

**UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION**

PennEast Pipeline Company, LLC
PennEast Pipeline Project
Docket No. CP15-558-000

COMMENTS OF LOWER SAUCON TOWNSHIP,
NORTHAMPTON COUNTY, PENNSYLVANIA
ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT
FERC\EIS: 0271D

Via Electronic Filing to:
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COMMENTS OF LOWER SAUCON TOWNSHIP, NORTHAMPTON COUNTY,
PENNSYLVANIA ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

Lower Saucon Township, Northampton County, Pennsylvania, welcomes the opportunity to present comments on the Draft Environmental Impact Statement (“Draft EIS” or “DEIS”) for the PennEast Pipeline Project.¹

As we observed in our scoping comments, we respectfully submit that Federal Energy Regulatory Commission (“FERC”) EIS documents evaluating the impacts of interstate natural gas transmission pipelines and associated facilities in the Northeast United States do not fully comply with the requirements of the National Environmental Policy Act and implementing regulations of the Council on Environmental Quality (“CEQ”).

The Interests of Lower Saucon Township

Lower Saucon Township (“Township”) is a “local agency” and an “interested person”² with respect to this project and its potential impacts on natural and cultural resources within the Township. It has sought to conserve and protect those resources and has a long history of doing so.³ On January 21, 2015, the Township Council adopted a Resolution stating that it “opposes and objects to the design, route, and construction of the...PennEast pipeline and Hellertown Lateral. The construction and operation of the proposed pipeline/lateral threatens to significantly damage streams, wildlife habitat,

¹ The Township filed NEPA scoping comments with respect to the environmental review of the PennEast Project. See, “Comments of Lower Saucon Township, Northampton County, Pennsylvania On Environmental Issues and The Scope Of The Draft Environmental Impact Statement”, FERC Docket PF15-1-000, Accession No. 20150225-5312. In those scoping comments we raised concerns about the involvement of Tetra-Tech as a third party preparer of the draft EIS and we predicted a number of problems in the draft EIS if FERC were to conduct business-as-usual in its preparation. The DEIS in fact presents many of the problems and issues we prefigured in our scoping comments, and fails to comply with FERC’s NEPA obligations. While many of those comments are reiterated here, we incorporate herein by reference those scoping comments.

² See, e.g., 40 C.F.R. §1501.7.

³ Lower Saucon Township’s multi-municipal comprehensive plan states: “Saucon Valley’s natural resources, along with its other cultural and historic assets, are significant components of the region’s future economic development.... From historic structures and architecture to unique geologic forms, this portion of Saucon Valley, can offer residents and visitors alike with experiences unparalleled to any in this area of the Commonwealth.” *Our Resources, Our Valley: Multi-Municipal Comprehensive Planning in Pennsylvania’s Saucon Valley* (October 2009) <http://www.lowersaucontownship.org/pdf/jointcompplan.pdf>

existing farm operations, and the quality of life in Lower Saucon Township.”⁴ It timely filed a Motion to Intervene in this matter on October 16, 2015.⁵

The Pennsylvania state Constitution provides that “the people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment.” Pennsylvania Constitution, Art. I, Sec. 27. Pennsylvania’s public natural resources are the common property of all of the people, including generations yet to come. Under Pennsylvania state law:

[A] political subdivision has a substantial, direct, and immediate interest in protecting the environment and the quality of life within its borders, which interest confers upon the political subdivision standing in a legal action to enforce environmental standards. *Susquehanna County v. Commonwealth*, 458 A.2d 929, 931 (Pa. 1983) (county has standing to appeal executive agency order related to operation of sanitary landfill by corporate permit holder); *Franklin Twp.*, 452 A.2d at 720 (municipality and county have standing to appeal agency’s decision to issue permit to operate solid waste facility). Political subdivisions, the Court has recognized, are legal persons, which have the right and indeed the duty to seek judicial relief, and, more importantly, they are “place[s] populated by people.” *Id.* The protection of environmental and esthetic interests is an essential aspect of Pennsylvanians’ quality of life and a key part of local government’s role. Local government, therefore, has a substantial and direct interest in the outcome of litigation premised upon changes, or serious and imminent risk of changes, which would alter the physical nature of the political subdivision and of various components of the environment.

Robinson Twp., Washington County v. Commonwealth, 623 Pa. 564, 595, 83 A.3d 901, 920 (2013).

We submit these comments on the draft EIS for the PennEast Pipeline Project on the basis of the Township’s status as a “local agency” a person who is “interested” and “affected” within the meaning of the regulations of the Council on Environmental Quality (“CEQ”), its status as a “consulting party” within the meaning of the National Historic Preservation Act (“NHPA”) and the regulations of the Advisory Council on Historic Preservation (“ACHP”), and as Intervenor in this matter.

The Draft EIS is incomplete and was prematurely issued

We had previously explained at length, as part of our scoping comments, that the scoping comment period was premature because the information provided to the public regarding the route was conflicting, misleading, and confusing. As a result, the NEPA scoping process could not properly fulfill its function of “determining the scope of issues

⁴ That resolution is filed of record with FERC at the PennEast pre-filing docket, accession number 20150122-5163.

⁵ Accession No. 20151016-5439

to be addressed and...identifying the significant issues related to a proposed action.” 40 C.F.R. §1501.7.

The issuance of this Draft EIS now compounds this problem because the document is incomplete and fails to provide the “hard look” at environmental impacts that NEPA requires. See, e.g., *Northern Plains Resource Council v. Surface Transportation Board*, 668 F.3d 1067, 1083 (9th Cir. 2011) (the fact that an agency “plans to conduct surveys and studies as part of its post-approval mitigation measures” does not constitute a “sufficiently ‘hard look’” under NEPA).

In issuing this incomplete Draft EIS, FERC has violated 40 CFR §1502.22, “Incomplete or unavailable information.”⁶ That regulation provides:

When an agency is evaluating reasonably foreseeable significant adverse effects on the human environment in an environmental impact statement and there is incomplete or unavailable information, the agency shall always make clear that such information is lacking.

(a) If the incomplete information relevant to reasonably foreseeable significant adverse impacts is essential to a reasoned choice among alternatives and the overall costs of obtaining it are not exorbitant, the agency shall include the information in the environmental impact statement.

(b) If 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, the agency shall include within the environmental impact statement:

- (1) A statement that such information is incomplete or unavailable;
- (2) a statement of the relevance of the incomplete or unavailable information to evaluating

⁶ CEQ regulations are binding on FERC. See, e.g., *Piedmont Envtl. Council v. F.E.R.C.*, 558 F.3d 304, 310 (4th Cir. 2009) (“CEQ regulations are binding on federal agencies”, citing *Andrus v. Sierra Club*, 442 U.S. 347, 358, 99 S.Ct. 2335, 60 L.Ed.2d 943 (1979) and holding that FERC violated CEQ regulations when it failed to consult with the CEQ before amending its (FERC's) NEPA implementing regulations); see also, CEQ “Forty Questions” document, available at: <https://www.fws.gov/r9esnepa/CEQNEPAGuidance/40Questions/30-40.pdf> (“31a. *Application of Regulations to Independent Regulatory Agencies*. Do the Council's NEPA regulations apply to independent regulatory agencies like the Federal Energy Regulatory Commission (FERC) and the Nuclear Regulatory Commission?”

A. The statutory requirements of NEPA's Section 102 apply to “all agencies of the federal government.” The NEPA regulations implement the procedural provisions of NEPA as set forth in NEPA's Section 102(2) for all agencies of the federal government. The NEPA regulations apply to independent regulatory agencies, however, they do not direct independent regulatory agencies or other agencies to make decisions in any particular way or in a way inconsistent with an agency's statutory charter. Sections 1500.3, 1500.6, 1507.1, and 1507.3.”

reasonably foreseeable significant adverse impacts on the human environment; (3) a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment, and (4) the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community. For the purposes of this section, "reasonably foreseeable" includes impacts which have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason.

The FERC Draft EIS essentially ignores these requirements. The Draft EIS is patently incomplete, and is based on woefully inadequate information. While the Draft EIS frequently admits that surveys, plans, wetland delineations, mitigation plans, and numerous other elements are incomplete, it ignores CEQ requirements that the EIS include "a statement of the relevance of the incomplete or unavailable information to evaluating reasonably foreseeable significant adverse impacts on the human environment." It fails to include "a summary of existing credible scientific evidence which is relevant to evaluating the reasonably foreseeable significant adverse impacts on the human environment." It fails to include "the agency's evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community." Thus, the Draft EIS violates 40 CFR §1502.22(b)(2), (3) and (4).

A reader need go no further than the DEIS Executive Summary and the first few pages of section I of the DEIS to find numerous examples in which the staff admits that the information relevant to environmental impacts is incomplete or not yet available.⁷ Yet the DEIS fails to comply with the CEQ requirements. Here are a few examples:

p. ES-4 (p. 10 of PDF): The Draft EIS refers to incomplete information for geotechnical investigation for HDD crossings, on which it purports to blame a lack of permission to access the proposed ROW, but also on changes in the proposed alignment and design, and variation in geological materials. Thus, PennEast has chosen to alter the proposed alignment and its design, and neither FERC nor PennEast can claim that lack of access is the singular reason that the draft EIS fails to include adequate geotechnical data for the environmental impact analysis.

p. ES-5 (p. 12 of PDF): PennEast and FERC's draft EIS have not identified the final hydrostatic test water withdrawal locations, and therefore provide no site-specific analysis of the impacts of those withdrawals. Instead, it recommends that prior to construction PennEast identify the water withdrawal sources and locations, and provide

⁷ Numerous additional examples are listed in our detailed page by page comments on the Draft EIS in the final section of these comments.

documentation that all necessary permits and approval have been obtained for withdrawal from each source. Thus, there has been no site-specific evaluation of impacts of water withdrawals or for the subsequent discharge of the water.

p. ES-6 (p. 12 of PDF): The Draft EIS asserts that no permanent fill or loss of wetland area would result from operation and construction of the pipeline. But this bald assertion is unsupported by facts that would justify this broad unqualified claim, and ignores such phenomena as alteration of subsurface hydrology that can damage wetlands and alter their area and cross-section. See, for example, the Princeton Hydro report, *The Short and Long-Term Consequences of the Construction of the PennEast Pipeline– A White Paper*,” Princeton Hydro LLC, July 2015, Accession No. 20150810-5177, which states:

Another often overlooked impact caused by pipelines (whether wastewater, stormwater or gas/oil) is that their construction can actually alter the movement of groundwater. Essentially when the pipe and pipe trench intercept the shallow aquifer, groundwater flows can be prevented from flowing normally leading to changes in base flow conditions or the hydrologic properties of adjacent wetlands. The pipeline and pipeline trench can function as a subsurface diversion forcing groundwater away from vital stream and wetland resources.

More fundamentally, the Draft EIS is based on an admittedly incomplete survey of wetlands (and thus necessarily incomplete wetland identification and delineation) along the pipeline survey corridor. *Ipsa facto*, FERC cannot have meaningfully analyzed the impacts to wetlands in areas that it has not yet surveyed.

p. ES-12 (p. 18 of PDF): The Draft EIS acknowledges that it has clearly inadequate information on cultural resources, and that much of the survey corridor has not even been surveyed for cultural resources. It also alludes to ongoing unresolved disputes between PennEast and State Historic Preservation Officers, who have withheld their concurrence. Nor has the National Park Service provided its concurrence on impacts to trails and other cultural resources. While it recommends that no construction commence until surveys are completed, and treatment plans reviewed by consulting parties, such statements simply confirm that FERC lacks adequate information for its decision making.

p. 1-3 (p. 39 of PDF): The Draft EIS refers to a claim of need for the project, but fails to provide any factual support for any actual demand justifying PennEast’s claim of need to provide one billion cubic feet/day, 1.1 million dekatherms per day (MMDth/d) of natural gas to NJ, PA and "surrounding states" as represented by the project.⁸ Instead, the applicant purports to offer justifications such as "provide enhanced competition among natural gas suppliers and pipeline transportation providers", "additional supply flexibility, diversity and reliability", "ability to capture pricing differentials between the various interconnected pipelines." This is not actual public need; these are private competitive

⁸ PennEast has repeatedly asserted to the public that this natural gas is sufficient to “serve 4.7 million homes.” Yet it does not provide facts demonstrating any reasonable forecasted actual demand justifying such additional pipeline capacity.

interests. Moreover, the DEIS appears to uncritically accept the applicant's statements at face value, and lacks the analysis of need that NEPA requires. See further discussion of purpose and need, *infra*.

p. 1-5 (p. 41 of PDF): The Draft EIS states that: "As an element of its review, the USACE must consider whether a proposed project avoids, minimizes, and compensates for impacts on existing aquatic resources, including wetlands, to strive to achieve the national regulatory goal of net loss of values and functions." Aside from the DEIS's incorrect and extremely ironic reference to the "national regulatory goal of net loss of values and functions", we are at a loss to understand how the Army Corps of Engineers can make such determinations in the face of such inadequate surveys and incomplete information, and without final wetlands identifications, delineations, and mitigation plans.

As we said, these are just examples from the first few pages of the DEIS. We note throughout these comments other examples of the incomplete and inadequate character of this DEIS.

PennEast's and FERC's approach to compliance with the National Historic Preservation Act is flawed.

PennEast's and FERC's approach to compliance with the National Historic Preservation Act and the regulations of the ACHP is flawed.⁹ Among other things, PennEast and FERC have failed to properly consult with Lower Saucon Township as required by NHPA regulations.

The DEIS (p. 4-183, p. 281 of PDF) states:

We have received three requests for consulting party status. These were from Judith Sullivan, Ramapough Conservancy Inc., Marilyn Cummings, Delaware Township Historic Advisory Committee, and Karen Lutz, Appalachian Trail Conservancy.

These statements ignored Lower Saucon Township's request, as a local government, to PennEast and to FERC requesting that Lower Saucon Township be recognized as a consulting party for purposes of NHPA reviews. The Township's scoping comments on the draft EIS specifically requested recognition as a consulting party for NHPA purposes. Our scoping comments stated:

Under the regulations of the Advisory Council on Historic Preservation, FERC must:

⁹ Other commenters have similarly objected to the DEIS's flawed approach to compliance with the NHPA and ACHP regulations. We echo and concur with those objections. See, for example, comments of Kingwood Township (Accession No. 20160902-5239) and of the New Jersey Conservation Foundation (Accession No. 20150715-5137).

- (i) Identify consulting parties either pursuant to §800.3(f) or through the NEPA scoping process with results consistent with §800.3(f);
- (ii) Identify historic properties and assess the effects of the undertaking on such properties in a manner consistent with the standards and criteria of §§ 800.4 through 800.5, provided that the scope and timing of these steps may be phased to reflect the agency official's consideration of project alternatives in the NEPA process and the effort is commensurate with the assessment of other environmental factors.

36 C.F.R. §800.8(c)(1).

A representative of each municipality through which the pipeline may cut is to participate formally as a consulting party in accordance with 36 C.F.R. part 800:

- (3) Representatives of local governments. A representative of a local government with jurisdiction over the area in which the effects of an undertaking may occur is entitled to participate as a consulting party.

36 C.F.R. §800.2(c)(3).

Moreover, the regulations governing this process provide that “[c]ertain individuals and organizations with a demonstrated interest in the undertaking may participate as consulting parties” either “due to the nature of their legal or economic relation to the undertaking or affected properties, or their concern with the undertaking’s effects on historic properties.” 36 C.F.R. §800.2(c)(5). Lower Saucon Township meets that test, as the Township has a specific interest in preserving intact historic properties within the Township for their historic and social value as demonstrated by its history of partnership with the Lower Saucon Historical Society and its expenditure of public funds for preservation and maintenance of National Register-listed properties within the township.

For the record, Lower Saucon Township requests to participate as a “consulting party” in the Section 106 process with respect to all historic properties within its jurisdiction.

*Comments of Lower Saucon Township, Northampton County, Pennsylvania on Environmental Issues and the Scope of the Draft Environmental Impact Statement, pp.70-71 (Accession No. 20150225-5312) (emphasis supplied).*¹⁰

¹⁰ See also, Township Motion to Intervene, p. 2 (“Lower Saucon Township also requested participation as a “consulting party” in the National Historic Preservation Act Section 106

Despite these requests, PennEast and FERC have failed to consult with the Township.

PennEast’s Resource Report 4 and the draft EIS identified a number of historic properties within Lower Saucon Township in close proximity to the Project. They include the following references:

Resource Report 4, Table 4.7-2, Previously Recorded Historic Architectural Resources within 1/4 Mile of the Project Corridor in Pennsylvania

MP 71.7, HL 0.1	086688	Site No. 3: Farmhouse, Barn and Outbuildings	Eligible: 9/17/1996
MP 71.6 HL 0.0	086674	Limekiln	Undetermined: 1972
HL 1.1	101330	Severn Homestead	Not Eligible: 3/8/1993
71.7	096307	Anthony Oberly Farm	Eligible: 11/14/1989
72.0	143013	Christman Farm; Pichel Farm	Eligible: 8/21/2006

The draft EIS (p. 4-191) identifies the following listed/eligible resources within the Township:

DEIS TABLE 4.9.2-4, Aboveground Resources Listed/Eligible to the NRHP or Requiring Additional Documentation Located within the Indirect APE in Pennsylvania

086688	Site No. 3: Farmhouse, Barn and Outbuildings	Eligible	Consult the Pennsylvania SHPO regarding effects
096307	Anthony Oberly Farm	Eligible	Consult the Pennsylvania SHPO regarding effects
143013	Christman Farm; Pichel Farm	Eligible	Consult the Pennsylvania SHPO regarding effects

The PennEast Resource Report 4, Appendix 4D also identifies the following resources within the Township:

Table 4D-1, Newly Identified Historic Architectural Resources in Pennsylvania

1.8 (HL) NO-0177	Lower Saucon	Northampton	Needs Additional Research
2.0 (HL) NO-0176	Lower Saucon	Northampton	Needs Additional Research

The DEIS (p. 4-182; p. 280 of PDF) states:

Representatives of local governments within the Project area are participants in the Section 106 review of the Project and would be provided cultural resources information within their jurisdiction for review and comment. When cultural resources survey and/or evaluation reports are available within a local government’s jurisdiction, PennEast would

process with respect to all historic properties located within the Area of Potential Effects within its geographical boundaries.”

provide the information to the representative of a local government for review and comment.

Despite this assertion in the draft EIS, no such information has been provided to Lower Saucon Township “for review and comment.” Nor have cultural resource survey or evaluation reports been provided to the Township “for review and comment.”

The DEIS (p. 4-182, p. 280 of PDF) claims:

Additionally, in December 2015, PennEast consulted with local organizations in Pennsylvania to request their input regarding known cultural resources located within the Project boundaries. The local organizations contacted were the following: Society for Pennsylvania Archaeology...Lower Saucon Township Historical Society...Northampton County Historical and Genealogical Society, Pennsylvania Canal Society, Preservation Pennsylvania[.]”

We have inquired of the Lower Saucon Township Historical Society whether PennEast has consulted with it regarding historic properties in the Township. The Lower Saucon Township Historical Society reports that PennEast has not consulted with it. To the contrary, the Historical Society confirmed that it did not receive consultation communications from PennEast in December 2015 as the draft EIS claims.¹¹

Moreover, any consultation with Lower Saucon Township would necessarily have been inadequate because the draft EIS and PennEast’s Resource Report 4 show that substantial areas of the proposed pipeline route within Lower Saucon Township (both mainline and Hellertown Lateral) have not even been surveyed for cultural resources.

The Township respectfully submits that the NHPA Section 106 process, as incorporated in the DEIS, is flawed and therefore objects to the DEIS on this basis. Inasmuch as FERC has incorporated the NHPA Section 106 process into its NEPA process (36 C.F.R. §800.8) and the DEIS for the PennEast Pipeline project, the preparation of the DEIS must meet the requirements of 36 C.P.R. § 800.8(c)(1). Under §800.8(c)(2)(ii), if a consulting party objects to the DEIS for not meeting the standards in § 800.8(c)(1) or because the DEIS’s substantive resolution of the effects on historic properties is inadequate, the federal agency “*shall* refer the matter to the Council.” 36 C.P.R. §800.8(c)(2)(ii) (emphasis added). As the Township must be deemed a

¹¹ Lower Saucon Township is by no means the only entity that is reporting to FERC that the DEIS claims of NHPA consultation are incorrect or false. See, e.g., Letter dated September 1, 2016 from the Mayor of Kingwood Township to FERC Secretary Kimberly Bose, Accession No. 20160902-5239: “FERC’s assertions in the DEIS that PennEast consulted with the local committees is false. PennEast never offered the local committees, including the Kingwood Township Historical Society, consulting party status nor did PennEast ever provide the committees with any survey reports...PennEast and FERC did not consult the local committees or townships at all, let alone at an early enough time for the consultation to serve its intended purposes.” (p. 4 of PDF).

“consulting party” as a matter of law pursuant to 36 C.F.R. § 800.8(c)(2)(ii), FERC must refer the objections to the ACHP for resolution.

As set forth in more detail below, the Township objects to the DEIS for not meeting the standards in § 800.8(c)(1) and for providing inadequate evaluation and resolution of adverse effects.

ACHP regulations establish five requirements for preparation of a DEIS that complies with the NHPA: (1) identify consulting parties pursuant to § 800.3(f); (2) identify historic properties and assess the effects on those properties pursuant to §§ 800.4 through 800.5; (3) consult the consulting parties regarding the effects during ‘NEPA scoping, environmental analysis, and the preparation of NEPA documents;’ (4) involve the public; and (5) develop alternatives and proposed mitigation measures in consultation with the consulting parties and describe those alternatives and mitigation measures in the DEIS. 36 C.F.R. § 800.8(c)(1).

The regulations specifically require that “During preparation of the EA or draft EIS (DEIS) the agency official shall” complete these five requirements. Thus, meeting the requirements *after* the issuance of the DEIS is inadequate. 36 C.F.R. § 800.8(c)(1) (emphasis added). The Township objects to the DEIS for its failure to meet all five requirements.

1. Failure to identify consulting parties.

The regulations provide: “the representative of a local government with jurisdiction over the area in which the effects of undertaking may occur is entitled to participate as a consulting party.” 36 C.F.R. § 800.2(c)(3) (emphasis added). Despite having a right to formally participate as a consulting party, PennEast and FERC did not identify the Township as a consulting party and did not consult with it. The Township specifically requested that it participate as a consulting party. The DEIS mentions the Lower Saucon Historical Society, but does not even suggest that it was a designee of the Township for purposes of NHPA consultation for this project (it was not) and fails to confirm that the Township has a continuing right to be a consulting party under the NHPA.

Because FERC never identified the Township as a consulting party, the Township objects to the DEIS for failure to meet the requirements in 36 C.F.R. § 800.8(c)(1)(i).

2. Failure to identify historic properties and assess their potential effects.

Because PennEast and FERC did not complete cultural resource surveys for a substantial portion of the route,¹² they could not have sufficiently identified the historic

¹² The DEIS states that, within Pennsylvania: “Between August 2014 and July 2015, PennEast performed cultural resource surveys for 56.3 miles (approximately 2730 acres) along the proposed pipeline route and where survey permission was granted (Wyatt et al. 2015). An additional 380 acres were surveyed within the study corridor and the limit of disturbance between

properties within the area of the undertaking. Despite its knowledge and admission that PennEast had not even completed the initial step of identifying historic properties, FERC released the DEIS. Rather than complying with the clear and explicit requirements of the ACHP regulations, FERC plans instead to require PennEast to complete the process after issuance of the Final EIS, and after agency action to issue a certificate of public convenience and necessity. This turns the required process on its head, purporting to allow agency action first, and thereafter identify historic properties and evaluate the effects of the undertaking on those properties.

The DEIS states (p. 4-200; PDF p. 298) that:

Compliance with section 106 of the NHPA has not been completed for the Project. PennEast still needs to complete surveys and evaluation for archaeological sites and historic architecture for the Project. To ensure the FERC's responsibilities under the NHPA and its implementing regulations are met, we recommend that:

- PennEast should not begin construction of facilities and/or use of all staging, storage, or temporary work areas, and new or to-be-improved access roads until:
- PennEast files with the Secretary:
 - remaining cultural resources survey report(s);
 - site or resource evaluation report(s) and avoidance/treatment plan(s), as required;
 - the Project's recommended effects to historic properties in Pennsylvania and New Jersey; and
 - comments on the cultural resources reports and plans from the Pennsylvania and New Jersey SHPOs, as appropriate.
- the Advisory Council on Historic Preservation is afforded an opportunity to comment if historic properties would be adversely affected; and
- the FERC staff reviews and the Director of the OEP approves the cultural resources reports and plans, and notifies PennEast in writing that treatment plans/mitigation measures (including archaeological data recovery) may be implemented and/or construction may proceed.

This recommendation sets up a process that violates ACHP regulations and the NHPA. ACHP regulations explicitly state that identification of historic properties must be

July 2015 and February 2016.” (DEIS, pp. 4-184 to 4-185; PDF, pp. 282-283). Table 4.9.2-3 (“PennEast Pipeline Segments Pending Surveys in Pennsylvania”) identifies those portions of the pipeline route that have not yet been surveyed, including significant portions within Lower Saucon Township. The DEIS (p. 4-198; PDF, p. 296) also admits that: “PennEast has not completed all cultural resources field investigations, provided reports, or completed consultation for the Project...There are approximately 1,032 acres in Pennsylvania that still require archaeological surveys...Additionally, there are 148 parcels in Pennsylvania that still require aboveground resources/historic architecture surveys.”

done during preparation of the DEIS. Thus, FERC's plan to complete identification at a later date—indeed, after the completion of the NEPA process and an agency final action whether to issue a certificate of public convenience and necessity—clearly violates the regulations.

The ACHP regulations also require the agency to assess potential effects on the potentially impacted historic sites during the preparation of the DEIS. FERC could not fully meet this requirement in preparing the DEIS because it did not even complete the necessary surveys for historic properties. FERC released the DEIS for public comment before PennEast provided complete information regarding effects and without the required consultation with consulting parties. The DEIS contains almost no analysis by FERC of the potential effects on historic properties. For example, the DEIS is utterly void of any landscape studies or even any recognition that impacts to viewsheds should be analyzed, and alternatives reviewed to mitigate impacts to viewsheds of historic districts and sites.¹³ Instead, FERC's DEIS states it will examine the effects whenever PennEast finally provides the necessary identification information, sometime prior to construction. This violates the ACHP regulations and the NHPA. The Township objects to the DEIS because FERC failed to include an assessment of the effects on historic properties, in violation of 36 C.F.R. § 800.8(c)(1)(ii).

3. Failure to consult the consulting parties.

Not only did FERC fail to identify the consulting parties in the DEIS, it also failed to actually consult with the consulting parties as required by law and regulation.¹⁴ Under the regulations, a consulting party must be involved “at the early stages of the project planning” so the party can fully consult on all stages from identifying historic sites, conducting surveys of those sites, and mitigating effects. 36 C.F.R. § 800.1 et seq. In addition, the agency must consult the consulting parties during “NEPA scoping, environmental analysis, and the preparation of NEPA documents.” 36 C.F.R. § 800.8(c)(1)(iii). FERC and PennEast did not consult with the Township.

The DEIS describes the required consultation process as follows: “When cultural resources survey and/or evaluation reports are available within a local government's jurisdiction, PennEast would provide the information to the representative of local government for review and comment.” But PennEast never did so. Without this

¹³ The utter vacuity of landscape studies and effects analysis reflected in the DEIS violates even FERC's own “Guidelines for Reporting On Cultural Resources Investigations for Pipeline Projects,” which requires recognition of cultural landscapes, historic viewsheds, and project effects on such features. The DEIS simply offers generic, boilerplate statements that impacts on unspecified “visual resources” would be “minimal.”

¹⁴ While the Township reports that it received no communications from PennEast regarding historic resources and the NHPA Section 106 process, “Consultation” is more than sending out a letter. It “means the process of seeking, discussing, and considering the views of other participants, and, where feasible, seeking agreement with them regarding matters arising in the section 106 process.” 36 CFR §800.16.

information, the Township as a consulting party could not meaningfully participate in any consultation process.

4. Failure to involve the public.

FERC and PennEast have failed to adequately involve the public in the Section 106 process. For example, contrary to its false claims, it did not involve the Lower Saucon Township Historical Society, which would have been able to offer comments and information. Even worse, by planning to complete the section 106 process after the expiration of the DEIS public comment period, and only prior to construction, FERC plans to effectively *exclude* the public from meaningful involvement.

The lack of public consultation was a significant criticism of the PennEast/FERC process by the New Jersey Historic Preservation Officer. See, Letter dated September 1, 2016 from the Mayor of Kingwood Township to FERC Secretary Kimberly Bose, Accession No. 20160902-523, p. 5.¹⁵ As was noted by Kingwood Township, this lack of public involvement, along with the failure to consult with local governments and historic groups, deprived PennEast and FERC of local expertise regarding the presence of historic sites and the likely impacts to those sites by the Project.¹⁶

The Township objects to the DEIS because FERC failed to sufficiently involve the public before its release, thus violating 36 C.F.R. § 800.8(c)(1)(iv).

5. Failure to develop alternatives and develop mitigation measures

Because FERC and PennEast have failed to fully identify historic properties or assess the effects of the project on those properties, they also cannot and have not developed alternatives or mitigation measures based on the analysis of site-specific effects. FERC cannot develop or consider avoidance alternatives without knowing first what properties may be affected and what the impacts are from the proposed action. Similarly, FERC cannot develop proper mitigation measures for effects without knowing what and where the site-specific effects will be. FERC recognizes in the DEIS that mitigation measures will need to be developed by PennEast and approved by FERC at some point before construction. See, DEIS at pp. 4-199, 4-200. This approach is flawed. As with the other ACHP regulatory requirements set forth above, the development of alternatives and mitigation measures should have occurred prior to the issuance of the DEIS and should have been disclosed in it.

¹⁵ These criticisms were acknowledged, but downplayed, in the DEIS. See, DEIS, p.4-179.

¹⁶ This failure to consult with or involve local “consulting parties” or other knowledgeable entities or persons seems to be an endemic, structural problem in the DEIS. For example, the DEIS states that: “NPS [National Park Service] also noted the Project crossings through the Delaware and Lehigh National Heritage Corridor and the Crossroads of the American Revolution National Heritage Area. NPS requested PennEast to contact State and local land managers associated with these areas. To date no communications has [sic] been filed.” DEIS, p. 4-181, p. 279 of PDF.

In recognition of the importance of the development of alternatives to the proposed action, ACHP regulations require that FERC consult with consulting parties to develop alternatives that might limit or avoid the effects on historic and cultural resources and include them in the DEIS. 36 C.F.R. § 800.8(c)(1)(v). These alternatives must reflect site-specific conditions, and must be analyzed prior to issuance of the DEIS.

FERC's limited analysis of alternatives failed to include or develop alternatives based on the project's effects on historic and cultural resources. Even if FERC eventually works with consulting parties to develop alternatives as required under NHPA, that development will almost certainly not occur until after FERC has already made its determinations under NEPA and the Natural Gas Act. Those determinations will preclude full consideration of alternatives and mitigation actions. Thus, developing the alternatives at that stage will not serve the intended purpose.

The DEIS fails to describe any actual mitigation measures developed by PennEast or analyzed by FERC with respect to effects to historic and cultural resources except a few generic boilerplate references to "fencing" and "monitoring" proposed by PennEast.¹⁷ Rather than developing alternatives and mitigation measures for consultation, and for disclosure in the DEIS as part of its environmental review and decisionmaking, FERC improperly kicks the can down the road: "[i]f it is determined that adverse effects to historic properties would result from the Project, PennEast would be required to develop avoidance plans and treatment plans along with Memoranda of Agreements." DEIS, p. 4-199.

In light of the fact that PennEast and FERC do not yet know the extent of the impacts nor even to have fully identified all of the sites in the APE, the DEIS inevitably—if not necessarily—lacks a full discussion of mitigation measures. This failure violates ACHP regulations and jeopardizes the historic resources.

The Township objects to the DEIS because it fails to meaningfully discuss alternatives and mitigation measures, as required by 36 C.F.R. § 800.8(c)(1)(v).

6. The DEIS's substantive resolution of the effects on historic properties is inadequate.

The Township also objects to the DEIS because its substantive resolution of the effects on historic properties is inadequate. As we note above, the DEIS does not analyze the effects on historic properties and provides no resolution regarding the effects. Instead, FERC says it will provide any resolution "prior to construction." The failure to address and describe effects, resolution, avoidance, mitigation, and treatment plans, with respect to all historic properties prior to issuance of the DEIS is improper and violates regulatory requirements.

¹⁷ These PennEast-proposed measures are not articulated or developed in the DEIS and FERC does not meaningfully comment on them. It is noteworthy that the NJSHPO does not concur with the adequacy of many of these measures for properties in New Jersey and that any Pennsylvania SHPO concurrence lacked involvement by appropriate consulting parties.

As outlined above, the Township objects to the DEIS because it fails to meet any of the requirements found in 36 C.F.R. §800.8(c)(1) and fails to provide substantive resolution of the adverse effects. Because the Township is a mandatory consulting party, under 36 C.F.R. §800.8(c)(2), FERC is required to refer the Township's objections to the Council for resolution. The flawed and inadequate DEIS should be withdrawn, and then revised, supplemented, and reissued for public comment.

The DEIS Fails to Include Other Responsible Viewpoints and Fails to Discuss FERC Disagreement With Them Or To Explain Why Such Viewpoints Were Not Accepted or Included.

A number of commenters and intervenors have submitted expert reports and information, particularly regarding the lack of need for the project, the exaggeration of the purported benefits of the project, and the economic impacts of the project. The DEIS ignores all of these comments and expert reports.

These comments and reports include, but are not limited to, expert comments and reports by Dr. Jeffrey Shafer, economist with a Ph.D. from Yale University and 30 years of experience in applying economic analysis to public policy. His filings indicate that he served as an economist in the Federal Reserve System, and on the staff of the President's Council of Economic Advisers and the OECD. He served as Assistant Secretary and subsequently Undersecretary of the U.S. Treasury for International Affairs from 1993 to 1997. He has taught at Yale, Carnegie Mellon, Columbia and Princeton Universities.

The Delaware Riverkeeper filed expert reports by Labyrinth Consulting Services, Inc., an energy consulting firm that concludes that the PennEast Pipeline project is not justified by market needs and would represent an oversupply of 53% in the market the Project purports to serve. *See, e.g.*, FERC Accession No. 20150629-5252

The New Jersey Conservation Foundation filed a report by international energy markets consulting firm Skipping Stone, "Analysis of Public Benefit Regarding PennEast Pipeline." That report presents central challenges to the applicant's reliance on non-arms-length transactions as a foundation for claims of market need, and to its claims that the ratepayers will benefit from the project. It concludes that "most of the sponsors of the proposed line are the regulated utility-shippers' unregulated affiliates that are likely committing ratepayer dollars to provide equity returns that will be realized by the unregulated affiliates." It also filed an expert report (Accession No. 20151109-5014) by the Goodman Group, Ltd., a consulting firm specializing in pipeline economics and regulation, energy and regulatory economics, and economic development. The Goodman report analyzed PennEast's claims of the project's economic benefit and finds those claims to be wildly overstated.

The Delaware Riverkeeper filed an expert report by Princeton Hydro, LLC, a firm with specialized expertise in aquatic and terrestrial ecology, water resources engineering, and geotechnical investigations. The report, "The Short and Long-Term Consequences of the Construction of the PennEast Pipeline—A White Paper (Accession number 20150810-

5177) identified numerous environmental impacts of the Project that are not adequately mitigated or that are not subject to mitigation.

Oil Change International filed an expert report to the docket, “A Bridge Too Far: How Appalachian Basin Gas Pipeline Expansion Will Undermine U.S. Climate Goals” (July 2016)” (Accession No. 20160808-5124) addressing the greenhouse gas and climate change impacts of the natural gas development that will be “unlocked” by construction of pipeline from the Marcellus Shale region.

These reports should be accepted and their viewpoints reflected in the EIS. By completely ignoring all of these expert reports and viewpoints in the DEIS, FERC is violating its obligations under NEPA to consider, disclose and discuss responsible opposing viewpoints. *See, Ctr. for Biological Diversity v. U.S. Forest Serv.*, 349 F.3d 1157 (9th Cir. 2003) (subsection of NEPA implementing regulations that permits agency to modify alternatives included and analyzed in final environmental impact statement (EIS) as response to comments filed with agency does not eliminate agency's obligation under separate provision to disclose and discuss responsible opposing viewpoints in final EIS, citing 40 C.F.R. §§ 1502.9(b), 1503.4(a)(1))

CEQ regulations provide:

- (a) Draft environmental impact statements shall be prepared in accordance with the scope decided upon in the scoping process. The lead agency shall work with the cooperating agencies and shall obtain comments as required in part 1503 of this chapter. *The draft statement must fulfill and satisfy to the fullest extent possible the requirements established for final statements in section 102(2)(C) of the Act.* If a draft statement is so inadequate as to preclude meaningful analysis, the agency shall prepare and circulate a revised draft of the appropriate portion. *The agency shall make every effort to disclose and discuss at appropriate points in the draft statement all major points of view on the environmental impacts of the alternatives including the proposed action.*
- (b) Final environmental impact statements shall respond to comments as required in part 1503 of this chapter. The agency shall discuss at appropriate points in the final statement any responsible opposing view which was not adequately discussed in the draft statement and shall indicate the agency's response to the issues raised.

40 C.F.R. § 1502.9 (emphasis supplied).

The DEIS Fails to Explain the Purpose or Need for the Hellertown Lateral, or to Consider Alternatives, Including the “No-Action” Alternative, with respect to the Hellertown Lateral.

The DEIS failed to consider alternatives to the Hellertown Lateral portion of the proposed action, including the elimination of the Hellertown Lateral. The elimination of the Hellertown Lateral would essentially constitute a “no action” alternative to that portion of the pipeline. The Hellertown Lateral is functionally independent of the pipeline mainline. The PennEast Pipeline can be constructed without the Hellertown Lateral, which appears to simply provide an interconnection point with the UGI distribution system, which is currently more than adequately served with existing natural gas supplies and pipeline systems.

The actual benefit of the Hellertown Lateral itself has not been analyzed or considered in the DEIS, although the Hellertown Lateral will cause significant environmental impacts over its 2.1-mile length, including deforestation of a substantial area of forest and cutting through the Bull Run natural area, a Natural Heritage Area of statewide significance recognized by the Lehigh Valley Planning Commission.¹⁸

¹⁸ See, Township Scoping Comments, 20150225-5312, Appendix 7, “NATURAL HERITAGE INVENTORY OF LEHIGH AND NORTHAMPTON COUNTIES, PENNSYLVANIA - UPDATE 2013 (June 2013), p. 111. The Bull Run Natural Heritage Area is a “forested area includ[ing] nearly 200 acres of interior forest. The area between the forest edge and 100 meters into the forest is ... highly influenced by edge effects: increased levels of light, noise, temperature, wind and dryness. These effects create much different habitat conditions than those found in interior forest. Interior forest conditions are essential habitat for interior forest dwelling birds. This area has been previously impacted by construction that has fragmented even larger forested areas.” Any intrusion of the PennEast Pipeline into this area is a cumulative effect that threatens to further degrade this important forest environment. These impacts are not addressed. The Natural Heritage Inventory document recommended a number of Conservation Actions for the Bull Run Natural Heritage Area. Examples include:

- Maintaining the current hydrologic regime, as critical to the community and rare species at this site.
- Controlling invasive species to prevent native species from being crowded out. Invasive species have begun to colonize parts of the forest interior due to prior fragmentation.
- Allowing the forested habitats to achieve and maintain old growth conditions. ***Avoid fragmenting the existing forested areas with additional buildings or infrastructure.***

The intrusion of a pipeline into this area would frustrate and damage those conservation actions.

CEQ regulations at 40 C.F.R. §1502.14 (“Alternatives including the proposed action”) state:

This section is the heart of the environmental impact statement. Based on the information and analysis presented in the sections on the Affected Environment (§1502.15) and the Environmental Consequences (§1502.16), it should present the environmental impacts of the proposal and the alternatives in comparative form, thus sharply defining the issues and providing a clear basis for choice among options by the decisionmaker and the public. In this section agencies shall:

- (a) Rigorously explore and objectively evaluate all reasonable alternatives, and for alternatives which were eliminated from detailed study, briefly discuss the reasons for their having been eliminated.
- (b) Devote substantial treatment to each alternative considered in detail including the proposed action so that reviewers may evaluate their comparative merits.
- (c) Include reasonable alternatives not within the jurisdiction of the lead agency.
- (d) Include the alternative of no action.

The DEIS fails to “rigorously explore” the alternative of elimination of the Hellertown Lateral and the resulting reduction of environmental impacts. It fails to explain the specific purpose of, or the need for, the Hellertown Lateral. While the DEIS offers several broad statements regarding the purposes of the overall project (DEIS, p. 1-3, p. 39 of PDF), these statements point merely to the competitive interests of the shippers and practically admit that there is no need for this pipeline capacity to convey gas to cover actual new demand. Rather, it focuses on pro forma claims of the economic advantages of “enhanced competition”, “additional supply flexibility, diversity and reliability”, “liquid points for trading”, and the “ability to capture pricing differentials between the various interconnected market pipelines.”¹⁹

Without a clear explanation of the rationale, need, and justification for the Hellertown Lateral, the DEIS fails to provide a basis for authorization of construction of the lateral or for evaluating its benefits in comparison to its environmental impacts.

According to the DEIS, “FERC’s evaluation criteria for selecting alternatives include whether they:

¹⁹ The Township’s scoping comments filed to the PennEast docket reviewed at some length the lack of adequate showing of need for the overall project. These comments apply perforce to the Hellertown Lateral and we do not repeat them here, but incorporate them by reference.

- are technically and economically feasible, reasonable, and practical;
- offer a significant environmental advantage over the proposed action;
- and
- have the ability to meet the objectives of the project.

We submit that the removal of the Hellertown Lateral from the scope of the project is clearly “technically and economically feasible, reasonable, and practical”, as it simply avoids the construction of a 2.1 mile lateral to the mainline. It offers a significant environmental advantage over the proposed action, as it will eliminate all of the environmental impacts of pipeline construction and maintenance along that section. This would eliminate impacts to a Natural Heritage Area of statewide significance and protect the forested area from unnecessary and damaging fragmentation. The overall objectives of the project could still be met, with the only impact being to one shipper who might fail to gain the competitive advantage of transportation via the lateral.

The draft environmental impact statement fails to provide a detailed analysis of the project purpose and need, supported by substantial evidence.

The scale of the project and the volume of natural gas – 1 BCF/day – that PennEast proposes to transport through this pipeline belies PennEast’s public claims that its purpose is to serve residential customers within Eastern Pennsylvania and New Jersey.²⁰ The PennEast public website explicitly tied the 1 billion cubic feet per day to “4.7 million homes heated.” See PennEast infographic at www.penneastpipeline.com. The notion that its 1 billion cubic feet of natural gas per day will serve, as PennEast’s infographic claims, “4.7 million homes heated” as “local customers” is patently misleading. To place PennEast’s claim in context, the number of households in the entire state of New Jersey is only 3,186,418 (2009-2013). See, <http://quickfacts.census.gov/qfd/states/34000.html>

The project appears to be offer redundant services in the region, as it will run nearly parallel to an already existing large scale transmission line that is owned and operated by Transcontinental Gas Pipe Line Co. Transco’s pipeline itself is currently in the process of capacity upgrades, the Leidy Southeast Expansion Project.

Another new pipeline proposal, “Diamond East”, is also anticipated to cut a somewhat parallel path, creating another redundant line to PennEast. We are advised that Diamond East is an expansion project of Transco’s existing Pennsylvania pipeline designed to move 1 Bcf/d from its Leidy line in Lycoming County to near Trenton in Mercer County, New Jersey.

Indeed, the Project’s Resource Reports and the Draft EIS practically admit that there is no need for this pipeline capacity to convey gas to cover *actual new demand*.

²⁰ Apparently recognizing that its claims of need for 1 BCF/day capacity far outstripped any rational forecasted need for natural gas in Pennsylvania and New Jersey, PennEast later belatedly and vaguely altered its statements of need to refer to unspecified “surrounding states.”

Rather, it focuses on *pro forma* claims of the economic advantages of “enhanced competition”, “additional supply flexibility, diversity and reliability”, “liquid points for trading”, and the “ability to capture pricing differentials between the various interconnected market pipelines.”²¹

PennEast Pipeline has stated that it has contracts with shippers for the gas it intends to transport, and argues that those contracts are sufficient proof of the need for the pipeline.²² If so, then the FERC should have required the disclosure of those contracts as part of the environmental review. *Certification of New Interstate Natural Gas Pipeline Facilities*, 88 FERC ¶ 61,227 (1999) (“If an applicant has entered into contracts or precedent agreements for the capacity, it will be expected to file the agreements in support of the project.”) (p. 25).

These contracts are with entities that are controlled by PennEast Pipeline, LLC members themselves. One of the shippers is UGI Energy Services, LLC, which is a 22% interest holder in PennEast Pipeline Company LLC, and its project manager. Another shipper, PSEG Power LLC, is a 22% interest holder in PennEast. Yet another shipper, South Jersey Gas Company, is a subsidiary of South Jersey Industries, a holding company, and 22% interest holder. Another shipper, Pivotal Utility Holdings, d/b/a Elizabethtown Gas, is a subsidiary of ALG Resources, a 22% interest holder. Another shipper, New Jersey Natural Gas, is a subsidiary of New Jersey Resources, a 22% interest holder in PennEast. Finally, Texas Eastern Transmission is a subsidiary of Spectra Energy, which provides the direct access to the eastern Marcellus Shale region of northeast Pennsylvania.²³

²¹ See, e.g., DEIS, p. 1-3; PennEast Resource Report No. 1, p. 1-2: “An additional supply of natural gas to the region will provide a benefit to consumers, utilities and electric generators by providing enhanced competition among suppliers and pipeline transportation providers. The Project will satisfy the needs of shippers seeking (i) additional supply flexibility, diversity and reliability; (ii) liquid points for trading in locally produced gas, including Marcellus Shale gas; (iii) direct access to premium markets in the northeast and mid-Atlantic regions; (iv) the ability to capture pricing differentials between the various interconnected market pipelines; and (v) firm access to long-lived dry gas reserves.”

²² PennEast’s Resource Report 10 claimed that: “PennEast is not aware of any non-PennEast system alternatives that would satisfy the purpose and need of the Project. The purpose and need of the Project includes the need to satisfy the service that has been subscribed by the Project shippers under long-term firm contracts, which include multiple, unique receipt and delivery point combinations located along the PennEast system. PennEast is not aware of any other pipeline alternative that could satisfy the unique receipt and delivery point combinations subscribed under its agreements with the Project shippers.” Given the fact that the shippers are controlled by members of PennEast, these “unique combinations” were within the control of PennEast, calculated to provide financial benefit to its members, and not necessarily driven by external market demand.

²³ Spectra Energy claims that “this [PennEast] project will provide Spectra Energy with a strategic opportunity to leverage existing assets by directly connecting northeast Pennsylvania Marcellus shale production to the Texas Eastern Transmission and Algonquin Gas Transmission systems, and will allow Spectra Energy to further strengthen its relationship with some of its

The commitments of these entities under the terms of PennEast’s open season announcement are based on requests for a maximum daily quantity (“MDQ”). PennEast Pipeline Company, LLC Announces Binding Open Season For Transportation Service, August 11, 2014, http://penneastpipeline.com/openseason/OpenSeason_Announcement.pdf. As is customary, the contracts are likely to be based on maximum contract demand and maximum daily quantity.

In weighing the various alternatives and project impacts, FERC cannot uncritically accept PennEast’s claims regarding the project’s purpose and need that, in essence, foreclose FERC from accepting any alternative except the routes, delivery points, and capacity proposed by PennEast in a self-dealing, non-arms-length arrangement. PennEast’s *ipse dixit* statement of need in its Resource Report 10 is a classic example of a statement of “need” that is calculated to foreclose *ab initio* any consideration of alternatives that is different from its exact proposed project.

The needs analysis for this proposed pipeline must be vigorous and exhaustive. Such a vigorous and exhaustive analysis is nowhere to be found in the DEIS. FERC should require a robust analysis of the underlying data because unique conditions are driving the market to drill for natural gas. These conditions include, for example, poor regulatory oversight of the drilling; exaggerated Wall Street hype; an oversupply of gas; the recent numerous approvals for infrastructure to move it; and an increasing interest in its export. FERC must determine whether there is an actual demand, in the United States, for the amount of gas being produced and proposed to be transported. Recent reports and articles suggest that there is not. See, e.g., Daniel Gilbert and Tom Fowler, “Natural Gas Glut Pushes Exports”, *Wall Street Journal* (October 4, 2012), available at <http://online.wsj.com/article/SB10000872396390444223104578036403362012318.html>.

Therefore, FERC should have gathered all the information necessary to perform a complete and accurate needs analysis and presented it in the DEIS. This could have included information such as the following:

1. current data on the recoverable reserves in Pennsylvania that could feasibly be transported through this pipeline;
2. Estimated Ultimate Recovery (EUR) of shale plays by the USGS within the project area;
3. holdings by the relevant suppliers within the project area;
4. reserves and EURs of holdings by the relevant suppliers within the project area based upon USGS data and methodology;
5. percentage of wells drilled and capped by the relevant suppliers within the project area;
6. yearly data on producing wells owned by the relevant suppliers within the project area;

biggest customers.” <http://www.spectraenergy.com/Operations/New-Projects-and-Our-Process/New-Projects-in-US/PennEast-Pipeline-Project/>

7. contracts between the relevant suppliers and the PennEast Pipeline Company;
8. contracts between the relevant suppliers and the purchasers of the transported gas;
9. total current retail demand of natural gas in the relevant markets;
10. projected retail demand of natural gas in the relevant markets from 2015 to 2020, from 2020 to 2025, and from 2025 to 2030;
11. projected supply of natural gas for the relevant markets from 2015 to 2020, from 2020 to 2025, and from 2025 to 2030;
12. number of billion cubic feet per day (Bcf/d) of new transmission capacity approved to serve the northeast markets over the past 5 years;
13. number of billion cubic feet per day (Bcf/d) of new transmission capacity approved to serve the northeast markets over the past 5 years, currently in operation;
14. number of billion cubic feet per day (Bcf/d) of new transmission capacity approved to serve the northeast markets over the past 5 years, but not yet in operation;
15. number of billion cubic feet per day (Bcf/d) of new transmission capacity planned to serve the northeast markets that are currently in pre-filing stages;
16. number of billion cubic feet per day (Bcf/d) of new transmission capacity planned to serve the northeast markets that are in the application stage; and
17. reports on total United States gas reserves, EURs, transmission capacity, yearly production, storage, market demand over the past five years, and projections over the next five, ten, fifteen, and twenty years.

The analysis of the project's purpose and need should have evaluated the possibility that the pipeline will be used to transmit natural gas for export, rather than the domestic use claimed by PennEast. It should not refuse to analyze this possibility as "outside the scope of this EIS" (DEIS, p. 1-17, p. 53 of PDF) and should not accept at face value PennEast's claims of project purpose.

Section 3 of the Natural Gas Act provides in pertinent part:

[N]o person shall export any natural gas from the United States to a foreign country or import any natural gas from a foreign country without first having secured an order of the Commission authorizing it do so. The Commission shall issue such order upon application unless, after opportunity for hearing, it finds that the proposed exportation or importation will not be consistent with the public interest.

15 U.S.C. §717b(a).

In 2006, FERC acquired “exclusive authority to approve or deny an application for the siting, construction, expansion, or operation of an LNG terminal.” 15 U.S.C. §717b(e)(1); see, Department of Energy Delegation Order No. 00-004.00A (May 16, 2006).

The Dominion Cove Point LNG export facility²⁴ would provide a primary route for shipping Marcellus shale gas to global markets. In Dominion Cove Point LNG, LP’s (“DCP”) own words:

DCP is especially well positioned to export gas production from the Marcellus Shale, one of the largest shale plays with among the lowest development costs[.] The pipeline industry in the Marcellus area has recently experienced a surge in pipeline expansions as the gas producers look for ways to get their gas to markets. With export authorization, DCP would be able to provide an additional outlet for these growing domestic gas supplies.²⁵

DCP also owns a pipeline system that underlies these shale plays and provides “direct access” to the terminal, thus linking Cove Point to the larger regional gas fields, connecting their production to the world market. *Id.* Indeed, DCP already has contracted with Japanese and Indian companies to accept LNG from its terminal.²⁶

FERC cannot ignore the probability that the PennEast pipeline will be utilized as a conduit for natural gas export from the United States.²⁷ The current situation creates a

²⁴ Dominion Cove Point LNG, LP, Docket No. CP13-113-000

²⁵ DCP, Application for Export to the Department of Energy 9 (Oct. 3, 2011).

²⁶ Application at 2; see also Reuters, Dominion Signs Deals to Export U.S. Natural Gas from Cove Point (Apr. 1, 2013), available at: <http://www.reuters.com/article/2013/04/01/us-lng-dominion-export-idUSBRE9300CH20130401>.

²⁷ A legal question exists whether a taking of private property for purposes of an interstate natural gas pipeline that will be used to transmit natural gas for foreign export is consistent with the Fifth Amendment Takings Clause and *Kelo v. City of New London*, 545 U.S. 469 (2005). A taking must be for the purpose of a “public use.” The limitations on government power imposed by the Takings Clause raise the question of whether FERC can certify a project as in the “public necessity and convenience”, thus authorizing the exercise of eminent domain power, where it entails the taking of land for “domestic use” of natural gas, while another federal agency considers its export, or where FERC fails to make a full and independent inquiry into the potential for such export for the private financial benefit of natural gas companies. In *Transcontinental Gas Pipe Line Company*, Docket No. CP12-30-000, Order Issuing Certificate And Granting Abandonment (November 2, 2012), the Commission stated:

Commenters also suggest that the gas transported by the proposed project is ultimately going to be exported. There is no indication in the record that any of the customers that have subscribed to the capacity created by the proposed facilities contemplate using that capacity to export natural gas. In any event, no gas may be exported without prior NGA... section 3 authorization from the Department of Energy (DOE). That DOE proceeding would be the appropriate forum to address the concerns of the commenters.

“reasonably foreseeable” result – gas transmitted through the proposed pipeline is likely to be exported during the life of the project. Therefore, the implications and impacts of such exports must be studied in detail. 18 C.F.R. §380.12(a)(8).²⁸

The draft environmental impact statement should have included, but did not, a detailed analysis, supported by substantial evidence, of all “connected actions”, all “cumulative actions”, all “similar actions”, all alternatives including the “no action” alternative and mitigation measures, and the project impacts, including direct, indirect, and cumulative impacts.

We respectfully submit that prior FERC environmental reviews for interstate natural gas transmission pipelines have failed to adhere to NEPA. It has based its analysis on incomplete information, including an inadequate assessment of water resources, forest ecosystems, and air quality and climate change impacts. It has refused to take a hard look at the indirect and cumulative impacts of the projects. It has failed to properly consider purpose and need and reasonable alternatives. This DEIS is no different.

Transcontinental Gas Pipe Line Company, LLC, 141 FERC P 61091 (2012), n.16. We respectfully disagree that the DOE proceeding would be the appropriate forum to address concerns that the power of eminent domain would be used to justify the appropriation of private property for purposes of transmission of natural gas for export. Such a DOE proceeding would be too late because property would already have been acquired. Moreover, issues relating to the public convenience and necessity for the pipeline, and its potential use by PennEast Pipeline LLC and its controlled entities for transmission of gas for export rather than for domestic “public use” must be addressed in *this* proceeding, and cannot be deferred or delegated to DOE. The potential for export must be independently analyzed not only for the “public convenience and necessity” finding, but also because it raises NEPA issues of “connected action” and “indirect impacts.” See also, Executive Order 13406 of June 23, 2006, “*Protecting the Property Rights of the American People*,” Section 1: “It is the policy of the United States to protect the rights of Americans to their private property, including by limiting the taking of private property by the Federal Government to situations in which the taking is *for public use*, with just compensation, and for the purpose of benefiting the general public and not merely for the purpose of advancing the economic interest of private parties to be given ownership or use of the property taken.” 71 Fed. Register 36973 (emphasis supplied).

²⁸ The Energy Information Administration (EIA) has concluded that increased natural gas exports lead to increased natural gas prices in the domestic market. Larger export levels lead to larger domestic price increases, while rapid increases in export levels lead to large initial price increases that moderate somewhat in a few years. Slower increases in export levels lead to more gradual price increases but eventually produce higher average prices during the decade between 2025 and 2035. U.S. Energy Information Administration, *Effect of Increased Natural Gas Exports on Domestic Energy Markets*, as requested by the Office of Fossil Energy (January 19, 2012), available at <http://www.eia.gov/analysis/requests/fe/>. In addition, EIA found that “increased LNG exports result in higher total primary energy use and energy-related CO₂ emissions in the United States.” *Id.* Since FERC is required to consider the price of gas and environmental impact in its assessment of public convenience and necessity, the exporting of gas would be contrary to the domestic public interest.

Prior mitigation plans have been inadequate or submitted too late for meaningful public review and comment. Prior EIS have failed to properly evaluate the social cost of carbon emissions by failing to utilize available interagency tools in order to evaluate climate change impacts due to pipeline projects. Prior EIS have failed to include an adequate analysis of the project's indirect and cumulative effects and impermissibly based their conclusion that the project's significant environmental impacts could be adequately mitigated on substantially incomplete information. The EIS reviews have also underestimated potential air quality and climate change impacts and neglected the long-term impacts of forest fragmentation. Moreover, they have impermissibly dismissed the "no action" alternative, or based its "no action" alternatives analysis on a flawed interpretation of NEPA's causation requirements. This DEIS suffers from the same problems.

Moreover, FERC has approved such interstate natural gas transmission pipeline projects despite the failure of the applicants to obtain key permits prior to certificate issuance, including a Section 401 Water Quality Certification from the state agencies with jurisdiction.²⁹ It should not repeat these errors in this case.

The Commission has previously erred in concluding that the environmental consequences of induced gas production were not indirect effects of or connected to the project that the Commission must consider in its environmental review. Additional natural gas production in the Marcellus Shale region is a reasonably foreseeable consequence of these demand-creating projects which "unlock" natural gas resources in the region. Thus, the Commission should have, but did not, consider the environmental consequences of this development.

The Commission has previously erred in concluding that project cumulative impacts are not "significant". This DEIS appears to make similar errors.

The Commission has previously erred in concluding that project significant environmental impacts will be avoided or adequately minimized. The Commission has reached such conclusions despite a lack of information or on the basis of unsupported assumptions, and where significant information remains to be submitted for review. It does the same here.

The Commission has improperly ignored the long-term impacts of pipeline project fragmentation of interior forest habitats. FERC's analyses underestimate the permanent impacts that fragmenting interior forest may have on species, and its mitigation measures are insufficient to sufficiently address these significant impacts. This DEIS suffers from the same inadequacies.

²⁹ FERC purports to justify this practice on the basis that awaiting issuance of a state Section 401 water quality certification prior to issuance of its Certificate would unduly delay pipeline projects. *See, e.g., Northwest Pipeline GP*, Order Denying Clarification and Rehearing, 145 FERC ¶61,013 (2013). Such a justification does not survive a plain reading of the unambiguous language of Section 401 of the Clean Water Act.

The Commission is under a duty to consider not only this specific pipeline route, but also all “connected actions”, “cumulative actions”, and “similar actions”:

To determine the scope of environmental impact statements, agencies shall consider 3 types of actions, 3 types of alternatives, and 3 types of impacts. They include:

- (a) Actions (other than unconnected single actions) which may be:
 - (1) Connected actions, which means that they are closely related and therefore should be discussed in the same impact statement. Actions are connected if they:

* * *

- (ii) Cannot or will not proceed unless other actions are taken previously or simultaneously.
 - (iii) Are interdependent parts of a larger action and depend on the larger action for their justification.
 - (2) Cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.
 - (3) Similar actions, which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography....

- (b) Alternatives, which include:
 - (1) No action alternative.
 - (2) Other reasonable courses of actions.
 - (3) Mitigation measures (not in the proposed action).

- (c) Impacts, which may be: (1) Direct; (2) indirect; (3) cumulative.

40 C.F.R. §1508.25.

CEQ regulations expressly prohibit a federal agency from avoiding preparation of an EIS by “breaking [an action] down into small component parts.” 40 C.F.R. §1508.27(b)(7) (1996). Closely related or “connected” actions must be discussed in the same impact statement. *See* 40 C.F.R. §1508.25(a)(1) (1996); *see also* *Town of Huntington v. Marsh*, 859 F.2d 1134, 1142 (2d Cir.1988), *cert. denied*, 494 U.S. 1004, 110 S.Ct. 1296, 108 L.Ed.2d 473 (1990); *Taxpayers Watchdog, Inc. v. Stanley*, 819 F.2d 294, 298 (D.C. Cir.1987); *City of Rochester v. United States Postal Serv.*, 541 F.2d 967, 972 (2d Cir.1976).

An EIS must also describe the direct and indirect effects, and cumulative impacts of, a proposed action. 40 C.F.R §§1502.16, 1508.7, 1508.8; *Northern Plains Resource Council v. Surface Transportation Board*, 668 F.3d 1067, 1072-73 (9th Cir. 2011). These terms are distinct from one another: 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 also “caused by the action” but:

are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect effects 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 effect on air and water and other natural systems, including ecosystems.

40 C.F.R. §1508.8(b).

The DEIS should have included a review of the environmental consequences of induced natural gas production and transportation infrastructure in the context of pipeline construction as “connected actions”, “indirect effects” or “cumulative effects” of the Project.

The development and production of natural gas produced in the Marcellus Shale region of Pennsylvania constitutes a “connected action” within the meaning of CEQ regulations at 40 CFR §1508.25. The regulations regarding the scope of an environmental impact statement require agencies to consider “connected actions”, which are “closely related”, and “[c]annot or will not proceed unless other actions are taken previously or simultaneously”, or “[a]re interdependent parts of a larger action and depend on the larger action for their justification.”

NEPA’s and CEQ’s duties imposed by 40 C.F.R. §1508.8(b) also require agencies to analyze the “indirect” effects of a project within the required scope of a NEPA review including “growth inducing effects and other effects related to induced changes in the pattern of land use...and related effects on air and water and other natural systems, including ecosystems”, agencies routinely are required to consider the environmental consequences induced by approval of an infrastructure project. *See, e.g., Northern Plains Resource Council, Inc., supra*, 668 F.3d at 1081–82 (9th Cir. 2011) (finding that NEPA review must consider induced coal production at mines, which was a reasonably foreseeable effect of a project to connect two rail lines that would carry coal, especially where the company proposing the railway line anticipated induced coal production in justifying its proposal); *Mid States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549–50 (8th Cir. 2003) (environmental effects of increased coal consumption due to construction of a new rail line to reach coal mines were reasonably foreseeable and required evaluation under NEPA).

There is no demonstrated support for a conclusion that the entities that will provide natural gas for the PennEast pipeline capacity have sufficient current production to fill their portion of the pipeline project’s capacity for even a year without drilling any new wells. It is not likely that the Commission will impose time limits on the operation of the proposed pipeline. Even assuming that the PennEast pipeline would operate only until the end of the initial terms of PennEast’s precedent agreements with its affiliates or other

transportation service agreements, it is unlikely that existing wells will be able to supply sufficient natural gas over that time period. Thus, additional wells will be required.

FERC must conduct an analysis to determine to what extent producers and customers utilizing the PennEast pipeline will have to develop additional production capacity for the natural gas to be transported in the pipeline over its life. NEPA requires that the Commission take a hard look at the effects of this induced development and include an analysis of the environmental impacts in the EIS. That such development is undertaken pursuant to state regulatory authorization does not eliminate FERC's responsibility under NEPA to account for the environmental effects of drilling and fracturing at each and every newly developed or serviced well induced by projects under its jurisdiction. *See Calvert Cliffs v. U.S. Atomic Energy Comm'n*, 449 F.2d 1109,1125 (D.C. Cir. 1971) (“[O]bedience to water quality certification . . . is not mutually exclusive with the NEPA procedures. It does not preclude performance of the NEPA duties . . . [but] essentially establish a *minimum condition* for the granting of a license.”) (emphasis in original).

Anticipated future natural gas drilling in the area relevant to the project, above and beyond current production levels, is sufficiently connected to the project to require consideration. FERC cannot limit evaluation of indirect effects of the proposed project to only those for which the exact location, scale, and timing of future facilities is known. FERC cannot permissibly accept a bald assertion that there is extant adequate natural gas production in Pennsylvania to fully supply the pipeline project over its entire life without additional production. The Commission cannot permissibly conclude that additional production is not causally related to the pipeline project because natural gas development would continue “with or without the proposed projects.” Such rationales misconstrue NEPA's mandate to analyze the effects of the induced industrial growth — including impacts from new gas development and from the installation and operation of new gas distribution systems — that are reasonably foreseeable.

This project, and others like it, fit into the larger picture of exploding shale gas development in the Marcellus Shale region. Numerous separate large-scale transmission pipeline projects either currently traverse the Delaware River Basin or are planned to cross it.³⁰ Pipeline projects such as the PennEast project and natural gas development

³⁰ While we have not yet independently reviewed all the dockets or announcements, such projects reportedly include:

- TGP 300 Line Upgrade Project (CP09-444); Columbia 1278k Replacement (CP10-492)
- ESNG Eastern Shore Expansion (C11-333); ESNG New Castle Project (CP11-303)
- DTE Bluestone Pipeline; TGP Northeast Upgrade Project (CP11-161)
- ESNG Greenspring Project (CP12-461); Transco Northeast Supply Link (CP12-30)
- Transco Philadelphia Lateral (CP11-508); Transco Mainline “A” Replacement (CP12-497)
- Constitution Pipeline (PF12-9); Texas Eastern Appalachia to Market Expansion 2014 (TEAM 2014) Project; Transcontinental Atlantic Sunrise (PF-14-8)
- Transco Leidy Southeast Expansion CP13-551-000; Sonoco Mariner East Project (Not in Prefiling yet); Commonwealth Pipeline (Not in Prefiling yet, project reportedly “suspended”)

activities in the Marcellus Shale region are inextricably connected and interdependent. One does not proceed without the other.

Records maintained by the Pennsylvania Department of Environmental Protection show that drilling of wells in the Marcellus Shale increased by nearly 400 percent in a single year between 2008 and 2009, from 195 wells to 768 wells. See Bureau of Oil & Gas Mgmt., Pa. Department of Environmental Protection, Wells Drilled in 2008 (Dec. 31, 2008).³¹ A more recent report generated from PADEP's Office of Oil and Gas Management of well drilling and operation permits (attached as Appendix 11) shows the continued explosion of well drilling in the Marcellus Shale region from 2008 to 2014. http://www.portal.state.pa.us/portal/server.pt/community/oil_and_gas_reports/20297

The increased development is not limited to the drilling of wells. 5.6 billion cubic feet per day of pipeline capacity was constructed in the Northeast just in 2008 and 2009, and an additional 1.2 billion cubic feet per day was constructed in the region as of January 2011.³² “Much of the new pipeline capacity in the area is targeted at improving the access of shale gas to markets.” *Id.* This rapid expansion of pipeline capacity proceeds apace. According to FERC, “nearly 4.3 Bcf/d of new pipeline capacity is scheduled to come online by the start of the [2014-15] winter. Most of this capacity is producer-sponsored to move natural gas out of the Marcellus and Utica Shales[.]”³³

Thus, the PennEast project is both a product of the development of the Marcellus Shale and a likely catalyst for further gas development. The impacts of the project cannot be understood apart from the totality of the past, present, and reasonably foreseeable future actions associated with shale gas development. The foreseeable related activities include the impacts of gas exploration and production and the construction and operation of well pads, access roads, gathering lines, compressor stations, and other infrastructure. The Commission staff must not merely acknowledge “general development of the Marcellus Shale” upstream activities, but instead address existing wells and gathering systems and their impacts.

While the scope of a *cumulative* impact analysis is not bound by a causation requirement, a clear and linear causal link exists between interstate natural gas transmission line construction and upstream natural gas development. Ultimately, the

□ Transco Northeast Connector (CP13-132-000); NiSource East Side Expansion Project (CP-14-17)

³¹ <http://www.dep.state.pa.us/dep/deputate/minres/oilgas/BOGM%20Website%20Pictures/2008/2008%20Wells%20Drilled.jpg>, Bureau of Oil & Gas Mgmt., Pa. Dep't of Env'tl. Prot., Wells Drilled in 2009 (Jan. 25, 2010).

³² FERC Winter 2010-11 Energy Market Assessment (Oct. 21, 2010), <https://www.ferc.gov/market-oversight/reports-analyses/mkt-views/2010/10-21-10.pdf>

³³ FERC Winter 2014-15 Energy Market Assessment (Oct. 16, 2014), <http://www.ferc.gov/market-oversight/reports-analyses/mkt-views/2014/10-16-14-A-3.pdf>

development of upstream activities in the Marcellus region may only proceed if the Commission continues to expand access to markets through the interstate pipeline system. All potential interstate transmission lines must first be approved by the Commission before construction may begin.

Thus, the Commission acts as a gatekeeper, able to promote, prevent, or otherwise affect such activities. “[W]hen an agency serves effectively as a ‘gatekeeper’ for private action, that agency can no longer be said to have ‘no ability to prevent a certain effect [under the *Public Citizen* rule].” *Humane Soc. of U.S. v. Johanns*, 520 F. Supp. 2d 8, 25 (D.D.C. 2007). The construction of an interstate natural gas transmission line to enable natural gas drillers to get their product to market is causally related to the development of shale gas resources in the project area because of the Commission’s role as gatekeeper. Indeed, it is difficult to imagine a better example of a federal agency’s serving as “gatekeeper.” Unlike producers of common goods with many options for transport to markets in interstate commerce via road, train, and/or air freight, natural gas producers are wholly reliant on FERC-approved interstate natural gas transmission lines. But for the construction of an interstate pipeline – whose approval is entirely controlled by the Commission – natural gas producers would simply be unable to access markets across state lines.

FERC has previously asserted that an analysis of “the full range of Marcellus Shale development” is “highly difficult and speculative” because it “is both widespread and uncertain in nature and timing.” See, e.g., “Order Issuing Certificate and Approving Abandonment.” *Columbia Gas Transmission, LLC*, 149 FERC ¶ 61,255 (Dec. 18, 2014), Order at 119. An impact is reasonably foreseeable, however, if it is “sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision.” *Sierra Club v. Marsh*, 976 F.2d 763 (1st Cir. 1992). Furthermore, FERC is *required* to engage in “reasonable forecasting” because “speculation...is implicit in NEPA.” *Northern Plains Resource Council v. Surface Transportation Board*, *supra*, 668 F.3d at 1079 (9th Cir. 2011).

[P]rojects need not be finalized before they are reasonably foreseeable. “NEPA requires that an EIS engage in reasonable forecasting. Because speculation is ... implicit in NEPA, [] we must reject any attempt by agencies to shirt their responsibilities under NEPA by labeling any and all discussion of future environmental effects are crystal ball inquiry.” As the [EPA] also has noted, “reasonably foreseeable future actions need to be considered even if they are not specific proposals.”

Id., 668 F.3d at 1078-79 (citations omitted) (emphasis added).

“[W]hen the *nature* of the effect is reasonably foreseeable but its *extent* is not, [an] agency may not simply ignore the effect.” *Mid States Coalition for Progress v. Surface Transportation Board*, 345 F.3d 520, 549 (8th Cir. 2003) (emphasis in original). See also, *Habitat Education Center v. U.S. Forest Service*, 609 F.3d 897, 902 (7th Cir. 2010).

In a 2012 presentation provided through the Penn State Cooperative Extension, *Marcellus Gas Well & Pipeline Projections*,³⁴ The Nature Conservancy (“TNC”) estimated that 60,000 shale gas wells could eventually be drilled in Pennsylvania. *Marcellus Gas Well & Pipeline Projections*, p. 13. TNC reviewed how these projected wells would be distributed on the landscape under various well pad development scenarios. *Id.* It also analyzed where Marcellus Shale drilling was likely to occur (*Id.* at 15-17) and how many miles of new pipelines and the direct and indirect effects of those pipelines on forests by 2030 (*Id.* at 21). For example, TNC estimates that by 2030 there could be 10,000 – 25,000 miles of new gathering pipelines causing an estimated 60,000 to 150,000 acres of direct forest clearing and 300,000 to 900,000 acres of forest edge effects. *Id.*, at 21.

According to TNC, pipeline mileage in Pennsylvania will at least double, if not quadruple, by 2030. *Id.*, at 22. The footprint from pipeline alone is projected to be larger than the “cumulative area impacted by all other Marcellus gas infrastructure combined.” *Id.* Thus, when shale gas wells, roads, and other associated infrastructure (besides pipelines) are included, these figures will be much higher.

In a recent report by the investment research firm Morningstar, “drilling inventory figures from some of the most prominent, lowest-cost, and fastest growing Marcellus players, including Cabot Oil & Gas, Range Resources, Chesapeake Energy, EQT Corporation, and Antero Resources,” have “identified between 10 and 30 years of drilling locations across the Marcellus, which should fuel several more years of production growth at relatively low cost.” Morningstar, Energy Observer, *Shale Shock: How the Marcellus Shale Transformed the Domestic Natural Gas Landscape and What It Means for Supply in the Years Ahead*, p. 17 (Feb. 2014). The information about reasonably foreseeable future drilling, including “drilling locations across the Marcellus,” is readily available to FERC. This information would inform both FERC and the public regarding whether FERC is achieving its goal in its Certificate Policy Statement of avoiding “unnecessary disruption of the environment.”

Therefore, a clear causal connection exists between the pipeline project and gas drilling in the Marcellus shale formation. Such gas drilling is reasonably foreseeable. Therefore, FERC would violate 40 C.F.R. §1508.8(b) by failing to consider gas drilling as an indirect effect of the Project.

Reasonable forecasting of induced Marcellus Shale gas production would provide meaningful information to inform FERC’s decision about whether the project is in the public interest. Even if FERC does not know the extent of such production, it is certainly aware of its nature and may not simply ignore the effect. *Mid States Coalition for Progress v. Surface Transportation Board*, 345 F.3d 520, 549 (8th Cir. 2003).

³⁴ <http://extension.psu.edu/natural-resources/forests/private/training-and-workshops/2012-goddard-forum-oil-and-gas-impacts-on-forest-ecosystems/marcellus-gas-well-and-pipeline-projections>

Thus, Marcellus Shale development activities, particularly those in and around the pipeline's service area, are reasonably foreseeable consequences of the project, and their effects must therefore be considered in the Commission's indirect and cumulative impacts analysis. The cumulative impact analysis must encompass consideration of actions that cause an effect within "all, or part, of the time span" of the proposed project's effects. Marcellus shale gas development will have effects within "all, or part, of the time span" of the PennEast project's effects, and that development should therefore be included in the cumulative impacts analysis.

Nor can the Commission evade its responsibilities to engage in a meaningful cumulative impacts analysis in the EIS by arguing that it is impossible to determine where induced shale gas development will occur.

For a project-specific analysis, it is often sufficient to analyze effects within the immediate area of the proposed action. When analyzing the contribution of this proposed action to cumulative effects, however, the geographic boundaries of the analysis almost always should be expanded. These expanded boundaries can be thought of as differences in hierarchy or scale. Project-specific analyses are usually conducted on the scale of counties, forest management units, or installation boundaries, whereas cumulative effects analysis should be conducted on the scale of human communities, landscapes, watersheds, or airsheds.

CEQ, *Considering Cumulative Effects under the National Environmental Policy Act*, p. 12 (1997) (emphasis added).

CEQ thus says agencies should be considering cumulative impacts at a much broader scale than the specific project geographic scope. CEQ guidance recommends looking well beyond the project area for various resources in a cumulative effects analysis. CEQ says that it may be necessary to look at cumulative effects at the "ecosystem" level for vegetative resources and resident wildlife, the "total range of affected population units" for migratory wildlife, an entire "state" or "region" for land use, and the "global atmosphere" for air quality. 1997 CEQ Guidance, p. 15.

Another case supporting the need for FERC to consider the reasonably foreseeable impacts of Marcellus Shale gas extraction at a broader scale is *Natural Resources Defense Council v. Hodel*, 865 F.2d 288 (D.C. Cir. 1988). In *Hodel*, the D.C. Circuit remanded the case because the Department of Interior failed to adequately consider the "inter-regional" cumulative impacts of its 5-year oil and gas leasing program in the outer continental shelf on migratory species. *Id.* at 299. The court noted that it would "eviscerate NEPA" to approve of the DOI's environmental analysis. *Id.* Like the DOI in *Hodel*, FERC is ignoring the "interregional" impacts of Marcellus Shale gas extraction.

These impacts are extensive and significant. According to recent research published in *Environmental Science & Technology*:

Potential effects on terrestrial and aquatic ecosystems can result from many activities associated with the extraction process and the rate of development, such as road and pipeline construction, well pad development, well drilling and fracturing, water removal from surface and ground waters, establishment of compressor stations, and by unintended accidents such as spills or well casing failures....The cumulative effect of these potential stressors will depend in large part on the rate of development in a region. Depending on extent of development, oil and gas extraction has the potential to have a large effect on associated wildlife, habitat and aquatic life.

Brittingham, M.C., et al., "Ecological Risks of Shale Oil and Gas Development to Wildlife, Aquatic Resources and their Habitats", *Environmental Science & Technology*, pp. 11035-11037 (Sept. 4, 2014) (citations omitted) (Attached as Appendix 12).

This research further explains the true impacts of shale gas drilling and pipelines:

- Shale oil and gas development changes the landscape. Land is cleared for pad development and associated infrastructure, including pipelines, new and expanded roads, impoundments, and compressor stations, and much of this exploration and development is occurring in relatively undeveloped landscapes. Seismic testing, roads, and pipelines bisect habitats and create linear corridors that fragment the landscape. *Id.* at 11037 (citations omitted).
- Habitat fragmentation is one of the most pervasive threats to native ecosystems and occurs when large contiguous blocks of habitat are broken up into smaller patches by other land uses or bisected by roads, transmission lines, pipelines or other types of corridors. Habitat fragmentation is a direct result of shale development with roads and pipelines having a larger impact than the pads (Table 1). For example, in Bradford and Washington counties Pennsylvania, forests became more fragmented primarily as a result of the new roads and pipelines associated with shale development, and development resulted in more and smaller forest patches with loss of core forest (forest > 100 m from an edge) at twice the rate of overall forest loss. Pipelines and roads not only resulted in loss of habitat but also created new edges. Similar results have been shown in other studies. *Id.* (citations omitted).
- Fragmentation from linear corridors such as pipelines, seismic lines, and roads can alter movement patterns, species interactions and ultimately abundance depending on whether the corridor is perceived as a barrier or territory boundary or used as an avenue for travel and invasion into

habitats previously inaccessible. *Id.* (citations omitted).

- [T]he New York State Department of Environmental Conservation estimates that development of one horizontal well requires over 3300 one-way truck trips. This is a concern because roads of all types have a negative effect on wildlife through direct mortality, changes in animal behavior, and increased human access to areas, and these negative effects are usually correlated with the level of vehicular activity. Even after a well is drilled and completed, new roads and pipelines provide access for more people, which results in increased disturbance. *Id.*, at 11038 (citations omitted).

- In Wyoming, Sawyer et al. found that mule deer migratory behavior was influenced by disturbance associated with coal bed gas development and observed an increase in movement rates, increased detouring from established routes, and overall decreased use of habitat along migration routes with increasing density of well pads and roads. *Id.* (citations omitted).

- Exploration and development of the shale resource is associated with both short-term and long-term increases in noise. In the short term, site clearing and well drilling, [high volume hydraulic fracturing], and construction of roads, pipelines and other infrastructure are a limited time disturbance similar to disturbance and sound associated with clearing land and home construction (Table 1). Depending on number of wells drilled, construction and drilling can take anywhere from a few months to multiple years. Compressor stations, which are located along pipelines and are used to compress gas to facilitate movement through the pipelines, are a long-term source of noise and continuous disturbance (Table 1). Because chronic noise has been shown to have numerous costs to wildlife, compressors have potential to have long-term effects on habitat quality. *Id.* (citation omitted).

- For many species of wildlife, sound is important for communication, and noise from compressors can affect this process through acoustical masking and reduced transmission distances. Studies on effects of noise from compressors on songbirds have found a range of effects including individual avoidance and reduced abundance, reduced pairing success, changes in reproductive behavior and success, altered predator-prey interactions, and altered avian communities[.]

- Because of the large overlap between the Appalachian shale play and core forest habitat in the East, many forest species are vulnerable to development. Area-sensitive forest songbirds are primarily insect-eating Neotropical migrants, are an important component of forest ecosystems, and, as a group, many have declined in numbers in response to forest

fragmentation. These birds are area-sensitive because breeding success and abundance are highest in large blocks of contiguous forest, and numerous research studies have documented negative effects of fragmentation on abundance and productivity...The impact that shale development has on this group of species will depend on the scale and extent of development. By some estimates, less than 10% of potential shale gas development has occurred in the Appalachian basin. If this is the case, there is the potential for a 10-fold increase in the amount of shale gas development, which would likely have negative impacts on area-sensitive forest songbirds and other forest specialists. *Id.*, at 11040 (citations omitted)

- Development of shale resources, which clears land for well pads and roads, is occurring across a large portion of the native range of brook trout, especially in Pennsylvania (Figure 3). If remaining high-quality stream reaches become unsuitable to brook trout, there may be further fragmentation of the larger meta-population. *Id.*
- Freshwater mussels are an additional taxonomic group of interest because of already high numbers of listed species and relative sensitivity to toxicants. The endangered Indiana Bat, (*Myotis sodalis*), is another example of a species where a large portion of its native range is within areas of shale development (Figure 3). Gillen and Kiviat 2012 reviewed 15 species that were rare and whose ranges overlapped with the Marcellus and Utica shale by at least 35%. The list included the West Virginia spring salamander (*Gyrinophilus subterraneus*), a species that is on the IUCN Red List as endangered and whose range overlaps 100% with the shale layers. It requires high quality water and is sensitive to fragmentation suggesting that this species is at great risk to oil and gas development. The list also included eight Plethodontid salamanders, a group that tends to be vulnerable because of the overlap between their range and shale layers, their dependence on moist environments and sensitivity to disturbance. *Id.*, at 11040-11041.

The Brittingham research demonstrates the substantial impact that shale gas drilling and pipelines are having and will continue to have on wildlife throughout the Marcellus and Utica shale formations, especially if FERC continues facilitating such impacts by authorizing infrastructure projects such as the one proposed here. FERC has an obligation under NEPA to take a hard look at these impacts on a much broader scale.

As FERC staff well knows, publicly available maps of permitted gas wells in Pennsylvania show the locations of wells already drilled in the Marcellus Shale region as well as the locations of newly-permitted well sites, and production data is also available. The Commission quite simply cannot argue that the location, scale, and timing of wells impacting the Project area and connected with the project are “unknown” when numerous wells are already permitted and relevant data on them is widely available on-line.

A Pennsylvania-specific analysis of the environmental impacts of the Marcellus Shale gas development activities was prepared by The Nature Conservancy: *Pennsylvania Energy Impacts Assessment, Report 1: Marcellus Shale Natural Gas and Wind*.³⁵

TNC mapped projected wells across the state, considering how the wells and their associated infrastructure, including roads and pipelines, interacted with the landscape. TNC concluded:

- About 60,000 new Marcellus wells are projected by 2030 in Pennsylvania with a range of 6,000 to 15,000 well pads, depending on the number of wells per pad;
- Wells are likely to be developed in at least 30 counties, with the greatest number concentrated in 15 southwestern, north central, and northeastern counties;
- Nearly two thirds of well pads are projected to be in forest areas, with forest clearing projected to range between 34,000 and 83,000 acres depending on the number of number of well pads that are developed. An additional range of 80,000 to 200,000 acres of forest interior habitat impacts are projected due to new forest edges created by well pads and associated infrastructure (roads, water impoundments);
- On a statewide basis, the projected forest clearing from well pad development would affect as much as one percent of the state's forests, but forest clearing and fragmentation could be much more pronounced in areas with intensive Marcellus development;
- Approximately one third of Pennsylvania's largest forest patches (>5,000 acres) are projected to have a range of between 1 and 17 well pads in the medium scenario;
- Impacts on forest interior breeding bird habitats vary with the range and population densities of the species. The widely-distributed scarlet tanager would see relatively modest impacts to its statewide population while black-throated blue warblers, with a Pennsylvania range that largely overlaps with Marcellus development area, could see more significant population impacts;
- Watersheds with healthy eastern brook trout populations substantially overlap with projected Marcellus development sites. The state's watersheds ranked as "intact" by the Eastern Brook Trout Joint Venture are concentrated in north central Pennsylvania,

³⁵ The report is available at: http://www.nature.org/media/pa/tnc_energy_analysis.pdf. Substantial additional information on the environmental impacts of natural gas development activities in a shale formation is available from the New York Department of Environmental Conservation's Revised Draft Supplemental General Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program, (Sept. 2011) ("NY RDSGEIS"). The NY RDGEIS is available at: <http://www.dec.ny.gov/energy/75370.html>

where most of these small watersheds are projected to have between two and three dozen well pads;

- Nearly a third of the species tracked by the Pennsylvania Natural Heritage Program are found in areas projected to have a high probability of Marcellus well development, with 132 considered to be globally rare or critically endangered or imperiled in Pennsylvania. Several of these species have all or most of their known populations in Pennsylvania in high probability Marcellus gas development areas;

- Marcellus gas development is projected to be extensive across Pennsylvania's 4.5 million acres of public lands, including State Parks, State Forests, and State Game Lands. Just over 10 percent of these lands are legally protected from surface development.

FERC must examine the cumulative impact of the multiple utility and other linear projects that are being proposed or constructed in the area. These projects do not occur in a vacuum. As one by one they steadily impair the natural and scenic resources of the region, the combined impacts become more severe over time.

The Commission need not know the exact location, scale, and timing of future Marcellus Shale development to examine the proposed Project's indirect effects.

Even if it cannot know the exact consequences at each and every wellhead, FERC is obligated under NEPA to undertake an evaluation of reasonably foreseeable natural gas development induced by the availability of the proposed pipeline's transportation capacity.

To meet NEPA's goal of ensuring that decisionmaking goes forward in full view of the environmental consequences, agencies are required to engage in "[r]easonable forecasting and speculation." *City of Davis v. Coleman*, 521 F.2d 661, 676 (9th Cir. 1975). Thus, FERC has an obligation to forecast the consequences of additional natural gas production and transportation infrastructure that is reasonably foreseeable in light of the approval of the project. "The government's inability to fully ascertain the precise extent of the effects of [the activity] is not . . . a justification for failing to estimate what those effects might be before irrevocably committing to the activity." *Ctr. for Biological Diversity v. Bureau of Land Mgmt.*, 937 F. Supp. 2d 1140, 1158 (N.D. Cal. 2013) (quoting *Conner v. Burford*, 848 F.2d 1441, 1450 (9th Cir. 1988)).

The availability of new infrastructure to transport the gas to market creates an inducement for future gas development along the pipeline route that FERC cannot ignore. See, e.g., *City of Davis*, *supra*, 521 F.2d at 676 (EIS for a highway project needs to analyze the impact of induced development despite uncertainty about pace and direction of development). Thus, the Commission cannot lawfully eschew a specific analysis of Marcellus Shale upstream facilities merely because the exact location, scale, and timing of future facilities are not precisely known. See also, Bridge Too Far report discussed *infra*.

The high demand for gas drilling in the Marcellus Shale region and the requirements by EPA and likely other agencies for completions of new well development will increase incentives to construct wells within close proximity of existing pipeline systems. In addition, significant cost savings are associated with siting well pads as close as possible to transmission pipeline receipt points. Moreover, tools exist to facilitate an analysis of induced natural gas development, even in the absence of specific location and timing. For example, information for both New Jersey and Pennsylvania regarding future gas development can be used to project future development patterns. See, e.g., The Nature Conservancy, *Natural Gas Pipelines: Excerpt from Report 2 of Pennsylvania Energy Impacts Assessment* (Dec. 16, 2010), available at <http://www.nature.org/ourinitiatives/regions/northamerica/unitedstates/pennsylvania/ng-pipelines.pdf>

The EIS cannot exclude consideration of indirect effects based on the presence of other natural gas pipelines in the area.

The existence of other pipelines does not alter the fact that the 1 Bcf/day of additional capacity created by the pipeline project has the potential to induce additional natural gas production and infrastructure development, especially over the undefined, but likely decades-long, life of the PennEast pipeline.

Output from unconventional natural gas wells sharply declines after the first few years of production. While the advent of Marcellus Shale natural gas production provided an important new source of gas, this supply is characterized by high decline rates, which means that wells must be continuously drilled to maintain supply. In 2001, the U.S. natural gas decline rate was about 23% and the annual replacement requirement was 12 Bcf/d when total consumption was 54 Bcf/d. Today, the decline rate is estimated to be 32% and increased consumption of gas means that approximately 22 Bcf/d must be replaced each year.

The average first year decline rates across Pennsylvania appear to range from approximately 60% to 80%. Penn State Extension, *Appalachian Basin Decline Curve and Royalty Estimation*, July 27, 2014, available at <http://extension.psu.edu/natural-resources/natural-gas/news/2014/07/appalachian-basin-decline-curve-and-royalty-estimation-part-1>. See also, Jennifer Hiller, *Red Queen Effect Can Make Production Slow Down in a Hurry*, FuelFix, Oct. 30, 2013, available at <http://fuelfix.com/blog/2013/10/30/red-queen-effect-can-make-production-slow-down-in-a-hurry/>. This so-called “Red Queen” effect³⁶ decline in production at unconventional wells will force companies to drill additional wells to continue to achieve the same levels of natural gas production. *Id.* One source predicts that “more than 6,000 U.S. wells would be needed each year to offset declines, at an annual cost of \$35 billion.” *Id.*

³⁶ This effect is named after a character in Lewis Carroll's *Through the Looking-Glass*. The Red Queen lectures Alice: "Now, here, you see, it takes all the running you can do, to keep in the same place. If you want to get somewhere else, you must run at least twice as fast as that!"

“The initial decline, or decrease in production, over the first year of operation of a shale well is an important variable in estimating the potential for future production.” *Id.* With average first year decline rates between 60% to 80%, more drilling and hydraulic fracturing will occur as the industry attempts to keep production up, thereby causing even more environmental impacts from activities that are links in a chain with the pipeline.

Because the PennEast pipeline can be expected to be operational over a period of decades, it is arbitrary and capricious to assume that additional natural gas production facilities will not be associated with the project.

The DEIS does not properly apply the causation test in determining the scope of the EIS with respect to indirect effects.

FERC is not free to ignore indirect upstream effects of the project under NEPA simply because there are other causes of natural gas development. Natural gas production that is a reasonably foreseeable consequence of the project must be evaluated as part of the EIS. For example, FERC cannot refuse to consider the environmental consequences of the likely increases in natural gas production in the area that the PennEast project will encourage and facilitate simply because it may assume that natural gas development would continue without the pipeline.

Such an approach would misinterpret NEPA’s requirement that FERC consider “reasonably foreseeable” indirect effects of the proposed action. The project is completely dependent on having natural gas to transport and thus natural gas production is an essential predicate to the pipeline project moving forward. Nothing in NEPA, its regulations, or applicable case law limits the requirement to evaluate the indirect effects of the development following from a project to those situations where the project is responsible for causing all, as opposed to some, of the development in the area.

It is reasonably foreseeable that over the life of the PennEast pipeline, additional natural gas development will be required to fill the capacity of the pipeline project and additional gathering lines will be constructed to link new wells to the pipeline project. This is precisely the type of indirect effect that the Commission must analyze under NEPA. *See, e.g., Border Power Plant Working Group v. Dept. of Energy*, 260 F. Supp. 2d 997, 1013 (S.D. Cal. 2003) (noting that, in authorizing an electric transmission line, an agency was required to consider the environmental consequences of generating the additional electricity to be carried on those lines); *City of Davis*, 521 F.2d at 674–77 (stating that environmental review for highway project needed to analyze impact of induced development despite uncertainty about pace and direction of development).

The Ninth Circuit has said that an agency must consider something as an indirect effect if the agency action and the effect are “two links of a single chain.” *Sylvester v. U.S. Army Corps of Engineers*, 884 F.2d 394, 400 (9th Cir. 1980). Here, Marcellus Shale gas extraction activities and the PennEast project are “two links of a single chain.” This is supported by multiple industry and government sources, not to mention common sense.

In 2011, the National Petroleum Council (“NPC”), a federally chartered advisory committee reporting to the Secretary of Energy, published a report noting that:

The 2007 NPC Hard Truths study described infrastructure as a key link in the chain, connecting supply to markets, and found that knowledge of existing infrastructure and planning for new infrastructure could fall short of meeting market needs. Sufficient natural gas midstream infrastructure, including gathering systems, processing plants, transmission pipelines, storage fields, and LNG terminals, is crucial for efficient delivery and functioning markets....New infrastructure will be required to move natural gas from regions where production is expected to grow to areas where demand is expected to increase.

NPC, *Prudent Development: Realizing the Potential of North America’s Abundant Natural Gas and Oil Resources*, pp. 51-52, 2011 (emphasis added)

Concisely put, without “sufficient natural gas midstream infrastructure, including...transmission pipelines,” gas extracted “from regions where production is expected to grow,” such as the Marcellus and Utica shale formations, will not have a way to reach “areas where demand is expected to increase.” Thus, the NPC clearly considers upstream shale gas extraction and transmission pipelines as “two links of a single chain” that transports natural gas to downstream market areas.

FERC itself considers shale gas extraction and infrastructure (including transmission pipelines) as “two links of a single chain.” For example, FERC’s Strategic Plan for FY2014-2018 states that the “development of interstate natural gas infrastructure – pipelines, storage, and LNG facilities – is a critical link in ensuring that natural gas supply can reach market areas.” FERC, Strategic Plan FY2014-2018, p. 17 (Mar. 2014) (emphasis added) It would be disingenuous for FERC to claim that there is an “insufficient causal link” between the proposed project and gas drilling activities in the Marcellus formation when its own Strategic Plan says that gas pipelines are a “critical link” that connect natural gas supply areas with market areas.

A FERC refusal to consider the effects of the upstream gas drilling in the Marcellus shale formation is similar to arguments made by the Surface Transportation Board that were rejected by the Eighth Circuit in *Mid States Coalition for Progress v. Surface Transportation Board*, 345 F.3d 520 (8th Cir. 2003). In that case, the Surface Transportation Board argued that because many utilities were likely to switch to the kind of low-sulfur variety of coal that a planned railroad would make available, “this shift will occur regardless of whether [the railroad company’s] new line is constructed.” *Mid States Coalition for Progress, supra*, at 549. The Eighth Circuit rejected this argument outright:

...[T]he proposition that the demand for coal will be unaffected by an increase in availability and a decrease in price, which is the stated goal of the project, is illogical at best. The increased availability of inexpensive coal will at the very least make coal a more attractive option to future

entrants into the utilities market when compared with other potential fuel sources, such as nuclear power, solar power, or natural gas. Even if this project will not affect the short-term demand for coal....it will most assuredly affect the nation's long-term demand for coal[.]

Mid States, 345 F.3d at 549. A refusal to consider the effects of upstream gas development impacts is similarly illogical because once the project is operational and the target market areas of the northeast and mid-Atlantic are connected to gas production in the Marcellus shale formations, it makes drilling in Pennsylvania much more *likely*.

The scope of the EIS therefore must account for the fact that the pipeline will induce natural gas production in the Marcellus Shale and cause reasonably foreseeable changes to pipeline infrastructure to transport gas to the pipeline.

The fact that gas drilling activities are not regulated by FERC is irrelevant since FERC must consider these cumulative impacts "regardless of what agency (Federal or non-Federal) or person undertakes such other actions." 40 C.F.R. §1508.7.

The DEIS should have included a full and comprehensive analysis of the Project's cumulative actions and impacts when considered with other actions.

"Cumulative impacts" are not causally related to the action. Instead, they are:

the impact on the environment which 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. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

40 C.F.R. §1508.7

The scope of the action to be considered in the draft EIS must include:

(2) Cumulative actions, which when viewed with other proposed actions have cumulatively significant impacts and should therefore be discussed in the same impact statement.

(3) Similar actions, which when viewed with other reasonably foreseeable or proposed agency actions, have similarities that provide a basis for evaluating their environmental consequences together, such as common timing or geography. An agency may wish to analyze these actions in the same impact statement. It should do so when the best way to assess adequately the combined impacts of similar actions or reasonable alternatives to such actions is to treat them in a single impact statement.

40 C.F.R. §1508.25

“Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.” 40 C.F.R. §1508.7. A finding of “[s]ignificance cannot be avoided by terming an action temporary.” 40 C.F.R. §1508.27(b)(7). “[A] meaningful cumulative impact analysis must identify (1) the area in which the effects of the proposed project will be felt; (2) the impacts that are expected in that area from the proposed project; (3) other actions--past, present, and proposed, and reasonably foreseeable--that have had or are expected to have impacts in the same area; (4) the impacts or expected impacts from these other actions; and (5) the overall impact that can be expected if the individual impacts are allowed to accumulate.” *Grand Canyon Trust v. FAA*, 290 F.3d 339, 345 (D.C. Cir. 2002). NEPA requires such an analysis because “[e]ven a slight increase in adverse conditions . . . may sometimes threaten harm that is significant . . . may represent the straw that breaks the back of the environmental camel.” *Id.*, at 343.

NEPA’s cumulative impact analysis requirement is not satisfied where the “analysis” merely announces that there may be risks or impacts, but fails to provide the kind of information about those risks or impacts that would be “useful to a decisionmaker in deciding whether, or how, to alter the program to lessen cumulative environmental impacts.” *NRDC v. Hodel*, 865 F.2d 288, 299 (D.C. Cir. 1988) (“perfunctory references” do not constitute “analysis”). A cumulative impact section that merely “recites the history of [project] development” in the area and then offers the “conclusory statement” that “the cumulative direct impacts have been minimal” does not satisfy NEPA requirements. *FOE v. United States Army Corps of Eng’rs*, 109 F. Supp. 2d 30, 42 (D.D.C. 2000) (citing *Hodel*, 865 F.2d at 298). More generally, an agency must provide a reasoned explanation to support its assertions and conclusions; otherwise, its decision is arbitrary and capricious. *Alpharma, Inc. v. Leavitt*, 460 F.3d 1, 6 (D.C. Cir. 2006) (the scope of review requires an agency to “examine the relevant data and articulate a satisfactory explanation for its action including a ‘rational connection between the facts found and the choice made.’” . . . The “agency must cogently explain why it has exercised its discretion in a given manner,” . . . and that explanation must be “sufficient to enable us to conclude that the agency’s action was the product of reasoned decisionmaking[.]” (internal citations omitted).

The EIS must include a comprehensive analysis of the incremental impacts of the project when considered in addition to other past, present, and reasonably foreseeable future actions. See 40 C.F.R. §1508.7; see also *Oregon Natural Res. Council Fund v. Brong*, 492 F.3d 1120, 1132–33 (9th Cir. 2007) (“One of the specific requirements under NEPA is that an agency must consider the effects of the proposed action in the context of all relevant circumstances, such that where ‘several actions have a cumulative . . . environmental effect, this consequence must be considered . . .’”) (quoting *Neighbors of Cuddy Mountain v. U.S. Forest Serv.*, 137 F.3d 1372, 1378 (9th Cir. 1998)). Assessing the impacts of a proposed action within the context of existing and foreseeable effects in the same area yields “a realistic evaluation of the total impacts” and ensures that an EIS does not impermissibly “isolate a proposed project, viewing it in a vacuum.” *Grand Canyon Trust v. Fed. Aviation Admin.*, *supra*, 290 F.3d at 342 (D.C. Cir. 2002).

The EIS must catalog adequately the relevant past projects in the area; past projects must be described with sufficient specificity to permit adequate review of their cumulative impact. 40 C.F.R. §1502.22(a). *Lands Council v. Vaught*, 198 F.Supp.2d 1211 (E.D.Wash. 2002). The purpose of the cumulative impact analysis required by NEPA is to provide readers with a *complete understanding* of the environmental effects a proposed action will cause; separating the cumulative effects discussion into discrete environmental impact statements eliminates the context necessary for readers to comprehend fully the project's overall environmental effects. NEPA, §2 et seq., 42 U.S.C.A. § 4321 et seq.; 40 C.F.R. §§ 1502.22, 1508.7, 1508.25(c); *North Carolina Alliance for Transp. Reform, Inc. v. U.S. Dept. of Transp.*, 151 F.Supp.2d 661 (2001).

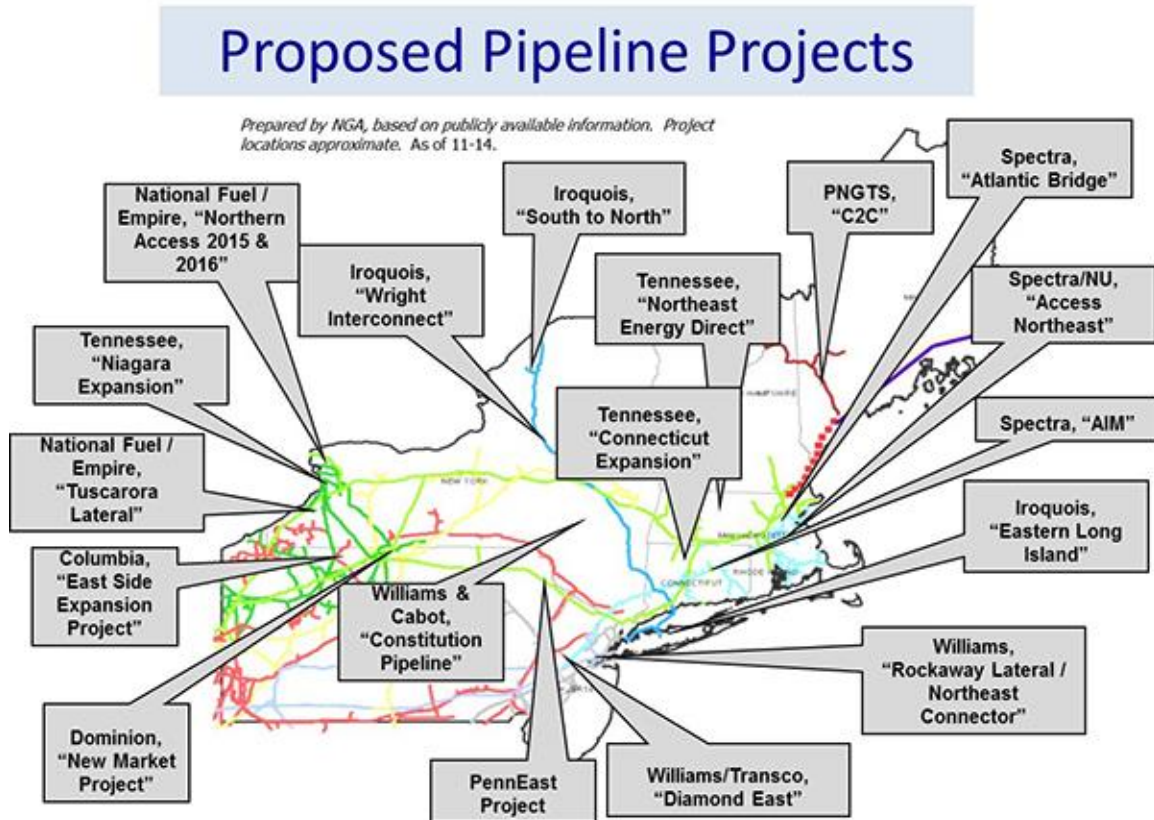
The statute requires analysis of “the cumulative harm that results from [the proposed action’s] contribution to *existing adverse conditions or uses* in the area . . . [E]ven a slight increase in adverse conditions that form an existing environmental milieu may sometimes threaten harm that is significant. One more factory . . . may represent the straw that breaks the back of the environmental camel.” *Grand Canyon Trust, supra*, 290 F.3d at 343 (quoting *Hanly v. Kleindienst*, 471 F.2d 823, 831 (2d Cir. 1972)) (emphasis added). Without an accurate account of either the baseline impacts of other actions or the incremental impact of the project, the Commission cannot assess the overall impact that can be expected if the individual impacts are allowed to accumulate—the very essence of the cumulative impact analysis. See *Klamath-Siskiyou Wildlands Ctr. v. Bureau of Land Mgmt.*, 387 F.3d 989, 994–996 (9th Cir. 2004) (“Sometimes the total impact from a set of actions may be greater than the sum of the parts.”). The Marcellus Shale region has experienced substantial development of natural gas production and transportation infrastructure that has caused significant negative cumulative effects on air and water quality, created GHG emissions, and severely fragmented forests.

NEPA requires that FERC engage in a detailed and useful *analysis* of cumulative effects, not just a recitation of impacts. See *Brong, supra*, 492 F.3d at 1133, n. 19 (“[An agency] cannot fulfill its responsibility to conduct a cumulative effects *analysis* by merely reciting what effects have occurred, no matter how many pages it fills by doing so. . . [T]he time, type, place, and scale of past activities must be included.”).

The prior-approved, current, and planned additional natural gas pipelines in the region through which the PennEast Pipeline route will pass and the market areas it will serve must be considered and their cumulative impacts assessed. See, e.g., *Delaware Riverkeeper Network v. F.E.R.C.*, 753 F.3d 1304, 410 U.S.App.D.C. 137 (2014) (four separate natural gas pipeline upgrade projects were connected, closely related, and interdependent, and thus FERC impermissibly segmented NEPA review of the third project when it failed to consider the cumulative impacts of all four upgrade projects, where the four projects upgraded a linear and physically interdependent pipeline, each project did not have substantial independent utility separate from the other projects, and all four projects were in some stage of development at the same time.). Because FERC itself reviews and approves interstate natural gas pipelines, it possesses detailed information on the need, purpose, routes, suppliers, capacity, connections, and other

aspects of these pipelines. In addition, it obviously has access to information held by the U.S. Energy Information Administration (“EIS”). It therefore has an obligation to review its own and EIA’s current data on announced, pre-filed, filed, approved, under-construction, and completed natural gas pipeline projects to determine the relationship between these pipeline projects.³⁷

The Figure below offers a sense of the additional pipeline projects proposed in the Northeast United States (as of 11/14). FERC must analyze the extent to which these projects may be related, interconnected and/or exert cumulative impacts.



FERC Should Prepare a Programmatic EIS If It Determines That Other Regional Natural Gas Pipelines Need Not Be Considered in the PennEast EIS.

If FERC determines – improperly, in our view - that no other natural gas pipeline projects in temporal and geographic proximity need be analyzed in the PennEast EIS, then FERC can consider the cumulative impacts of all such pipelines by preparing an area-wide or programmatic EIS. NEPA expressly contemplates a programmatic EIS where an agency is facing multiple independent permitting decisions that have overlapping, shared, or cumulative impacts. See *Native Ecosystems Council v. Dombeck*,

³⁷ See, e.g., EIA Spreadsheet of Pipeline Projects in the Northeast United States (appendix 13 to Township Scoping Comments). In addition, FERC’s assessment of the need for the PennEast pipeline must take these projects into account.

304 F.3d 886 (9th Cir. 2002) (A single NEPA review document is required for distinct projects when the projects are connected, cumulative or similar actions).

CEQ guidance (in Q&A format) on this issue states:

Question: When is an area-wide or overview EIS appropriate?

Answer: The preparation of an area-wide or overview EIS may be particularly useful when similar actions, viewed with other reasonably foreseeable or proposed agency actions, share common timing or geography. For example, when a variety of energy projects may be located in a single watershed, or when a series of new energy technologies may be developed through federal funding, the overview or area-wide EIS would serve as a valuable and necessary analysis of the affected environment and the potential cumulative impacts of the reasonably foreseeable actions under that program or within that geographical area.³⁸

FERC has claimed that a programmatic EIS for natural gas infrastructure in the Marcellus and Utica shale formations is “unfounded.” See, Order Issuing Certificate and Approving Abandonment.” *Columbia Gas Transmission, LLC*, 149 FERC ¶ 61,255 (Dec. 18, 2014), at p. 123. A programmatic EIS is sometimes required “for broad Federal actions.” 40 C.F.R. §1502.4(b). “Programmatic NEPA reviews address the general environmental issues relating to broad decisions, such as those establishing policies, plans, programs, or suite of projects, and can effectively frame the scope of subsequent site- and project-specific Federal actions.” CEQ, *Effective Use of Programmatic NEPA Reviews*, p. 10 (2014). “A well-crafted programmatic NEPA review provides the basis for decisions to approve such broad or high-level decisions such as identifying geographically bounded areas within which future proposed activities can be taken or identifying broad mitigation and conservation measures that can be applied to subsequently tiered reviews.” *Id.* Such an analysis is critical for the public to understand the actual scope of environmental impacts from natural gas pipeline and other infrastructure projects in the Marcellus shale region.

Additionally:

Programmatic NEPA reviews may also support policy- and planning-level decisions when there are limitations in available information and uncertainty regarding the timing, location, and environmental impacts of subsequent implementing action(s). For example, in the absence of certainty regarding the environmental consequences of future proposed

³⁸ CEQ’s *Effective Use of Programmatic NEPA Reviews* is available at: http://www.whitehouse.gov/sites/default/files/docs/effective_use_of_programmatic_nepa_reviews_final_dec2014_searchable.pdf; see also, *Earth Island Institute v. U.S. Forest Service*, 351 F.3d 1291 (9th Cir. 2003) (confirming that “similar actions”—i.e., actions which have similarities, such as common timing or geography, that warrant comprehensive review—must be considered in a single EIS if it is the “best way” to consider their impacts).

actions, agencies may be able to make broad program decisions and establish parameters for subsequent analyses based on a programmatic review that adequately examines the reasonably foreseeable consequences of a proposed program, policy, plan, or suite of projects.

CEQ, *Effective Use of Programmatic NEPA Reviews*, p. 11. Just because precise details of future gas infrastructure projects may not be yet known with certainty does not mean that FERC would not be able to “establish parameters for subsequent analyses.” In fact, this may assist FERC (and the public) in understanding the broader reasonably foreseeable consequences of jurisdictional projects and non-jurisdictional gas drilling in the Marcellus shale play.

The 2014 CEQ Guidance recommends preparing a programmatic EIS when “several energy development programs proposed in the same region of the country [have] similar proposed methods of implementation and similar best practice and mitigation measures that can be analyzed in the same document.” *Id.*, at 21. Additionally, CEQ says that “broad Federal actions may be implemented over large geographic areas and/or a long time frame” and “must include connected and cumulative actions, and the responsible official should consider whether it is helpful to include a series or suite of similar actions.” *Id.*, at 22.

The benefit of a programmatic EIS is obvious:

When the public has a chance to see the big picture early it can provide fresh perspectives and new ideas before determinations are made that will shape the programmatic review and how those determinations affect future tiered proposals and NEPA reviews. Early outreach also provides an opportunity to develop trust and good working relationships that may extend throughout the programmatic and subsequent NEPA reviews and continue during the implementation of the proposed action.

Id., at p. 25 (citations omitted).

Furthermore:

Programmatic NEPA reviews provide an opportunity for agencies to incorporate comprehensive mitigation planning, best management practices, and standard operating procedures, as well as monitoring strategies into the Federal policymaking process at a broad or strategic level. These analyses can promote sustainability and allow Federal agencies to advance the nation’s environmental policy as articulated in Section 101 of NEPA.

By identifying potential adverse impacts early during the broad programmatic planning, programmatic NEPA reviews provide an opportunity to modify aspects of the proposal and subsequent tiered

proposals to avoid or otherwise mitigate those impacts. A thoughtful and broad-based approach to planning for future development can include best management practices, standard operating procedures, adaptive management practices, and comprehensive mitigation measures that address impacts on a broad programmatic scale (e.g., program-, region-, or nation-wide).

Id., pp. 34-35.

Moreover, CEQ has specifically endorsed the use of programmatic NEPA reviews in the context of evaluation of climate change impacts. See, *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*, p. 32.

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.

It is clear that the expansion of pipeline capacity to carry natural gas production from the Northeast's Marcellus Shale region in Pennsylvania is a broad Federal action being implemented over a large geographic area,³⁹ and that natural gas infrastructure projects have similar proposed methods of implementation and similar best practice and mitigation measures. Therefore, FERC must prepare a programmatic EIS, if it will not consider these infrastructure expansions in the context of the PennEast pipeline project.

³⁹ In 2013, EIA stated that although natural gas pipeline capacity investment had slowed in 2012, “[l]imited capacity additions were concentrated in the northeast United States, mainly focused on removing bottlenecks for fast-growing Marcellus shale gas production. More than half of new pipeline projects that entered commercial service in 2012 were in the Northeast.” EIA, *Today in Energy, Over half of U.S. natural gas pipeline projects in 2012 were in the Northeast*, Mar. 25, 2013, (emphasis added) available at <http://www.eia.gov/todayinenergy/detail.cfm?id=10511> . In December 2014, EIA stated: “Spurred by growing natural gas production in Pennsylvania, West Virginia, and Ohio, the natural gas pipeline industry is planning to modify its system to allow bidirectional flow to move up to 8.3 billion cubic feet per day (Bcf/d) out of the Northeast....In addition to these bidirectional projects in the Northeast, the industry plans to expand existing systems and build new systems to transport natural gas produced in the Northeast to consuming markets outside the region.” EIA, *Today in Energy, 32% of natural gas pipeline capacity into the Northeast could be bidirectional by 2017*, Dec. 2, 2014, available at <http://www.eia.gov/todayinenergy/detail.cfm?id=19011> .

Appellate courts have also defined a two-pronged inquiry to establish whether a programmatic EIS is appropriate: (a) Could the programmatic EIS be sufficiently forward looking to contribute to the decisionmakers' basic planning of the overall program? and, (b) Does the decisionmaker purport to 'segment' the overall program, thereby unreasonably constricting the scope of primordial environmental evaluation?" *Churchill County v. Norton*, 276 F.3d 1060, 1076 (9th Cir. 2001) (citing *Nat'l Wildlife Fed'n v. Appalachian Reg'l Comm'n*, 677 F.2d 883, 889 (D.C. Cir. 1981)). See also, *Foundation on Economic Trends v. Heckler*, 756 F.2d 143, 159 (D.C. Cir. 1985). With respect to the second prong, an agency cannot escape the existence of a comprehensive program with cumulative environmental effects by "disingenuously describing it as only an amalgamation of unrelated smaller projects." *Churchill County*, 276 F.3d at 1076 (citing *Nat'l Wildlife Fed'n*, 677 F.2d at 890). Appellate courts have also held that where there are large-scale plans for regional development, NEPA requires *both* a programmatic *and* a site-specific EIS. *City of Tenakee Springs v. Clough*, 915 F. 2d 1308, 1312 (9th Cir.1990). When the projects in a particular geographical region are foreseeable and similar, NEPA calls for an examination of their impact in a single EIS. *Id.*

FERC has historically provided two explanations for why it considers the need for a programmatic EIS "unfounded." First, FERC views the project in isolation claiming that "it is not a broad program or plan for regional gas exploitation." *Columbia Gas Transmission, LLC, supra*, 149 FERC ¶ 61,255, at P 123. This is a statement with blinders on, and ignores the vast number of recent, proposed, and reasonably foreseeable infrastructure expansions. Second, FERC claims that it does not have an official policy to increase the nation's reliance on natural gas. *Id.* But actions taken by FERC in recent years belie this statement.

FERC is engaged in regional development and planning with the gas industry. FERC claims that it does not have an "official policy" to "increase the nation's reliance on natural gas" and that it merely "considers individual proposed infrastructure projects on their own merits, pursuant to its statutory obligation under NGA section 7(c)." *Columbia Gas Transmission, LLC, supra*, P 123. This is disingenuous, at best. As stated above, FERC participated in the development of the National Petroleum Council's Prudent Development report, which stresses the need to increase natural gas infrastructure. Moreover, FERC's Strategic Plan identifies the approval of natural gas infrastructure, including pipelines, as a specific goal over the next several years.⁴⁰

⁴⁰ Former Chairman LaFleur's remarks at the National Press Club on January 27, 2015 addressed the implications of the Administration's "Clean Power Plan." They clearly reflect the goal of FERC's Strategic Plan to expand natural gas infrastructure:

Starting with infrastructure. I think additions to both the gas and electric infrastructure will be needed to carry out the Clean Power Plan. And in the case of gas pipelines and gas compressor stations, FERC is the one who does the environmental review, permits them and decides the rates.... Now, I believe based on everyone I've talked to, that meeting the goals of the Clean Power Plan will also lead to the construction of a lot of new gas generation because most of the people I've talked to said that can be the most cost effective way to meet some of the goals[.]...But utilizing that gas to meet climate

Additionally, FERC initiated several docket proceedings related to the coordination of the natural gas and electricity markets. See *Coordination Between Natural Gas and Electricity Markets* (Docket No. AD12-12-000); *Coordination of the Scheduling Processes of Natural Gas Pipelines and Public Utilities* (Docket No. RM14-2-000); *Order Initiating Investigation into ISO and RTO Scheduling Practices*, 146 FERC ¶ 61,202 (Docket Nos. EL14- 22 et seq.); and *Posting of Offers to Purchase Capacity*, 146 FERC ¶ 61,203 (Docket No. RP14-442). FERC explained that “since natural gas is expected to be relied on much more heavily in electricity generation, the interdependence of these industries merits careful attention.” *Coordination Between Natural Gas and Electricity Markets* (Docket No. AD12-12-000, Accession No. 20120215-3066).

In ordering further conferences and reports, FERC highlighted the “growing concern regarding natural gas-electric interdependencies and in particular whether the natural gas and electric industries are prepared to work together seamlessly in an environment of increasing reliance on the use of natural gas as a fuel for electric generation.” *Coordination Between Natural Gas and Electricity Markets*, 141 FERC ¶ 61,125 at P 1 (Nov. 15, 2012). One of the issues that “spurred significant discussion and concern” was “whether electric market incentives are adequate to ensure gas-fired generator performance or otherwise signal the need for pipeline infrastructure to meet growing needs.” *Id.*, at p. 3, n. 2. Since FERC’s order in Docket No. AD12-12, FERC staff has produced quarterly reports providing updates on “national and regional Gas-Electric Coordination Activities.” See, e.g., *Gas-Electric Coordination, Quarterly Report to the Commission*, Sept. 18, 2014.⁴¹ According to this report:

The Eastern Interconnection Planning Collaborative (EIPC) is now working on the Target2 study, which will evaluate the adequacy of the natural gas infrastructure in 2018 and 2023 to meet the expected core load and non-core gas-fired generation requirements on a Winter Peak Day and a Summer Peak Day. Work is focused on finalizing the second set of natural gas and electricity market assumptions on core and non-core demand levels such as infrastructure expansions, load growth, LDC expansion, and oil-to-gas conversion for Target 2 model inputs....

...The ICF-led study on Long-term Electric and Natural Gas Infrastructure Requirements in the Eastern Interconnection, prepared for NARUC and

goals require the expansion and construction of gas infrastructure, both pipelines and compressor stations, to get it to where it needs to be to keep the lights on.
<https://www.ferc.gov/media/videos/lafleur/2015/012715-lafleur.pdf>

The “Clean Power Plan” has been criticized by the Union of Concerned Scientists (“UCS”), among others, for its failure to consider the much deeper emission reductions that would be possible by increasing renewable energy use and for its overreliance on natural gas for electric generation. See, UCS, *Strengthening the EPA’s Clean Power Plan* (2014), available at: <http://www.ucsusa.org/sites/default/files/attach/2014/10/Strengthening-the-EPA-Clean-Power-Plan.pdf>

⁴¹ <http://www.ferc.gov/legal/staff-reports/2014/09-18-14-gas-electric-cord-quarterly.pdf>

the Eastern Interconnection States Planning Council (EISPC), examines the potential build-out of natural gas infrastructure required to supply power and gas customers to 2030 under three demand and policy scenarios for the power sector in the Eastern Interconnect region. The preliminary study results presented in September find that the overwhelming factor driving natural gas infrastructure development is the demand for electricity. *Id.*, at pp. 5-6 (emphasis added).

FERC staff then highlights “relevant natural gas filings” (pp. 15-17) and “relevant electric filings” (pp. 18-19). The backbone of FERC’s “Coordination Between Natural Gas and Electricity Markets” is ensuring there is sufficient infrastructure in place to meet future demand for electricity. FERC is fully engaged in long-term regional development and planning with the natural gas industry.

According to the Natural Gas Supply Association: (“NGSA”):

As FERC and industry participants address transitional issues of increased reliance on natural gas by the power sector, the natural gas industry’s achievement in serving the power sector’s substantial growth in natural gas demand cannot be overlooked. Because the United States is blessed with an abundant supply of clean-burning natural gas, and new technologies to develop shale gas, growth in natural gas production has been enormous. Over the past decade alone, production has increased by approximately 43 percent; growing from nearly 50 Bcf/d in 2005 to 71 Bcf/d projected for 2015. In fact, production has increased by 28 percent in just the past five years, allowing gas sellers to accommodate the 25 percent growth in power generation demand in the same timeframe. However, to take full advantage of these abundant new supplies, additional gas infrastructure must be in place to transport and store natural gas from the wellhead to the point of consumption.

Comments of NGSA at 3-4 (Docket No. RM14-2-000, Accession No. 20141128-5031) (emphasis added).

FERC is engaged in long-term regional gas infrastructure planning and development related to both the Marcellus and Utica shale formations. The network of recently constructed, planned and proposed projects cries out for a forward-looking comprehensive EIS that thoroughly evaluates all environmental impacts together in a single document. By asserting that it only reviews individual proposals, FERC obfuscates its active participation in this planning and development. FERC also avoids meaningfully analyzing the direct, indirect and cumulative effects on this region as a whole, including the impacts of Marcellus and Utica shale gas development. FERC is also substantially limiting the development and consideration of alternatives to natural gas as a supply for electric generation. Therefore, FERC should prepare a programmatic EIS that addresses recent, present, and reasonably foreseeable gas infrastructure projects related to the

Marcellus and Utica shale formations and the coordination between the natural gas and electricity markets.

The EIS Cannot Rely On Assumptions of Regulatory and Permitting Compliance, But Must Instead Rely On Historical Data of Violations and Non-Compliance.

The EIS may not permissibly rely on presumed compliance with permitting requirements to justify a conclusion that no cumulative or indirect impacts will result from the project. To the contrary, the Commission must take a hard look at the realities and history of *non-compliance* in order to perform adequate cumulative and indirect impacts analyses. For example, because the pipeline will induce additional well drilling and other development of natural gas infrastructure in Pennsylvania, the Commission must consider the history of regulatory violations and permit non-compliance by natural gas development activities in the Marcellus Shale play including improper hydraulic fracturing wastewater disposal, impairment of water supplies, and other environmental regulatory violations. A recent (January 2015) report by the Environment America Research & Policy Center concluded:

In Pennsylvania, fracking companies violate rules and regulations meant to protect the environment and human health on virtually a daily basis. Between January 1, 2011, and August 31, 2014, the top 20 offending fracking companies committed an average of 1.5 violations per day. Fracking operators in Pennsylvania have committed thousands of violations of oil and gas regulations since 2011. These violations are not “paperwork” violations, but lapses that pose serious risks to workers, the environment and public health[.]”

Fracking Failures: Oil and Gas Industry Environmental Violations in Pennsylvania and What They Mean for the U.S., Environment America Research & Policy Center (January 2015), available at: http://environmentamerica.org/sites/environment/files/reports/EA_PA_fracking_scrn.pdf

The data in the report were downloaded from the Pennsylvania Department of Environmental Protection, Office of Oil and Gas Management, at http://www.portal.state.pa.us/portal/server.pt/community/oil_and_gas_reports/20297 Violation, well activity and production reporting data were downloaded on 18 September 2014. Violations are those reported in the state’s own “Oil and Gas Compliance Report” database. These violations, documented by official Pennsylvania state agency documents, include such violations as:

- Endangering drinking water through improper well construction. Well problems, including leaks, contaminated drinking water supplies in as many as 243 cases across Pennsylvania between December 2007 and August 2014 – 81 of them between 2011 and 2014. In one such case Carrizo (Marcellus) LLC was cited for failing to properly restore a water supply its fracking activities had contaminated.
- Dumping industrial waste into local waterways. One operator, EQT Production, was cited twice in 2012 by the Pennsylvania Department of Environmental

Protection (DEP) for violations at a well in Duncan Township, Tioga County that polluted a local stream.

- Otherwise disposing of waste improperly. In one 2012 incident at an Exco Resources well in Bell Township, Clearfield County, the company was cited for contaminating underground drinking water supplies as a result of leaks from a well drilled for the specific purpose of injecting toxic waste underground.

A single such violation of a regulation can create a significant adverse environmental impact.

Thus, any “no significant impact” conclusions, or a failure to consider the environmental impact of regulatory violations based on an assumption of regulatory compliance, are contradicted by the actual historical record.

FERC must consider “whether the action threatens a violation of Federal, State, or local law or requirements imposed for the protection of the environment.” 40 C.F.R. §1508.27(b)(10).⁴² The Pennsylvania Constitution provides that “the people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic and esthetic values of the environment.” Pennsylvania Constitution, Art. I, Sec. 27. Pennsylvania’s public natural resources are the common property of all of the people, including generations yet to come. *Id.* Thus, FERC must consider whether authorization of the project threatens a violation of Article I, Section 27 of the Pennsylvania Constitution.

According to the Pennsylvania Supreme Court:

By any responsible account, the exploitation of the Marcellus Shale Formation will produce a detrimental effect on the environment, on the people, their children, and future generations, and potentially on the public purse, perhaps rivaling the environmental effects of coal extraction.

Robinson Township v. Commonwealth of Pennsylvania, 83 A.3d 901, 976 (Pa. 2013) (plurality opinion).

⁴² In addition, numerous properties through which the pipeline will cut are subject to: (1) land use and zoning restrictions that prohibit the proposed action; and (2) conservation and open space restrictions and easements authorized by state and local law and to which County and municipal governments are *parties*. The construction and operation of a natural gas pipeline will almost universally violate the covenants of these open space requirements and conservation easements. Notwithstanding any argument that these restrictions may be preempted by the Natural Gas Act, CEQ regulations *require* that the environmental consequences analysis of the EIS must consider and discuss “possible conflicts between the proposed action and the objectives of Federal, regional, State, and local (and in the case of a reservation, Indian tribe) land use plans, policies and controls for the area concerned. (See §1506.2(d).)” 40 CFR § 1502.16 - Environmental consequences. Thus, whether such restrictions are preempted is irrelevant. The EIS must identify the properties within the pipeline corridor that are subject to such land use restrictions, and conservation and open space easements authorized by state and local law, identify the conflicts, and evaluate how these conflicts may be mitigated.

FERC cannot evade its responsibility to conduct an *analysis* of the cumulative impacts and offer bald conclusory statements that the project would have no significant adverse impact on the environment. This would defeat the very purpose of a cumulative impacts analysis. Under NEPA, the Commission is required to consider the incremental impact of the project's effects *when added* to the impacts caused by those Marcellus Shale development activities. See *Brong*, 492 F.3d at 1132–33. Even if the Commission would conclude that the amount of habitat lost because of the pipeline project's construction does not constitute a significant adverse impact, the additive impact of this habitat loss along with the destruction of habitat caused by past, present, or reasonably foreseeable gas development activities and other development activities in the region clearly constitutes an adverse impact. This is precisely the analysis that NEPA requires agencies to undertake and that FERC has previously refused to perform.

The FEIS cannot simply baldly conclude that proposed construction practices and conditions on the permits issued for various aspects of the project will avoid, minimize, or sufficiently mitigate any potential impacts. As discussed above, applicants' rote promises to comply with regulations and permitting conditions does not eliminate FERC's responsibility to conduct an analysis under NEPA. See *Calvert Cliffs*, 449 F.2d at 1124. Moreover, such a bald conclusion would be contrary to actual historical fact and would be arbitrary and capricious. In fact, such violations are so commonplace that the environmental conditions in FERC's standard natural gas pipeline certificate orders require *post-hoc* FERC notification of violations when they are reported to state and other regulatory agencies. Indeed, other FERC-authorized pipeline projects for which state permits were granted have resulted in adverse impacts to water resources, as evidenced by the numerous notices of violation issued. See, e.g., Tennessee Gas Pipeline Co., LLC, Monthly Status Report, Northeast Upgrade Project 3, FERC Docket No. CP11-161-000 (filed Apr. 2, 2014) (listing problems with BMPs and instances of non-compliance with permit conditions); Beth Brelje, DEP, *Tennessee Gas continue talks about fines*, Pocono Record, Nov. 27, 2012, available at <http://www.poconorecord.com/apps/pbcs.dll/article?AID=/20121127/NEWS/211270320/-1/rss01> (reporting hundreds of violations). For example, various "industry leaders" such as Cabot, the supplier of the majority of the gas proposed for transport along the FERC-authorized Constitution pipeline and an affiliate of one of the co-owners of that pipeline, has a lengthy record of permit violations in Pennsylvania. Since the beginning of 2010, Cabot has been cited with 394 violations at unconventional well sites (accounting for over 10 percent of total violations in the state). See, *Oil & Gas Reports*, Pa. Dep't of Env'tl. Prot., available at: http://www.portal.state.pa.us/portal/server.pt/community/oil_and_gas_reports/20297.⁴³

PennEast's Resource Report 10 states that "[t]he Project will extend from various receipt point interconnections in the eastern Marcellus region, including interconnections with Transcontinental Gas Pipe Line Company, LLC (Transco) and gathering systems operated by Williams Partners L.P." Williams Partners and its subsidiaries such as

⁴³ Total violations were calculated by clicking "Oil and Gas Compliance Report," selecting the inspection period between 1/1/2010 and 3/1/2014, setting "OPERATOR" to "CABOT OIL & GAS CORP (43513)," and setting "UNCONVENTIONAL ONLY (PF INPSECTIONS)" to "Yes."

Williams Fields Services Company, have a history of violations at its facilities, including those associated with a fire at the Williams Central Compressor Station⁴⁴ and resulting in \$388,694 in fines for 2013 alone.⁴⁵

Rather than blithely accepting the promises of regulatory compliance and imposing a *post-hoc* notification requirement for violations, the Commission must take into account *in the EIS itself* the real-world likelihood that permit conditions will be violated, best management practices will not always be implemented effectively, and the environment will be adversely impacted as a result. The DEIS fails to do so.

The DEIS fails to ensure that all measures intended to “minimize” or mitigate the Project’s significant environmental impacts were fully documented, clearly described, and are monitored pursuant to monitoring regimes that are available for public review and comment.

To be sure, one important ingredient of an EIS is the discussion of steps that can be taken to mitigate adverse environmental consequences. The requirement that an EIS contain a detailed discussion of possible mitigation measures flows both from the language of the Act and, more expressly, from CEQ’s implementing regulations. Implicit in NEPA’s demand that an agency prepare a detailed statement on “any adverse environmental effects which cannot be avoided should the proposal be implemented,” 42 U.S.C. § 4332(C)(ii), is an understanding that the EIS will discuss the extent to which adverse effects can be avoided. See D. Mandelker, *NEPA Law and Litigation* § 10:38 (1984). More generally, omission of a reasonably complete discussion of possible mitigation measures would undermine the “action-forcing” function of NEPA. Without such a discussion, neither the agency nor other interested groups and individuals can properly evaluate the severity of the adverse effects. An adverse effect that can be fully remedied by, for example, an inconsequential public expenditure is certainly not as serious as a similar

⁴⁴ Joseph Kohut, *Fire, possible explosion at Susquehanna gas compressor station thought to be accidental*, THE TIMES TRIBUNE, May 16, 2013, available at <http://thetimes-tribune.com/news/fire-possible-explosion-at-susquehanna-gas-compressor-station-thought-to-be-accidental-1.1489789>.

⁴⁵ Laura Legere, *DEP fined oil and gas companies \$2.5 million last year*, StateImpact Pennsylvania, Feb. 27, 2014, <http://stateimpact.npr.org/pennsylvania/2014/02/27/dep-fined-oil-and-gas-companies-2-5-million-last-year/>. See also *Williams Compressor Station, Windsor NY is (again) on Fire*, NY Friends of Clean Air and Water, Jan. 6, 2013, available at <http://nyfriendsofcleanairandwater.blogspot.com/2014/01/williams-compressor-station-windsor-ny.html> (listing incident at Williams facilities).; see also, *Williams Probe Expanded on ‘Unusual’ Gas Accidents Trio*, Bloomberg Business, May 15, 2014, <http://www.bloomberg.com/news/articles/2014-05-15/williams-probe-expanded-on-unusual-gas-accidents-trio> (“A probe into safety practices at pipeline operator Williams Cos. is being expanded after a natural gas plant fire led to the evacuation of a town in Wyoming last month, the company’s third accident in a year.”)

effect that can only be modestly ameliorated through the commitment of vast public and private resources. Recognizing the importance of such a discussion in guaranteeing that the agency has taken a “hard look” at the environmental consequences of proposed federal action, CEQ regulations require that the agency discuss possible mitigation measures in defining the scope of the EIS, 40 CFR § 1508.25(b) (1987), in discussing alternatives to the proposed action, § 1502.14(f), and consequences of that action, § 1502.16(h), and in explaining its ultimate decision, § 1505.2(c).

Robertson v. Methow Valley Citizens Council, 490 U.S. 332, 351-52, 109 S. Ct. 1835, 1846-47, 104 L. Ed. 2d 351 (1989)

NEPA and CEQ regulations require detailed analysis of both on-site and off-site mitigation measures. *See, e.g.*, 40 CFR §1502.16(b) (1987); *Robertson, supra*, 490 U.S. at 358, 109 S. Ct. at 1850, 104 L. Ed. 2d 351. In order for mitigation measures to support a finding that the project impacts will be reduced to less than significant levels, the mitigation plan and measures must be “clearly described” and must be “enforceable.” CEQ, *Memorandum for Heads of Federal Agencies, Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact* (“CEQ Mitigation Memorandum”).⁴⁶ The Commission cannot satisfy these criteria by prematurely preparing a DEIS prior to the receipt of all necessary information and prior to the issuance of all applications for, and required state and federal determinations, relevant to those mitigation measures. *See, e.g.*, *N. Plains Res. Council, supra*, 668 F.3d at 1083 (stating that “plans to conduct surveys and studies as part of its post-approval mitigation measures” do not constitute a “sufficiently ‘hard look’” under NEPA). In this DEIS, numerous mitigation measures are vaguely promised for the future, but are not provided or described in the DEIS. The range from bog turtle plans to wetland mitigation plans to historic property treatment plans, and many more.

It is also improper to simply announce that various environmental impacts will be mitigated out of existence or that mitigation will reduce impacts to less than a significant level, without proper detailed analysis and support and without monitoring mechanisms to assure that the mitigation measures will be fully and completely implemented. *See, CEQ Mitigation Memorandum*, at 7 & n.18 (2011) (“Mitigation commitments needed to lower the level of impacts so that they are not significant should be clearly described ... in any other relevant decision documents related to the proposed action.”). The DEIS failed to provide this analysis and support.

Mitigation techniques to which PennEast should be required to commit and which should be fully documented and monitored include those set forth in the report by landscape architect and forest expert Leslie Sauer, *Achieving Higher Quality Restoration Along Pipeline Rights-of-Way: An Overview of Pipeline Construction Impacts with*

⁴⁶ The guidance is available at: https://ceq.doe.gov/current_developments/docs/Mitigation_and_Monitoring_Guidance_14Jan2011.pdf

*Recommendations for Reducing Environmental Damage.*⁴⁷ The DEIS fails to accomplish this.

The Draft EIS fails to contain full and complete information on impacts to waterbodies and mitigation of those impacts.

The draft EIS identifies numerous wetlands and waterbodies that will be affected by the project. However, substantial areas of the route have not yet even been surveyed for wetlands, springs, and other water resources. As noted in more detail elsewhere herein, the details regarding crossing methods, wetland mitigation measures, locations of hydrostatic testing water withdrawals, and numerous other aspects of mitigation of impacts to waterbodies are absent from this DEIS.

Taking the requisite “hard look” at whether project impacts to waterbodies will be significant, or can be adequately mitigated, requires PennEast to provide substantial additional information about the crossing methods it will use, as well as other construction details. Different dry crossing methods can have different impacts. Without a site-specific identification of which dry crossing method will be used at each waterbody crossing, there will be no basis to determine what the pipeline project’s impacts will be or whether they will be mitigated sufficiently. In addition, there should be an alternatives-analysis of utilizing HDD crossings of other waterbodies.

Full information that should have been available for comment at the time of the DEIS includes:

- geotechnical feasibility studies for all trenchless crossing locations throughout the entire route;
- identification of all water wells and springs within 150 feet of the proposed pipeline and contractor yards throughout the entire route;
- surveys for all proposed contractor yards concerning water wells, waterbodies, and wetlands throughout the entire route;
- site-specific blasting plans that include protocols for in-water blasting and the protection of aquatic resources and habitats throughout the entire route;
- specific information and full location information regarding water withdrawals for hydrostatic testing, including timing restrictions.

“After all, once a project begins, the ‘pre-project environment’ becomes a thing of the past. Evaluating the project’s effect on pre-project resources is simply impossible.” *LaFlamme v. FERC*, 852 F.2d 389, 400 (9th Cir. 1988). Moreover:

[T]he very purpose of NEPA’s requirement that an EIS be prepared for all actions that may significantly affect the environment is to obviate the need

⁴⁷ The document is available at:

http://www.delawareriverkeeper.org/resources/Reports/SauerL_Achieving_Higher_Quality_Restoration_Alone_Pipeline_Rights_of_Way.pdf

for speculation by insuring that available data is gathered and analyzed prior to the implementation of the proposed action. (internal citations omitted).

Id.

The Commission is not permitted to approve the project and then conduct its study of the project's environmental effects. *National Parks & Conservation Ass'n v. Babbitt*, 241 F.3d 722, 734 (9th Cir. 2001). The information listed above is the kind of "information and understanding that is required before a decision that may have a significant impact on the environment is made," *Id.* at 733. This is particularly so when the Commission's ultimate finding under NEPA may be based on the assumption that significant environmental impacts will be mitigated. Indeed, while mitigation measures often are necessary, they are not sufficient alone to meet the FERC's NEPA obligations to determine the projected extent of the environmental harm to enumerated resources before a project is approved. See *Northern Plains Res. Council*, 668 F.3d at 1084. "Mitigation measures may help alleviate impact *after* construction, but do not help to evaluate and understand the impact before construction." *Id.* (emphasis in original). Reliance on mitigation measures cannot presuppose approval or assume that—regardless of what effects the project may have—there are mitigation measures that might counteract those effects without first understanding the extent of the problem. See *id.*, at 1084-85.

There must be a detailed analysis of stormwater management and the potential impacts of runoff on waterbodies near the project, both during the construction and post-construction period. The pipeline construction will result in permanent alterations to soil structure and, possibly, topography. The expected increase in sediment mobilization that can be expected to result from the pipeline construction activities must be evaluated in detail. While some of these impacts may be temporary, others will be permanent. A number of the waterbodies are special protection waters of the Commonwealth and have been designated as High Quality (HQ), or Exceptional Value (EV) under applicable Pennsylvania regulations at 25 Pa. Code Chapter 93. Impacts to these waters in particular must be avoided or minimized to the greatest possible extent; the water quality of EV waters shall be maintained and protected, without any exception. 25 Pa. Code § 93.4a. Specific mitigation plans should be prepared for these waters and made available for review.

The EIS should take into account the conditions of the required Pennsylvania and New Jersey Section 401 Water Quality Certifications, if any are issued. Final EIS documents should await the issuance of any such 401 Water Quality Certifications because they may contain conditions that affect environmental impacts of the project.

Under Section 401 of the Clean Water Act, "no [federal] license or permit shall be granted until the certification required by this section has been obtained or has been waived." 33 U.S.C. §1341(a)(1). 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....” *Jefferson County PUD. v. Wash. Dept. of Ecology*, 511 U.S. 700, 707 (1994) (emphasis added). In recognition of this clear and binding precedent, the D.C. Circuit also has 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).

A FERC Certificate of Public Convenience and Necessity for the PennEast Pipeline project would constitute a “license or permit” within the definition provided by EPA regulations, because it would be granted to permit an “activity which may result in any discharge into the navigable waters of the United States,” namely, construction and operation of the pipeline project. *See*, 40 CFR §121.1(a).

We note that FERC has, in the past, issued Orders issuing Certificates of Public Convenience that condition the Applicants’ ability to commence construction on the future receipt of the Section 401 certification.⁴⁸ This does not cure FERC’s violation of the CWA. The clear language of the CWA prohibits the granting of *any* license or permit. 33 U.S.C. §1341(a)(1). The statute makes no exceptions for licenses or permits that are conditioned on the subsequent grant of the 401 Certification.⁴⁹

⁴⁸ *See, e.g., Northwest Pipeline GP*, Docket No. CP12-471 Order Denying Clarification and Rehearing, 145 FERC ¶61,013 (2013).

⁴⁹ The Commission’s issuance of “conditional licenses” is contrary to the design and intent of the CWA, which allocates to the States the role of primary regulator under the statute. Section 401 allows states to condition Water Quality Certifications on measures designed to ensure compliance with effluent limitations and other state regulations. *Id.* at §1341(d). The state’s conditions, in turn, are required to “become a condition on any Federal license or permit subject to the provisions of this section.” *Id.* Thus, the Section 401 Certification must come before any license, and because of the State’s power to impose conditions on the activity, should come before any DEIS is issued for public comment. Such conditional orders are arbitrary and capricious, because no balancing of the public interest can be made regarding the construction of the proposed pipeline project *before* the Commission has quantified and considered the full extent of the benefits and adverse impacts. It appears that FERC has also previously violated the CWA by purporting to limit the state’s power and require that “[a]ny state or local permits issued with respect to the jurisdictional facilities authorized herein must be consistent with the conditions of this certificate.” *See, e.g., Constitution Pipeline Company, LLC*, Docket No. CP13-499, December 2, 2014 Order, ¶ 147. The Natural Gas Act does not confer upon FERC the power to curtail state rights under the CWA. *See* 15 U.S.C. § 717b(d)(3); *see also Dominion Transmission, Inc. v. Summers*, 723 F.3d 238, 243 (D.C. Cir. 2013) (finding in a case involving the construction of a facility under 15 U.S.C. §717f(c) that Congress expressly saved the states’ powers under the Clean Air Act from preemption). Such Orders exceed the Commission’s statutory authority and impermissibly curtail States’ ability to grant, condition, or withhold a Certification under Section 401 of the CWA, including imposing conditions in the Certification requiring more stringent measures than are contained in FERC’s orders, to prevent natural gas pipeline projects from posing an unacceptable risk to water quality. *See City of Tacoma*, 460 F.3d at 67 (“The Clean Water Act gives a primary role to states to block... local water projects ... FERC’s role [under CWA Section 401] is limited to awaiting, and then deferring to, the final decision of the state.”) (internal quotations omitted).

Moreover, States may include limitations or conditions in their certifications as necessary to ensure compliance with water quality standards and other provisions of the CWA and appropriate requirements of state or tribal law. 33 U.S.C. §1341(d); CWA §401(d); *S. D. Warren Co. v. Maine Board of Environmental Protection et al*, 547 U.S. 370, 126 S.Ct. 1843 (2006). *Jefferson County PUD v. Washington Dept. of Ecology*, 511 U.S. 700, 711 (1994).

Conditions to protect water quality need not focus solely on the potential discharge. Once a potential discharge triggers the requirement for §401, the certifying agency may develop “*additional conditions and limitations on the activity as a whole.*” *Jefferson County PUD v. Washington Dept. of Ecology*, 511 U.S. 700, 712 (1994).

Section 401 applies to any federal permit or license for an activity that may discharge into a water of the U.S. The Ninth Circuit Court of Appeals has ruled that the discharge must be from a point source, and agencies in other jurisdictions have generally adopted the requirement. *Oregon Natural Desert Association v. Michael P. Dombeck*, 151 F.3d 945, 5 (9th Cir. 1998); *ONDA v. U.S. Forest Service*, 550 F.3d 778 (9th Cir. 2008). Of course, the definition of “point source” is very broad. The CWA defines “point source” as “any discernible, confined, and discrete conveyance, including but not limited to any pipe, ditch, channel...rolling stock ... or vessel...from which pollutants are or may be discharged.” 33 USC 1362(14); CWA §502(14). “Point sources” also include bulldozers and similar construction equipment. *Avoyelles Sportsmen's League v. Marsh*, 715 F.2d 897, 922 (5th Cir. 1983).

Once these thresholds are met, the scope of analysis and potential conditions can be quite broad. We emphasize that once §401 is triggered, the certifying state or tribe may consider and impose conditions on the *project activity in general*, and not merely on the discharge, if necessary to assure compliance with the CWA and with any other appropriate requirement of state law. *Jefferson County PUD v. Washington Dept. of Ecology*, 511 U.S. at 711-712 (1994); *S. D. Warren Co. v. Maine Board of Environmental Protection et al*, *supra*. For example, water quality implications of fertilizer and/or herbicide use to maintain pipeline rights of way might be considered as part of a §401 certification analysis of a CWA §404 permit for the project.

Conditions placed in §401 water quality certifications must become conditions of the resulting federal permit or license. CWA 401(d), 33 U.S.C. §1341(d). The federal agency may not select among conditions when deciding which to include and which to reject. *American Rivers v. Federal Energy Regulatory Commission*, 129 F.3d 99, 110-111 (2d Cir. 1997).

If the federal agency chooses not to accept all conditions placed on the certification, then the permit or license may not be issued. 33 U.S.C. §1341(a)(1); CWA §401(a)(1); *American Rivers Inc. v. Federal Energy Regulatory Commission*, 129 F.3d 99, 110-111 (2d Cir. 1997); *Del Ackels v. United States Environmental Protection Agency*, 7 F.3d 862, 868 (9th Cir 1993); *Puerto Rico Sun Oil Company v. United States Environmental Protection Agency*, 8 F.3d 73, 74-75 (1st Cir. 1993); *Roosevelt*

Campobello International Park Commission v. United States Environmental Protection Agency, 684 F.2d 1041, 1056 (1st Cir. 1982); *US v. Marathon Development Corporation*, 867 F.2d 96, 99 (1st Cir. 1989).

The extent and type of conditions that the certifying state agencies impose will directly influence, if not determine, the extent and type of impacts on the aquatic environment that the project will cause. It would therefore be premature for FERC to finalize an EIS for agency action without first assessing the conditions to be imposed by the certifying states of Pennsylvania and New Jersey in their 401 water quality certifications.

The DEIS fails to fully evaluate the release of project-related methane emissions over the entire lifespan of the project and the air quality impacts of those emissions.

The DEIS flatly declares that: “Consideration of leakage from natural gas production well sites is beyond the scope of this Project.” DEIS, p. 4-226, p. 324 of PDF. Based on this flat declaration, the DEIS provides no analysis of methane releases from natural gas production related to the project.

But by increasing the transportation capacity of natural gas pipeline networks and thus purportedly eliminating a "bottleneck" from the gas production system, this project would necessarily expand the capacity of extraction companies to drill wells and extract natural gas in the Marcellus Shale region of Pennsylvania. Methane often leaks and is vented as a result of the gas production, transportation, and distribution process, and leakage may occur any point between the well pad and final delivery. *See, e.g.,* Scot M. Miller et al., *Anthropogenic Emissions of Methane in the United States*, 110 Proceedings of the National Academy of Science. 2018 (2013), available at <http://www.pnas.org/content/110/50/20018.full?sid=21462d5c-d709-4afe-8fd1-8f58cafc6218>

The EIS should evaluate the impacts of methane emissions from the entire fuel cycle of the natural gas that the pipeline project will transport, including production and transmission. See also section below, “The Draft EIS fails to properly evaluate the pipeline project’s climate impacts, including those arising from its induced natural gas development activities, and is contrary to the CEQ Final Guidance on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews.”

The Draft EIS fails to properly evaluate the pipeline project’s climate impacts, including those arising from its induced natural gas development activities, and is contrary to the CEQ Final Guidance on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews

We have already explained why the EIS must consider the environmental impacts of expanded development of natural gas resources in the Marcellus Shale region, as those

activities are connected and represent cumulative and indirect effects of FERC's permitting of interstate natural gas pipelines.⁵⁰ The CEQ's recent *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 2016) ("Final Guidance")⁵¹ must inform the EIS and NEPA reviews for this project.

CEQ has warned federal agencies that simply dismissing these impacts in environmental reviews because of the small incremental impact from a particular project is not acceptable:

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.

Final Guidance, p.11.

The Final Guidance states: pp. 13-14:

2. The Scope of the Proposed Action

In order to assess effects, agencies should take account of the proposed action – including “connected” actions – 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.

⁵⁰ See, discussion *infra* under the heading: “The EIS must include a review of the environmental consequences of induced natural gas production and transportation infrastructure as “connected actions”, “indirect effects”, or “cumulative effects” of the Project.”

⁵¹ The CEQ Final Guidance is available at: <http://www.whitehouse.gov/administration/eop/ceq/initiatives/nepa/ghg-guidance>

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. [internal footnote omitted]

Final Guidance, pp. 13-14.

With respect to indirect effects the Final Guidance states:

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.

Final Guidance, p. 16, fn. 42.

In fact, the Final Guidance (p. 16, fn. 43) specifically identifies full life cycle analysis for greenhouse gas emissions as a model method to evaluate activities and impacts that may be connected to a specific natural gas project: 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) ("Life Cycle Greenhouse Gas Perspective"), available at: <http://energy.gov/sites/prod/files/2014/05/f16/Life%20Cycle%20GHG%20Perspective%20Report.pdf>.

That example involves a full life cycle analysis ("LCA") for greenhouse gas emissions in the context of Department of Energy permitting for a liquefied natural gas export facility. As the example explains: "This is a cradle-to-grave LCA that begins with extraction of natural gas or coal and ends with electricity delivered to the consumer. NETL uses five life cycle (LC) stages, beginning with the acquisition of raw materials and ending with energy consumption." Greenhouse gas emissions are modeled through the entire life cycle, from emissions at the stage of natural gas extraction in the Marcellus Shale region, through its transport, and its ultimate combustion for energy production.

NETL's natural gas model uses a comprehensive set of parameters within a flexible network of unit processes, allowing the modeling of different types of natural gas sources. Key variables include lifetime well production rates, emission factors for episodic emissions (e.g. completions

and workovers), flaring rates at extraction and processing, workover and liquid unloading frequency, and pipeline distance... For additional details on the natural gas model, refer to the NETL Life Cycle Analysis of Natural Gas Extraction and Power Generation (NETL, 2014). For Scenario 1 of this analysis, all natural gas is modeled as unconventional gas from the Marcellus Shale. For the purposes of this analysis, Marcellus Shale gas was utilized as a proxy for new unconventional natural gas production.

Life Cycle Greenhouse Gas Perspective, p.3. Thus, the CEQ Final Guidance provides an example of how a NEPA analysis should fully analyze greenhouse gas emissions and potential climate change impacts from the entire series of connected activities involving natural gas infrastructure, using life cycle analysis.

In addition, the Final Guidance instructs agencies that:

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. [internal footnotes omitted]

Final Guidance, p. 28.

Thus, the DEIS should evaluate the extent to which FERC's decision on the PennEast Pipeline will advance or obstruct progress for the United States climate goals and compliance with international greenhouse gas emissions and climate change commitments.

We believe it is important for this agency to know to what extent pipeline construction, by unlocking natural gas resources in the Marcellus Shale region, will jeopardize compliance with United States climate change commitments and contribute to worsening climate conditions induced by greenhouse gas emissions. Is this not the point of the CEQ Final Guidance?

As we noted above, the report, "A Bridge Too Far: How Appalachian Basin Gas Pipeline Expansion Will Undermine U.S. Climate Goals" (July 2016) ("Bridge Too Far

study”) has been filed to the PennEast docket.⁵² The “Bridge Too Far” study analyzes the relationships between the explosion in natural gas production in the Marcellus and Utica Shale plays, the proposed pipelines to transport it from those areas, the resulting greenhouse gas emissions, and the resulting impossibility of reaching national climate goals and U.S. international commitments. The study concludes, *inter alia*, that:

The U.S. Energy Information Administration’s (EIA) latest projection for U.S. gas supply and demand (Annual Energy Outlook 2016) shows a 55 percent increase in production and a 24 percent increase in consumption by 2040. The difference between the greater rise in production than consumption would go to export, making the U.S. a major exporter of natural gas in the coming decades. (p. 5)

The currently planned gas production expansion in Appalachia would make meeting U.S. climate goals impossible, even if the Administration’s newly proposed methane rules are successful in reducing methane leakage by 45 percent. Our calculations show that the rise in gas consumption projected by the EIA would alone lead to emissions that would surpass the current long-term U.S. climate target by 2040, even after accounting for methane leakage cuts. This ignores the emissions from the production (and consumption) of exported gas. In other words, even if gas were the only source of greenhouse gases in 2040, it would still blow the U.S. carbon budget. (p. 6)

In the next few years, the Appalachia Basin could become the epicenter of this pipeline buildout, and FERC stands as the gatekeeper to dozens of major projects yet to be permitted. These projects could unleash a massive surge in natural gas production from this region, allowing U.S. natural gas production to aggressively grow at precisely the time that the world needs to constrain fossil fuels of every kind. At stake is the attainment of U.S. climate goals. Locking in new natural gas infrastructure, with an economic lifespan of at least 40 years, could appropriate all of the U.S. emissions budget for natural gas alone. In other words, far from providing a bridge to clean energy, natural gas could undermine the transition that is required for a safe climate future. (p. 9)

This production growth cannot be realized without building the pipeline capacity to carry it to market. We calculate that around 15.2 Bcf/d of the anticipated 18.5 Bcf/d production growth cannot go ahead without the pipelines that are currently proposed and under review. (p. 10)

⁵² The report is also accessible at:

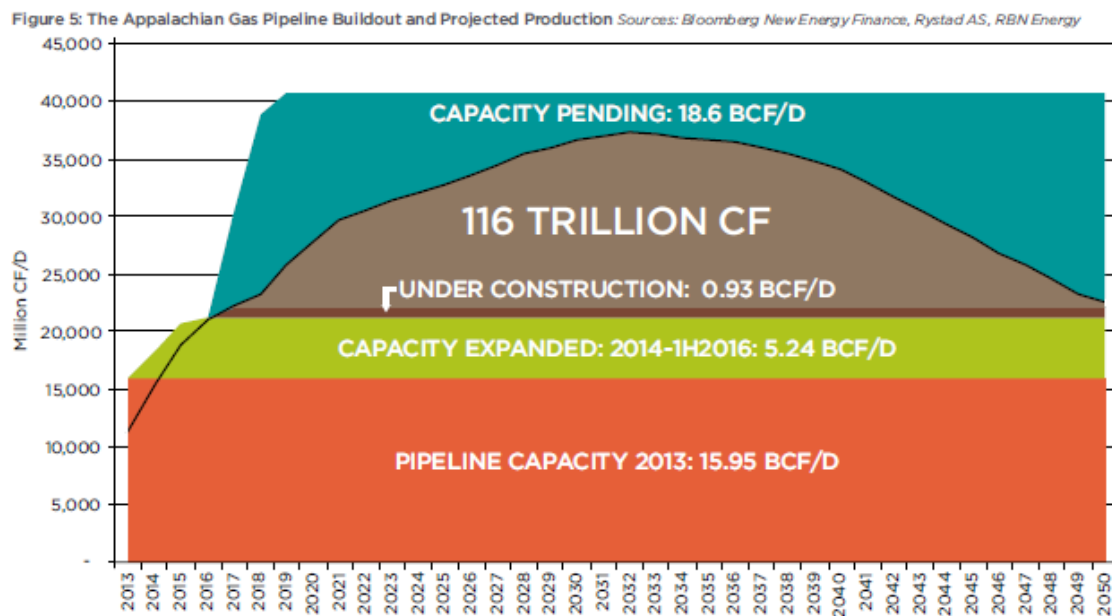
http://priceofoil.org/content/uploads/2016/08/bridge_too_far_report_web_final_v4.pdf

Eight of the proposed pipelines are new-build projects forging new pipeline corridors over hundreds of miles (see Map 2). These would add another 12.4 Bcf/d of takeaway capacity. Together with the Constitution Pipeline, there is over 18.6 Bcf/d of takeaway capacity hanging in the balance. Building these pipelines would enable the Appalachian Basin to expand production to its likely maximum potential (see Figure 5).

Table 2: Proposed New-Build Pipelines

Pipeline	Capacity (Million CF/D)	Destinations	Status (FERC Docket No.)
Spectra Constitution	650	New York	Construction Stalled
CGT Leach Xpress	1,000	Gulf Coast Markets	FERC Docket CP15-514
ETP Rover	2,750	Michigan & Canada	FERC Docket CP15-93
Spectra PennEast	990	Pennsylvania	FERC Docket CP15-558
Spectra NEXUS	1,500	Michigan & Canada	FERC Docket CP16-22
Dominion Atlantic Coast	1,500	Virginia & No. Carolina	FERC Docket CP15-554
EQT Mountain Valley	2,000	Virginia	FERC Docket CP16-10
CGT Mountaineer Express	750	Connects to US Gulf Coast	FERC Pre-filing
Williams Transco	1,900	Connects to Atlantic Sunrise	(Preliminary Evaluation)
Appalachian Connector		Mid-Atlantic and SE as far as Florida	

Total Capacity 13,040



A starting point for looking at the climate impact of this pipeline buildout is to estimate how much gas production is enabled by the full realization of all the proposed pipelines. Figure 5 shows the capacity implications of the region's pipeline buildout, including pipelines that are already built, those that are currently under construction, and those yet to break ground. It also shows the Rystad Energy forecast for Appalachian Basin gas

production – in particular, the gray shaded area within the “capacity pending” area shows the total production that would be enabled by the increase in pipeline capacity from currently planned pipelines.

As the chart shows, current pipeline capacity could become full in 2017, constraining projected Appalachian Basin gas production growth to 2050 and beyond. If no new takeaway capacity is built, production of around 116 trillion cubic feet of potential gas production from now through 2050 would be avoided. New gas drilling in the region would only occur as production from existing wells declines to free up pipeline capacity. Avoiding production of the additional gas would dent U.S. gas production growth and, as we will demonstrate in subsequent sections of this report, could help prevent the U.S. from overshooting its climate goals. (p.18)

Thus, the approval of the PennEast Pipeline would contribute directly to the failure of U.S. climate change goals, exceeding our national carbon budget, and failing to meet international commitments. A natural gas pipeline EIS that fails to analyze or recognize this is a failure.

The EIS must evaluate the full extent of the GHGs, including “upstream emissions”, that will result from the project, analyze the climate impacts of those emissions, and evaluate their impact on National climate change and GHG emission commitments. FERC should tabulate the total amount of GHGs, and take into account their varying warming potential and climate-change-forcing effects and using meaningful equivalencies. See, e.g., <http://www.epa.gov/cleanenergy/energy-resources/calculator.html> and <http://www.epa.gov/climatechange/ghgemissions/gases.html>. This analysis should include all emissions (vented and fugitive) from the proposed compressor station, pipeline and other infrastructure, all construction emissions, and all emissions from indirectly-related activities. This should also include CO₂ emissions from the combustion of 1 Bcf/day of natural gas. However, the analysis cannot be limited to merely these direct GHG emissions. It must also account for the release of stored GHGs that will result from disturbing interior forest, permanently eliminating acres of interior forest, and disturbing wetlands. Elimination of carbon sinks such as forests is a well-established factor in exacerbating the global concentrations of GHGs. This must be accounted for.⁵³

These impacts – as with all other adverse environmental impacts - should be monetarily quantified so as to provide an apples-to-apples offset against the purported economic benefit of the project. For example, the “social cost of carbon” assigns a dollar

⁵³ IPCC, Agriculture, Forestry and Other Land Use (AFOLU), Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change 825 (2014), available at <http://mitigation2014.org/report/publication/>; see also CEQ, *Draft Guidance on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change* n.1 (“Also for purposes of this guidance, ‘emissions’ includes releases of stored GHGs as a result of destruction of natural GHG sinks such as forests and coastal wetlands, as well as future sequestration capability.”)

cost to the emission of one metric ton of CO₂ in order to more clearly understand the effects of continuing to increase the concentration of GHGs in the atmosphere. See, e.g., USEPA, The Social Cost of Carbon, <http://www.epa.gov/climatechange/EPAactivities/economics/scc.html>; IPCC, *Social, Economic and Ethical Concepts and Methods, Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* 249 (2014), available at <http://mitigation2014.org/report/publication/>.

In *High Country Conservation Advocates et al. v. U.S. Forest Serv. et al.*, the District Court ordered the Bureau of Land Management to evaluate the impacts of a project's GHG emissions using the social cost of carbon. 2014 WL 2922751, at * 11 (D. Colo. June 27, 2014). The court held that “a ‘hard look’ has to include a ‘hard look’ at whether [the use of the social cost of carbon], however imprecise it might be, would contribute to a more informed assessment of the impacts than if it were simply ignored.” It is not reasonable “to ignore a tool in which an interagency group of experts invested time and expertise.” *Id.* 22

The use of a social cost of carbon measure must consider the long (and indefinite) lifespan of the project. It would be entirely arbitrary to quantify the cost of only one year of GHG emissions for a project that is designed with a lifespan that is measured in decades, particularly when the cost of carbon emissions rises dramatically over time.⁵⁴ The environmental review should explicitly calculate the project's social cost of carbon over 10, 20, 30, 40 and 50 years of operation to account for the likely period of emissions and project lifespan. The analysis over this time scale must also include consideration of higher leak rates as the infrastructure ages. In addition, the loss of the carbon sink of deforested land into perpetuity should also be calculated using a similar “social cost of carbon.”

Nor may the EIS trivialize the impacts of GHG emissions associated with the project by comparing the emissions with such background as the entire U.S. Greenhouse Gas Inventory. The CEQ guidance explicitly instructs agencies to reject this line of reasoning: “the statement that emissions from a government action or approval represent only a small fraction of global emissions is more a statement about the nature of the climate change challenge, and *is not an appropriate basis for deciding whether to consider climate impacts under NEPA.*”

FERC must also take a hard look at the consequences of climate change to which the project's GHG emissions and destruction of carbon sinks contribute. Mere quantification of GHG emissions or monetized social cost of carbon fails to reflect any understanding of the context in which climate change concerns arise. The EIS should include a detailed and robust explication of the long-term impacts of climate change as a result of fossil fuel development and use, including the induced-development of natural gas extraction in the Marcellus Shale region from which the pipeline gas will be produced.

⁵⁴ See U.S. EPA, *The Social Cost of Carbon*, *supra*, (calculating a \$10 increase in the social cost of carbon between 2015 and 2040, using the most conservative discount rate of 5%).

The DEIS did not candidly and fully analyze the long-term and permanent impacts of pipeline project fragmentation of interior forest habitats.

In other pipeline cases, the Commission does not dispute that the pipeline would have a “long-term to permanent” impact by “reducing the size of unfragmented forest tracts and [creating] open habitats.” See, e.g., Constitution Pipeline FEIS at 4-88.

“Mitigation measures” such as co-locating portions of the route (see DEIS, p. 4-88, p. 186 of PDF) or reducing ROW widths in deep forest not only are inadequate to address the long-term effects of the fragmentation of interior forest habitats, but also demonstrate the Commission’s failure to evaluate the full breadth of long-term impacts that will result from the destruction of forest habitat. FERC EIS documents fail to take a hard look at this reality, including the cumulative impacts to forests and species that have resulted from significant recent development of natural gas infrastructure. Rather, FERC dismisses the effects of pipeline project’s forest fragmentation by trivializing the time required for growth of new trees and referencing the advantage of edge habitat to other species. See, DEIS, p. 4-87, p. 1185 of PDF. Unlike the migratory species of birds likely to be affected by the loss of interior forest habitat, there is no support for the notion that common species who might favor edge habitat such as white-tailed deer or raccoons have experienced any population decline where a further loss of habitat could pose a jeopardy to the species.⁵⁵

FERC should not underestimate the negative impacts of the pipeline project on birds, by focusing on only “special species” that have been afforded an additional level of protection by state or federal agencies. The environmental review must consider the entire range of species and bird populations that may be affected by the project

The mitigation measures considered in the EIS must be adequate to address the significant impacts from the eliminating vast amounts of rare interior forest. The measures cannot be limited to those aimed at minimizing *construction* impacts and which do nothing to address the pipeline project’s long-term fragmentation of the forest habitat. For example, reducing a right of way by 10 feet will have no effect on the adjacent interior forest, which still will become degraded breeding habitat. In addition, a “mitigation” measure such as the creation of a monetary fund cannot compensate for the clearing of contiguous mature forest. It will take lifetimes to recreate these woodlands that are critical to bird species currently at risk, and no evidence exists that the species can survive the loss of habitat for that long period.

⁵⁵ In fact, substantial evidence shows that overbrowsing of forest understory by high populations of deer reduce abundance and species richness of many of the same birds impacted by fragmentation—actually worsening the effects of forest fragmentation on bird species. See, e.g., D.S. deCalesta, Effects of white-tailed deer on songbirds within managed forests in Pennsylvania, *Journal of Wildlife Mgmt.* 58, 711–18 (1994) (finding that species’ richness of intermediate canopy-nesting songbirds declined 27% and abundance declined 37% between the lowest and highest deer density plots studied).

Risks to public safety should have been more comprehensively considered in the environmental review.

PennEast’s pipeline proposal raises significant public health and safety issues. The project would put a significant number of people at risk of catastrophic accidents resulting from a natural gas accident. The pipeline will cross near schools, residences, through communities, under an interstate highway, and near other areas where accidents or terrorist-induced crimes⁵⁶ could leave a devastating toll on human life and significant economic losses. For these reasons, the EIS should have fully disclosed the risks and potential consequences of an accidental or intentional release of natural gas from the pipeline.⁵⁷

As the Department of Energy has observed:

Documents prepared under NEPA should inform the decision maker and the public about the chances that reasonably foreseeable accidents associated with proposed actions and alternatives could occur, and about their potential adverse consequences. The term “reasonably foreseeable” extends to events that may have catastrophic consequences, even if their probability of occurrence is low, provided that the analysis of the impacts is supported by credible scientific evidence, is not based on pure conjecture, and is within the rule of reason. [Council on Environmental Quality (CEQ) NEPA Regulations, 40 CFR 1502.22]

Accident analyses are necessary for a reasoned choice among the proposed action and alternatives and appropriate consideration of mitigation measures. Accident analyses in NEPA documents can provide estimates of the magnitude of risk that the proposed action and alternatives would present and a comparison of risk among the proposed action and alternatives.

U.S. Department of Energy, *Recommendations for Analyzing Accidents Under The National Environmental Policy Act* (July 2002), pp. 1-2 (emphasis supplied).⁵⁸

⁵⁶ The DEIS scarcely noted the potential for a terrorist attack on the pipeline (DEIS p. 4-264, p. 362 of PDF), and mentioned various agencies and groups working on security measures, but did not describe in any detail the potential consequences of such an attack including total potential loss of life and number of injuries, societal disruption, financial and economic impacts, and other losses if multiple points along the pipeline were to be targeted. Vulnerabilities include not just physical attacks, but targeted challenges to supervisory control and data acquisition (SCADA) systems. See, e.g., CRS Report for Congress, “Pipeline Cybersecurity: Federal Policy”, R42660, Paul W. Parfomak (August 16, 2012), available at: <http://fas.org/sgp/crs/homesecc/R42660.pdf>

⁵⁷ The risks of accidents are routinely considered in the environmental reviews of other facilities such as Department of Energy facilities, nuclear power generating facilities, and others.

⁵⁸ Available at: http://energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-DOE-AccidentAnalysis.pdf

The EIS should evaluate risks and accident impacts to residents, property, and resources along the actual PennEast pipeline route, rather than provide generic listings of historical accident data. This evaluation should also include visitors and tourists at significant locations such as the Appalachian National Scenic Trail, the D&L Heritage Corridor, Delaware Canal, and other recreational facilities the pipeline is proposed to cross. *Cf., e.g.,* Letter from the National Park Service to FERC, Oregon LNG Export Project and Washington Expansion Project, FERC Nos. PF12-18-000, PF12-20-000 (Nov. 7, 2012) (National Park Service comments to FERC that the EIS must analyze safety impacts to visitors of the nearby Lewis and Clark National Historical Park and the Lewis and Clark National Historical Trail.)

Recent natural gas pipeline explosions demonstrate that, even with modern safety standards and inspections, deadly pipeline explosions continue to occur, causing loss of life and enormous economic losses.⁵⁹ The proposed PennEast main pipeline will have a potential impact radius (PIR) as defined by 49 C.F.R. §192.903 of nearly 1,000 feet.⁶⁰ As determined by Appendix C of the “Pipeline Emergency Response Guidelines” (2014) (see Appendix 15) for the Pipeline Association for Public Awareness, of which PennEast affiliate UGI is a member, the *minimum evacuation zone for the PennEast main pipeline for thermal exposure would exceed 3,000 feet in radius*.⁶¹ In the case of an accident requiring evacuation within Lower Saucon Township, the evacuation zone would include I-78 and Rt. 33, the two primary regional transportation routes. See Township Scoping Comments, Appendix 16, Map of Evacuation Zones within Lower Saucon Township (showing approximate evacuation radii for a 24-inch and a 36-inch natural gas pipeline at 1,480 pi.) The EIS must examine direct, indirect, and cumulative risks and impacts of

⁵⁹ See, e.g., Appendix 14, PHMSA, Pipeline Significant Incident 20 Year Trend, Data as of 2/17/2015. From 1995 to the present, significant pipeline incidents have resulted in 360 fatalities, 1,368 injuries, and \$6,983,415,589 in property damage (Data Source: PHMSA). The PHMSA database indicates that: From 1994 through 2013, the U.S. had 745 serious incidents with gas **distribution**, causing 278 fatalities and 1059 injuries, with \$110,658,083 in property damage. From 1994 through 2013, there were an additional 110 serious incidents with gas **transmission**, resulting in 41 fatalities, 195 injuries, and \$448,900,333 in property damage. From 1994 through 2013, there were an additional 941 serious incidents with gas **all system type**, resulting in 363 fatalities, 1392 injuries, and \$823,970,000 in property damage. These figures do not fully account for the total economic losses attributable to these accidents.

⁶⁰ The PIR for a natural gas pipeline failure is determined by the formula $r = 0.69 * (\sqrt{p * d^2})$, where ‘r’ is the radius of a circular area in feet surrounding the point of failure, ‘p’ is the maximum allowable operating pressure (MAOP) in the pipeline segment in pounds per square inch and ‘d’ is the nominal diameter of the pipeline in inches. The PennEast main pipeline is 36” in diameter, and has a design maximum allowable pressure of 1,480 psi. Thus, the PIR for the PennEast main pipeline is 955 feet. The original derivation of this formula is contained in the Gas Research Institute (GRI) report by C-FER Technologies (C-FER), “*A Model for Sizing High Consequence Areas Associated with Natural Gas Pipelines*” (Stephens 2000). This formula was derived solely on the premise that thermal radiation from a jet/trench fire is the dominant hazard related to pipe rupture and subsequent ignition.

⁶¹ The PAPA Pipeline Emergency Response Guidelines document is available at: <http://www.pipelineawareness.org/wp-content/uploads/2014/09/2014-Pipeline-Emergency-Response-Guidelines.pdf>

building and operating the pipelines, including loss of life, injuries and economic losses due to evacuation, property destruction and damage, and wildfires from a pipeline explosion.⁶² The DEIS fails to do this.

The EIS should include maps illustrating threats to loss of human life and property, including depictions of both the PIR and the evacuation zone. The EIS should include clear, visual information that explains the potential risks from accidental or intentional releases from the pipeline. FERC should also prepare a specific description of the properties, community and public resources, and residences that would be adversely affected in the event of a natural gas release. It should also provide estimates of the financial and economic losses that would foreseeably result from such accidental or intentional releases, fires, and explosions.

In evaluating the public safety risks, the EIS should consider and realistically evaluate emergency response capabilities, or the lack thereof, in each of the areas through which the pipeline would pass. We do not believe that local municipalities have emergency response capability to adequately respond to a large-scale natural gas transmission pipeline release, explosion or fire.

The DEIS did not fully and comprehensively consider the “no action” alternative.

The Commission was required to give full and comprehensive consideration to the benefits associated with the “no action” alternative, including appropriate

⁶² We also note the scoping comments filed at Accession No. 20150220-5074 regarding the psychological health and stress impact of living near a 36” diameter 1,480 psi high pressure natural gas pipeline with its attendant risks of catastrophic accidents. We reiterate that this pipeline has a minimum evacuation radius of 3,000 feet. Appendix 15, Pipeline Emergency Response Guidelines (2014). A substantial population resides within this evacuation distance over its 118-mile length. We believe that it would not be unreasonable to evaluate this “reasonably foreseeable” impact as part of the environmental review under NEPA. Under NEPA, “[e]ffects includes ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, cultural, economic, social, or health[.]” 40 CFR §1508.8 (emphasis supplied). The psychological impact would flow directly from a physical change in the environment: the physical construction, continued presence, and operation of the pipeline posing a threat. This fact alone takes the case out of the rationale of *Metro. Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 103 S. Ct. 1556, 75 L. Ed. 2d 534 (1983), which held that the Nuclear Regulatory Commission was not required to consider psychological injuries under NEPA as part of its evaluation of a restart of Three Mile Island Unit 1. The Court specifically relied on its conclusion that there was an insufficient nexus with a change to the physical environment. Justice Brennan, concurring, stated: “*There can be no doubt that psychological injuries are cognizable under NEPA.*” See ante, at 1559. As the Court points out, however, the particular psychological injury alleged in this case did not arise, for example, out of the direct sensory impact of a change in the physical environment.” 460 U.S. at 779, 103 S. Ct. at 1564 (emphasis supplied).

quantification of the natural resource and ecological benefits of avoiding the adverse impacts that are identified.

An evaluation of the full benefits of the “no action” alternative requires a concomitant full evaluation of the project risks and adverse impacts. If the EIS does not adequately address the full range and extent of the adverse environmental impacts from the Project, it will necessarily understate the environmental benefits that would result from the “no action” alternative.

In particular, the Commission must “compare the environmental consequences of the *status quo* to the consequences of the proposed action.” *Center for Biological Diversity v. U.S. Dept. of Interior*, 623 F.3d 633, 642 (9th Cir. 2010). The *status quo* that must be analyzed as part of the “no action” alternative includes the fact that critical interior ridge-top and other forest habitat will remain intact, numerous waterways will remain uncrossed and the risk of erosion and sedimentation reduced, there will be no impact to wetlands, and the air and climate-changing pollution associated with the project will remain un-emitted, and the induced development of natural gas in the Marcellus Shale region would be constrained, thus reducing or eliminating the environmental impacts of those activities. The EIS may not simply describe and compare a number of options for meeting energy demands or the specific demands of the applicant. Such a limited evaluation would not allow “policymakers and the public to compare the environmental consequences of the status quo to the consequences of the proposed action.” *See id.* In particular, the DEIS should also have included a valuation of the environmental services being performed by the particular environmental features that would be adversely affected and a concomitant analysis of the monetized loss from adverse impacts to these affected features.⁶³ It failed to do so.

The DEIS violates NEPA by narrowly defining the Project’s purpose in order to reject all other alternatives.

The DEIS states (p. 1-3, p. 39 of PDF):

According to PennEast, the purpose of the Project is to provide about 1.1 million dekatherms per day (MMDth/d) of year-round natural gas transportation service from northern Pennsylvania to markets in New Jersey, eastern and southeastern Pennsylvania, and surrounding states. PennEast’s stated objectives are to:

- provide low cost natural gas produced from the Marcellus Shale region in northern Pennsylvania to homes and businesses in New Jersey, Pennsylvania, and surrounding states;
- serve markets in the region with firm, reliable access to Marcellus Shale natural gas supplies versus traditional, more costly Gulf Coast regional supplies and pipeline pathways;

⁶³ See, e.g., Dr. James Boyd, Resources for the Future, *Valuation of Ecosystem Services*, and references therein, available at: <http://www.moore.org/materials/white-papers/Ecosystem-Services-Seminar-3-Valuation.pdf>

- provide enhanced competition among natural gas suppliers and pipeline transportation providers; and
- satisfy the needs of shippers seeking: additional supply flexibility, diversity, and reliability; liquid points for trading in locally produced natural gas; direct access to premium markets in the northeast and mid-Atlantic regions; ability to capture pricing differentials between the various interconnected pipelines; enhanced natural gas transportation system reliability; and direct access to affordable long-lived dry gas reserves.

Given this range of purported purposes, the Commission should analyze in detail whether alternatives exist to meet one, some, or all of these purposes. These include alternatives of smaller project scopes, elimination of the Hellertown Lateral, utilization of other existing capacity, contracts with other suppliers, and so forth.

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)"); *National 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). Thus, a statement of purpose and need that primarily addresses the corporate interests for financial benefit of the PennEast Pipeline Company, LLC, and the shippers for the lowest cost supply of natural gas is impermissibly narrow. Such narrow statements of purpose and need undermine the NEPA process. *Environmental Prot. Info. Center v. U.S. Forest Serv.*, 234 F. Appx. 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"). Similarly, defining the Project's purpose as serving the needs of specific customers contravenes the NGA'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). This is so particularly in light of the expert reports of energy consulting firms Labyrinth Consulting and Skipping Stone in this proceeding demonstrating the lack of actual market need or demand for this volume of natural gas. Neither NEPA nor the NGA allows FERC to reject all alternatives except this Project in order to promote the pecuniary interests of specific private corporations.

Specific Page by Page Comments on the DEIS

We offer these additional comments on specific pages of the Draft EIS:

p. ES-11. The EIS states:

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... 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.

Much of this statement is incorrect, and the failure to provide mitigation measures for NEPA public comment is improper. Lands in Northampton County that are subject to the standard form of conservation easement prohibit pipeline construction and similar activities, prohibit clear-cutting of forested areas, prohibit the removal of soil, and prohibit the use of the property for commercial or industrial purposes]. Such lands can *never* be "restored in compliance with easement requirements." To the contrary, the pipeline construction would result in the continued and perpetual violation of the terms of the conservation easements. These lands should be avoided, or the EIS should acknowledge this as an unmitigated impact.

p. 1-11 (p. 47 of PDF): The Draft DEIS states that the "Project would cross three navigable waters: Susquehanna River and Lehigh River in Pennsylvania and the Delaware River in New Jersey." The reference to the Delaware River "in New Jersey" (repeated throughout the DEIS) makes it sound like the document preparers believe that the Delaware River is only a New Jersey river, and not a border between Pennsylvania and New Jersey.

p. 1-11 (p. 47 of PDF): FERC must prepare an Endangered Species Act Biological Assessment. FERC appears to intend that the EIS will constitute the Biological Assessment (DEIS, p. 4-93) even though its analysis and surveys for threatened and endangered species is substantially incomplete. It is doubtful that this incomplete document satisfies the regulatory criteria and guidance for a Biological Assessment.⁶⁴

⁶⁴ The U.S. Fish and Wildlife Service Section 7 Consultation "Guidance for Preparing a Biological Assessment guidance" states: "For each species that 'may be present,' describe the current habitat conditions within the action area. If known, include population status and trend.

p. 1-12 (p. 48 of PDF): We find troublesome FERC's use of PennEast consultants and Tetra-Tech contractors for its NHPA responsibilities. 36 CFR 800.2(a)(3) provides that "Consistent with applicable conflict of interest laws, the agency official may use the services of applicants, consultants, or designees to prepare information, analyses and recommendations under this part. The agency official remains legally responsible for all required findings and determinations. If a document or study is prepared by a non-Federal party, the agency official is responsible for ensuring that its content meets applicable standards and guidelines." We previously raised concerns in our scoping comments about Tetra-Tech's involvement in the EIS scoping and preparation. Those concerns remain unaddressed.

p. 1-17 (p. 53 of PDF): The DEIS refer to comments allegedly "outside the scope of this EIS." These include issues such as natural gas production activity and the resulting environmental impact of such activities, which are induced or "unlocked" by FERC-authorized pipeline infrastructure. The determination that such matters are "outside of the scope of this EIS" rests largely upon its simple declaration that natural gas production activities are outside of FERC's jurisdiction. We submit that excluding such matters and the cumulative impacts of such activities from the EIS because they are not directly within FERC's jurisdiction is incorrect and applies the wrong legal test. Merely because environmental impacts causally related to a project involve matters not directly within the agency's jurisdiction is not a basis for refusing to consider them. The fact that gas drilling activities are not regulated by FERC is irrelevant since FERC must consider these cumulative impacts "regardless of what agency (Federal or non-Federal) or person undertakes such other actions." 40 C.F.R. §1508.7. See *supra*, discussion of the cumulative impacts of pipeline construction, and the "links-of-a-chain" causal connection articulated in the study, "A Bridge Too Far: How Appalachian Basin Gas Pipeline Expansion Will Undermine U.S. Climate Goals (July 2016)".

p. 1-18 (p. 54 of PDF): We disagree with the legal conclusion that "impacts that may result from additional shale gas development are not 'reasonably foreseeable'" as defined by the CEQ regulations. Nor is [sic] such additional developments, or any correlative potential impacts, an 'effect' of the Project, as contemplated by the CEQ regulations, for purposes of a cumulative impact analysis." The phrase "reasonably foreseeable" is not a

For critical habitat, identify the primary constituent elements that occur in the action area. For a description of the primary constituent elements, refer to the rule in the Federal Register that designated the critical habitat. Describe how the action may affect each protected resource - This section should document your conclusion and supporting rationale. Document your analysis of the what, when and how the protected resources will be exposed to and how such individuals or habitat are likely to respond to this exposure. Remember that you must consider effects that may occur later in time (e.g., after completion of initial construction). If species experts were contacted, include a summary of the conversations/conclusions reached. Include the references for the literature that your analysis relied upon." https://www.fws.gov/midwest/endangered/section7/ba_guide.html

defined term in the CEQ regulations, and any common sense understanding of the phrase would dictate that it would include additional shale gas development that will inevitably result from the unconstrained ability to transport it from the shale gas region via pipeline. See, *supra*, “Bridge Too Far study, and its analysis of how pipeline construction will “unlock” gas development. See also, Township Scoping Comments, pp. 25-43, which we incorporate by reference.

p. 2-3 Table 2.2-1 (p. 58 of PDF): We note that the DEIS states as a result of the Hellertown Lateral, the land affected by construction would be 17.6 acres, and land affected by operation would be 12.5 acres.

p. 2-9 (p. 63 of PDF): The DEIS misleadingly states that PennEast “would use water from municipal supplies for the hydrostatic testing.” This is contrary to p. 4-52 of the DEIS, which states that PennEast would use water from surface waterbodies OR municipal supplies.

p. 2-9 (p. 63 of PDF); The DEIS claims that waterbody crossings were evaluated by FWS, DEP, and other agencies: “Evaluation of crossing methods was done in consultation with the FWS, PADEP, NJDEP, and USACE.” However, the recommendations sections of the DEIS acknowledge that that details about many waterbody crossings are not yet available.

p. 2-12 (p. 66 of PDF): The DEIS states that with respect to the proposed pipeline crossing of 210 wetlands: “[v]egetation would be cut off just above ground level. Tree stump removal and grading would be limited to the area above the trench unless safety-related construction constraints require otherwise.” and “Original topographic conditions and contours would be restored as nearly as practicable following construction.” We submit that as a practical matter such restoration in all cases would be highly unlikely. Such assertions depend on an unrealistic assumption of compliance with requirements. The DEIS does not address the probable impacts from inevitable non-compliance. See, e.g., PowerPoint Presentation, “Minimizing and Restoring Stream and Wetland Impacts On Pipeline Construction Projects”, (July 29, 2015, Paul A. Kanouff, Civil & Environmental Consultants, Inc.), “Minimizing and Restoring Stream and Wetland Impacts Is Not a Priority”. This presentation notes: “Many companies do not submit permit completion forms or monitoring reports to the agencies”, “Even though submission of these documents is a requirement of the stream and wetland permits, agencies have not enforced this requirement”, “Many companies do not conduct post-construction monitoring of stream and wetland crossings”, “Costs money”, “Very little oversight of stream and wetland restoration”, “Agencies have little time to do field visits.”

p. 2-14 (p. 68 of PDF): The DEIS baldly states: “PennEast would comply with all conditions set forth in their permits as well as adhere to our Plan and Procedures.” We submit that this is an unjustified assumption, a predictive judgment without factual basis. The Township’s scoping comments argued that FERC should assume the opposite - that violations would occur. Recognition of the reality of permit violations and non-

compliance with requirements is the only way to fully consider the likely adverse environmental impacts of this project. See also, Township Scoping Comments, “The EIS Cannot Rely On Assumptions of Regulatory and Permitting Compliance, But Must Instead Rely On Historical Data of Violations and Non-Compliance”, pp. 50-53.

p. 2-15 (p. 69 of PDF): The DEIS states: “PennEast would adhere to their E&SCP during vegetation maintenance of the operational right-of-way.” This too is an unjustified predictive judgment. The DEIS also states: “No herbicides or pesticides would be used for clearing or maintenance within 100 feet of a waterbody.” This statement does not rule out use of pesticides and herbicides except within 100 feet of a waterbody. The DEIS does not appear to discuss the potential adverse impacts resulting from pesticide and herbicide application drift and impacts to non-target organisms and vegetation, including cropland. The implication that pesticides and herbicides might be used more than 100 feet of a waterbody appears to be inconsistent with the DEIS (p. 4-126 (p. 224 of PDF)) claim that “PennEast states in its E&SCP (Appendix D) that it would not use herbicides or pesticides anywhere along the maintained permanent right of way. Therefore routine vegetation maintenance would not impact honeybees or apiaries.” Which is it? Will PennEast use herbicides and pesticides for clearing or for maintenance outside of a 100-foot waterbody buffer?

p. 3-2, et seq., (p. 72, et seq. of PDF): The discussion of alternatives contains no analysis of a “no-action” alternative to the Hellertown Lateral pipeline through the Township.

p. 3-3 (p. 73 of PDF): The DEIS states that “because the purpose of the Project is to transport natural gas, and the generation of electricity from renewable energy sources or the gains realized from increased energy efficiency and conservation are not transportation alternatives, they are not considered or evaluated further in this analysis electricity generation from renewables are deemed outside of the scope of the EIS because they are not “transportation alternatives.” We disagree with this limited scope of analysis, and question whether such a limitation would be applicable to the Hellertown Lateral, which appears to be sited and proposed to serve a single electric generating plant (Calpine). In this regard, the intended purpose of the Hellertown Lateral as it pertains to supply of natural gas to Calpine, which is currently served by existing natural gas infrastructure, should be clarified.

The statement in the DEIS also improperly attempts to have it both ways. The DEIS discussion of alternatives (DEIS p. 3-3) states: “If PennEast’s proposed facilities are not constructed, the Project shippers may need to obtain an equivalent supply of natural gas from new or existing pipeline systems...*Alternatively, customers of the Project shippers could seek to use alternative fuel or renewable energy sources, which could require new facilities. In either case, construction of new pipelines or other energy infrastructure would result in environmental impacts that could be equal to or greater than those of the Project.* For these reasons, the No Action Alternative would not be preferable to or provide a significant environmental advantage over the Project.” (emphasis supplied). Thus, FERC wants to rely on entirely speculative musings about the potential additional environmental impacts of construction of renewable energy sources to conclude that the

“No Action” alternative would not be preferable to the pipeline, while at the same time precluding any actual fact-based consideration of such renewable energy sources as “outside the scope” of the DEIS.

p. 3-8 (p.78 of PDF): The DEIS states: “In many cases, the route variations were identified with input from or at the request of state agencies, municipalities, or landowners in an effort to avoid or minimize potential impacts on specific localized resources, including residences, planned future development, conservation easements, or waterbodies.” We note that numerous property owners requested route variations or adjustments to minimize impacts to their properties, to protect conservation areas, and to avoid environmentally sensitive areas that PennEast failed or refused to consider.

p. 4-12 (p. 110 of PDF): The text includes a double negative that is either a textual error or a hidden admission of risks to water supplies from arsenic contamination: “would not result in no detectible risk of arsenic mobilization.”

p. 4-14 (p. 112 of PDF): The DEIS text states: “Prior to construction, PennEast should file with the Secretary the results of all outstanding geotechnical investigations and final planned design of each HDD crossing.” Thus, actual design details of such HDD crossings will not be available until “prior to construction.” Without such actual design details, it is not possible to evaluate the actual impacts of such HDD crossings.

p. 4-15 (p. 113 of PDF): The DEIS indicates that 38% of soils along pipeline route are considered “highly erodible” by water and wind and would be “temporarily impacted.” We submit that this statement downplays the impact of such erodibility as it may affect stabilization and revegetation, especially where such “highly erodible” soils exist on steep slopes.

p. 4-16 (p. 114 of PDF): Table 4.2.1-1 acknowledges that 1,050 acres of land to be impacted by all Project facilities have “poor revegetation potential.” The DEIS does not meaningfully evaluate the impact of this data.

p. 4-18 (p.116 of PDF): The DEIS text states: “About 723 acres (67 percent) of the soils along the proposed PennEast Pipeline and laterals are soils with a poor revegetation potential and would be temporarily impacted by construction.” But DEIS contains no discussion of the implications of this data as it may pertain to long-term impacts caused by revegetation failure.

p. 4-18 (p. 116 of PDF): The DEIS indicates that 31 percent of soils crossed by the pipeline have shallow depth to bedrock, causing incorporation of bedrock fragments into surface soils, reducing soil moisture holding capacity, resulting in reduction of soil productivity. We note there may be cumulative effects of the combined effects of shallow soil depth, existing poor revegetation potential, and high erodibility. The DEIS contains no discussion of the cumulative effects of these combined soil conditions.

p. 4-23 (p. 121 of PDF): Text of DEIS states: “At the end of construction, PennEast would return surface contours and drainage patterns to as close to original conditions as practicable and reestablish vegetation as soon as possible following final grading. PennEast would inspect the right-of-way and maintain erosion and sediment controls as necessary until final stabilization is achieved. Once revegetation is satisfactory, temporary erosion control measures would be removed. We find that soil erosion would be minimized through proper implementation and maintenance of measures in the FERC Plan and E&SCP.” We submit that these predictive statements suffer from the same lack of foundation as the other compliance assurances previously noted.

p. 4-24 (p. 122 of PDF): The DEIS text states: “Soils in the Project area should allow for successful revegetation, and where limitations exist, they would easily be overcome by implementing construction and BMP procedures. Standard revegetation measures include use of fertilizer and pH amendments (except in wetlands), seedbed preparation, use of a proven seed mix, consideration of seasonal constraints, and mulch application of disturbed areas except for cultivated croplands. Where necessary, biodegradable erosion control fabric or matting would be used on steep slopes to help ensure that soils successfully revegetate. PennEast would monitor all areas disturbed by Project construction for two growing seasons after construction to evaluate revegetation success in accordance with its E&SCP. Areas that have not revegetated successfully would be corrected to ensure the conditions of areas disturbed during construction are similar to the surrounding undisturbed areas. With adherence to the protocols outlined in PennEast’s E&SCP, we determine that revegetation would be successful.”

Just like the others, these predictive statements of full compliance also lack factual foundation. How does this paragraph address the soil conditions/poor revegetation potential mentioned in other parts of the EIS? How does this paragraph take into consideration extent of soils with poor revegetation potential? What happens after revegetation is not successful on very steep slopes? It almost sounds like two different people wrote these sections on revegetation potential and have different and conflicting perspectives.

p. 4-24 (p. 122 of PDF): “4.2.2.3 Hydric Soils and Compaction Potential.” With respect to “Post-construction Revegetation”, the text states: “Soils disturbed by the Project in uplands would be revegetated using a seed mix composed primarily of grasses, herbaceous plants, and legumes or as specified by landowners.” This use of standard seed for revegetation mix will not actually revegetate to prior conditions, especially in a Natural Heritage Area such as Bull Run within Lower Saucon Township that has sensitive ecosystem conditions.

p. 4-30 (p. 128 of PDF) DEIS states: “Within Pennsylvania, WHPA data is not publicly available. However, PennEast has identified two (2) known WHPAs located within 5 miles of the Project workspace in Pennsylvania. These WHPAs are both associated with wells located in Bucks County, Pennsylvania.”

While wellhead protection areas (WHPA) data may not be *easily* available to the public, it is likely available by inquiry to each municipality, as is evidenced by the Appendix K reference to the Riegelsville, PA source protection plan.⁶⁵ Moreover, it is available to PADEP, which can provide comment on potential impacts to these areas. How is PennEast mitigating potential impacts to WHPAs without knowing their location? It also appears that PennEast and FERC have not used WHPA information that is publicly available. There is no indication that any meaningful research was conducted to identify all WHPAs along or near the Project workspace. One list of public water supply systems involved in local WHPA programs is available at DEP website: https://www.dep.state.pa.us/dep/deputate/watermgt/wc/subjects/srceprot/source/Final_WHPP_AppB.htm A cursory search using standard research tools such as Google reveals maps and other locational data for wellhead protection areas in Pennsylvania. <http://www.warwicktownship.org/municipal-authority-wtma/pages/wellhead-protection-program>; “Wellhead Protection Program: Borough of Rouseville, Pennsylvania” (1993), available at: <https://nepis.epa.gov>. See also: <https://www.dep.state.pa.us/dep/deputate/watermgt/wc/subjects/srceprot/source/TACWHPSM.htm> (“As of this writing, over 150 PWSs and many more municipalities are developing or implementing local WHP programs in Pennsylvania. The growing success of wellhead protection in Pennsylvania is because of the recognition of the common sense and benefits of planning and pollution prevention in protecting public health and reducing the cost of SDWA compliance.”)

p. 4-31 (p. 129 of PDF): The DEIS admits that “PennEast has not conducted surveys for water supply wells along the entire Project.” The DEIS recommends that: “Prior to construction, PennEast should complete all necessary surveys for water supply wells and groundwater seeps and springs, identify public and private water supply wells within the construction workspace, and file with the Secretary a revised list of water wells and groundwater seeps and springs within 150 feet of any construction workspace (500 feet in areas characterized by karst terrain).” (DEIS, p. 4-32, p. 130 of PDF). Such incomplete information regarding basic features such as water supply wells and groundwater features make it impossible for FERC to meaningfully evaluate the environmental impact of the project.

p. 4-38 (p. 136 of PDF): The DEIS consistently and erroneously refers to the Delaware River only “in New Jersey”, as though the writers are unaware that it constitutes a boundary between New Jersey and Pennsylvania.

p. 4-52 (p. 150 of PDF): The information is incomplete and “preliminary” with respect to hydrostatic testing water withdrawal and discharge sites presented in table 4.3.2-7, and FERC staff recommends that prior to construction, PennEast should file final hydrostatic test water withdrawals and discharge locations. However, it is our understanding that PennEast has submitted to the Delaware River Basin Commission a table of water withdrawals and discharge locations that is not “preliminary.” Table 3.1-1, “Water

⁶⁵ See, Appendix K, which lists as a reference: “Riegelsville Borough Water Company. 2007. The Source Water Protection Plan for the Riegelsville Borough Water Company PWS# 1090058. Bucks County, PA. Available directly from Township.”

Withdrawal and Discharge Locations for Construction Activities Associated with the PennEast Project.” FERC staff should compare the PennEast filings with the DRBC with its filings with FERC for consistency.

According to the DEIS, numerous aspects of hydrostatic testing water withdrawals and discharges remain unresolved will not be resolved until some time prior to construction, including the final locations of sources and discharge locations, water volumes for each pipeline segment, the decision process that would be used to determine when an alternative water source would be used under low flow conditions. These matters should have been determined and disclosed in the DEIS.

p. 4-52 (p. 150 of PDF): The reference to the use of “hydrostatic test manifolds” to dissipate “energy flow” in “aquatic waterbodies” [sic] may be inconsistent with note 6 in the DRBC table 3.1-1, which states: “No direct discharges to surface waters will occur. All discharges will be directed to appropriate energy dissipation/filtration structures which will be constructed in well vegetated upland locations.

p. 4-58 (p. 156 of PDF): The DEIS states: “PennEast proposes to develop site-specific blasting plans for each waterbody crossing where blasting is determined to be necessary.” Thus, the DEIS is incomplete, as site specific plans for blasting in areas for waterbody crossing is necessary to understand the impacts and risks to the waterbody.

p. 4-69 (p. 167 of PDF): The final, critical, statement is incomplete: “No permanent fill or loss of wetland area would result from construction and operation of the Project. The Project would not result in loss of wetland acreage as all wetland fills would be temporary and all wetlands would be restored to pre-construction [sic, end of sentence]” Restored to their pre-construction condition? If so, this contradicts other statements in the DEIS that some wetland hydrology may be altered, and there may be adverse impacts that cannot be avoided.

pp. 4-70 to 4-71 (pp 168-169 of PDF): The DEIS acknowledges the potential for adverse impacts to wetlands that are not avoided or mitigated.

p. 4-74 (p. 172 of PDF): The DEIS text states: “PennEast has conducted surveys for biological resources (e.g., wetlands, weeds, vegetation and terrestrial species, ESA listed species, etc.) within portions of the Project’s route (surveys were conducted within a 400-foot corridor around the Project) in 2015 and 2016; however, surveys have yet to be completed for all portions of the Project area (see appendix G-13). If the Commission decides to authorize the Project, the Certificate would grant PennEast the right to pursue access through eminent domain, at which time PennEast would complete the necessary remaining field surveys.” Thus, FERC staff would turn the NEPA and agency action process on its head: it advocates allowing the agency to finalize its action before it obtains the necessary information to conduct an environmental assessment and then, by the eminent domain authority conferred by the agency’s action, obtain the information necessary to conduct and complete the environmental impact analysis.

p. 4-93 (p. 191 of PDF): FERC admits that “species surveys are still pending or only partially complete due to lack of access to certain areas where the land- owner/manager has not granted PennEast access” and therefore “final effects determination cannot be made at this time.” Nevertheless, FERC “request’s [sic] that the FWS consider this EIS as the BA [biological assessment].” We believe that this incomplete document cannot properly be accepted as the biological assessment.

p. 4-99 (p. 197 of PDF): The DEIS acknowledges that surveys are not complete for threatened species of bat Indiana bat and northern long-eared bat. But surveys for listed species are required to be completed within all suitable habitats that could be impacted by the Project prior to construction. The project may affect and is likely to adversely affect these species, and the failure to complete the required surveys is not acceptable.

p. 4-99 (page 197 of PDF): It is acknowledged that consultation with FWS has not been completed, and that FWS may develop additional measures beyond those described in this EIS to avoid or minimize impacts on ESA listed species. The consultation should be completed and the mitigation measures identified and disclosed in the EIS.

p. 4-100 (page 198 of PDF): The DEIS admits that bog turtle Phase 1 surveys are incomplete in both PA and NJ; thus, the process for conducting Phase 2 surveys is necessarily incomplete.

p. 4-100 (p. 198 of PDF): The DEIS admits that project impacts to bog turtle include changes to wetland hydrology, which it represents is discussed in detail within sections 4.4 and 4.5 of the DEIS. But no specific mitigation plans are described in the DEIS. The DEIS is incomplete.

p. 4-100 (p. 198 of PDF): The DEIS recommends that PennEast file with FERC a bog turtle plan developed in coordination with FWS that includes avoidance, minimization, and mitigation measures that would be used during construction. Thus, it appears that no bog turtle plan has yet been submitted for public review and comment. Moreover, significant portions of the pipeline route have not yet been field surveyed for bog turtle habitat. Therefore, avoidance of such habitat may require route adjustments that the DEIS neither discloses or discusses. The DEIS is incomplete.

pp. 4-102 to 4-103 (pp. 200-01 of PDF): The DEIS recognizes that the federally-listed endangered species northeastern bulrush habitat generally consists of wetland complexes. But neither species surveys or wetland delineation surveys are anywhere near complete; wetland surveys are only 79% complete in Pennsylvania, and even less complete in New Jersey. Thus, the DEIS is incomplete with respect to potential impacts to this endangered species. The DEIS asserts that if this species is discovered within the construction work area, PennEast would establish a 300-foot buffer around wetlands or a 150-foot buffer from waterways that support this species and would avoid impacts within this buffer. The DEIS also asserts that if PennEast cannot adhere to the proposed disturbance buffer, the affected wetland should be crossed via a HDD method.

The text of the recommendation is:

[W]e recommend that:

- Prior to construction, PennEast should file with the Secretary the results of additional surveys to determine potential presence of northeastern [sic] bulrush. If the northeastern bulrush is identified within the proposed construction work area, PennEast should identify the specific measures that it would use to avoid impacts within 300 feet of wetlands or 150 feet of waterways where the species is found. PennEast should also provide documentation of the consultation with the FWS. If PennEast is unable to adhere to its proposed 300-foot no disturbance buffer around wetlands and 150-foot no disturbance buffer around any waterways that support the northeastern bulrush, then the affected wetland should be crossed via a HDD method.

This recommendation is incomplete and fails to include any crossing recommendation for non-wetland waterways that support the northeastern bulrush. Moreover, the DEIS fails to require that PennEast identify the types of “specific measures” it would use to avoid impacts to this species.

p. 4-108 (p. 206 of PDF): The DEIS indicates that with respect to the Pennsylvania state-endangered species northern flying squirrel no surveys have been conducted or are planned, (see p. 4-106), yet mitigation is only proposed for a small area where the Pennsylvania Game Commission previously identified as an area where KNOWN northern flying squirrel populations exist (MPs 27-32). But if no surveys are planned, it is unclear how other populations will be identified and mitigation measures be implemented in those additional areas where the species may be extant. Moreover, no actual mitigation plan has yet been developed and consultations with PGC are not complete. Thus, the DEIS is incomplete with respect to this state-endangered species.

p. 4-109 (p. 207 of PDF): The DEIS acknowledges that PennEast has not identified any specific measures it would take to protect or minimize project impacts to the eastern small-footed bat, a Pennsylvania state-listed threatened species and priority species in Pennsylvania’s wildlife action. It acknowledges that this species has been definitively identified in the project area. But no mitigation measures are proposed. The DEIS merely recites that PennEast “would adhere to recommendations and requirements of the respective state wildlife management agencies as needed to avoid or minimize impacts on state-listed species.” The DEIS contains a recommendation that PennEast “continue to consult with PGC as needed to finalize plans”. This is woefully incomplete, and fails to provide the public with any opportunity to comment on mitigation plans. Moreover, this arrangement likely precludes any reasonable possibility of avoidance of impact through route adjustment or other measures.

p. 4-126 (p. 224 of PDF): See Township comment above re: DEIS p. 2-15, regarding PennEast’s use of herbicides and pesticides.

p. 4-189 (p. 288 of PDF): The DEIS admits that archaeological surveys for more than ½ mile of the 2.1 mile Hellertown Lateral are incomplete, and 22 acres have not been fully surveyed. The DEIS is incomplete.

p. 4-283 (p. 381 of PDF): The entire discussion of greenhouse gas emissions and climate change must be redone, as it is incomplete, fails to include “upstream” natural gas development activities, and does not comply with new CEQ Final Guidance on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews. (See more detailed discussion, *infra*.) The DEIS completely fails to identify any proposed measures to minimize or mitigate the inevitable releases of greenhouse gases as a result of the project. This includes replacement carbon sequestration as a result of the deforestation caused by the project. Also, in CEQ’s view, agencies should quantify direct and indirect GHG emissions, including “reasonable projections and assumptions,” for the reasonably foreseeable direct and indirect effects of the action. CEQ uses the production of a fossil fuel, like coal, as an example, describing the exploration and production of the resource as the direct effects of the action and the impacts from combustion of the fuel as reasonably foreseeable indirect effects. Under the new Final Guidance, FERC should recognize that the PennEast Pipeline project, in conjunction with other pipeline projects, “unlocks” further natural gas development in the Marcellus Shale play and must consider the GHG emissions that will be the inevitable result of this unlocking of these natural gas resources through the full “lifecycle” from production through combustion.

p. 4-287 (p. 385 of PDF): The DEIS states: “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 PennEast Pipeline Project displaces the use of other more polluting fossil fuels.” This statement lacks any factual foundation. No facts are presented to support a claim that the natural gas to be transported through this pipeline will replace existing usage of oil or coal fossil fuels.

p. 4-289 (p. 387 of PDF): We note the DEIS conclusion that “most of the adverse impacts” would be “reduced to less than significant levels.” Of course, this is a backhanded way of acknowledging that the project will actually cause significant adverse environmental impacts. Yet the DEIS fails to clearly identify what it deems to be the significant adverse environmental impacts that will occur despite any PennEast compliance with requirements, recommendations and permits and despite the implementation of the proposed mitigation measures.

p. 5-8 (p. 394 of PDF): The discussion on impacts to vegetation presents a good example of how the DEIS uses language and highly selective precision in an attempt to downplay and trivialize the full impacts of this project. It states:

Impacts are expected to be “short-term” in non-forested areas that are allowed to restore to preconstruction conditions, as it is expected that these non-forested areas would be successfully restored within three years

following construction (with implementation of PennEast's E&SCP and FERC's Plan and Procedures). However, all impacts on forested habitats would be considered long-term because of the time required to restore woody vegetation to preconstruction conditions.

Several things about this paragraph are noteworthy. First, is the precision with which the time period is expressed for "non-forested areas" to be "successfully restored": three years. This can be compared with the total absence of any reference to the time scale "required to restore woody vegetation to preconstruction conditions." For mature forested areas, this of course would actually be a hundred years or more. Yet the DEIS is not candid enough to acknowledge such a time scale. Second, is the failure to acknowledge in this paragraph that significant areas of mature forest will be permanently destroyed. A candid and clear discussion of the full scale of the adverse impacts of the project is missing in this DEIS.

p. 5-9 (p. 395 of DEIS): The DEIS states:

The Project would cross through and impact areas that have been identified as regions that contain unique or exemplary wildlife habitats. This includes 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).

This paragraph fails to acknowledge the impacts to the Bull Run Natural Heritage Area within Lower Saucon Township.⁶⁶

p. 5-19 (p. 405 of PDF): The DEIS claims that "we do not believe that PennEast's response to those conditions that are requested prior to the end of the draft EIS comment period would change any of the conclusions presented in the draft EIS." This predictive judgment lacks any factual foundation. This either is a bald crystal ball statement or a reference to a pre-determined outcome, in light of the fact that the information has not yet been provided.

p. 5-20 (p. 406 of PDF): This page reflects the inadequate and incomplete nature of the DEIS. It purports to allow the authorization by the OEP director of new areas, route realignments, facility relocations, staging areas, storage-yards, new access roads, and other disturbed areas not previously identified in filings with FERC. This, of course, raises the potential for impacts to cultural resources, federally listed threatened/endangered species, and other environmentally sensitive areas while precluding any NEPA analysis or public comment. FERC should commit to the

⁶⁶ We have referenced this Natural Heritage Area before, but for the reader's convenience, we refer to the Township Scoping Comments, 20150225-5312, Appendix 7, "NATURAL HERITAGE INVENTORY OF LEHIGH AND NORTHAMPTON COUNTIES, PENNSYLVANIA - UPDATE 2013" (June 2013), p. 111.

preparation of a supplemental environmental impact statements and their circulation as required by law under such circumstances.

p. 5-23 (p. 410 of PDF): The DEIS fails to include or require, except for some unknown period prior to construction, that PennEast file a Geohazard Risk Evaluation Report, and a final karst mitigation plan. The DEIS is based on incomplete information.

p. 5-25 (p. 411 of PDF): PennEast has not even delineated all wetlands for the project or surveyed all areas mapped as being potential vernal habitat areas to identify whether these areas contain vernal pool habitat and will not be required to do until "prior to construction". PennEast will not be required to map all potential vernal habitat until "prior to construction" and thus the public has no chance to comment on this information, and there will be no chance for route adjustments to avoid or mitigate the impact to such environmentally sensitive areas. The DEIS is based on incomplete information.

p. 5-25 (p. 412 of PDF): No migratory bird conservation plan must be filed until "prior to construction" and thus the plan will not be part of the NEPA process, the public will have no opportunity to comment, and any meaningful opportunity for route adjustment to protect migratory birds will be lost. The DEIS is incomplete.

p. 5-25 (p. 412 of PDF): No bog turtle plan will be required until "prior to construction" and thus the plan will not be part of the NEPA process, the public will have no opportunity to comment, and any meaningful opportunity for route adjustment to avoid impacts will be lost. The DEIS is incomplete.

p. 5-26 (p. 412 of PDF): The DEIS states: "**Prior to construction**, PennEast shall complete all necessary surveys for federally listed species and shall file with the Secretary all survey results, including any comments received from the FWS on the surveys and their conclusions." Thus these surveys will not be part of the NEPA process, the public will have no opportunity to comment, and any meaningful opportunity for route adjustment to avoid impacts will be lost. FERC staff implicitly admits that required surveys are not completed, and need not be completed until "prior to construction", and "proposed mitigation that would substantially avoid or mitigate the potential impacts" need not be identified for the EIS. The DEIS is incomplete.

p. 5-27 (p. 414 of PDF): Site-specific crossing plans (including mitigation) for recreational and special interest sites will not be required to be submitted until "prior to the end of the DEIS comment period." This deprives the public of a meaningful opportunity to comment on these plans as part of the NEPA process.

p. 5-29 (p. 415 of PDF): The DEIS recommendations purport to authorize the delay in filing of critical cultural resource information until after the NEPA process has ended, thus depriving the public of an opportunity to comment, and after any meaningful opportunity for route adjustment to avoid or mitigate impacts to cultural resources. This includes:

- i) remaining cultural resources survey report(s);
- ii) site evaluation report(s) and avoidance/treatment plan(s), as required;
- iii) the Project's recommended effects to historic properties in Pennsylvania and New Jersey; and
- iv) comments on the cultural resources reports and plans from the Pennsylvania and New Jersey SHPOs, as appropriate

This effectively delays any opportunity for the ACHP to comment if historic properties will be adversely affected until after the NEPA process is completed and after any meaningful opportunity for route adjustments or other avoidance measures.

p. 755 of PDF: Nowhere does Appendix G of the DEIS identify or recognize Bull Run Natural Heritage Area within Lower Saucon Township as a special natural area with an ecosystem that warrants protection.

p. 789 of PDF: Table G-3 identifies the area between MP 0.17 and 0.28 of the Hellertown Lateral within Lower Saucon Township as an area of “shallow bedrock with potential to require blasting.” Part of this milepost range is within the Bull Run Natural Heritage Area. The DEIS does not address the potential impacts to the character and ecological values of this area.

p. 829 of PDF, Table G-5 (Appendix G): The DEIS notes that within Lower Saucon Township the Hellertown Lateral would cross the waterbody Bull Run, a Wild Trout Water III, within the Bull Run Natural Heritage Area, and proposes a dry crossing method. However, the table fails to identify the applicable alignment sheet, plan sheet or figure.

pp. 928-929 of PDF: We note that within Lower Saucon Township, ATWS is expected to be required for the Hellertown Lateral (Table G-15).

pp. 960-962 of PDF: We note that within Lower Saucon Township, pipeline construction workspace is proposed within 50 feet of numerous residential buildings, sheds, and other structures (see Table G-16).

p. 985 of PDF: *Table G-21- High Consequence and Unusually Sensitive Areas Crossed by the Pipeline Facilities, by County.* We note that within Lower Saucon Township, a high consequence area is proposed to be crossed by the Hellertown Lateral at MP 0.8 to 1.1 (single family dwellings in the Sherry Hills Estates).

p. 986 of PDF: We note that determinations of high consequence areas are based on aerial data dated 2015, and are subject to additional field survey information as it becomes available. More recent land development and building information in Northampton County is available from the Lehigh Valley Planning Commission, and should have been utilized for these determinations. Because this area (Allentown-Bethlehem-Easton MSA) is the fastest growing MSA in Pennsylvania, more recent data should have been used including review of approved land development plans.

The EIS should contain mapping of the potential impact radius (PIR) along the route and disclose the population within the PIR.

pp. 1114-1115 of PDF: We note the residential mitigation plans for the route within Lower Saucon (Appendix I).

p. 1157 et seq., of PDF: We note the references set forth in Appendix K. Overall, the DEIS and Appendix K lack the necessary context for readers to determine how the references were used to support various elements of the DEIS. The relevance of some references are not obvious. Two examples are: “NRC. 2016a. Combined License Applications for New Reactors. <http://www.nrc.gov/reactors/new-reactors/col/bell-bend.html>” and “NRC. 2016b. Final EIS for the Bell Bend Nuclear Power Plant. NUREG-2179. April 2016,” which are U.S. Nuclear Regulatory Commission licensing and environmental documents for a proposed nuclear power facility in Luzerne County, the licensing application for which has been withdrawn. The use of these Appendix K references is not footnoted, which obscures rather than elucidates the basis for scientific judgment and factual assertions.

We submit that the DEIS fails to comply with CEQ regulations regarding the methodology, and professional and scientific integrity of the document. CEQ regulations provide:

§ 1502.24 Methodology and scientific accuracy.

Agencies shall insure the professional integrity, including scientific integrity, of the discussions and analyses in environmental impact statements. *They shall identify any methodologies used and shall make explicit reference by footnote to the scientific and other sources relied upon for conclusions in the statement.* An agency may place discussion of methodology in an appendix. (emphasis supplied).

CONCLUSION

Overall, we submit that the DEIS is flawed and incomplete. It fails to reflect the neutrality expected from a federal government agency. It is calculated to trivialize and downplay the full adverse impacts of the proposed action. It makes unjustified predictive judgments that lack factual basis in the DEIS. It deploys language that disguises impacts. It relies on a highly selective focus on detail at the expense of the larger picture of impacts. It misses the forest for the trees.

More broadly, it fails to address the GHG emissions and other impacts from induced natural gas development unlocked by the PennEast Project. In conjunction with other pipeline projects pending before it, FERC's business-as-usual approach will make it impossible for the United States to meet its climate change goals and obligations.

Respectfully submitted,

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CERTIFICATE OF SERVICE

Pursuant to Rule 2010 of FERC's Rules of Practice and Procedure, 18 C.F.R. §385.2010, the undersigned hereby certifies that I am this day serving the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding by e-filing the document with FERC Online. Service will also be made by electronic mail notification.

Dated: September 11, 2016

/s/ Charles W. Elliott
Charles W. Elliott, Esquire