Greater Philadelphia region from more vigorous production... To achieve this goal, however, we need to expand the existing interstate and intrastate natural gas pipeline infrastructure.”

“Encouraging the industry to invest in new pipelines and in new distribution system infrastructure ... provides additional capacity for increased volumes of gas.”

Industry is advocating for pipeline capacity exiting Northeast Pennsylvania to grow by over 60 percent in the next several years in order to allow for drilling activity to resume. PennEast is a major component of this expansion, as identified in **Table 3**.

**Table 3: Pipeline Capacity Exiting Northeast Pennsylvania<sup>46</sup>**

	Capacity (Bcf/day)
<b>Existing</b>	
Transco	3.4
Tennessee	1.8
Millennium	0.8
Existing Capacity	6.0
<b>In Development</b>	
TGP Susquehanna	
West	0.15
TGP Orion Expansion	0.14
Constitution Pipeline	0.65
Transco Atlantic	
Sunrise	1.70

<sup>43</sup> Ibid.

<sup>44</sup> Cabot Oil & Gas 2015 Annual Report. Page 3. Available at: <http://www.cabotog.com/wp-content/uploads/2016/04/COG-2015-AR.pdf>

<sup>45</sup> Greater Philadelphia Energy Action Team, *A Pipeline for Growth*, March 30, 2016.

<sup>46</sup> Pipeline capacities are taken from the relevant FERC dockets: TGP Susquehanna (CP15-148), TGP Orion (CP16-4), Constitution (CP13-449), Transco Atlantic Sunrise (CP155-138), PennEast (CP15-558), and Millennium (PF16-3)

PennEast Pipeline	1.11
Millennium Upgrade	0.20
In Development	3.95
<b>Total</b>	<b>10.0</b>

Historical drilling activity is an accurate and strong indicator for new wells

The state of Pennsylvania currently has 9,480 “active” unconventional natural gas wells.<sup>47</sup> Active gas wells have been issued a permit, but may or may not have been drilled or be currently producing natural gas. Those wells are found largely in the counties located in the Northeast and Southwest regions of the state, which contain 83 percent of active wells. Table 2 shows the breakdown of these active natural gas wells by region.

**Table 4. Active natural gas wells in Pennsylvania**

Region	Active Wells
Northwest	856
Southwest	3,537
Capital	0
Central	673
Northeast	4,414
Southeast	0
<b>Total</b>	<b>9,480</b>

*Source: Pennsylvania Department of Environmental Protection. PA Oil and Gas Mapping. Accessed August 26, 2016. Available online at:*

<http://www.depgis.state.pa.us/PaOilAndGasMapping/OilGasWellsStrayGasMap.html>

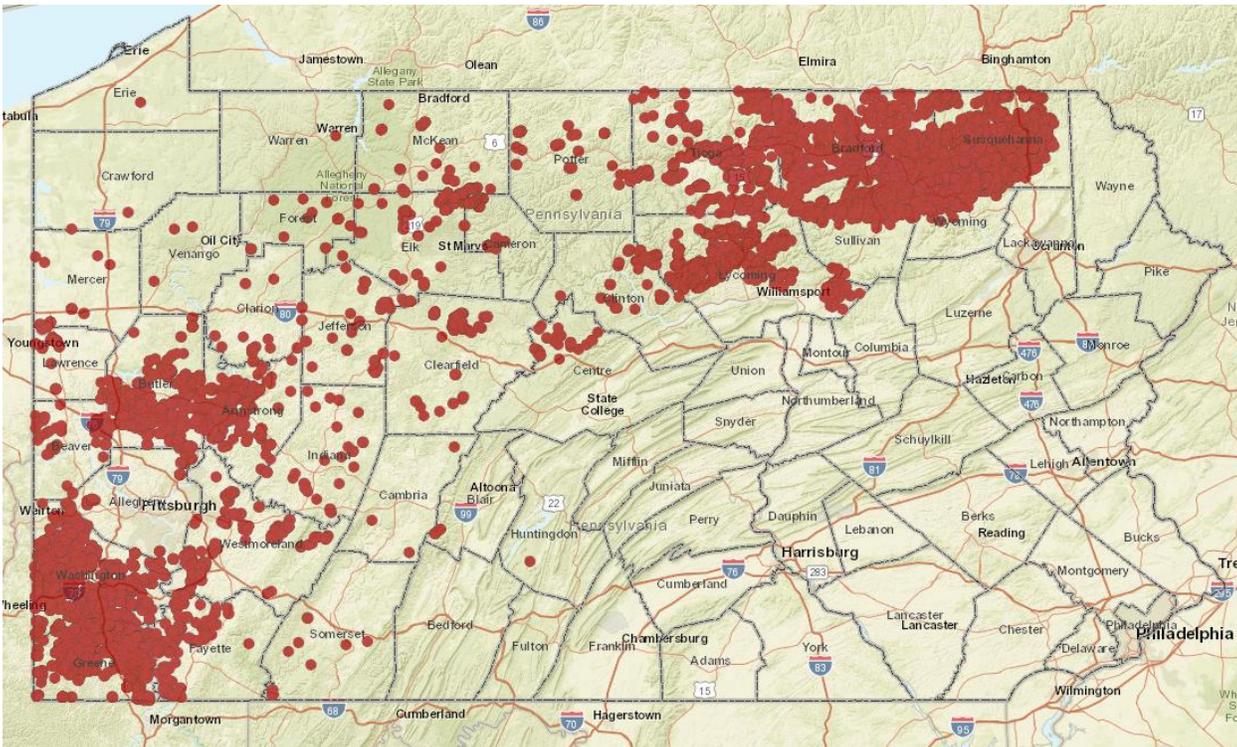
In the Northeast, near the start of the PennEast pipeline, four counties contain large volumes of active gas wells: Bradford County (12 percent of active wells in the state), Lycoming County (9 percent), Susquehanna County (14 percent), and Tioga County (8 percent). Figure 1 shows the distribution of active wells across the state.

<sup>47</sup> Pennsylvania Department of Environmental Protection. PA Oil and Gas Mapping. Accessed August 26, 2016. Available online at:

<http://www.depgis.state.pa.us/PaOilAndGasMapping/OilGasWellsStrayGasMap.html>

## Figure 1. Map of Active Natural Gas Wells in Pennsylvania

Source: Pennsylvania Department of Environmental Protection. PA Oil and Gas Mapping. Accessed August 26, 2016. Available online at:



<http://www.depgis.state.pa.us/PaOilAndGasMapping/OilGasWellsStrayGasMap.html>

For a full listing of the number of active wells in Pennsylvania by county, see Appendix 1.

The state of Pennsylvania tracks natural gas wells that are Proposed but Never Materialized (PBNM), in which a permit was issued but expired prior to the commencement of drilling, as well as Operator Reported Not Drilled (ORND), in which a permit was issued but the operator reported that the well was never drilled. These sites are logical and likely candidates for new drilling in Pennsylvania. A total of 2,733 wells fall into the PBNM category, and 4,258 wells are classified as ORND. The breakdown by region is shown in Table 2. Well more than half of these sites are located in Northeastern Pennsylvania.

**Table 5. Number of Wells in Pennsylvania That Have Been Permitted but Not Drilled**

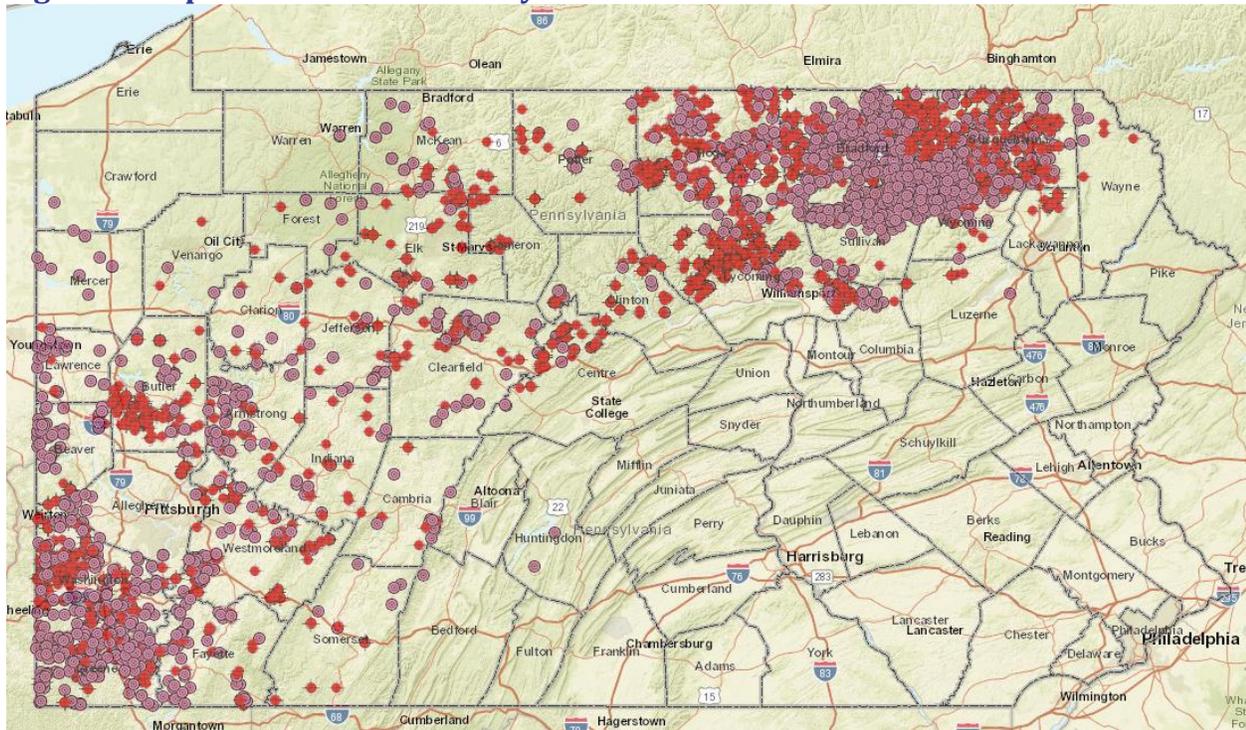
Region	Proposed but Never Materialized	Operator Reported Not Drilled
Northwest	200	275
Southwest	789	746
Capital	0	0
Central	295	517
Northeast	1,449	2,720
Southeast	0	0
<b>Total</b>	<b>2,733</b>	<b>4,258</b>

As shown in Table 4, of the counties in Northeast Pennsylvania, Bradford County and Susquehanna County have the highest number of wells that are PBNM and ORND. In general, the counties with the highest number of active wells also have the highest number of PBNM and ORND wells. Figure 2 shows the distribution across the state of Pennsylvania of natural gas wells that were permitted but never drilled, with the purple circles representing PBNM wells, and the red circles representing ORND wells. Appendix 1 contains a full listing by county of PBNM and ORND wells.

**Table 6. Active, PBNM, and ORND wells in Northeast Pennsylvania**

County	Active	Proposed but Never Materialized	Operator Reported Not Drilled
<b>Northeast Pennsylvania</b>	<b>4,414</b>	<b>1,449</b>	<b>2,720</b>
Bradford	1,133	650	1,114
Carbon	0	0	0
Lackawanna	0	0	27
Luzerne	0	1	12
Lycoming	894	104	404
Monroe	0	0	0
Pike	0	0	0
Sullivan	119	131	82
Susquehanna	1,306	262	494
Tioga	743	199	449
Wayne	0	5	4
Wyoming	219	97	134

**Figure 2. Map of Gas Wells in Pennsylvania that were Permitted but Not Drilled**



Distribution across the state of Pennsylvania of natural gas wells that were permitted but never drilled, with the purple circles representing PBNM wells, and the red circles representing ORND wells.

*Source: Pennsylvania Department of Environmental Protection. PA Oil and Gas Mapping. Accessed August 26, 2016. Available online at:*

*<http://www.depgis.state.pa.us/PaOilAndGasMapping/OilGasWellsStrayGasMap.html>*

Given the large number of wells that have been permitted but not drilled, one can reasonably expect that new natural gas wells drilled as a result of the construction of the PennEast pipeline would most likely be among the sites identified in Figure 2. Those counties with the highest number of wells that received permits but were never drilled are Bradford, Susquehanna, Greene, Washington, Tioga, Sullivan, Wyoming, Lycoming, and Clearfield.

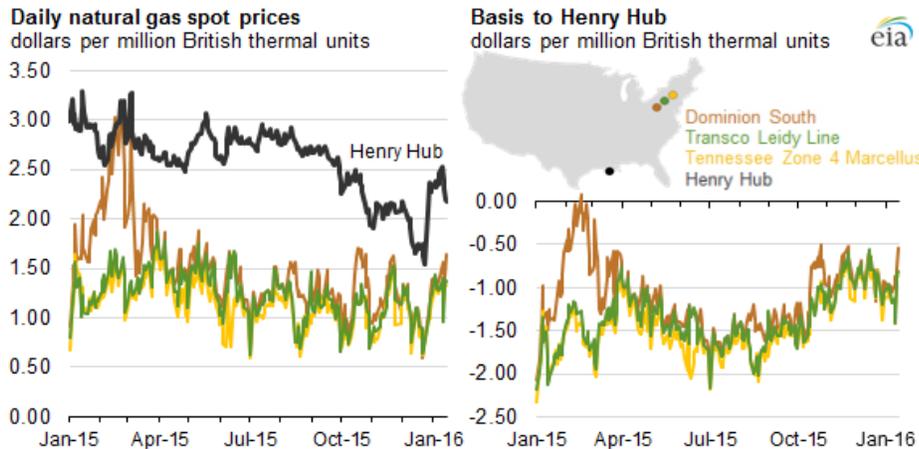
### Relative Pricing Impacts of Pipelines

Natural gas prices are lowest in the regions in which gas is produced. For many years, the lowest natural gas prices in the East were found at Henry Hub, located near the Gulf of Mexico where much of the natural gas in the United States was produced. With the increase in shale gas production, however, the lowest natural gas prices in the country are now found at trading points in and around the Marcellus and Utica shale plays in Pennsylvania, West Virginia, and Ohio. Availability of pipeline infrastructure to send natural gas to other regions has a direct impact on the price of natural gas in those regions—greater gas take-away capacity allows more natural gas to be produced. The improved access to higher priced markets via additional pipeline infrastructure will raise the price of natural gas in the producing region, which also will increase production.

Information on natural gas spot prices published in January 2016 by the EIA shows these market forces in action. While trading points in and around the Marcellus and Utica shale regions have been below the Henry Hub price in recent years, the EIA points out that, as of January 2016, the

difference between these price points has narrowed due to the recent pipeline projects that have come online. That narrowing is shown in Figure 3.

**Figure 3. Spread in Natural Gas Prices at Henry Hub and Marcellus Trading Points**



*Source: US Energy Information Administration, based on Natural Gas Intelligence. Available online at: <http://www.eia.gov/todayinenergy/detail.cfm?id=24712>*

Despite the eroding of the Marcellus basis differential in late 2015, towards close to \$1 per million BTU, that differential has persisted throughout 2016 and further increased. On August 29, 2016, natural gas in Northeast Pennsylvania was trading at \$1.30 per million BTU, while Henry Hub gas was at \$2.87—a \$1.57 differential.<sup>48</sup>

The narrowing of prices between the Henry Hub and Marcellus/Utica trading points in late 2015 may be due in part to the fact that producers in the Marcellus curtailed production of natural gas by approximately 1.2 Bcf/d as of November 2015 in response to weak prices resulting from the rapid growth of production in the face of pipeline constraints. Of the gas production that was curtailed, about 750 MMcf/d was in Bradford and Susquehanna counties in Pennsylvania.<sup>49</sup>

Economics dictates that natural gas production is likely to increase as additional pipeline capacity is added to the region. Producers in the Marcellus such as Seneca Resources and Cabot Oil & Gas have indicated that additional pipeline infrastructure is a cornerstone of plans to increase production in Northeast Pennsylvania.<sup>50</sup> In January 2016, Bentek Energy and the EIA noted a large backlog of natural gas wells that have been drilled but will not begin production until infrastructure (in the form of pipelines) becomes available to transport additional supply or until the price of natural gas increases. Bentek and EIA suggested that this backlog will allow production of natural gas in the

<sup>48</sup> NGI Shale Daily, August 29<sup>th</sup>, 2016.

<sup>49</sup> NGI's Shale Daily. Information on the Marcellus Shale. Available online at: <http://www.naturalgasintel.com/marcellusinfo>. Accessed on August 28, 2016.

<sup>50</sup> Comments of Allegheny Defense Project before the Federal Energy Regulatory Commission on the Draft Environmental Impact Statement for Transcontinental Pipe Line Company proposed Atlantic Sunrise Project. Docket No. CP14-138-000. June 2016. Page 22.

Marcellus to increase quickly when new infrastructure projects are completed.<sup>51</sup> And so, in addition to advancing new drilling, additional pipeline infrastructure will advance gas production in wells that may have been drilled but from which the industry did not yet extract gas due to a lack of available pipeline infrastructure.

### The PennEast Project would induce significant and predictable new drilling activity

The PennEast pipeline represents a significant fraction of the total new pipeline capacity coming to Northeast Pennsylvania—over 25 percent according to Table 1. A significant amount of existing production that has been curtailed will now come online for asserted customers as a result of the new pipeline. Permitted wells that were not previously completed would start producing gas for transport to New Jersey and Pennsylvania markets through the PennEast pipeline.

The total number of wells induced by any given pipeline depends on the lifetime production, or estimated ultimate recovery (EUR), from a given well. Wells in Northeast Pennsylvania provide up to 20 Bcf of total lifetime production, according to a recent Range Resources presentation.<sup>52</sup> There is significant variability across wells, and well decline rates—the decline in daily production over time after a well starts producing gas—have proven to be much more significant than initially estimated. As a result of this uncertainty, we use a lower average well EUR based on EIA data. We weight this county-specific EIA data based on the number of wells in each county in Northeast Pennsylvania (as provided in Table 6). This results in an average EUR for the region near the start of the PennEast pipeline of between 3.84 Bcf and 5.5 Bcf.

The PennEast pipeline, with 1.1 Bcf per day of gas transmission capacity, could result in the transfer of up to 16,000 Bcf over its expected economic lifetime. Based on an average well EUR of 5 Bcf, the PennEast could effectively support the drilling of **3,000 new wells in Pennsylvania**. This would likely come from a combination of wells that have been drilled but are not yet producing due to market conditions and wells not yet drilled. These wells are most likely to be located in Northeast Pennsylvania, in Bradford, Susquehanna, Lycoming, and Tioga counties.

### **The economic benefits asserted in the DEIS are indefensible and unsupported, and the economic harms are entirely overlooked**

FERC's section 7 duty to consider the public interest is broader than promoting a plentiful supply of cheap gas. *See Fla. Gas Transmission Co. v. FERC*, 604 F.3d 636, 649 (D.C. Cir.2010). Rather, FERC must ensure “the [public] benefits of the proposal outweigh the adverse effects on other economic interests.” *AES Ocean Express, LLC*, 103 F.E.R.C. ¶ 61,030 at ¶ 19. Here, it is clear that the record shows that the net costs resulting from the construction of this pipeline outweigh the alleged public benefits of the Project.

Specifically, the DEIS consideration of economic benefits and harms is so misleading, inaccurate and deficient as to be a meaningless element of the DEIS, and certainly cannot be said to

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<sup>51</sup> US Energy Information Administration. 2016. *Spread between Henry Hub, Marcellus natural gas prices narrows as pipeline capacity grows*, Available online at:

<http://www.eia.gov/todayinenergy/detail.cfm?id=24712>

<sup>52</sup> Range Resources. EnerCom Oil & Gas Conference 21. August 15, 2016.

<http://ir.rangeresources.com/phoenix.zhtml?c=101196&p=irol-presentations>

fulfill the mandates of NEPA or FERC's Policy Statement to fully and fairly consider the economic issues involved with this proposed project.

As demonstrated in the attached report by Key-Log Economics, this comment and the comments of others on the docket, the claims of economic benefit advanced by PennEast and adopted by FERC in the DEIS are based on an analysis that is so flawed it is indefensible.

As determined by a careful analysis by Key-Log Economics.<sup>53</sup> In short, the DEIS;

- Overestimates short term impacts due to inherent issues with the models used and the choice of the size of the study region.
- Overestimates long term job "creation" and other impacts due to use of a model empirically proven to have no value as a predictor of economic activity occurring more than a year into the future."

In addition to providing exaggerated and false claims of benefit, the DEIS ignores the economic harms inflicted by construction and operation of PennEast. Among its many deficiencies, the DEIS analysis does not consider the adverse impacts to recreation and ecotourism so vitally important to the impacted region; the analysis fails to consider the implications for future investment in open space preservation and the adverse impacts thereof as communities realize that preserved lands are not protected from pipeline construction; the economic damage to agricultural crop production is overlooked as are harms to other businesses;<sup>54</sup> the impact on market values and marketability of properties through which the project will cut are misrepresented; the costs to the community to respond to emergencies, to the increased stormwater runoff, pollution inputs, and other adverse impacts that could result from this project and be foisted upon the shoulders of local towns and residents are given short shrift if they are mentioned at all; and the DEIS does not consider the health impacts to the residents who will be impacted by construction and operation of this project.

By way of more specific examples, the DEIS analysis ignores the many and varied economic harms that would result from the construction, operation and maintenance of the PennEast pipeline. Attached is a detailed analysis of the many deficiencies provided by Key-Log Economics. Among the deficiencies highlighted in that report, and in other resources provided as part of this comment, the DEIS fails to consider:

- *Public health costs*

"Based upon experience with other pipelines it can be anticipated that, for example, just in Carbon County where 560 people live within 2 miles of the proposed compressor station (US Census

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<sup>53</sup> In addition to the Key-Log Economics analysis attached she attached report by Jannette Barth challenging the Econsult Analysis. This report was provided on the FERC docket as public comment prior to completion of the DEIS, but FERC clearly chose to ignore this report along with all the other comments you ignored.

<sup>54</sup> We have learned from farmers, and it has been documented on the record, that crop production has gone down by as much as 30% when a pipeline cuts through farm crop lands. DEIS figures do not consider harms to other local businesses, such as the 7th generation nursery business reported in the press that said their ability to continue to operate would be harmed if PennEast passes through their property as is under consideration.

Bureau, 2015), there will be on the order of “504 people experiencing odor events, 398 people experiencing respiratory impacts, 325 people experiencing sinus problems, and 218 people experiencing sleep disturbances and/or severe headaches.”<sup>55</sup>

- *Reduced property values*

Of the comments reviewed so far by the Delaware Riverkeeper Network in partnership with Key-Log Economics (which includes the majority filed to date) “35% mention concerns about the effect on property value. Of this group, 99.6% believe the effect on property value will be negative.”<sup>56</sup>

- “68% of Realtors believe the presence of a pipeline would decrease residential property value.”<sup>57</sup>
- “Of these Realtors, 56% believe the decrease in value would be between 5% and 10%. (Kielisch does not report the magnitude of the price decrease expected by the other 44%).”<sup>58</sup>
- “70% of Realtors believe a pipeline would cause an increase in the time it takes to sell a home. This is not merely an inconvenience, but a true economic and financial cost to the seller.”<sup>59</sup>
- “In a survey of buyers presented with the prospect of buying an otherwise desirable home with a 36 inch diameter gas transmission line on the property, 62.2% stated that they would no longer buy the property at any price. Of the remainder, half (18.9%) stated that they would still buy the property, but only at a price 21%, on average, below what would otherwise be the market price. The other 18.9% said the pipeline would have no effect on the price they would offer.

Not incidentally, the survey participants were informed that the risks of “accidental explosions, terrorist threats, tampering, and the inability to detect leaks” were “extremely rare” (Kielisch, 2015, p. 7). Considering only those buyers who are still willing to purchase the property, the expected loss in market value would be 10.5%. This loss in value provides the midlevel impact in our estimates. A much greater loss (and higher estimates) would occur if one were to consider the fact that 62% of buyers are effectively reducing their offer prices by 100%, making the average reduction in offer price for all potential buyers 66.2%.”<sup>60</sup>

- “Based on five “impact studies” in which appraisals of smaller properties with and without

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<sup>55</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

<sup>56</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

<sup>57</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

<sup>58</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

<sup>59</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

<sup>60</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

pipelines were compared, “the average impact [on value] due to the presence of a gas transmission pipeline is 11.6%”(Kielisch, 2015, p. 11). The average rises to a range of 12% to 14% if larger parcels are considered, possibly due to the loss of subdivision capability.”<sup>61</sup>

- Research has also “found that properties within the “emergency plan response zone” of sour gas wells and natural gas pipelines faced an average loss in value of 3.8%, other things being equal.”<sup>62</sup>
- Proximity to compressor stations have inflicted health harms, quality of life impacts and property damage, as well as lost property value, and have had impacts so severe that in at least one documented case it forced a family to abandon their \$250,000 investment in the home rather than suffer the health, safety and other harms they were experiencing.<sup>63</sup>
- “In Hancock, another New York town with a much smaller (15,000 hp) compressor station, three homeowners have had their property assessments reduced, two by 25% and one by 50%, due to the impact of truck traffic, noise, odors, and poor air quality associated with the compressor station (“Proximity of Compressor Station Devalues Homes by as Much as 50%” 2015).”<sup>64</sup>
- The experts at Key-Log Economics estimate that “properties within one half mile of the Kidder Township compressor station would lose 25% of their value if the station is built.” ... “[T]he Kidder compressor station would reduce the value of 43 properties by a total of \$1.9 million dollars.”<sup>65</sup>
- *Damage caused by air pollution to agriculture and infrastructure*

“One study found that shale gas air pollution damages in Pennsylvania already amount to between \$7.2 and \$30 million, with compressor stations responsible for 60-75% of this total (Walker & Koplinka-Loehr, 2014). Using the low estimate of 60%, that is between \$4.32 and \$18 million in damages associated with compressor stations.”<sup>66</sup>

- *The Social Cost of Carbon*

“PennEast, LLC estimates the pipeline would transport 401,500,000 dekatherms annually, contributing to an equivalent of 20.1 metric tons of CO<sub>2</sub> emitted per year (U.S. EPA, 2016a). Using the

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<sup>61</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

<sup>62</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

<sup>63</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

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most conservative estimate of the cost per metric ton of carbon (U.S. EPA, 2016b), the additional emission of CO<sub>2</sub> would cost \$252.4 million annually.”<sup>67</sup>

- *Loss of Ecosystem Services*

The ecosystem services, “benefits that flow from nature to people”, that will be lost, for example, “tangible physical quantities, such as food, timber, and clean drinking water, life support functions like assimilating waste that ends up in air and water or on the land, as well as aesthetics, recreational opportunities, and other benefits of a more cultural, social, or spiritual nature.”<sup>68</sup>

In addition there is no recognition in the DEIS for the decrease in property values associated with increased ecological impacts to the environment from PennEast. For example, one of the benefits of living next to a stream or other natural body of water is the increased property value those riparian rights bring as well as the recreational and quality of life benefits that can be enjoyed. But the cut of a pipeline diminishes all of these rights and benefits of living near a waterway. Property values are demonstrably harmed by the presence of a pipeline.<sup>69</sup> Aesthetic qualities, ecological health of a stream and instream populations such as fish are diminished due to a pipeline’s stream cuts and permanent loss of riparian vegetation essential for healthy riparian and instream habitat. Ecological and aesthetic harm translates into diminished recreational enjoyment and opportunities as well as a diminished ability to enjoy the environment and one’s property.

In addition, the economic analysis included in the DEIS fails to consider the potentially superior economic benefits and values of a clean energy alternative for fulfilling energy needs in Pennsylvania, New Jersey and the unnamed surrounding states PennEast asserts it is seeking to serve. For example, an investment in clean energy strategies are known to result in far superior job creation for every million dollars invested as compared to the oil and gas industry, including pipeline projects.

Research has demonstrated that investment in clean energy generates a greater number of long term jobs that bring greater capacity for worker earning and advancement. For every million dollars invested in clean energy, including wind, solar, eco-friendly water, and efficiency, generates 6 to 8 times the number of direct jobs, and 3 times the number of direct, indirect and induced jobs collectively as compared to oil, gas or coal.<sup>70</sup>

FERC wrongly concentrates its determinations regarding pipeline certificate approvals largely on the contracts and the alleged reliability accessibility proposed by the applicant without considering the economic costs articulated above –given that improper review, FERC’s failure to fully consider economic harms renders a decision flowing therefrom as arbitrary and capricious.

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<sup>67</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

<sup>68</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

<sup>69</sup> See e.g. Review of INGAA Foundation Report, “*Pipeline Impact to Property Value and Property Insurability*”, Key-Log Economics, March 11, 2015

<sup>70</sup> See *The Economic Benefits of Investing in Clean Energy*, by the Center for American Progress & PERI Univ of Mass Amhersts

Using methods established in Phillips and McGee (2016) and applied to pipelines in Phillips, Wang and Bottorff (2016), the PennEast pipeline would cause an initial loss of \$7.3 million in ecosystem services during a one year construction period. For each year the pipeline is in operation, the pipeline would induce an additional loss of \$2.4 in ecosystem services due to conversion of land in the ROW. Land converted for use as permanent pipeline related infrastructure would mean an additional loss of \$218,200 each year. Such losses are not accounted for in the DEIS or FERC's balancing of the economic costs of the project. Additionally, using methods established by Kielisch (2015) and Boxall, Chan, McMillan (2005), and applied to pipelines in Phillips, Wang and Bottorff (2016), we estimate that construction of the PennEast pipeline would result in a loss of \$158.3 to \$176.0 million in property value in the right of way and evacuation zone.<sup>71</sup>

### **The DEIS fails in its legal obligation to consider greenhouse gas emissions and climate change implications of the PennEast Pipeline**

On August 1, 2016, The Council on Environmental Quality (CEQ) issued final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews. The final guidance directs federal agencies on how to consider a proposed action's impacts on climate change—both in terms of the potential effects of *a proposed action on climate change* (by assessing the GHG emissions that would result *directly and indirectly* from the action) and in terms of the effects of *climate change on a proposed action* and its environmental impacts.

The guidance, building off of recent scientific assessments and conclusions, including the 2009 EPA finding that climate change impacts are “reasonably anticipated to endanger the public health and public welfare of present and future generations”, states that “Climate change is a fundamental environmental issue, and its effects fall squarely within NEPA’s purview.” The document acts as a guide for federal agencies to apply NEPA principles and practices to the analysis of GHG emissions and climate change.

DEIS discussion of greenhouse gas emissions cannot be said to fulfill the requirements of the CEQ Guidance issued on August 1, 2016.

According to CEQ guidance:

“when addressing climate change agencies should consider: (1) The potential effects of a proposed action on climate change as indicated by assessing GHG emissions (e.g., to include, where applicable, carbon sequestration); and, (2) The effects of climate change on a proposed action and its environmental impacts.”

Pursuant to the guidance CEQ recommends:

- “...that agencies quantify a proposed agency action’s projected direct and indirect GHG emissions, ...;”
- “....agencies use projected GHG emissions ... as a proxy for assessing potential climate change effects when preparing a NEPA analysis for a proposed agency action;”

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<sup>71</sup> See letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

- “ that where agencies do not quantify a proposed agency action’s projected GHG emissions because tools, methodologies, or data inputs are not reasonably available to support calculations for a quantitative analysis, agencies include a qualitative analysis in the NEPA document and explain the basis for determining that quantification is not reasonably available;”
- agencies “[d]iscuss methods to appropriately analyze reasonably foreseeable direct, indirect, and cumulative GHG emissions and climate effects;”
- “...agencies consider the short- and long-term effects and benefits in the alternatives and mitigation analysis;”

The assessment undertaken in the DEIS to fulfill consideration of the climate change impacts of this proposed project is overwhelmingly deficient. The DEIS fails to fully, fairly and accurately consider the greenhouse gas emissions of the proposed PennEast pipeline project itself, as well as the shale gas extraction emissions that will directly and indirectly be induced by approval of this project, the potential for climate change to worsen environmental impacts associated with the project and the impacts of climate change on the project itself.

#### DEIS uses improper time frame and GWP for Methane.

It is notable that at the outset the DEIS asserts for Methane, CH<sub>4</sub>, a Global Warming Potential (GWP) of 25. According to the USEPA, “Methane (CH<sub>4</sub>) is estimated to have a GWP of 28–36 over 100 years.”<sup>72</sup> As a result of FERC using the outdated figure of 25, it will have seriously understated the greenhouse gas emissions calculations for the proposed PennEast pipeline regardless of the other deficiencies noted in this comment with the DEIS analysis – the current EPA accepted range of 28-36 should be the figure used for all calculations associated with Methane emissions for this project. A failure to do so understates the associated global warming potential by between 12% and 44%.

Given that the earth may reach a temperature tipping point in anywhere from 18 to 38 years,<sup>73</sup> it is the 20 year time frame that is the most meaningful and needs to be the basis of present day decision-making. If a 20-year time frame is used, the global warming potential of methane identified by the USEPA is between 84 and 87. For purposes of assessing the climate changing impacts of approving the PennEast pipeline the DEIS should engage in a robust analysis that includes the 20 year GWP for methane of 84 to 87. If FERC insists on using the scientifically inaccurate 100 year time frame for this assessment then it should use the EPA range of 28 to 36. But in no instance is use of a 25 GWP for methane appropriate for this assessment. And at a minimum the DEIS should do an analysis that includes both the 100 year and the 20 year time frame with the more accurate numbers discussed above for the GHG and climate change assessment of the proposed pipeline.

#### GHG and Climate change analysis needs to consider full pipeline project development and the resulting shale gas production

The climate changing effects of approving PennEast are significant and a climate change assessment needs to include consideration of methane emissions along the entire 115 plus miles of

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<sup>72</sup> <https://www.epa.gov/ghgemissions/understanding-global-warming-potentials>

<sup>73</sup> R. Howarth, D Shindell, R. Santoro, A. Ingraffea, N. Phillips, A Townsend-Small, *Methane Emissions from Natural Gas Systems*, Background Paper Prepared for the National Climate Assessment, Reference number 2011-0003, Feb. 25, 2012.

proposed pipeline, including consideration of greenhouse gas and methane emissions from the proposed compressor station, 8 meter and regulator stations for interconnects, 11 mainline valve sites and 4 pig launcher/receiver sites. The climate change assessment also needs to include the gas production that will take place in order to supply the gas that will be carried by the PennEast pipeline in to interstate commerce and that is a foreseeable and direct element of the PennEast pipeline project. End uses of the gas must likewise be considered. Carrying out a legally appropriate, necessary and data driven assessment demonstrates that approval, construction and operation of the PennEast pipeline will have significant climate changing ramifications.

The DEIS acknowledges that there will be methane emissions from the PennEast pipeline. The DEIS states “Potential emissions of GHGs associated with operation of the Project, including methane emissions from fugitive leaks and equipment venting, are estimated to exceed the 25,000 metric ton threshold for the Kidder Compressor Station. In addition, GHG operating emissions from the New Jersey portion of the Project are also estimated to exceed 25,000 metric tons per year.” DEIS p. 4-209

- Table 4.10.1-8 says that during operations the PA greenhouse gas CO2 equivalent emissions will be 11,450 tons per year; in NJ they will be 70,823 tons per year
- Table 4.10.1-6 says that for the compressor state the greenhouse gas CO2 equivalent emissions will be 191,785 tons per year
- Table 4.10.1-9 says that the greenhouse gas CO2 equivalent emissions for the operational phase of the project in total will be 274,057 tons per year
- Table 4.12.4-1 estimates construction phase greenhouse gas CO2 equivalent emissions at 34,878 tons per year

But these figures understate what should be the anticipated emissions as compared to what is being documented by current science for other pipeline infrastructure.

For example, the DEIS fails to assess the emissions resulting from the induced shale gas production that will result from construction and operation of the pipeline necessary to fulfill its claimed “need” for the project. While recognizing that “upstream development and production of natural gas might be a “reasonably foreseeable” effect of a proposed action” FERC asserts that “ the actual scope and extent of potential GHG emissions from upstream natural gas production is not reasonably foreseeable” and as a result no consideration pursuant to the DEIS is necessary. This kind of double speak – shale gas production is reasonably foreseeable at the same time it is not reasonably foreseeable – does not provide firm, or legally defensible ground for FERC’s failure to consider the GHG emissions or climate changing ramifications of shale gas production that will be the result of approval and construction of the PennEast pipeline. In fact the production of shale gas is reasonably foreseeable, and so too is the scope and extent of that production upon which a GHG emissions analysis can be performed. (See above analysis.)

“Natural gas systems are the single largest source of anthropogenic methane emissions in the United States” contributing approximately 40% of the anthropogenic emissions of methane.<sup>74</sup> Emission of methane to the atmosphere during the production and distribution of shale gas contributes to this fossil fuel’s climate changing impacts. Methane is released to the atmosphere on multiple occasions during the shale gas extraction process. It has been estimated that “during the life cycle of an average shale-gas well, 3.6 to 7.9% of the total production of the well is emitted to the

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<sup>74</sup> *Id.*

atmosphere as methane.”<sup>75</sup> Among the most recent scientific findings is that as much as 9% of the methane produced while drilling for gas is lost to the atmosphere.<sup>76</sup> While a previous estimation that 4% was lost from the well fields had already raised alarm bells for many;<sup>77</sup> the new figure of 9% is increasing evidence of the massive methane contribution shale gas development provides to the atmosphere.

Additionally, large amounts of methane leak into the atmosphere during the “transport, storage and distribution” phases of the natural gas delivery process including during transmission through interstate pipelines like PennEast.<sup>78</sup> Even conservative estimates of leakage during gas transmission, storage and distribution have given a range of up to 3.6%.<sup>79</sup> Emissions from the transmission of natural gas occur along the length of pipeline project.

Researchers “have found that methane leaks would need to be held to 2% or less in order for natural gas to have less of a climate changing impact than coal due to the life cycle of methane.”<sup>80</sup> At leakage above 3.2%<sup>81</sup> natural gas ceases to have any climate advantage over other fossil fuels. As discussed above, science is finding that the existing leakage rate during the production and/or transmission of shale produced gas is significantly higher than either of these numbers.

When upstream and downstream emissions are considered along with the increase in shale gas wells over the next 2 decades, the methane emissions from the natural gas industry will increase, by as much as 40 to 60%.<sup>82</sup> Upstream emissions occur during well completion and production at a well site while midstream emissions occur during gas processing. Downstream emissions are those that happen in the storage systems as well as the transmission and distribution pipelines.<sup>83</sup>

Scientists believe that if the earth warms to 1.8°C above what it was between 1890 and 1910 that it will put in play a set of chain reactions that will result in increasing releases of methane to the atmosphere – largely released from the arctic as a result of melting permafrost – which will in turn cause increased warming and its associated impacts.<sup>84</sup> It is posited by scientists that without immediate reductions in methane emissions and black carbon the earth will warm to 1.5°C by 2030 and 2.0°C by 2045/2050 and that this will be the case regardless whether carbon dioxide emissions are reduced or not.

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<sup>75</sup> Howarth, *supra note 55*.

<sup>76</sup> *Methane Leaks Erode Green Credentials of Natural Gas*, Nature International Weekly Journal of Science, Jan. 2, 2013. See also Howarth, *supra note 56*

<sup>77</sup> *Id.*

<sup>78</sup> Howarth, *supra note 56*; See also U.S. EPA 1997. *Methane Emissions from the Natural Gas Industry*. USEPA National Risk Management Research Laboratory, June 1997, EPA-600-SR-96-080.

<sup>79</sup> Howarth, R. W. (2014). A bridge to nowhere: methane emissions and the greenhouse gas footprint of natural gas. Energy Science & Engineering.; See also Howarth, *supra note 55*.

<sup>80</sup> *Switching from Coal to Natural Gas Would Do Little for Global Climate, Study Indicates*, UCAR/NCAR Atmos News, Sept 8, 2011.

<sup>81</sup> According to the Environmental Defense Fund

<sup>82</sup> Howarth, *supra note 56*.

<sup>83</sup> Howarth, *supra note 56*.

<sup>84</sup> Howarth, *supra*.

Another cascading and irreversible impact of climate change involves irreversible changes in ocean currents. The Atlantic serves as the engine for the planet's conveyor belt of ocean currents - Atlantic Meridional Overturning Circulation (AMOC). The massive amount of cooler water that sinks in the North Atlantic stirs up that entire ocean and drives global circulation. When the Atlantic turns sluggish or stops, it has worldwide impacts and likely irreversible effects: The entire Northern Hemisphere cools, Indian and Asian monsoon areas dry up, North Atlantic storms get amplified, and less ocean mixing results in less plankton and other life in the sea.<sup>85</sup> Paleo climatologists have spotted times in the deep past when the current slowed quickly and dramatically, cooling Europe by 5 to 10 degrees C (10 to 20 degrees F) and causing far-reaching impacts on climate.

Acknowledged in the DEIS is that FERC:

“received comments from EPA recommending that we also estimate GHG emissions from the development and production of natural gas being transported through the proposed pipeline, as well as estimate the GHG emissions associated with the end use of the gas.”<sup>86</sup>

FERC rejects its obligation to consider GHG emissions stating:

FERC has in the past ruled that while upstream development and production of natural gas might be a “reasonably foreseeable” effect of a proposed action, the actual scope and extent of potential GHG emissions from upstream natural gas production is not reasonably foreseeable (FERC 2015).<sup>87</sup>

In fact, FERC arbitrarily limits its review by failing to require the current, available, reasonable and attainable analyses, projections and methodologies that will in fact inform the agency of the scope and extent of the foreseeable induced natural gas production and, from there, allow assessment of the anticipated resulting greenhouse gas emissions. FERC's self-inflicted ignorance on the subject does not alleviate the agency of its obligation to undertake an assessment of greenhouse gas emissions from induced shale gas production associated with this project and its climate changing implications. Once the scope and extent of induced drilling is determined, FERC has demonstrated it has a competence in determining resulting levels of greenhouse gas emissions. This analysis should be undertaken and subjected to the NEPA review and comment process.

#### DEIS ignores other clear guidance

Even if FERC did not have an obligation to quantitatively consider the projected greenhouse gas emissions it is still obligated to “explain the basis for determining that quantification is not reasonably available” and then to undertake a “qualitative analysis in the NEPA document” neither of

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<sup>85</sup> Hansen, J., M. Sato, P. Hearty, R. Ruedy, M. Kelley, V. Masson-Delmotte, G. Russell, G. Tselioudis, J. Cao, E. Rignot, I. Velicogna, E. Kandiano, K. von Schuckmann, P. Kharecha, A.N. LeGrande, M. Bauer, and K.-W. Lo, 2016: Ice melt, sea level rise and superstorms: Evidence for paleoclimate data, climate modeling, and modern observations that 2°C global warming could be dangerous. Atmos. Chem. Phys., <http://csas.ei.columbia.edu/2016/03/22/ice-melt-sea-level-rise-and-superstorms-the-threat-of-irreparable-harm/>

<sup>86</sup> FERC DEIS pg 4-285

<sup>87</sup> FERC DEIS pg. 4-285

which FERC has done for the induced shale gas production from this project.<sup>88</sup>

Furthermore, because FERC arbitrarily limited its consideration of alternatives to different route proposals it has also denied itself and the public the ability to consider a comparison of greenhouse gas emissions between the proposed pipeline and other mechanisms for fulfilling genuine end use energy needs such as investments in energy efficiency, solar, wind energy, geothermal, environmentally sustainable water, etc.

In addition, according to CEQ guidance:

“When discussing GHG emissions, as for all environmental impacts, it can be helpful to provide the decision maker and the public with a recognizable frame of reference for comparing alternatives and mitigation measures. Agencies should discuss relevant approved federal, regional, state, tribal, or local plans, policies, or laws for GHG emission reductions or climate adaptation to make clear whether a proposed project’s GHG emissions are consistent with such plans or laws. For example, the Bureau of Land Management has discussed how agency actions in California, especially joint projects with the State, may or may not facilitate California reaching its emission reduction goals under the State’s Assembly Bill 32 (Global Warming Solutions Act). This approach helps frame the policy context for the agency decision based on its NEPA review.”<sup>89</sup>

The DEIS failed to properly give this kind of frame of reference or context for the greenhouse gas emissions discussion.

DEIS fails to consider combined adverse environmental impacts of climate change and the PennEast pipeline and the potential implications for the PennEast pipeline itself.

The DEIS states:

“These projected climate change effects in the Project area are not anticipated to exacerbate any other environmental impacts from the Project during its expected lifetime”

FERC, in the DEIS, summarily dismisses any consideration of the combined adverse environmental impacts of climate change and the PennEast pipeline and the potential implications for the PennEast pipeline itself resulting from climate change.

In fact, the PennEast pipeline, if built, would have compounding adverse effects with regard to climate change, requiring a more thorough assessment and analysis in the DEIS. In addition, the impacts of climate change on the northeast region is likely to have implications for the PennEast pipeline itself that require NEPA consideration and assessment

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<sup>88</sup> Counsel on Environmental Quality, Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, August 1, 2016

<sup>89</sup> Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews, Aug 1, 2016

With regards to this element of the NEPA analysis, CEQ guidance states:

“The analysis of climate change impacts should focus on those aspects of the human environment that are impacted by both the proposed action and climate change. Climate change can make a resource, ecosystem, human community, or structure more susceptible to many types of impacts and lessen its resilience to other environmental impacts apart from climate change. This increase in vulnerability can exacerbate the effects of the proposed action.”

The DEIS identifies the following list of potential implications for the Northeast region of the United States resulting from climate change that are expected in the project’s lifetime:

- “the frequency, intensity and duration of heat waves is expected to increase. The average number of days exceeding 90 °F currently ranges between 0-5 and 10-20 days per year in the Project area, and could increase in range to between 5-10 and 30-40 days per year during the 2041-2070 time period.
- changes in precipitation patterns are expected. During the expected Project lifetime, the NCA projects small increases in average winter precipitation, an increased frequency of heavy downpours, and an increased risk of summer drought due to earlier spring snowmelt.
- increased cold damage to crops is projected, due to a higher frequency of premature spring warm spells followed by hard freezes.
- increased crop damage and reduced crop yields are projected due to intense precipitation events, delays in crop plantings and harvest, and heat stress.
- increased stress on native vegetation is projected due to the spread of invasive insects and growth of invasive weeds such as kudzu.
- the species distributions of trees and plants are projected to move to higher elevations.
- bird ranges are projected to move northward, and migratory birds are projected to arrive earlier in the spring.
- increases are projected in carrier habitat and human exposure to vector-borne diseases such as Lyme disease, West Nile virus, and Zika virus.”

But after providing this list, the DEIS summarily dismisses them without any discussion or consideration, simply stating:

“These projected climate change effects in the Project area are not anticipated to exacerbate any other environmental impacts from the Project during its expected lifetime.”

In fact, there is a lot to be considered in terms of compounding and synergistic affects between the pipeline and climate change for ecological systems, drinking water supplies, and communities. The summary dismissal fails to fulfill NEPA’s obligations to consider the impacts of climate change for the pipeline, but also the combined effects of the pipeline and climate change for the environment and communities. Simply listing some anticipated climate change impacts for the region is obviously deficient.

Frequency, intensity, duration of heat waves in the region

As identified in this comment and others on the docket, the PennEast pipeline will alter groundwater flows and increase stormwater runoff thereby reducing groundwater recharge. This altered and loss of groundwater to streams and wetlands will alter stream base flow, wetland source water, water quality, and temperatures. Increasing the “average number of days exceeding 90 °F currently ranges between 0-5 and 10-20 days per year in the Project area, and could increase in range to between 5-10 and 30-40 days per year” will exacerbate these harms inflicted by PennEast and vice versa. The combination of increasing weather temperatures, declining baseflow and wetland source water, will increase instream temperatures and decrease the moderating affect healthy groundwater flows would provide, in addition the increased temperatures will result in increased evaporation that will compound the impacts of lost recharge and base flow.

Pipeline construction results in the loss of riparian (streamside) vegetation.<sup>90</sup> For each of the pipeline construction techniques there is a resulting loss of vegetation and foliage associated with clearing the stream banks – the PennEast pipeline is no exception. At least 255 streams will be crossed with the vast majority being crossed via open trench methods which result in permanently denuded streambanks. Riparian vegetation is an important part of a healthy ecosystem and protects the land adjoining a waterway which in turn directly affects water quality, water quantity, and stream ecosystem health. A reduction in streamside healthy and mature streamside vegetation reduces stream shading, increases stream temperature and reduces its suitability for incubation, rearing, foraging and escape habitat.<sup>91</sup> These impacts are not accounted for in the DEIS.

The loss of riparian vegetation along streams will, among other impacts, remove shading and result in increased stream temperatures. Many of the streams being cut by PennEast are smaller, headwater streams with high water quality. The loss in vegetation coupled with the more extreme temperatures brought on by climate change, will magnify increased stream temperature and thereby reduce its quality and suitability for aquatic life. For some species the resulting change in temperature could have dramatic impacts.

The Union of Concerned scientists has also recognized the combined effect of warming temperatures, changing precipitation, altered streams flows, higher water temperatures and diminished shading along stream banks for fish species, identifying two but recognizing others may be implicated as well: “As global warming drives up air temperatures and changes precipitation patterns, altered seasonal stream flows, higher water temperatures, and diminished shade along stream banks may follow. The native brook trout and smallmouth bass are particularly sensitive to such changes.”<sup>92</sup> The Penn East lists at least 131 Wild Trout Waters in Pennsylvania to be cut across by the pipeline (Table G-5). Hawk Run, Little Bear Creek, Black Creek, Bull Run, Cooks Creek, Frya Run, Monocacy Creek, Hokendauqua Creek, Aquashicola Creek, Indian Creek, Pohopoco Creek, Hunter Creek, Buckwha Creek, White Oak Run, Wild Creek, Mud Run, Stony Creek, Laurel Run, Lehigh River, Little Shades Creek, Shades Creek, Mill Creek, Deep Creek, Abrahams Creek, Trout Brook, and Toby Creek are some of the streams in Pennsylvania to be crossed, some crossed multiple times, but that have naturally reproducing populations of trout. It is important that with recent updates to the Fish and Boat Commission Class A lists that PennEast update this list and ensure all designations are accurate.

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<sup>90</sup> Norman, *supra*.

<sup>91</sup> CAPP (2005), *supra*.

<sup>92</sup> Union of Concerned Scientists, *Climate Change in Pennsylvania – Impacts and Solutions for the Keystone State*, Oct 2008

The synergistic implications of climate change and the PennEast pipeline on stream flows, quality, temperatures, health, and aquatic life were not assessed by the DEIS.

Changes in precipitation – increase in downpours and drought due to earlier spring snowmelt

As documented by experts in the attached reports, including Meliora Design<sup>93</sup> who stated:

“Due to land use changes and soil alteration, there will be permanent long term water quality impacts related to stormwater runoff, including increases in the rate, volume, and frequency of stormwater runoff.”

“The proposed pipeline conditions will significantly reduce the land surface’s ability to retain rainfall and facilitate infiltration, and will increase runoff frequency, volumes, and flow rates, including increased surface erosion and sediment transport to Special Protection or C1 water bodies.”

Furthermore, the loss of riparian vegetation associated with the PennEast pipeline will make impacted streams more susceptible to erosion events, resulting in the loss of riparian lands (including floodplain) and exacerbating the sedimentation impacts of construction. As noted by experts, the deforestation caused by the PennEast pipeline will result in increased stormwater runoff; this will result in increasing flows in the stream with stream banks more susceptible to its erosive forces due to the loss of vegetative protection. Increased erosion means loss of habitat; channel migration that can have serious implications for riparian lands and vegetation over long stretches and long periods of time as the stream continues to erode, downcut and deposit sediment in order to try and reestablish a stable channel; and increased instream sedimentation which is considered a pollutant both legally and scientifically. Having more extreme weather events, including “increased frequency of heavy downpours,” means that the instream flows from both rainfall and runoff will be much more extreme and have stronger erosion potential. These more erosive and extreme flow events will combine with the impacts inflicted by the construction and ongoing land management, including removal of riparian vegetation and forest, associated with the pipeline ROW to intensify the impacts of both.

The ROW associated with PennEast will be the location of compacted soils and, in the case of natural landscapes like forests, the maintenance of plants that have lesser capacity to infiltrate rainfall. The combination of compacted soils with low growing plants (to the degree they are able to grow in the compacted soils or under PennEast’s ROW management protocols) will result in increased runoff to nearby streams, thereby increasing flows that are flooding downstream communities. The combination of increased duration, frequency and intensity of storms by climate change, coupled with the increased landscapes that are the source of stormwater runoff contributing to flood flows, flood peaks, and more erosive stream flows, could be significant in some areas.

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<sup>93</sup> Adams, Michelle, and Henderson, Marc, Water Resources Engineers, Meliora Design, LLC, *Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, September 2016.

The compacted soils and lost or altered vegetation from the pipeline will not only increase stormwater runoff, but it will decrease groundwater recharge. In addition the presence of the pipeline will already be altering the flow path of some groundwater systems, diverting water from streams and wetlands that would otherwise provide life supporting base flow for them. Increased drought caused by climate change will work with the altered and impacted groundwater flows resulting from the PennEast pipeline to more seriously impact streams during periods of drought. Climate change generally and the PennEast Pipeline specifically, will adversely impact base flow of streams along the pipeline route which will harm water quality, habitat, recreation and potentially drinking water supplies, but together these impacts will be magnified. In addition to adversely impacting stream and/or wetland base flows, drinking water supplies/aquifers could be adversely impacted, losing the historic water recharge they receive.

The threat of increased drought from climate change is significant depending on how quickly the U.S. reduces climate changing emissions – and given that we are commenting on yet another proposal for a fossil fuel based gas pipeline, it is not unlikely that emissions will significantly reduce in sufficient time to prevent these consequences from coming to fruition. According to the Union of Concerned Scientists:

“On a higher-emissions pathway, a short seasonal drought can be expected every year in most of New England by the end of this century, while the frequency of longer droughts could triple to once every 6 to 10 years in parts of New York, Pennsylvania, and Maine— the region’s key agricultural states.”<sup>94</sup>

The ramifications of drought will be dramatically increased by land use changes, such as those that will be inflicted by PennEast. Increased stormwater runoff, reduced groundwater recharge, altering vegetative landscapes, reduced stream baseflow, and reduced recharge of drinking water supplies that will result from PennEast will magnify the adverse implications of climate change for groundwater supplies, drinking water supplies, stream flows and wetlands because there will be less water available for resources impacted by PennEast making them less resilient to these climate change induced periods of drought.

The absolute denial of any consideration of the combined effects of PennEast for recharge, groundwater and baseflow, coupled with the heightened anticipation of drought due to climate change, is inexcusable and fails to fulfill the NEPA review obligation.

For the actual pipeline itself there are also implications from the extreme weather events that will be brought to the region by climate change, including the extreme and more frequent downpours. Because open trench pipeline installations may unnaturally alter both stream bank and streambed (i.e., channel) stability, there is an increased likelihood of scouring within backfilled pipeline trenches.<sup>95</sup> This is because open trenches themselves, when backfilled, may not be compacted to

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<sup>94</sup> Union of Concerned Scientists, *Climate Change in Pennsylvania – Impacts and Solutions for the Keystone State*, Oct 2008

<sup>95</sup> See e.g. Fogg, J. and Hadley, H., 2007, Hydraulic Considerations for Pipelines Crossing Stream Channels. Technical Note 423. BLM/ST/ST-07/007+2880. U.S. Department of the Interior, Bureau of Land Management, National Science and Technology Center, Denver, CO. 20 pp. <http://www.blm.gov/nstc/library/techno2.htm>; Doeing, B.J., Williams, D.T. and Bradley, J.B., 1997, Gas Pipeline Erosion Failures: January 1993 Floods, Gila River Basin, Arizona. In Storm - Induced Page 44 of 80

stable pre-trench sediment permeability conditions. Flooding rivers can scour river bottoms and expose pipelines to powerful water currents and damaging debris. The more extreme rainfall events brought by climate change will mean more extreme and erosive flooding events in streams crossed by PennEast, increasing the likelihood of stream scour, exposure and rupture. Additionally, unusually heavy rains associated with climate change, threaten to increase overall stream degradation and channel migration – thereby also exposing buried pipelines.

### Increased damage to crops

Climate change was identified in the DEIS as having adverse impacts for crops due to altered weather events and temperatures. Farmers along the pipeline route who have already been impacted by pipelines have identified the presence of pipelines as adversely impacting their crop yield. One farm has worked to document that the existence of a pipeline across his farm fields has reduced his crop yield by as much as 30% in a given year.<sup>96</sup>

Adding the PennEast pipeline to farm fields will reduce crop yield. Couple that with the altered temperature and weather patterns and the stressors on the crops will be magnified further reducing their ability to survive and produce as robustly as they had historically and as the farmers need them to in order to produce for their customers and to support the economic income they need to continue to sustain and operate their farms.

In addition, the USGCRP Climate Change Impacts in the United States Report states: “To date, all weed/crop competition studies where the photosynthetic pathway is the same for both species favor weed growth over crop growth as carbon dioxide is increased.”<sup>97</sup> This means that while crops impacted by the pipeline and climate change are already struggling to produce, they are also going to be more susceptible to being outcompeted by weeds, which will have further ramifications for crop production and for the increased use of herbicides on agricultural lands with both economic and health implications.

These kinds of effects were not even considered in the DEIS.

### Increased stress on native plants due to invasives

Climate change was identified in the DEIS as causing “increased stress on native vegetation is projected due to the spread of invasive insects and growth of invasive weeds such as kudzu”. “[M]any insect pests, pathogens, and invasive plants like kudzu appear to be highly and positively responsive to recent and projected climate change.”<sup>98</sup> As noted by Native Landscape expert Leslie Sauer permanent pipeline ROWs cause:

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Geologic Hazards, Case Histories from the 1992 - 1993 Winter in Southern California and Arizona; Geological Society of America; Reviews in Engineering Geology, Volume XI (ed. Robert A. Larson).

<sup>96</sup> See attached graphics re the Fulper Farm.

<sup>97</sup> Horton, R., G. Yohe, W. Easterling, R. Kates, M. Ruth, E. Sussman, A. Whelchel, D. Wolfe, and F. Lipschultz, 2014: Ch. 16: Northeast. *Climate Change Impacts in the United States: The Third National Climate Assessment*, J. M. Melillo, Terese (T.C.) Richmond, and G. W. Yohe, Eds., U.S. Global Change Research Program, 16-1-nn.

<sup>98</sup> Horton, R., G. Yohe, W. Easterling, R. Kates, M. Ruth, E. Sussman, A. Whelchel, D. Wolfe, and F. Lipschultz, 2014: Ch. 16: Northeast. *Climate Change Impacts in the United States: The Third National*  
Page 45 of 80

“Increased wind movement facilitates movement of weedy propagules and invasive species deep into the forest where they find the way suddenly wide open for them with abundant new ground to colonize. Predators and parasitic birds like cowbirds use these corridors to access otherwise difficult to find prey.”<sup>99</sup>

The increased pressure on natives due to invasives inflicted by the PennEast pipeline will be exacerbated and magnified by the encouragement of invasives imposed by climate change, and vice versa. The two impacts will work synergistically with devastating effects for native species of both plant and animal.

### Movement of bird ranges

As identified in the DEIS, climate change will have implications for changing bird habitat forcing bird ranges to move northward and altering the arrival of migratory species. The PennEast Pipeline will be cutting down hundreds of acres of forest. “Fifty-seven percent of the pipeline right-of-way area, or approximately 446 acres, is currently forested and will permanently be altered from forest during pipeline operation. An additional 139 acres of forest will be removed for construction.”<sup>100</sup> In forested areas the habitat loss will not just be in the immediate footprint of the pipeline, but it will impact an additional 300 feet of forest on either side of the ROW.<sup>101</sup> This means that for every mile of pipeline cut through a forest an additional 12 acres of forest will be harmed. In addition, the pipeline will irreparably alter a tremendous number of wetlands (how many is unclear, as this comment and our attached reports document the incredibly inaccurate, misleading and deficient job PennEast and FERC, through this DEIS, did on assessing wetland impacts), including changing their functions and values.

The result will be to reduce available bird habitat, nesting grounds and feeding grounds. The invasive species problems noted above will further erode habitat and food resources for bird species.

The ramification of this lost habitat will be to make it harder for this northward evolution of species resulting from climate change. Climate change will force the northward migration, PennEast and climate change individually and combined will reduce the available food, habitat and nesting grounds available for these species in our region, thereby impeding their ability to adapt, survive and thrive.

These kinds of effects were not even considered by the DEIS.

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*Climate Assessment*, J. M. Melillo, Terese (T.C.) Richmond, and G. W. Yohe, Eds., U.S. Global Change Research Program, 16-1-nn.

<sup>99</sup> Sauer, Leslie., *Achieving Higher Quality Restoration Along Pipeline Rights of Way*

<sup>100</sup> Michelle Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, *Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, September 2016

<sup>101</sup> Nels Johnson, et al., *Natural Gas Pipelines*, The Nature Conservancy, 1 (December 2011); CNA, *The Potential Environmental Impacts of Fracking in the Delaware River Basin*, 2015; Cara Lee, Brad Stratton, Rebecca Shirer, Ellen Weiss, *An Assessment of the Potential Impacts of High Volume Hydraulic Fracturing (HVHF) on Forest Resources*, The Nature Conservancy, Dec. 19, 2011.

## Other Impacts Ignored by the DEIS and FERC

Other adverse impacts to the region from climate change that, combined with the PennEast pipeline would have more serious implications in need of consideration by the FERC DEIS which didn't even make it to FERC's DEIS list:

- “Suitable forest habitat for maple, black cherry, hemlock, and others is expected to shift northward...” This will threaten tourism as well as lucrative timber such as world-renowned black cherry.”<sup>102</sup>

The DEIS mentions the northward movement of bird habitat, but fails to recognize northward migrations of habitat for other species, as well as the environmental and economic implications of that northward migration. Given that PennEast will maintain a permanent footprint spanning hundreds of acres of what would otherwise be forest land, where migrating native plant species might otherwise settle, and that it will encourage invasive species that adversely impact and kill native plants including trees and shrubs, the implications of pipeline construction combined with climate change for forest species needing to migrate northward is important. The ecological as well as the recreation, social and economic affects must be among the issues considered.

- “Warming climate and shifting distributions and quality of forest habitat is expected to cause substantial changes in bird life. As many as half of the 120 bird species modeled in Pennsylvania could see at least 25-percent reductions in their suitable habitat. Species at greatest risk include the ruffed grouse, white-throated sparrow, magnolia warbler, and yellow-rumped warbler.”<sup>103</sup>

The habitat of Ruffed Grouse includes deciduous and mixed forest, dense undergrowth, overgrown pasture, scrub oak, thick shrubland, young forest, understory including in Carbon, Luzerne, Northampton, Bucks, Hunterdon, Lehigh Counties. These are all habitats and regions that will be cut and damaged by PennEast, and for which analysis of direct impacts, as well as impacts compounded by climate change, including for this species were not considered.

The habitat of White-throated Sparrow includes coniferous and mixed forest, dense thickets, secondary growth areas, around ponds or openings, forest edge including in Hunterdon, Luzerne, Northampton, Carbon, Lehigh, and Bucks. These are all habitats and regions that will be cut and damaged by PennEast, and for which analysis of direct impacts, as well as impacts compounded by climate change, including for this species were not considered.

The habitat of Magnolia Warbler includes coniferous and mixed forest especially young spruces, nests in trees, during migration- deciduous shrubs or low trees including in Luzerne, Northampton, Carbon, Lehigh, Bucks, and Hunterdon Counties. These are all habitats and regions that will be cut and damaged by PennEast, and for which analysis of direct impacts, as well as impacts compounded by climate change, including for this species were not considered.

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<sup>102</sup> Union of Concerned Scientists, *Climate Change in Pennsylvania – Impacts and Solutions for the Keystone State*, Oct 2008

<sup>103</sup> Union of Concerned Scientists, *Climate Change in Pennsylvania – Impacts and Solutions for the Keystone State*, Oct 2008

The habitat of Yellow-Rumped Warbler includes mature coniferous and mixed coniferous/deciduous forest, forest edge including in Luzerne, Northampton, Carbon, Lehigh, Bucks, and Hunterdon Counties. These are all habitats and regions that will be cut and damaged by PennEast, and for which analysis of direct impacts, as well as impacts compounded by climate change, including for this species were not considered.

The DEIS mentions the northward movement of bird habitat and altered migratory patterns, but it fails to discuss the actual loss of habitat due to climate change of a variety of bird species, including the ones noted above as being at risk. Given that the PennEast pipeline would destroy a variety of natural habitats important for bird species, including forest, wetlands, meadow and more that are important habitat for a variety of species, and that it would also invite in invasive plants and animals that will further degrade, damage or destroy habitat, the combined effect of a PennEast pipeline with climate change for the loss or degradation of bird habitat is an important consideration.

- Effects on Amphibians

Amphibians are important indicators of environmental health and water quality. The timing of amphibian breeding is largely driven by environmental cues such as temperature and moisture, and because of this, their breeding phenology may be directly affected by global warming. Amphibians in regions such as the northeastern United States (where the proposed PennEast pipeline would be) may be even more susceptible to increases in temperature. Amphibian species in the northeast spend a large portion of the year inactive, escaping either cold winters or hot summers. Subtle increases in temperature or moisture trigger them to emerge from their hibernacula in the spring. Immediately upon emergence, they migrate to ponds or streams to breed. As average air temperatures increase from climate change, amphibians will start to emerge and breed earlier in the year. If amphibians breed too early in the season, they may be more vulnerable to early snowmelt induced floods and early season freezes that are usually less common later in the season. Amphibians tricked by the warm temperatures from climate change may emerge too early and then die when a cold front comes in.

Amphibians are also affected by extreme weather events associated with climate change, particularly drought. In addition to requiring water for breeding, amphibians need to keep their skin moist to avoid drying up in the sun. Rain water, shade from trees, and moist soil are very important to amphibians. In drought conditions caused by climate change, long periods with no rain can be detrimental to amphibian populations. These effects are worsened by deforestation because it eliminates the shade that the trees provide. Shade keeps the soil on the forest floor moist by blocking the sun's rays. Many amphibians, particularly salamanders, burrow in this moist soil in between periods of rain. Without the shade from the canopy and with no rain, this soil is exposed to full sun exposure and quickly dries up and amphibians become desiccated. Natural gas pipeline construction involves the clearing of many acres of forest, so this is a prime example of natural gas infrastructure working hand-in-hand with climate change and compounding impacts. At the same time, FERC falsely states that vernal pools to be cut by the pipeline will only have temporary impacts or not significant sustaining impacts yet it ignores to consider the 1,000 feet of upland forest that amphibians using vernal pools require for parts of the year when they are not in their breeding vernal pool habitats. A pipeline cut adjacent and through a vernal pool or within 1,000 feet of a vernal pool can be a death sentence for migrating amphibians who may not be able to successfully cross the dry compacted

pipeline route to reach their seasonal vernal pool.<sup>104</sup> Predation also increases with these pipeline cuts.

In addition, local changes in the environment can decrease immune function and lead to pathogen outbreaks and elevated mortality in amphibians. Conditions can change to become more favorable for the growth of a pathogen. For example, the chytrid fungus (*Batrachochytrium dendrobatidis*) grows best in culture between 6-28 degrees C and dies at 32 degrees C. The chytrid fungus causes an infectious disease in amphibians called chytridiomycosis which has killed millions of amphibians worldwide and has affected about 30% of all amphibian species in the world. Climate change may make environmental conditions more conducive for this disease to spread as well as cause weakened immune systems, making it more difficult for amphibians to fight off the disease. This disease has been documented in Pennsylvania and New Jersey which are both home to multiple state listed amphibian species.

Clearly, these amphibian species are at great risk and they would be put at an even greater risk by the combined impacts of climate change and the construction of the PennEast pipeline.<sup>105</sup> The DEIS failed to consider these impacts.

### **The DEIS Alternatives Analysis is Fundamentally Flawed**

FERC cannot interpret the Project's purpose and need so narrowly that every conceivable alternative is ruled out by definition. See *Simmons v. U.S. Army Corps of Eng's*, 120 F.3d 664 (7th Cir. 1997) (cautioning agencies not to put forward a purpose and need statement that is so narrow as to "define competing 'reasonable alternatives' out of consideration (and even out of existence)"); *Nat'l Parks & Cons. Ass'n v. Bureau of Land Mgmt.*, 606 F.3d 1058, 1072 (9th Cir. 2009) (finding a purpose and need statement that included the agency's goal to address long-term landfill demand, and the applicant's three private goals was too narrowly drawn and constrained the possible range of alternatives in violation of NEPA). Only PennEast's proposed Project offers the means of meeting FERC's stated requirements, thus all alternatives are preordained to fail in comparison. Such a narrow statement of purpose and need, and failure to examine other system alternatives, undermines the NEPA process and will not be upheld. *Env'tl. Prot. Info. Ctr. v. U.S. Forest Serv.*, 234 F. App'x 440, 443 (9th Cir. 2007) (agencies cannot "define[] the objectives of the project so narrowly that the project [is] the only alternative that would serve those objectives").

FERC rejected co-locating the PennEast line along Transcontinental's Leidy Line gas transportation system for two reasons, but neither is sufficiently explained in the DEIS. Primarily FERC contends that because colocation would not "provide access to the delivery points" as the proposed project this alternative is rejected. However, considering the close proximity of these two right of ways, FERC never explains why those deliver points could not be accessed. Furthermore, FERC contends that "due to the amount of commercial, industrial, and residential development that has occurred adjacent to Transco's existing right-of-way" this alternative was rejected. However, FERC never explains how much of the right of way would be inaccessible nor how much additional

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<sup>104</sup> Delaware Riverkeeper Network Field Monitoring Report, *Pipeline Construction & Maintenance Irreparably Harms Rivers, Wetlands and Streams*. Addendum to Comment for the PennEast Pipeline.

<sup>105</sup> Vredenberg, V., McDonald, M., & Sayre, T. (2008). *Climate Change. AmphibiaWeb: Information on amphibian biology and conservation, 2016, Berkeley, California*. Retrieved from <http://amphibiaweb.org/declines/ClimateChange.html>

greenfields would need to be constructed. It would seem that the environmental footprint of the proposed project would be less if collocated with Transco even if the right of way had to deviate at places. By failing to sufficiently examine other competing pipeline system alternatives FERC violates the Natural Gas Act's overriding purpose "to protect consumers against exploitation at the hands of natural gas companies." *United Distrib. Co. v. FERC*, 88 F.3d 1105, 1122 (D.C. Cir. 1996) (citation omitted). Neither NEPA nor the Natural Gas Act allows FERC to reject all alternatives except the Project in order to promote the pecuniary interests of its already identified project shippers. As such, the Environmental Assessment and Order are factually and legally deficient.

The DEIS Alternatives Analysis is fundamentally flawed. The analysis assumes as true the characterizations of "need" made by PennEast. In fact there are multiple analyses already on the record, as well as comments filed, in addition to this comment, that demonstrate there is in fact key for the PennEast pipeline project, and to the degree there is an assertion of need it is based upon a self-manufactured claim.

Of priority concern is FERC's failure in this DEIS to consider other mechanisms for achieving energy goals in the region that are not shale gas dependent – such as implementation of increased energy efficiency strategies and renewable energy strategies such as solar, wind, geothermal and environmentally protective hydro.

As discussed in the attached expert report from Key-Log Economics:

"Changes in energy markets due to energy efficiency gains and/or further market penetration by renewable alternatives to fossil fuels are reasonably foreseeable. For example, renewable energy accounted for 40% of new domestic power capacity installed (American Council On Renewable Energy, 2014), and the relative cost of producing power from renewable sources, which is already competitive, is falling (Randall, 2016; U.S. Energy Information Administration, 2016). Moreover, and as shown in Lander (2016), "there are 49.9% more resources available to meet peak day demand from local gas distribution companies in the region than is needed (p.9)." In light of these facts and related factors, FERC must consider alternatives that reflect the likely future reality in which the gas the PennEast pipeline would transport is not needed and/or is not a cost-effective choice for consumers or electric power generators. To do otherwise—that is, to focus narrowly on only transportation options—could lead to a federal action that imposes significant environmental effects and associated economic costs for no reason."

### **Continued Use of Segmentation in this DEIS is Improper**

The D.C. Circuit in *Delaware Riverkeeper v. FERC*, identified two tests for evaluating whether an agency has improperly segmented its review of a project. *Delaware Riverkeeper Network, et al. v. Federal Energy Regulatory Commission*, 753 F.3d 1304, at 1314-1315 (D.C. Cir. 2014). In the *Delaware Riverkeeper* case – as here – FERC failed both tests. First, the Court stated that for the purpose of segmentation review, an agency's consideration of the proper scope of its NEPA analysis should be guided by the "governing regulations," which were 40 C.F.R. § 1508.25(a). *Id.* The same analysis is required in the instant matter. Second, the Court in *Delaware Riverkeeper*, also stated that even if the segmentation analysis was guided instead by the test articulated in *Taxpayers Watchdog v. Stanley*, 819 F.2d 294 (D.C. Cir. 1987), FERC still unlawfully segmented its review of the projects. *Id.* As shown below, FERC here similarly fails both tests for improper segmentation review of the proposed Project.

An agency should prepare a single programmatic Environmental Impact Statement for actions that are “connected,” “cumulative,” or “similar,” such that their environmental effects are best considered in a single impact statement. *Am. Bird Conservancy, Inc. v. FCC*, 516 F.3d 1027, 1032 (D.C. Cir. 2008); 40 C.F.R. § 1508.25(a). “Actions are ‘connected’ or ‘closely related’ if they: (i) Automatically trigger other actions which may require environmental impact statements; (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously; [or] (iii) Are interdependent parts of a larger action and depend on the larger action for their justification.” *Hammond v. Norton*, 370 F. Supp. 2d 226, 247 (D.D.C. 2005) (quoting 40 C.F.R. § 1508.25(a)(1)). Similar actions have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography. *Id.* at 246; 40 C.F.R. § 1508.25(a)(3). NEPA requires “agencies to consider the cumulative impacts of proposed actions.” *NRDC v. Hodel*, 865 F.2d 288, 297 (D.C. Cir. 1988) (“Hodel”). *See also TOMAC v. Norton*, 433 F.3d 852, 864 (D.C. Cir. 2006). An agency must analyze the impact of a proposed project in light of that project’s interaction with the effects of “past, current, and reasonably foreseeable future actions.” 40 C.F.R. § 1508.7.

“Piecemealing” or “segmentation” is the unlawful practice whereby a project proponent avoids the NEPA requirement that an EIS be prepared for all major federal actions with significant environmental impacts by dividing an overall plan into component parts, each involving action with less significant environmental effects. *Taxpayers*, 819 F.2d 294, 298 (D.C. Cir. 1987). Federal agencies may not evade their responsibilities under NEPA by “artificially dividing a major federal action into smaller components, each without a ‘significant’ impact.” *Coal. on Sensible Transp. v. Dole*, 826 F. 2d 60, 68 (D.C. Cir. 1987). *See also* 40 C.F.R. § 1508.27(b)(7).

The general rule is that segmentation should be “avoided in order to insure that interrelated projects, the overall effect of which is environmentally significant, not be fractionalized into smaller, less significant actions.” *Town of Huntington v. Marsh*, 859 F.2d 1134, 1142 (2d Cir. 1988). Without this rule, developers and agencies could “unreasonably restrict the scope of environmental review.” *Fund for Animals v. Clark*, 27 F. Supp. 2d 9, 16 (D.D.C. 1998) (“Fund”).

In addition to failing to meet the requirements of 40 C.F.R. § 1508.25(a), FERC also fails to satisfy the three of the factor test articulated in *Taxpayers*, thus demonstrating that FERC impermissibly segmented its NEPA analysis. *Taxpayers*, 819 F.2d 294 (D.C. Cir. 1987). To determine whether a project has been unlawfully segmented, “courts have considered such factors as whether the proposed segment (1) has logical termini; (2) has substantial independent utility; (3) does not foreclose the opportunity to consider alternatives[.]” *Taxpayers*, 819 F.2d at 298. In *Delaware Riverkeeper*, the court held that even if the court were to expand its analysis from Section 1508.25(a) to the factors in articulated in *Taxpayers*, FERC’s defense of its action was still deficient. *Delaware Riverkeeper*, 753 F.3d at 1314-16 (the court held that the projects did not have “(1) has logical termini; [or] (2). . . substantial independent utility.” (the court’s examination did not reach the remaining factor)). FERC failed to satisfy each of the factors identified in the *Taxpayers’* test.

A project lacks “independent utility” if it could not function or would not have been constructed in the absence of another project. *Wetlands Action Network v. U.S. Army Corps of Engineers*, 222 F.3d 1105, 1118 (9th Cir. 2000). *See also W. N.C. Alliance v. N.C. DOT*, 312 F. Supp. 2d 765, 774-775 (E.D.N.C. 2003) (project widening highway section lacked independent utility because it would leave a “bottleneck” of narrow highway to north, such that traffic congestion between the

termini of the project would be worsened until construction of later project widening bottleneck section).

It is clear that partners of the PennEast Pipeline Company, LLC are proposing additional projects that, given their connected ownership, physical connection, contemporaneousness in terms of time and space, and the planned route for the gas – are integral parts of the PennEast Pipeline project and should be considered as part of cumulative impacts of the PennEast Pipeline project and plan. Spectra Energy Partners is a “member company” in PennEast Pipeline Company, LLC and 10% owner of the PennEast Pipeline proposal. Spectra Energy is 100% owner of Texas Eastern Pipeline that will be interconnected with PennEast in/around Lambertville, NJ. Spectra Energy is currently planning for and proposing a new project called the Texas Eastern Marcellus to Market project (M2M) in which it clearly identifies, as a primary goal, the redirection and transfer to western markets of gas brought via the PennEast Pipeline that will transfer at/thru the compressor station in Lambertville, NJ. Spectra’s M2M project seeks to increase capacity along the Texas Eastern pipeline segment between the Lambertville NJ Compressor Station and Eagle (in Chester County PA) Compressor Station. The M2M project, consists of upgrades to existing lines including some new facilities. Indeed absent the PennEast pipeline project the M2M project is not viable.

The M2M project sketch map clearly documents Spectra Energy’s plan to receive most of its anticipated gas (over 62%) from the PennEast Pipeline. The map also confirms that Spectra Energy plans to send the gas *west* from Lambertville Station into Pennsylvania via its Texas Eastern systems. On its website, Spectra makes very clear that the proposed PennEast pipeline will be the primary source of gas that the M2M project will transport.

Specifically, according to the Spectra Energy website, the new M2M pipeline would receive the majority of its gas, 62.5%, (up to 125,000 dekatherms per day (Dth/d)) from the PennEast pipeline (this equates to over 11% of PennEast’s anticipated capacity).

Spectra is also pursuing the proposed Greater Philadelphia Expansion Project. The stated intent of the project is to increase the volume of gas Spectra can transport to the Philadelphia region from the Eagle Compressor Station – the same station that is part of Spectra’s proposed M2M Project. The Philadelphia region has been under discussion for an LNG export facility, which is one obvious pathway for future intended export of PennEast gas. This export facility must be disclosed and analyzed in addition to the Cove Point LNG export facility already identified by the Delaware Riverkeeper Network and Mr. Berman as a likely recipient of the gas. FERC did not conduct this analysis in the current DEIS.

The National Environmental Policy Act clearly requires FERC consideration of these interconnected projects obviously being contemplated and planned for in the same time frame by the same owner for delivery of the same gas. There exists a physical, functional, and temporal nexus that cannot be overlooked and FERC is now fully aware of these additional elements of the PennEast Pipeline project that is before FERC and freely available to the public for review and consideration. Spectra Energy clearly intends and plans for these projects to operate as an interconnected whole, and as such their cumulative impacts must be considered as part of the review of the PennEast Pipeline project and the M2M project when it is actually proposed.

The DEIS fails to undertake this mandated analysis.

**DEIS fails to address comments and experience that shows use of standard constructions practices will result in environmental violations and degradation.**

The DEIS asserts in multiple locations in multiple ways that the project will be constructed in full compliance with all applicable laws and that in temporary work spaces and restored areas the natural landscape will return to its former, or some altered but healthy ecological status. In fact, experience shows that neither is true. The Delaware Riverkeeper Network pointed this out in great detail in our comments to date, the fact that FERC fails to consider the reality of pipeline construction, and that construction is fraught with environmental violations and a failure of mitigation/restored areas to return to ecological health is a significant deficiency that ignores the reality and comments filed.

As the result of document reviews and field investigations during construction of three sections of pipeline -- the TGP 300 line upgrade, TGP Northeast Upgrade Project (NEUP), and Columbia 1278 pipeline -- in the Upper Delaware River Basin the Delaware Riverkeeper Network documented:

- over 60 instances where best management practices (BMPs) were not present, inadequate or not functioning or in need of repair, maintenance or reinforcement,
- 4 instances of fueling being conducted in wetlands or near waterbodies,
- dozens of instances of poor signage and staking and mapping errors which sometimes led to impacts off of the permitted Right of Way (ROW), loss of trees outside the ROW, and inaccurate mitigation calculations,
- thermal impacts, extreme (and unreversed) soil compaction, nutrient impacts, benthic invertebrate changes from pipeline cuts, including for streams with exceptional value, high quality and or C-1 anti-degradation classifications,
- discrepancies between pipeline company monthly compliance reports and what work and activities to meet compliance and avoid pollution were actually occurring or not occurring on the ground. We also noted excessive lag time in the filing and/or public release of construction reports making for difficult follow up in the field. We documented too few pipeline inspectors and a lack of oversight person-power for these extensive linear projects that spanned many miles and where work was going on simultaneously along the routes with little independent oversight.

Based on first hand observations and monitoring of these pipelines, it is clear that:

- Interstate natural gas pipeline projects result in a multitude of environmental impacts that inflict high levels of unnecessary ecological damage – this damage is not avoided, nor properly mitigated, despite the resource reports that are drafted or the guidance provided by FERC or other federal or state agencies;
- Violations of environmental laws are common place and an accepted part of pipeline construction – and compliance outweighs penalties and violations to the detriment of the environment and the public;
- Construction problems and potential violations are not properly responded to by the company, by FERC or by other state or federal agencies and mitigation does not undo the harms inflicted -as a result of both, pipelines inflict enduring and/or repetitive harms on natural resources; and

- Current or proposed guidance from FERC or other regulatory agencies do not prevent, avoid, or otherwise mitigate these ecological and public harms or the multitude of bad practices used by the pipeline companies.

Attached please find: *Field Monitoring Report, Pipeline Construction & Maintenance Irreparably Harms Rivers, Wetlands and Stream., Addendum to Comment for the PennEast Pipeline*, a compilation of Delaware Riverkeeper Network technical documents, reports and observations compiled as the result of field monitoring which support, inform and expand upon these conclusions. DRN's observations in the field demonstrate and document that construction, operation and maintenance practices like those being proposed by the PennEast pipeline company, even when followed in full compliance with regulatory standards, results in unavoidable, unmitigated and irreparable harm and violations of state water quality standards and wetlands protections. In addition, DRN monitoring has documented that over and above these impacts, violations of law are commonplace during pipeline construction, operation and maintenance and as a result the violations of law, including water quality standards and wetland protections, are further exacerbated.

The DEIS needs to build in a consideration of the inevitable impacts and implications of construction activity for the project that will necessarily involve violations of the laws governing the construction activity. No pipeline project of this scale is ever built without violations.<sup>106</sup>

### **DRBC legal authority misrepresented in the DEIS – thereby misleading the public and decision-making officials.**

The mission and authority ascribed to the DRBC in the DEIS is flagrantly incorrect and misleading. The authority of the DRBC is far broader than asserted by FERC in the DEIS. FERC's failure to understand and give due regard to DRBC's authority fails to ensure full and accurate information has been provided to the public and suggests that FERC anticipates authorizing pipeline actions that violate the law. DRBC's legal authority is not preempted by that of FERC, and therefore, DRBC retains its full authority to review, approve, approve with modifications and/or deny the PennEast pipeline project the DRBC docket it requires to proceed to construction, operation and maintenance.

Section 3.8 of the Compact provides in relevant part:

No project having a substantial effect on the water resources of the basin shall hereafter be undertaken by any person, corporation, or governmental authority unless it shall have been first submitted to and approved by FERC, subject to the provisions of Sections 3.3 and 3.5. FERC shall approve a project whenever it finds and determines that such project would not substantially impair or conflict with the comprehensive plan and may modify and approve as modified, or may disapprove any such project whenever it finds and determines that the project would substantially impair or conflict with such plan. FERC shall provide by regulation for the procedure of submission, review and consideration of projects, and for its determinations pursuant to this section.

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<sup>106</sup> See discussion in this comment and attachment titled: Delaware Riverkeeper Network *Field Monitoring Report, Pipeline Construction & Maintenance Irreparably Harms Rivers, Wetlands and Streams*. Addendum to Comment for the PennEast Pipeline.

In addition to the DRBC Rules of Practice and Procedure that apply to hydrostatic testing water withdrawals and wastewater discharges discussed in the DEIS, the DRBC Rules of Practice and Procedure (“RPP”) clearly subject natural gas pipelines and appurtenances to DRBC authority in the following additional circumstances<sup>107</sup>:

- 1) if the Executive Director of FERC specifically directs;
- 2) if any state or federal agency refers a project pursuant to specific RPP provision;
- 3) if the project in question crosses an existing or proposed reservoir or recreation area that has been incorporated into the Comprehensive Plan; and
- 4) if the project involves a significant disturbance of ground cover affecting water resources.

Also of significant legal relevance are the DRBC Special Protection Waters Regulations – because Section 3.8 review does clearly apply to the PennEast Pipeline Project; the Special Protection Waters regulations also clearly apply. In 1992, in response to a petition filed by the Delaware Riverkeeper Network, the DRBC launched the Special Protection Waters (“SPW”) program, which established regulations to protect existing water quality in the upper and middle sections of the non-tidal Delaware River, portions of which had been designated by the federal government as part of the National Wild and Scenic Rivers System in 1978. Following the federal designation of an additional 38.9 miles of the Delaware in the National Wild and Scenic Rivers System in 2000, and again in response to a petition filed by the Delaware Riverkeeper Network, in 2008 the DRBC expanded SPW coverage to include the River from the Delaware Water Gap National Recreation Area downstream to the head of tide at Trenton, New Jersey. The entire 197-mile non-tidal river is now included under the SPW regulations, which is believed to be the longest stretch of anti-degradation policy established on any river in the nation.

Article 3 of the Water Code, Section 3.10.3.A.2, establishes the strict anti-degradation standard that the DRBC applies to Special Protection Waters of the Watershed: “It is the policy of the Commission that there be no measurable change in existing water quality except towards natural conditions. . . .” Water Code Article 3, Section 3.10.3.A.2.e, requires that “[p]rojects subject to review under Section 3.8 of the Compact that are located in the drainage area of Special Protection Waters must submit for approval a Non-Point Source Pollution Control Plan that controls the new or increased non-point source loads generated within the portion of the project’s service area which is also located within the drainage area of Special Protection Waters.”

Given that the PennEast Pipeline project will, among other elements, cross DRBC Comprehensive Plan areas, will cause a significant disturbance of ground cover affecting water resources, will impact special protection waters, and the company has been notified it will be subject to DRBC jurisdiction by the Executive Director, the proposed PennEast Pipeline is subject to the full extent applicable of DRBC authority and is in need of a DRBC docket addressing all relevant impacts (not just those associated with hydrostatic testing) before it can proceed to and through any portion of the project’s construction and operation.

### **DEIS Data and Information Gaps Makes the Document Legally Deficient and Incomplete – a New and Complete Supplemental DEIS is Required.**

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<sup>107</sup> These provisions are in addition to others that may apply depending upon legal interpretation and the outcome of future legal actions and/or decision-making.

### Missing Info according to the DEIS:

The DEIS is missing a tremendous amount of information. FERC acknowledges the huge data gaps throughout the DEIS document. Among the many information gaps identified by FERC itself are:

1. Evaluation of the presence of working and abandoned mines near the proposed crossing of the Susquehanna River;
2. Evaluation of liquefaction hazards along the pipeline route and at the compressor station site;
3. Final landslide hazard inventory;
4. Necessary mitigation measures and post construction monitoring plan for liquefaction hazards and landslide hazards;
5. Evaluations to support routine/mitigation measures through geologically hazardous areas;
6. Final landslide inventory;
7. Landslide mitigation measures with locations;
8. Post construction landslide monitoring plan;
9. Final karst mitigation plan;
10. Results of all geotechnical investigations, including karst areas, necessary for HDD planning and design;
11. Final planned design of each HDD crossing;
12. A revised/final list, based on final surveys, of water wells and springs within 150 feet of any construction workspace (500 feet in areas characterized by Karst terrain);
13. Identification of the management and field environmental professionals responsible for notification for contaminated sites;
14. Documentation of the final hydrostatic test water withdrawal sources and locations;
15. Documentation of all necessary permits and approvals for each hydrostatic test water withdrawal source;
16. Identification of special construction methods for construction in extremely saturated wetlands;
17. Justification for required additional workspace to accommodate special construction methods for extremely saturated wetlands;
18. A revised/final table of impacts on vernal pools within or near the proposed workspaces based on completed surveys;
19. An Invasive Plant Species Management Plan for use during construction and operation;
20. A Migratory Bird Conservation Plan;
21. Identification of appropriate seed mixes to be used during revegetation efforts;
22. Completed surveys identifying all potential suitable habitats for special status species in the project area;
23. Remaining site specific construction plans for all residences within 25 feet of the construction ROW and additional temporary workspaces (ATWS) including landowner approval;
24. Mitigation measures to minimize adverse impacts for the 7 residential developments, 3 commercial developments, 2 municipal developments and 1 hospital expansion identified as being within 0.25 miles of the project and its facilities;
25. Update on the status of the site specific crossing plans for each of the recreational and special interest areas listed as being crossed or otherwise affected by the pipeline;

26. Results of consultations with NRCS and the landowner of a known USDA easement crossing, including proposed mitigation measures to be implemented and copies of correspondence;
27. Documentation of PA and NJ State Historic Preservation Offices (SHPOs) regarding proposed avoidance, resource identification, recommendations, updated documentation, avoidance plans and evaluation reports/treatment plans;
28. Treatment plans or mitigation for National Register of Historic Places – eligible archaeological sites that cannot be protected from project impacts;
29. Identification of National Park Service concerns with regards to effects to trails and cultural resources;
30. A vibration monitoring plan and modification of blasting plan that include a review of potential effects to cultural resources;
31. Mitigation measures for noise levels at the proposed Kidder Compressor Station;

Given all of these self-identified missing pieces of the DEIS, coupled with the missing, inaccurate and deficient information documented in this and other comments, it is impossible for FERC to honestly assert it was able to conclude that: “construction and operation of the Project would result in some adverse environmental impacts, but impacts would be reduced to less-than-significant levels with the implementation of PennEast’s proposed and our recommended mitigation measures.”

In addition to the missing and deficient information identified by FERC, Delaware Riverkeeper Network experts have identified a multitude of deficiencies, inaccuracies and missing information discussed in the attached reports including, but not limited to, the following missing information:

1. DEIS Figure 3.3.1-3 which shows the layout of the proposed preferred route and the Bucks County Alternative fails to show the lateral pipeline to the proposed Gilbert Interconnect which requires crossing the Delaware River;
2. Full evaluation of alternatives 7 and 9 given their watershed protection benefits;
3. DEIS fails to consider the environmental ramifications of the open trenching method of wetland crossings, including impacts to groundwater flows that are so vital to the majority of wetlands impacted by this project;
4. The DEIS fails to disclose sufficient details about proposed water sources for hydrostatic testing;
5. HDD crossing plans including specific crossing area, specific methods to be used, location of mud pits, pipe assembly areas, all areas to be disturbed and/or cleared for construction, containment plans for spills, contingency plans, etc.;
6. HDD water discharge details including the specific volume of anticipated discharge, discharge method and impacts on receiving streams;
7. Standards used to guide HDD water withdrawals without preventing impacts on downstream ecological or human uses and needs;
8. The DEIS should provide a table of bedrock aquifers that includes relevant properties, including specific capacity statistics or well yields, and conductivity where available.
9. The DEIS needs to include map, analysis and evaluation of the recharge, runoff, pollution, vegetation, habitat, soil and erosion impacts resulting from the combination of soil type, slope, compaction potential and depth to bedrock for each section of pipeline along the proposed preferred route as well as alternatives.

10. The DEIS should include a complete inventory of springs and seeps within a quarter mile of the pipeline to adequately consider the changes which could occur due to pipeline construction.
11. The DEIS should present the result of a final karst study for the area and present plans for mitigating problems caused by constructing through karst or caused by rapid contaminant transport within karst.
12. The DEIS should include data or information regarding the mineral content of the soils to be crossed by the proposed pipeline and the results of leaching tests that should be required.
13. The DEIS should assess the potential for pipeline construction to generate acid generation or leach metals in all areas where it crosses mine spoil.
14. The DEIS should present avoidance and mitigation discussions focused on preventing the leaching and transport of acid and metals from the site.
15. The DEIS should provide the data and references supporting the DEIS assertion that “shallow groundwater ... generally have (sic) low arsenic concentrations and that high arsenic concentrations ... are the result of more mature groundwater interacting with geochemically susceptible and arsenic-enriched water bearing zones, which are often deeper wells” (DEIS, p 4-12).
16. The DEIS should provide the data and references supporting the DEIS assertion that there is “no indication that common construction activities that involve shallow excavation, such as home construction, has resulted in increased arsenic concentrations in water supply wells” (DEIS, p 4-12).
17. The arsenic analysis provided in the DEIS is insufficient to indicate that arsenic leaching from pipeline construction in the Newark Basin would not be a problem for shallow groundwater and therefore needs to legitimately and scientifically analyze this issue.
18. The DEIS should provide a plume map of groundwater contamination and a map showing soils contamination from the Palmerton Zinc Pile Superfund site and assess the implications of the various proposed pipeline routes for water, groundwater and drinking water contamination.
19. The DEIS failed to consider: How pipeline construction and operations could affect recharge and shallow groundwater flow in aquifers near the proposed pipeline; Preferential flow caused by trenching in the aquifer; Potential contaminant transport enhanced by the trenching; Groundwater drawdown caused by the trenching.
20. The DEIS fails to consider how the project construction would affect recharge rates, which are highly variable with the underlying geology, soil type and thickness, and topography controlling the actual recharge location.
21. As part of an analysis of preferential flow, the DEIS should also analyze the potential for the trench backfill to facilitate the movement of contaminants through the groundwater.
22. The DEIS fails to consider the pipeline trench as a pathway for contamination.
23. The DEIS fails to define and analyze a reasonable range of alternatives.
24. The DEIS overestimates asserted job and other economic benefits.
25. The DEIS fails to account for the public health impacts of the proposed project.
26. The DEIS fails to account for the social cost of carbon.
27. The DEIS fails to include an analysis of ecosystem services lost due to the construction, operation and maintenance of the pipeline.
28. The DEIS does not properly account for impacts to property values from construction, operation and maintenance of the pipeline.
29. The DEIS fails to require sufficient information to determine the potential extent of blasting at each stream or wetland crossing.

30. The DEIS fails to consider site specific conditions to determine whether blasting in stream channels may be required.
31. The DEIS fails to address that proposed pipeline construction practices and long-term maintenance of the ROW in a non-forested condition will alter land surface conditions and result in greater stormwater impacts.

The many deficiencies noted in the attached report by Dr. Jim Schmid regarding PennEast materials on wetlands carry forward into the DEIS data, analysis, and findings. Dr. Schmid's detailed analysis was based on filings by PennEast with FERC, the State of Pennsylvania, and elsewhere. Much of the detail provided in those other filings that were the basis of this analysis were not available as part of the DEIS.<sup>108</sup> Specifically, it is a marked deficiency that the DEIS does not include detailed wetland information necessary for expert review like that of Dr. Schmid to accurately review and determine the quality of the wetlands that are to be impacted. Dr. Schmid's report based on the materials provided to other regulatory agencies demonstrates just how deficient, inaccurate, and misleading PennEast has been, and FERC is now adopting PennEast's assertions whole cloth. FERC and PennEast had the opportunity to remedy these many deficiencies, inaccuracies, missing data and problems in the DEIS and yet chose not to remedy them or address them in the DEIS. For more detail on the items identified below see attached report by Dr. Schmid.

- The size (acreage) of some wetlands along the proposed pipeline were undermapped significantly.
- There are internal discrepancies in the reported acreage of many delineated wetlands in the PennEast documents upon which this DEIS is based.
- Most wetlands within and along the proposed pipeline right-of way (ROW) are not visibly flagged in the field making field verification and ground truth difficult.
- Some wetlands which should be classified as "exceptional value" pursuant to Pennsylvania law were incorrectly identified by the applicant as "other"
- An assessment of the functions and values of existing wetlands has not been done, and no evaluation of proposed impacts on the functions and values of wetlands has been done.
- Additional wetlands exist within approximately 19.4 miles of right-of-way (24% of the proposed pipeline Study Area) that have not been investigated because access was not (initially) granted. Impacts to those wetlands have not been acknowledged, calculated, or mitigated for.
- No "existing use" analysis of affected streams has been done, possibly leading to an undercount of the number and extent of Exceptional Value Wetlands.
- Bog turtle searches did not encompass the entire area requested by USFWS.
- Certain areas of suitable bog turtle habitat were not acknowledged by the applicant.

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<sup>108</sup> There does not appear to be any detailed wetland delineation information needed to compare to the detailed findings in Dr. Schmid's report. In Volume 1, there is only Table 4.4.2-1 on page 4-70 that is a summary claiming that 56 acres of wetlands would be affected by construction disturbance and 35 acres would be affected by operation disturbance. In Volume 3, Table G10 is a summary of Wetland and Waterbody Crossings but it doesn't provide the wetland type or the acreage. Table G11 shows the wetlands crossed in PA and Table G12 shows the wetlands crossed in NJ. Here the DEIS lists the wetland type but leaves out the Wetland ID numbers and acreage of each wetland. There does not seem to be tables for impacted wetlands and delineated wetlands; only wetlands crossed.

- FERC cannot develop an appropriate mitigation plan based on the information and analysis in the DEIS with regard to wetlands because the DEIS “provides no evidence that the functions and values of each wetland proposed to be impacted have been determined or evaluated.”
- The only information evaluating wetland quality is entirely missing from the DEIS. Specifically, the wetlands tables do not indicate the quality of the wetland impacted pursuant to the state classification of the wetland.
- Most of the wetlands data is unreliable because it is largely “based on available remote sensing mapping, and not on field-based investigations.”
- There are numerous “instances where wetlands shown on project drawings appear to be significantly under-mapped”

To the extent these deficiencies in accurately describing both the size and quality of the wetlands subject to construction for the Project, FERC cannot accurately determine the appropriate scope of mitigation necessary to compensate for these irreversible and unavoidable harms. For example, many of the wetlands in the Project area are not appropriately classified pursuant to the Pennsylvania Code and the requirements therein, thus preventing FERC and the public from considering the quality of the wetlands impacted. Indeed, there is no data in the DEIS analyzing wetland quality outside of this classification system, therefore it is critical that these classifications are exactly accurate (which they are not).

Other critical deficiencies include, but are certainly not limited to:

- “While the DEIS and the various Resource Reports and updates included in the PennEast application include information and statistics related to each of these (and other conditions), the DEIS utterly fails to examine these conditions as they relate to each other and potentially impact project conditions at stream and wetland crossings. For example, it is impossible, from the information presented in the DEIS and the PennEast application materials, to directly determine how many stream crossings of Exceptional Value streams in Pennsylvania will involve open cuts in areas that are currently forested conditions, on public lands, on steep slopes or erosive soils, or any combination of the above conditions that can impact water quality and that should inform pipeline location and construction decisions. It is impossible to easily determine if these crossings also include Additional Temporary Work Space (ATWS) areas within 50 feet of the waterbody that further increase disturbance and the potential for water quality impacts, or are located in geologic formations that may require blasting within the stream channel.

While the DEIS and PennEast application materials provide considerable data and tables in multiple locations and formats, neither the DEIS nor the PennEast application materials include any comprehensive compilation and evaluation of the data at stream and wetland crossings, or any indication that site specific conditions and their impact on water quality (or other environmental impacts) have informed decisions related to project location and project construction methods”<sup>109</sup>

- Many of the “dry crossings of streams are in areas of severely erodible soils (103 dry crossings), rugged terrain with slopes greater than 30% (34 dry crossings), and other (often multiple) site specific constraints that increase the likelihood and potential for adverse water quality impacts.

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<sup>109</sup> Michelle Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, *Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, September 2016

Thirty (30) dry stream crossings are located at sites with both severely erodible soils and rugged terrain. This information must be gleaned from multiple sources within the PennEast application and is not presented comprehensively in either the PennEast application materials or the DEIS. The DEIS fails to consider these site specific conditions in determining pipeline location and suitability of construction methods to minimize impacts or protect water quality.”<sup>110</sup>

- “PennEast proposed to use HDD crossings for eleven crossings, including five waterbody crossings, but site specific plans will be prepared at a later date (DEIS, p 4.51). This means that aspects of the plans that could be critical at those crossings were not made available for public review as part of this DEIS. Such plans would include the “location of mud pits, pipe assembly areas, and all areas to be disturbed or cleared for construction” (Id.). These areas all have potential impacts far exceeding general pipeline construction. The DEIS should also justify that the crossing areas and methods are “the minimum needed to construct the crossing” (Id.), and that the public to be able to review this aspect of the design. The containment plans for spills of drilling mud and other contingency plans should also be included as important elements in the DEIS for discussion and review.”<sup>111</sup>

- Beyond a general list of potential impacts of pipelines construction on water resources, the DEIS “does not quantify either the existing conditions or describe how the pipeline would affect the existing conditions. For each water crossing, the DEIS could easily describe the stream velocities, expected range of flows, bank composition, bed sediment sizes and contaminants present on those sediments, riparian conditions, and stream type (Rosgen and Silvey 1996). Using this information the DEIS could make at least semi-quantitative descriptions of the impacts pipeline construction will cause to the stream.”<sup>112</sup>

- “The DEIS and supporting materials provided by PennEast fail to consider the unique, site specific conditions at each individual proposed stream and wetland crossing, and the corresponding potential adverse water quality impacts associated with stream crossings, including open cut crossings. The DEIS fails to comprehensively evaluate each stream crossing with regards to conditions such as water quality, erosive soils, existing land use and forested areas, existing slopes, riparian buffers, and the potential need for in-stream blasting. Lacking consideration of the site specific conditions at each crossing, the DEIS fails to require adequate location and construction recommendations to protect water quality, as well as construction techniques specific to conditions at each crossing. The proposed stream and wetland crossing locations, methods of construction, and long-term land use conditions appear to be based on the needs and preferences of PennEast and not informed by site specific conditions.”<sup>113</sup>

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<sup>110</sup> Michelle Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, *Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, September 2016

<sup>111</sup> Tom Myers, Ph.D. *Technical Memorandum Review of Draft Environmental Impact Statement, Proposed PennEast Pipeline, Docket No. CP15-558-000, FERC\EIS: 0271D*, August 31, 2016

<sup>112</sup> Tom Myers, Ph.D. *Technical Memorandum Review of Draft Environmental Impact Statement, Proposed PennEast Pipeline, Docket No. CP15-558-000, FERC\EIS: 0271D*, August 31, 2016

<sup>113</sup> Michelle Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, *Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, September 2016

- “Importantly, the supporting documentation provided by PennEast fails to provide stream and wetland crossing information in a manner that allows FERC and other reviewing agencies to evaluate the site specific conditions at each stream crossing...”<sup>114</sup>

- The DEIS fails to consider or even acknowledge stormwater impacts from pipeline construction, as no stormwater management is proposed or required for the pipeline area.<sup>115</sup>

- The DEIS analysis fails to legitimately examine the potential for landslides resulting from site preparation, construction activities, and post-construction changes to soil properties and vegetative cover (not just those triggered by seismic events) – the Erosion and Sediment Control Plan relied upon by FERC and PennEast to avoid this threat is, according to expert review, lacking with respect to any actual special measures proposed for steep sloped areas to prevent landslides from occurring.<sup>116</sup>

- The DEIS “evaluation of soil compaction impacts based primarily on a soil’s drainage classification is incorrect.”<sup>117</sup>

- “DEIS fails to consider the site specific conditions that will impact stormwater and erosion, including existing land cover, steep slopes, soil erosion potential, revegetation potential, and proximity to waterbodies, as well as pipeline maintenance practices. There is no correlation of site specific data and information related to the factors that impact stormwater runoff and erosion in the DEIS or supporting materials. The DEIS fails to evaluate the varying conditions that will impact stormwater and erosion, and correspondingly fails to require site specific construction techniques and stormwater management practices.”<sup>118</sup>

- “The DEIS and supporting application materials fail to address the permanent, long term changes to land use cover and soil conditions, and the corresponding increase in stormwater runoff and erosion. As a result of pipeline construction, there will be permanent long term water quality impacts related to stormwater runoff, including increases in the rate, volume, and frequency of stormwater runoff.”<sup>119</sup>

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<sup>114</sup> Michelle Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, *Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, September 2016

<sup>115</sup> Michelle Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, *Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, September 2016

<sup>116</sup> Princeton Hydro, *Technical Review of Volume I FERC Draft Environmental Impact Statement Submitted for PennEast Pipeline Project*, September 2016.

<sup>117</sup> See discussion in: Princeton Hydro, *Technical Review of Volume I FERC Draft Environmental Impact Statement Submitted for PennEast Pipeline Project*, September 2016.

<sup>118</sup> Michelle Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, *Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, September 2016

<sup>119</sup> Michelle Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, *Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, September 2016

- “FERC’s analysis and the resulting reliance on mitigation measures to address soil compaction impacts are short-sighted and inaccurate. With respect to soil related impacts, the DEIS greatly underestimates the potential for the alteration of soils traversed by the pipeline and the subsequent short- and long-term consequences of soil compaction. Additionally, FERC’s finding that the proposed mitigation measures will prevent any significant alteration of site soils or can successfully limit impacts attributable to such alterations is inaccurate as based on actual field assessments of “restored” pipeline ROWs.”<sup>120</sup>

- “The subsection of the plan dealing with spill prevention and control is contained in Sub-Section 13 of the E&SCP, is a single paragraph consisting of five (5) simple bullet points, none of which provide any direction of the actions that must be taken in the event of a spill. The Spill Prevention, Control, and Countermeasures Plan upon which FERC has based their findings is unreasonably simplistic, lacks any detail, and does not account for the highly sensitive and unique environments the pipeline will disturb.”<sup>121</sup>

- FERC relies upon PennEast’s Horizontal Directional Drilling (HDD) Inadvertent Returns and Contingency Plan for addressing potential impact to groundwater attributable to drilling wastes, asserting the plan provides sufficient protection. The reference provides only a “single bullet point that states, a site specific plan will be implemented that includes “a description of how an inadvertent release of drilling mud would be contained and cleaned up”. This statement provides no assurance or guidance (even in general) regarding the measures that PennEast takes to prevent such events or their response to such events.”<sup>122</sup>

- The DEIS and FERC’s assessment of hydrostatic testing impacts do not consider data generated on hydrostatic test water showing “phosphorus levels (total phosphorus) ranging from 0.03 mg/l to 0.07 mg/L; which is enough to stimulate an algae bloom” or test results showing that hydrostatic test “return water is typically very low in dissolved oxygen” which “could cause a temporary but significant impact to the organisms residing in a stream especially during low flow conditions or during the summer when DO saturation is low.”

- The DEIS and documents upon which it depends for its conclusions, “does not address potential groundwater contamination events associated with the operation and maintenance of the pipeline, including the long-term application of herbicides to control the growth of vegetation or the management of invasive plants within and adjacent to the pipeline ROW.”<sup>123</sup>

- The alignment sheets included in the DEIS fail to include mile posts – this is critical information for evaluating the claims, assertions and/or data included in and relied upon in the DEIS. In other documents, such as Resource Report 3, MPs are included. An EIS is supposed to be more comprehensive, so MPs should be marked on the alignment sheets. The absence of this critically

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<sup>120</sup> Princeton Hydro, *Technical Review of Volume I FERC Draft Environmental Impact Statement Submitted for PennEast Pipeline Project*, September 2016.

<sup>121</sup> Princeton Hydro, *Technical Review of Volume I FERC Draft Environmental Impact Statement Submitted for PennEast Pipeline Project*, September 2016.

<sup>122</sup> Princeton Hydro, *Technical Review of Volume I FERC Draft Environmental Impact Statement Submitted for PennEast Pipeline Project*, September 2016.

<sup>123</sup> Princeton Hydro, *Technical Review of Volume I FERC Draft Environmental Impact Statement Submitted for PennEast Pipeline Project*, September 2016.

important information renders the DEIS legally incomplete and unusable for purposes of public, agency or expert review or comment as it impedes the ability to ground truth and review the information, claims and data in the DEIS. Not including MPs can only be inferred as an attempt to provide vague information in response to the knowledge that experts and volunteers are ground truthing and investigating the claims asserted in the DEIS by PennEast and FERC.

- In addition, on alignments the original alignment aerials views and backgrounds on the plots are muted out; making it difficult for the landowners and public monitors to ground truth the information asserted. On other pipeline projects, maps are much more detailed and legible. Blurring and the lack of MPs is an attempt to avoid providing complete information to the public.

In addition, the failure to provide the public with GIS referenced routes and images so they could be plotted in interactive maps for the public to review files is grossly negligent and yet another way that the public has not been provided all of the information needed to engage in the DEIS review and comment process. Furthermore, PennEast's own pipeline route on its website as of 8/19/16 also includes only the September 2015 route as an interactive map. Where are the files showing the reroutes and the clear alignments proposed for those reroutes? And where are the electronic files for GIS plotting and for the public to make these maps on their own without extensive effort and resources? These files should be provided by the company as the route is updated. FERC's DEIS recommendation that alignment sheets be provided to the Secretary before construction is grossly inadequate for the public to comment or review the deviations being considered.

- The FERC DEIS states that approximately 0.13 acre of vernal pool habitats would be impacted by construction of the Project, with 0.11 acre permanently impacted during operation. Spot checks in short sections of already surveyed areas of the route make clear that many sensitive vernal pools and groundwater seeps and wetlands have been missed and not accurately depicted by field surveys or the DEIS.

- In Ted Stiles Preserve at Baldpate Mountain, an area that according to the DEIS and PE alignment sheet had been surveyed by PennEast, there was no flagging observed by Delaware Riverkeeper Network during a Field-Truthing site visit of the pipeline center line, or any of the wetlands or streams along the proposed pipeline route we encountered. In addition, an intermittent stream was not delineated on the PE alignment sheets nor was there flagging present to note this water feature despite the fact that the stream is delineated on Government mapping.<sup>124</sup>

**The FERC DEIS is filled with assertions that are false, inaccurate, misleading and/or deficient – these failings ensure this DEIS cannot be said to fulfill the requirements of NEPA.**

NEPA requires that the agency “adequately considered and disclosed the environmental impact of its actions. . .” *Baltimore Gas & Electric Co. v. Natural Res. Defense Council, Inc.*, 462 U.S. 87, 97-98 (1983); *see also Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1998) (finding that the “goal of [NEPA] is to ensure that federal agencies infuse in project planning a thorough consideration of environmental values”).

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<sup>124</sup> Delaware Riverkeeper Network. *Field-Truthing and Monitoring of the Proposed PennEast Pipeline, FERC Draft EIS, Docket No. CP15-558*, September 2016.

A baseline is a practical requirement in a NEPA environmental analysis employed to identify the environmental consequences of a proposed agency action. *See American Rivers, Inc. v. FERC*, 201 F.3d 1186, n. 15 (9th Cir. 1999). It has been recognized that “[w]ithout establishing . . . baseline conditions . . . there is simply no way to determine what effect [an action] will have on the environment and, consequently, no way to comply with NEPA.” *Half Moon Bay*, 857 F.2d at 510; *see also N. Plains Res. Council*, 668 F.3d at 1085 (“without [baseline] data, an agency cannot carefully consider information about significant environment impacts. Thus, the agency fails to consider an important aspect of the problem, resulting in an arbitrary and capricious decision.”) (internal quotation marks and brackets omitted); Council on Environmental Quality, *Considering Cumulative Effects under the National Environmental Policy Act*, at 41 (January 1997) (“The concept of a baseline against which to compare predictions of the effects of the proposed action and reasonable alternatives is critical to the NEPA process”); *see also* 40 C.F.R. § 1508.27(b)(3).

NEPA requires that the lead agency provide the data on which it bases its environmental analysis. *See Lands Council v. McNair*, 537 F.3d 981, 994 (9th Cir. 2008) (holding that an agency must support its conclusions with studies that the agency deems reliable) (overturned on other grounds). Such analyses must occur **before** the proposed action is approved, not afterward. *See LaFlamme v. FERC*, 852 F.2d 389, 400 (9th Cir. 1988) (“[T]he very purpose of NEPA’s requirement that an [environmental review] be prepared for all actions that may significantly affect the environment is to obviate the need for speculation by insuring that available data is gathered and analyzed prior to the implementation of the proposed action”) (internal citation and quotation marks omitted). This is consistent with NEPA’s twin aims of (1) ensuring that agencies carefully consider information about significant environmental impacts; and, (2) guaranteeing relevant information is available to the public. *See Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1998).

The missing and inaccurate information is a fundamental failing of the DEIS, and it prevents other state, federal and regional watershed agencies, and the public from having the data and information they need to assess the impacts of the proposed pipeline on water resources, habitat, wildlife, drinking water and human communities. The DEIS is designed to help inform sound decision-making, in its current deficient and erratic state this document is worthless for assessment and decision-making purposes.

The FERC DEIS is filled with assertions that are false, inaccurate, misleading and/or deficient, including, but not limited to:

The DEIS states:

“The authorized facility location(s) shall be as shown in the EIS, as supplemented by filed alignment sheets. As soon as they are available, and before the start of construction, PennEast shall file with the Secretary any revised detailed survey alignment maps/sheets at a scale not smaller than 1:6,000 with station positions for all facilities approved by the Order. PennEast shall file with the Secretary detailed alignment maps/sheets and aerial photographs at a scale not smaller than 1:6,000 identifying all route realignments or facility relocations, and staging areas, pipe storage-yards, new access roads, and other areas that will be used or disturbed and have not been previously identified in filings with the Secretary. Approval for each of these areas must be explicitly requested in writing. For each area, the request must include a description of the existing land use/cover type, documentation of landowner approval, whether any cultural resources or federally listed threatened or endangered

species will be affected, and whether any other environmentally sensitive areas are within or abutting the area. All areas shall be clearly identified on the maps/sheets/aerial photographs. Each area must be approved in writing by the Director of the OEP before construction in or near that area. This requirement does not apply to extra workspace allowed by PennEast's E&SCP Plan and/or minor field realignments per landowner needs and requirements that do not affect other landowners or sensitive environmental areas such as wetlands."

DRN Response:

All of this information must and should be included in, and subjected to, the DEIS review and comment process. Having provided such deficient information in the DEIS in the first instance, that PennEast and FERC are allowed to, out of the public process, remedy, review, agree upon, and use for construction purposes supplemental information evades the requirements of law and both undermines and evades the review of the public and the mandates of the public process.

There is an overall discrepancy – a missing mile – between the description of the pipeline proposal in the resource reports versus in the DEIS. The DEIS states that there will be 115.1 miles of 36 inch pipeline, while other documents, such as Resource Report 1, state that there will be approximately 114 miles of 36 inch pipeline. Most maps and GIS files of the project show a total length of 114.02 miles. The alignment has changed since September of 2015, and it's possible that these changes may have resulted in an extra mile of overall length and therefore an extra mile of potential environmental damage. Regardless, the reason for the change and the discrepancy in length should be remedied and clearly identified in all materials associated with this project, including being directly addressed in the DEIS and subject to public and agency review and comment.

DEIS states:

The 118.8 miles would consist of the following facilities:

- 115.1 miles of new 36-inch-diameter pipeline extending from Luzerne County, Pennsylvania to Mercer County, New Jersey;
- the 2.1-mile Hellertown Lateral consisting of 24-inch-diameter pipe in Northampton County, Pennsylvania;
- the 0.1-mile Gilbert Lateral consisting of 12-inch-diameter pipe in Hunterdon County, New Jersey; and
- the 1.5-mile Lambertville Lateral consisting of 36-inch-diameter pipe in Hunterdon County, New Jersey.

This characterization of the project is different than what the public was told elsewhere on the FERC docket.

DRN Response:

But Resource Report 1 (September 2015) says:

The Project will entail the construction of approximately 114 miles of 36-inch diameter pipeline from Luzerne County, Pennsylvania, to Mercer County, New Jersey. The Hellertown Lateral, an approximately 2.1-mile lateral of 24-inch diameter pipe, will be constructed in Northampton County, Pennsylvania. This lateral will serve as an Interconnect with Columbia Gas (TCO) and UGI Utilities, Inc. The Gilbert Lateral, an approximately 0.6-mile lateral of 12-inch diameter pipe, will extend from the mainline in Holland Township in Hunterdon County, New Jersey, to the Gilbert Electric Generating Station where it will interconnect with NRG REMA, LLC, and Elizabethtown Gas. The Lambertville Lateral, an approximately 1.4-mile lateral of 36-inch diameter pipe, will be constructed in Hunterdon County, New Jersey. This lateral will serve as an Interconnect with Algonquin and Texas Eastern. The associated aboveground infrastructure for the Project will consist of interconnect meter stations, mainline block valves, and a single compressor station and their appurtenant facilities and equipment (e.g., pig launchers/receivers, milepost markers, cathodic protection test posts, etc.).

Additionally, proposed HDD source locations and volumes provided in DEIS Table 4.3.2-7 differ from those provided in resource report 2 Table 2.4-1.

**The DEIS is riddled with Threatened and Endangered (T&E) data that is inconsistent, wrong, missing, or misleading thus failing to establish an effective baseline for the review**

Statement from the EIS:

“The red-shouldered hawk was identified by the NJDEP-NHP as potentially occurring within the Project area in Hunterdon and Mercer counties. No suitable habitat was identified within accessible properties that were surveyed by PennEast in 2015; however, suitable breeding habitat for this species may be present. PennEast has committed to conducting tree clearing to times outside of the March 1- July 31 breeding and nesting period for raptors. This timing restriction would minimize the impacts that the Project would have to this species. PennEast would also be required to follow all restrictions found in the MBTA related to impacts on migratory birds, and would be required to develop a Migratory Bird Conservation Plan developed in consultation with FWS (see Section 4.5).”

DRN Response:

The surveys missed two red-shouldered hawk nests and multiple adult and juvenile red-shouldered hawks that were observed in the area of MP 93.5 and MP 93.6 by Dennis and Joann Kager in Kingwood Township, NJ. The nests were adjacent to the ROW where the pipeline would go. Photographs and observational data were submitted to NJDEP and are presented to FERC now.

Statement from the EIS:

“The red-headed woodpecker was identified by the NJDEP-NHP as potentially occurring within the Project area in Hunterdon and Mercer counties, and it was identified during PennEast’s surveys at milepost 104.7. PennEast has committed to conducting tree clearing to times outside of the March 1- July 31 breeding and nesting period. This timing restriction would minimize the impacts that the Project would have on this species. PennEast would also be required to follow all restrictions found in the MBTA related to impacts on migratory birds,

and would be required to develop a Migratory Bird Conservation Plan developed in consultation with FWS (see Section 4.5).

DRN Response:

Red-headed woodpeckers were also observed and documented by DRN volunteer monitors at MP 93.5 – 93.6 and MP 95.1.

Statement from the EIS:

“Although no bog turtles have been found during Project-specific surveys, the Project would cross through and impact potential bog turtle habitat (including habitats in unsurveyed areas), and bog turtles could be present in unsurveyed areas. As a result, the Project *may affect and is likely to adversely affect* bog turtles.

“Therefore, our preliminary determination for the Indiana bat, northern long-eared bat, bog turtle, dwarf wedgemussel, and northeastern bulrush is that the Project “*may affect and is likely to adversely affect*” these species.”

DRN Response:

The conclusion of “absence” as a result of the Phase 2 presence/absence bog turtle surveys does not carry much weight when it is admitted that the project may affect the species and is likely to adversely affect the species because not all areas have been surveyed. The same can be said for the Indiana bat, northern long-eared bat, dwarf wedgemussel, and northeastern bulrush. FERC’s failure to evaluate the areas where there is likely to be an adverse impact to these species renders the DEIS factually and legally deficient pursuant to NEPA.

Statement from the EIS:

“Of the surveyed wetlands in Pennsylvania, seven met the field criteria (i.e., vegetation, hydrology and soils) to be considered potential bog turtle habitat, while two met the field criteria to be considered potential bog turtle habitat in New Jersey. Phase 2 surveys are currently on-going...”

DRN Response:

The EIS notes that 7 wetlands in PA are considered suitable bog turtle habitat. However, Save Carbon County hired an independent USFWS qualified bog turtle surveyor (Jason Tesauro) who identified 9 properties containing one or more suitable bog turtle wetlands in the Hunters Creek drainage (part of Aquashicola Creek watershed) alone. Tesauro’s report was posted on the FERC docket and also filed with the USFWS.

The following are areas that were identified to have suitable bog turtle habitat by Save Carbon County’s consultant (Jason Tesauro) in September of 2015 and were not surveyed or were left out of the report by PennEast’s consultant (AECOM) in July of 2015:

1. Angun property, MP 44.8

1 suitable bog turtle area identified by Tesauro missing from AECOM July 2015 bog turtle survey report. Parcel listed as unsurveyed on PennEast's March 2016 wetland delineation maps.

*"The area was small (~0.1 acre), but **clearly consistent with suitable bog turtle habitat criteria.**"* – Jason Tesauro on Angun property

2. Conner property, MP 44.9

1 suitable bog turtle area identified by Tesauro missing from AECOM July 2015 bog turtle survey report. Parcel listed as unsurveyed on PennEast's March 2016 wetland delineation maps.

3. Maroney property, MP 45

1 suitable bog turtle area identified by Tesauro missing from AECOM July 2015 bog turtle survey report. Parcel listed as unsurveyed on PennEast's March 2016 wetland delineation maps.

*"Collectively, these patches comprised 0.2 acres of **suitable bog turtle habitat.**"* – Jason Tesauro on Conner and Maroney properties

4. Knirnschild property, between MP 45 and 45.1

2 suitable bog turtle areas identified by Tesauro missing from AECOM July 2015 bog turtle survey report. Parcel was fully surveyed on PennEast's March 2016 wetland delineation maps.

*"The southern terminus of the Sei Pike valley (Knirnschild property--closest to the intersection of Sei Pike and Spruce Hollow Roads) contained the largest area of **suitable bog turtle habitat** along Sei Pike...The potential habitat area was approximately 0.4 acres."* – Jason Tesauro on Knirnschild property

5. Fernandez property, between MP 45 and 45.1

1 highly suitable bog turtle area identified by Tesauro missing from AECOM July 2015 bog turtle survey report. One wetland, 052915\_JC\_1001\_PEM, is listed as unsuitable bog turtle habitat in AECOM's report. Part of parcel listed as fully surveyed and another part is listed as unsurveyed on PennEast's March 2016 wetland delineation maps.

*"...the Fernandez site contained a 0.2-acre elongated area of spring-fed marsh and shrub swamp situated between the base of the Spruce Hollow Rd embankment and the stream...The Fernandez site, although small, **contained highly suitable potential bog turtle habitat.**"* – Jason Tesauro on Fernandez property

6. Mosier property, between MP 45 and 45.1

1 suitable bog turtle area identified by Tesauro missing from AECOM July 2015 bog turtle survey report. Part of parcel listed as unsurveyed and other part does not appear on PennEast's March 2016 wetland delineation maps.

*“The approximate size of the **suitable bog turtle habitat** on the Mosier property was 1 acre.” – Jason Tesauro on Mosier property*

7. Randy property, MP 45.2

1 suitable bog turtle area identified by Tesauro missing from AECOM July 2015 bog turtle survey report. Parcel does not appear on PennEast’s March 2016 wetland delineation maps.

8. Vees property, MP 45.7

1 suitable bog turtle area identified by Tesauro missing from AECOM July 2015 bog turtle survey report. One wetland east of the property, 051115\_JC\_1001\_PEM, is listed as unsuitable bog turtle habitat in AECOM’s report. Parcel does not appear on PennEast’s March 2016 wetland delineation maps.

*“The wetland contained a 1.5 acre spring fed marsh with deep mud and muck soils, rivulets, and shallow-water swales...Approximate habitat size: 0.54 acres...The two properties evaluated along the Hunters Creek contained a significant area of emergent and scrub-shrub wetlands, much of which **appeared suitable for bog turtles.**” – Jason Tesauro on Randy and Vees properties*

9. Anthony property, MP 45.9

2 highly suitable bog turtle areas identified by Tesauro missing from AECOM July 2015 bog turtle survey report. Parcel listed as unsurveyed on PennEast’s March 2016 wetland delineation report.

*“The wetland system on the Anthony property encompassing the headwaters above the farm’s outbuildings to the marsh along Stagecoach Road East **supports highly suitable bog turtle habitat.**” – Jason Tesauro on Anthony property*

The failure to accurately delineate these wetlands, and therefore failure to accurately classify them pursuant to the Pennsylvania Code, renders the DEIS legally and factually deficient.

Statement from the EIS:

Pennsylvania and New Jersey have enacted laws to designate and protect state listed species. In Pennsylvania, this state law is referred to as the Endangered Species Coordination Act (under Pennsylvania House Bill 1576); while the applicable state law is referred to as the Endangered Species Conservation Act of 1973 in New Jersey. This EIS provides information related to impacts on state listed species in compliance with these state laws.”

DRN Response:

A total of 8 NJ state threatened, endangered, or special concern mussel species are completely left out of the EIS. These species are as follows: triangle floater (threatened), brook floater (endangered), yellow lampmussel (threatened), eastern lampmussel (threatened), green floater (endangered), tidewater mucket (threatened), eastern pondmussel (threatened), and creeper (species of special concern). All eight of these species may potentially occur in various waterbodies

crossed by the project, based on the GIS range maps created by the Conserve Wildlife Foundation of New Jersey and the NJ Division of Fish and Wildlife found at:  
<http://conservewildlife.maps.arcgis.com/apps/MapJournal/index.html?appid=093a625e6fa044e191595e57dceee027&webmap=7fc0d5a9cd0f419a8fdd3d254b316752>

Image from DEIS:

TABLE 4.4.1-1			
Vernal Pools Potentially Crossed by the Project			
Milepost	Length of Crossing (Feet)	Acres Potentially Affected – Construction	Acres Potentially Affected - Operation
<b>Pennsylvania</b>			
MP 13.1	0	0	0
MP 25.2	0	0	0
MP 35.5	48	0.01	0.01
MP 52.4	25	0.03	0.03
MP 52.5	0	0	0
MP 52.6	67	0.09	0.07
<b>New Jersey</b>			
MP 89.5 <u>a/</u>	-	-	-
MP 90.5-90.8 <u>a/</u>	-	-	-
MP 98.5 <u>a/</u>	-	-	-
MP 102.5	0	0	0
MP 103.4-103.5 <u>a/</u>	-	-	-
MP 103.5	0	0	0
MP 103.5	0	0	0
Note: <u>a/</u> The areas identified at MP 89.5, MP 90.5-90.8, MP 98.5, MP 103.4-103.5 were based on review of the New Jersey GIS database for vernal pools (New Jersey Landscape Project Version 3.1 maps) and have not yet been field verified.			

Response:

In PA, one DRN volunteer monitor documented a vernal pool near MP 43.5 – 44 by observing wood frog egg masses (a vernal pool obligate species).

In NJ, volunteer monitors documented vernal pools near MP 95 – 95.5 and MP 107 – 109 by observing wood frog egg masses, wood frog tadpoles, and springtime fairy shrimp (vernal pool obligate species).

Potential vernal pool habitat at MP 107.8 – 107.9 is acknowledged in Resource Report 3 below:

Vernal Habitat in New Jersey

- MP 103.1- 103.2 : Mapped as vernal habitat – no vernal pool observed within the study corridor.
- MP 103.3-103.4: predominantly forested; potential vernal pool area mapped - observed to be outside of study corridor.
- MP 103.5- 103.7: northernmost portion of study corridor mapped as potential vernal area; no potential vernal habitat observed within the survey corridor.
- MP 107.8-107.9: Mapped as vernal habitat area – no potential vernal pools observed onsite. Site is forested, with rocky substrate & intermittent drainage features

Pa;

Since it was concluded that no potential vernal pools were observed onsite in Resource Report 3, this area was presumably left out of the EIS. However, our volunteer documenting vernal pool obligate species between MP 107 – 109 encompasses the area in question.

It must be noted that DRN volunteer monitors only walked certain sections of the pipeline route so many more vernal pools are likely missing from the mapping and DEIS.

With regards to Timber Rattlesnakes, the DEIS states:

PennEast conducted presence/absence and/or habitat surveys for this species in the summer of 2015. These surveys were conducted by a qualified herpetologist in potential habitat areas designated by the PFBC. Suitable habitat for this species was identified within the Project area and one timber rattlesnake was observed within the Project area in Pennsylvania during wetland field surveys in 2015. For areas that were identified as potential habitat, PennEast has committed to following the PFBC recommendations to minimize impacts on this species: which include spring presence surveys, avoiding the habitat during construction, and the restoration of gestation habitat following PFBC guidelines (PFBC 2010). PennEast has also committed to avoiding denning habitat identified near MP 39.2 and adhering to a 300 foot no disturbance buffer around these dens, as well as the use of rattlesnake monitor on-site during construction in suitable habitats between April 15 and October 15.

DRN Response:

The habitats that are listed in the DEIS as being surveyed are not complete and not protective of timber rattlesnakes and copperheads. DRN documented optimum timber rattlesnake habitat during assessments conducted in SGL 168 from at least MP 52.9 to 51.0 along Blue Mountain near Danielsville, PA. DEIS states that 51.1 to 51.6 was surveyed for timber rattlesnake but this only includes one section of this habitat and does not include all of the optimal habitat areas in that area of SGLs. There are other areas that should have been/should be the subject of Phase 1 and/or Phase 2 surveys but have not been<sup>125</sup>.

**The DEIS is legally inadequate in its failure to consider alternative routes or construction practices that could avoid and/or mitigate harm.**

As briefly discussed above, the DEIS fails to adequately consider the impacts of the proposed route, and alternative routes, and fails to fully consider the various construction alternatives that could both avoid and minimize impacts.

Fails to consider alternatives to avoid or mitigate the adverse impacts of soil compaction in natural areas.

FERC and PennEast presume in the DEIS and supporting materials “that there is no difference between the hydrologic response of a forested woodland and the compacted, post-construction pipeline right-of-way.” As a result, there is no consideration of construction practices to avoid or mitigate the harms inflicted on these natural resources and thereby prevent the ecological harm that

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<sup>125</sup> Delaware Riverkeeper Network. Field-Truthing and Monitoring of the Proposed PennEast Pipeline, FERC Draft EIS, Docket No. CP15-558, September 2016.

will result in the form of lost habitat, increased stormwater runoff, reduced groundwater infiltration and recharge, inability of vegetation to regrow etc.

As proposed for the PennEast Pipeline,

“Compaction in construction work spaces will not be restored by simply regrading to pre-existing contours, retilling at the surface, and reseeding the area as currently outlined in the permit application materials. Heavy equipment used in the construction of the pipeline will inherently compact work areas to depths deeper than conventional surface tilling can reach. Compaction creates conditions that inhibit the germination of plants and plant root growth. Existing topsoil will not be segregated and restored, but will be lost in the construction process. The establishment of vegetative cover within the pipeline ROW will be more difficult once surface soils are compacted, and forested woodland will not be restored.”<sup>126</sup>

“When vegetation regrowth is limited, the likelihood of accelerated erosion is increased. When runoff cannot infiltrate, is not slowed at the surface by vegetation, and has direct contact with exposed soils, sediments are much more likely to be transported to downhill streams and wetlands. This is of specific concern on significant portions of the pipeline right-of-way in proximity to stream crossings, where soils to be disturbed by pipeline construction are classified as Severe Erosion Potential (79), Poor Vegetation (122), and Rugged Terrain with slopes greater than 30% (28). These areas are especially prone to erosion and sediment transport to waterbodies.”<sup>127</sup>

The DEIS fails to recognize these impacts and fails to consider alternatives to avoid or mitigate the harms including constructions practices that reduce the removal of pre-existing vegetation, that limit the building envelope, and that prevent compaction during construction – practices discussed in the attached report by expert Leslie Sauer.

HDD construction method should be default location for waterways and wetlands crossings:

Pipeline projects can use a construction technique called Horizontal Directional Drilling (“HDD”) to construct the pipeline underneath waterways and wetlands, avoiding impacts entirely. For this type of crossing, a specialized drill rig is used to advance an angled borehole below the stream or wetland to be crossed and, using a telemetry guidance system, the borehole is steered beneath the stream or wetland and then back to the ground surface. The hole is then reamed to a size, adequate for the pipe to pass through, and the pipeline is then pulled back through the bore hole.

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<sup>126</sup> Michelle Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, *Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, September 2016

<sup>127</sup> Michelle Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, *Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, September 2016

The records are replete with examples of pipeline projects that have utilized this technology. For example, the Tennessee Gas Pipeline Company's use of this technology to construct its Northeast Upgrade pipeline project under the Delaware River. *See* 42 Pa Bulletin 7478-7482. Additionally, the Columbia Gas Pipeline used HDD under Exceptional Value wetlands and at least seven streams for the Eastside Expansion Project. *See* Permit E15-846. Indeed, Tennessee Gas Pipeline Company recently described the viability of HDD technology in its application to the Department for Orion Pipeline Project.

In fact, the PennEast pipeline project will use HDD to avoid impacts to 74% of the 189 road crossings it will encounter, but for the stream crossings, 75% will be accomplished using open cut methods that have the greatest potential to inflict water quality harm, and long term damage to the creek and its riparian buffer. And, of the seventeen stream crossing locations to be accomplished by HDD, only four are not associated with a road crossing – making clear that the reason for the HDD alternative at those locations is the existence of the road, not an effort to protect the creek. Clearly FERC has prioritized protecting roadways over protecting streams.

Failing to mandate primary consideration and discussion of an HDD construction alternative for each and every wetland and waterway crossing fails to undertake the alternatives analysis mandated by NEPA. Indeed, in Pennsylvania HDD under exceptional value wetlands is required by the Pennsylvania Code.

#### Activities are proposed for damaging areas with no visible consideration of less damaging options

In Mercer Co. New Jersey, while a horizontal directional drill (HDD) is proposed under Pleasant Valley Rd. and an adjacent stream and wetland complex (between MP 105.5 and 106.0, the HDD entry point is proposed to be located at MP 105.4 and within a large PEM wetland complex (1002-PEM and 1001-PEM), and the exit point is proposed just adjacent another wetland complex and just north of and paralleling a stream where it appears from the faded aerial provided by PennEast that mature trees will need to be cut. And yet, it seems that there are obviously less impactful locations for both the entry and exit point that were not even considered<sup>128</sup>.

#### Blasting

The discussion on blasting (DEIS, p 4-58) concerns worker safety, not environmental impacts. In fact there are significant ramifications that result from blasting, among them is that blasting leaves nitrogen which can run off with stormflow and enter streams as nitrate or ammonia. Issues such as these, noise and other potential environmental impacts are overlooked by the DEIS. Alternatives that avoid blasting were not given due consideration.

#### Co-location – Alternative Footprints

The DEIS fails to provide an adequate level of detail regarding the selection of the proposed preferred route – it gives numbers of stream crossings, wetlands cut, forest acres lost, but fails to give the information necessary to assess or justify why alternatives with a reduced footprint with regards to some natural resources were rejected for the proposed preferred route.

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<sup>128</sup> Delaware Riverkeeper Network. *Field-Truthing and Monitoring of the Proposed PennEast Pipeline, FERC Draft EIS, Docket No. CP15-558*, September 2016.

In addition, the DEIS presumes that if the pipeline is co-located with a preexisting linear project that its impacts have been avoided or been minimized as compared to other options; such an outcome cannot be presumed. The co-location strategy proposed does not site the PennEast pipeline within the pre-existing ROW of these preexisting projects, it actually creates a second, adjacent footprint, thereby expanding the ROW footprint to accommodate the PennEast project. This expansion of the ROW requires new tree clearing, more soil compaction, new stream cuts and denuded buffers, etc. The value of the co-location in these areas is therefore less significant than stated in the DEIS.

Additionally, while the DEIS states that colocation is less impactful, in the Ted Stiles Preserve on Baldpate Mountain, the pipeline maps indicate that the pipeline would run adjacent to the existing ROW cutting through new habitat instead of being built within the current ROW footprint which means more habitat disturbed, trees cut, and an extension of forest fragmentation further into the woods.

As noted by Dr. Myers in his attached report:

- “An existing 50 to 100 foot wide treeless swath through a forest could be doubled as the result of the preference to following existing ROWs within a forest area. Such a width doubling could have foreseeable (but unanticipated by the DEIS) effects especially in valuable forest regions such as in Hickory Run State Park (Photo 5, p 17). In a wetland, such as in Photo 5, the area exposed to solar insolation could significantly increase which would both warm the water and increase evapotranspiration. The DEIS does not consider such factors in its comparison of alternatives.”

In other areas, where obvious opportunities for colocation, if within the pre-existing corridor, may reduce the pipeline footprint and impact, it seems an altogether ignored option. For example:

- In the Blue Mountain, part of SGL 168, Blue Mt Ski area is highly impacted with massive cuts for ski slopes yet it appears the pipe line proposed near the ski center would add an additional cut rather than utilize one of the current clear cut paths.
- While there is an existing Buckeye oil pipeline present in proximity to the proposed new greenfield PennEast route that already cuts across the steep slope and the Appalachian Trail (AT) within SGL 168, it is unclear why co-location is not considered for this area where such sensitive habitat, steep slopes, and cultural impacts are in jeopardy.
- Note -- the crossing of the Appalachian Trail by the proposed route is in a section that is only feet away from a scenic overlook and cliff outcropping – it is hard to imagine a more damaging location for harming this important recreational and cultural resource. This area is also prime rattlesnake habitat.

The DEIS fails to fully consider the advantages of alternative options for the construction route, instead relying on what PennEast proposes rather than an independent assessment amongst options.

The most obvious advantage of the Luzerne-Carbon alternative is that just 1.5 acres of wetland would be affected by construction while for the proposed preferred route, 12 acres would be affected. The DEIS does not compare wetland type or value, but the much smaller area for the alternative suggests it could be much less impactful. Also, the Luzerne-Carbon reach also includes the extremely saturated wetland 7 are just south of I-80 on the proposed route, which the DEIS describes as a

difficult area for construction (DEIS, p 4-69 and discussion below in Section 3.33). The DEIS alternatives comparison fails to consider the advantages of not constructing the pipeline through this wetland.

The DEIS notes the increase in stream crossings and small increase in forest area clearing in its rejection of the alternative (DEIS, p 3-11). The increases are not discussed regarding the quality of the streams or forest affected, nor does it consider the value of the wetlands not impacted, so the DEIS does not provide adequate evidence in support of the choice of the proposed route.”

Similar deficiencies in analysis are noted by Dr. Myers for the Bucks County alternative.

### ROW Use Damage by Vehicular Traffic

Dr. Tom Myers notes in his report the damage that is done on existing ROWs due to access by vehicular traffic, including off road vehicles. Dr. Myers provides expert analysis, and photographic evidence, of the damage done by this use of at least one of the existing ROW's PennEast proposes to use. Use of ROWs by off road vehicles is a common, known and foreseeable outcome of construction of the PennEast pipeline, and yet the DEIS fails to give the frequent, ongoing, repetitive and enduring damage to natural resources including waterways, wetlands, wildlife, habitat and restoration efforts by this known and foreseeable outcome its due attention. Statements that off road vehicles are prohibited by sign postings, gates, or web site announcements is not good enough. Discussion and commitment to enforceable measures that will demonstrably prevent this significant, repetitive and enduring impact is an essential element of avoiding known and foreseeable harm and requires due attention.

### **Construction of the PennEast Pipeline will bring demonstrable threats and harms to life, property, property rights and riparian rights**

The PennEast pipeline is a significant danger to human life and property. Pipelines are a serious source of human harm and property damage.

According to the Pipeline and Hazardous Materials Safety Administration<sup>129</sup>, in the most recent six years found on PHMSA's data portal for gas transmission lines (onshore) there have been over 100 fatalities or injuries requiring hospitalization and over \$880 million in damage as the result of 622 pipeline incidents. When explosions happen, the harm to people, property and the environment can be severe and costly. And the risk of accident, incident and harm is increasing. In addition to the actual physical harm that happens when there is an accident or incident, there is the ongoing psychological burden inflicted by the fear of accident, incident or explosion for those who are forced to live next to a gas pipeline, including those who are forced to live with a pipeline because of the power of eminent domain exercised by a pipeline company.

The DEIS asserts that:

“The frequency of significant incidents is strongly dependent on pipeline age.”

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<sup>129</sup> <https://hip.phmsa.dot.gov/analyticsSOAP/saw.dll?Portalpages>

But in fact this determination is not supported by the evidence. In fact, the hazards of pipelines for human safety and property damage are increasing. According to a report by Pipeline Safety Trust:

“The gas transmission lines installed in the 2010s had an annual average incident rate of 6.64 per 10,000 miles over the time frame considered, even exceeding that of the pre-1940s pipes. Those installed prior to 1940 or at unknown dates had an incident rate of 6.08 per 10,000 miles.”<sup>130</sup>

The DEIS’s improper determination that pipelines constructed more recently are safer resulted in a flawed analysis and discussion of the health and safety ramifications of the proposed PennEast pipeline for communities. The focus of the DEIS on compliance with regulations does not excuse the failure to assess the fact that accidents, incidents and explosions are higher than in older, pre-1940 pipelines, and the need to consider why safety is on the decline and whether PennEast will be subjected to the same construction approaches that have made more modern pipelines less safe and more prone to catastrophic events.

In the DEIS, to diminish the serious health and safety threats and harms of pipelines, FERC uses the assertion that:

“The majority of fatalities from natural gas pipelines are associated with local distribution pipelines. These pipelines are not regulated by FERC; they distribute natural gas to homes and businesses after transportation through interstate transmission pipelines. In general, these distribution lines are smaller-diameter pipes and/or plastic pipes that are more susceptible to damage.”

But given that distribution pipelines are a normal and needed consequence of an interstate transmission line in order to take the induced fracked gas from the well pads into interstate commerce, the harms inflicted by distribution lines must be equally assessed and accounted for in the DEIS as a foreseeable, direct and induced consequence of the PennEast pipeline.

The effort by the DEIS to dismiss the devastation that gets inflicted when a pipeline explodes or does damage to a community through an accident or incident is, frankly, disgusting. The DEIS tries to dismiss the devastation to people and families suffered from an explosion of a pipeline, for example, by asserting that the harms associated with pipelines are less than with other activities:

The nationwide totals of accidental fatalities from various anthropogenic and natural hazards are listed in table 4.11.3-2 in order to provide a relative measure of the industry-wide safety of natural gas transmission pipelines. Direct comparisons between accident categories should be made cautiously because individual exposures to hazards are not uniform among all categories. As indicated in table 4.11.3-2, the number of fatalities associated with natural gas facilities is much lower than the fatalities from natural hazards such as lightning, tornados, floods, earthquakes, etc.

In addition to the effort to diminish the devastation to a person or family suffered during an explosion by a natural gas pipeline, the dismissal fails to give the necessary context or assessment to fairly compare these uses. The necessary comparisons of potential for an incident to occur amongst

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<sup>130</sup> <https://www.snl.com/InteractiveX/Article.aspx?cdid=A-33791090-11060>

different threats versus the actual reality of a hazard is lacking in the DEIS analysis. Comparing apples to oranges does not work here.

The DEIS fails to fulfill the mandates of NEPA in all the ways identified in this comment and all its associated attachments and references. FERC must prepare a new, complete and accurate DEIS for public review, comment, hearing and consideration. Preparing a final EIS based on this overly deficient draft would be a violation of NEPA.

**To the extent FERC issues any letter orders to proceed with tree felling construction activity prior to the issuance of the Clean Water Act Section 401 water quality certifications, FERC is in violation of the Clean Water Act**

Section 401 of the CWA plainly requires “no [federal] license or permit shall be granted until the certification required by this section has been granted or waived.” 33 U.S.C. § 1341(a)(1); *City of Tacoma v. FERC*, 460 F.3d 53, 68 (D.C. Cir. 2006) (“without [Section 401] certification, FERC lacks authority to issue a license.”). The Supreme Court has stated that, consistent with the State’s primary enforcement responsibility under the CWA, Section 401 “requires States to provide a water quality certification *before* a federal license or permit can be issued....” *PUD No. 1 of Jefferson Cnty. v. Wash. Dept. of Ecology*, 511 U.S. 700, 707 (1994) (emphasis added). Likewise, the D.C. Circuit clearly held that “without [Section 401] certification, FERC lacks authority to issue a license.” *City of Tacoma v. FERC*, 460 F.3d 53, 68 (D.C. Cir. 2006). Until such time that the states of Pennsylvania and New Jersey issue their respective Section 401 water quality certifications FERC is prohibited from issuing letter orders authorizing any construction activity for the Project. This includes but is not limited to tree felling activities.

Submitted,



Maya K. van Rossum  
the Delaware Riverkeeper

**Attachments:**

Appendix 1: Table A-1. Active, proposed and reported natural gas wells in Pennsylvania, by county

Letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.

*Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, Michelle Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, September 5, 2016.

Table A Attachment to *Professional Review & Comment...*, Meliora Design, LLC, September 5, 2016

*The Effects of the Proposed PennEast Pipeline on Exceptional Value Wetlands in Pennsylvania, Prepared for the Delaware Riverkeeper Network*, Schmid and Company, July 2016

Letter dated September 9, 2016 written by Schmid & Company, Consulting Ecologists to Maya K. van Rossum, the Delaware Riverkeeper.

*Technical Memorandum Review of Draft Environmental Impact Statement, Proposed PennEast Pipeline, Docket No. CP15-558-000, FERC\EIS: 0271D, Tom Myers, Ph.D., August 31, 2016*

*Opinion on the PennEast Pipeline, Arthur Berman, Petroleum Geologist, Labrynth Consulting Services, Inc., September 11, 2016*

*Technical Review of Volume I FERC Draft Environmental Impact Statement Submitted for PennEast Pipeline Project, Princeton Hydro, September 2016*

*Field Monitoring Report, Pipeline Construction & Maintenance Irreparably Harms Rivers, Wetlands and Streams. Addendum to Comment for the PennEast Pipeline, Delaware Riverkeeper Network.*

*Review of INGAA Foundation Report, "Pipeline Impact to Property Value and Property Insurability", Key-Log Economics, March 11, 2015*

*Fulper Farm Grain Harvest Graphics, 4 Images, 2008-2012*

*Marcellus/Utica on Pace for Pipeliem Overbuild, Says Braziel, Natural Gas Intelligence, June 8, 2016*

*Achieving Higher Quality Restoration Along Pipeline Rights of Way, Leslie Sauer, May 2014*

*Professional Opinion of Proposed PennEast Pipeline Project, Arthur E. Berman, Petroleum Geologist, Labyrinth Consulting Services, Inc., February 26, 2015*

*Analysis of Public Benefit Regarding PennEast, Skipping Stone, March 9, 2016*

*Review of PennEast Pipeline Project Economic Impact Analysis, Jannette Barth, Pepacton Institute, April 4, 2016*

*Expert Report on the PennEast Pipeline Project Economic Impact Analysis for New Jersey and Pennsylvania, The Goodman Group Report, Nov 4, 2015*

*The Potential Environmental Impact from Fracking in the Delaware River Basin, Steven Habicht, Lars Hanson, and Paul Faeth, August 2015*

*Report on Phase 1 Bog Turtle Survey for Wetlands Associated with Hunters Creek, Towamensing Township, Carbon County, Pennsylvania, Jason Tesauro, September 5, 2015*

*Drilling Deeper: A Reality Check on U.S. Government Forecasts for a Lasting Tight Oil and Shale Gas Boom, J. David Hughes, Post Carbon Institute, October 2014*

*Revealed: Contractors Hired by FERC to Review A New Spectra Energy Pipeline Work for Spectra on a Related Project, Itai Vardi, Desmog, May 26, 2016*

*A Bridge Too Far: How Appalachian Basin Gas Pipeline Expansion Will Undermine U.S. Climate Goals*, Oil International, July 2016

*Climate Change in Pennsylvania: Impacts and Solutions for the Keystone State*, Union of Concerned Scientists, October 2008

*Climate Change Impacts and Solutions for Pennsylvania*, Union of Concerned Scientists, 2008

*The Changing Northeast Climate*, Union of Concerned Scientists, 2006

*Cumulative Land Cover Impacts of Proposed Transmission Pipelines in the Delaware River Basin*, Lars Hanson and Steven Habicht, May 2016

*Natural Gas Price Increase Inevitable*, Art Berman, The Petroleum Truth Report, February 21, 2016

*Climate Change Impacts in the United States*, Radley Horton and Gary Yohe, May 2014

*Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*, Christina Goldfuss, Council on Environmental Quality, August 1, 2016

*Pennsylvania Energy Impacts Assessment*, Nels Johnson, the Nature Conservancy, November 15, 2010

**People's Dossier: FERC's Abuses of Power and Law  
→ Climate Change & Drilling Impacts Ignored**

**Climate Change & Drilling Impacts Ignored**  
**Attachment 9**, Statement of Commissioner Richard Glick  
on Texas Eastern Transmission, LP, FERC Docket No.  
CP18-10, July 19, 2018.



# STATEMENT

## Dissenting in Part Commissioner Richard Glick on Texas Eastern Transmission, LP

Date: July 19, 2018

Item No.: C-2

Docket No.: CP18-10-000

"Today, the Commission issues a certificate to Texas Eastern Transmission, LP to construct and operate the Texas Industrial Market Expansion Project and the Louisiana Market Expansion Project (Projects), concluding that the Projects are required by the public convenience and necessity.<sup>1</sup> The Commission also finds that the Projects will not have a significant effect on the environment.<sup>2</sup> In reaching these conclusions, the Commission maintains that it need not consider the harm caused by the Projects' contribution to climate change. The Commission's refusal to do so falls well short of our obligations under the Natural Gas Act (NGA)<sup>3</sup> and the National Environmental Policy Act (NEPA).<sup>4</sup> Because I disagree with these conclusions and believe the Commission cannot find that the Projects are in the public interest without first considering the significance of the Projects' contribution to climate change,<sup>5</sup> I dissent in part from the Commission's action today.

"In today's order, the Commission once again adopts a definition of indirect effects for purposes of analyzing upstream and downstream greenhouse gas (GHG) emissions that is overly narrow and circular.<sup>6</sup> The Commission quantifies a

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<sup>1</sup> *Texas Eastern Transmission, LP*, 164 FERC ¶ 61,037 (2018) (Certificate Order).

<sup>2</sup> *Id.* P 33.

<sup>3</sup> 15 U.S.C. 717f (2012).

<sup>4</sup> National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852.

<sup>5</sup> Section 7 of the NGA requires that, before issuing a certificate for new pipeline construction, the Commission must find both a need for the pipeline and that, on balance, the pipeline's benefits outweigh its harms. 15 U.S.C. § 717f (2012). Furthermore, NEPA requires the Commission to take a "hard look" at the environmental impacts of its decisions. See 42 U.S.C. § 4332(2)(C)(iii); *Balt. Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983). While I cannot support today's order because it fails to meet these standards, I agree with the Commission's conclusion that Texas Eastern has adequately demonstrated a need for the Projects.

<sup>6</sup> See *San Juan Citizens All. et al. v. United States Bureau of Land Mgmt.*, No. 16-CV-376-MCA-JHR, 2018 WL 2994406, at \*10 (D.N.M. June 14, 2018) (holding that it was arbitrary for the Bureau of Land Management to conclude "that consumption is not 'an indirect effect of oil and gas production because production is not a proximate cause of GHG emissions resulting from consumption'" as "this statement is circular and worded as though it is a legal conclusion"). In adopting this narrow and circular definition, the Commission disregards the Projects' central purpose—to facilitate natural gas consumption by providing new supplies to two identified end-use customers. See EA at 1 (describing the purpose and need for the Project as "provid[ing] an additional 157,500 dekatherms per day of firm capacity . . . to meet its contractual obligations with Entergy Louisiana, LLC and Natgasoline, LLC").



# STATEMENT

portion of the Projects' downstream GHG emissions,<sup>7</sup> but nonetheless fails to recognize that the harm caused by the Projects' contribution to climate change is an indirect effect that the Commission must evaluate and consider under NEPA and the NGA.<sup>8</sup> The Commission also contends, without further explanation, that it "has not identified a suitable method" for determining the impact from the Projects' contribution to climate change and, absent such a method, it simply "cannot make a finding whether a particular quantity of [GHG] emissions poses a significant impact on the environment and how that impact would contribute to climate change."<sup>9</sup>

"As I have stated previously,<sup>10</sup> NEPA does not permit agencies to so easily shirk their responsibilities to consider environmental consequences; instead, it requires that the Commission engage in reasonable forecasting and estimation where doing so would further the statute's two-fold purpose of ensuring that the relevant agency will "have available, and will carefully consider, detailed information concerning significant environmental impacts" and that this information will be "available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision."<sup>11</sup>

"As the U.S. Court of Appeals for the District of Columbia Circuit explained in *Sierra Club v. FERC (Sabal Trail)*, in the face of indefinite variables, "agencies may sometimes need to make educated assumptions about an uncertain future."<sup>12</sup> The Commission cannot point to the mere presence of uncertainty over upstream and downstream GHG emissions to excuse it from considering the harm from the Projects' contribution to climate change. In the case of new natural gas pipelines, it is reasonable to assume that building incremental transportation capacity will spur additional production and result in some level of combustion of natural gas, even if the exact details of the method or location are not definite. As the United States Court of Appeals for the Eighth Circuit explained in *Mid States*—a case that also involved downstream GHG emissions from new infrastructure for transporting fossil fuels—when the "nature of the

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<sup>7</sup> Certificate Order, 164 FERC ¶ 61,037 at P 32.

<sup>8</sup> *Id.* P 33. The Commission also ignores the other half of the Projects' incremental transportation capacity, even though Natgasoline LLC, a "greenfield world scale methanol production complex," has subscribed for the entire remainder. Natgasoline LLC, *Fertilizer & Chemicals, Our Facilities*, OCI (July 17, 2018), <http://www.oci.nl/oci-fcg/our-facilities/natgasoline-llc>.

<sup>9</sup> Certificate Order, 164 FERC ¶ 61,037 at P 33.

<sup>10</sup> See *Mountain Valley Pipeline, LLC*, 163 FERC ¶ 61,197, at 7 (2018) (Glick, Comm'r, *dissenting*); *Tennessee Gas Pipeline Company, L.L.C.*, 163 FERC ¶ 61,190, at 2 (2018) (Glick, Comm'r, *dissenting in part*); *Florida Southeast Connection, LLC*, 163 FERC ¶ 61,158, at 1-2 (Glick, Comm'r, *dissenting in part*); *Gulf South Pipeline Company, LP.*, 163 FERC ¶ 61,124, at 1-2 (Glick, Comm'r, *dissenting in part*); *Florida Southeast Connection, LLC*, 162 FERC ¶ 61,223, at 6 (2018) (Glick, Comm'r, *dissenting*).

<sup>11</sup> *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 768 (2004) (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989)). In order to evaluate circumstances in which downstream impacts of a pipeline facility are reasonably foreseeable results of constructing and operating the proposed facility, I am relying on precisely the sort of "reasonably close causal relationship" that the Supreme Court has required in the NEPA context and analogized to proximate cause. See *id.* at 767 ("NEPA requires a 'reasonably close causal relationship' between the environmental effect and the alleged cause. The Court [has] analogized this requirement to the 'familiar doctrine of proximate cause from tort law.'") (quoting *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 774 (1983)); see also *Paroline v. United States*, 134 S. Ct. 1710, 1719 (2014) ("Proximate cause is often explicated in terms of foreseeability or the scope of the risk created by the predicate conduct."); *Staelens v. Dobert*, 318 F.3d 77, 79 (1st Cir. 2003) ("[I]n addition to being the cause in fact of the injury [the but for cause], the plaintiff must show that the negligent conduct was a proximate or legal cause of the injury as well. To establish proximate cause, a plaintiff must show that his or her injuries were within the reasonably foreseeable risks of harm created by the defendant's negligent conduct.") (internal quotation marks and citations omitted).

<sup>12</sup> 867 F.3d 1357, 1374 (D.C. Cir. 2017).



# STATEMENT

effect” (end-use emissions) is reasonably foreseeable, but “its extent is not” (specific consumption activity producing emissions), an agency may not simply ignore the effect.<sup>13</sup>

“Based on the record here, it is entirely foreseeable that a portion of the natural gas transported through the Projects will be combusted, emitting GHGs that contribute to climate change. As noted above, the Projects are designed to provide firm natural gas transportation capacity to fuel Lake Charles Power Station and to serve Natgasoline, LLC, a new methanol production complex.<sup>14</sup> Under these circumstances, the Commission must consider the harm from the Projects’ contribution to climate change.<sup>15</sup>

“Quantifying the Projects’ GHG emissions, including reasonably foreseeable upstream and downstream emissions, is a necessary—but not sufficient—step in meeting the Commission’s obligations to consider the Projects’ environmental effects associated with climate change. NEPA and the NGA’s public interest standard require the Commission to consider not the GHG emissions themselves but the resulting environmental impact. The Commission not only refuses to consider the significance of the Projects’ climate-change impact, but also maintains that it lacks the means to do so.<sup>16</sup>

“The Commission is incorrect insofar as it concludes that there is no “suitable method” to consider the harm caused by the Projects’ contribution to climate change.<sup>17</sup> That is precisely what the Social Cost of Carbon provides. It translates the long-term damage done by a ton of carbon dioxide into a monetary value, thereby providing a meaningful and informative approach for satisfying an agency’s obligation to consider how its actions contribute to the harm caused by climate change. The U.S. Environmental Protection Agency recommended this approach in its comments on the Commission’s pending review of the natural gas certification process, explaining that estimates of the Social Cost of Carbon “may be used for project analysis when [the Commission] determines that a monetary assessment of the impacts associated with the estimated net change in GHG emissions provides useful information in its environmental review or public interest determination.”<sup>18</sup> Furthermore, the U.S. Council on Environmental Quality regulations themselves outline a framework for determining whether a project’s impacts on the environment will be considered significant.<sup>19</sup>

\* \* \*

“Climate change poses an existential threat to our security, economy, environment, and, ultimately, the health of individual citizens. Unlike many of the challenges that our society faces, we know with certainty what causes climate

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<sup>13</sup> *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549 (8th Cir. 2003).

<sup>14</sup> See *supra* note 6 (EA at 1).

<sup>15</sup> *Sabal Trail*, 867 F.3d at 1371-72; *id.* at 1374.

<sup>16</sup> Certificate Order, 164 FERC ¶ 61,037 at P 33. Notably, the Environmental Assessment lacks any discussion of climate change.

<sup>17</sup> See *supra* note 9.

<sup>18</sup> United States Environmental Protection Agency, Comments, Docket No. PL18-1-000, at 4-5 (filed June 21, 2018).

<sup>19</sup> 40 C.F.R. § 1508.27 (2017) (setting forth a list of factors agencies should rely on when determining whether a project’s environmental impacts are “significant” considering both “context” and “intensity.”).



# STATEMENT

change: It is the result of GHG emissions, including carbon dioxide and methane, which can be released in large quantities through the production and consumption of natural gas. Congress determined under the NGA that no entity may transport natural gas interstate, or construct or expand interstate natural gas facilities, without the Commission first determining the activity is in the public interest.<sup>20</sup> This requires the Commission to find, on balance, that a project's benefits outweigh the harms, including the environmental impacts from climate change that result from authorizing additional transportation. Accordingly, it is critical that, as an agency of the federal government, the Commission comply with its statutory responsibility to document and consider how its authorization of a natural gas pipeline facility will lead to the emission of GHGs, contributing to the existential threat of climate change.

"For these reasons, I respectfully dissent in part."

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<sup>20</sup> 15 U.S.C. 717f(c)(1)(A).

**People's Dossier: FERC's Abuses of Power and Law  
→ Climate Change & Drilling Impacts Ignored**

**Climate Change & Drilling Impacts Ignored**  
**Attachment 10**, Statement of Commissioner Cheryl  
LaFleur on Texas Eastern Transmission, LP, FERC  
Docket No. CP18-10, July 19, 2018.



# STATEMENT

## Dissent of Commissioner Cheryl A. LaFleur on Texas Eastern's Texas Industrial Market Expansion Project

Date: July 19, 2018

Docket Nos.: CP18-10-000

"Today's order grants Texas Eastern's request for authorization to construct and operate the Texas Industrial Market Expansion Project (Texas Project) and the Louisiana Market Expansion Project (Louisiana Project), together the TX-LA Markets Project. I believe the fact pattern presented in this case, a pipeline designed to serve a specific known downstream powerplant, falls squarely within the precedent of *Sierra Club v. FERC*.<sup>1</sup> Given that the majority's analysis here suffers from the same flaws as its decision on remand in *Sabal Trail*,<sup>2</sup> I respectfully dissent.

"As I articulated in my dissent in *Sabal Trail*, I believe that, given the Court's finding that downstream greenhouse gas (GHG) emissions in that case were indirect impacts, the Commission must now quantify and consider those impacts as part of its National Environmental Policy Act (NEPA) review.<sup>3</sup> In this case, the Commission quantified and disclosed the upper-bound estimate of the downstream GHG emissions associated with the Louisiana Project, which is fueling the Lake Charles Power Station, a natural gas-fired combined cycle power plant in Westlake, Louisiana.<sup>4</sup> The volume of GHG emissions associated with this downstream use would result in about 0.7 percent increase in GHG emissions in Louisiana and a 0.03 percent increase of national GHG emissions, based upon 2015 state and national inventories. The majority states that it cannot "make a finding whether a particular quantity of greenhouse gas emissions poses a significant impact on the environment and how that impact would contribute to climate change."<sup>5</sup> I disagree.

"While the Commission appropriately calculated the GHG emissions from the Lake Charles Power Station, as required by *Sabal Trail*, I am troubled by the manner in which today's order addresses the significance of the downstream GHG emissions. NEPA requires us to include discussion of indirect effects and their significance in our environmental review. I reject the contention that the Commission is unable to discern the significance of GHG emissions. We are required by NEPA to reach a determination regarding the significance of all environmental impacts, including downstream GHG emissions. It is our responsibility to use the best information we have to make that determination. One way we could assess the significance of a given rate or volume of GHG emissions is to compare the downstream

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<sup>1</sup> 867 F.3d 1357 (D.C. Cir. 2017) (*Sierra Club*).

<sup>2</sup> *Florida Southeast Connection, LLC*, 162 FERC ¶ 61,233 (2018) (LaFleur, Comm'r, *dissenting in part*) (*Sabal Trail*)

<sup>3</sup> *Id.*

<sup>4</sup> The order includes an estimate that if all 75,000 dekatherms per day (Dth/d) of natural gas were transported to combustion end uses, downstream end-use would result in the emissions of about 1.5 metric tpy of CO<sub>2e</sub>. *Texas Eastern Transmission, LP*, 164 FERC ¶ 61,037 at PP 32-33 (2018) (Texas Eastern Certificate Order). The Commission should have sought more precise information to develop the record in this proceeding, to allow the Commission to more accurately assess the indirect impacts of downstream GHG emissions by calculating gross and net GHG emissions.

<sup>5</sup> Texas Eastern Certificate Order at P 33.



# STATEMENT

GHG emissions associated with an individual project to the total state, regional, and/or national emission inventories.<sup>6</sup> The fact that consideration of climate change is difficult does not alleviate our responsibilities under the Natural Gas Act (NGA) and NEPA to determine the significance of GHG emissions.

"The majority also asserts that it cannot "determine how a project's contribution to GHG emissions would translate into physical effects on the environment."<sup>7</sup> But that is precisely the use for which the Social Cost of Carbon was developed—it is a scientifically-derived metric to translate tonnage of carbon dioxide or other GHGs to the cost of long-term climate harm.<sup>8</sup> By translating the emissions into monetized climate damages, the Commission could provide context to the quantified rate or volume of GHG emissions of a pipeline project and could ascribe significance as part of our NEPA review.<sup>9</sup> We can account for changes in GHG emissions resulting from the combustion of the transported gas by applying the Social Cost of Carbon, which more accurately reflects the climate change impacts of a particular project.<sup>10</sup> I believe the Social Cost of Carbon metric would more readily apply to a proposed pipeline project if we developed a fuller record to support a quantified cost-benefit approach to our pipeline reviews. I believe we should discuss how the Commission could effectively use the Social Cost of Carbon, and more broadly, how the Commission should consider climate change impacts in our environmental reviews as part of the notice of inquiry on the Certificate Policy Statement.<sup>11</sup>

"I also note that the Commission did not quantify and disclose the downstream GHG emissions associated with the Texas Project because there is no identified end-use in the record. If I were to vote for this order, I would need to compute the other downstream emissions estimates and consider them as part of my public interest determination.

"For all of these reasons, I dissent."

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<sup>6</sup> Though the majority does disclose the state and national comparison data, it does not ascribe significance to the percent increase in GHG emissions, and instead concludes that it cannot making a finding on whether a particular amount of GHG emissions is significant. Texas Eastern Certificate Order at P 33.

<sup>7</sup> *Id.*

<sup>8</sup> [https://www.epa.gov/sites/production/files/2016-12/documents/social\\_cost\\_of\\_carbon\\_fact\\_sheet.pdf](https://www.epa.gov/sites/production/files/2016-12/documents/social_cost_of_carbon_fact_sheet.pdf); See also, United States Environmental Protection Agency (EPA), Comments, *Certification of New Interstate Natural Gas Facilities*, Notice of Inquiry, 163 FERC ¶ 61,042 (2018) (NOI on the Certificate Policy Statement), Docket No. PL18-1-000 (filed June 21, 2018) (The EPA explains that estimates of the Social Cost of Carbon allow an agency to "incorporate the societal value of changes in carbon dioxide and other GHG emissions into benefit-cost analyses of actions that have small, or marginal, impacts on cumulative global emissions.").

<sup>9</sup> Social Cost of Carbon is meant to measure the physical, incremental impacts from a project including changes in net agricultural productivity, human health, property loss and damages from increased flood risk, and energy demand changes.

<sup>10</sup> See, e.g., *Florida Southeast Connection, LLC*, 162 FERC ¶ 61,233 (2018) (LaFleur, Comm'r, *dissenting in part*) (*Sabal Trail* Remand Order); *Dominion Transmission Inc.*, 163 FERC ¶ 61,128 (2018) (LaFleur, Comm'r, *dissenting in part*); *Florida Southeast Connection, LLC*, 163 FERC ¶ 61,158 (2018) (LaFleur, Comm'r, *concurring*); and *Tennessee Gas Pipeline Company*, 163 FERC ¶ 61,190 (2018) (LaFleur, Comm'r, *concurring*).

<sup>11</sup> 163 FERC ¶ 61,042 (2018).

**People's Dossier: FERC's Abuses of Power and Law  
→ Climate Change & Drilling Impacts Ignored**

**Climate Change & Drilling Impacts Ignored**  
**Attachment 11**, Statement of Commissioner Richard Glick on Northwest Pipeline, LLC, FERC Docket Nos. CP17-441-000, CP17-441-001, July 19, 2018.



# STATEMENT

## Dissenting in Part Commissioner Richard Glick on Northwest Pipeline LLC

Date: July 19, 2018

Item No.: C-3  
Docket Nos.: CP17-441-000,  
CP17-441-001

"In today's order, the Commission grants Northwest Pipeline LLC's request for authorization to upgrade its North Seattle Lateral (the North Seattle Lateral Upgrade Project or Project), enabling Northwest to provide approximately 159,200 dekatherms per day of additional firm transportation service to Puget Sound Energy Inc. (Puget Sound), finding that the Project is required by the public convenience and necessity.<sup>1</sup> The Commission also concludes that the Project will not have a significant effect on the environment.<sup>2</sup> In reaching these conclusions, the Commission maintains that it need not consider the harm from the Project's contribution to climate change. I believe that the Commission's refusal to do so falls well short of our obligations under the Natural Gas Act (NGA)<sup>3</sup> and the National Environmental Policy Act (NEPA).<sup>4</sup> While the Commission quantifies the Project's downstream greenhouse gas (GHG) emissions, the Commission nonetheless determines that upstream and downstream GHG emissions are not reasonably foreseeable and that it is not obligated to determine whether the resulting harm from the Project's contribution to climate change is significant.<sup>5</sup> I dissent in part from today's order because I disagree with these conclusions and believe the Commission cannot find that the Project is in the public interest without first considering the significance of the Project's contribution to climate change.<sup>6</sup>

"The Commission, once again, goes out of its way to avoid seriously addressing the harm caused by the Project's contribution to climate change, claiming that its policy is to analyze upstream and downstream GHG emissions "when those effects are indirect or cumulative impacts."<sup>7</sup> At the same time, the Commission disregards the Project's

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<sup>1</sup> *Northwest Pipeline LLC*, 164 FERC ¶ 61,038 (2018) (Certificate Order).

<sup>2</sup> *Id.* P 38.

<sup>3</sup> 15 U.S.C. 717f (2012).

<sup>4</sup> National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852.

<sup>5</sup> Certificate Order, 164 FERC ¶ 61,038 at PP 31-32, 34-35.

<sup>6</sup> Section 7 of the NGA requires that, before issuing a certificate for new pipeline construction, the Commission must find both a need for the pipeline and that, on balance, the pipeline's benefits outweigh its harms. 15 U.S.C. § 717f (2012). Furthermore, NEPA requires the Commission to take a "hard look" at the environmental impacts of its decisions. See 42 U.S.C. § 4332(2)(C)(iii); *Balt. Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983). While I cannot support today's order because it fails to meet these standards, I agree with the Commission's conclusion that Northwest has adequately demonstrated a need for the Project.

<sup>7</sup> Certificate Order, 164 FERC ¶ 61,038 at PP 30.



# STATEMENT

estimated emissions from end-use combustion.<sup>8</sup> The Final Environmental Assessment (EA) for the Project includes a “full-burn” analysis that quantifies the potential downstream GHG emissions associated with combusting the amount of gas that the Project could transport.<sup>9</sup> Nevertheless, the Commission refuses to recognize the harm from these emissions as an indirect effect of the Project.<sup>10</sup> Furthermore, the Commission surmises that only where it has definitive information about the specific location and timing of upstream production can it conclude that GHG emissions from production activities are reasonably foreseeable.<sup>11</sup> This definition of indirect effects is overly narrow and circular.<sup>12</sup> NEPA does not permit agencies to so easily shirk their responsibilities to consider environmental consequences; instead, it requires that the Commission engage in reasonable forecasting and estimation where doing so would further the statute’s two-fold purpose of ensuring that the relevant agency will “have available, and will carefully consider, detailed information concerning significant environmental impacts” and that this information will be “available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision.”<sup>13</sup>

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<sup>8</sup> Compare *id.* P 31 (quantifying the Project’s downstream GHG emissions) with *id.* PP 34-35 (concluding that the record does not identify a “reasonably foreseeable specific end use” and “declin[ing] to further address upstream or downstream GHG emissions related to the [P]roject”). In response to commenters’ request that the Commission consider strategies for mitigating the significant increase in emissions in the State of Washington, the Commission argues that it lacks jurisdiction to impose mitigation on downstream end-use consumers. But this misses the point. The fact that individual states and other federal agencies may consider, and even regulate, end-use consumption and some of the environmental impacts from the pipeline, does not limit the Commission’s responsibility to consider these impacts when evaluating the public interest. Furthermore, under similar circumstances, the U.S. Court of Appeals for the District of Columbia Circuit has held that GHG emissions from downstream end use “are an indirect effect” of the Commission’s certificate decisions, “which [the Commission] could reasonably foresee, and which the agency has legal authority to mitigate.” *Sierra Club v. FERC*, 867 F.3d 1357, 1374 (D.C. Cir. 2017) (citing 15 U.S.C. § 717f(e)).

<sup>9</sup> Final EA at 60-61 (basing the emission quantity on the full design capacity of the Project). This calculation was made prior to the policy change, announced in *Dominion Transmission, Inc.*, 163 FERC ¶ 61,128, at PP 38-42, 59-63 (2018) (*New Market*), to exclude downstream GHG emissions calculations in cases where the exact end use location for consumption is not known.

<sup>10</sup> Certificate Order, 164 FERC ¶ 61,038 at P 35 (declining to analyze upstream or downstream GHG emissions related to the Project because “NEPA does not require analysis of impacts that are not indirect or cumulative and a broad analysis based on generalized assumptions rather than reasonably specific information does not meaningfully inform the Commission’s project-specific review”).

<sup>11</sup> *Id.* P 32.

<sup>12</sup> See *San Juan Citizens All. et al. v. United States Bureau of Land Mgmt.*, No. 16-CV-376-MCA-JHR, 2018 WL 2994406, at \*10 (D.N.M. June 14, 2018) (holding that it was arbitrary for the Bureau of Land Management to conclude “that consumption is not ‘an indirect effect of oil and gas production because production is not a proximate cause of GHG emissions resulting from consumption’” as “this statement is circular and worded as though it is a legal conclusion”). In adopting this narrow and circular definition, the Commission disregards the Project’s central purpose—to facilitate natural gas consumption by providing new supplies. See EA at 2 (describing the purpose of the Project as to “provide additional natural gas delivery capacity to [Puget Sound Energy] and thus markets in North Seattle by up to 159,299 dekatherms per day”).

<sup>13</sup> *Dep’t of Transp. v. Pub. Citizen*, 541 U.S. 752, 768 (2004) (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989)). In order to evaluate circumstances in which downstream impacts of a pipeline facility are reasonably foreseeable results of constructing and operating the proposed facility, I am relying on precisely the sort of “reasonably close causal relationship” that the Supreme Court has required in the NEPA context and analogized to proximate cause. See *id.* at 767 (“NEPA requires a ‘reasonably close causal relationship’ between the environmental effect and the alleged cause. The Court [has] analogized this requirement to the ‘familiar doctrine of proximate cause from tort law.’”) (quoting *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 774 (1983)); see also *Paroline v. United States*, 134 S. Ct. 1710, 1719 (2014) (“Proximate cause is often explicated in terms of foreseeability or the scope of the risk created by the predicate conduct.”); *Staelens v. Dobert*, 318 F.3d 77, 79 (1st Cir. 2003) (“[I]n addition to being the cause in fact of the injury [the but for



# STATEMENT

"As the U.S. Court of Appeals for the District of Columbia Circuit explained in *Sierra Club v. FERC (Sabal Trail)*, in the face of indefinite variables, "agencies may sometimes need to make educated assumptions about an uncertain future."<sup>14</sup> The Commission cannot point to the mere presence of uncertainty over upstream and downstream GHG emissions to excuse it from considering the harm from the Project's contribution to climate change. In the case of new natural gas pipelines, it is reasonable to assume that building incremental transportation capacity will result in some level of combustion of natural gas and spur additional production, even if the exact details are not definite. As the United States Court of Appeals for the Eighth Circuit explained in *Mid States*—a case that also involved downstream GHG emissions from new infrastructure for transporting fossil fuels—when the "nature of the effect" (end-use emissions) is reasonably foreseeable, but "its extent is not" (specific consumption activity producing emissions), an agency may not simply ignore the effect.<sup>15</sup>

"Based on the record here, it is entirely foreseeable that natural gas transported through the Project will be combusted, emitting GHGs that contribute to climate change. As noted above, the Project's stated purpose is to provide additional natural gas transportation capacity to Puget Sound and, thus, markets in North Seattle, which Puget Sound explains have "experienced significant growth in natural gas demand, particularly during early morning peak periods."<sup>16</sup> Even where exact information regarding the source of the gas to be transported and the ultimate end use is unknown, the Commission will often be able to produce comparably useful information based on reasonable forecasts of the GHG emissions.<sup>17</sup> This is the case here, where the Commission did estimate and disclose the potential GHG emissions resulting from downstream consumption, utilizing information provided in the record and publicly available analytical tools.<sup>18</sup> Under these circumstances, the Commission must consider the harm caused by the Project's contribution to climate change resulting from this likely end use.<sup>19</sup>

"As I have said previously, quantifying a project's GHG emissions, including reasonably foreseeable upstream and downstream emissions, is a necessary—but not sufficient—step in meeting the Commission's obligations to consider a

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cause], the plaintiff must show that the negligent conduct was a proximate or legal cause of the injury as well. To establish proximate cause, a plaintiff must show that his or her injuries were within the reasonably foreseeable risks of harm created by the defendant's negligent conduct.") (internal quotation marks and citations omitted).

<sup>14</sup> 867 F.3d 1357, 1374 (D.C. Cir. 2017).

<sup>15</sup> *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549 (8th Cir. 2003).

<sup>16</sup> See *supra* note 12 (EA at 2); Puget Sound May 24, 2018 Letter at 1.

<sup>17</sup> In comments recently submitted in the Commission's pending review of the natural gas certification process, the Environmental Protection Agency recommended a number of tools the Commission can use to quantify the reasonably foreseeable "upstream and downstream GHG emissions associated with a proposed natural gas pipeline." These include "economic modeling tools" that can aid in determining the "reasonably foreseeable energy market impacts of a proposed project." United States Environmental Protection Agency, Comments, Docket No. PL18-1-000, at 3-4 (filed June 21, 2018) (explaining that the "EPA has emission factors and methods" available to estimate GHG emissions—from activities upstream and downstream of a proposed natural gas pipeline—through the U.S. Greenhouse Gas Inventory and the Greenhouse Gas Reporting Program); see *Certification of New Interstate Natural Gas Facilities*, Notice of Inquiry, 163 FERC ¶ 61,042 (2018).

<sup>18</sup> EA at 60-61; Certificate Order, 164 FERC ¶ 61,038 at P 31.

<sup>19</sup> *Sabal Trail*, 867 F.3d at 1371-72; *id.* at 1374.



# STATEMENT

project's environmental effects associated with climate change.<sup>20</sup> NEPA and the NGA's public interest standard require the Commission to consider not the GHG emissions themselves but the resulting environmental impact. The Commission not only refuses to consider the significance of the Project's climate-change impact, but also maintains that it lacks the means to do this.<sup>21</sup>

"The Commission is incorrect insofar as it concludes that there is no "standard methodology . . . to determine whether, and to what extent, a project's incremental contribution to GHG emissions would result in physical effects on the environment for the purposes of evaluating the Project's impacts on climate change."<sup>22</sup> That is precisely what the Social Cost of Carbon provides. It translates the long-term damage done by a ton of carbon dioxide into a monetary value, thereby providing a meaningful and informative approach for satisfying an agency's obligation to consider how its actions contribute to the harm caused by climate change. The U.S. Environmental Protection Agency recommended this approach in its comments on the Commission's pending review of the natural gas certification process, explaining that estimates of the Social Cost of Carbon "may be used for project analysis when [the Commission] determines that a monetary assessment of the impacts associated with the estimated net change in GHG emissions provides useful information in its environmental review or public interest determination."<sup>23</sup> Furthermore, the U.S. Council on Environmental Quality regulations themselves outline a framework for determining whether a project's impacts on the environment will be considered significant.<sup>24</sup>

\* \* \*

"Climate change poses an existential threat to our security, economy, environment, and, ultimately, the health of individual citizens. Unlike many of the challenges that our society faces, we know with certainty what causes climate change: It is the result of GHG emissions, including carbon dioxide and methane, which can be released in large quantities through the production and consumption of natural gas. Congress determined under the NGA that no entity may transport natural gas interstate, or construct or expand interstate natural gas facilities, without the Commission first determining the activity is in the public interest.<sup>25</sup> This requires the Commission to find, on balance, that a project's benefits outweigh the harms, including the environmental impacts from climate change that result from authorizing additional transportation. Accordingly, it is critical that, as an agency of the federal government, the Commission comply with its statutory responsibility to document and consider how its authorization of a natural gas pipeline facility will lead to the emission of GHGs, contributing to the existential threat of climate change.

"For these reasons, I respectfully dissent in part."

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<sup>20</sup> See *Mountain Valley Pipeline, LLC*, 163 FERC ¶ 61,197, at 7 (2018) (Glick, Comm'r, *dissenting*); *Tennessee Gas Pipeline Company, L.L.C.*, 163 FERC ¶ 61,190, at 2 (2018) (Glick, Comm'r, *dissenting in part*); *Florida Southeast Connection, LLC*, 163 FERC ¶ 61,158, at 1-2 (Glick, Comm'r, *dissenting in part*); *Gulf South Pipeline Company, LP.*, 163 FERC ¶ 61,124, at 1-2 (Glick, Comm'r, *dissenting in part*); *Florida Southeast Connection, LLC*, 162 FERC ¶ 61,223, at 6 (2018) (Glick, Comm'r, *dissenting*).

<sup>21</sup> EA at 78-79.

<sup>22</sup> *Id.*

<sup>23</sup> United States Environmental Protection Agency, Comments, Docket No. PL18-1-000, at 4-5 (filed June 21, 2018).

<sup>24</sup> 40 C.F.R. § 1508.27 (2017) (setting forth a list of factors agencies should rely on when determining whether a project's environmental impacts are "significant" considering both "context" and "intensity").

<sup>25</sup> 15 U.S.C. 717f(c)(1)(A).

**People's Dossier: FERC's Abuses of Power and Law  
→ Climate Change & Drilling Impacts Ignored**

**Climate Change & Drilling Impacts Ignored**  
**Attachment 12**, Statement of Commissioner Richard  
Glick on Columbia Gas Transmission, L.L.C., FERC  
Docket No. CP17-80-000, July 19, 2018.



# STATEMENT

## Dissenting in Part Commissioner Richard Glick on Columbia Gas Transmission, L.L.C.

Date: July 19, 2018

Item No.: C-1  
Docket No.: CP17-80-000

"In today's order, the Commission grants Columbia Gas Transmission's request for authorization to construct and operate the Eastern Panhandle Expansion Project (Project), concluding that the Project is required by the public convenience and necessity.<sup>1</sup> The Commission also finds that the Project will not have a significant effect on the environment.<sup>2</sup> Yet, in reaching these conclusions, the Commission maintains that it need not consider the harm from the Project's contribution to climate change. I believe that the Commission's refusal to do so falls well short of our obligations under the Natural Gas Act (NGA)<sup>3</sup> and the National Environmental Policy Act (NEPA).<sup>4</sup> While the Commission quantified the Project's downstream greenhouse gas (GHG) emissions, the Commission nonetheless determines that these emissions are not reasonably foreseeable and that it is not obligated to determine whether the resulting harm from climate change is significant.<sup>5</sup> I dissent in part from today's order because I disagree with these conclusions and believe the Commission cannot find that the Project is in the public interest without first considering the significance of the Project's contribution to climate change.<sup>6</sup>

"The Commission, once again, goes out of its way to avoid seriously addressing the Project's impact from climate change by disregarding the Project's upstream and downstream GHG emissions.<sup>7</sup> The Final Environmental Assessment (EA) for the Project includes a "full-burn" analysis that quantifies the potential downstream GHG emissions associated

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<sup>1</sup> *Columbia Gas Transmission, L.L.C.*, 164 FERC ¶ 61,036 (2018) (Certificate Order).

<sup>2</sup> Certificate Order, 164 FERC ¶ 61,036 at P 74.

<sup>3</sup> 15 U.S.C. 717f (2012).

<sup>4</sup> National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852.

<sup>5</sup> Certificate Order, 164 FERC ¶ 61,036 at P 58.

<sup>6</sup> Section 7 of the NGA requires that, before issuing a certificate for new pipeline construction, the Commission must find both a need for the pipeline and that, on balance, the pipeline's benefits outweigh its harms. 15 U.S.C. § 717f (2012). Furthermore, NEPA requires the Commission to take a "hard look" at the environmental impacts of its decisions. See 42 U.S.C. § 4332(2)(C)(iii); *Balt. Gas & Elec. Co. v. Nat. Res. Def. Council, Inc.*, 462 U.S. 87, 97 (1983). While I cannot support today's order because it fails to meet these standards, I agree with the Commission's conclusion that Columbia Gas has adequately demonstrated a need for the Project.

<sup>7</sup> Certificate Order, 164 FERC ¶ 61,036 at PP 44-47.



# STATEMENT

with combusting the amount of gas that the Project could transport.<sup>8</sup> Nevertheless, the Commission refuses to recognize the harm from these emissions as an indirect effect of the Project. Furthermore, the Commission surmises that only where it has definitive information about the specific location and timing of upstream production can it conclude that GHG emissions from production activities are reasonably foreseeable.<sup>9</sup> This definition of indirect effects is overly narrow and circular.<sup>10</sup> NEPA does not permit agencies to so easily shirk their responsibilities to consider environmental consequences; instead, it requires that the Commission engage in reasonable forecasting and estimation where doing so would further the statute's two-fold purpose of ensuring that the relevant agency will "have available, and will carefully consider, detailed information concerning significant environmental impacts" and that this information will also be "available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision."<sup>11</sup>

"As the D.C. Circuit explained in *Sierra Club v. FERC (Sabal Trail)*, in the face of indefinite variables, "agencies may sometimes need to make educated assumptions about an uncertain future."<sup>12</sup> The Commission cannot point to the mere presence of uncertainty over upstream and downstream GHG emissions to excuse it from considering the harm from the Project's contribution to climate change. In the case of new natural gas pipelines, it is reasonable to assume that building incremental transportation capacity will spur additional production and result in some level of combustion of natural gas, even if the exact details of the method or location are not definite. As the United States Court of Appeals for the Eighth Circuit explained in *Mid States*—a case that also involved the downstream emissions from new infrastructure for transporting fossil fuels—when the "nature of the effect" (end-use emissions) is reasonably foreseeable, but "its extent is not" (specific consumption activity producing emissions), an agency may not simply

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<sup>8</sup> Final EA at 77 (emission quantity based on the full design capacity of the projects). This calculation was made prior to the policy change, announced in *Dominion Transmission, Inc.*, 163 FERC ¶ 61,128, at PP 38-42, 59-63 (2018) (*New Market*), to exclude downstream GHG emissions calculations in cases where the exact end use location for consumption is not known.

<sup>9</sup> Certificate Order, 164 FERC ¶ 61,036 at PP 44-47.

<sup>10</sup> See *San Juan Citizens All. et al. v. United States Bureau of Land Mgmt.*, No. 16-CV-376-MCA-JHR, 2018 WL 2994406, at \*10 (D.N.M. June 14, 2018) (holding that it was arbitrary for the Bureau of Land Management to conclude "that consumption is not 'an indirect effect of oil and gas production because production is not a proximate cause of GHG emissions resulting from consumption'" because "this statement is circular and worded as though it is a legal conclusion"). In adopting it, the Commission disregards the Project's central purpose—to facilitate natural gas consumption by providing new supplies. See EA at 2 (describing the purpose and need for the Project as including "directly meet[ing] the market demand growth that [Mountaineer Gas's] system continues to experience", where Mountaineer Gas is the project shipper, subscribing to the entire pipeline capacity).

<sup>11</sup> *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 768 (2004) (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989)). In order to evaluate circumstances in which downstream impacts of a pipeline facility are reasonably foreseeable results of constructing and operating the proposed facility, I am relying on precisely the sort of "reasonably close causal relationship" that the Supreme Court has required in the NEPA context and analogized to proximate cause. See *id.* at 767 ("NEPA requires a 'reasonably close causal relationship' between the environmental effect and the alleged cause. The Court [has] analogized this requirement to the 'familiar doctrine of proximate cause from tort law.'") (quoting *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 774 (1983)); see also *Paroline v. United States*, 134 S. Ct. 1710, 1719 (2014) ("Proximate cause is often explicated in terms of foreseeability or the scope of the risk created by the predicate conduct."); *Staelens v. Dobert*, 318 F.3d 77, 79 (1st Cir. 2003) ("[I]n addition to being the cause in fact of the injury [the but for cause], the plaintiff must show that the negligent conduct was a proximate or legal cause of the injury as well. To establish proximate cause, a plaintiff must show that his or her injuries were within the reasonably foreseeable risks of harm created by the defendant's negligent conduct.") (internal quotation marks and citations omitted).

<sup>12</sup> 867 F.3d 1357, 1374 (D.C. Cir. 2017).



# STATEMENT

ignore the effect.<sup>13</sup>

“Based on the record here, it is entirely foreseeable that natural gas transported through the Project will be combusted, emitting GHGs that contribute to climate change. As noted above, the Project’s stated purpose is to assist Mountaineer Gas, a local distribution company subscribing to the Project’s full capacity, “in meeting the current and future needs of residents and businesses.”<sup>14</sup> Even where exact information regarding the source of the gas to be transported and the ultimate end use is unknown, the Commission will often be able to produce comparably useful information based on reasonable forecasts of the GHG emissions.<sup>15</sup> This is the case here, where the Commission did estimate and disclose the potential GHG emissions resulting from downstream consumption, utilizing information provided in the record and publicly available analytical tools.<sup>16</sup> Under these circumstances, the Commission must consider the impact from climate change resulting from this likely end use.<sup>17</sup>

“Quantifying the GHG emissions that result from the project is a necessary, but not sufficient, step in meeting the Commission’s obligations to consider the Project’s environmental effects associated with climate change. NEPA and the NGA’s public interest standard require the Commission to consider not just the GHG emissions caused by a new pipeline but the resulting harm. The majority claims that it lacks the means to do this.<sup>18</sup>

“The Commission is incorrect insofar as it concludes that there is no “standard methodology . . . to determine how a project’s contribution to [GHG] emissions would translate into physical effects on the environmental for the purposes of evaluating the project’s impacts on climate change.”<sup>19</sup> That is precisely what the Social Cost of Carbon provides. It translates the long-term damage done by a ton of carbon dioxide into a monetary value, thereby providing a meaningful and informative approach for satisfying an agency’s obligation to consider how its actions contribute to the harm caused by climate change.

“The Commission also claims that it cannot determine whether the Project’s contributions to the harm caused by climate change is significant because there is no standard established “to ascribe significance to a given rate or volume

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<sup>13</sup> *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549 (8th Cir. 2003).

<sup>14</sup> See *supra* note 10 (EA at 2).

<sup>15</sup> In comments recently submitted in the Commission’s pending review of the natural gas certification process, the current Administration’s Environmental Protection Agency recommended a number of tools the Commission can use to quantify the reasonably foreseeable “upstream and downstream GHG emissions associated with a proposed natural gas pipeline.” These include “economic modeling tools” that can aid in determining the “reasonably foreseeable energy market impacts of a proposed project.” United States Environmental Protection Agency, Comments, Docket No. PL18-1-000, at 3-4 (filed June 21, 2018) (explaining that the “EPA has emission factors and methods” available to estimate GHG emissions—from activities upstream and downstream of a proposed natural gas pipeline—through the U.S. Greenhouse Gas Inventory and the Greenhouse Gas Reporting Program); see *Certification of New Interstate Natural Gas Facilities*, Notice of Inquiry, 163 FERC ¶ 61,042 (2018).

<sup>16</sup> EA at 77; Certificate Order, 164 FERC ¶ 61,036 at P 57.

<sup>17</sup> *Sabal Trail*, 867 F.3d at 1371-72; *id.* at 1374.

<sup>18</sup> Certificate Order, 164 FERC ¶ 61,036 at PP 58-60.

<sup>19</sup> *Id.* P 58; see also *id.* PP 59-60.



# STATEMENT

of GHG emissions.”<sup>20</sup> In other words, even if it quantified the harm caused by the Projects using the Social Cost of Carbon, the majority believes this task would be meaningless because it is not aware of an established framework or threshold for determining the significance of that impact.

“But the Commission itself recognizes that a variety of environmental impacts are best considered qualitatively and provides no answer for why the Commission—as the agency with both the mandate and technical expertise to consider the public interest in the Projects—cannot use a quantitative measure as input to making a qualitative determination regarding the significance of the Projects’ contribution to climate change.

As the Commission notes when discussing Project alternatives, the CEQ regulations already outline a framework for determining whether a project’s impacts on the environment will be considered significant.<sup>21</sup> Furthermore, the Environmental Protection Agency recommended this approach in its comments on the Commission’s pending review of the natural gas certification process, explaining that estimates of the Social Cost of Carbon “may be used for project analysis when [the Commission] determines that a monetary assessment of the impacts associated with the estimated net change in GHG emissions provides useful information in its environmental review or public interest determination.”<sup>22</sup>

\* \* \*

“Climate change poses an existential threat to our security, economy, environment, and, ultimately, the health of individual citizens. Unlike many of the challenges that our society faces, we know with certainty what causes climate change: It is the result of GHG emissions, including carbon dioxide and methane—which can be released in large quantities through the production and the consumption of natural gas. Congress determined under the NGA that no entity may transport natural gas interstate, or construct or expand interstate natural gas facilities, without the Commission first determining the activity is in the public interest. This requires the Commission to find, on balance, that a project’s benefits outweigh the harms, including the environmental impacts from climate change that result from authorizing additional transportation. Accordingly, it is critical that, as an agency of the federal government, the Commission comply with its statutory responsibility to document and consider how its authorization of a natural gas pipeline facility will lead to the emission of GHGs, contributing to climate change.

“For these reasons, I respectfully dissent in part.”

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<sup>20</sup> *Id.* P 59.

<sup>21</sup> *Id.* PP 71-72 (citing 40 C.F.R. § 1508.27 (2017), which sets forth a list of factors agencies should rely on when determining whether a project’s environmental impacts are “significant” considering both “context” and “intensity.”).

<sup>22</sup> United States Environmental Protection Agency, Comments, Docket No. PL18-1-000, at 4-5 (filed June 21, 2018).

**People's Dossier: FERC's Abuses of Power and Law  
→ Climate Change & Drilling Impacts Ignored**

**Climate Change & Drilling Impacts Ignored**  
**Attachment 13**, Statement of Commissioner Richard Glick on Mountain Valley Pipeline, LLC , FERC Docket Nos. CP16-10-000 and CP16-13-000, June 15, 2018.



# STATEMENT

## Statement of Commissioner Richard Glick on Mountain Valley Pipeline, LLC Equitrans, L.P.

Date: June 15, 2018

Docket No.: CP16-10-000  
CP16-13-000

Today's order denies rehearing of the Commission's decision to certificate the Mountain Valley Pipeline (MVP) and Equitrans Expansion Projects (Equitrans) (collectively, the Projects). I dissent from the order because it fails to comply with our obligations under section 7 of the Natural Gas Act<sup>1</sup> (NGA) and the National Environmental Policy Act (NEPA).<sup>2</sup> Two issues are particularly egregious.<sup>3</sup> First, the Commission concludes that precedent agreements among affiliates of the same corporation are sufficient to demonstrate that the Projects are needed. I disagree. The mere existence of affiliate precedent agreements—which, by their very nature, are not necessarily the product of arms-length negotiations—is insufficient to demonstrate that the Projects are needed. Second, the Commission concludes that it is not obligated to consider the harm caused by the Projects' contributions to climate change and, in any case, that it lacks the tools needed to do so. In order to meet our obligations under both NEPA and the NGA, the Commission must adequately consider the environmental impact of greenhouse (GHG) emissions on climate change. As I have previously explained, and reiterate below, the Commission has the tools needed to evaluate the Projects' impacts on climate change. It simply refuses to use them. Both of these considerations—the need for the Projects and their contribution to the harm caused by climate change—are critical to determining whether the Projects are in the public interest. Therefore, the Commission's failure to adequately address them is a sufficient basis for vacating this certificate. For these reasons, I dissent from today's order.

### *The Commission Has Not Demonstrated that the Projects Are Needed*

Section 7 of the NGA requires that, prior to issuing a certificate for new pipeline construction, the Commission must find both a need for the pipeline, and that, on balance, the pipeline's benefits outweigh its harms.<sup>4</sup> Today's order asserts that the first requirement—that the pipeline be needed—is satisfied based solely on the existence of precedent

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<sup>1</sup> 15 U.S.C. § 717f (2012).

<sup>2</sup> National Environmental Policy Act of 1969, Pub. L. No. 91-190, 83 Stat. 852.

<sup>3</sup> In addition, I agree with the concerns expressed by my colleague, Commissioner LaFleur, that the Commission should consider conducting regional reviews for the development of natural gas infrastructure and take steps to ensure that the natural gas certification process is transparent, so that all interested parties know how to fully participate in the process. I look forward to exploring these issues as part of the Commission's Notice of Inquiry on the natural gas certification process. *Certification of New Interstate Natural Gas Facilities*, Notice of Inquiry, 163 FERC ¶ 61,042 (2018).

<sup>4</sup> See *Pub. Utils. Comm'n of Cal. v. FERC*, 900 F.2d 269, 281 (D.C. Cir. 1990) (The public interest standard under the NGA includes factors such as the environment and conservation, particularly as decisions concerning the construction, operation, and transportation of natural gas in interstate commerce "necessarily and typically have dramatic natural resource impacts.").



# STATEMENT

agreements among corporate affiliates of the Projects' developers. Although precedent agreements can be useful in assessing whether a pipeline is needed, they may not be, in and of themselves, sufficient to make that demonstration and certainly are not when the precedent agreements involve affiliated entities. Indeed, the Commission itself has recognized that "[u]sing contracts as the primary indicator of market support for the proposed pipeline project also raises additional issues when the contracts are held by pipeline affiliates."<sup>5</sup> In particular, I am concerned that, where entities are part of the same corporate structure, precedent agreements among those entities will not necessarily be negotiated through an arms-length process and considerations other than market demand will bear on the negotiations underlying the agreement.<sup>6</sup> This situation requires that the Commission rely on more than the mere existence of precedent agreements when concluding that these Projects are needed. That is particularly so where, as here, *all* of the precedent agreements are among affiliates of the Projects' developer.<sup>7</sup>

Looking beyond affiliate precedent agreements need not be a difficult exercise. As the Commission stated in the Certificate Policy Statement, "[r]ather than relying only on one test for need, the Commission will consider all relevant factors reflecting on the need for the project," including "demand projections, potential cost saving to consumers, or a comparison of projected demand with the amount of capacity currently serving the market."<sup>8</sup> These and potentially other factors can serve as indicia of need.

The Commission maintains that nothing in its Certificate Policy Statement requires it to look beyond precedent agreements and that the need underlying a shipper's contract is "not lessened because it is affiliated with the project sponsor."<sup>9</sup> But the fact that it is not required to look beyond precedent agreements does not excuse the Commission from failing to recognize that affiliate precedent agreements may not demonstrate need. The Commission's reliance on *Minisink* and *Sabal Trail* is similarly inapt.<sup>10</sup> In both proceedings, the court discussed only the Commission's reliance on precedent agreements generally—not precedent agreements among affiliates—and, therefore, those cases provide no response to the unique concerns posed by affiliate precedent agreements.<sup>11</sup>

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<sup>5</sup> *Certification of New Interstate Natural Gas Pipeline Facilities*, 88 FERC ¶ 61,227, at 61,744 (1999) (Certificate Policy Statement), *clarified*, 90 FERC ¶ 61,128, *further clarified*, 92 FERC ¶ 61,094 (2000).

<sup>6</sup> I am concerned that the corporate relationships among affiliates might cause companies to contract for natural gas pipeline capacity on an affiliated project to enhance the value of the pipeline project.

<sup>7</sup> See *Mountain Valley Pipeline, LLC*, 161 FERC ¶ 61,043 at P 10 & nn.12-16, P 19 & n.12 (2017) (Certificate Order), *order on reh'g*, 163 FERC ¶ 61,197, at P 36 (MVP Rehearing Order) (2018).

<sup>8</sup> Certificate Policy Statement, 88 FERC at 61,747.

<sup>9</sup> MVP Rehearing Order, 163 FERC ¶ 61,197 at P 37 (stating that the Commission's "sole concern" regarding affiliates when considering applications for new certificates "is whether there may have been undue discrimination against a non-affiliate shipper"); *id.* P 40 (explaining that affiliate shippers "are fully at-risk for the cost of the capacity and would not have entered into the agreements had they not determined there was a need for the capacity to move their product to market.").

<sup>10</sup> MVP Rehearing Order, 163 FERC ¶ 61,197 at P 36 & n.88.

<sup>11</sup> *Minisink Residents for Environmental Preservation and Safety v. FERC*, 762 F.3d 97, 111 n.10 (D.C. Cir. 2014); *Sierra Club v. FERC*, 867 F.3d 1357, 1379 (D.C. Cir. 2017) (*Sabal Trail*).



# STATEMENT

The developer of a potential pipeline, especially of a pipeline that is not clearly needed, still has a powerful incentive to secure precedent agreements with one of its affiliates. The Commission consistently relies on those agreements, by themselves, to conclude that a proposed pipeline is needed. This incentive to secure precedent agreements in order to make this showing is, at least potentially, sufficient for a pipeline developer's corporate parent to cause one of its affiliates to enter into a precedent agreement with the developer. The Commission's disregard of this incentive means that its exclusive reliance on precedent agreements cannot be the product of reasoned decisionmaking.

## *The Order Does Not Adequately Evaluate the Projects' Environmental Impact*

Climate change poses an existential threat to our security, economy, environment, and, ultimately, the health of individual citizens.<sup>12</sup> Unlike many of the challenges that our society faces, we know with certainty what causes climate change: It is the result of GHG emissions, including carbon dioxide and methane—which can be released in large quantities through the production and the consumption of natural gas. Accordingly, it is critical that the Commission carefully consider the Projects' contributions to climate change, both in order to fulfill NEPA's requirements and to determine whether the Projects are in the public interest under the NGA.

The Commission, however, goes out of its way to avoid seriously addressing the Projects' contributions to the harm caused by climate change. Although the Commission recognizes its responsibility to evaluate the Projects' contributions to climate change—both by quantifying the Projects' direct and indirect effects on GHG emissions and by “linking downstream GHG emissions to particular climate change impacts through *qualitative or quantitative* analysis”<sup>13</sup>—it refuses to consider the reasonably foreseeable downstream GHG emissions caused by the Projects or to quantify that harm through the use of the Social Cost of Carbon. That is inconsistent with our statutory obligations. The Commission is required by the NGA to find, on balance, that a project's benefits outweigh the harms, including the environmental impacts from climate change that result from authorizing additional transportation. Yet, the Commission appears to be arguing that it can establish public interest prior to examining potential adverse environmental effects and further suggests that it cannot deny a certificate on the basis that the downstream GHG emissions would be too harmful to the environment.<sup>14</sup> This failure to consider all impacts affecting the public interest amounts to a collateral attack on our obligations under NEPA and the NGA.

The Final Environmental Impact Statement (EIS) for the Projects includes a “full-burn” analysis that quantifies the potential downstream GHG emissions associated with combusting the amount of gas that the Projects could transport.<sup>15</sup> The Commission, however, turns a blind eye to these emissions, asserting that they result from “an activity that is attenuated and not reasonably foreseeable.”<sup>16</sup> The record, however, indicates that the combustion of natural gas transported through the Projects is an entirely foreseeable result of the Projects themselves. Mountain

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<sup>12</sup> *Fla. Se. Connection, LLC*, 162 FERC ¶ 61,233, at 2 & n.9 (2018) (Glick, Comm'r, dissenting).

<sup>13</sup> MVP Rehearing Order, 163 FERC ¶ 61,197 at P 271.

<sup>14</sup> *Id.* P 310.

<sup>15</sup> Final EIS at 4-620 (emission quantity based on the full design capacity of the projects). This calculation was made prior to the policy change, announced in *Dominion Transmission, Inc.*, 163 FERC ¶ 61,128, at PP 38-42, 59-63 (2018) (*New Market*), to exclude downstream greenhouse gas emissions calculations in cases where the exact end use location for consumption is not known.

<sup>16</sup> MVP Rehearing Order, 163 FERC ¶ 61,197 at P 272.



# STATEMENT

Valley Pipeline supplied a market study to the record which demonstrated that the primary driver for increased gas consumption in the Southeast is the expanded role of gas-fired power generation.<sup>17</sup>

Under these circumstances, it is certainly reasonable to consider the likely end use of gas transported through the Projects, even if we do not know the precise use to which every molecule of gas will be devoted. NEPA, after all, does not require exact certainty; instead, it requires that the Commission engage in reasonable forecasting and estimation of possible effects of a major federal action where doing so would further the statute's two-fold purpose of ensuring that the relevant agency will "have available, and will carefully consider, detailed information concerning significant environmental impacts" and that this information will also be "available to the larger audience that may also play a role in both the decisionmaking process and the implementation of that decision."<sup>18</sup> As the United States Court of Appeals for the Eighth Circuit explained in *Mid States*—a case that also involved the downstream emissions from new infrastructure for transporting fossil fuels—when the "nature of the effect" (end-use emissions) is reasonably foreseeable, but "its extent is not" (specific consumption activity producing emissions), an agency may not simply ignore the effect.<sup>19</sup> Put differently, the fact that an agency may not know the exact location and amount of GHG emissions to attribute to the federal action is no excuse for assuming that impact is zero. Instead, the agency must engage in a case-by-case inquiry into what effects are reasonably foreseeable and estimate the potential emissions associated with that project—making assumptions where necessary—and then give that estimate the weight it deserves. As noted above, the record here is sufficient to demonstrate that the "nature of the effect" is emissions from end-use combustion.<sup>20</sup>

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<sup>17</sup> WOOD MACKENZIE, INC., SOUTHEAST U.S. NATURAL GAS MARKET DEMAND IN SUPPORT OF THE MOUNTAIN VALLEY PIPELINE PROJECT (Jan. 2016) (filed as Appendix A of Mountain Valley's January 27, 2016 Answer at 14-15) ("The primary driver for increased gas consumption [in the Southeast] has been the expanded role of gas-fired power generation, which grew at an annual rate of 5.8% [between 2010 and 2015] ... Three main factors underscore the need for new gas pipeline capacity and supply in the Southeast. 1. Power generation. The Southeast leads all regions in total projected migration from coal- to gas-fired power generation. 2. Peak period demand growth. In addition to seasonal peak demand spikes in core market sectors, significant pipeline capacity will be required to meet the peak hour dispatch rates in gas-fired power generation. 3. Economic supply displacement. Buyers reduce purchases of current Gulf Coast gas supply sources in favor of more economic Marcellus and Utica production.").

<sup>18</sup> *Dep't of Transp. v. Pub. Citizen*, 541 U.S. 752, 768 (2004) (quoting *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989)). In order to evaluate circumstances in which downstream impacts of a pipeline facility are reasonably foreseeable results of constructing and operating the proposed facility, I am relying on precisely the sort of "reasonably close causal relationship" that the Supreme Court has required in the NEPA context and analogized to proximate cause. See *id.* at 767 ("NEPA requires a 'reasonably close causal relationship' between the environmental effect and the alleged cause. The Court [has] analogized this requirement to the 'familiar doctrine of proximate cause from tort law.'") (quoting *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 774 (1983)); see also *Paroline v. United States*, 134 S. Ct. 1710, 1719 (2014) ("Proximate cause is often explicated in terms of foreseeability or the scope of the risk created by the predicate conduct."); *Staelens v. Dobert*, 318 F.3d 77, 79 (1st Cir. 2003) ("[I]n addition to being the cause in fact of the injury [the but for cause], the plaintiff must show that the negligent conduct was a proximate or legal cause of the injury as well. To establish proximate cause, a plaintiff must show that his or her injuries were within the reasonably foreseeable risks of harm created by the defendant's negligent conduct.") (internal quotation marks and citations omitted).

<sup>19</sup> *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549 (8th Cir. 2003).

<sup>20</sup> See Final EIS at 4-620 (estimating 48 million tons of GHG emissions caused by the combustion of the full design capacity of the projects); *id.* 4-617-4-620 (finding that GHG emissions would contribute incrementally to climate change, producing impacts such as sea level rise, increasing temperatures, decreased availability of water, compromised ecosystems, and extreme weather events); WOOD MACKENZIE, INC., SOUTHEAST U.S. NATURAL GAS MARKET DEMAND IN SUPPORT OF THE MOUNTAIN VALLEY PIPELINE PROJECT (Jan. 2016) (filed as Appendix A of Mountain Valley's January 27, 2016 Answer at 14-15) (indicating primary use of additional gas supplied to the region of the Projects will be for gas-fired generation).



# STATEMENT

Quantifying the GHG emissions that result from the project is not sufficient. The Commission must also identify the harm caused by those emissions. The Social Cost of Carbon does just that, providing a meaningful approach for considering the effects that the Commission's certificate decisions have on climate change. Nevertheless, the Commission again rejects the use of the Social Cost of Carbon arguing that it "cannot meaningfully inform the Commission's decisions on natural gas transportation infrastructure projects under the NGA."<sup>21</sup> The order suggests that the Commission's role is to merely "oversee[] proposals to transport natural gas between...locations" and has "no direct connection to the...end use of natural gas,"<sup>22</sup> thus the Social Cost of Carbon tool is not meaningful to its decision making.<sup>23</sup>

Yet, Congress determined under the NGA that no entity may transport natural gas interstate, or construct or expand interstate natural gas facilities, without the Commission first determining the activity is in the public interest. This requires the Commission to find, on balance, that a project's benefits outweigh the harms, including the environmental impacts associated with the Projects such as the contribution to climate change. By measuring the long-term damage done by a ton of carbon dioxide, the Social Cost of Carbon provides a meaningful method for "linking GHG emissions to particular climate impacts through qualitative or quantitative analysis."<sup>24</sup>

The Commission further claims that the Social Cost of Carbon is not useful because it requires the Commission to undertake a complete cost-benefit analysis, pointing to Council on Environmental Quality (CEQ) Guidance that the Commission should not utilize a monetary cost-benefit analysis when there are "important qualitative considerations."<sup>25</sup> Indeed, the public interest in major infrastructure projects should not be viewed solely through the lens of monetary impacts, particularly when some factors are best considered qualitatively. But the opposite is equally true. The Commission cannot refuse to consider a factor as significant as climate change simply because it is best considered as a function of dollars. Such an approach flies in the face of the same CEQ Guidance, which clearly distinguishes a quantitative assessment of climate change from a complete cost-benefit analysis.<sup>26</sup> The fact that the

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<sup>21</sup> MVP Rehearing Order, 163 FERC ¶ 61,197 at P 281.

<sup>22</sup> *Id.* P 283.

<sup>23</sup> The Commission attempts to distinguish its responsibility to consider the climate change impacts of its decisions from that of other agencies, such as the Forest Service, that the Commission argues "are tied more directly" to fossil fuel production and consumption. But the facts belie this suggestion. The NGA requires the Commission to authorize not just the construction and siting of new interstate pipeline facilities but also the transportation of natural gas over those facilities. To transport natural gas in interstate commerce is no less tied to its consumption than to produce it, and the case law reflects this accord. Like the Commission, the Forest Service does not directly regulate consumption and yet the court found that the Forest Service must evaluate the climate change effects from downstream coal consumption using the Social Cost of Carbon. *Compare High County Conservation Advocates v. Forest Serv.*, 52 F. Supp. 3d 1174, 1191 (D. Colo. 2014) (recognizing that the Forest Service must evaluate and consider the climate change impact from combusting the coal produced as a result of the agency's approval of mining operations) *with Sabal Trail*, 867 F.3d at 1374 (GHG emissions from consumption "are an indirect effect of authorizing [the interstate pipeline project], which [the Commission] could reasonably foresee, and which the agency has legal authority to mitigate.").

<sup>24</sup> MVP Rehearing Order, 163 FERC ¶ 61,197 at P 271.

<sup>25</sup> *Id.* P 284.

<sup>26</sup> See CEQ, *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews* at 32-33 (Aug. 1, 2016) ("[When an agency determines that



# STATEMENT

Social Cost of Carbon is a monetized quantification does not implicate a full cost-benefit analysis, and certainly does not suggest one is required. Instead, CEQ recognizes that both monetized quantification of an impact and cost-benefit analysis are appropriate to be incorporated into the NEPA document, if doing so is necessary for an agency to fully evaluate the environmental consequences of its decisions.<sup>27</sup> In addition, the courts have endorsed—and, in some cases, required agencies to use the Social Cost of Carbon to evaluate climate change when the agency monetizes other impacts of its decision,<sup>28</sup> as the Commission has here through, for example, its consideration of the Projects' effects on capital expenditures, local tax revenues, state tax revenues, ad valorem tax revenues, and property tax revenues.<sup>29</sup>

"One of the most important procedures NEPA mandates is the preparation, as part of every 'major Federal action[] significantly affecting the quality of the human environment,' of a 'detailed statement' discussing and disclosing the environmental impact of the action."<sup>30</sup> Here, however, the Commission claims that it cannot determine whether the Projects' contributions to the harm caused by climate change is significant because there is no standard established "that would assist us to ascribe significance to a given rate or volume of GHG emissions."<sup>31</sup> The Commission contends that, even if it quantified the harm caused by the Projects using the Social Cost of Carbon, this task would be meaningless because it is not aware of an established framework or threshold for determining the significance of that impact.<sup>32</sup>

But the Commission itself recognizes that a variety of environmental impacts are best considered qualitatively and provides no answer for why the Commission—as the agency with both the mandate and technical expertise to consider the public interest in the Projects—cannot use a quantitative measure as input to making a qualitative determination regarding the significance of the Projects' contribution to climate change.

This is particularly troubling because the Commission regularly exercises its expert judgement in this way. In the Final EIS, the Commission makes *qualitative* significance determinations utilizing the quantitative information available, without any defined threshold or national targets. For example, the permanent disturbance of over 3,000 acres of

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a monetized assessment of the impacts of greenhouse gas emissions *or* a monetary cost-benefit analysis is appropriate and relevant to the choice among different alternatives being considered, such analysis may be incorporated by reference or appended to the NEPA document as an aid in evaluating the environmental consequences.") (emphases added) (internal citations omitted), [https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/nepa\\_final\\_ghg\\_guidance.pdf](https://obamawhitehouse.archives.gov/sites/whitehouse.gov/files/documents/nepa_final_ghg_guidance.pdf).

<sup>27</sup> *Id.*

<sup>28</sup> See *Montana Env'tl Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1097 (D. Mont. 2017), *amended in part, adhered to in part sub nom. Montana Env'tl. Info. Ctr. v. U. S. Office of Surface Mining*, No. CV 15-106-M-DWM, 2017 WL 5047901 (D. Mont. Nov. 3, 2017); *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1193 (D. Colo. 2014) (requiring agency to use the Social Cost of Carbon protocol when calculating costs and benefits of action that would generate greenhouse gas emissions).

<sup>29</sup> Final EIS at 4-393–4-399.

<sup>30</sup> *Sabal Trail*, 867 F.3d. at 1367.

<sup>31</sup> MVP Rehearing Order, 163 FERC ¶ 61,197 at P 293.

<sup>32</sup> *Id.* P 295 (Commission staff is "not aware of studies that assess the significance of monetized damages calculated with the Social Cost of Carbon tool.").



# STATEMENT

forest is deemed significant based on expert qualitative judgement.<sup>33</sup> This qualitative approach to significance is aligned with our obligation as “NEPA does not demand that every federal decision be verified by the reduction to mathematical absolutes for insertion into a precise formula.”<sup>34</sup> The Commission, in today’s order, in fact, agrees that siting infrastructure necessarily involves making *qualitative* judgements between different resources as to which there is no agreed-upon *quantitative* value.<sup>35</sup> A wholesale rejection of a Social Cost of Carbon analysis on the grounds that the Commission is “not aware of studies that assess the significance” of the impact amounts is arbitrary and capricious, given that the Commission relies on qualitative judgement elsewhere in the EIS.

Finally, it is worth comparing the Commission’s refusal to fully consider the GHG emissions caused by the Projects or to quantify the harm caused by those emissions using the Social Cost of Carbon with the Commission’s statement that it is “cognizant of the potentially severe consequences of climate change.”<sup>36</sup> Paying lip service to the consequences of climate change means little if the Commission does not use its “best efforts”<sup>37</sup> to identify, evaluate, and disclose the Projects’ contribution to those consequences. Similarly, a commitment to “monitoring climate science and state and national emission targets”<sup>38</sup> is no replacement for an agency fulfilling its NEPA obligation to consider the environmental effects of a proposed action before that action is taken and those effects come to pass.<sup>39</sup>

For these reasons, I respectfully dissent.

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<sup>33</sup> Certificate Order, 161 FERC ¶ 61,043 at P 194 (“[I]n considering the total acres of forest affected, the quality and use of forest for wildlife habitat, and the time requirement for fill restoration in temporary workspaces, the final EIS concludes that the MVP Project will have significant impacts on forested land.”) (citing Final EIS at 4-191).

<sup>34</sup> *Sierra Club v. Lynn*, 502 F.2d 43, 61 (5th Cir. 1974).

<sup>35</sup> MVP Rehearing Order, 163 FERC ¶ 61,197 at P 284.

<sup>36</sup> *Id.* P 281.

<sup>37</sup> *New Market*, 163 FERC ¶ 61,128, at 3-5 (Glick, Comm’r, dissenting in part).

<sup>38</sup> MVP Rehearing Order, 163 FERC ¶ 61,197 at P 281.

<sup>39</sup> *City of Davis v. Coleman*, 521 F.2d 661, 677 (9th Cir.1975).

**People's Dossier: FERC's Abuses of Power and Law  
→ Climate Change & Drilling Impacts Ignored**

**Climate Change & Drilling Impacts Ignored**  
**Attachment 14, Mountain Valley Pipeline DEIS at 3-1,**  
**FERC Docket No. CP16-10.**



**Federal Energy Regulatory Commission**  
 Office of Energy Projects  
 888 First Street, NE, Washington, DC 20426

**FERC/DEIS-D0272**

**September 2016**

# **Mountain Valley Project and Equitrans Expansion Project**

## *Draft Environmental Impact Statement*



**Mountain Valley Pipeline, LLC and Equitrans, LP**  
 FERC Docket Nos.: CP16-10-000 and CP16-13-000

**Cooperating Agencies:**



U.S. Forest Service



U.S. Army Corps of Engineers



U.S. Bureau of Land Management



U.S. Environmental Protection Agency



Pipeline Hazardous Materials Safety Administration



West Virginia Department of Environmental Protection



West Virginia Division of Natural Resources

FEDERAL ENERGY REGULATORY COMMISSION  
WASHINGTON, D.C. 20426

OFFICE OF ENERGY PROJECTS

In Reply Refer To:  
OEP/DG2E/Gas 3  
Mountain Valley Pipeline LLC  
Docket No. CP16-10-000  
Equitrans LP  
Docket No. CP16-13-000

TO THE PARTY ADDRESSED:

The staff of the Federal Energy Regulatory Commission (FERC or Commission) has prepared a draft environmental impact statement (EIS) for the projects proposed by Mountain Valley Pipeline LLC (Mountain Valley) and Equitrans LP (Equitrans) in the above-referenced dockets. Mountain Valley requests authorization to construct and operate certain interstate natural gas facilities in West Virginia and Virginia, known as the Mountain Valley Project (MVP) in Docket Number CP16-10-000, designed to transport about 2 billion cubic feet per day (Bcf/d) of natural gas from production areas in the Appalachian Basin to markets in the Mid-Atlantic and Southeastern United States. Equitrans requests authorization to construct and operate certain natural gas facilities in Pennsylvania and West Virginia, known as the Equitrans Expansion Project (EEP) in Docket No. CP16-13-000, designed to transport about 0.4 Bcf/d of natural gas north-south on its system, to improve system flexibility and reliability, and serve markets in the Northeast, Mid-Atlantic, and Southeast, through interconnections with various other interstate systems, including the proposed MVP. Because the MVP and EEP are interrelated and connected actions, we are analyzing them both together in this single comprehensive EIS.

The draft EIS assesses the potential environmental effects of the construction and operation of the MVP and EEP in accordance with the requirements of the National Environmental Policy Act (NEPA). The FERC staff concludes that approval of the MVP and EEP would have some adverse environmental impacts; however, these impacts would be reduced with the implementation Mountain Valley's and Equitrans' proposed mitigation measures, and the additional measures recommended by the FERC staff in this EIS.

The United States (U.S.) Department of Agriculture Forest Service (FS), U.S. Army Corps of Engineers (COE), U.S. Environmental Protection Agency, U.S. Department of the Interior Bureau of Land Management (BLM), U.S. Department of Transportation, West Virginia Department of Environmental Protection; and West Virginia Division of Natural Resources participated as cooperating agencies in the preparation of the EIS. Cooperating agencies have jurisdiction by law or special expertise with respect to resources potentially affected by the proposals and participate in the NEPA analysis. The BLM, COE, and FS may adopt and use the EIS when they consider the issuance of a Right-of-Way Grant to Mountain Valley for the portion of the MVP that would cross federal lands. Further, the FS may use the EIS when it considers amendments to its Land and Resource Management Plan for the Jefferson National Forest to allow the MVP to cross the Forest. Although the cooperating agencies provided input to the conclusions and recommendations presented in the draft EIS, the agencies will present their own

conclusions and recommendations in their respective permit authorizations and Records of Decision for the projects.

The draft EIS addresses the potential environmental effects of the construction and operation of the proposed facilities. For the MVP those facilities include:

- about 301 miles of new 42-inch-diameter pipeline extending from the new Mobley Interconnect in Wetzel County, West Virginia to the existing Transcontinental Gas Pipe Line Company LLC (Transco) Station 165 in Pittsylvania County, Virginia;
- 3 new compressor stations (Bradshaw, Harris, Stallworth) in West Virginia totaling about 171,600 horsepower (hp);
- 4 new meter and regulation stations and interconnections (Mobley, Sherwood, WB, and Transco);
- 2 new taps (Webster and Roanoke);
- 5 pig<sup>1</sup> launchers and receivers; and
- 36 mainline block valves.

For the EEP those facilities include:

- about 8 miles total of new various diameter pipelines in six segments;
- new Redhook Compressor Station, in Greene County, Pennsylvania, with 31,300 hp of compression;
- 4 new taps (Mobley, H-148, H-302, H-306) and 1 new interconnection (Webster);
- 4 pig launchers and receivers; and
- decommissioning and abandonment of the existing 4,800 hp Pratt Compressor Station in Greene County, Pennsylvania

The FERC staff mailed copies of the draft EIS to federal, state, and local government representatives and agencies; elected officials; regional environmental groups and non-governmental organizations; potentially interested Native Americans and Indian tribes; affected landowners; local newspapers and libraries; parties to this proceeding; and members of the public who submitted comments about the projects. Paper copy versions of this draft EIS were mailed to those specifically requesting them; all others received a compact-disc version. In addition, the draft EIS is available for public viewing on the FERC's website ([www.ferc.gov](http://www.ferc.gov)).<sup>2</sup> A limited number of copies are available for distribution and public inspection at:

Federal Energy Regulatory Commission  
Public Reference Room  
888 First Street NE, Room 2A  
Washington, DC 20426  
(202) 502-8371

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<sup>1</sup> A "pig" is a device used to clean or inspect the interior of a pipeline.

<sup>2</sup> Go to "Documents & Filings," click on "eLibrary," use "General Search" and put in the Docket numbers (CP16-10 or CP16-13) and date of issuance (09/16/16).

Any person wishing to comment on the draft EIS may do so. To ensure consideration of your comments on the proposal in the final EIS, it is important that the Commission receive your comments on or before **December 22, 2016**.

For your convenience, there are four methods you can use to submit your comments to the Commission. The Commission will provide equal consideration to all comments received, whether filed in written form or provided verbally. The Commission encourages electronic filing of comments and has expert staff available to assist you at (202) 502-8258 or [efiling@ferc.gov](mailto:efiling@ferc.gov). Please carefully follow these instructions so that your comments are properly recorded.

- 1) You can file your comments electronically using the [eComment](#) feature on the Commission's website ([www.ferc.gov](http://www.ferc.gov)) under the link to [Documents and Filings](#). This is an easy method for submitting brief, text-only comments on a project;
- 2) You can file your comments electronically by using the [eFiling](#) feature on the Commission's website ([www.ferc.gov](http://www.ferc.gov)) under the link to [Documents and Filings](#). With eFiling, you can provide comments in a variety of formats by attaching them as a file with your submission. New eFiling users must first create an account by clicking on "[eRegister](#)." If you are filing a comment on a particular project, please select "Comment on a Filing" as the filing type; or
- 3) You can file a paper copy of your comments by mailing them to the following address. Be sure to reference the project docket number (CP16-10-000 or CP16-13-000) with your submission::

Kimberly D. Bose, Secretary  
Federal Energy Regulatory Commission  
888 First Street NE, Room 1A  
Washington, DC 20426

- 4) In lieu of sending written or electronic comments, the Commission invites you to attend one of the public comment session its staff will conduct in the project area to receive oral comments on the draft EIS. The dates, time, and locations of the public comment sessions will be released with the Notice of Availability for the draft EIS to be issued by the FERC on September 16, 2016, and mailed to our environmental list.

Any person seeking to become a party to the proceeding must file a motion to intervene pursuant to Rule 214 of the Commission's Rules of Practice and Procedures (18 CFR Part 385.214).<sup>3</sup> Only intervenors have the right to seek rehearing of the Commission's decision. The Commission grants affected landowners and others with environmental concerns intervenor status upon showing good cause by stating that they have a clear and direct interest in this proceeding which no other party can adequately represent. **Simply filing environmental**

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<sup>3</sup> See the previous discussion on the methods for filing comments.

**comments will not give you intervenor status, but you do not need intervenor status to have your comments considered.**

### **Questions**

Additional information about the projects is available from the Commission's Office of External Affairs, at **(866) 208-FERC**, or on the FERC website ([www.ferc.gov](http://www.ferc.gov)) using the eLibrary link. For assistance, please contact FERC Online Support at [FercOnlineSupport@ferc.gov](mailto:FercOnlineSupport@ferc.gov) or toll free at (866) 208-3676; for TTY, contact (202) 502-8659. The eLibrary link also provides access to the texts of formal documents issued by the Commission, such as orders, notices, and rulemakings.

In addition, the Commission offers a free service called eSubscription that allows you to keep track of all formal issuances and submittals in specific dockets. This can reduce the amount of time you spend researching proceedings by automatically providing you with notification of these filings, document summaries, and direct links to the documents. Go to [www.ferc.gov/docs-filing/esubscription.asp](http://www.ferc.gov/docs-filing/esubscription.asp).

**TABLE OF CONTENTS**

**Mountain Valley Project and Equitrans Expansion Project  
Draft Environmental Impact Statement**

**TABLE OF CONTENTS ..... i**

**LIST OF APPENDICES ..... vii**

**LIST OF TABLES ..... viii**

**LIST OF FIGURES ..... xiii**

**ACRONYMS AND ABBREVIATIONS ..... xiv**

**EXECUTIVE SUMMARY ..... ES-1**

**PROPOSED ACTION ..... ES-1**

**PUBLIC INVOLVEMENT ..... ES-2**

**PROJECT IMPACTS AND MITIGATION ..... ES-3**

        Geology and Soils ..... ES-3

        Cultural Resources ..... ES-10

        Air Quality and Noise ..... ES-11

        Reliability and Safety ..... ES-12

**MAJOR CONCLUSIONS ..... ES-15**

**1.0 INTRODUCTION ..... 1-1**

**1.1 BACKGROUND AND THE PRE-FILING REVIEW PROCESS ..... 1-2**

        1.1.1 Mountain Valley Project ..... 1-5

        1.1.2 Equitrans Expansion Project ..... 1-7

**1.2 PURPOSE AND NEED OF THE PROJECTS ..... 1-7**

        1.2.1 Mountain Valley Project ..... 1-8

        1.2.2 Equitrans Expansion Project ..... 1-8

        1.2.3 Project Need ..... 1-8

            1.2.3.1 Mountain Valley Project ..... 1-9

            1.2.3.2 Equitrans Expansion Project ..... 1-10

**1.3 PURPOSE AND SCOPE OF THIS EIS ..... 1-10**

        1.3.1 Federal Energy Regulatory Commission ..... 1-11

        1.3.2 Cooperating Agencies ..... 1-12

            1.3.2.1 U.S. Department of Agriculture - Forest Service ..... 1-12

            1.3.2.2 U.S. Army Corps of Engineers ..... 1-15

            1.3.2.3 U.S. Bureau of Land Management ..... 1-18

            1.3.2.4 U.S. Environmental Protection Agency ..... 1-19

            1.3.2.5 U.S. Department of Transportation – Pipeline and  
                    Hazardous Materials Safety Administration ..... 1-20

            1.3.2.6 West Virginia Department of Environmental Protection ..... 1-20

            1.3.2.7 West Virginia Division of Natural Resources ..... 1-21

        1.3.3 Out-of-Scope Issues ..... 1-22

**1.4 PUBLIC REVIEW ..... 1-24**

**1.5 PERMITS, APPROVALS, AND REGULATORY REQUIREMENTS ..... 1-30**

        1.5.1 Federal Laws Other than the National Environmental Policy Act ..... 1-30

            1.5.1.1 Bald Eagle and Golden Eagle Protection Act ..... 1-30

            1.5.1.2 Clean Air Act ..... 1-30

            1.5.1.3 Clean Water Act ..... 1-31

            1.5.1.4 Endangered Species Act ..... 1-31

## TABLE OF CONTENTS (CONTINUED)

	1.5.1.5 Migratory Bird Treaty Act .....	1-32
	1.5.1.6 National Historic Preservation Act .....	1-32
	1.5.1.7 National Trails System Act .....	1-33
	1.5.1.8 Rivers and Harbors Act .....	1-33
	1.5.1.9 Wilderness Act .....	1-33
	1.5.2 State and Local Laws .....	1-33
<b>2.0</b>	<b>DESCRIPTION OF THE PROPOSED ACTION .....</b>	<b>2-1</b>
2.1	PROPOSED FACILITIES .....	2-1
2.1.1	Pipeline Facilities .....	2-3
2.1.1.1	Mountain Valley Project .....	2-9
2.1.1.2	Equitrans Expansion Project .....	2-10
2.1.2	Aboveground Facilities .....	2-11
2.1.2.1	Mountain Valley Project .....	2-11
2.1.2.2	Equitrans Expansion Project .....	2-15
2.1.3	Cathodic Protection .....	2-18
2.1.3.1	Mountain Valley Project .....	2-18
2.1.3.2	Equitrans Expansion Project .....	2-20
2.2	NON-JURISDICTIONAL FACILITIES .....	2-20
2.2.1	Mountain Valley Project .....	2-20
2.2.1.1	Mobley Interconnect .....	2-21
2.2.1.2	Bradshaw Compressor Station and Mainline Valve 2 .....	2-21
2.2.1.3	Sherwood Interconnect .....	2-21
2.2.1.4	Harris Compressor Station, WB Interconnect, and Mainline Valve 9 .....	2-21
2.2.1.5	Stallworth Compressor Station and Mainline Valve 19 .....	2-21
2.2.1.6	Transco Interconnect and Mainline Valve 36 .....	2-22
2.2.2	Equitrans Expansion Project .....	2-22
2.3	LAND REQUIREMENTS .....	2-22
2.3.1	Pipelines .....	2-24
2.3.1.1	Mountain Valley Project .....	2-24
2.3.1.2	Equitrans Expansion Project .....	2-25
2.3.2	Aboveground Facilities .....	2-26
2.3.2.1	Mountain Valley Project .....	2-26
2.3.2.2	Equitrans Expansion Project .....	2-27
2.3.3	Additional Temporary Workspaces .....	2-28
2.3.3.1	Mountain Valley Project .....	2-28
2.3.3.2	Equitrans Expansion Project .....	2-28
2.3.4	Yards .....	2-28
2.3.4.1	Mountain Valley Project .....	2-29
2.3.4.2	Equitrans Expansion Project .....	2-30
2.3.5	Access Roads .....	2-30
2.3.5.1	Mountain Valley Project .....	2-30
2.3.5.2	Equitrans Expansion Project .....	2-31
2.3.6	Cathodic Protection .....	2-31
2.3.6.1	Mountain Valley Project .....	2-31
2.3.6.2	Equitrans Expansion Project .....	2-31
2.4	CONSTRUCTION PROCEDURES .....	2-31
2.4.1	Mitigation .....	2-32
2.4.1.1	General Federal Energy Regulatory Commission Mitigation Measures .....	2-32

**TABLE OF CONTENTS (CONTINUED)**

2.4.1.2	General Forest Service Mitigation .....	2-35
2.4.2	General Upland Overland Pipeline Construction Methods .....	2-36
2.4.2.1	Survey and Staking .....	2-38
2.4.2.2	Clearing and Grading .....	2-38
2.4.2.3	Trenching .....	2-39
2.4.2.4	Pipe Stringing, Bending, Welding, and Coating .....	2-40
2.4.2.5	Lowering-in and Backfilling .....	2-41
2.4.2.6	Hydrostatic Testing .....	2-41
2.4.2.7	Commissioning .....	2-42
2.4.2.8	Cleanup and Restoration .....	2-42
2.4.2.9	Special Pipeline Construction Procedures .....	2-43
2.4.2.10	Waterbody Crossings .....	2-43
2.4.2.11	Wetland Crossings .....	2-45
2.4.2.12	Road and Railroad Crossings .....	2-46
2.4.2.13	Residential Areas .....	2-47
2.4.2.14	Foreign Utilities .....	2-48
2.4.2.15	Agricultural Lands .....	2-48
2.4.2.16	Rugged Topography .....	2-49
2.4.2.17	Karst Terrain .....	2-50
2.4.2.18	Winter Construction .....	2-50
2.4.3	Aboveground Facility Construction .....	2-51
2.4.4	Monitoring .....	2-51
2.4.4.1	Construction Monitoring and Quality Control .....	2-51
2.4.4.2	Post-Approval Variance Process .....	2-52
2.4.4.3	Post-Construction Monitoring .....	2-53
2.4.4.4	Monitoring of the Right-of-Way Grant for Federal Lands .....	2-53
2.5	CONSTRUCTION SCHEDULE AND WORKFORCE .....	2-55
2.6	OPERATION AND MAINTENANCE .....	2-56
2.6.1	Pipelines .....	2-56
2.6.2	Aboveground Facilities .....	2-57
2.7	FUTURE PLANS AND ABANDONMENT .....	2-57
<b>3.0</b>	<b>ALTERNATIVES .....</b>	<b>3-1</b>
3.1	NO ACTION ALTERNATIVE .....	3-3
3.1.1	Mountain Valley Project .....	3-4
3.1.2	Equitrans Expansion Project .....	3-4
3.2	ALTERNATIVE MODES OF NATURAL GAS TRANSPORTATION .....	3-5
3.2.1	LNG Vessels .....	3-5
3.2.2	Truck Delivery .....	3-6
3.2.3	Railroad Delivery .....	3-6
3.3	SYSTEM ALTERNATIVES .....	3-7
3.3.1	Existing Natural Gas Pipeline Systems .....	3-7
3.3.1.1	Mountain Valley Project .....	3-7
3.3.1.2	Equitrans Expansion Project .....	3-12
3.3.2	Proposed Natural Gas Pipeline Systems .....	3-13
3.3.2.1	Proposed Projects in the Vicinity of the Mountain Valley Project .....	3-13
3.3.2.2	Proposed Projects in the Vicinity of the Equitrans Expansion Project .....	3-16
3.4	ROUTE ALTERNATIVES .....	3-16
3.4.1	Major Alternative Route Concepts Not Evaluated in Detail .....	3-17

## TABLE OF CONTENTS (CONTINUED)

3.4.1.1	Mountain Valley Project .....	3-17
3.4.1.2	Equitrans Expansion Project .....	3-20
3.4.2	Major Route Alternatives .....	3-20
3.4.2.1	Mountain Valley Project .....	3-20
3.4.2.2	Equitrans Expansion Project .....	3-28
3.5	ROUTE VARIATIONS .....	3-28
3.5.1	Mountain Valley Project Route Variations .....	3-28
3.5.1.1	Supply Header Collocation Alternative .....	3-30
3.5.1.2	Burnsville Lake Wildlife Management Area Variation .....	3-33
3.5.1.3	Elk River Wildlife Management Area Variation .....	3-36
3.5.1.4	Variations 110, 110R, and 110J .....	3-39
3.5.1.5	Columbia Gas of Virginia Pipelines Peters Mountain Variation .....	3-43
3.5.1.6	Alternatives for Crossing the Appalachian National Scenic Trail.....	3-46
3.5.1.7	Mount Tabor Variation .....	3-52
3.5.1.8	Blake Preserve Variation .....	3-55
3.5.1.9	Blue Ridge Parkway Variation .....	3-58
3.5.1.10	Variation 35 .....	3-61
3.5.2	Equitrans Expansion Project Variations.....	3-64
3.5.2.1	H-316 Route Variations .....	3-64
3.5.2.2	H-318 Variation .....	3-67
3.5.2.3	M-80 and H-158 Variations .....	3-70
3.5.3	Minor Route Variations .....	3-73
3.5.3.1	Mountain Valley Project Minor Route Variations .....	3-73
3.5.3.2	Equitrans Expansion Project Minor Route Variations .....	3-84
3.6	ABOVEGROUND FACILITY ALTERNATIVES.....	3-89
3.6.1.1	Electric-driven Compression Alternatives .....	3-89
<b>4.0</b>	<b>ENVIRONMENTAL ANALYSIS.....</b>	<b>4-1</b>
4.1	GEOLOGY .....	4-3
4.1.1	Affected Environment.....	4-3
4.1.1.1	Geologic Setting.....	4-3
4.1.1.2	Bedrock Geology .....	4-5
4.1.1.3	Surficial Geology .....	4-10
4.1.1.4	Mineral Resources.....	4-13
4.1.1.5	Geologic Hazards.....	4-21
4.1.1.6	Paleontological Resources .....	4-39
4.1.1.7	Jefferson National Forest .....	4-40
4.1.2	Environmental Consequences .....	4-41
4.1.2.1	Mines.....	4-41
4.1.2.2	Oil and Gas Wells .....	4-44
4.1.2.3	Seismicity and Potential for Soil Liquefaction .....	4-44
4.1.2.4	Slopes and Landslide Potential .....	4-46
4.1.2.5	Karst Terrain .....	4-48
4.1.2.6	Shallow Bedrock .....	4-50
4.1.2.7	Blasting .....	4-50
4.1.2.8	Paleontology .....	4-51
4.1.2.9	Jefferson National Forest .....	4-52
4.2	SOILS .....	4-55
4.2.1	Affected Environment.....	4-55

## TABLE OF CONTENTS (CONTINUED)

4.2.1.1	Soil Limitations.....	4-55
4.2.1.2	Contaminated Soils .....	4-62
4.2.1.3	Ground Heaving.....	4-62
4.2.1.4	Slip-Prone Soils .....	4-63
4.2.1.5	Jefferson National Forest .....	4-63
4.2.2	Environmental Consequences .....	4-64
4.2.2.1	Soil Limitations.....	4-65
4.2.2.2	Contaminated Soils .....	4-67
4.2.2.3	Ground Heaving.....	4-67
4.2.2.4	Slip-Prone Soils .....	4-68
4.2.2.5	Jefferson National Forest .....	4-68
4.3	WATER RESOURCES .....	4-69
4.3.1	Groundwater.....	4-69
4.3.1.1	Affected Environment.....	4-69
4.3.1.2	Environmental Consequences .....	4-77
4.3.1.3	Conclusion .....	4-84
4.3.2	Surface Water Resources .....	4-85
4.3.2.1	Affected Environment.....	4-85
4.3.2.2	Environmental Consequences .....	4-108
4.3.3	Wetlands.....	4-116
4.3.3.1	Affected Environment.....	4-116
4.3.3.2	Environmental Consequences .....	4-120
4.3.3.3	Alternative Measures .....	4-128
4.3.3.4	Compensatory Mitigation .....	4-129
4.3.3.5	Conclusion .....	4-129
4.4	VEGETATION .....	4-131
4.4.1	Affected Environment.....	4-131
4.4.1.1	Vegetation Cover Types.....	4-131
4.4.1.2	Interior Forest.....	4-131
4.4.1.3	Fire Regimes .....	4-136
4.4.1.4	Vegetation Communities of Special Concern or Management .....	4-136
4.4.1.5	Noxious Weeds and Invasive Plants .....	4-138
4.4.2	Environmental Consequences .....	4-140
4.4.2.1	General Impacts on Vegetation Communities .....	4-140
4.4.2.2	Restoration of Vegetation .....	4-144
4.4.2.3	Interior Forest Fragmentation and Edge Effects .....	4-144
4.4.2.4	Special Areas .....	4-147
4.4.2.5	Non-Native Invasive Plants and Weeds.....	4-149
4.4.2.6	Fire Regimes .....	4-150
4.4.3	Conclusions.....	4-150
4.5	WILDLIFE.....	4-152
4.5.1	Affected Environment.....	4-152
4.5.1.1	Migratory Birds.....	4-154
4.5.1.2	Game Species.....	4-157
4.5.1.3	Sensitive and Managed Wildlife Habitats.....	4-157
4.5.2	Environmental Consequences .....	4-160
4.5.2.1	General Impacts on Wildlife.....	4-160
4.5.2.2	Forest Fragmentation and Edge Effects on Wildlife.....	4-161
4.5.2.3	Noise Impacts on Wildlife .....	4-163
4.5.2.4	Light Impacts on Wildlife .....	4-164

**TABLE OF CONTENTS (CONTINUED)**

4.5.2.5	Noxious and Invasive Species.....	4-165
4.5.2.6	Migratory Birds.....	4-165
4.5.2.7	Game Harvesting.....	4-168
4.5.2.8	Sensitive and Managed Wildlife Areas.....	4-169
4.5.3	Conclusion .....	4-170
4.6	<b>FISHERIES AND AQUATIC RESOURCES .....</b>	<b>4-171</b>
4.6.1	Affected Environment.....	4-171
4.6.1.1	Fisheries of Special Concern.....	4-171
4.6.1.2	Jefferson National Forest .....	4-175
4.6.2	Environmental Consequences .....	4-176
4.6.2.1	Sedimentation and Turbidity.....	4-176
4.6.2.2	Loss of Stream Bank Cover .....	4-177
4.6.2.3	Fuel and Chemical Spills .....	4-178
4.6.2.4	Hydrostatic Testing and Water Withdrawals .....	4-178
4.6.2.5	Blasting .....	4-178
4.6.2.6	Jefferson National Forest .....	4-179
4.6.2.7	Fisheries of Special Concern.....	4-180
4.6.2.8	Conclusion .....	4-180
4.7	<b>THREATENED, ENDANGERED, AND OTHER SPECIAL STATUS SPECIES.....</b>	<b>4-182</b>
4.7.1	Federally Listed Threatened, Endangered, and Other Species of Concern.....	4-183
4.7.1.1	Mountain Valley Project .....	4-183
4.7.1.2	Equitrans Expansion Project .....	4-189
4.7.1.3	Conclusion for Federally Listed Threatened, Endangered, and Other Species of Concern .....	4-191
4.7.2	State-Listed and Special Concern Species .....	4-191
4.7.2.1	Mountain Valley Project .....	4-195
4.7.2.2	Equitrans Expansion Project .....	4-196
4.7.2.3	Conclusion for State-Listed and Other Sensitive Species .....	4-196
4.7.3	Jefferson National Forest .....	4-197
4.7.3.1	Federally Listed Species within the Jefferson National Forest .....	4-197
4.7.3.2	Regional Forester’s Sensitive Species .....	4-198
4.7.3.3	Forest Service Locally Rare Species.....	4-200
4.7.3.4	Management Indicator Species .....	4-201
4.7.3.5	Conclusion for the Jefferson National Forest.....	4-201
4.8	<b>LAND USE, SPECIAL INTEREST AREAS, AND VISUAL RESOURCES.....</b>	<b>4-203</b>
4.8.1	Affected Environment.....	4-203
4.8.1.1	Counties Crossed By Pipelines .....	4-203
4.8.1.2	Land Use Types .....	4-203
4.8.1.3	Agricultural Land Conservation Programs .....	4-215
4.8.1.4	Orchards, Specialty Crops, and Organic Farms .....	4-215
4.8.1.5	Existing Residences, Businesses, and Planned Developments .....	4-216
4.8.1.6	Recreational and Special Interest Areas.....	4-217
4.8.1.7	Scenic Byways .....	4-226
4.8.1.8	Coastal Zone Management Act.....	4-227
4.8.1.9	Hazardous Waste and Contaminated Sites.....	4-228
4.8.1.10	Visual Resources.....	4-228

**TABLE OF CONTENTS (CONTINUED)**

- 4.8.1.11 Land Use on Federal Lands .....4-235
- 4.8.2 Environmental Consequences .....4-238
  - 4.8.2.1 Land Use .....4-238
  - 4.8.2.2 Residences and Commercial Lands .....4-243
  - 4.8.2.3 Hazardous Waste Sites.....4-247
  - 4.8.2.4 Recreation and Special Interest Areas.....4-247
  - 4.8.2.5 Visual Resources.....4-256
  - 4.8.2.6 Land Use on Federal Lands .....4-259
- 4.9 SOCIOECONOMICS .....4-268
  - 4.9.1 Affected Environment.....4-268
    - 4.9.1.1 Population and Employment.....4-268
    - 4.9.1.2 Housing .....4-270
    - 4.9.1.3 Public Services.....4-273
    - 4.9.1.4 Tourism .....4-275
    - 4.9.1.5 Transportation and Traffic .....4-281
    - 4.9.1.6 Property Values, Mortgages, and Insurance .....4-283
    - 4.9.1.7 Economy and Tax Revenue .....4-289
    - 4.9.1.8 Environmental Justice .....4-293
    - 4.9.1.9 Jefferson National Forest .....4-300
  - 4.9.2 Environmental Consequences .....4-301
    - 4.9.2.1 Population and Employment.....4-301
    - 4.9.2.2 Housing .....4-305
    - 4.9.2.3 Public Services.....4-307
    - 4.9.2.4 Tourism .....4-308
    - 4.9.2.5 Transportation and Traffic .....4-310
    - 4.9.2.6 Property Values, Mortgages, and Insurance .....4-312
    - 4.9.2.7 Economy and Tax Revenue .....4-314
    - 4.9.2.8 Environmental Justice .....4-320
    - 4.9.2.9 Jefferson National Forest .....4-321
- 4.10 CULTURAL RESOURCES .....4-323
  - 4.10.1 Consultations.....4-323
    - 4.10.1.1 Mountain Valley Project .....4-323
    - 4.10.1.2 Equitrans Expansion Project .....4-328
  - 4.10.2 Consultations with Local Governments and Historical Societies .....4-328
    - 4.10.2.1 Mountain Valley Project .....4-328
    - 4.10.2.2 Equitrans Expansion Project .....4-331
  - 4.10.3 Consultations with State Historic Preservation Offices .....4-332
    - 4.10.3.1 Mountain Valley Project .....4-332
    - 4.10.3.2 Equitrans Expansion Project .....4-334
  - 4.10.4 Consultations with Indian Tribes .....4-334
    - 4.10.4.1 Mountain Valley Project .....4-338
    - 4.10.4.2 Equitrans Expansion Project .....4-339
  - 4.10.5 Affected Environment.....4-342
    - 4.10.5.1 Overview and Survey Results .....4-342
    - 4.10.5.2 Definition of the Area of Potential Effect .....4-344
  - 4.10.6 Previous Surveys and Previously Recorded Cultural Resources .....4-345
    - 4.10.6.1 Mountain Valley Project .....4-345
    - 4.10.6.2 Equitrans Expansion Project .....4-352
  - 4.10.7 Sites Newly Identified from Surveys .....4-353
    - 4.10.7.1 Mountain Valley Project .....4-353
    - 4.10.7.2 Equitrans Expansion Project .....4-366

## TABLE OF CONTENTS (CONTINUED)

4.10.8	Cultural Attachment.....	4-366
4.10.8.1	Mountain Valley Project .....	4-366
4.10.8.2	Equitrans Expansion Project .....	4-373
4.10.9	Environmental Consequences .....	4-373
4.10.9.1	Historic Properties and Assessment of Project Effects .....	4-373
4.10.9.2	Unanticipated Discoveries Plans.....	4-383
4.10.9.3	Compliance with the National Historic Preservation Act .....	4-384
4.11	AIR QUALITY AND NOISE .....	4-386
4.11.1	Air Quality .....	4-386
4.11.1.1	Affected Environment.....	4-386
4.11.1.2	Air Quality Regulatory Requirements .....	4-390
4.11.1.3	Environmental Consequences .....	4-403
4.11.1.4	Radon Exposure .....	4-418
4.11.2	Noise .....	4-420
4.11.2.1	Affected Environment.....	4-421
4.11.2.2	Noise Regulatory Requirements .....	4-434
4.11.2.3	Environmental Consequences .....	4-436
4.12	RELIABILITY AND SAFETY .....	4-459
4.12.1	Safety Standards.....	4-459
4.12.2	Pipeline Accident Data.....	4-468
4.12.3	Impacts on Public Safety.....	4-471
4.12.4	Terrorism and Security Issues.....	4-472
4.13	CUMULATIVE IMPACTS.....	4-474
4.13.1	Other Projects within the Geographic Scope of Analysis .....	4-480
4.13.1.1	Oil and Gas Exploration and Production .....	4-493
4.13.1.2	FERC-jurisdictional Natural Gas Interstate Transportation Projects .....	4-494
4.13.1.3	Other Energy Projects .....	4-496
4.13.1.4	Transportation and Road Improvement Projects.....	4-496
4.13.1.5	Mining Operations .....	4-496
4.13.1.6	Residential and Commercial Developments .....	4-497
4.13.2	Cumulative Impacts on Specific Environmental Resources .....	4-498
4.13.2.1	Water Resources .....	4-498
4.13.2.2	Wetlands .....	4-502
4.13.2.3	Vegetation .....	4-503
4.13.2.4	Wildlife, Fisheries, and Federally-Listed Threatened or Endangered Species .....	4-504
4.13.2.5	Land Use, Recreation, Special Interest Areas, and Visual Resources.....	4-507
4.13.2.6	Cultural Resources .....	4-509
4.13.2.7	Air Quality and Noise .....	4-510
4.13.2.8	Jefferson National Forest .....	4-516
4.13.3	Conclusion .....	4-517
<b>5.0</b>	<b>CONCLUSIONS AND RECOMMENDATIONS.....</b>	<b>5-1</b>
5.1	CONCLUSIONS OF THE ENVIRONMENTAL ANALYSIS .....	5-1
5.1.1	Geological Resources.....	5-1
5.1.2	Soils.....	5-2
5.1.3	Water Resources .....	5-3
5.1.3.1	Groundwater .....	5-3
5.1.3.2	Surface Waters .....	5-3

**TABLE OF CONTENTS (CONTINUED)**

5.1.4 Wetlands..... 5-4  
5.1.5 Vegetation ..... 5-4  
5.1.6 Wildlife and Aquatic Resources..... 5-5  
5.1.7 Special Status Species ..... 5-6  
5.1.8 Land Use, Special Interest Areas, and Visual Resources..... 5-7  
5.1.9 Socioeconomics ..... 5-9  
5.1.10 Cultural Resources ..... 5-10  
5.1.11 Air Quality and Noise ..... 5-11  
    5.1.11.1 Air Quality ..... 5-11  
    5.1.11.2 Noise ..... 5-12  
5.1.12 Reliability and Safety..... 5-13  
5.1.13 Cumulative Impacts ..... 5-14  
5.1.14 Alternatives ..... 5-15  
5.2 FERC STAFF’S RECOMMENDED MITIGATION..... 5-16

## 3.0 ALTERNATIVES

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### Introduction

In this section, we evaluate a range of reasonable alternatives, as required by NEPA (at 40 CFR 1502.14) and Commission policy. We also discuss other alternatives that were eliminated from detailed review because they were not reasonable or practicable. The alternatives may have been presented by the Applicants, cooperating and other governmental resource agencies, affected landowners, the public, and staff. The range of alternative we evaluated include the no action alternative, system alternatives, pipeline route alternatives, route variations, and compressor station equipment alternatives.

The purpose of this evaluation is to determine whether an alternative would be preferable to the proposed action. We generally consider an alternative to be preferable to a proposed action using three evaluation criteria, as discussed in greater detail below. These criteria include:

- the alternative meets the stated purpose of the project;
  - i.e., for the MVP, to alleviate some of the constraints on transporting natural gas production by adding infrastructure to transport lower-priced natural gas from the Appalachian Basin to industrial users and power generators in the Mid-Atlantic and Southeastern United States, as well as to LDCs;
  - i.e., for the EEP, to provide additional volumes of firm capacity of natural gas to be transported north-south on Equitrans' existing system. The creation of expansion capacity on Equitrans' system would allow shippers to transport natural gas produced in the Appalachian Basin to markets in the Northeast, Mid-Atlantic, and Southeastern United States, mainly through an interconnection with the MVP. The EEP would also interconnect with the existing systems of Texas Eastern; Dominion; and Columbia. End-users could include LDCs, industry, and electric power generators;
- is technically and economically feasible and practical; and
- offers a significant environmental advantage over a proposed action.

Each of the cooperating agencies with obligations under NEPA can use this alternatives analysis as part of their decision making process. Individual agencies would ensure consistency with their own administrative procedures prior to accepting the conclusions in this EIS.

### Public Comments

We received 240 comments for the MVP and 3 comments for the EEP, respectively, requesting that we evaluate alternatives. In response to these comments, we requested that the Applicants provide additional environmental information to enable us to compare alternatives to the proposed action. Our analysis of the Applicants' data and assessment of the alternatives can be found below. In some cases, during pre-filing and following filing of the applications, in response to stakeholder, agency, and staff comments, and their own assessments, the Applicants revised their proposals.