



February 28, 2019

Ms. Kimberly Bose
Federal Energy Regulatory Commission
Office of the Secretary
Washington D.C., 20428

**Re: Adelphia Gateway, LLC, Adelphia Gateway Project Environmental Assessment,
Docket Nos. CP18-46-000 and CP18-46-001**

Dear Secretary Bose,

The Delaware Riverkeeper Network (“DRN”) provides the following comments to be considered by the Federal Energy Regulatory Commission (“FERC” or the “Commission”) with respect to the proposed Adelphia Gateway Pipeline project (the “Project” or “AGP”) proposed by Adelphia Gateway, LLC (“Adelphia”). Clean Air Council joins in these comments and is also submitting separate comments.

Project Summary

On January 12, 2018, Adelphia filed an application with FERC, Docket No. CP18-46-000, seeking a Certificate of Public Convenience and Necessity (“Certificate”) under Section 7(c) of the Natural Gas Act.¹ Adelphia proposes to purchase and convert an existing 84.2 mile 18-inch-diameter mainline running from Marcus Hook, PA to Lower Mount Bethel Township, PA (“Existing System”) owned by Interstate Energy Company, LLC (“IEC”) and to construct two new 16-inch-diameter pipeline laterals. In addition, the Project will also include construction of compressor stations and other facilities in both Delaware and Pennsylvania.

The Existing System includes:

- One mainline of 84.2 miles of 18-inch diameter pipeline built in the 1970s referred to as Zone North A and Zone South with the existing Quakertown meter Station at MP 50 in Bucks County, PA as the separation point:²

¹ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 1.

² Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 3.

- (1) Zone North A is the northern 34.5 mile-long section of the 18-inch mainline which begins in Bucks County, PA and ends in Lower Mount Bethel Township, Northampton County, PA. Zone North A has been transporting natural gas exclusively since 2014.
- (2) Zone South is the southern 49.4 mile-long segment running from Bucks County, PA to Marcus Hook, PA. This segment has been out of service since 2014 and was last used to transport oil.
- Zone North B is 4.4 miles of existing 20-inch-diameter pipeline constructed in 2002 and used to transfer oil and natural gas from the most northern point of Zone North A to Martins Creek Station.
- Four meters station along Zone North A at mileposts 50, 68, 80, and 84.

The Zone North A and Zone North B facilities currently transport natural gas to Lower Mount Bethel Energy, LLC, a 555 megawatt combined-cycle plant, and Martins Creek, an approximately 1,708-megawatt conventional steam boiler plant, both of which generate electricity for the region (“Existing Shippers”).³ Adelphia has stated that it plans to continue service to these Existing Shippers.

The existing Zone South facilities will have their flow reversed from south-to-north to north-to-south and be converted to carry natural gas instead of oil. Zone South will offer natural gas to the “markets near Philadelphia and surrounding areas that need additional natural gas for end-use consumption.”⁴ This conversion of the Existing System will require construction of new appurtenant facilities, which include:

- one new 5,625 horsepower (hp) compressor station in Delaware County, Pennsylvania (Marcus Hook Compressor Station) ;
- one new 5,625 hp compressor station in Bucks County, Pennsylvania (Quakertown Compressor Station);
- two 16-inch-diameter laterals (Parkway (0.3 miles) and Tilghman (4.4 miles))
- five meter and regulator stations (Quakertown, Delmarva, Monroe, Transco, and Tilghman);
- seven blowdown assembly valves (Chester Creek, Paoli Pike, French Creek, Cromby, Schuylkill River, Perkiomen Creek, and East Perkiomen Creek);
- two mainline valves;
- two tap valves (Quakertown and Skippack); and
- four pig launcher and receiver facilities.

Adelphia’s original application proposed that the Project transport 775,000Dth/d of natural gas.⁵ On August 31, 2018, Adelphia filed an amendment to its application under Docket No. CP18-46-001 seeking to increase the design capacity of the Zone North A segment of the

³ Adelphia Gateway Project Amendment to Application, Docket No. CP18-46-001, Accession No. 20180831-5215 at 5-6.

⁴ Adelphia Gateway Project Amendment to Application, Docket No. CP18-46-001, Accession No. 20180831-5215 at 6.

⁵ Estimation based off of numbers provided in the Environmental Assessment.

Project, from 175,000 dekatherms per day (Dth/d) to 250,000 Dth/d. Adelphia had determined, after consultations with the design engineers, that it can flow an extra 75,000 Dth/d of natural gas from Zone North A into Zone South. In the amendment to its application, Adelphia only sought “Commission authorization to make necessary design and rate modifications.”⁶ Both FERC and Adelphia did not consider this increase in capacity one that would affect any other portion of the application and therefore, the environmental impacts of the project analyzed here do not account for this increase. In total, the Project proposes to transport 850,000 Dth/d (850 million cubic feet per day) of natural gas. As the Project would result in the transport of an additional 250,000 Dth/d of natural gas in Zone South and 250,000 Dth/d along the Zone North A end and no change to the existing 350,000 Dth/d capacity of the Zone North B.

The *size and scope* of the construction and operation activity for this Project will have a damaging effect on the health and vitality of the Delaware River watershed. Pipeline projects, in construction and operation, create noise and air pollution, cause degradation of water quality and stream habitats, and degrade the functions and values of the ecosystems traversed.

The Environmental Assessment Prepared to Review the Adelphia Gateway Project is Woefully Inadequate. The Project Will Cause a Substantial Impact on the Environment and Therefore Should Be Reviewed Through an Environmental Impact Statement.

This comment, along with others, demonstrates that the Environmental Assessment (EA) issued by FERC cannot be said to fulfill its legal obligations pursuant to the National Environmental Policy Act (NEPA), and that instead an Environmental Impact Statement (EIS) with an associated comment period and public hearings is required. Absent taking such a step FERC will be in violation of the law.

Specifically, the EA fails establish an accurate baseline from which a determination can be made regarding the significance of the impacts resulting from construction and operational activity of the Project, the EA fails to examine the cumulative and induced development that would result from the approval of the Project, the EA does not sufficiently account for climate change impacts, the EA does not sufficiently account for the cumulative air emissions for the Project, the EA fails to properly assess the public health and safety risks associated with the Project, and the EA fails to sufficiently establish need for the Project. Additional deficiencies are noted throughout this comment letter and listed on page 93.

Under 18 C.F.R. § 380.6(a)(1-3), any authorization, certificate applications, or construction projects under section 7 of the Natural Gas Act are statutorily required to have an environmental impact statement. Adelphia is applying to convert and construct the Adelphia Gateway Project under section 7 of the Natural Gas Act and is therefore required to have an EIS.⁷ While FERC has failed to take this step, it is obvious, from the numerous unknown impacts and gaps in the EA, that the impacts from this project will significantly affect the environment and require an EIS under NEPA as well as the NGA.

⁶ Adelphia Gateway Project Amendment to Application, Docket No. CP18-46-001, Accession No. 20180831-5215 at 1.

⁷ 18 C.F.R. § 380.6

NEPA is our “basic national charter for protection of the environment.”⁸ As such, it makes environmental protection a part of the mandate of every federal agency⁹ by requiring that federal agencies take environmental considerations into account in their decision-making “to the fullest extent possible.”¹⁰ This means that federal agencies must consider environmental harms and the means of preventing them in a “detailed statement” before approving any “major federal action significantly affecting the quality of the human environment.”¹¹ This required analysis serves to ensure that “the agency will not act on incomplete information, only to regret its decision after it is too late to correct.”¹²

NEPA also “guarantees that the relevant information [concerning environmental impacts] will be made available to the larger audience,” including the public, “that may also play a role in the decisionmaking process and the implementation of the decision.”¹³ As NEPA’s implementing regulations explicitly provide, “public scrutiny [is] essential to implementing NEPA.”¹⁴ The opportunity for public participation guaranteed by NEPA ensures that agencies will not take final action until after their analysis of the environmental impacts of their proposed actions has been subject to public scrutiny.¹⁵

NEPA is an “environmental full disclosure law.”¹⁶ It requires that an agency obtain and consider detailed information concerning environmental impacts, and it “ensures that an agency will not act on incomplete information, at least in part, by ensuring that the public will be able to analyze and comment on an action’s environmental implications.”¹⁷ The information provided to the public “must be of high quality” because “[a]ccurate scientific analysis, expert agency comments, and public scrutiny are essential to implementing NEPA.”¹⁸

A proper environmental assessment must fully assess and disclose the complete range of environmental consequences of the proposed action, including “ecological (such as the effects on natural resources and on the components, structures, and functioning of affected ecosystems), aesthetic, historic, [and] cultural” impacts, “whether direct, indirect, or cumulative.”¹⁹ Direct effects are “caused by the action and occur at the same time and place.”²⁰ Indirect effects are

⁸ 40 C.F.R. § 1500.1(a).

⁹ *See* 42 U.S.C. § 4332(1).

¹⁰ 42 U.S.C. § 4332.

¹¹ *Id.* § 4332(2)(C).

¹² *Marsh v. Oregon Natural Res. Council*, 490 U.S. 360, 371 (1979).

¹³ *Robertson v. Methow Valley Citizens Council*, 490 U.S. 332, 349 (1989).

¹⁴ 40 C.F.R. § 1500.1(b).

¹⁵ *See N. Plains Res. Council v. Surface Transp. Bd.*, 668 F.3d 1067, 1085 (9th Cir. 2011) (noting that where “data is not available during the EIS process and is not available to the public for comment,” the process “cannot serve its larger informational role, and the public is deprived of their opportunity to play a role in the decision-making process”) (quoting *Robertson*, 490 U.S. at 349).

¹⁶ *Monroe Cnty. Conservation Council, Inc. v. Volpe*, 472 F.2d 693, 697 (2d Cir. 1972).

¹⁷ *Ohio Valley Envtl. Coal. v. U.S. Army Corps of Eng’rs*, 674 F. Supp. 2d 783, 792 (S.D. W. Va. 2009) (internal quotation marks and citations omitted).

¹⁸ 40 C.F.R. § 1500.1(b).

¹⁹ 40 C.F.R. §§ 1502.16(a), (b); 1508.8.

²⁰ 40 C.F.R. § 1508.8(a).

those impacts that are caused by the action, but occur “later in time or farther removed in distance, but are still reasonably foreseeable,” and may include “growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate, and related effects on air and water and other natural systems, including ecosystems.”²¹ Cumulative impacts are “impact[s] on the environment which result[] from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.”²² As the regulations make clear, “[c]umulative impacts can result from individually minor but collectively significant actions taking place over a period of time.”²³ In addition, NEPA requires FERC to take a hard look at the ways to avoid or mitigate the Projects’ impacts. The potential adverse effects of the Adelphia Project cannot be adequately analyzed without complete data on all affected resources. However, as highlighted throughout this comment, the EA falls short in a significant number of areas.

The Project’s Assertion Of Need Is Unsubstantiated, Contradicted By The Preponderance Of The Evidence, And Is Largely A Statement Of Industry Desires Rather Than Public Need.

NEPA requires that an environmental assessment “[s]hall include brief discussion of the need for the proposal, of alternatives as required by section 102(2)(E), of the environmental impacts of the proposed action and alternatives, and a listing of agencies and persons consulted.”²⁴ Further, Section 7 of the NGA, 15 U.S.C. §717f, and FERC’s Statement of Policy for Certification of New Interstate Natural Gas Pipeline Facilities (“Certificate Policy Statement”)²⁵, require the Commission to determine whether the Project facilities are “in the public interest” and whether the proposed pipeline is “required by the public convenience and necessity.” Specifically, the Certificate Policy requires the Commission to balance the alleged need for a project against the adverse impacts on affected landowners and the surrounding communities.²⁶ The need statement drives the environmental analysis, the analysis of the projects other impacts, the options for alternatives and, ultimately, the decision to select the project or not.

Adelphia’s assertion of need, adopted fully by FERC in the EA without any examination or scrutiny, is contradicted by evidence and is largely a statement of industry need and desires rather than public need. As detailed below, it does not constitute an adequate explanation of the Project’s “underlying purpose and need” as required by NEPA²⁷ in the Commission’s environmental review; nor does it provide an adequate basis of accurate information for FERC to conduct its public interest determination.

The Project’s statement of need does not assert an actual need for the project:

²¹ 40 C.F.R. § 1508.8.

²² 40 C.F.R. § 1508.7 (emphasis added).

²³ *Id.*

²⁴ 40 CFR 1508.9(b).

²⁵ 88 FERC ¶ 61,227 (1999), clarified, 90 FERC ¶ 61,128 (2000), further clarified, 92 FERC ¶ 61,094 (2000).

²⁶ 88 FERC ¶ 61,747.

²⁷ 40 CFR 1502.13

Adelphia states that the purpose of its proposed Project is to provide a clean, safe, and low-cost supply of natural gas pipeline capacity to the Greater Philadelphia industrial region with potential to serve additional markets in the Northeast while continuing to provide uninterrupted service to two existing power plants at the northern end of the Existing System, the Lower Mount Bethel Power Plant, and the Martins Creek Power Plant.²⁸

This does not allow the public or the reviewers to know what the intent, purpose, or rationale for the project is. For example, Adelphia has not identified underserved markets, they have not discussed foreseeable issues in the current service offered, and they have not identified the end use of the natural gas, it could go to Philadelphia or somewhere else in the Northeast. While the Lower Mount Bethel Power Plant and Martins Creek Power Plant already receive service at the same capacity proposed by Adelphia, they do not have a need for the Project. Similarly, “provid[ing]” a “supply of natural gas pipeline capacity to the Greater Philadelphia industrial region with potential to serve additional markets in the Northeast” does not imply an actual public need for the project, but only an industry desire.

The need statement is contradicted by evidence of excessive natural gas and already served markets. According to expert reports and analysis, there is no need for the gas Adelphia would carry to the Greater Philadelphia region, Pennsylvania is fully supplied. As noted in the attached expert report from Arthur Berman “...Pennsylvania has no unfulfilled demand...”²⁹ And to the degree that Adelphia wants to assert it is delivering the gas to other unknown, unidentified states in the Northeast markets—in order to substantiate this claim and subject it to the public process that is required by NEPA, more detail is required that actually identifies the states and the users.

Lack of “need” for gas in Pennsylvania is also asserted by a Labyrinth Consulting reaction to a recently released report advocating for more pipelines for similar goals, to fulfill an asserted need for gas and to reduce prices in the region. In this responsive analysis the assertion of a need for the gas was proven false with facts:

“First, Pennsylvania exported 3.23 Bcfd to other regions of the country in 2015 an amount almost equal to its 2014 consumption of 3.3 Bcfd. There is plenty of existing pipeline capacity to meet Pennsylvania’s demand and enough left over to send out of the state.”³⁰

An additional expert report generated by Skipping Stone on the PennEast Pipeline Project similarly finds a lack of need for the capacity in the region of the Adelphia Gateway Project. According to Skipping Stone, similar to Labyrinth Consulting:³¹

“Local gas distribution companies in the Eastern Pennsylvania and New Jersey

²⁸ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 2.

²⁹ *Professional Opinion of Proposed PennEast Pipeline Project*, Arthur E. Berman, Petroleum Geologist, Labyrinth Consulting Services, Inc., February 26, 2015.

³⁰ *Id.*

³¹ *Analysis of Public Benefit Regarding PennEast*, Skipping Stone, March 9, 2016.

market have more than enough firm capacity to meet the needs of customers during peak winter periods. Our analysis shows there is currently *49.9% more capacity than needed to meet even the harsh winter experienced in 2013*”

In its application materials, Adelphia states that the project is designed to provide [...] “shippers access to diverse and abundant natural gas supplies through existing interconnects with three interstate pipelines and access to demand centers and end-users near the greater Philadelphia area and the Marcus Hook Industrial Complex,” a “state-of-the-art terminalling and natural gas liquids storage facility”³²

Given that the EA has not demonstrated any need for the gas in the Greater Philadelphia area or other Northeast markets and that natural gas can sell at a significantly higher price overseas as compared to domestically, it is both reasonable and foreseeable that at least some of the Adelphia transported gas will be transported to Marcus Hook for export (see more discussion on FERC’s failure to include known and likely end users and reasonably foreseeable outcomes of the gas on pages 21-24 of this comment). FERC must thoroughly assess Adelphia’s claims regarding the need for the project in its balancing of the likely public benefit against the adverse impacts associated with the project.

Additionally, the claim that this pipeline is “needed” in order to provide “low-cost” gas to Pennsylvania customers is not a “need” and cannot be an expected outcome of this project. In fact, the construction of the Adelphia Gateway Project may, to the contrary, contribute to an increase in gas prices for many in Adelphia’s identified service area.

Natural gas prices are lowest in the regions in which gas is produced. For many years, the lowest natural gas prices in the East were found at Henry Hub, located near the Gulf of Mexico where much of the natural gas in the United States was produced. With the increase in shale gas production, however, the lowest natural gas prices in the country are now found at trading points in and around the Marcellus and Utica shale plays in Pennsylvania, West Virginia, and Ohio. Availability of pipeline infrastructure to send natural gas to other regions has a direct impact on the price of natural gas in those regions—greater gas take-away capacity allows more natural gas to be produced, and an increase in supply will lead to a decline in price in those regions that receive additional gas. The improved access to higher priced markets via additional pipeline infrastructure will raise the price of natural gas in the producing region, which also will increase production – in this case the producing region is Pennsylvania, therefore it is not a given that prices would in fact be low or reduced.

The implication that increased pipeline capacity will necessarily result in reduced gas prices is challenged by other experts considering the issue when responding to claims that pipeline capacity is needed to reduce prices for Eastern Pennsylvania end users:

³² See Adelphia Gateway LLC’s Abbreviated Application of Adelphia Gateway, LLC for Certificates of Public Convenience and Necessity Authorizing Acquisition, Construction, and Operation of Certain Pipeline Facilities and for Related Authorizations. January 11, 2018.

“The correlation between volume of gas production and the price of gas for power generation is poor because there are other factors besides production volume that affect the price of gas. Still it seems unlikely that more gas production in Pennsylvania would result in a cost reduction since production already exceeds consumption by almost 100%.”³³

A second report issued by Arthur Berman further clarifies that:³⁴

“There is no evidence...that more gas supply [would] result[] in lower costs to consumers”

“All leading companies in the Marcellus and Utica plays reported net losses for the second quarter of 2015”

“U.S. gas production is declining and shale gas output is down almost 2.5 Bcf per day”

FERC’s failure to Require Pipeline Project to demonstrate genuine Need Exacerbates Pipeline Overbuild.

This demonstration of a lack of need is complemented by the predictions and concerns of experts that the industry is proposing an “overbuild” of pipelines from the Marcellus and Utica shales.³⁵

“Speaking to attendees at the 21st Annual LDC Gas Forums Northeast conference in Boston Tuesday, [RBN Energy LLC President Rusty] Braziel said an evaluation of price and production scenarios through 2021 suggests the industry is planning too many pipelines to relieve the region’s current capacity constraints.”

“What we’re really seeing is the tail end of a bubble, and what’s actually happened is that bubble attracted billions of dollars’ worth of infrastructure investment that now has to be worked off,” Braziel said.

As reported by the Institute for Energy Economics and Financial Analysis, pipeline companies have an incentive to overbuild, and no reason to self-moderate or limit their construction.³⁶ The failure of FERC to provide any independent review or oversight over self-serving claims of “need” undermines the requirements of the law and the actual needs of the public:

- “...current low natural gas prices in the Marcellus and Utica region are driving a race among natural gas pipeline companies An individual pipeline

³³ Labyrinth Consulting responding to “A Pipeline For Growth Report”

³⁴ *Opinion on the PennEast Pipeline*, Arthur Berman, Petroleum Geologist, Labyrinth Consulting Services, Inc., September 11, 2016.

³⁵ *Marcellus/Utica on Pace for Pipeline Overbuild, Says Braziel*, Natural Gas Intelligence, June 8, 2016.

³⁶ Institute for Energy Economics and Financial Analysis, *Risks Associated with Natural Gas Pipeline Expansion in Appalachia*, April 2016.

company acquires a competitive advantage if it can build a well-connected pipeline network...; thus, pipeline companies competing to see who can build out the best networks the quickest. This is likely to result in more pipelines being proposed than are actually needed to meet demand in those higher-priced markets.”³⁷

- “[T]he regulatory environment created by FERC encourages pipeline overbuild. The high returns on equity that pipelines are authorized to earn by FERC and the fact that, in practice, pipelines tend to earn even higher returns, mean that the pipeline business is an attractive place to invest capital. And because ... there is no planning process for natural gas pipeline infrastructure, there is a high likelihood that more capital will be attracted into pipeline construction than is actually needed.”³⁸
- “The pipeline capacity being proposed exceeds the amount of natural gas likely to be produced from the Marcellus and Utica formations over the lifetime of the pipelines. An October 2014 analysis by Moody’s Investors Service stated that pipelines in various stages of development will transport an additional 27 billion cubic feet per day from the Marcellus and Utica region. This number dwarfs current production from the Marcellus and Utica (approximately 18 billion cubic feet per day).”³⁹

Commissioner LaFleur acknowledged the risk of pipeline overbuild that comes with the Commission’s refusal to ensure demonstrated, genuine need for a project in her dissent of the Spire STL Pipeline LLC’s certificate order:

“Ultimately, because need has not been demonstrated, there is a significant risk of overbuilding into a region that cannot support additional pipeline infrastructure. Pipelines are long-lived assets and we should be careful not to authorize infrastructure that is not needed. The Commission has not established need, and has not shown the pipeline’s benefits outweigh its harms. I do not find the proposed project is required by the public convenience and necessity.”⁴⁰

FERC’s Failure To Adequately Assess Project Need Results In An Abuse Of Its Eminent Domain Power.

Eminent domain originated as a way for governments to build necessary public infrastructure projects such as national highways and public buildings. It also enables governments to create parks and other public recreation areas. While eminent domain is considered an inherent government power, it is subject to constitutional limitations. Among those limitations is that the

³⁷ Institute for Energy Economics and Financial Analysis, *Risks Associated with Natural Gas Pipeline Expansion in Appalachia*, April 2016.

³⁸ *Ibid.*

³⁹ *Ibid.*

⁴⁰ Commissioner Cheryl A. LaFleur, Dissent on Spire STL Pipeline LLC, 164 FERC ¶ 61,085, Docket No. CP17-40-000 and CP17-40-001 LaFleur 2018.08.03, citations omitted.

land acquisition must be for “public use”.⁴¹ The power of eminent domain is abused when it is used to benefit powerful private interest groups at the expense of the less powerful; Supreme Court justices have recognized that the beneficiaries of this abuse “are likely to be those...with disproportionate influence and power in the political process, including large corporations and development firms.”⁴² At its best, eminent domain allows for the acquisition of private property to create national parks for all to enjoy, and at worst, it exploits less politically and economically powerful groups for the benefit of private actors. In the latter instance, the government acts as a henchman for private corporations. While this is not the intent of eminent domain, this is precisely what is happening at the behest of pipeline companies including Adelphia. As spelled out above, there is no genuine need for this project; the true goals are not to serve the public but to help Adelphia Gateway LLC to meet its corporate goals and to generate profits. This amounts to a government subsidization of a private company’s profits, at the expense of the public.

FERC has stated that “[e]ven though the compensation received in [an eminent domain proceeding] . . . is deemed legally adequate, the dollar amount received as a result of eminent domain may not provide a satisfactory result to the landowner and this is a valid factor to consider in balancing the adverse effects of a project against the public benefits.”⁴³ FERC has made clear that “[u]nder the Certificate Policy Statement, FERC will not authorize the construction of a project, with the concomitant right to obtain the necessary rights-of-way through either negotiation or the eminent domain process, unless it first finds that the overall public (not private) benefits of the project will outweigh the potential adverse consequences.”⁴⁴ Here, landowners have refused Adelphia access to their property, which will require Adelphia to acquire property via eminent domain. Further, numerous comments on the docket suggest that many landowners do not want this project as it will degrade their environment, removing any likelihood of the public seeing it as a benefit. As such, there currently exists little proof that this project will be a benefit that should be brought about through the use of eminent domain. Rather, the current facts suggest that this will be a repeat situation of the government acting as a henchmen for the benefit of private entities at the expense of the public.

The Lack of Established Need and Consequences of FERC Certification Demand That FERC Take a Harder Look at Whether Adelphia is Truly Needed.

It is an abuse of process and power for FERC to allow Adelphia’s baseless and unsupported claims to fulfill the requirement of “need.” While FERC concludes its inadequate Purpose and Need section of the EA by stating that “The Commission does not direct the development of the gas industry’s infrastructure regionally or on a project-by-project basis, or redefine an applicant’s stated purpose,” this does not excuse the Commission from independently examining the company’s claims of “need” in order to accurately assess the project’s underlying purpose and need in its environmental review, as required by NEPA. The EA’s statement of “need” fails to provide an adequate basis of accurate information to conduct its public interest determination

⁴¹ U.S. Const. Amend. V.

⁴² *Kelo v. City of New London*, 545 U.S. 469 (2005) (J. O’Connor Dissent).

⁴³ See *Order Clarifying Statement of Policy*, 90 FERC ¶ 61,128, at 61,398.

⁴⁴ See *Order Clarifying Statement of Policy*, 88 FERC ¶ 61,748, at 50.

and fairly balance the alleged need for the project against the adverse impacts, as required by the NGA and outlined in the Certificate Policy Statement.

FERC has plenty of guidance to ensure it adequately assesses a pipeline company's claim of need for a project as required by NEPA and the NGA. As Commissioner Glick explains in his dissent of the Spire STL Pipeline LLC's certificate order:

“The Commission’s Certificate Policy Statement contemplates a range of additional indicia of need including, but not limited to, “demand projections, potential cost savings to consumers, or comparison of projected demand with the amount of capacity currently serving the market.” This evidence would permit the Commission to make an independent assessment of the need for the project”⁴⁵

Commissioner LaFleur stated in her dissent of the Spire STL Pipeline LLC, that “In cases where adverse effects are present, as is the case here, the amount of evidence necessary to establish need increases.”⁴⁶ As demonstrated in this comment, the Adelphia Gateway Project would clearly impose adverse effects on the public and, therefore, the Commission must thoroughly assess Adelphia's claims of need, including considering expert reports, evidence put forth in this comment, and other evidence on the record.

FERC's past review of projects has not considered this evidence and has arbitrarily ignored evidence put forth by other groups that shows pipeline infrastructure is in fact not needed.

“But the Commission does not explain why the additional evidence in support of the Project is meaningful and the evidence against it is not. Instead, the Commission selectively points to evidence of expected demand only in instances where it backs the Commission's conclusions, while summarily rejecting the same type of evidence when it does not support the Project. I oppose this inconsistent and arbitrary application of the Certificate Policy Statement for the purposes of evaluating project need.”⁴⁷

FERC has made it clear that it does not “look behind the contracts to determine whether the customer commitments represent genuine growth in market demand” or need.⁴⁸ Such an arbitrary review process, when taken to its logical conclusion, leads to absurd results. Indeed, to the extent the contracts are artificially manufactured and do not represent “genuine growth in market demand” FERC essentially admits that such fraudulent representations to FERC are sufficient for a decision approving the certificate. To the extent FERC fails to make a determination on “genuine market growth,” any subsequent approval provided by FERC is arbitrary and capricious.

⁴⁵ Commissioner Richard Glick, Dissent on Spire STL Pipeline LLC, 164 FERC ¶ 61,085, Docket no. CP17-40-000 and CP17-40-0001, 2018.8.3.

⁴⁶ Commissioner Cheryl A. LaFleur, Dissent on Spire STL Pipeline LLC, 164 FERC ¶ 61,085, Docket No. CP17-40-000 and CP17-40-001 LaFleur 2018.08.03, citations omitted.

⁴⁷ Commissioner Richard Glick, Dissent on NEXUS Gas Transmission, 164 FERC ¶ 61,054, Docket No. CP16-22-001m 2018.7.25.

⁴⁸ See also *NE Hub Partners, L.P.*, 90 FERC ¶ 61,142 (2000).

Approving construction of a pipeline project and granting it exemption from state and local laws, gives it the power of eminent domain. It allows companies to take private property, as well as publicly preserved parks, forests and natural lands, all so the pipeline company can achieve its independent goal of greater profits. Such practices are unacceptable and subject communities to the threat and reality of pipeline accidents, incidents and explosions (which happen with concerning regularity) without a legitimate need that warrants these property takings and associated harms. And in the end, it simply saves these industries a buck on the backs of the rest of us.

Given the significant level of impacts that will be inflicted by the Project on Pennsylvania and Delaware and beyond (when considering the far-reaching climate change impacts), and that the project will necessarily result in unavoidable and unmitigatable harm to the environment and communities, a lack of demonstration of need for the Adelphia Gateway Project is a fatal flaw. It is improper for FERC, to presume “need” rather than require the project applicant to affirmatively demonstrate it.

The EA Alternatives Analysis is Fundamentally Flawed

“The CEQ regulations require agencies, in preparing an EIS or EA, to ‘[r]igorously explore and objectively evaluate all reasonable alternatives.’”⁴⁹ An evaluation of alternatives is the “‘heart of the [EIS]’ or EA.”⁵⁰ The determination—by both agencies and courts—of whether an alternative is “reasonable,” is guided by the same “rule of reason”⁵¹, which “necessarily governs both which alternatives the agency must discuss, and the extent to which it must discuss them.”⁵²

To start its alternative analysis, FERC identified the considerations that factor into their decision making. The first consideration is “whether or not [the alternative] could satisfy the [Project’s] stated purpose.”⁵³ The second consideration is “feasibility and practicality” of the alternative (looking at economic and construction impacts).⁵⁴ And the final consideration evaluates whether the alternative “provides a significant environmental advantage” which “requires a comparison of the impacts on each resources as well as an analysis of impacts on resources that are not common to the alternatives being considered.”⁵⁵ Yet rather than use these considerations to evaluate a wide variety of alternatives, as they seem to imply, the EA alternatives section was woefully inadequate and failed to meet the standard required under NEPA.

⁴⁹ *National Parks Conservation Association v. United States*, 177 F.Supp.3d 1, 17–18 (D. D.C. 2016) (quoting 40 C.F.R. § 1502.14(a)).

⁵⁰ *Id.*

⁵¹ See *Citizens against Burlington, Inc. v. Busey*, 938 F.2d 190, 195-96 (D.C. Cir. 1991) (“CAB”); *Theo. Roosevelt Conserv. P’ship v. Salazar*, 616 F.3d 66, 73 (D.C. Cir. 2011) (“TRCP”).

⁵² *Alaska v. Andrus*, 580 F.2d 465, 475 (D.C. Cir. 1978) (emphasis added) *vacated in part sub nom. W. Oil & Gas Ass’n v. Alaska*, 439 U.S. 922 (1978); see also *Hodel*, 865 F.2d at 294 (“NEPA’s requirement of a discussion of alternatives . . . should be superintended according to a ‘rule of reason’”).

⁵³ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 175

⁵⁴ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 175

⁵⁵ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 175

Finally, FERC is not only required to evaluate alternatives under NEPA, but also received comments from “USEPA and numerous other stakeholders regarding need to evaluate alternatives to the proposed Project, including alternatives not within the jurisdiction of FERC (e.g. use of renewable energy sources) and which would not meet the Project’s stated objections.”⁵⁶ FERC denied that they had any responsibility to evaluate such alternatives, but DRN does not believe that such a limitation is required to be put on the projects alternative analysis and explains this issue in more detail below.

FERC Defined the Projects Purpose too Narrowly, Effectively Eliminating Evaluation of Other Reasonable Alternatives

FERC cannot interpret the Project’s purpose and need so narrowly that every conceivable alternative is ruled out by definition.⁵⁷ Yet FERC does this in the EA’s alternatives analysis section as it redefines and consequently narrows Adelphia’s stated purpose ensuring that only natural gas projects can be considered in this section. According to the EA, the Project’s stated purpose for this section is:

providing about 250 and 350 million cubic feet per day of natural gas per day on the northern segment of the existing mainline and the 20-in-diameter pipeline, respectively, as well as adding 250 million cubic feet per day of natural gas capacity on the southern segment of the existing mainline and including two new laterals. As proposed the Project would increase service to industrial facilities in the Philadelphia area, serve additional markets in the northeast US, and maintain service to existing power plants.⁵⁸

This definition of the Project’s purpose is stricter than the one articulated in the Purpose and Scope section in the beginning of the EA, which stated that “the purpose of [this] proposed Project is to provide a clean, safe, and low-cost supply of natural gas pipeline capacity to the Greater Philadelphia industrial region with potential to serve additional markets in the Northeast”⁵⁹ Such a sudden narrowing of the Project’s purpose for the alternatives section only, ensures that this Project will only be compared to other natural gas alternatives. Therefore, rather than FERC acknowledging the purpose is to provide energy, the purpose turns into the provision of 250 million, 350 million, and an additional 250 million cubic feet of natural gas per day. Such

⁵⁶ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 174.

⁵⁷ See *Simmons v. U.S. Army Corps of Eng’s*, 120 F.3d 664 (7th Cir. 1997) (cautioning agencies not to put forward a purpose and need statement that is so narrow as to “define competing ‘reasonable alternatives’ out of consideration (and even out of existence)”; *Nat’l Parks & Cons. Ass’n v. Bureau of Land Mgmt.*, 606 F.3d 1058, 1072 (9th Cir. 2009) (finding a purpose and need statement that included the agency’s goal to address long-term landfill demand, and the applicant’s three private goals was too narrowly drawn and constrained the possible range of alternatives in violation of NEPA).

⁵⁸ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 175

⁵⁹ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 2.

a narrowing statement of purpose and need results in a failure to examine other viable system alternatives that would provide energy generally and undermines the NEPA process.⁶⁰

Further the narrowing of the need and purpose limited consideration of alternatives for converting and repurposing the 40 year old southern zone, which many commenters asked FERC to reconsider due to the public health and safety risks that allowing continued use and conversion of an older pipeline can bring.⁶¹ So that, instead of considering alternatives besides a natural gas pipeline for this section, such as reusable energy (which could have eliminated some health and safety risks), this limited definition of the Project's purpose ensured that the southern segment must still be a natural gas pipeline.⁶²

Additionally, the narrow description of purpose allows for FERC's failure to consider other mechanisms for achieving energy goals in the region that are not shale gas dependent – such as implementation of increased energy efficiency strategies and renewable energy strategies such as solar, wind, geothermal, and environmentally protective hydro. Considering such alternatives, not only is required by the procedures mandated by NEPA, but as discussed in the attached expert report from Key-Log Economics:

“Changes in energy markets due to energy efficiency gains and/or further market penetration by renewable alternatives to fossil fuels are reasonably foreseeable. For example, renewable energy accounted for 40% of new domestic power capacity installed (American Council On Renewable Energy, 2014), and the relative cost of producing power from renewable sources, which is already competitive, is falling (Randall, 2016; U.S. Energy Information Administration, 2016). Moreover, and as shown in Lander (2016), “there are 49.9% more resources available to meet peak day demand from local gas distribution companies in the region than is needed (p.9).” In light of these facts and related factors, FERC must consider alternatives that reflect the likely future reality in which the gas the PennEast pipeline would transport is not needed and/or is not a cost-effective choice for consumers or electric power generators. To do otherwise—that is, to focus narrowly on only transportation options—could lead to a federal action that imposes significant environmental effects and associated economic costs for no reason.”⁶³

Therefore, through this artificial act of narrowing the statement of purpose FERC ensured that only Adelphia's proposed Project offers the means of meeting the stated requirements, thus all alternatives are preordained to fail in comparison. Such a flawed alternative analysis review undermines the NEPA process and will not be upheld when reviewed by a court.⁶⁴

⁶⁰ *Env'tl. Prot. Info. Ctr. v. U.S. Forest Serv.*, 234 F. App'x 440, 443 (9th Cir. 2007) (agencies cannot “define[] the objectives of the project so narrowly that the project [is] the only alternative that would serve those objectives”).

⁶¹ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 178

⁶² Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 179

⁶³ Key-Log Economics, LLC, *Economic Costs of the PennEast Pipeline*, January 2017.

⁶⁴ *Env'tl. Prot. Info. Ctr. v. U.S. Forest Serv.*, 234 F. App'x 440, 443 (9th Cir. 2007) (agencies cannot “define[] the objectives of the project so narrowly that the project [is] the only alternative that would serve those objectives”).

The EA Fails to Provide Proper Justification for Denying the Alternatives Discussed, Including the No Action Alternative

Further, the EA Alternatives Analysis is fundamentally flawed because it arbitrarily limits the no action analysis and presumes, with no facts, that if Adelphia is not afforded this opportunity to convert a pipeline another pipeline will be built. The analysis assumes as true the characterizations of “need” made by Adelphia and other pipeline projects in the Northeast. When in fact there are multiple analyses already on the record, as well as comments filed, in addition to this comment, that demonstrate there is no need for the Adelphia pipeline project or another natural gas pipeline.

Yet, with the no action alternative, the EA relied on the fact that if Adelphia were not built then presumably “other natural gas transmission companies could [and would] propose to construct similar facilities to meet the demand for the additional volume of natural gas.”⁶⁵ This alternative presumes that there (1) is such a demand (which Adelphia has not proven as it only has a fraction of its natural gas with end use actually identified) and (2) that a company is ready and willing to build a natural gas pipeline to meet this energy demand instead of employing an alternative way to generate energy. While FERC states that it cannot consider alternative energy sources, in order to satisfy NEPA requirements, it should consider that if the project is not built there could be an energy alternative to meet the supposed demand that exists and could be utilized. This small change could vastly alter the environmental impacts of the Project.⁶⁶

Additionally, there are numerous existing natural gas transmission pipeline projects in the Project area that could be used as system alternatives as identified in the EA: Columbia, TETCO, Transco, Eastern Shore Natural Gas, and PennEast.⁶⁷ Yet FERC dismisses that they could replace Adelphia under the claims that that capacity of the projects cannot meet the supposed need that exists, which is why Adelphia should be built. But these projects, as well as other projects, could be fabricating actual need, which FERC never examines, as they take precedent agreements at face value rather than doing their due diligence of ensuring actual need exists through verifying shippers, market demands, and alternatives.⁶⁸

By failing to sufficiently examine other alternatives outside of natural gas pipelines, FERC violates the Natural Gas Act’s overriding purpose “to protect consumers against exploitation at

⁶⁵ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 176

⁶⁶ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 174. (“USEPA and numerous other stakeholders regarding need to evaluate alternatives to the proposed Project, including alternatives not within the jurisdiction of FERC (e.g. use of renewable energy sources) and which would not meet the Project’s stated objections.”)

⁶⁷ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 176; Many of the projects still have issues with need. See *The Art of the Self-Deal, How Regulatory Failure Lets Gas Pipeline Companies Fabricate Need and Fleece Ratepayers*, Oil Change International, September 2017.

⁶⁸ *The Art of the Self-Deal, How Regulatory Failure Lets Gas Pipeline Companies Fabricate Need and Fleece Ratepayers*, Oil Change International, September 2017.

the hands of natural gas companies.”⁶⁹ Neither NEPA nor the Natural Gas Act allows FERC to reject all alternatives except the Project, or similar projects, in order to promote the pecuniary interests of the private parties. As such, the alternative analysis done is factually and legally deficient.

The EA Failed to Adequately Consider Alternatives that were identified as FERC Arbitrarily limited the Facts and Analysis Provided for Each Alternative.

FERC’s analysis of alternatives was also flawed as they limited the analysis by claiming that the EA only needed to consider alternatives for facilities that the public commented on. Additionally, what analysis was provided appears to rest on conclusory statements and not actual evidence.

FERC arbitrarily limited the alternatives analysis “[c]oncerning alternatives for the compressor stations, meter stations, BAVs and MLVs” by mandating that in order for an alternative to the facility to be considered the public must have commented on it.⁷⁰ Aside from the fact that this is a violation of the NEPA’s requirement to identify and consider alternatives without requests from the public to do so, DRN did identify the proximity of blowdowns in Chester in their scoping comment as an issue that should be addressed.⁷¹ We consider this a comment that could have prompted a discussion of potential alternatives that would not lead to locating these facilities close together and would like to take this opportunity to identify this discrepancy to FERC.

For the limited number of compressor stations, meter stations, BAVs and MLVs that FERC did take the time to consider, they arbitrarily denied the alternatives as infeasible despite the possibility that they would help to substantially reduce the environmental impacts of the project. For example, when considering the Quakertown Compressor Station Alternatives, FERC was able to identify alternative sites away from residences but believed the additional construction was not worth moving the compressor station.⁷² Similar to the Quakertown Compressor Alternative, when considering the alternative for Paoli Pike BAV, Adelphia again dismissed what could have been an environmentally better alternative because it required more construction. In fact, throughout the analysis FERC relies on conclusory statements that claim any extra construction would make other benefits inconsequential. For example, the EA identifies that while alternatives “would avoid potential bog turtle habitat, to construct one of the

⁶⁹ *United Distrib. Co. v. FERC*, 88 F.3d 1105, 1122 (D.C. Cir. 1996) (citation omitted).

⁷⁰ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 182. “[b]ecause our alternative analysis are comment and resource driven, we have not evaluated alternatives for Transco, Monroe, and Tilghman Meter Stations, the Marcus Hook Compressor station, or five of the BAVs.

⁷¹ Comment Regarding Adelphia Gateway Pipeline Project- Scoping Period, Delaware Riverkeeper Network, June 1, 2018, pg. 33.

⁷² Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 183. (Alternatives 1 and 2 “would also be further from residences” but are “non-developed sites.”)

alternatives, the amount of land disturbance would be doubled....”⁷³ and therefore not worth an adequate consideration.

Additionally, FERC’s evaluation of changing the electrical technology for the compressor stations was deficient and dependent on conclusory statements instead of facts. As DRN identifies in the Compressor Stations section of this comment, changing from natural gas electricity generation to power lines at compressor stations, can help alleviate the strain on communities where these compressor stations will be cited. Yet FERC allowed for Adelphia’s wants and needs and not the issues identified by the public to limit the scope of this comparison. FERC did acknowledge that “to minimize air emissions, we evaluated the feasibility of using electric motor-driven compressor units in lieu of the proposed natural gas fired compressor units at the Quakertown and Marcus Hook Compressor Stations.” Yet back tracked this option because “gas-driven engines are **generally preferred by operators** over electric compression for providing reliable, uninterrupted natural gas transmission because the fuel supply does not require a third party for operation....”⁷⁴ Concluding that although changing the form of electricity would lessen air emissions (thereby aiding public and environmental health), it would not be preferred by Adelphia and therefore there would be no reason to pursue this alternative. This analysis is flawed as it allows for industry preference to dictate the direction and scope of the analysis, it fails to quantify the claims that electric compression would strain the power grid or be more costly, and it fails to quantify and fully evaluate the air emissions and other environmental factors that could be lessened. In the end, instead of using evidence or facts to establish its conclusion, FERC relies on generalized statements of presumptions.

FERC also failed to adequately consider alternatives the proposed routes for the Tilghman Lateral. Here, FERC had received numerous comments “regarding concerns with pipeline construction in a densely populated areas and in an industrialized area where the potential exists to encounter soil and groundwater contamination.”⁷⁵ Yet FERC only considered a minor route variation for the lateral. They define minor route variations as “typically involving minor shifts in the pipeline alignment meant to avoid a site-specific resource issue or concerns and are generally smaller in scale.”⁷⁶ Yet the comments FERC received on the Tilghman Lateral’s placement did not highlight a specific area but rather the whole route of the lateral as it all goes through residential and industrialized areas. Clearly FERC failed to consider the actual issues highlighted by the public in analyzing the location of the Tilghman Lateral.

Therefore, the Commission’s irrational logic justifying its failure to examine any meaningful system alternatives ultimately renders its Environmental Assessment legally deficient

⁷³ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 192.

⁷⁴ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 187. (emphasis added)

⁷⁵ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 180.

⁷⁶ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 180.

The EA Fails To Consider Cumulative Impacts Of The Project And Multiple Other Pipeline Projects in the Area, As Well As Reasonably Foreseeable Upstream and Downstream Impacts.

NEPA prohibits FERC from ignoring the ‘indirect’ impacts of its export-facility approval on the production and use of natural gas within the United States. The EA cumulative impacts assessment fails to fulfill these requirements of NEPA.

Cumulative impacts caused by “reasonably foreseeable” future actions are recognizable under NEPA and must be considered through the NEPA process. Additionally, FERC must consider the cumulative effects of actions similar to the proposed action, whether existing or reasonably foreseeable. Cumulative impacts include impact[s] on the environment which result from the incremental impact of the action “*when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions.*”⁷⁷ Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time⁷⁸ and include “direct and indirect effects, on a given resource, ecosystem, and human community of all actions taken, no matter who has taken the actions.”⁷⁹ A proper cumulative effects analysis focuses on resource sustainability, and has expanded geographic and time boundaries.

The Council on Environmental Quality (“CEQ”) draft guidance has noted that “for Federal actions that require an EA or EIS the direct and indirect GHG emissions from the action should be considered in scoping,” and these GHG impacts should be considered in the context of the “aggregate effects of past, present, and reasonably foreseeable future actions.”⁸⁰ Moreover, to reject the notion that climate change does not need to be considered in the EA is a violation of decision rendered by the Court of Appeals for the DC Circuit in which the court determined: “greenhouse-gas emissions are an indirect effect of authorizing this [pipeline] project, which FERC could reasonably foresee, and which the agency has legal authority to mitigate. *See* 15 U.S.C. § 717f(e).”⁸¹ Therefore, in order to conduct a proper EA, as required under NEPA, FERC must look at the indirect and direct effects of climate change from production of the pipeline materials to the eventual end use of natural gas flowing through it.

FERC has framed its cumulative impact analysis too narrowly as well as mischaracterized the degree of harm that will result from approval and construction of the proposed Adelphia pipeline project. The cumulative impact assessment neglects to consider reasonably foreseeable future

⁷⁷ 40 C.F.R. § 1508.7 (2010).

⁷⁸ 40 C.F.R. § 1508.7 (2010).

⁷⁹ Council on Environmental Quality, *Considering Cumulative Effects Under the National Environmental Policy Act*, available at http://energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-ConsidCumulEffects.pdf.

⁸⁰ Council on Env'tl. Quality, Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions 5, 9-10 (Feb. 18, 2010) (emphasis added), available at http://ceq.hss.doe.gov/nepa/regs/Consideration_of_Effects_of_GHG_Draft_NEPA_Guidance_FI_NAL_02182010.pdf (notice of availability published at 75 Fed. Reg. 8,046 (Feb. 23, 2010)).

⁸¹ *Sierra Club v. FERC*, 867, F.3d 1357, 1373 (D.C. Cir. 2017)

actions that will directly and indirectly result from approval of this proposed project and are clearly causally related.

For example, FERC failed to properly consider the effects this Project will have on natural gas production. Upstream natural gas production, and its subsequent impacts, are among the ‘effects’ that NEPA requires FERC to consider to determine whether its action will have a significant impact. NEPA’s implementing regulations define “[i]ndirect effects,” as those “which are caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable.”⁸² The Project’s takeaway capacity will necessarily lead to additional use of natural gas, with the consequences for its price, production, and use eminently foreseeable. Courts have recently held that such “generally applicable economic principles,” as the relationship between the price of a good and its production and consumption, are “sufficiently ‘self-evident’ ” to “require ‘no evidence outside the administrative record.’ ”⁸³ The results of “generally applicable” economics are all the more foreseeable here - because the administrative record does contain “evidence” specifically foreseeing them.

NEPA’s implementing regulations provide illustrative examples of indirect effects that are closely analogous to those at issue here: “growth inducing effects and other effects related to induced changes in the pattern of land use, population density or growth rate.”⁸⁴ Like impacts on gas production and use, ‘growth inducing effects’ and ‘induced changes in the pattern of land use’ reflect responses - generally, market-based - to changes in the supply and demand for various resources. Further reflecting the need to consider such impacts, the regulations include “economic” as well as environmental impacts among those that an agency must consider.⁸⁵

For that reason, courts have consistently required that agencies extend the ambit of their analysis to include effects akin to those that FERC ignored here. The Eighth Circuit has addressed circumstances that closely parallel those here, holding that when an agency approves a rail-line extension that would result in “an increase in availability and a decrease in price” of coal, NEPA demands that the agency examine the environmental “effects that may occur as a result of the reasonably foreseeable increase in coal consumption.”⁸⁶ In *Mid-States*, the agency’s decision enabled an increase in the supply of coal to the domestic market; here, as described below, FERC has enabled an increase in demand for natural gas. In *Mid-States*, that decision had foreseeable effects on the price of coal, its production, and its use. There is no reason why that same requirement would not be applied here as well.

FERC’s decision has foreseeable impacts on natural gas’s price, production, and use. In *Mid-States*, the Eighth Circuit held that the agency could not responsibly or lawfully ignore those

⁸² 40 C.F.R. § 1508.8(b).

⁸³ *Airlines for Am. v. Transp. Sec. Admin.*, 780 F.3d 409, 410-11 (D.C. Cir. 2015) (finding standing based on “basic proposition that ‘increasing the price of an activity ... will decrease the quantity of that activity demanded in the market’ ” (omission in original and citation omitted)).

⁸⁴ 40 C.F.R. § 1508.8(b).

⁸⁵ 40 C.F.R. § 1508.8.

⁸⁶ *Mid-States Coal. for Progress v. Surface Transp. Bd.*, 345 F.3d 520, 549-50 (8th Cir. 2003) (requiring that agency address air pollution resulting from increased coal use).

effects under NEPA.⁸⁷ Likewise, neither can FERC do so here. Other Circuits have reached similar results. When authorizing a runway that would expand capacity and “spur demand,” the Ninth Circuit has held that the Department of Transportation must examine the increased usage that will result from that demand.⁸⁸ The First Circuit has refused to let an agency construct a causeway and port, without examining the “industrial development” that would be enabled by that construction.⁸⁹ Those cases establish that when an Agency approves infrastructure that will increase demand for a resource, it cannot ignore the effects of that increased demand.

Further, NEPA does not require agencies to consider only those effects whose specifics are known and certain. As the Eighth Circuit held, “when the *nature* of the effect is reasonably foreseeable but its *extent* is not ... [an] agency may not simply ignore the effect.”⁹⁰ Indeed, where an action's effects are not precisely known, the Council on Environmental Quality's regulations suggest that the action is more - not less - likely to warrant an environmental impact statement.⁹¹ And, NEPA's implementing regulations provide detailed instructions as to how such uncertainty is to be addressed in an environmental impact statement.⁹²

That the precise location of natural gas production is unknown, therefore, does not render such production unforeseeable, or allow FERC to dismiss its effects as insignificant. “It is well recognized that a lack of certainty concerning prospective environmental impacts cannot relieve an agency of responsibility for considering reasonably foreseeable contingencies.”⁹³ Rather, “[a]t the threshold stage of the NEPA inquiry ... an agency must determine, to the extent feasible, whether the sum of all reasonably foreseeable effects, discounted by the probability of their occurrence, represent a ‘significant’ effect on the environment.”⁹⁴ If so, the “agency must issue an [environmental impact statement] analyzing the probabilistic facets of the prospective environmental impact.”⁹⁵ Here, widely accepted tools and methods are available to the Commission to demonstrate that additional drilling will be necessary to support the Project over the lifespan of its contracts, and to calculate the number of wells that will be needed to support the Project and where the new wells are likely to be located.

⁸⁷ *Id.*

⁸⁸ *Barnes v. U.S. Dep't of Transp.*, 655 F.3d 1124, 1138-9 (9th Cir. 2011).

⁸⁹ *Sierra Club v. Marsh*, 769 F.2d 868, 877-79 (1st Cir. 1985). See also *Friends of the Earth v. U.S. Army Corps of Eng'rs*, 109 F. Supp. 2d 30, 39-40 (D.D.C. 2000) (invalidating agency decision approving casino, without considering economic development that would result).

⁹⁰ *Mid-States Coal. for Progress*, 345 F.3d at 549-50 (when agency permits rail extension that will increase “availability of coal,” it may not ignore “the construction of additional [coal-fired] power plants” that may result merely because agency does not “know where those plants will be built, and how much coal these new unnamed power plants would use”).

⁹¹ See 40 C.F.R. § 1508.27(b)(5) (intensity depends upon “[t]he degree to which the possible effects on the human environment are highly uncertain or involve unique or unknown risks”); *Found. on Econ. Trends*, 756 F.2d at 154-55 (It is not “sufficient for the agency merely to state that the environmental effects are currently unknown,” because uncertainty is “one of the specific criteria for deciding whether an [environmental impact statement] is necessary”).

⁹² 40 C.F.R. § 1502.22(b) (specifying how agency should proceed when “the information relevant to reasonably foreseeable significant adverse impacts cannot be obtained because the overall costs of obtaining it are exorbitant or the means to obtain it are not known.”).

⁹³ *Potomac Alliance v. U.S. Nuclear Reg. Comm'n*, 682 F.2d 1030, 1036-37 (D.C. Cir. 1982).

⁹⁴ *Id.*

⁹⁵ *Id.*

Cumulative Impacts Assessment Must Consider Upstream Impacts of Reasonably Foreseeable Shale Gas Production.

Pursuant to NEPA, the EA must include existing and reasonably foreseeable shale development/production that will be advanced, induced, and supported if the Adelpia Gateway Project were to be approved by FERC and built. Among the reasonably foreseeable actions whose environmental and community impacts must be considered include the construction, operation, and maintenance of shale gas wells that will be the source of the gas carried by Adelpia, which will be carrying that gas in interstate commerce – both the new wells that will be constructed and the production that will be induced at pre-existing wells by the proposed AGP pipeline. The analysis of impact for these gas wells which will be producing gas for the purposes of delivering it through the AGP system in interstate commerce must include the associated gathering pipelines, access roads, gathering lines, compressor stations, and other supporting infrastructure which is necessary for the construction and development of these wells.

Shale gas production activities for delivery of gas into interstate commerce through the AGP are “sufficiently likely to occur that a person of ordinary prudence would take it into account in reaching a decision.”⁹⁶ Therefore, FERC’s approval of this project is a legally relevant cause that will result in the induced new, expanded, extended, and ongoing production of shale gas through construction of new gas wells and increased production at pre-existing wells, and FERC is obligated to consider these impacts in its NEPA analysis. Through ignoring this obligation, FERC arbitrarily limits the scope of its review by failing to consider the readily available and reasonable attainable analyses, projections, and assumptions that would inform the agency of the extent of the induced natural gas production that will result from the project. This lack of analysis allows the agency to ignore the broad range of environmental and community harms (e.g. air, water, wetlands, habitat, forest, floodplain, water quality, drinking water supplies, health, safety, climate change) that are known effects of shale gas production. Yet, FERC’s self-inflicted ignorance of this fact does not alleviate the agency of its obligation to undertake these assessments.

Analysts, experts, and modelers use the location of interstate transmission gas lines as a predictor of where gas production will take place. The reality of the industry is that gas is produced for transmission through interstate commerce, and that there is a direct relationship between the siting and construction of well pads and the location of existing or proposed interstate pipelines. FERC cannot be allowed to ignore and, as a result, minimize these known impacts.

Cumulative Impact Assessment Must Consider The Reasonably Foreseeable Outcome Of the Transportation and End Use of Natural Gas, Including the Potential for International Exports.

The direct, cumulative, and foreseeable impacts resulting from the exportation of the AGP transported gas must also be considered. Beyond maintaining existing delivery of gas to Martins

⁹⁶ *City of Shoreacres v. Waterworth*, 420 F.3d 440, 453 (5th Cir. 2005) (quoting *Sierra Club v. Marsh*, 976 F.2d 763, 767 (1st Cir. 1992)).

Creek LLC Electric Plant and the Lower Mount Bethel Energy LLC Combined Cycle Electric Plant, the EA fails to identify where exactly any of the end-users of the natural gas are located.

Despite its recognition that the “Project would result in direct and downstream GHG emissions and would contribute to global increases in GHG levels,”⁹⁷ FERC entirely shirks its responsibility to calculate the downstream GHG emissions of the Project and asserts a demonstrably false justification for this decision. FERC states that of the additional increase in gas capacity that would be transported by the project

22.5 million cubic feet per day is subscribed by the Philadelphia Electric Company for an unspecified end use. Because the downstream emissions from the remainder of the southern portion of the Project are not designated to a specific user, and the end use of the natural gas is not identified by Adelphia, the downstream GHG emissions of the southern portion of the Project are not calculated.⁹⁸

FERC further qualifies this just justification by stating

The Parkway Lateral and Delmarva Meter Station, which are proposed to provide natural gas service to TETCO and Columbia, may serve Calpine Corporation’s power plants; however, as of the time of the EA’s publication no contract or precedent agreement exists to ascribe any particular capacity to this potential end user.⁹⁹

However, information on the record from Adelphia and end users, some in direct response to FERC’s information requests, clearly demonstrates that these claims are misleading at best and outright false at worst.

First, as Clean Air Council explains in their comment on the EA, FERC’s assertion regarding the Calpine power plants is disingenuous:

The Commission’s description of the delivery of gas to the Calpine power plants also omits an important fact: the *purpose* of the Parkway Lateral is to serve the power plants. In Adelphia’s July 27, 2018 Response to Staff Data Request Dated July 12, 2018, accession no. 20180727-5070, NJR writes, “The proposed interconnection on the Parkway Lateral will serve to directly connect the Adelphia system with two existing Calpine Corporation (‘Calpine’) power plants to provide such Calpine power plants with an alternative source of gas.”¹⁰⁰

Even if FERC’s claim that no precedent agreements with the Calpine Corporation exist is true,

⁹⁷ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 132.

⁹⁸ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 132.

⁹⁹ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 132.

¹⁰⁰ Comments on the Adelphia Gateway Project, Clean Air Council, February 1, 2019, available at: https://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20190201-5223

the end user and use of the gas being transported through the Parkway Lateral is clearly reasonably foreseeable and as such the resulting downstream GHG emissions should be evaluated by the Commission.

In addition, while FERC excludes any mention of the Kimberly-Clark Cogeneration facility planned in Chester, PA as a potential or known end user, information on the FERC AGP docket from both Adelphia and Kimberly-Clark clearly indicates that Adelphia's Tilghman Lateral is designed to serve this new facility. In addition to letters from Kimberly-Clark to FERC on the docket expressing their support for the AGP,¹⁰¹ Adelphia wrote to FERC on August 10, 2018, clearly stating:

Additionally, on August 10, 2018, Kimberly-Clark Corporation ("K-C") submitted a letter in support of the Adelphia Project describing that K-C plans to retire its existing waste-coal generator and develop a new, efficient, natural gas-fired facility to serve Chester Mill's electricity requirements. K-C noted that securing dependable natural gas supply is key to the success of its plan. **Adelphia and K-C's natural gas provider have concluded negotiations of a precedent agreement for Zone South capacity, with delivery at PECO Energy Company's natural gas facility at Tilghman Street in Chester Pennsylvania, which will be used to serve K-C.**¹⁰²

Here, Adelphia clearly informs FERC on the docket in August of an existing precedent agreement to a known end user and for the known end use of powering the new Kimberly-Clark natural gas cogeneration facility. As such, FERC's claim that "the downstream emissions from the remainder of the southern portion of the Project are not designated to a specific user, and the end use of the natural gas is not identified by Adelphia" is demonstrably false. Additionally, its justification for not evaluating the reasonably foreseeable downstream GHG emissions resulting from the gas being delivered to the Calpine power plants, because "no contract or precedent agreement exists to ascribe any particular capacity to this potential end user," does not hold true for the Kimberly-Clark facility.

FERC's implication that it would be speculative to assume that, at least some, of the gas delivered by Adelphia would be burned is clearly disingenuous based on these clear statements on the docket. Even Adelphia estimated in its Application materials that the Project would contribute an equivalent of 4,861,766 CO₂e metric tons of greenhouse gases per year, based off of the reasonable assumption that "all of the incremental increase in volumes of natural gas transported by the Project would be combusted for use as a fuel source."¹⁰³

FERC's blatant falsehoods regarding the AGP's end use aside, FERC would be required to conduct this analysis with or without knowledge of the end users. As Commissioner LaFleur

¹⁰¹ See, among others, accession no. 20180810-5045

¹⁰² Supplemental Response from Adelphia Gateway to FERC, August 10, 2018, available at: https://elibrary.ferc.gov/idmws/file_list.asp.

¹⁰³ Adelphia Gateway, LLC, Adelphia Gateway Project Resource Report 1 at 43. FERC Docket No. CP18-46, January 2018 at 24-43. As was the case for many project impacts estimated by Adelphia, this calculation was based on the Project's additional natural gas capacity prior to their Amended Application which increased the additional capacity of the project.

explains in her partial dissent of Dominion Transmission, Inc.’s New Market Project, specific end users should not be required for the Commission to consider the reasonably foreseeable impacts of burning the gas being transported by FERC jurisdictional pipelines:

“...pipelines are driving the throughput of natural gas, connecting increased upstream resources to downstream consumption. With respect to downstream impacts, I believe it is reasonably foreseeable, in the vast majority of cases, that the gas being transported by pipelines we authorize will be burned for electric generation or residential, commercial, or industrial end uses. In those circumstances, there is a reasonably close causal relationship between the Commission’s action to authorize a pipeline project that will transport gas and the downstream GHG emissions that result from burning the transported gas. We simply cannot ignore the environmental impacts associated with those downstream emissions.”

“I agree that an identified end-use would enable the Commission to more accurately assess downstream GHG emissions by calculating gross and net GHG emissions as we did in Sabal Trail. However, I reject the view that if a specified end-use is not discernible, we should simply ignore such environmental impacts. In that case, we should disclose what we can, such as a full-burn calculation of GHG emissions.”¹⁰⁴

As we explain throughout this comment, a full-burn estimate would still be underestimate of the Project’s GHG emissions not only because it fails to account for the leaking and venting of methane throughout the pipeline system, but also because it fails to account for the emissions associated with the induced drilling for gas upstream that would result from the Project.

Facts are clear; in addition to the known end users that FERC fails to identify Adelphia will connect with the Marcus Hook Industrial Complex, which Adelphia advertised in its open season materials as a “state-of-the-art terminalling and natural gas liquids storage facility.” Given that natural gas can sell at a significantly higher price overseas as compared to domestically, it is both reasonable and foreseeable that Adelphia transported gas will be transported to Marcus Hook for export. There is no information in the EA examining this issue.¹⁰⁵

In its review of the Adelphia Gateway Project, FERC not only clearly misled the public in its characterization of the end use of the gas being transported by the project, it also failed to fulfill its NEPA duty to fully consider the impacts of the GHG emission that would reasonably and foreseeably result from the project.

The Cumulative Impacts Of Multiple Pipeline Projects In the Same Region Must Be Considered.

¹⁰⁴ *Dominion Transmission, Inc. (New Market-- Upstate, NY)*: LaFleur 2018.5.18

¹⁰⁵ See Adelphia Gateway LLC’s Abbreviated Application of Adelphia Gateway, LLC for Certificates of Public Convenience and Necessity Authorizing Acquisition, Construction, and Operation of Certain Pipeline Facilities and for Related Authorizations. January 11, 2018.

Additionally, the EA needed to more fully examine the cumulative impact of the multiple utility and other linear projects that are being proposed or constructed in the Delaware River watershed, in each subwatershed, and in each unique ecological community and human community.

For example, there are significant concerns related to the cumulative impacts of the continuous water crossings and wetlands disturbances that pipeline construction activity has on the health and vitality of the Delaware River basin and its tributaries. This is particularly a concern with the Adelpia Gateway Pipeline, and other similarly situated projects, as many of the same subwatersheds subject to development as a result of the Project were recently, or could be in the future, impacted by construction activity from other pipelines. Among the pipeline projects that are, will, or have impacted the same subwatersheds as Adelpia, are PennEast, Transco's Leidy line system upgrade projects which include the Northeast Supply Link project, the Southeast Leidy Expansion project, the Mariner East Project and the Atlantic Sunrise project

“[W]ith each of these projects comes some combination of stream impact, core forests destruction, wetland and riparian corridor disturbance, and clearing of steeply sloped lands. As such, each project has caused or will cause its own unique set of impacts and add another layer of acute and long-term assaults to the environment. Additionally, each new project magnifies the project specific impacts of each prior project. When dealing with environmental impact assessment, each project is evaluated independently; the cumulative impacts of multiple linear development projects are not assessed and the additive long-term impacts of past and future linear projects fail to be recognized.”¹⁰⁶

This kind of cumulative assessment is obviously required. As numerous harms stem from these impacts. For one example, look to the Buckeye Oil Gas Transmission ROW in the Blue Mountains. For this project, sensitive glacial soils, extreme compaction, continued and repeated ATV traffic and pipeline maintenance, lack of diverse growth, bare soils, and thermal heat and fragmentation impacts to the ROW and within the mature forest paralleling the Buckeye ROW were observed by DRN.¹⁰⁷ These impacts effect the area of the pipeline in both short and long term and without this analysis FERC cannot claim that this environmental review was complete. In order to assure some review of these impacts, consideration of the stream crossings proposed by Adelpia through Marcus Creek and Stoney Creek needs study and consideration on a subwatershed scale.

These are among the impacts that must be assessed as part of a cumulative impact statement – acknowledging the accumulation of harm that will result to these ecological resources and recreational and cultural assets given that Adelpia would be cutting through these same natural resources and inflicting similar harms. These projects do not occur in a vacuum. Each project individually depletes the natural and scenic resources of the region, and the combined impact becomes increasingly severe, unavoidable, unmitigatable, and irreversible. As such, the EA needs to examine these projects holistically in order to satisfy the requirements of NEPA.

¹⁰⁶ Princeton Hydro, *Technical Review of Volume I FERC Draft Environmental Impact Statement Submitted for PennEast Pipeline Project*, September 2016

¹⁰⁷ Delaware Riverkeeper Network. *Field-Truthing and Monitoring of the Proposed PennEast Pipeline, FERC Draft EIS, Docket No. CP15-558*, September 2016.

Under NEPA guidance, the environmental review area must include all the subwatersheds through which the pipeline crosses. A critical consideration in determining the cumulative environmental effects must be the interaction of runoff, lost recharge, deforestation, damaged habitat, compacted soils, air pollution, water pollution, methane emissions, and all other harms impacted by the proposed Adelphia pipeline along with the other past, present, and reasonably foreseeable future actions, whether federal, non-federal, or private that are connected to and/or would be the result of construction of the proposed Adelphia pipeline.¹⁰⁸

Cumulative Impacts Must Consider the Impacts to Ecological Systems During the Pipeline Construction, Operation, And Maintenance.

The EA does not consider the cumulative impacts to key ecological systems over the lifetime of the pipeline, from construction through operation and maintenance activities.

For example, forest ecological systems would experience enduring but also fresh impacts throughout the life and presence of the pipeline. The initial impact will include the removal of the forest and understory vegetation, coupled with the changes in light, moisture, wind, etc. impacting 300 feet into the forest on either side of the ROW footprint. There will be enduring compacted soils, and dramatically altered vegetative composition along the ROW and along that forest edge that will increase volume and alter the timing of stormwater runoff, reduce groundwater recharge, change/take habitats for species of all kinds. There will then be the influx of invasive plant and animal species that will have cascading impacts on the forest ecosystem, which will spread along the ROW and back into the core of the adjacent forest.

Additionally, over the life of the pipeline, the maintenance of the ROW will also impact ecological systems along the Project's route. Maintenance of the ROW includes, the prevention of tree growth and maintenance of low growing vegetation only – this will be accomplished by periodic mowing and the use of herbicides. The mowing will disturb the vegetation and habitats that were allowed to encroach on the ROW. The herbicides will include impacts for non-target species, and could have implications for soil microbes and nearby wetland, vernal pool, and stream ecosystems. Maintenance activities will involve periodic trimming, pruning, cutting back, and removal of trees and woody vegetation growing along the perimeter of the ROW. While about 80% of the pipeline will be on an existing ROW, Adelphia's project will increase the life of this pipeline. Further, just because the effects are already occurring does not mean that FERC does not have to account for them during the NEPA environmental review. Along the entire length of the pipeline, these changes in the hydrology of the affected lands (especially the steeper sloped areas) will invariably alter runoff properties. The end result will be impacts to the streams, wetlands and riparian areas traversed by the pipeline and pipeline ROW and increased opportunity for erosion along the steeper segments of the pipeline and pipeline ROW.¹⁰⁹

¹⁰⁸ 40 C.F.R. §§ 1508.7-8, 1508.27 (2010).

¹⁰⁹ *Technical Review of Volume I FERC Draft Environmental Impact Statement Submitted for PennEast Pipeline Project*, Princeton Hydro, September 2016. (while this study was done for PennEast the environmental ramifications can be transferred to other pipeline infrastructure projects as well).

FERC states that completed E&S Control Plans by agencies will adequately avoid harms but this is a false conclusion as can be seen on other pipeline projects where severe sediment pollution harmed local waterbodies, many of which had special protection designations¹¹⁰. Most agencies require quick establishment of groundcover to stabilize soils which takes the place of establishing more desired and diverse native habitats, biodiversity and soil health is lost. Once soil chemistry, soil porosity, and soil layering (horizons) that took eons to form are destroyed by the construction process, erosion control measures usually require lime and fertilizer to be applied so that seed mixes grow rapidly. The addition of lime and fertilizer are like poison to what were once forest soils of low pH and low nutrients. This essentially ruins the chance that the soil will ever revert to a native plant community again. Alien invasive weeds of all kinds thrive on the nutrient-enriched, topsy-turvy soil layers in the aftermath of construction. Native herbaceous plants and shrubs almost never outcompete weeds in these altered, nutrient-enriched, high pH soils. Just like on abandoned farmland, these construction sites act as "post-agricultural soils," and just like our abundant forests on post-agricultural soils, the herbaceous and shrub layers will be dominated by alien weeds virtually forever, especially with over-abundant deer in the equation.¹¹¹

The EA fails to consider cumulative impacts in an ecological system and fails to consider the multiple elements of specific site conditions that impact one another synergistically to determine what will be the impact that results from development of that site, with and/or without mitigation – e.g. pre and post vegetation composition, soils, slope etc. This missing component of the EA is massive and seriously undermines any of the conclusions reached regarding ecological impacts:

The cumulative impacts assessment must consider near term and long term impacts to ecological systems. This includes accounting for the damage done to ecological resources near term and long term, even with mitigation measures undertaken and full compliance with FERC procedures and the law, as well as an analysis of areas where past projects have failed and what could happen if similar events occur during construction, operation, and maintenance of Adelphia. These components needs to be and are not part of the cumulative impact assessment conducted by the EA. The forest example above is but one kind of resource that experiences these multi-pronged impacts in need of cumulative assessment by the EA– vernal pools, wetlands, streams, aquatic life, avian life, amphibian life, soil life, and wildlife all need an assessment of the cumulative impacts that will be visited upon them by Adelphia if it were to be constructed.

Expansion Of Adelphia Is A Foreseeable Impact That Must Be Considered By The EA As Part of the Cumulative Impacts Analysis

By connecting previously fragmented and idle systems and adding new laterals and compressor stations, Adelphia is essentially creating an entirely new interstate pipeline that will foreseeably be used to support future Adelphia pipeline upgrades. A quick review of other major pipeline project in the region demonstrates that natural gas pipeline operators including Columbia,

¹¹⁰ Delaware Riverkeeper Network *Field Monitoring Report, Pipeline Construction & Maintenance Irreparably Harms Rivers, Wetlands and Streams. Addendum to Comment for the PennEast Pipeline*

¹¹¹ Dr. Emile DeVito, New Jersey Conservation Foundation, Email Correspondence Re: Tennessee Gas Pipeline practices. July 14, 2015.

Tennessee Gas Pipeline, Texas Eastern, Transcontinental, and Millennium have all, within the last four years, added looping segments and/or additional compressors to their pipelines.

Looping is a common practice to expand the capacity of an existing pipeline by laying additional pipelines along the same right-of-way. Looped pipelines can be used to increase the distance between compressor stations or to provide additional storage capacity within the pipeline itself. Compression is another way to increase throughput capacity on an existing pipeline. Upgrading existing compressor stations with additional or higher powered compressors or adding new compressor stations can significantly increase pipeline capacity. Table 5 shows capacity expansions that have occurred shortly after new pipelines have commenced operations but prior to the consideration of looping, which can be a more costly alternative or supplement to additional compression. Table 2 shows several recent and proposed projects that have used compression and notes if these projects also incorporate compression as an element of the capacity expansion.

Table 1: New Pipeline Compressor-Based Expansions

	Capacity (Dth/day)	In Service Date
Millennium Pipeline		
Initial Capacity	450,000	2008
Minisink Compressor	225,000	2013
Hancock Compressor	107,500	2014
	<hr/> 782,500	
Percent Change	74%	
Maritimes & Northeast		
Initial Capacity	361,575	2000
Compressor Upgrade	78,425	2001
Phase IV Expansion	393,000	2009
	<hr/> 833,000	
Percent Change	130%	
Vector Pipeline		
Initial Capacity	925,200	2000
2007 Expansion	245,400	2007
Athens Expansion	105,000	2009
	<hr/> 1,275,600	
Percent Change	38%	

Table 2: Recent and Proposed Pipeline Looping Projects¹¹²

	Initial Pipeline Completion	In-Service Date	Looping	Compression
Transco Leidy Southeast Tennessee	Late 1950	Jan-16	30 miles	Yes ¹¹³
Susquehanna West	2011	2017	8 miles	Yes
Tennessee Orion	2011	2018	13 miles	No
Millenium Eastern Upgrade	2008	2018	7 miles	Yes
Northeast Upgrade Project	2011	Nov-13	40 miles	Yes
Triad Project	2011	2017	7 miles	No
East Side Expansion	Late 1940	Nov-15	19 miles	Yes

Adelphia intends to overbuild portions of the project, allowing for certain portions to handle more natural gas. In other pipelines where this has occurred, there has been a tendency to then also increase the rest of the project at a later date through replacement of the mainline or looping. As such, the EA analysis must account for the foreseeable expansion of the ROW to accommodate future upgrades.

While FERC Continues to Deny The Upstream Impacts Of Induced Shale Gas Production Such Impacts Are Reasonably Foreseeable and Must Be Considered By The EA.

The Adelphia Gateway Project will result in new production of shale gas. Construction of the Project will cause industry to undertake and pursue new shale gas production – both by drilling new wells for production of shale gas and by pursuing production from wells that have been drilled but for which production was not pursued due to lacking pipeline capacity. Determining the shale gas production that will be induced and supported by the AGP for delivery into interstate commerce is achievable using readily available data, methodologies, modeling, knowledge, resources and tools. Assessing the direct and indirect impacts from shale gas production and drilling that will result from construction of the AGP is required by NEPA.

Pipelines can result in new shale gas production and drilling in several ways

Regardless of whether there is an actual need for the gas that would be transported in interstate commerce to the areas identified by Adelphia in its application, once the project is constructed there will be shale gas production that will feed the pipeline which could then redirect it to other

¹¹² Properties of these projects are available in the respective FERC dockets: Transco Leidy Southeast (CP13-551), Tennessee Susquehanna West (CP15-148), Tennessee Orion (CP16-4), and Millenium Eastern Upgrade (PF 16-3).

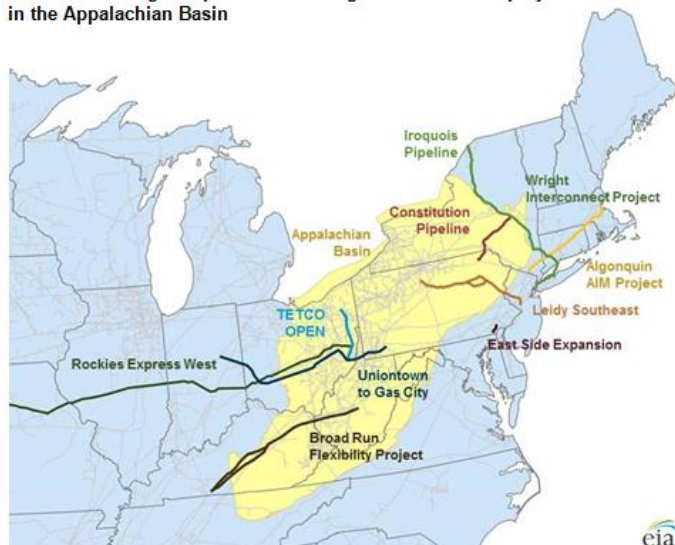
¹¹³ Susquehanna West, Orion, Northeast upgrade, and Triad are all expansions to the TN 300 line, which is itself an expansion of a 1950s era TGP line.

markets such as to LNG export facilities that can take the gas overseas for sale to foreign nations and users.

While FERC continues to try and ignore the connection between natural gas infrastructure investments and increased production, for producers, industry experts, and other government agencies, the effect is clear. With limitations on the ability to deliver gas to high-value markets, the economics do not favor increased drilling. In recent years, due to low gas prices and constrained delivery systems, many drillers have cut back on drilling; total production in the Marcellus actually declined for the first time since the shale boom began in 2008.¹¹⁴

Currently, there are about 12 projects proposed or under construction that would either expand existing pipeline capacity or add new pipelines for the purpose of delivering shale gas from the Marcellus region into markets in the Northeast, South, and beyond.¹¹⁵ The map below shows some of the recent proposals to expand take-away capacity from the Marcellus (notably, this map does not include the AGP, PennEast or the Atlantic Sunrise pipeline projects).

Selected existing and planned natural gas infrastructure projects in the Appalachian Basin



Reproduced from EIA, January 2016. Available at:
<http://www.eia.gov/todayinenergy/detail.cfm?id=24732>

These new pipelines, including Adelphia, will unlock additional production potential in the Marcellus region, both directly by providing additional takeaway capacity from the region and indirectly by resulting in higher regional prices. Natural gas prices in the Marcellus region have been trading at a significant discount to national benchmark prices for several years, as discussed

¹¹⁴ Bloomberg. "America's Biggest Shale Gas Field Is Choking on Its Own Supply." October 14, 2015. Available at: <http://www.bloomberg.com/news/articles/2015-10-14/america-s-biggest-shale-gas-field-is-choking-on-its-own-supply>; EIA Drilling Productivity Report. August 2016. Available at: <https://www.eia.gov/petroleum/drilling/pdf/dpr-full.pdf>.

¹¹⁵ Northeast Gas Association. "Planned Enhancements, Northeast Natural Gas Pipeline Systems". August 2016. Available at: http://www.northeastgas.org/pdf/system_enhance0816.pdf

elsewhere in this comment. Growth in gas production slowed in Pennsylvania in 2015, and local prices dropped significantly.

As a result of the recent slowdown in production, there are numerous well sites that are permitted but have not yet been drilled. For example, a subsidiary of the Natural Fuel Gas Company, Seneca Resources, stated in a presentation to its investors earlier in 2016 that it had “[l]imited development drilling [in its Eastern Development Area in northeastern Pennsylvania] until firm transportation on [the proposed] Atlantic Sunrise (190 MDth/d) is available in late 2017” and that it had “50-60 remaining Marcellus [drilling] locations” and “100-120 [Geneseo shale] locations” that could not be developed until that pipeline project was underway.¹¹⁶

Other producers in the region have similarly stated that they require additional pipeline capacity to develop new production capacity. Argus Media, a leading provider of data on prices and fundamentals for the natural gas industry, reported that “Antero Resources is waiting on the 3.25 Bcf/d Energy Transfer Rover pipeline to come online in the second half of 2017 before it increases drilling activity,” while “Northern Fuel Gas [in July 2016] said it was waiting on its own 475mn cf/d Northern Access to come online in the second half of 2017 before it raises its production levels.”¹¹⁷ Argus also reported that “Range Resources plan[ed] to drill a seven-well pad in the Appalachian shale region [in 2016], and could quickly drill up to 42 more laterals. The producer is expecting the 628mn cf/d (18mn m³/d) Spectra Gulf Markets project to facilitate some of its increased output when it begins flowing in the fourth quarter [of 2016].”¹¹⁸ In their 2015 Annual Report, Cabot Oil & Gas noted that drilling activity in the Marcellus region had been reduced to a single rig, in response to “the market environment.” Cabot further noted that the company plans to “exit 2016 with between 45 and 50 drilled uncompleted wells, which will allow for operational flexibility into 2017.”¹¹⁹ New pipeline capacity such as the AGP would enable producers like Cabot and other operators to complete additional wells and begin to further accelerate their production in the state.

A report¹²⁰ issued by the Greater Philadelphia Energy Action Team advocates for more pipelines in order to induce and support more and new shale gas production:

“In creating an Energy Hub, the goal, first and foremost, is to expand the market for the Marcellus/Utica natural gas and NGLs to increase the economic benefits that will come to the Commonwealth and the Greater Philadelphia region from more vigorous production... To achieve this goal, however, we need to expand the existing interstate and intrastate natural gas pipeline infrastructure.”

¹¹⁶ National Fuel. Investor Presentation: Q2 Fiscal 2016 Update April 2016. Slide 10. Available at: http://s2.q4cdn.com/766046337/files/doc_presentations/2016/April/20160428_NFG-IR-Presentation.pdf

¹¹⁷ Argus Media. August 29, 2016. “US gas producers boost output ahead of expansions.” Available at: <http://www.argusmedia.com/news/article/?id=1302610>

¹¹⁸ Ibid.

¹¹⁹ Cabot Oil & Gas 2015 Annual Report. Page 3. Available at: <http://www.cabotog.com/wp-content/uploads/2016/04/COG-2015-AR.pdf>

¹²⁰ Greater Philadelphia Energy Action Team, *A Pipeline for Growth*, March 30, 2016.

“Encouraging the industry to invest in new pipelines and in new distribution system infrastructure ... provides additional capacity for increased volumes of gas.”

Industry is advocating for pipeline capacity exiting Northeast Pennsylvania to grow by over 60 percent in the coming years in order to allow for drilling activity to resume. Adelphia will be a major component of this expansion.

Historical Drilling Activity Is an Accurate and Strong Indicator For New Wells.

As of August 2016, the state of Pennsylvania had 9,480 “active” unconventional natural gas wells.¹²¹ Active gas wells have been issued a permit, but may or may not have been drilled or be currently producing natural gas. Those wells are found largely in the counties located in the Northeast and Southwest regions of the state, which contain 83 percent of active wells.

Given the large number of wells that have been permitted but not drilled, one can reasonably expect that new natural gas wells will be drilled as a result of the construction of the Adelphia pipeline, and their approximate location.

See the Delaware Riverkeeper Network’s comments on the PennEast Pipeline project DEIS, attached to this comment, for an overview of the methods and an example of how historic drilling activity can be used to estimate the number and location of new wells.

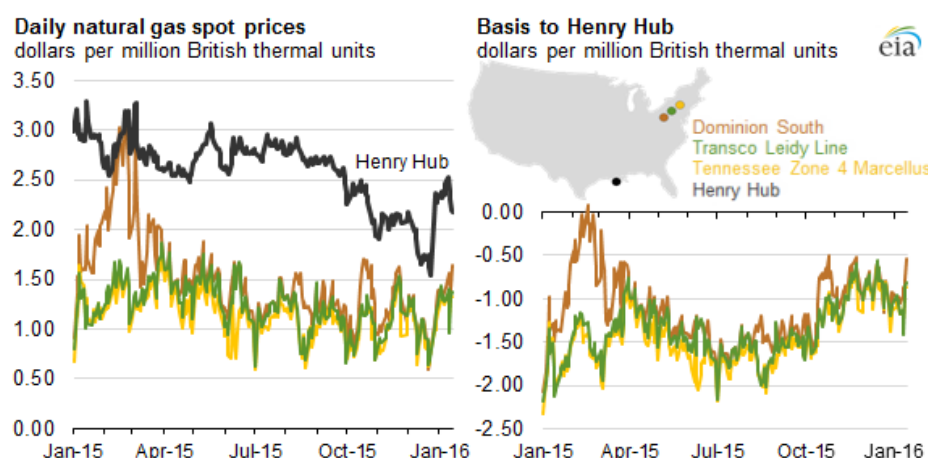
The Upstream Analysis Must Analyze Natural Gas Pricing Impacts Due to the Construction of Additional Pipelines

Natural gas prices are lowest in the regions in which gas is produced. For many years, the lowest natural gas prices in the East were found at Henry Hub, located near the Gulf of Mexico where much of the natural gas in the United States was produced. With the increase in shale gas production, however, the lowest natural gas prices in the country are now found at trading points in and around the Marcellus and Utica shale plays in Pennsylvania, West Virginia, and Ohio. Availability of pipeline infrastructure to send natural gas to other regions has a direct impact on the price of natural gas in those regions—greater gas take-away capacity allows more natural gas to be produced. The improved access to higher priced markets via additional pipeline infrastructure will raise the price of natural gas in the producing region, which also will increase production.

Information on natural gas spot prices published in January 2016 by the EIA shows these market forces in action. While trading points in and around the Marcellus and Utica shale regions have been below the Henry Hub price in recent years, the EIA points out that, as of January 2016, the difference between these price points has narrowed due to the recent pipeline projects that have come online. That narrowing is shown in Figure 3.

¹²¹ Pennsylvania Department of Environmental Protection. PA Oil and Gas Mapping. Accessed August 26, 2016. Available online at: <http://www.depgis.state.pa.us/PaOilAndGasMapping/OilGasWellsStrayGasMap.html>

Figure 3. Spread in Natural Gas Prices at Henry Hub and Marcellus Trading Points



Source: US Energy Information Administration, based on Natural Gas Intelligence.
Available online at: <http://www.eia.gov/todayinenergy/detail.cfm?id=24712>

Despite the eroding of the Marcellus basis differential in late 2015, towards close to \$1 per million BTU, that differential has persisted throughout 2016 and further increased. On August 29, 2016, natural gas in Northeast Pennsylvania was trading at \$1.30 per million BTU, while Henry Hub gas was at \$2.87—a \$1.57 differential.¹²²

The narrowing of prices between the Henry Hub and Marcellus/Utica trading points in late 2015 may be due in part to the fact that producers in the Marcellus curtailed production of natural gas by approximately 1.2 Bcf/d as of November 2015 in response to weak prices resulting from the rapid growth of production in the face of pipeline constraints. Of the gas production that was curtailed, about 750 MMcf/d was in Bradford and Susquehanna counties in Pennsylvania.¹²³

Economics dictates that natural gas production is likely to increase as additional pipeline capacity is added to the region. Producers in the Marcellus such as Seneca Resources and Cabot Oil & Gas have indicated that additional pipeline infrastructure is a cornerstone of plans to increase production in Northeast Pennsylvania.¹²⁴ In January 2016, Bentek Energy and the EIA noted a large backlog of natural gas wells that have been drilled but will not begin production until infrastructure (in the form of pipelines) becomes available to transport additional supply or until the price of natural gas increases. Bentek and EIA suggested that this backlog will allow production of natural gas in the Marcellus to increase quickly when new infrastructure projects are completed.¹²⁵ And so, in addition to advancing new drilling, additional pipeline infrastructure

¹²² NGI Shale Daily, August 29th, 2016.

¹²³ NGI's Shale Daily. Information on the Marcellus Shale. Available online at: <http://www.naturalgasintel.com/marcellusinfo>. Accessed on August 28, 2016.

¹²⁴ Comments of Allegheny Defense Project before the Federal Energy Regulatory Commission on the Draft Environmental Impact Statement for Transcontinental Pipeline Company proposed Atlantic Sunrise Project. Docket No. CP14-138-000. June 2016. Page 22.

¹²⁵ US Energy Information Administration. 2016. *Spread between Henry Hub, Marcellus natural gas prices narrows as pipeline capacity grows*, Available online at: <http://www.eia.gov/todayinenergy/detail.cfm?id=24712>

will advance gas production in wells that may have been drilled but from which the industry did not yet extract gas due to a lack of available pipeline infrastructure.

The Adelphia Gateway Project Would Induce Significant and Predictable New Drilling Activity

The AGP represents a significant fraction of the total new pipeline capacity coming to Northeast Pennsylvania. A significant amount of existing gas production that has been curtailed will now come online for asserted customers as a result of the new pipeline. Permitted wells that were not previously completed would start producing gas for transport to Pennsylvania and Delaware markets through the AGP.

The total number of wells induced by any given pipeline depends on the lifetime production, or estimated ultimate recovery (EUR), from a given well. Wells in Northeast Pennsylvania provide up to 20 BcF of total lifetime production, according to a Range Resources presentation.¹²⁶ There is significant variability across wells, and well decline rates—the decline in daily production over time after a well starts producing gas—have proven to be much more significant than initially estimated. Yet there is a way for such information to be reasonably identified and included in the EA analysis, despite the fact that FERC continues not to do so. To see an example of the methods used to calculate a projects potential inducement see the Delaware Riverkeeper Network’s comment on the PennEast Draft Environmental Impact Statement, attached to this comment.

The EA Fails In Its Legal Obligation To Consider Greenhouse Gas Emissions And Climate Change Implications Of The Adelphia Gateway Project

FERC is required by NEPA to take environmental considerations into account in their decision-making “to the fullest extent possible”¹²⁷, and under the Natural Gas Act (NGA), FERC is obligated to protect the public interest. Yet in the AGP EA, FERC fails to meet its obligation to consider foreseeable impacts, both direct and indirect, resulting from its pipeline approvals, including effects on climate change, water impacts, air impacts, community impacts, and the ramifications of increased drilling and fracking operations.

NEPA requires that federal agencies must consider environmental harms and the means of preventing them in a “detailed statement” before approving any “major federal action significantly affecting the quality of the human environment.”¹²⁸ FERC must consider past, present and “reasonably foreseeable” cumulative impacts caused by its decisions and actions.

Construction and operation of fracked gas pipelines, compressors and infrastructure are a direct, indirect, and foreseeable cause of increased greenhouse gas (GHG) emissions, increased drilling and fracking for gas from shale, and all the associated environmental impacts, including climate

¹²⁶ Range Resources. EnerCom Oil & Gas Conference 21. August 15, 2016.

<http://ir.rangeresources.com/phoenix.zhtml?c=101196&p=irol-presentations>

¹²⁷ 42 U.S.C. § 4332; 40 C.F.R. § 1500.2; *Fla. Audubon Soc. v. Bentsen*, 94 F.3d 658,684 (D.C. Cir.)

¹²⁸ 42 U.S.C. § 4332(2)(C).

change, pollution, environmental degradation, and a variety of community and economic harms. NEPA requires FERC to consider these foreseeable direct and indirect impacts in its review of proposed natural gas infrastructure projects.

On August 1, 2016, The Council on Environmental Quality (CEQ) issued final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews. The final guidance directs federal agencies on how to consider a proposed action's impacts on climate change—both in terms of the potential effects of *a proposed action on climate change* (by assessing the GHG emissions that would result *directly and indirectly* from the action) and in terms of the effects of *climate change on a proposed action* and its environmental impacts.

The guidance, building off of recent scientific assessments and conclusions, including the 2009 EPA finding that climate change impacts are “reasonably anticipated to endanger the public health and public welfare of present and future generations”, states that “Climate change is a fundamental environmental issue, and its effects fall squarely within NEPA’s purview.” While this guidance has been rolled back by the Trump administration,¹²⁹ the obligation to review the climate changing impacts of agency decisionmaking still exists as a mandate under the NEPA.¹³⁰ The rollback of the guidance does not change the NEPA obligation to consider the climate changing impacts of pipeline infrastructure approvals.

NEPA Requires FERC Consider The Downstream Impacts Of A Project Including Its Potential Contribution to Climate Change.

The Court of Appeals for the DC Circuit in *Sierra Club v. FERC*, regarding the Sabal Trail Pipeline, recently made clear that an analysis of the downstream impacts of GHG emissions is reasonably foreseeable and required pursuant to NEPA.¹³¹ It held that:

“... greenhouse-gas emissions are an indirect effect of authorizing this [pipeline] project, which FERC could reasonably foresee, and which the agency has legal authority to mitigate. *See* 15 U.S.C. § 717f(e). The EIS accordingly needed to include a discussion of the “significance” of this indirect effect, *see* 40 C.F.R. § 1502.16(b), as well as “the incremental impact of the action when added to other

¹²⁹ See Trump Executive Order.

¹³⁰ *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*, Christina Goldfuss, Council on Environmental Quality, August 1, 2016.

¹³¹ *Sierra Club v. FERC*, 867, F.3d 1357, 1373 (D.C. Cir. 2017)(“... greenhouse-gas emissions are an indirect effect of authorizing this [pipeline] project, which FERC could reasonably foresee, and which the agency has legal authority to mitigate. *See* 15 U.S.C. § 717f(e). The EIS accordingly needed to include a discussion of the “significance” of this indirect effect, *see* 40 C.F.R. § 1502.16(b), as well as “the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions,” *see WildEarth Guardians*, 738 F.3d at 309 (quoting 40 C.F.R. § 1508.7). “)

past, present, and reasonably foreseeable future actions.” *See WildEarth Guardians*, 738 F.3d at 309 (quoting 40 C.F.R. § 1508.7).”¹³²

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

“... to avoid confusion as to the scope of our obligations under NEPA and the factors that we find should be considered under NGA section 7(c) [...] the upstream production and downstream use of natural gas are not cumulative or indirect impacts of the proposed pipeline project, and consequently are outside the scope of our NEPA analysis.”¹³³

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

“pipelines are driving the throughput of natural gas, connecting increased upstream resources to downstream consumption. With respect to downstream impacts, I believe it is reasonably foreseeable, in the vast majority of cases, that the gas being transported by pipelines we authorize will be burned for electric generation or residential, commercial, or industrial end uses. In those circumstances, there is a reasonably close causal relationship between the Commission’s action to authorize a pipeline project that will transport gas and the downstream GHG emissions that result from burning the transported gas. We simply cannot ignore the environmental impacts associated with those downstream emissions.”¹³⁴

In addition, the U.S. Environmental Protection Agency has explicitly commented that FERC should consider impacts from the development and production of natural gas being transported through a proposed pipeline, as well as considering impacts associated with the end use of the gas, particularly with regards to greenhouse gas emissions and climate change effects.¹³⁵

NEPA Requires FERC Consider The Upstream Impacts Of A Project Including Its Potential Contribution to Climate Change.

NEPA requires that FERC’s environmental review include consideration of the GHG and other environmental harms that result from induced gas drilling. FERC has completely neglected this responsibility in its review of the Adelphia Gateway Project, despite

¹³² Decision rendered by the Court of Appeals for the DC Circuit on August 22, 2017 in *Sierra Club v. FERC*, 867, F.3d 1357, 1373 (D.C. Cir. 2017)

¹³³ Order Denying Rehearing for Dominion Transmission, Inc., FERC Docket No. CP14-497-001, May 18, 2018.

¹³⁴ Statement of Commissioner Cheryl A. LaFleur on Dominion Transmission, Inc., FERC Docket No. CP14-497-001, May 18, 2018; See Footnote Number 6 in Statement of Commissioner Cheryl LaFleur on Millennium Pipeline, FERC Docket No. CP16-486, July 24, 2018

¹³⁵ Detailed Comments on the DEIS for the Leach Xpress Pipeline and Rayne Xpress Expansion Project, United States Environmental Protection Agency, June 13, 2016.

acknowledging that increased gas production will result from the pipeline construction it is reviewing and approving. In the AGP EA, FERC states:

“The extraction of natural gas in shale formations by hydraulic fracturing is not the subject of this EA, nor is the issue directly related to the Project”¹³⁶

FERC’s assertion that hydraulic fracturing is not “directly related to the Project,” does not excuse it from duty under NEPA to consider the “direct and indirect effects, on a given resource, ecosystem, and human community of all actions taken, no matter who has taken the actions.”¹³⁷

This failure to consider the impacts of induced shale gas production as well as the end uses of the fracked gas is particularly troubling given that FERC has explicitly recognized that “upstream development and production of natural gas may be a ‘reasonably foreseeable’ effect of a proposed action,” and that a new pipeline would “alleviate some of the constraints on...natural gas production” in the context of other pipeline projects.¹³⁸ Yet in response to scoping comments on the AGP “that upstream and downstream GHG impacts of the Project should be considered in the analysis,” FERC states that

“Downstream GHG emissions are addressed below; the development of natural gas and associated emissions are outside the scope of this EA.”¹³⁹

FERC has attempted to further explain this justification in regards to other pipeline projects, claiming that “the actual scope and extent of potential GHG emissions from upstream natural gas production is not reasonably foreseeable” and therefore no consideration pursuant to NEPA is necessary.”¹⁴⁰ Through this circular logic of recognizing induced drilling but then discounting it because FERC has failed to assess the extent of the GHG emissions that will occur, FERC ignores its NEPA obligation to consider the impacts.

The direct and indirect connection between FERC’s approval of shale gas infrastructure and climate change impacts resulting from upstream production of shale gas has been recognized by

¹³⁶ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 28.

¹³⁷ Council on Environmental Quality, *Considering Cumulative Effects Under the National Environmental Policy Act*, available at http://energy.gov/sites/prod/files/nepapub/nepa_documents/RedDont/G-CEQ-ConsidCumulEffects.pdf.

¹³⁸ Draft Environmental Impact Statement for the PennEast Pipeline Project, FERC Docket No. CP15-558, July 2016, available at: <http://www.delawareriverkeeper.org/sites/default/files/Climate%20Change%20%26%20Drilling%20Impacts%20Ignored%20Attachment%203%2C%20PennEast%20Pipeline%20DEIS%20at%204-285%2C%20FERC%20Docket%20No.%20CP15-558%2C%20July%202016.pdf>

¹³⁹ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 132.

¹⁴⁰ Draft Environmental Impact Statement for the PennEast Pipeline Project, FERC Docket No. CP15-558, July 2016, available at: <http://www.delawareriverkeeper.org/sites/default/files/Climate%20Change%20%26%20Drilling%20Impacts%20Ignored%20Attachment%203%2C%20PennEast%20Pipeline%20DEIS%20at%204-285%2C%20FERC%20Docket%20No.%20CP15-558%2C%20July%202016.pdf>

at least two FERC commissioners. Commissioner Glick recently stated:

“It is particularly important for the Commission to use its “best efforts” to identify and quantify the full scope of the environmental impacts of its pipeline certification decisions given that these pipelines are expanding the nation’s capacity to carry natural gas from the wellhead to end-use consumers. Adding capacity has the potential to “spur demand” and, for that reason, an agency conducting a NEPA review must, at the very least, examine the effects that an expansion of pipeline capacity might have on production and consumption. Indeed, if a proposed pipeline neither increases the supply of natural gas available to consumers nor decreases the price that those consumers would pay, it is hard to imagine why that pipeline would be “needed” in the first place.”¹⁴¹

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

“Even if a causal relationship between the proposed action here and upstream production was presumed, the scope of the impacts from any such production is too speculative and thus not reasonably foreseeable.”¹⁴²

However, as Commissioner Glick clarified in his dissent:

“The fact that the pipeline’s exact effect on the demand for natural gas may be unknown is no reason not to consider the type of effect it is likely to have. As the United States Court of Appeals for the Eighth Circuit explained in *Mid States*—a case that also involved the downstream emissions from new infrastructure to transport fossil fuels—“if the *nature* of the effect” (i.e., increased emissions) is clear, the fact that “the *extent* of the effect is speculative” does not excuse an agency from considering that effect in its NEPA analysis.”¹⁴³

In fact, the relationship between FERC approved pipeline projects and upstream production is foreseeable, direct and demonstrable, as the Delaware Riverkeeper Network demonstrates in this

¹⁴¹ Commissioner Glick’s dissent re Order Denying Rehearing for the Dominion Transmission, Inc. New Market Project, FERC Docket No. CP14-497-001, May 18, 2018, available at: <https://www.ferc.gov/media/statements-speeches/glick/2018/05-18-18-glick.asp#.XFis-KB7mM8>. (citations omitted)

¹⁴² FERC Order Denying Rehearing for the Dominion Transmission, Inc. New Market Project, FERC Docket No. CP14-497-0001, May 18, 2018, available at: <https://www.ferc.gov/CalendarFiles/20180518111142-CP14-497-0011.pdf>

¹⁴³ Commissioner Glick’s dissent re Order Denying Rehearing for the Dominion Transmission, Inc. New Market Project, FERC Docket No. CP14-497-001, May 18, 2018, available at: <https://www.ferc.gov/media/statements-speeches/glick/2018/05-18-18-glick.asp#.XFis-KB7mM8>

comment and on the PennEast pipeline docket.¹⁴⁴ In both the Adelphia Gateway Project EA and the PennEast Pipeline DEIS, FERC failed to consider the emissions and other harms that will result from the shale gas production necessary to fulfill the claimed “need” for the project and to carry the volumes of gas proposed. As an example of the magnitude of these upstream impacts, the PennEast pipeline will likely induce the drilling of 3,000 new wells in Northeast Pennsylvania, Bradford, Susquehanna, Lyoming, and Tioga counties.¹⁴⁵ Given recent estimates that “during the life cycle of an average shale-gas well, 3.6 to 7.9% of the total production of the well is emitted to the atmosphere as methane”,¹⁴⁶ this failure to consider the GHG and climate changing impacts of the induced drilling operations and end uses of the gas these pipelines deliver is significant.

It is not just climate change that induced drilling and fracking operations seriously affect. Fracking operations are known to have severe impacts on water quality including drinking water, air quality, property values, human health, public parks, farming and land use patterns. These impacts are known, quantifiable, and scientifically demonstrated through peer reviewed articles. For example, the *Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking*¹⁴⁷ is a fully updated and referenced scientific resource that can be used to assess the many direct and indirect effects of pipeline-induced-fracking.

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

As Commissioner Glick explains in his dissent of the Dominion New Market Project certificate:

I believe that the NGA’s public interest standard requires the Commission to consider greenhouse gas emissions associated with the incremental production and consumption of natural gas caused by a new pipeline.

As an initial matter, the principal reason that the Commission does not have this “meaningful information” [about production and consumption of gas] is that the Commission does not ask for it. But NEPA does not permit agencies to so easily shirk their responsibilities to consider environmental consequences. Rather, NEPA requires that an agency “must use its best efforts to find out all that it reasonably can.” The Commission has several opportunities throughout the pre-filing and formal application processes to issue a data request to the pipeline developer seeking information about the

¹⁴⁴ Comments on the DEIS for the PennEast Pipeline (FERC Docket No. CP15-558), Delaware Riverkeeper Network, September 16, 2016.

¹⁴⁵ Comments on the DEIS for the PennEast Pipeline (FERC Docket No. CP15-558), Delaware Riverkeeper Network, September 16, 2016.

¹⁴⁶ Comments on the DEIS for the PennEast Pipeline (FERC Docket No. CP15-558), Delaware Riverkeeper Network, September 16, 2016.

¹⁴⁷ *Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking*, Physicians for Social Responsibility, March 2018, available at: https://concernedhealthny.org/wp-content/uploads/2018/03/Fracking_Science_Compndium_5FINAL.pdf

source of the gas to be transported as well as its ultimate end use. A simple data request would seem to fall easily within what constitutes the Commission's "best efforts." In the absence of any such efforts, the Commission should not be able to rely on the lack of "meaningful information" to satisfy its obligations under NEPA and the NGA to identify the reasonably foreseeable consequences of its actions.¹⁴⁸

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

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

FERC's consideration of the impacts resulting from the GHG of shale gas pipelines and compressors are clearly required as a result of the NGA as the impacts have grave impacts for the communities around the Project and the world as well. The United Nations IPCC Report and the US 4th National Climate Assessment all make clear the grave consequences of climate change and reaching a 1.5 degree tipping point – the ramifications are to health, safety, our environment, and our economy.¹⁴⁹ NASA has determined, through its data gathering and research, that methane is responsible for about a quarter of the human induced climate effects and that the fossil fuel industry is responsible for most of the dramatic rise in methane emissions in the past 10 years.¹⁵⁰ Pipelines and fracking are a big part of this equation. FERC's refusal to consider the GHG emissions and the climate changing impacts, as well as other environmental harms associated with approval of pipelines, compressor stations and related infrastructure brings with it dire consequences for the public interest of our communities and nation.

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

"Climate change poses an existential threat to our security, economy, environment, and, ultimately, the health of individual citizens. Unlike many of the challenges that our society faces, we know with certainty what causes climate change: It is the result of GHG

¹⁴⁸ Commissioner Glick's dissent re Order Denying Rehearing for the Dominion Transmission, Inc. New Market Project, FERC Docket No. CP14-497-001, May 18, 2018, available at: <https://www.ferc.gov/media/statements-speeches/glick/2018/05-18-18-glick.asp#.XFis-KB7mM8>

¹⁴⁹ *Special Report: Global Warming of 1.5 degrees C*, Intergovernmental Panel on Climate Change, Summary for Policymakers, 2018.

¹⁵⁰ *NASA-led Study Solves a Methane Puzzle*, January 2, 2018, available at: <https://www.nasa.gov/feature/jpl/nasa-led-study-solves-a-methane-puzzle>

emissions, including carbon dioxide and methane, which can be released in large quantities through the production and consumption of natural gas. Congress determined under the NGA that no entity may transport natural gas interstate, or construct or expand interstate natural gas facilities, without the Commission first determining the activity is in the public interest. This requires the Commission to find, on balance, that a project's benefits outweigh the harms, including the environmental impacts from climate change that result from authorizing additional transportation. Accordingly, it is critical that, as an agency of the federal government, the Commission comply with its statutory responsibility to document and consider how its authorization of a natural gas pipeline facility will lead to the emission of GHGs, contributing to the existential threat of climate change.”¹⁵¹

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

“...deciding whether a project is in the public interest requires a careful balancing of the economic need for the project and all of its environmental impacts. Climate change impacts of GHG emissions are environmental effects of a project and are part of my public interest determination.”¹⁵² (citations omitted)

The EA discussion of greenhouse gas emissions cannot be said to fulfill the requirements of NEPA, the CEQ Guidance issued on August 1, 2016, or its NGA obligations.

According to CEQ guidance:

“when addressing climate change agencies should consider: (1) The potential effects of a proposed action on climate change as indicated by assessing GHG emissions (e.g., to include, where applicable, carbon sequestration); and, (2) The effects of climate as change on a proposed action and its environmental impacts.”

Pursuant to the guidance CEQ recommends:

- “...that agencies quantify a proposed agency action’s projected direct and indirect GHG emissions, ...;”
- “...agencies use projected GHG emissions ... as a proxy for assessing potential climate change effects when preparing a NEPA analysis for a proposed agency action;”
- “ that where agencies do not quantify a proposed agency action’s projected GHG emissions because tools, methodologies, or data inputs are not reasonably available to support calculations for a quantitative analysis, agencies include a qualitative analysis in the NEPA document and explain the basis for determining that quantification is not reasonably available;”

¹⁵¹ Statement of Commissioner Richard Glick on Texas Eastern Transmission, LP, FERC Docket No. CP18-10, July 19, 2018.

¹⁵² Statement of Commissioner Cheryl A. LaFleur on Dominion Transmission, Inc., FERC Docket No. CP14-497-001, May 18, 2018.

- agencies “[d]iscuss methods to appropriately analyze reasonably foreseeable direct, indirect, and cumulative GHG emissions and climate effects;”
- “...agencies consider the short- and long-term effects and benefits in the alternatives and mitigation analysis;”

The assessment undertaken in the EA to fulfill consideration of the climate change impacts of this proposed project is overwhelmingly deficient. The EA fails to fully, fairly and accurately consider the greenhouse gas emissions of the proposed Adelphia Gateway Project itself, as well as the shale gas extraction emissions that will directly and indirectly be induced by approval of this project, the potential for climate change to worsen environmental impacts associated with the project, and the impacts of climate change on the project itself.

The EA Uses An Improper Time Frame And Global Warming Potential For Methane.

It is notable that at the outset the EA asserts for Methane, CH₄, a Global Warming Potential (GWP) of 25. According to the USEPA, “Methane (CH₄) is estimated to have a GWP of 28–36 over 100 years.”¹⁵³ As a result of FERC using the outdated GWP of 25, it will have seriously understated the greenhouse gas emissions calculations for the proposed AGP regardless of the other deficiencies noted in this comment with the EA analysis – the current, EPA-accepted GWP range of 28-36 should be the figure used for all calculations associated with Methane emissions for this project. A failure to do so understates the associated global warming potential by at least 12% to 44%, not even accounting for recent scientific developments that make the impacts of methane significantly more dire.

While previous estimates held that the earth may reach a temperature tipping point in anywhere from 18 to 38 years,¹⁵⁴ the most recent 2018 United Nations Intergovernmental Panel on Climate Change Report, which is based on more than 6,000 scientific references from 91 authors across 40 countries, found that avoiding irreversible climate change disaster will only be achieved if global CO₂ emissions decline “45% from 2010 levels by 2030.”¹⁵⁵ The report calls for “rapid, far-reaching and unprecedented changes in all aspects of society”¹⁵⁶ in order to achieve this. Given this 11 year timeframe for drastic change, the 20 year time frame is the most meaningful and needs to be the basis of present day decision-making. If a 20-year time frame is used, the global warming potential of methane identified by the USEPA is between 84 and 87. For purposes of assessing the climate changing impacts of approving the AGP the EA should engage in a robust analysis that includes the 20 year GWP for methane of 84 to 87. If FERC insists on using the scientifically inaccurate 100 year time frame for this assessment, then it should at least

¹⁵³ Understanding Global Warming Potentials, US Environmental Protection Agency, available at: <https://www.epa.gov/ghgemissions/understanding-global-warming-potentials>

¹⁵⁴ R. Howarth, D Shindell, R. Santoro, A. Ingraffea, N. Phillips, A Townsend-Small, *Methane Emissions from Natural Gas Systems*, Background Paper Prepared for the National Climate Assessment, Reference number 2011-0003, Feb. 25, 2012.

¹⁵⁵ *Special Report: Global Warming of 1.5 degrees C*, Intergovernmental Panel on Climate Change, Summary for Policymakers, 2018.

¹⁵⁶ *Special Report: Global Warming of 1.5 degrees C*, Intergovernmental Panel on Climate Change, Summary for Policymakers, 2018.

use EPA's GWP range of 28 to 36. But in no instance is use of a 25 GWP for methane appropriate for this assessment. And at a minimum, the EA should do an analysis that includes both the 100 year and the 20 year time frame with the more accurate numbers discussed above for the GHG and climate change assessment of the proposed pipeline.

The EA's Current GHG And Climate Change Analysis Is Fundamentally Flawed and Needs To Be Redone To Ensure A Thorough And Accurate Assessment of the Projects Climate Change Impacts, Including Those Resulting From Full Pipeline Project Development, Operation, And Reasonably Foreseeable End Uses Of The Gas, As Well As The Resulting Shale Gas Production.

The climate changing effects of approving AGP are significant and a climate change assessment needs to include consideration of methane emissions along the approximately 93.3 miles of pipeline system, including consideration of greenhouse gas and methane emissions from the two proposed compressor stations, 7 blowdown assembly valves, 5 meter and regulator stations for interconnects, 2 mainline valve sites, and 4 pig launcher/receiver sites.

The climate change assessment also needs to include the gas production that will take place in order to supply the gas that will be carried by the AGP in interstate commerce and that is a foreseeable and direct element of the Project. End uses of the gas must likewise be considered. Carrying out a legally appropriate, necessary and data driven assessment demonstrates that approval, construction and operation of the AGP will have significant climate changing ramifications.

The EA acknowledges that the "Project would result in direct and downstream GHG emissions and would contribute to global increases in GHG levels" and provides GHG emissions estimates from construction and operation "for accounting and disclosure purposes." The EA also states that the "actual GHG emissions from operation of the Quakertown and Marcus Hook Compressor Stations", including methane emissions from fugitive leaks and equipment venting, "would likely exceed the 25,000-tpy reporting threshold and reporting requirements."¹⁵⁷

- Table B-19 says that during construction the greenhouse gas CO2 equivalent emissions for the project will be 13,578.6 tons per year
- Table B-21 says the total fugitive emissions for the pipeline (including venting/blowdown emissions; and MLVs, BAVs, and tap valves along the existing mainline) and metering stations (including venting/blowdown emissions for new and existing metering stations) greenhouse gas CO2 equivalent emissions will be 27,096 tons per year
- Table B-21 says that for the Quakertown Compressor Station the greenhouse gas CO2 equivalent emissions will be 31,348 tons per year
- Table B-21 says that for the Marcus Hook Compressor Station the greenhouse gas CO2 equivalent emissions will be 31,348 tons per year

¹⁵⁷ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 122.

- Table 4.12.4-1 estimates construction phase greenhouse gas CO2 equivalent emissions at 34,878 tons per year

While there are many issues with FERC's GHG analysis in the EA outlined further below, there is one basic flaw in the calculations which results in a false and misleading presentation of these basic facts and should not be considered an acceptable for use in the EA. As the EA states:

“Since providing the estimates of fugitive emissions provided in table B-21, Adelphia has specified its intent to increase the capacity of the Existing System. Although Adelphia did not propose any changes to the Project's design or compression, the greater capacity could result in higher vented emissions during emergency and planned releases at MLVs and BAVs. However, these releases would be infrequent and are not expected to significantly degrade local air quality.”¹⁵⁸

FERC used the operational emissions that were calculated and provided by Adelphia before the company filed an amendment to its application, increasing the project capacity by 75,000 Dth/d of natural gas. The Delaware Riverkeeper Network provided extension comments in response to the amended application¹⁵⁹ outlining why Adelphia's claims that their proposed increase in capacity would have no bearing on the analysis of Project impacts on the environment and communities that they had previously submitted to FERC. The most obvious and significant example of the impacts resulting from the increase in the Project's capacity is an increase in the Project's operational GHG emissions. FERC could have easily requested that Adelphia provide updated information on the project's impacts, including at a minimum its operation GHG emissions, after they changed the size of the project, but instead the Commission knowingly used outdated and inaccurate information as the basis of its environmental assessment. FERC's reasoning that “these releases [emergency and planned releases at MLVs and BAVs] would be infrequent and are not expected to significantly degrade local air quality” is not acceptable, not supported, and misleading. The AGP inexplicably includes seven blowdown assembly valves at relatively close proximity. The EA does not explain the unusual concentration of BAVs or detail the actual emissions expected from them, so it is unclear how they came to this conclusion.

Additionally, despite its recognition that the “Project would result in direct and downstream GHG emissions and would contribute to global increases in GHG levels.”¹⁶⁰ FERC entirely shirks its responsibility to calculate the downstream GHG emissions of the Project and asserts a demonstrably false justification for this decision. FERC states that of the additional increase in gas capacity that would be transported by the project

22.5 million cubic feet per day is subscribed by the Philadelphia Electric Company for an unspecified end use. Because the downstream emissions from the remainder of the southern portion of the Project are not designated to a specific user, and the end use of the

¹⁵⁸ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 127.

¹⁵⁹ Comment Regarding Adelphia Gateway Pipeline Project- Scoping Period, Delaware Riverkeeper Network, September 27, 2018.

¹⁶⁰ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 132.

natural gas is not identified by Adelphia, the downstream GHG emissions of the southern portion of the Project are not calculated.¹⁶¹

FERC further qualifies this just justification by stating that:

The Parkway Lateral and Delmarva Meter Station, which are proposed to provide natural gas service to TETCO and Columbia, may serve Calpine Corporation's power plants; however, as of the time of the EA's publication no contract or precedent agreement exists to ascribe any particular capacity to this potential end user.¹⁶²

However, information on the record from Adelphia and end users, some in direct response to FERC's information requests, clearly demonstrates that these claims are misleading at best and outright false at worst.

First, as Clean Air Council explains in their comment on the EA, FERC's assertion regarding the Calpine power plants is disingenuous:

The Commission's description of the delivery of gas to the Calpine power plants also omits an important fact: the *purpose* of the Parkway Lateral is to serve the power plants. In Adelphia's July 27, 2018 Response to Staff Data Request Dated July 12, 2018, accession no. 20180727-5070, NJR writes, "The proposed interconnection on the Parkway Lateral will serve to directly connect the Adelphia system with two existing Calpine Corporation ('Calpine') power plants to provide such Calpine power plants with an alternative source of gas."¹⁶³

Even if FERC's claim that no precedent agreements with the Calpine Corporation exist is true, the end user and use of the gas being transported through the Parkway Lateral is clearly reasonably foreseeable and as such the resulting downstream GHG emissions should be evaluated by the Commission.

In addition, while FERC excludes any mention of the Kimberly-Clark Cogeneration facility planned in Chester, PA as a potential or known end user, information on the FERC AGP docket from both Adelphia and Kimberly-Clark clearly indicates that Adelphia's Tilghman Lateral is designed to serve this new facility. In addition to letters from Kimberly-Clark to FERC on the docket expressing their support for the AGP,¹⁶⁴ Adelphia wrote to FERC on August 10, 2018, clearly stating:

¹⁶¹ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 132.

¹⁶² Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 132.

¹⁶³ Comments on the Adelphia Gateway Project, Clean Air Council, February 1, 2019, available at: https://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20190201-5223

¹⁶⁴ Letter from Kimberly-Clark to FERC regarding Abbreviated Application of Adelphia Gateway, LLC for Certificates of Public Convenience and Necessity, FERC Docket No. CP18-46, available at: https://elibrary.ferc.gov/idmws/file_list.asp

Additionally, on August 10, 2018, Kimberly-Clark Corporation (“K-C”) submitted a letter in support of the Adelphia Project describing that K-C plans to retire its existing waste-coal generator and develop a new, efficient, natural gas-fired facility to serve Chester Mill’s electricity requirements. K-C noted that securing dependable natural gas supply is key to the success of its plan. **Adelphia and K-C’s natural gas provider have concluded negotiations of a precedent agreement for Zone South capacity, with delivery at PECO Energy Company’s natural gas facility at Tilghman Street in Chester Pennsylvania, which will be used to serve K-C.**¹⁶⁵

Here, Adelphia clearly informs FERC on the docket in August of an existing precedent agreement to a known end user and for the known end use of powering the new Kimberly-Clark natural gas cogeneration facility. As such, FERC’s claim that “the downstream emissions from the remainder of the southern portion of the Project are not designated to a specific user, and the end use of the natural gas is not identified by Adelphia” is demonstrable false. Additionally, it’s justification for not evaluating the reasonably foreseeable downstream GHG emissions resulting from the gas being delivered to the Calpine power plants, because “no contract or precedent agreement exists to ascribe any particular capacity to this potential end user,” does not hold true for the Kimberly-Clark facility.

FERC’s implication that it would be speculative to assume that, at least some, of the gas delivered by Adelphia would be burned is clearly disingenuous based on these clear statements on the docket. Even Adelphia estimated in its Application materials that the Project would contribute an equivalent of 4,861,766 CO₂ metric tons of greenhouse gases per year, based off of the reasonable assumption that “all of the incremental increase in volumes of natural gas transported by the Project would be combusted for use as a fuel source.”¹⁶⁶

FERC’s blatant falsehoods regarding the AGP’s end use aside, as Commissioner LaFleur explains in her partial dissent of Dominion Transmission, Inc’s New Market Project, specific end users should not be required for the Commission to consider the reasonably foreseeable impacts of burning the gas being transported by FERC jurisdictional pipelines:

“...pipelines are driving the throughput of natural gas, connecting increased upstream resources to downstream consumption. With respect to downstream impacts, I believe it is reasonably foreseeable, in the vast majority of cases, that the gas being transported by pipelines we authorize will be burned for electric generation or residential, commercial, or industrial end uses. In those circumstances, there is a reasonably close causal relationship between the Commission’s action to authorize a pipeline project that will transport gas and the downstream GHG emissions that result from burning the transported gas. We simply cannot ignore the environmental impacts associated with those downstream emissions.”

¹⁶⁵ Adelphia letter to FERC, wrote to FERC at accession no. 20180810-5116, emphasis added

¹⁶⁶ Adelphia Gateway, LLC, Adelphia Gateway Project Resource Report 1 at 43. FERC Docket No. CP18-46, January 2018; at 24-43. As was the case for many project impacts estimated by Adelphia, this calculation was based on the Project’s additional natural gas capacity prior to their Amended Application which increased the additional capacity of the project from 250,000 dekatherms per day of natural gas along the pipeline system to 325,000 dekatherms per day

“I agree that an identified end-use would enable the Commission to more accurately assess downstream GHG emissions by calculating gross and net GHG emissions as we did in Sabal Trail. However, I reject the view that if a specified end-use is not discernible, we should simply ignore such environmental impacts. In that case, we should disclose what we can, such as a full-burn calculation of GHG emissions.”¹⁶⁷

In its review of the Adelphia Gateway Project, FERC not only clearly misled the public in its characterization of the end use of the gas being transported by the project, it also failed to fulfill its NEPA duty to fully consider the impacts of the GHG emission that would reasonably and foreseeably result from the project. As we explain throughout this comment, a full-burn estimate would still be an underestimate of the Project’s GHG emissions not only because it fails to account for the leaking and venting of methane throughout the pipeline system, but also because it fails to account for the emissions associated with the induced drilling for gas upstream that would result from the Project.

Even if FERC based its GHG estimates on the Project’s actual gas capacity, the figures “based on manufacturers’ data and assumptions that the compressor station engines operate at full load for an entire year” would understate what should be the anticipated emissions as compared to what is being documented by current science for other pipeline infrastructure. For example, the EA fails to assess the emissions resulting from the induced shale gas production that will result from construction and operation of the pipeline necessary to fulfill its claimed “need” for the project. FERC’s assertions that “The extraction of natural gas in shale formations by hydraulic fracturing is not the subject of this EA, nor is the issue directly related to the Project”¹⁶⁸; and that “Downstream GHG emissions are addressed below; the development of natural gas and associated emissions are outside the scope of this EA”¹⁶⁹ are not legally defensible ground for FERC’s failure to consider the GHG emissions or climate changing ramifications of shale gas production that will be the result of approval and construction of the Adelphia Gateway Project. The production of shale gas is, in fact, reasonably foreseeable and indirectly related to the project, and so too is the scope and extent of that production upon which a GHG emissions analysis can be performed. (See above analysis.)

Additionally, natural gas releases one of the most destructive climate change gases, methane. “Natural gas systems are the single largest source of anthropogenic methane emissions in the United States”, contributing approximately 40% of the anthropogenic emissions of methane.¹⁷⁰ Emission of methane to the atmosphere during the production and distribution of shale gas contributes to this fossil fuel’s climate changing impacts. Methane is released to the atmosphere on multiple occasions during the shale gas extraction process. It has been estimated that “during the life cycle of an average shale-gas well, 3.6 to 7.9% of the total production of the well is emitted to the atmosphere as methane.”¹⁷¹ Among most scientific findings it is believed that as

¹⁶⁷ Dominion Transmission, Inc. (New Market-- Upstate, NY): LaFleur 2018.5.18

¹⁶⁸ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 28.

¹⁶⁹ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 132.

¹⁷⁰ *Id.*

¹⁷¹ Howarth, *supra* note 55.

much as 9% of the methane produced while drilling for gas is lost to the atmosphere.¹⁷² While a previous estimation that 4% was lost from the well fields had already raised alarm bells for many;¹⁷³ the new figure of 9% should highlight the need for accountability. Furthermore, large amounts of methane leak into the atmosphere during the “transport, storage and distribution” phases of the natural gas delivery process especially during transmission through interstate pipelines like AGP.¹⁷⁴ Even conservative estimates of leakage during gas transmission, storage and distribution have given a range of up to 3.6%.¹⁷⁵

To combat these known effects, researchers “have found that methane leaks would need to be held to 2% or less in order for natural gas to have less of a climate changing impact than coal due to the life cycle of methane.”¹⁷⁶ At leakage above 3.2%¹⁷⁷ natural gas ceases to have any climate advantage over other fossil fuels. As discussed above, science is finding that the existing leakage rate during the production and/or transmission of shale produced gas is significantly higher than either of these numbers.

When upstream and downstream emissions are considered along with the increase in shale gas wells over the next 2 decades, the methane emissions from the natural gas industry will increase, by as much as 40 to 60%.¹⁷⁸ Upstream emissions occur during well completion and production at a well site while midstream emissions occur during gas processing. Downstream emissions are those that happen in the storage systems as well as the transmission and distribution pipelines.¹⁷⁹

These effects will not only contribute to climate change themselves but release additional methane gas compounding the detrimental effects of these projects on our atmosphere. Scientists believe that if the earth warms to 1.8°C above what it was between 1890 and 1910 that it will put in play a set of chain reactions that will result in increasing releases of methane to the atmosphere – largely released from the arctic as a result of melting permafrost – which will in turn cause increased warming and its associated impacts.¹⁸⁰ It is posited by scientists that without immediate reductions in methane emissions and black carbon the earth will warm to 1.5°C by 2030 and 2.0°C by 2045/2050, regardless of whether carbon dioxide emissions are reduced.

Another cascading and irreversible impact of climate change involves irreversible changes in ocean currents. The Atlantic serves as the engine for the planet’s conveyor belt of ocean currents - Atlantic Meridional Overturning Circulation (AMOC). The massive amount of cooler water

¹⁷² *Methane Leaks Erode Green Credentials of Natural Gas*, Nature International Weekly Journal of Science, Jan. 2, 2013. See also Howarth, *supra* note 56

¹⁷³ *Id.*

¹⁷⁴ Howarth, *supra* note 56; See also U.S. EPA 1997. *Methane Emissions from the Natural Gas Industry*. USEPA National Risk Management Research Laboratory, June 1997, EPA-600-SR-96-080.

¹⁷⁵ Howarth, R. W. (2014). A bridge to nowhere: methane emissions and the greenhouse gas footprint of natural gas. *Energy Science & Engineering*.; See also Howarth, *supra* note 55.

¹⁷⁶ *Switching from Coal to Natural Gas Would Do Little for Global Climate, Study Indicates*, UCAR/NCAR Atmos News, Sept 8, 2011.

¹⁷⁷ According to the Environmental Defense Fund

¹⁷⁸ Howarth, *supra* note 56.

¹⁷⁹ Howarth, *supra* note 56.

¹⁸⁰ Howarth, *supra*.

that sinks in the North Atlantic stirs up that entire ocean and drives global circulation. When the Atlantic turns sluggish or stops, it has worldwide impacts and likely irreversible effects: The entire Northern Hemisphere cools, Indian and Asian monsoon areas dry up, North Atlantic storms get amplified, and less ocean mixing results in less plankton and other life in the sea.¹⁸¹ Paleo climatologists have spotted times in the deep past when the current slowed quickly and dramatically, cooling Europe by 5 to 10 degrees C (10 to 20 degrees F) and causing far-reaching impacts on climate.

In fact, FERC arbitrarily limits its review by failing to require the current, available, reasonable and attainable analyses, projections and methodologies that will inform the agency of the scope and extent of the foreseeable induced natural gas production and, from there, allow assessment of the anticipated resulting greenhouse gas emissions. FERC's self-inflicted ignorance on the subject does not alleviate the agency of its obligation to undertake an assessment of greenhouse gas emissions from induced shale gas production associated with this project and its climate changing implications. Once the scope and extent of induced drilling is determined, FERC has demonstrated it has a competence in determining resulting levels of greenhouse gas emissions. This analysis should be undertaken and subjected to the NEPA review and comment process.

The EA Overstates The Economic Benefits And Ignores the Economic Harms Of The Project

FERC's section 7 duty to consider the public interest is broader than promoting a plentiful supply of cheap gas.¹⁸² Rather, FERC must ensure "the [public] benefits of the proposal outweigh the adverse effects on other economic interests." *AES Ocean Express, LLC*, 103 F.E.R.C. ¶ 61,030 at ¶ 19. FERC's 1999 Policy Statement, additionally clarifies that the Commission should evaluate projects by:

"balancing the evidence of public benefits to be achieved against the residual adverse effects. This is essentially an economic test. Only when the benefits outweigh the adverse effects on economic interests will the Commission then proceed to complete the environmental analysis where other interests are considered"¹⁸³

Here, it is clear that the record shows that the net costs resulting from the construction and operation of this pipeline outweigh the alleged public benefits of the Project. Specifically, the EA consideration of economic benefits and harms is unbalanced, inaccurate and deficient, and certainly cannot be said to fulfill the mandates of NEPA or FERC's Policy Statement to fully and fairly consider the economic issues involved with this proposed project.

¹⁸¹ Hansen, J., M. Sato, P. Hearty, R. Ruedy, M. Kelley, V. Masson-Delmotte, G. Russell, G. Tselioudis, J. Cao, E. Rignot, I. Velicogna, E. Kandiano, K. von Schuckmann, P. Kharecha, A.N. LeGrande, M. Bauer, and K.-W. Lo, 2016: Ice melt, sea level rise and superstorms: Evidence for paleoclimate data, climate modeling, and modern observations that 2°C global warming could be dangerous. *Atmos. Chem. Phys.*, <http://csas.ei.columbia.edu/2016/03/22/ice-melt-sea-level-rise-and-superstorms-the-threat-of-irreparable-harm/>

¹⁸² See *Fla. Gas Transmission Co. v. FERC*, 604 F.3d 636, 649 (D.C. Cir.2010).

¹⁸³ Statement of Policy, FERC Docket No. PL99-3, September 15, 1999, retrieved from: <https://www.ferc.gov/legal/maj-ord-reg/PL99-3-000.pdf>.

As demonstrated in the attached reports by Key-Log Economics, this comment and the comments of others on the docket, the claims of economic benefit advanced by Adelphia and adopted by FERC in the EA are flawed and indefensible. In short, the EA overestimates short job “creation” impacts and other impacts, while underestimating or discounting entirely the costs of the project. FERC fails to conduct a proper analysis of the projects costs and benefits through its “unqualified and uncritical acceptance of applicants’ claims that new pipeline capacity will produce economic benefits; and FERC’s equally unqualified and uncritical disregard for likely, significant, and economically costly external effects.”¹⁸⁴

In addition to providing exaggerated and false claims of benefit, the EA ignores the economic harms inflicted by construction and operation of Adelphia. Among its many deficiencies, the EA analysis does not consider the adverse impacts to:

- “ecosystem service value as natural areas are converted from forests to shrublands, from open space to industrial zones, or from more to less productive agricultural land;”¹⁸⁵
- recreation and ecotourism;
- future investment in open space preservation;
- the economic damage to agricultural crop production is overlooked as are harms to other businesses;¹⁸⁶
- “diminished property value within the high consequence area and evacuation zones surrounding pipelines and in the vicinity of new compressor stations;”¹⁸⁷
- the costs to the community to respond to emergencies, to the increased stormwater runoff, pollution inputs, and other adverse impacts that could result from this project and be foisted upon the shoulders of local towns and residents;
- the health impacts to the residents who will be impacted by construction and operation of this project;
- the distribution of economic impacts and Environmental Justice impacts; and
- “the cost of upstream and downstream greenhouse emissions that are facilitated by more natural gas transmission.”¹⁸⁸

As Key-Log Economics has found through its analysis of at least five recent pipeline proposals before FERC:

These costs, conservatively estimated, can run into tens of billions of dollars over their designed lifetime. See, for example, analyses done for the following projects to see the costs and methods used to calculate: the Mountain Valley Pipeline, PennEast Pipeline, and the Millennium Eastern System Upgrade project.¹⁸⁹

¹⁸⁴ Key-Log Economics, LLC, *The Social Cost of Carbon and the Adelphia Gateway Project*, February 2019.

¹⁸⁵ Key-Log Economics, LLC, *The Social Cost of Carbon and the Adelphia Gateway Project*, February 2019.

¹⁸⁶ We have learned from farmers, and it has been documented on the record, that crop production has gone down by as much as 30% when a pipeline cuts through farm crop lands. The EA also does not consider harms to other local businesses.

¹⁸⁷ Key-Log Economics, LLC, *The Social Cost of Carbon and the Adelphia Gateway Project*, February 2019.

¹⁸⁸ Id.

¹⁸⁹ Id.

By way of more specific examples, the EA analysis ignores the many and varied economic harms that would result from the construction, operation and maintenance of the Adelphia Gateway Project, including the Social Cost of Carbon of the project and the Ecosystem Service Values lost. Attached is a more detailed analysis of the many deficiencies that FERC systematically fails to consider in its evaluation of pipeline projects,¹⁹⁰ as well as an analysis of the specific Social Costs of Carbon that would result from the AGP, both provided by Key-Log Economics.¹⁹¹ As these conservative estimates make clear, the significant economic harms that would result from this project would clearly outweigh the supposed public benefits if FERC were to conduct a proper analysis.

The EA Fails To Account For the Social Cost of Carbon of The Adelphia Gateway Project In Its Climate Change Analysis

The social cost of carbon (SCC) is “a measure, in dollars, of the long-term damage done by a ton of carbon dioxide (CO₂) emissions in a given year.”¹⁹² The SCC is important for decision-making because it helps agencies more accurately weigh the costs and benefits of a new rule or regulation. Importantly, it is a tool that would allow FERC to measure economic impacts of climate change that would result from the proposed pipelines it reviews in order to more accurately fulfill its NEPA and NGA mandates, and to perform its “economic test” of balancing the adverse impacts of a project against its benefits in order to determine whether the project is in the public interest.

Courts Have Declared That An EA For A Project Must Consider The Reasonably Foreseeable Outcome Of Greenhouse Gas Emissions From The Gas Wells (New And Newly Constructed) That Will Supply The Proposed Pipeline As Well As From The End Uses Of The Gas Supplied By The Pipeline.

Based on the recent decision by the United States Court of Appeals for the District of Columbia Circuit (D.C. Circuit) in *Sierra Club, et al. v FERC*, 867 F.3d 1357, (D.C. Cir., Aug. 22, 2017), which found that FERC is required to consider and quantify the downstream greenhouse gas (“GHG”) emissions from the combustion of the natural gas transported by a project as part of their National Environmental Policy Act review, FERC’s environmental review of the Project is inadequate and deficient as it fails to consider or quantify the indirect effects of downstream GHG that will result from burning the natural gas that the Project will transport to natural gas power plant facilities. In addition to examining end use emissions, FERC needs to account for the emissions and other impacts from the source of the gas as well. This analysis should examine both existing feeder facilities and expected induced development. Neither the downstream GHG impacts nor the upstream GHG impacts have been accounted for in the AGP EA.

To fulfill NEPA’s mandate, FERC must account for the cumulatively significant climate impacts of the greenhouse gas emissions from this Project and other gas projects in the region. In light of

¹⁹⁰ Comment on FERC Docket No. PL18-1 by Key-Log Economics, LLC, July 23, 2018.

¹⁹¹ Key-Log Economics, LLC, *The Social Cost of Carbon and the Adelphia Gateway Project*, February 2019.

¹⁹² EPA Fact Sheet, Social Cost of Carbon, December 2016, retrieved from:

https://www.epa.gov/sites/production/files/2016-12/documents/social_cost_of_carbon_fact_sheet.pdf

the recent D.C. Circuit's decision in the *Sierra Club, et al. v FERC*, 867 F.3d 1357, (D.C. Cir., Aug. 22, 2017), this analysis must:

- quantify the project's emissions combined with past, present, and reasonably foreseeable future gas projects in the region;
- and adopt appropriate mitigation measures in recognition of the past, present reasonably foreseeable future gas projects in the region to reduce the severity of cumulative impacts from the project.

The social cost of carbon is an available and appropriate methodology for assessing the significance of the Project's impacts. Based on the *Sierra Club* decision, FERC's environmental review of the Project is inadequate and deficient.

The EA prepared by FERC for the Project failed to reach an informed decision about the climate ramifications of the project. Instead of assessing soon to be implemented or constructed regional gas infrastructure projects and their cumulative climate impacts, the EA only generally discusses the types of climate change impacts that will burden the project's geographic area. The EA assumes that GHG emissions from the project would be cumulatively insignificant without offering adequate rationale. Based on the D.C. Circuit instructions to FERC in the *Sierra Club* case, this must be corrected:

The EIS accordingly needed to include a discussion of the "significance" of this indirect effect, see 40 C.F.R. § 1502.16(b), as well as "the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions," see *Wild Earth Guardians*, 738 F.3d at 309 (quoting 40 C.F.R. § 1508.7).

...

Quantification would permit the agency to compare the emissions from this project to emissions from other projects, to total emissions from the state or the region, or to regional or national emissions-control goals. Without such comparisons, it is difficult to see how FERC could engage in "informed decision making" with respect to the greenhouse-gas effects of this project, or how "informed public comment" could be possible.

As a result, FERC must quantify the project's emissions and past, present, and reasonably foreseeable future gas infrastructure projects in the region. To decide otherwise would violate NEPA's mandate for an informed public process.

Finally, FERC's limited discussion of mitigation focuses on methane leak prevention and repair, which are necessary measures, but because of its flawed analysis, the EA fails to analyze mitigation for the inevitable combustion emissions associated with the project and similar projects in the region. Such cursory analysis runs contrary to NEPA. As the D.C. Circuit held:

The effects an EIS is required to cover "include those resulting from actions which may have both beneficial and detrimental effects, even if on balance the agency believes that the effect will be beneficial." 40 C.F.R. § 1508.8. In other words, when an agency thinks

the good consequences of a project will outweigh the bad, the agency still needs to discuss both the good and the bad. . . .

The *Sierra Club* decision found that FERC's NEPA analysis was flawed as it failed to consider and quantify the downstream GHG emissions from the combustion of natural gas transported by the project. In FERC's environmental review of the Adelphia Gateway Project, FERC has again failed to consider or quantify the direct and indirect effects of downstream GHG emissions that will result from the burning of natural gas that the Project will transport to the end users, or that will result from LNG export of the gas if this is to be an anticipated end use.

The Social Cost of Carbon is a Meaningful, Informative, and Available Tool for Calculating and Evaluating the Significance of the Project's True Costs.

The courts, regulating entities, and FERC commissioners themselves recognize the value and need to use the social cost of carbon to assess the repercussions of this project. In April 2016, a federal court upheld the legitimacy of using the social cost of carbon as a viable statistic in climate change regulations.¹⁹³ In August 2016, the CEQ issued its final guidance for federal agencies to consider climate change when evaluating proposed Federal actions, stating:

“agencies should consider applying this guidance to projects in the EIS or EA preparation stage if this would inform the consideration of differences between alternatives or address comments raised through the public comment process with sufficient scientific basis that suggest the environmental analysis would be incomplete without application of the guidance, and the additional time and resources needed would be proportionate to the value of the information included”¹⁹⁴

Commissioners Glick and LeFleur have gone on the record in multiple dockets discussing the applicability, value, and legal importance of using the SCC tool for evaluating climate change impacts and informing FERC's legal mandate to consider whether projects are genuinely in the public interest. FERC has also received comments on multiple pipeline dockets from the public and their experts not just explaining the value of the social cost of carbon, but providing SCC facts and figures on how FERC should conduct that analysis in specific pipeline contexts.¹⁹⁵

Despite all of this, FERC continues to go out of its way to avoid seriously addressing project impacts from climate change by disregarding their upstream and downstream GHG emissions and disregarding the SCC tool. FERC has argued that the Social Cost of Carbon is not useful for NEPA purposes,¹⁹⁶ and again in the Adelphia Gateway Pipeline EA asserts that the SCC “is not appropriate for use in our project-specific analyses” because it “cannot meaningfully inform the Commission's decision whether and how to authorize a proposed project under the NGA”;

¹⁹³ Susanne Brooks, Environmental Defense Fund, *In Win for Environment, Court Recognizes Social Cost of Carbon*, August 29, 2016.

¹⁹⁴ Final Guidance on Greenhouse Gases and Climate Change, Council on Environmental Quality, August 2016.

¹⁹⁵ See, in addition to this comment, e.g. Delaware Riverkeeper Network comments on dockets CP15-558 for the PennEast Pipeline and CP16-486 for the Millennium Eastern System Upgrade Project.

¹⁹⁶ EarthReports, 828 F.3d at 956, retrieved from: <https://www.leagle.com/decision/infco20160715229>

because “the Commission does not use monetized cost-benefit analyses as part of the review under NEPA or the decision under the NGA”; and because “the SCC tool has methodological limitations.”¹⁹⁷ Not only are these assertions demonstrably false, but in addition, FERC has made no effort to identify a suitable alternative method for measuring a project’s climate change impacts.

In the *Sierra Club* decision, the court vacated and remanded the Commission’s authorization of the Sabal Trail Project, and directed the Commission to “explain whether it still adheres to its prior position that the Social Cost of Carbon tool is not useful in performing its NEPA review.”¹⁹⁸ In FERC’s order to reinstate the certificate authorizations for the Southeast Market Pipelines Project (SMP Project)¹⁹⁹, FERC responded by claiming that “the Social Cost of Carbon cannot meaningfully inform our decisions on proposed pipeline projects”²⁰⁰ and that “the Social Cost Carbon is not an appropriate tool for evaluating the significance of downstream GHG emissions.”²⁰¹ This assertion has been repeated by FERC over and over in the certificate orders issued since. As Commissioner LaFleur explains in a statement issued on the project, in FERC’s certificate to Texas Eastern Transmission, LP to construct and operate the Texas Industrial Market Expansion Project and the Louisiana Market Expansion Project (Projects), the Commission

contends, without further explanation, that it “has not identified a suitable method” for determining the impact from the Projects’ contribution to climate change and, absent such a method, it simply “cannot make a finding whether a particular quantity of [GHG] emissions poses a significant impact on the environment and how that impact would contribute to climate change.”²⁰²

However, as Commissioners Glick and LaFleur have pointed out in multiple recent certificate order decisions, FERC is incorrect in its claims that there is “no widely accepted standard to ascribe significance to a given rate or volume of GHG emissions”²⁰³ and that “it cannot ‘determine how a project’s contribution to GHG emissions would translate into physical effects

¹⁹⁷ Adelpia Gateway Project Amendment to Application, Docket No. CP18-46-001, Accession No. 20180831-5215; at 172.

¹⁹⁸ Paraphrase of DC Circuit Court decision from Statement of Commissioner Cheryl A. LaFleur on Southeast Market Pipelines Project, FERC Docket Nos. CP14-554-002, CP15-16-003, CP15-17-002, March 14, 2018.

¹⁹⁹ *Florida Southeast Connection, LLC*, 162 FERC ¶ 61,233 (2018).

²⁰⁰ Statement of Commissioner Cheryl A. LaFleur on Southeast Market Pipelines Project, FERC Docket Nos. CP14-554-002, CP15-16-003, CP15-17-002, March 14, 2018.

²⁰¹ Decision summarized in Statement of Commissioner Cheryl A. LaFleur on Southeast Market Pipelines Project, FERC Docket Nos. CP14-554-002, CP15-16-003, CP15-17-002, March 14, 2018.

²⁰² Statement of Commissioner Richard Glick on Texas Eastern Transmission, LP, FERC Docket No. CP18-10, July 19, 2018.

²⁰³ *Id.* P 27. *Florida Southeast Connection, LLC*, 162 FERC ¶ 61,233, at 2, 5–8 (2018) (Glick, Comm’r, dissenting).

on the environment.”²⁰⁴As Commissioner Glick explains in his dissent of the Florida SouthEast Connection,²⁰⁵:

“That is precisely what the Social Cost of Carbon provides. It translates the long-term damage done by a ton of carbon dioxide into a monetary value, thereby providing a meaningful and informative approach for satisfying an agency’s obligation to consider how its actions contribute to the harm caused by climate change.”²⁰⁶

And his June 15, 2018 dissent of the Mountain Valley Pipeline project order denying rehearing of the pipeline’s certificate:

“... the Commission concludes that it is not obligated to consider the harm caused by the Projects’ contributions to climate change and, in any case, that it lacks the tools needed to do so. In order to meet our obligations under both NEPA and the NGA, the Commission must adequately consider the environmental impact of greenhouse (GHG) emissions on climate change. As I have previously explained, and reiterate below, the Commission has the tools needed to evaluate the Projects’ impacts on climate change. It simply refuses to use them. [Consideration of the Projects] contribution to the harm caused by climate change—[is] critical to determining whether the Projects are in the public interest.”²⁰⁷

Commissioner LaFleur similarly rejects this assertion from the Commission majority, stating:

That is precisely the use for which the Social Cost of Carbon was developed—it is a scientifically-derived tool to translate tonnage of carbon dioxide or other GHGs to the cost of long-term climate harm. I have drawn the simplistic analogy of human food consumption and diet. It would be convenient for a person to say “I guess it is fine to eat this donut, because there is simply no way to assess if it will make me fat.” But there is such a tool, in the form of calories, which have been scientifically derived to translate the consumption of a specific food item to impact on weight gain. Similarly, we are able to estimate what the long-term consequence of a ton of carbon dioxide emissions is likely to be, by use of the Social Cost of Carbon tool.²⁰⁸

²⁰⁴ Statement of Commissioner Cheryl A. LaFleur on Texas Eastern’s Texas Industrial Market Expansion Project, FERC Docket No. CP18-10, July 19, 2018 referencing Texas Eastern Certificate Order at P 33.

²⁰⁵ Statement of Commissioner Richard Glick on Northwest Pipeline, LLC, FERC **Docket Nos.** CP17-441-000, CP17-441-001, July 19, 2018. See also Texas Eastern Transmission, LP, July 19, 2018, Docket No.: CP18-10-000; partial dissent on on Columbia Gas Transmission, L.L.C., July 19, 2018, Docket No.: CP17-80-000; July 19, 2018, Docket No.: CP17-80-000; partial dissent of the Northwest Pipeline certificate order.

²⁰⁶ *Id.* at 5 (Glick, Comm’r, dissenting) (citing cases that discuss the Social Cost of Carbon when evaluating whether an agency complied with its obligation under NEPA to evaluate the climate change impacts of its decisions).

²⁰⁷ Statement of Commissioner Richard Glick on Mountain Valley Pipeline, LLC , FERC Docket Nos. CP16-10-000 and CP16-13-000, June 15, 2018 (citations omitted).

²⁰⁸ Statement of Commissioner Cheryl A. LaFleur on Southeast Market Pipelines Project, FERC Docket Nos. CP14-554-002, CP15-16-003, CP15-17-002, March 14, 2018. (citations omitted)

Finally, even the U.S. Environmental Protection Agency has also recommended the use of the Social Cost of Carbon in its comments on the Commission's pending review of its Policy Statement, explaining that estimates of the Social Cost of Carbon "may be used for project analysis when [the Commission] determines that a monetary assessment of the impacts associated with the estimated net change in GHG emissions provides useful information in its environmental review or public interest determination."²⁰⁹

The EA's Claims Regarding The Social Cost Of Carbon Are Not Scientifically Or Economically Sound, Nor Legally Defensible.

Again here, in FERC's environmental assessment of the AGP, FERC has asserted similar illogical claims about the applicability of SCC to its review; and again the Delaware Riverkeeper Network and our expert report by Spencer Phillips, Ph.D., Economist & Principal of Key-Log Economics and Sonia Wang, Economist of *Key-Log Economics*, have refuted these claims made by FERC and calculated conservative SCC estimates for the Commission.

In the AGP EA, FERC acknowledges that the SCC as a method for calculating the incremental impact of GHG emissions exists, stating that:

We recognize that the SCC methodology does constitute a tool that can be used to estimate incremental physical climate change impacts, either on the national or global scale. The integrated assessment models underlying the SCC tool were developed to estimate certain global and regional physical climate change impacts due to incremental GHG emissions under specific socioeconomic scenarios.²¹⁰

FERC then goes on to assert that the SCC "is not appropriate for use in our project-specific analyses" because it 1) "cannot meaningfully inform the Commission's decision whether and how to authorize a proposed project under the NGA"; because 2) "the Commission does not use monetized cost-benefit analyses as part of the review under NEPA or the decision under the NGA"; and because 3) "the SCC tool has methodological limitations."²¹¹ As the attached Key-Log Economics report explains:²¹²

The first of these excuses is an admission that the writers do not have the capacity to make meaning out of SCC results. The second directly contradict the Commission's policy on pipeline certification found at 88 FERC 61,227. And the first and third are absurd from an economic and scientific perspective. Facts about the residual adverse impacts of the Project are exactly what is meaningful to the Commission's decision. If the FERC staff cannot present those facts in a meaningful way, they should add capacity,

²⁰⁹ United States Environmental Protection Agency, Comments on FERC Docket No. PL18-1-000, Accession Number 20180621-5095 at 4-5, June 21, 2018.

²¹⁰ Adelphia Gateway Project Amendment to Application, Docket No. CP18-46-001, Accession No. 20180831-5215 at 172.

²¹¹ Adelphia Gateway Project Amendment to Application, Docket No. CP18-46-001, Accession No. 20180831-5215 at 172.

²¹² Key-Log Economics, LLC, *The Social Cost of Carbon and the Adelphia Gateway Project*, February 2019 at 1-2.
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either on staff or via contractors, to do the Commission and the public the necessary service.

If the standard is to ignore economic information developed using any tools that have methodological limitations, then one would expect to not see the Commission employ estimates of the economic impact of natural gas transmission projects in its decision-making. (See Appendix A for details on the limitations of economic impact models.) While this EA does not explicitly state how it arrives at the conclusion (i.e., what data and models were used or what the methodological limitations of their methods might be), the EA does present information about direct employment changes during Project construction and operation, and it states that both construction and operation would have “negligible” impacts on employment/unemployment rates in the area.

Further, in regards to the “limitations” of the SCC, Key-Log Economics further explains:

It is worth noting that many believe that the SCC understates the full economic cost of GHG emissions, a point that the Working Group concedes in the quote above.

At the time, some researchers and environmentalists criticized the Obama number for being incomplete. It did not, for example, fully account for many plausible climate impacts like damage from increased wildfires or the loss of diverse ecosystems. In one survey of climate economists from 2015, 51 percent of respondents said the number was probably too low. Only 9 percent said it was probably too high.

—Brad Plumer, New York Times, 23 August, 2018

This criticism, FERC should note, does not suggest that the SCC has no value for decision making. Rather, it simply reinforces the notion that SCC produces conservative estimates.²¹³

Or, as the 2009 Interagency Working Group on the Social Cost of Greenhouse Gases, assembled to develop estimates of the social cost of carbon (SCC), explained the limitations at the time:

The models used to develop SC-CO₂ estimates, known as integrated assessment models, do not currently include all of the important physical, ecological, and economic impacts of climate change recognized in the climate change literature because of a lack of precise information on the nature of damages and because the science incorporated into these models naturally lags behind the most recent research. **Nonetheless, the current estimates of the SC-CO₂ are a useful measure to assess the climate impacts of CO₂ emission changes.**²¹⁴

²¹³ Key-Log Economics, LLC, *The Social Cost of Carbon and the Adelpia Gateway Project*, February 2019; at 5.

²¹⁴ Interagency Working Group on Social Cost of Greenhouse Gases, United States Government, 2016, emphasis added (as cited by New Key-Log report page 3, citations omitted)

Commissioners Glick and LaFleur have also noted that while the task of developing the policy needed to address FERC's current violations of NEPA and the NGA in this context isn't easy, it is FERC's obligation. As Commissioner LaFleur states, "The fact that consideration of climate change is difficult does not alleviate our responsibilities under the Natural Gas Act (NGA) and NEPA to determine the significance of GHG emissions."²¹⁵ And Commissioner Richard Glick, in his Partial Dissent of Columbia Gas Transmission, L.L.C.'s Eastern Panhandle Expansion Project (Eastern Panhandle Project):

"The Commission cannot point to the mere presence of uncertainty over upstream and downstream GHG emissions to excuse it from considering the harm from the Project's contribution to climate change. In the case of new natural gas pipelines, it is reasonable to assume that building incremental transportation capacity will spur additional production and result in some level of combustion of natural gas, even if the exact details of the method or location are not definite. As the United States Court of Appeals for the Eighth Circuit explained in *Mid States*—a case that also involved the downstream emissions from new infrastructure for transporting fossil fuels—when the "nature of the effect" (end-use emissions) is reasonably foreseeable, but "its extent is not" (specific consumption activity producing emissions), an agency may not simply ignore the effect. [...] It is entirely foreseeable that natural gas transported through the Project will be combusted, emitting GHGs that contribute to climate change. [...] Under these circumstances, the Commission must consider the impact from climate change resulting from this likely end use."²¹⁶ (citations omitted)

FERC's claim that it lacks the means to account, at least conservatively/partially, for climate change impacts is absurd. The Social Cost of Carbon does just that. In the EPA's own definition, it explains that the Social Cost of Carbon:

is meant to be a comprehensive estimate of climate change damages and includes, among other things, changes in net agricultural productivity, human health, property damages from increased flood risk and changes in energy system costs, such as reduced costs for heating and increased costs for air conditioning. However, it does not currently include all important damages.

....

The models used to develop [SCC] estimates do not currently include all of the important physical, ecological, and economic impacts of climate change recognized in the climate change literature because of a lack of precise information on the nature of damages and because the science incorporated into these models naturally lags behind the most recent research. Nonetheless, current estimates of the [SCC] are a useful measure to assess the climate impacts of CO2 emission changes.²¹⁷

²¹⁵ Statement of Commissioner Cheryl A. LaFleur on **Texas Eastern's Texas Industrial Market Expansion Project**, FERC Docket No. CP18-10, July 19, 2018.

²¹⁶ Statement of Commissioner Richard Glick on Columbia Gas Transmission, L.L.C., FERC Docket Nos. CP17-441 and CP17-441-001No. CP17-80, July 19, 2018.

²¹⁷ EPA Fact Sheet, Social Cost of Carbon, December 2016, retrieved from: https://www.epa.gov/sites/production/files/2016-12/documents/social_cost_of_carbon_fact_sheet.pdf.

As the attached Key-Log Economic report reiterates,

It is fundamentally important that those purporting to make decisions about what is good and bad for society do so with a full set of facts. In this case, that means actually estimating and weighing the societal costs of the AGP. Completion of such an analysis would begin to make it possible that the Commission's later decisions on whether or not certify the project would be informed by relevant facts.

...

That information should include estimates of the full external costs of transmission projects, including the cost of GHG emissions associated with the projects, including both upstream and downstream emissions.²¹⁸

And finally, as the U.S. Court of Appeals for the District of Columbia Circuit explained in the *Sierra Club* decision, "in the face of indefinite variables, 'agencies may sometimes need to make educated assumptions about an uncertain future.'"²¹⁹ The tools exist, and conservative estimates based on best science and economics can be calculated. In fact, as previously noted, the Delaware Riverkeeper Network and other public stakeholders have regularly done this work for FERC. The magnitude of adverse impacts revealed in Key-Log Economics' conservative estimates of the SCC for the AGP (below) as well as three recently approved pipeline projects is significant (Millennium's Eastern System Upgrade: **\$51.8 - 434.5 million**; the PennEast Pipeline: **\$301.8 - 2,339.0 million**; Atlantic Sunrise Pipeline: **\$466.5 - 3,615.1 million**).²²⁰

And again here, in FERC's environmental assessment of the AGP, FERC has failed to utilize the SCC in its review; and again Spencer Phillips, Ph.D., & Sonia Wang, expert economist of Key-Log Economics, have calculated a conservative range of SCC estimates for the Commission to demonstrate the scale and significance of the costs at stake.

FERC Must Use One Of Several Available Tools To Assess The AGP's Climate Change And Ecosystem Impacts on an Economic Level.

For purposes of the National Environmental Policy Act, meaningfully disclosing the impact of greenhouse gas emissions requires the use or implementation of a tool beyond merely identifying physical changes in the environment attributable to an individual project's emissions. In this section, DRN will identify two tools for making such a determination. The first is a protocol developed by the interagency working group on the Social Cost of Carbon. Second is the modeling and evaluation of "ecosystem services." The Commission ignored these two widely accepted tools in its environmental review, and as a result the information contained in the EA, and that FERC has acknowledged on the record, is an inadequate basis for any subsequent public benefits analysis and approval.

²¹⁸ See Key-Log Economics, LLC, *The Social Cost of Carbon and the Adelphia Gateway Project*, February 2019 at pages 1 and 2, respectively. Citations omitted.

²¹⁹ Statement of Commissioner Richard Glick on Texas Eastern Transmission, LP, FERC Docket No. CP18-10, July 19, 2018. See *Sierra Club v. FERC*, 867 F.3d 1357 (D.C. Cir. 2017) (No. 16-1329).

²²⁰ *The Social Cost of Carbon and the Adelphia Gateway Project*, February 2019.

In the FERC Docket PL18-1 Notice of Intent, FERC stated:

“As for the use of the Social Cost of Carbon tool, the Commission has found that although this tool is appropriate to use as part of cost-benefit analyses associated with certain rulemakings, it is not useful or appropriate to apply in its NEPA documents.”

Even though we disagree with the position that this tool is not appropriate for FERC’s NEPA review, by FERC’s own admission, especially in light of the significant costs outlined in export report included in this comment, FERC must utilize the SCC as part of its NGA mandated and Certificate Policy guided cost-benefit analysis of the project and subsequent public interest determination, and must publish and detail these calculations for the public to review. If not, then to the extent FERC refuses to use several available tools to assess the AGP’s impacts, any subsequent approval provided by FERC would be arbitrary and capricious.

Social Cost of Carbon of the Proposed Adelphia Gateway Project

The Social Cost of Carbon is a “scientifically-derived metric” to translate tonnage of carbon dioxide or other greenhouse gases to the cost of long-term climate harm,²²¹ and remains generally accepted in the scientific community.²²² Cost monetization, as provided by this tool, is appropriate and required where available “alternative mode[s] of [NEPA] evaluation [are] insufficiently detailed to aid the decision-makers in deciding whether to proceed, or to provide the information the public needs to evaluate the project effectively.”²²³ Additionally, several courts and two of the five Commissioners have provided full-throated support for using the Social Cost of Carbon as a tool in the analysis of similar pipeline projects.²²⁴

Here, Adelphia estimated in its Application materials that the Project would contribute an equivalent of 4,861,766 CO₂e metric tons of greenhouse gases per year, based off of the assumption that “all of the incremental increase in volumes of natural gas transported by the Project would be combusted for use as a fuel source.”²²⁵ As was the case for nearly all project impacts estimated by Adelphia, this calculation was based on the Project’s natural gas capacity

²²¹ PennEast Pipeline Rehearing Order (LaFleur, Comm’r, dissenting) at 4-5.

²²² 40 C.F.R. § 1502.22(b)(4) (2018).

²²³ *Columbia Basin Land Prot. Ass’n v. Schlesinger*, 643 F.2d 585, 594 (9th Cir. 1981).

²²⁴ See, e.g., *Mont. Env’tl. Info. Ctr. v. U.S. Office of Surface Mining*, 274 F. Supp. 3d 1074, 1097-98 (D. Mont. 2017); *High Country Conservation Advocates v. U.S. Forest Serv.*, 52 F. Supp. 3d 1174, 1190-91 (D. Colo. 2014); *NEXUS Gas Transmission, LLC; Texas Eastern Transmission, LP; DTE Gas Company; Vector Pipeline L.P.*, 164 F.E.R.C. ¶ 61,054 at P 61,340 (2018); PennEast Pipeline Rehearing Order (LaFleur, Comm’r, dissenting) at 6. (“[T]he Social Cost of Carbon provides a meaningful approach for considering the effects that the Commission’s certificate decisions have on climate change.”); Commissioner LaFleur, (“[T]he Social Cost of Carbon can meaningfully inform the Commission’s decision-making to reflect the climate change impacts of an individual project.”).

²²⁵ Adelphia Gateway, LLC, Adelphia Gateway Project Resource Report 1 at 43. FERC Docket No. CP18-46, January 2018

prior to their Amended Application which increased the capacity of the project from 250,000 dekatherms per day to 325,000 dekatherms per day.²²⁶

Additionally, Adelphia conditions this full-burn estimate as “a worst-case potential impact of this Project from a GHG emissions quantity perspective,” however, as Clean Air Council explains in their in their comment on the EA:

[Adelphia] calls this a worst-case scenario in terms of climate impact, but that is not the case. As noted above, methane is a much more potent greenhouse gas than carbon dioxide, which is what results when gas is burned. The worst-case scenario is that the gas leaks or is vented, rather than being burned. The most likely scenario is that most of the gas is burned and some of it leaks.²²⁷

Even further, as we explain throughout this comment, a full-burn estimate would not only be an underestimate of the Project’s GHG emissions because it fails to account for the leaking and venting of methane throughout the pipeline system, but also because it fails to account for the emissions associated with the induced drilling for gas upstream that would result from the Project.

However, as outlined earlier in this comment, FERC refused to adopt Adelphia’s estimate or put forth any such estimate for the Project’s GHG emissions in the EA, asserting that because only a small portion of the additional capacity is subscribed (by the Philadelphia Electric Company) for an “unspecified end use”, and the remainder of the additional capacity is “not designated to a specific user, and the end use of the natural gas is not identified by Adelphia”, “the downstream GHG emissions of the southern portion of the Project are not calculated.”²²⁸ For a full discussion of the factual issues with these claims, see page 21-24 of this comment.

While FERC failed to include these calculations in the EA, Key-Log Economics, in their expert analysis of the costs of the AGP for the Delaware Riverkeeper Network, used information on the AGP FERC record to calculate an updated estimate of the additional natural gas capacity of the Project and the resulting incremental GHG emissions downstream²²⁹, with the average cost estimates per metric ton of carbon and average discount rate, to calculate the Social Cost of

²²⁶ See Abbreviated Application for Adelphia Gateway, LLC, FERC Docket No. CP18-46, January 11, 2018; and Adelphia Gateway Project Amendment to Application, Docket No. CP18-46-001, Accession No. 20180831-5215

²²⁷ Adelphia Gateway, LLC, Adelphia Gateway Project Resource Report 1 at 43. FERC Docket No. CP18-46, January 2018

²²⁸ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 132.

See Key-Log Economics, LLC, *The Social Cost of Carbon and the Adelphia Gateway Project*, February at 5-6:

“If completed, the AGP will have result in the transport of a total of 850 million cubic feet (MCF) of natural gas per day. Some of this is existing capacity being acquired, and some is new capacity developed through the construction of pipelines, compressor stations, and other infrastructure (Federal Energy Regulatory Commission, 2019). Of this total, 325 MCF/day is new or incremental capacity created by the project. That includes an additional 250 MCF/day along the southern end of the existing mainline and an increase of 75 MCF/day along the northern segment.”

Carbon for the Project—a cost of over *\$91.4 million annually*. As the Key-Log Economics report (see Attachment 1 of this comment) explains:

For each year of AGP operation, this calculation yields an estimate of the cost to society of GHG emissions in that year, but in dollars that, due to the discounting (and to a lesser degree the adjustment for inflation) can make sense to decisionmakers today. If we sum those estimates across all years of operation (i.e., 2020 through 2050), we obtain an estimate of the total SCC for the AGP.²³⁰

Key-Log Economics further calculates the SCC of the incremental capacity added by the project over the 30-year operation period using “the 5% average, 2.5% average, and the 3% 95th percentile discount rate estimates provided by the 2016 interagency Working Group estimates, as well as the new estimates developed under the new interim guidance from the Trump Administration²³¹,” in order to provide “a sense of the possible range of SCC effects due to the AGP”, finding that:

the SCC of the incremental capacity added by the project over the 30-year operation period ranges from **\$4.4 to \$40.0 billion** (2018\$). Under the Trump Administration’s new guidance, these estimates drop to a range of **\$0.3 to \$1.7 billion**.²³²

But, as Key-Log Economics explains, “It is important to note that these are low estimates of what would be the actual social cost of carbon associated with the AGP, and why”.²³³

First, the methods here assume that each MCF makes it through the pipeline and is combusted for heating, power generation, or some other useful purpose. The reality is

²³⁰ Key-Log Economics, LLC, *The Social Cost of Carbon and the Adelpia Gateway Project*, February.

²³¹ See Key-Log Economics, LLC, *The Social Cost of Carbon and the Adelpia Gateway Project*, February 5-6:

“In 2017, President Trump disbanded the interagency work group and tasked the EPA with producing new interim SCC numbers based only on damages occurring within domestic borders, and using 3% and 7% discount rates (Table 1) (Plumer, 2018 & U.S. Environmental Protection Agency, 2017). Clearly this directive results in radically lower estimates of the cost of each tonne of GHG emitted.

By focusing only on potential climate change related costs in the United States, the Trump Administration is ignoring the fact that climate change is a global issue and that emissions created in the U.S. have the ability to affect other global states and vice versa. If the U.S. disregards emissions impacts on other countries, the U.S. is setting the precedent for other countries to do the same (Plumer, 2018). Furthermore, the reality is that future climate change impacts will have an effect on the United States. According to the National Academy of Sciences, “Climate change in other regions of the world could affect the United States through such pathways as global migration, economic destabilization, and political destabilization” (National Academies of Sciences, 2017).

In the new interim SCC estimates, the EPA also uses different discount rates to estimate the future impacts of climate change. A discount rate is used to value costs and benefits across time, or in other words, what is the opportunity cost of spending money today to fight climate change impacts in the future. A higher discount rate, like the 7% discount rate used in the new interim SCC estimate, results in a lower social cost for carbon. Economists, however, argue that higher discount rates are not appropriate for addressing long-range problems like climate change because issues like ocean acidification or melting ice caps can have effects lasting centuries (Plumer, 2018).”

²³² Key-Log Economics, LLC, *The Social Cost of Carbon and the Adelpia Gateway Project*, February; at 7, emphasis added

²³³ Key-Log Economics, LLC, *The Social Cost of Carbon and the Adelpia Gateway Project*, February; at 7-8, citations omitted

that some of the methane will leak from the pipes, valves, and other facilities, and some will be deliberately released during blowdowns at the compressor stations. Because methane is a GHG 86 times more potent than carbon dioxide in the coming decades run and 34 times more potent over the next century (Intergovernmental Panel on Climate Change, via Vaidyanathan, 2015), the leaks, blowdowns, and other fugitive emissions will have a much greater impact on climate change than will the CO₂ released as a product of methane combustion by its end users.

In addition, and to the extent that excess natural gas transmission capacity would induce the development, extraction, and delivery of more natural gas than would otherwise be the case. Thus the AGP would be responsible for some additional “upstream” GHG emissions. The upstream GHG/SCC effects of certifying the AGP, therefore, would include not only the GHG emissions associated with the use of the gas transported, but also those emissions associated with the extraction of the gas in the first instance.

Despite being low estimates, these calculations provide indispensable data with regard to the Commission’s environmental and public interest determinations analysis. Indeed, the Commission’s Section 7 duty to consider the public interest is “broader than promoting a plentiful supply of cheap gas.”²³⁴ Specifically, this economic test must “balance ‘the public benefits against the adverse effects of the project.’”²³⁵

Here, FERC has failed as of yet to utilize the Social Cost of Carbon metric for its NEPA environmental review and, as a result and in addition, the current record is inadequate for the Commission to perform its NGA balancing test.

The EA Could Have Utilized Ecosystem Services Analysis To Quantify Pipeline Costs

“Ecosystem services” is a term describing a phenomenon of “benefits that flow from nature to people.”²³⁶ These benefits include tangible physical quantities, such as food, timber, clean drinking water; life support functions like assimilating waste that ends up in air and water or on the land; as well as aesthetics, recreational opportunities, and other benefits of a more cultural, social, or spiritual nature. By applying per-acre ecosystem service productivity estimates (denominated in dollars per acre per year) to various ecosystem service types, the Commission could estimate ecosystem service value produced (or lost) per year in the periods before, during, and after construction.

Yet, the Commission has failed to use any of the existing resources, such as the methodologies outlined in *Federal Resource Management and Ecosystem Services* or *Best Practices for Integrating Ecosystem Services into Federal Decision Making*, to estimate the loss of ecosystem

²³⁴ *Fla. Gas Transmission Co. v. FERC*, 604 F.3d 636, 650 (D.C. Cir. 2010); *see also* 15 U.S.C. § 717f(e) (2012).

²³⁵ *Sierra Club v. FERC*, 867 F.3d 1357, 1373 (D.C. Cir. 2017).

²³⁶ Delaware Riverkeeper PennEast Rehearing Request (quoting Key-Log Report); Comment on FERC Docket No. PL18-1 by Key-Log Economics, LLC, July 23, 2018.

services related to Project construction and operation for its NEPA review. Nor did the Commission explain why it failed to use these readily available tools.²³⁷

Failing to consider ecosystem service losses means many of the economic consequences of environmental impacts have not been accounted for. The Commission's willful ignorance of readily available analytical tools to inform a qualitative assessment of the Project's impacts violates its responsibilities under NEPA and the NGA and distorts the true impacts of the Project.

The EA Fails to Account for the Actual Impacts the Projects Compressor Stations and Numerous Blowdown Valves Will Have on Air and Local Communities

It has been well-settled for decades that NEPA's ultimate goal is the protection of human health and welfare and the physical environment.²³⁸ To ensure this, analysis of the air emissions from the various components of this Project must be substantive, including evaluations of public health and public safety risks that result from the operation of compressor stations and blowdown assembly valves (BAVs). These stations, which are generally unmanned and poorly regulated, have proven to create a host of serious environmental, health, and safety hazards for surrounding communities.

Compressor Stations are a necessary but dangerous part of natural gas pipeline infrastructure, installed at regular intervals along the pipeline, usually 40 to 100 miles apart, and run continuously.²³⁹ As natural gas loses pressure through friction in the pipeline, transmission compressors "pump," or re-pressurize, and often filter, the gas in order to advance its flow. In addition to increasing the pressure in a pipeline, most compressor stations will filter out liquids and other contaminants that have accumulated in the natural gas stream.²⁴⁰ This process creates highly toxic waste, which is stored on-site in tanks before being transported for treatment or disposal—leaving great opportunity for toxic and likely radioactive waste leaks, spills, or mishandling.²⁴¹

²³⁷ See *Sierra Club v. FERC*, 867 F.3d at 1375.

²³⁸ See *Metropolitan Edison Co. v. People Against Nuclear Energy*, 460 U.S. 766, 771 (1983) ("All the parties agree that effects on human health are cognizable under NEPA . . ."), 773 ("NEPA states its goals in sweeping terms of human health and welfare . . . [T]hese goals are ends that Congress has chosen to pursue by means of protecting the physical environment.") (original emphasis omitted).

²³⁹ Tobin, James. 2007. Natural Gas Compressor Stations on the Interstate Pipeline Network: Developments Since 1996. Energy Information Administration, Office of Oil and Gas. Available at: https://www.eia.gov/pub/oil_gas/natural_gas/analysis_publications/ngcompressor/ngcompressor.pdf; Folga, S.M. 2007. Natural Gas Pipeline Technology Overview. Argonne National Laboratory, Environmental Science Division. Available at:

http://corridoreis.anl.gov/documents/docs/technical/APT_61034_EVS_TM_08_5.pdf.

²⁴⁰ Spectra Energy. 2013. Inside a Natural Gas Compressor Station. Available at: http://www.spectraenergy.com/content/documents/media_resources_pdfs/insidenatgascompressstn.pdf

²⁴¹ United States Environmental Protection Agency. 2006. Installing Vapor Recovery Units on Storage Tanks. Lessons Learned from Natural Gas Star Partners. Available at: https://www3.epa.gov/gasstar/documents/ll_final_vap.pdf

Further, and contrary to the claim in the EA²⁴², Compressor Stations are generally operational 24 hours per day, 365 days a year. These stations are unmanned and monitored by an off-site computerized system that manages and coordinates the operations of the several compressor stations within a natural gas pipeline system.²⁴³ If an issue is detected at a compressor station, such as a drop in pressure or fire, an emergency shutdown system releases the natural gas in the pipeline into the atmosphere in what is called a blowdown.²⁴⁴

Blowdowns are releases of unexpected, sudden bursts of air which occur at both BAVs and compressor stations. The event is the “largest single emission at a compressor station.” with gas plumes extending upward 30 to 60 meters. During the blowdown, the first 30 to 60 minutes are the most intense and contain the biggest release, but the entire blowdown could last up to three hours. Adding to the issues this burst of contaminants creates is the fact that the exact composition of emissions and the amount of each toxin released is not adequately measured, reported, or regulated. In fact, emission levels vary from station to station, depending on the size and power source, and throughout each day, depending on emission events such as blowdowns, fugitives, and accidents. While there is incomplete information on the content of compressor emissions, many harmful chemicals are known to be released.

The power source of the compressor stations themselves also greatly affects emissions. Compressor stations can be powered by either natural gas fired engines, turbines, or electric motors. Most are fueled by a portion of the natural gas flowing through the pipeline.²⁴⁵ The EA should have addressed the chosen power source from both of the proposed compressor stations and analyzed available alternatives.

Finally, diesel emissions as a result of the Project may lead to a higher level of ozone along the ROW as the cleared ROW provides more sunlight for nitrogen oxides and reactive organic cases to combine.

All of these additional emissions, which are not evaluated and considered in the EA, would affect residents of areas already burdened by elevated levels of pollution, since the areas are in nonattainment of the NAAQS under the 8-Hour Ozone (Northampton, Bucks, Montgomery,

²⁴² The EA posits that “The Quakertown and Marcus Hook Compressor Stations would not likely operate at capacity (i.e. full load) every day” therefore the analysis provided portrays the “conservative, worst-case estimate of emissions.” FERC provides no basis for this assumption that it would not operate at full capacity. Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 127.

²⁴³ Federal Energy Regulatory Commission. 2015. An Interstate Natural Gas Facility on my Land: What do I Need to Know?; Tobin, James. 2007. Natural Gas Compressor Stations on the Interstate Pipeline Network: Developments Since 1996. Energy Information Administration, Office of Oil and Gas.

²⁴⁴ TransCanada. 2014. The Basics of a Compressor Station. Available at: <https://www.princerpupertgas.com/wp-content/uploads/2014/04/prince-rupert-natural-gas-transmission-compressor-station-basics-factsheet-transcanada.pdf>; Folga, S.M. 2007. Natural Gas Pipeline Technology Overview. Argonne National Laboratory, Environmental Science Division.

²⁴⁵ Tobin, James. 2007. Natural Gas Compressor Stations on the Interstate Pipeline Network: Developments Since 1996. Energy Information Administration, Office of Oil and Gas.

Chester, Delaware, and New Castle Counties) and PM-2.5 standards (Delaware County),²⁴⁶ NO_x and VOCs both being precursors to ozone.

The EA's Public Health Analysis Failed to Account for the Health Risks and Other Issues That Occur as A Result of Compressor Station and BAV Locations

When gas is emitted or leaked from compressor stations, a very large number of chemicals are released together. In fact, no other industry emits as many chemicals within as close a range to residences as natural gas pipelines.²⁴⁷ From the limited available research on compressor emissions, chemicals found at our near compressor stations include: benzene, carbon monoxide, nitrogen dioxide, carbon disulfide, toluene, ethyl benzene, acetone, fine particulate matter, and many other toxic VOCs and HAPs, many of which were found above potentially unsafe levels.²⁴⁸

Below are just some known impacts of contaminants released during a blowdown:

VOCs (Volatile Organic Compounds):²⁴⁹

- Benzene: Short-term exposure can cause drowsiness, dizziness, headaches, irritation of the eyes, skin, and respiratory tract, and unconsciousness. Long-term exposure is carcinogenic; linked to reproductive effects, leukemia and childhood leukemia, and various blood disorders.
- Methylene chloride: Short-term exposure can cause decrease nervous system function and long-term exposure can affect the central nervous system. It is potentially carcinogenic, with animal studies showing increased liver and lung cancer following inhalation.
- Formaldehyde: Carcinogenic. Short-term exposure can cause asthma-like symptoms, coughing, wheezing, and shortness of breath. It is linked to adverse pregnancy outcomes and reproductive and developmental toxicity. Considered a Hazardous Air Pollutant (HAP).
- Styrene: Carcinogenic.

Particulate matter: Particulate matter of 10 micrometers in diameter (PM₁₀) or less is small enough to get into the lungs, causing serious health problems on their own and compounding the effects of other chemicals. The size of particles determines the depth of inhalation into the

²⁴⁶ EPA, *Nonattainment Areas for Criteria Pollutants (Green Book)*, available at <https://www.epa.gov/green-book> (last visited May 31, 2018).

²⁴⁷ Madison County Department of Health. 2014. Comments to the Federal Energy Regulatory Committee Concerning Docket No. CP14-497-000, Dominion Transmission Inc. Madison County, New York.

²⁴⁸ "Emission Inventory." Pennsylvania Department of Environmental Protection.

http://www.dep.state.pa.us/dep/deputate/airwaste/aq/emission/emission_inventory.htm2010; Texas Commission on Environmental Quality Barnett Shale Formation Area Monitoring Projects. Doc number BS0912-FR

http://www.tceq.state.tx.us/assets/public/implementation/barnett_shale/200.01.27-

[BarnettShaleMonitoringReport.pdf](#); Wolf Eagle Environmental. Town of DISH, Texas Ambient Air Monitoring Analysis Final Report. September 15, 2009; Steinzor N, Subra W, Sumi L. Investigating Links between Shale Gas Development and Health Impacts through a Community Survey Project in Pennsylvania New Solutions 2013; 23(1): 55-84.

²⁴⁹ Madison County Department of Health. 2014. Comments to the Federal Energy Regulatory Committee Concerning Docket No. CP14-497-000, Dominion Transmission Inc. Madison County, New York.

lung—with smaller particles more readily reaching the deep lung. PM2.5 and ultrafine particles (less than .1 micrometer in diameter) are of particular concern.²⁵⁰

- PM2.5 and ultrafine particles: Cause harm respiratory and cardiovascular systems. For example, inhalation of PM2.5 can cause decreased lung function, aggravate asthma symptoms, cause heart attacks and high blood pressure, increase risk of cardiovascular disease and death, increase cardiopulmonary death, and increased risk of lung cancer. In children, exposure to PM2.5 has been linked to increased asthma and hospitalizations for respiratory diseases such as pneumonia. Particulate pollution is also linked to low birth weights and preterm births for pregnant women.²⁵¹

TENORM: Radon and the resulting polonium are known carcinogens, while all three materials, including lead, are highly toxic.²⁵²

Additionally, one of the known chemical reactions associated with compressor stations is that between particulate matter and other water soluble chemicals. PM2.5 and smaller particulate matter absorb other airborne chemicals and carry them into a person's deep lung and blood stream. This causes airborne chemicals to be absorbed at much higher concentrations than they would in the absence of particulate matter—essentially increasing the dosage of any soluble chemical their midst.²⁵³

Studies have shown the risks of these air pollutants manifest themselves in numerous health issues.²⁵⁴ Individuals living within 2 miles of compressor stations and metering stations experience respiratory impacts (71% of residents), sinus problems (58%), throat irritation (55%), eye irritation (52%), nasal irritation (48%), breathing difficulties (42%), vision impairment (42%), sleep disturbances (39%), and severe headaches (39%). In addition, some 90% of individuals living within 2 miles of these facilities also reported experiencing odor events. Odors associated with compressor stations include sulfur smell, odorized natural gas, ozone, and burnt butter.²⁵⁵ The health risks that emissions and noise pose to the general population are even greater for vulnerable populations such as children, pregnant women, the elderly, and sensitive individuals.²⁵⁶

²⁵⁰ Ibid.

²⁵¹ Madison County Department of Health. 2014. Comments to the Federal Energy Regulatory Committee Concerning Docket No. CP14-497-000, Dominion Transmission Inc. Madison County, New York.

²⁵² Madison County Department of Health. 2014. Comments to the Federal Energy Regulatory Committee Concerning Docket No. CP14-497-000, Dominion Transmission Inc. Madison County, New York.

²⁵³ Amdur MO. The response of guinea pigs to inhalation of formaldehyde and formic acid alone and with a sodium chloride aerosol. *International Journal of Air Pollution* 1960; 3:201-20.

²⁵⁴ Understanding Natural Gas Compressor Stations, PennState Extensions, available at: <https://extension.psu.edu/understanding-natural-gas-compressor-stations>

²⁵⁵ Luckett, B., Buppert, G., & Margolis, J. M. (2015, April 28). SELC ACP Comment, FERC DOCKET NO.: PF15-6-000,20150428-5504(30537222). Southern Environmental Law Center; Appalachian Mountain Advocates; Center for Biological Diversity (citations omitted).

²⁵⁶ Madison County Department of Health. 2014. Comments to the Federal Energy Regulatory Committee Concerning Docket No. CP14-497-000, Dominion Transmission Inc. Madison County, New York.

The EA failed to account for the potential health impacts of these various air contaminants, dismissing the emissions from compressor stations and blowdowns as fugitive air emissions that did not warrant further consideration. This ignorance of reliable and available data goes against the investigation that NEPA requires federal agencies to conduct to ensure there is a thorough and informed environmental assessment for a project. And, in the end, it allows for industries to benefit at the detriment of the communities they are building in and ignores the actual consequences of a project.

Additionally, FERC should have also considered the effects of these toxins when emitted in short, sudden spurts rather than the average for the year. As DRN identified in its initial scoping comment, compressor stations and BAVs both usually emit short, sudden emissions of gases throughout the year and such events have been shown to have different effects on human health and the environment as compared to a steady continuous release. In fact, during such events, people living near compressor stations report strong odors as well as visible plumes during venting or blowdowns, as well as health issues such as burning eyes and throat, skin irritation, coughing, and headache.

Additionally, with the close proximity of the various BAVs to one another, not only should the likelihood of an incident be addressed, but the assessment should have also considered the compounding risks that would occur as a result. As mentioned above, it is normal for both compressor stations and BAVs to be sited 40-100 miles apart along the length of the pipeline. Yet, Adelphia has placed numerous BAVs in close proximity to one another. Of the 8 blowdowns, five are within 15 miles of one another in Chester County.²⁵⁷ The close proximity should have been addressed in the EA as it is an anomaly among pipeline projects. Additionally, FERC should have examined the compounding effects of these units in close proximity to one another addressing the increase in air emissions, increase in health effects, and increase in public safety risk.

The EA Failed to Account for the Public Safety Risks Compressor Stations Pose to the Surrounding Communities

Not only did the EA fail to adequately account for the impacts on public health. FERC's public safety analysis was also woefully inadequate.

Compressor stations are built at strategic locations along a pipeline route—with sites ranging from densely populated residential areas, where they put communities at higher risk of toxic emissions, deadly explosions, noise pollution, and property value loss, to remote forested areas, which results in significant land disturbance, forest loss, habitat destruction, increased wildfire risk, and ensuing air and water quality loss.

²⁵⁷ Understanding Natural Gas Compressor Stations, PennState Extensions, available at: <https://extension.psu.edu/understanding-natural-gas-compressor-stations>

The process of compressing natural gas to a highly pressurized state generates a huge amount of heat, which must be vented and dispersed through cooling facilities.²⁵⁸ This is not only a waste of energy, but also a serious safety hazard in a facility that is unmanned and processing flammable gas around the clock. As a result, gas leaks, glitches in the computer monitoring system, and other events regularly lead to fires and/or explosions of various magnitudes at compressor stations throughout the country.

Yet the EA's public safety assessment was based on generalizations and assumptions instead of an examination of actual impacts. The EA assessed the risk of death from a pipeline incident by comparing it to the risk of death from an automobile accident as well as other "anthropogenic and natural hazards,"²⁵⁹ a comparison with such a drastic difference it creates a skewed perception of risk. FERC even admitted this in the EA.²⁶⁰ Moreover, the public safety section had no assessment of risks from Compressor Stations or BAVs, nor any recognition of the stress an emergency would place on the local community. Such an obvious oversight violates the mandates NEPA places on federal agencies when examining the impacts of projects.

Additionally, FERC received comments recommending a human health risk assessment for the project, yet, rather than conducting such an assessment, it relied on the risk assessment for the New Market EA.²⁶¹ FERC rationalized that the "compressor stations in New Market EA risk assessment were about twice as big as the proposed compressor stations in the Project and therefore emitted a greater volume of HAPs as compared to the proposed compressor stations" therefore the comparison can provide adequate information.²⁶² FERC then concluded that "based on the size of the proposed Adelphia compressor stations, the results of the New Market EA, we do not believe that conducting a risk assessment specific to Adelphia facilities is warranted."²⁶³

This claim is especially troubling not simply because it seems to brush aside the requirements of NEPA –reviewing the specific projects impacts– but also because it seems to contradict the claims in the very next paragraph where the EA dismissed a study of the effects of compressor stations in New York on the basis that "it is not appropriate to compare the emissions of larger facilities that emit a significantly greater volume of emissions as compared to a minor source."²⁶⁴ Further, the EA goes on to state that "[a]ir pollution modeling is typically evaluated on a county or regional scale that incorporates topography, terrain ground cover, and historic weather

²⁵⁸ Tobin, James. 2007. Natural Gas Compressor Stations on the Interstate Pipeline Network: Developments Since 1996. Energy Information Administration, Office of Oil and Gas

²⁵⁹ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 151.

²⁶⁰ "Direct comparisons between accident categories should be made cautiously because individual exposure to hazards are not uniform among all categories." Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 151.

²⁶¹ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 130.

²⁶² Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 130.

²⁶³ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 130.

²⁶⁴ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 130.

data...mak[ing] it site specific, considering local factors such as weather and wind patterns that contribute to pollutant dispersion.”²⁶⁵ Such contradiction in the use of studies is irrational and a violation of the procedures required by NEPA. Therefore, FERC’s conclusion that the health risks associated with the project are not substantial is unreasonable as it is based off of arbitrary claims and irrational logic instead of actual facts.

The EA Failed to Account for Economic Impacts On The Community From Compressor Stations, Including Decrease in Property Values, Additional Emergency Response Costs, and Damage to Existing Agriculture and Infrastructure

The environmental assessment fails to account for the effects that compressor station and BAV facilities will have on the community such as decrease in property values, which have been shown to drop, by as much as 50%.²⁶⁶ In addition, the pollution from compressor stations can cause damage to agriculture and infrastructure. One study found that shale gas air pollution damages in Pennsylvania already amount to between \$7.2 and \$30 million, with compressor stations responsible for 60-75% of this total.²⁶⁷ Using the low estimate of 60%, that is between \$4.32 and \$18 million in damages associated with compressor stations.²⁶⁸ Additionally, associated health impacts bring health care costs and even inability to work, putting additional strain on the community and local economy.

Additionally, fires and explosions that occur from regular operations at compressor stations have resulted in evacuated homes, closed roads, wildfires, toxic emissions, complete destruction of homes and compressor stations, millions of dollars in damages, injuries, and deaths. Fires can last for hours or even days, putting a huge strain on local firefighters, hospitals, and other emergency responders. During these types of events, the natural gas industry typically relies on local fire departments for assistance.²⁶⁹ This is often a problem as localities are not always equipped with the resources to adequately contain a large natural gas fire or explosion or care for those injured. In addition to the damage to property and infrastructure, injuries to people who live in the vicinity can include respiratory damage and serious burns and can require evacuation by medical helicopter.²⁷⁰

In fact, an explosion and fire at a natural gas compressor station just occurred recently. On January 30, 2019 during the polar vortex which brought the coldest days of this winter (and recent years) to the United States, an equipment malfunction at a Consumers Energy

²⁶⁵ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 130.

²⁶⁶ Catskill Citizens. 2015. Proximity of Compressor Station Devalues Homes by as Much as 50%. Available at: <http://catskillcitizens.org/learnmore/DEVALUE.pdf>

²⁶⁷ Walker & Koplinka-Loehr, 2014

²⁶⁸ *Id.*

²⁶⁹ Folga, S.M. 2007. Natural Gas Pipeline Technology Overview. Argonne National Laboratory, Environmental Science Division

²⁷⁰ Madison County Department of Health. 2014. Comments to the Federal Energy Regulatory Committee Concerning Docket No. CP14-497-000, Dominion Transmission Inc. Madison County, New York.

Compressor Station in Macomb County Michigan occurred causing a fire.²⁷¹ Consumer Energy has asked that its 1.8 million residential, commercial, and industrial customers to reduce their gas energy use (including home thermostats) until the issue can be remedied.

These risks and impacts need to be address in the Environmental Assessment in order to assure FERC is able to fully assess the burdens and costs compressor stations and BAVs pose to local communities in the event of an explosion or fire.

The EA Fails to Adequately Assess the True Effects of the Noise Pollution on the Communities Where the Compressor Stations and BAVs are Located

Compressor stations emit noise and vibrations continuously, day and night. The noise emitted is often above allowable standards, especially during construction, emergency venting, and blowdowns, which can last for hours. At these peak noise events, the noise emitted is likened to a jet engine or a freight train, depending on residents' proximity.²⁷² In addition, compressor stations emit constant low frequency noise during normal operation. In fact, residents living nearby have compared the noise of compressor stations to a truck running in there driveway at all hours.²⁷³ This noise is not only a nuisance for the local communities but can lead to numerous health issues, including Vibroacoustic Disease, which causes a range of serious health impacts²⁷⁴ with symptoms worsening over time, as well as other physical and mental health effects.²⁷⁵ The health risks that emissions and noise pose to the general population are even greater for vulnerable populations such as children, pregnant women, the elderly, and sensitive individuals.²⁷⁶

²⁷¹ George Norkus, "Consumers Energy asks customers to reduce natural gas use following fire, January 30, 2018. Available at https://www.macombdaily.com/news/local/equipment-mishap-causes-fire-at-consumers-energy-facility-in-armada/article_618d73e8-24b9-11e9-bafa-0fa99dd80dcf.html.

²⁷² Spectra Energy. 2013. Inside a Natural Gas Compressor Station. Available at: http://www.spectraenergy.com/content/documents/media_resources_pdfs/insidenatgascompressstn.pdf

²⁷³ Cusick, Marie. 2014. State regulators take a closer listen to gas compressor stations. State Impact. Available at: <https://stateimpact.npr.org/pennsylvania/2014/08/25/state-regulators-take-a-closer-listen-to-gas-compressor-stations/>

²⁷⁴ Symptoms can include hypertension, thickening of cardiovascular structures, heart disease, infections, cognitive impairment in children, sleep disturbance, tinnitus, hearing loss, reduced performance, and aggressive behavior among others.

²⁷⁵ See: EPA's Integrated Risk Information System database.; Babisch W. Transportation noise and cardiovascular risk: Updated review and synthesis of epidemiological studies indicate that the evidence has increased. Noise & Health 2006; 8(30):1-29. World Health Organization. Burden of disease from environmental noise: Quantification of healthy life years lost in Europe. 2011.; and Moudon AV. Real noise from the urban environment: How ambient community noise affects health and what can be done about it. 2009. American Journal of Preventive Medicine 37(2):167-171; Branco, NAA Castelo, & Alves-Pereira. 2004. Vibroacoustic disease. Noise and Health, 6(23), 3-20). Available at: <http://www.noiseandhealth.org/article.asp?issn=1463-1741;year=2004;volume=6;issue=23;spage=3;epage=20;aulast=Castelo.>; Luckett, B., Buppert, G., & Margolis, J. M. (2015, April 28). SELC ACP Comment, FERC DOCKET NO.: PF15-6-000,20150428-5504(30537222).

Southern Environmental Law Center; Appalachian Mountain Advocates; Center for Biological Diversity

²⁷⁶ Madison County Department of Health. 2014. Comments to the Federal Energy Regulatory Committee Concerning Docket No. CP14-497-000, Dominion Transmission Inc. Madison County, New York.

The EA states that the compressor stations will be required to average about 50db during operation.²⁷⁷ Yet the background noise for a quiet rural area is 30db, described as 1/16 as loud as 70 db. Further, in the event of a blowdown, the noise will create loud, sporadic interruptions in the communities.²⁷⁸ This will be especially troubling for residential and agricultural areas that will now have to deal with the constant hum and sporadic bursts of loud air. For the EA, FERC only assessed noise levels as compared to regulations established by the agency and local ordinances.²⁷⁹ They did not consider the public nuisance and health effects result from the noise as well. This gap in analysis miscalculates the actual repercussions of BAVs' and compressor stations' effects on the environment through both noise pollution and resulting health risks.

Further, FERC has allowed Adelphia to cite a compressor station abutting residential homes and in a location that actually runs contrary to FERC's published Policy Guidelines, *An Interstate Natural Gas Facility on My Land? What Do I need to Know?*. FERC does not provide an explanation for the exception, nor has Adelphia expressed any need for this specific location. Instead placing the burden of moving the location on the local community without thought to consequences.

As identified here and explained in the sections above, the EA fails to identify significant impacts on landowners and the surrounding community near the compressor stations and blowdowns. Impacts such as the Project's public health analysis, risks to local communities, safety risks, economic impacts, and noise pollution are not minor and create short and long term burdens on the communities where these facilities are cited. Absent a comprehensive assessment of adverse impacts to landowners and surrounding communities that NEPA requires, the Commission is not in a position to draw a conclusion as to whether the Projects' potential public benefits outweigh its potential adverse effects.

The EA Needs to Account for the Added Emissions from Adelphia's Request to Increase Capacity

Finally, there is a portion of data missing from the air and noise analysis conducted in the EA. Adelphia submitted an amended application On September 7, 2018, asking to be allowed to increase capacity on the projects Zone North A from 175,000 dekatherms per day (Dth/d) to 250,000 Dth/d.²⁸⁰ In the request, Adelphia– and by inaction FERC – felt that there was no need to conduct additional environmental assessments as an increase in transmission capacity would only affect the rate structure for the project.²⁸¹ Delaware Riverkeeper Network, along with other citizens, specifically identified this flaw in its comments on the Amended Application and asked

²⁷⁷ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 133.

²⁷⁸ Adelphia Gateway, LLC, Adelphia Gateway Project Appendix 9D, FERC Docket No. CP18-46.

²⁷⁹ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 133.

²⁸⁰ Adelphia Gateway LLC, Notice of Amended Application, September 7, 2018, Docket No. CP18-46-001

²⁸¹ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 127.

that this increase be assessed for environmental impacts.²⁸² These comments clearly went ignored, as FERC has allowed Adelphia to not update its emission studies.²⁸³ This, even though, FERC has admitted that this change has likely caused an increase in emissions in the EA, writing that “the greater capacity could result in higher vented emissions during emergency and planned releases at MLVs and BAVs. However, these releases would be infrequent and are not expected to significantly degrade local air quality.”²⁸⁴ There is no rational reasoning to dismiss the environmental impacts of an increase of 75,000 Dth/d especially when the agency and Adelphia had nearly four months to conduct such a study. This is a significant increase that needs to be accounted for in order to ensure a proper environmental analysis of the impact of this Project.

The EA Fails to Properly Assess the Projects Potential Impacts to Endangered Species

Part of the NEPA environmental review process must examine how the Project would affect endangered species including impacts on habitats, vegetation, reproduction, water quality and other ecological impacts such as increased sedimentation of waterways, increased water temperatures, increased soil temperatures, multiple disturbances over time, mortality due to increased traffic, and impacts to groundwater recharge.

Species monitoring is an extensive process and the timeframe for conducting these studies must not be cut short simply to satisfy the applicant’s desired in-service date. More time may be needed to study the true impacts to these threatened, rare, and endangered species if this Project moves forward. The NEPA document must carefully assess whether this Project can proceed without disrupting this habitat or resulting in the taking of any federal or state protected species. Furthermore, FERC should require AGP to mitigate for the loss of habitat. FERC must ensure full compliance with the Endangered Species Act. The EA should clarify that any disturbed areas that will result in compensation, will involve resources that have substantially the same values and functions as those impacted.

The ROW forest buffer, compressor station site, access roads, construction areas, staging areas, areas of aperture placement and operation, and buffers must be examined for species and habitat. The effects of increased forest edge and habitat degradation due to the impacts of construction and permanent impairment of resources on these species must be analyzed as well. The ramifications of noise, light, air and heat impacts from operation of the pipeline and associated apertures such as compressor stations must be fully considered.

The EA Fails to Adequately Assess the Projects Impact on the Bog Turtle

Phase 1 bog turtle surveys at wetlands within the project area were performed by NV5 Technical Engineering & Consulting Solutions. The EA states that suitable bog turtle habitat was identified at the Chester Creek BAV site and the Paoli Pike BAV site. The EA concludes that,

²⁸² Comment Regarding Adelphia Gateway Pipeline Amended Application, Delaware Riverkeeper Network, September 28, 2018.

²⁸³ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 127.

²⁸⁴ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 127.

“While we are assuming presence of bog turtles at these two BAV sites, and active construction could result in a take of bog turtles, we have determined that with the employment of a USFWS Recognized Qualified Bog Turtle Surveyor during construction and the limited amount of habitat that would be disturbed, construction and operation of the Project *is not likely to adversely affect* the bog turtle.”

However, these recommendations are inconsistent with the bog turtle survey reports from NV5, the bog turtle consultant hired by Adelphia. For the Chester Creek BAV, NV5 recommends that,

“...if possible, work should be completed between November 1 and April 14 (weather dependent), which is outside of the bog turtle’s active season.”

This seasonal timing restriction is not mentioned in the EA. Furthermore, the Chester Creek surveys were incomplete due to a lack of permission to access some of the wetlands. The bog turtle survey report states that,

“NV5 did not have permission to survey the area adjacent to the access road and therefore conducted visual surveys only of this area from the access road itself...NV5 could not determine definitively if suitable bog turtle habitat exists in the area along the access road area due to lack of survey permission.”

Access was also not granted to all wetlands at the Quakertown Metering Station Site. In addition, the Paoli Pike BAV site is classified as an EV wetland because of its suitable bog turtle habitat. The majority of the Paoli Pike BAV workspace is located within the Action Area of potential bog turtle habitat. The Paoli Pike BAV and access road (AR-14.46-01) would temporarily affect 0.06 acre of suitable bog turtle habitat during construction, of which, 0.01 acre of emergent wetland habitat would be permanently lost within the footprint of the Paoli Pike BAV. While a 0.01 acre loss of habitat sounds like a small number, the existing suitable habitat itself is only about an acre in size. In addition, the habitat is already fragmented by Paoli Pike to the south and a residential neighborhood to the west.

If a bog turtle population does exist at this site, it is likely to be small and highly stressed. Therefore, any additional loss of habitat, no matter how small, could be detrimental to its continued existence. While assuming presence and utilizing exclusion fencing and a USFWS Recognized Qualified Bog Turtle Surveyor on site may assist with mitigating impacts to bog turtles *during* construction, it does nothing to address the permanent habitat loss that would exist *after* construction. Therefore, a Phase 2 presence/absence survey should be conducted to determine whether bog turtles are in fact present at this site. Without knowing if bog turtles are present or if they are utilizing the habitat that would be permanently lost, it is impossible for FERC and Adelphia to know that the project is “*not likely to adversely affect the bog turtle.*”

The Environmental Analysis Failed to Adequately Consider Impacts to Water Resources and Wetlands

The entirety of the proposed Project falls within the Delaware River watershed with construction occurring in close proximity to streams, waterbodies, and wetlands, and involves stream crossings, including the open-cut crossing of Stoney Creek. The project route crosses several contaminated sites including two RCRA Corrective Action sites and a Superfund site along the Tilghman Lateral, which will be crossed using Horizontal Directional Drilling (“HDD”) and could lead to release of contaminants.²⁸⁵ FERC’s conclusions that these impacts will not be significant are based off of assumptions of compliance and not facts. Therefore FERC’s Plans and Procedures effectiveness at preserving and protecting the environment are not evaluated in the EA and not available for public review or, even, the Commission members themselves. These impacts need to be properly evaluated and considered in order to understand the full implications of this project and, considering the substantial impact this project will have, should be assessed through an Environmental Impact Statement (EIS).

The Potential For Contamination Of Water Resources Must Be Properly Assessed.

In the scoping comment DRN emphasized that “The EIS needs to carefully and accurately consider not only the actual number and size of streams and wetlands crossed, but also the acreage, vegetation, and slope of forested and wild open space affected by the project and the associated damage to water quality in order to fully and fairly consider the project impact on water resources.” Yet, Adelphia has not done this and FERC had not demanded such considerations.

By way of example, the following is a list of items in the Waterbodies and Wetlands portions of the EA that are incomplete and need further information in order to be properly analyzed:

1. “Adelphia is proposing to access the Perkiomen Creek BAV via a portion of the existing mainlines right-of-way that is characterized as PEM wetlands.” Yet Adelphia “has not proposed or identified potential mitigation measures to mitigate impacts from operational use of the access road.” Nor have they “requested a site specific modification to section VI.B.1.d.”²⁸⁶
2. “[W]etland delineation for a portion of the Tilghman Lateral has not been completed.”²⁸⁷
3. Adelphia has proposed a diversion ditch to manage stormwater flow from the Transco Meter Station into a nearby wetland, which is not in compliance with section VI.B.3.b of FERC’s procedures.²⁸⁸
4. Adelphia has not submitted an IRCP that addresses “mitigation measures in the event of an inadvertent release in an area of existing contamination” for the Horizontal Directional Drilling that will occur at the Tilghman Lateral.²⁸⁹

²⁸⁵ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 45.

²⁸⁶ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 66. Section VI.B.1.d “restricts new access roads or use of existing access roads through wetlands if it would result in impacts on the wetland.”

²⁸⁷ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 63.

²⁸⁸ *Id.* at 61.

²⁸⁹ *Id.* at 50.

5. Agency consultations regarding the construction in the Marcus Hook area are still ongoing and “sampling results from contaminated site investigations activities have not been provided.”²⁹⁰

Additionally, both Delaware Riverkeeper Network and Clean Air Council in their scoping comments highlighted the high likelihood of erosion and sedimentation from construction activities for blowdown assemblies within close, upstream proximities of Ridley Creek and Chester Creek. These impacts are particularly important in light of the damaging repeated inadvertent returns from the construction of Mariner East 2 to Chester Creek and the aesthetic and cultural value of Ridley Creek, “the centerpiece of Ridley Creek State Park, a gem of preserved parkland amid Philadelphia’s suburban sprawl.”²⁹¹ The EA acknowledged these comments, yet did not conduct any additional or even preliminary assessment of potential harms that could occur, instead dismissing this public concern by concluding that “[c]onstruction of these facility would not directly affect waterbodies.”²⁹²

FERC must conduct a more in-depth analysis of the cumulative impacts of Chester Creek Gate Blowdown and nearby actions on the Chester Creek watershed; and must require Adelphia to evaluate the effect of the Paoli Pike Gate Blowdown construction on both the water quality of Ridley Creek and the aesthetics and recreational values of Ridley Creek State Park.²⁹³

Additionally, Adelphia proposes to cross Marcus Hook Creek using Horizontal Directional Drilling (“HDD”). HDD is the method currently in use in the construction of the controversial Sunoco Mariner East 2 pipelines. While HDD can be a better way to place a pipeline in environmentally sensitive areas, if done carelessly or in unsuitable geological locations, it can

²⁹⁰ *Id.* at 49-50.

²⁹¹ Clean Air Council's Initial Comments on Comments on the Adelphia Gateway Pipeline Project, Clean Air Council, February 13, 2018, Docket No. CP18-46.

²⁹² Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 60.

²⁹³ See Pennsylvania Department of Environmental Protection (PADEP), *Sunoco Mariner East II – Pipeline Construction Inadvertent Returns – Waters of the Commonwealth*, rev'd January 26, available at <http://ehb.courtapps.com/efile/documentViewer.php?documentID=41078> (charting inadvertent returns from Mariner East 2); compilation of Mariner East 2 inadvertent return reports produced from PADEP, available at <http://ehb.courtapps.com/efile/documentViewer.php?documentID=41079> and <http://ehb.courtapps.com/efile/documentViewer.php?documentID=41080>; see, e.g., Affidavit of David A. Mano (detailing well water contamination), available at <http://ehb.courtapps.com/efile/documentViewer.php?documentID=41088>; Affidavit of David Anspach (same), available at <http://ehb.courtapps.com/efile/documentViewer.php?documentID=41101>.

²⁹ See Pennsylvania Department of Environmental Protection (PADEP), *Sunoco Mariner East II – Pipeline Construction Inadvertent Returns – Waters of the Commonwealth*, revised January 26, 2018, available at <http://ehb.courtapps.com/efile/documentViewer.php?documentID=41078> (charting inadvertent returns from Mariner East 2); PADEP Notice of Violation to Sunoco Pipeline L.P., November 3, 2017, attached as Exhibit C hereto (regarding HDD crossing Chester Creek, “DEP is concerned that the above-cited Inadvertent Return (‘IR’) is the sixth known IR from this Drill”).

³⁰ See Pennsylvania Department of Conservation and Natural Resources, *Ridley Creek State Park*, available at <http://www.dcnr.pa.gov/StateParks/FindAPark/RidleyCreekStatePark/Pages/default.aspx> (last visited Feb. 12, 2018); see also Visit Philadelphia, *Ridley Creek State Park: More than 2,600 acres of gently rolling woodlands and meadows*, available at <http://www.visitphilly.com/outdoor-activities/philadelphia/ridley-creekstate-park/> (last visited Feb. 12, 2018).

result in damaging aquifers and drinking water resources. As Clean Air Council cautioned in their preliminary comments on the Project:

As a cautionary example, the use of HDD by Sunoco Pipeline L.P. for the Mariner East pipeline project has not been done properly. Sunoco's HDD has resulted in contaminating dozens of water wells across Pennsylvania and spilling drilling fluids in over 160 locations.²⁹⁴

The EA fails to address the threats to the water table and local water supply. The installation of the Project will involve drilling and digging into the bedrock; the potential effects of this must be considered. Further, if any construction activities result in interception of the water table, dewatering activities would result in the localized drawdowns of water table elevation and could impact local wells. Construction activities may also result in contamination of groundwater by creating a direct flow of contaminants, including herbicides, into local aquifers. FERC in the EA has identified that "Marcus Hook Compressor Station (which would also be used as a wareyard) and two lateral and associated interconnects would be within the Delaware River Streamflow Zone/New Jersey Coastal Plains Aquifer sole source aquifer zone."²⁹⁵ This means that if this aquifer were to become contaminated, there would be no reasonably available alternative drinking water source for the local community. Yet, the EA did not consider the likelihood that the water source could be impacted. Additionally, there was no account of costs that could be borne by municipalities if the Project depleted the quality of the water supply or contaminated the groundwater to a point that water treatment facilities become necessary.

Rather than using scientific data and conclusions to presume that such incidents will not lead to any substantial environmental issues, the assessment makes a blanket conclusion that the public should not worry about water contamination at all as "there is low probability that pipeline operations would contaminate groundwater because methane is lighter than air. The methane would generally dissipate rapidly through the air in the event of a pipeline leak, thereby causing no impact on groundwater. Therefore project operation is not anticipated to impact groundwater quality."²⁹⁶

Finally, the proposed Project, as demonstrated by the installation of other pipeline projects in our region and nation, will create new pathways for water flow, thereby altering the hydrologic pattern of the watershed and adversely impacting (in both quantity, quality and seasonal timing) streams, wetlands and drinking water sources. The EA failed to account for these change and impacts and this must be remedied by creating an EIS and demanding Adelphia provide information needed to truly assure that the public and the environment will be safe during construction.

²⁹⁴ Clean Air Council's Initial Comments on Comments on the Adelphia Gateway Pipeline Project, Clean Air Council, February 13, 2018, Docket No. CP18-46.

²⁹⁵ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 53.

²⁹⁶ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 56.

The Environmental Assessment Failed to Account for the Effects the Project will Have on the Right of Way

A proper analysis needs to account for the repercussions of clearing vegetation from the right of way (“ROW”). Current practices call for the ROW to be clear of vegetative matter. Herbicides are frequently used to accomplish this task. Creating and maintaining the ROW could result in increased and repeated herbicide use on or near the federal, state, and county parklands and, as run-off capacity will be intensified in the ROW due to lack of vegetation and forest cover and due to increased soil compaction resulting from pipeline construction, there will be an increased level of herbicides discharging directly (or through stormwater systems) into tributary streams, wetlands and the downstream Delaware River. In addition, the removal of vegetation and increased soil compaction will create a direct route for stormwater runoff from neighboring lands which may be treated by other property owners with herbicides, pesticides, fertilizers, and/or other chemicals that could/would then be transported and discharged into nearby water bodies either directly or through stormwater collection systems.

Additionally, a proper analysis needs to account for the water quality impacts that will result from activities on the ROW. Beyond chemical contamination, water quality impacts will also result from an increase in suspended solids in the water due to erosion resulting from the increased volume of stormwater runoff that will result from removal of vegetation and increased soil compaction and from the removal of streamside vegetation, thus depriving streams of the natural armoring of vegetative root systems. Upon entering the stream ecosystem, this increase in suspended solids will result in a reduction of the streams’ water bearing capacity, in turn reducing oxygen availability and impacting aquatic plant and animal species, including habitat for fish reproduction and macroinvertebrate diversity. Each of these factors must be individually reviewed at all water crossings.

A proper analysis would also account for the resulting altered flows that would affect local wetlands and aquatic life. According to expert observation, pipeline trenches can divert groundwater and as a result “permanently alter the hydrologic cycle in the vicinity of the pipeline right-of-way. This alteration will decrease the water resources available to support wetland hydrology and stream base flow in the summer and fall dry season.”²⁹⁷ The compacted soils resulting from pipeline and facility construction increase rainfall runoff and reduce groundwater infiltration. This can cause further negative impacts on wetland hydrology and stream baseflow in the area of the pipeline and above ground facilities.²⁹⁸ “Increased runoff as a result of compacted soils, and increased drainage of shallow ground water” around a pipeline, due to previous and proposed construction practices, can increase “surface water flow and groundwater discharge in the wet winter and spring seasons and decrease summer and fall groundwater discharge which supports wetland hydrology and stream base flow.”²⁹⁹ The result of reduced groundwater discharge during the dry summer and fall months can decrease the size of supported wetlands. The result is too much or too little flow depending on the time of year. Another result

²⁹⁷ Affidavit of Peter M. Demicco, *DRN v. PA DEP and TGP NEUP*, 2013 Pa. Envir. LEXIS 6 (Pa. Env’tl. Hearing Bd. February 1, 2013)

²⁹⁸ *Id.*

²⁹⁹ *Id.*

of the altered flows can be to decrease stream baseflow that supports aquatic life and trout habitat in headwater streams in the dry summer and fall period.

Furthermore, increasing the runoff potential of soils due to compaction will negatively impact groundwater recharge areas surrounding the ROW. By removing the topsoil layer and associated forest litter and humus, runoff will decrease the soil porosity and moisture retention capacity. This will induce even greater levels of runoff and will damage the groundwater recharge capabilities of the ecosystem. The decreased ability to absorb water results in runoff and sedimentation that severely decreases water quality.

Previous FERC jurisdictional projects have resulted in significant soil compaction issues. In the scoping comment, DRN asked that FERC identify ways in which previous soil compaction problems can be avoided or properly remediated and emphasized that “A restatement of previous practices would be unacceptable.” Yet, the EA relies on Adelphia’s adherence to FERC’s *Upland Erosion Control, Revegetation, and Maintenance Plan* and FERC’s *Wetland and Waterbody Construction and Mitigation Procedures*, which provide baseline guidance. These Plans and Procedures have failed in the past and there is little assurance that reliance on them will be successful in the future.

Additionally in the scoping comment, DRN asked that the NEPA assessment document include a survey of the established benthic community in potentially impacted streams. DRN further requested that this survey include the composition, quantity, and diversity of the community using standardized sampling protocols consistent with the state’s assessments. Potential water quality impacts must also be evaluated, including further discussion of construction related impacts such as the possibility of fuel spills, compaction from parking and staging equipment and contamination of runoff and further erosion and sedimentation. And that any potential channel relocations that occur due to construction must be studied as an impact. Installing the Project will require stream diversions that will also impact wetland areas. While FERC has listed precautions Adelphia will take during construction and restoration, there was no evaluations done to the extent suggested.³⁰⁰ Additionally FERC acknowledged that “dry-ditch crossing methods would reduce turbidity and downstream loss of habitat, and/or the alteration of water quality (including temperature) could increase the stress rates, injury, and or mortality experienced by fish.”³⁰¹ Yet there is nothing more than just an identification of these issues.

While the EA acknowledges the issues that construction activates can have on the ROW and soil resources, there is not identification of what Adelphia will do to minimize this. Rather the EA concludes that as long as Adelphia will stick to established Plans and Procedures, there is no need to identify, quantify, and acknowledge the known environmental consequences. To make these assumptions without data or facts to back up such conclusory statements is irrational and arbitrary decisionmaking by FERC.

³⁰⁰ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 73.

³⁰¹ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 73.

Adverse Impacts to Wetlands To Be Crossed Or Adjacent To Construction Or Ground Work Need Greater Due Diligence, Assessment, And Acknowledgement Than What Was Provided In The Environmental Assessment

Despite their tremendous value, more than half of America's original wetlands have been lost to development, agriculture, mining, hydrology alterations and pollution.³⁰² And, each year we continue to decimate nearly 500,000 additional acres of wetlands.³⁰³

Loss of wetlands can have repercussions felt through the environmental ecosystem. Such losses increase soil erosion, damage water quality and allow increased sedimentation and polluted runoff into streams.³⁰⁴ Increased stormwater flows can upset the "dynamic equilibrium" that exists between wetlands and the surrounding watershed. Changes in volume or quality of runoff to wetlands can affect the biological community and ecological functions of a wetland.

Generally, wetlands work as an integrated system with other wetlands in a watershed. When assessing the value, or lost value, of wetlands, it is important to recognize this critical interrelationship.³⁰⁵ Below are just some of the benefits of wetlands that will be disrupted by this Project that should be accounted for when FERC conducts its review.

- Wetlands provide productive and diverse ecosystems for both aquatic and terrestrial wildlife³⁰⁶ and produce biomass for the base of the food chain.³⁰⁷
- Wetlands of all sizes, both large and small, have been demonstrated to provide important habitat for a wide variety of plants and animals, many of which could not survive without them.³⁰⁸ Forty-two percent of the "total U.S. threatened and endangered species depend upon wetlands for survival."³⁰⁹
- Wetlands provide a diverse and complex set of ecosystems -- niches that function as an irreplaceable ecological unit.³¹⁰
- Wetlands' dense vegetation act as a natural pollution filter thereby providing irreplaceable water quality benefits filtering out sediment, nutrients and other

³⁰² "America's Wetlands, Our Vital Link Between Land and Water", US EPA Office of Wetlands Protection, Office of Water, Doc. No. OPA-87-016, February 1988, p. 6.

³⁰³ Michael J. Caduto, Pond and Brook, A Guide to Nature in Freshwater Environments, University Press of New England, 1985

³⁰⁴ Clean Water Network and NRDC, "Wetlands for Clean Water, How Wetlands Protect Rivers, Lakes and Coastal Waters from Pollution", April 1997.

³⁰⁵ *Ibid.* 15, 4.

³⁰⁶ National Wildlife Federation Fact Sheet -- nwf.org/wetlands/facts/benefits.html

³⁰⁷ Michael J. Caduto, Pond and Brook, A Guide to Nature in Freshwater Environments, University Press of New England, 1985, p. 29

³⁰⁸ National Wildlife Federation, "Status Report of Our Nation's Wetlands", October 1987.

³⁰⁹ DNREC and Brandywine Conservancy, Conservation Design for Stormwater Management: A Design Approach to Reduce Stormwater Impacts from Land Development and Achieve Multiple Objectives Related to Land Use, September, 1997, p. 2-11.

³¹⁰ *Ibid.* 21

pollutants,³¹¹ as well as pesticides and heavy metals and can reduce water-borne bacterial contamination through microbial action.³¹²

- Wetlands provide flood control, erosion control and groundwater recharge.
- Wetlands are part of nature's sponge, holding water, feeding plants, and slowly recharging aquifers.
- Wetlands effectively absorb and hold floodwaters thereby protecting adjacent and downstream properties from flood damage.³¹³ Depending on the soil type, wetlands can contain 1 to 1.5 million gallons of water per acre, thereby alleviating flooding by holding excess water like a sponge.³¹⁴ At the same time, wetland vegetation helps to slow the speed of floodwaters - this in combination with the storage capabilities of wetlands can both lower flood heights and reduce the erosive potential of floodwaters.³¹⁵
- Wetlands can also desynchronize flood peak flows and velocities during small runoff events.³¹⁶

In its scoping comment, DRN asked that the analysis also consider wetland delineations and an assessment of values and functions of wetlands impacted by Adelphia directly or indirectly are needed, which would include an examination of hydrology, vegetation, and soils. As well as an assessment of function and value considering all ecosystem services being provided, such as those listed above, to ensure a proper assessment of impacted wetlands.³¹⁷

The assessment should have also included changes to wetlands directly including, but not limited to changes in water levels, flow characteristics, and circulation patterns, the impacts of temporary and permanent alteration of vegetation in and around wetlands, altered temperatures, changed light, altered humidity, altered groundwater or surface water flows, and/or altered flooding frequencies due to the Project. This information is significant as changes in substrate conditions may affect the ability of the wetland to sustain vegetation and wildlife populations including sensitive amphibian populations. For example, repeated maintenance and lagging restoration practices that span over multiple seasons/years could impact important amphibian and fish migrations and critical reproduction periods if biological windows are not considered.

Five wetlands would be affected by construction of the proposed Project.³¹⁸ The impacts would be greatest during and immediately following construction. The EA has put forth the claim that "majority of these effects would be short-term in nature and would cease when, or shortly after, the wetlands are restored and revegetated. That "[f]ollowing revegetation, the wetland would

³¹¹ Clean Water Network and NRDC, *"Wetlands for Clean Water, How Wetlands Protect Rivers, Lakes and Coastal Waters from Pollution"*, April 1997.

³¹² *Id.*

³¹³ *Ibid.* 15, 4.

³¹⁴ Bob Schildgen, "Unnatural Disasters", *Sierra*, June 1999.

³¹⁵ *Ibid.* 15, 4.

³¹⁶ *Ibid.* 22.

³¹⁷ Schmid and Company Inc. *The effects of converting forest or scrub wetlands to herbaceous wetlands in Pennsylvania*. Prepared for the Delaware Riverkeeper Network, Bristol, Pennsylvania, 2014.

³¹⁸ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 63.

transition back into a community similar to that of the pre-construction state.”³¹⁹ Yet, previous pipeline projects and science seems to indicate that such conclusions are false.

One exceptional value wetland would be impacted by construction and operation of the Paoli Pike BAV resulting in the permanent loss of 0.01 acres, this wetland is also a recognized suitable habitat for the bog turtle.³²⁰ FERC has failed to assess what the loss of this wetland will do to the surrounding ecosystems and what will result as a repercussion to this intrusion.³²¹ Further, as with previous the section, in lieu of an actual analysis, the EA has presumed the Procedures and Plans will be adequate.

Adelphia has also requested modifications to FERC’s procedures to allow work within 50 feet of wetlands in Chester Creek, Paoli Pike, Schuylkill River, Perkiomen Creek, East Perkiomen Creek BAVs and at areas along the Tilghman Lateral and the Quakertown Compressor and Meter Stations. Adelphia claims that such modifications are needed due to the footprint of the existing pipeline and facilities. FERC has decided to allow such intrusions provided that Adelphia install double row silt fences to prevent sedimentation and would not conduct refueling operations within 100 feet of these wetlands among other things. While Adelphia has provided ways to minimize impacts, FERC fails to adequately identify actual impacts and assess threats to endangered species whose habitat will be damaged as a consequence of this Project.³²² Additionally, they have failed to assess the impacts this construct will have even if Adelphia follows the procedures outlines by FERC.

Additionally, some construction is still not in compliance with FERC procedures, yet the EA concluded there was a finding of no significant impact. “Adelphia proposed a diversion ditch to manage storm water flow from the Transco Meter Station into a nearby wetland.” Directing stormwater flow into a wetland is not in compliance with section VI.B.3.b of FERC’s procedures.³²³ FERC has concluded that “Adelphia did not provide sufficient justification for this,” yet Adelphia only must submit a plan at some future point. If there is no plan, and the activity is one that FERC has identified is not allowed to occur, there is no reason why Adelphia should be allowed to submit it later. NEPA is supposed to allow the public access to the environmental information. This is significant information that would violate procedures if followed, therefore FERC should have received this plan prior to coming to the conclusion that the project will not have a significant impact on surface waters.

Instead the assessment identifies construction and mitigation measures that will be taken to reduce the effects. Glazing over the potential detrimental effects by concluding that “[t]he majority of these effects would be short-term in nature and would cease when, or shortly after, the wetlands are restored and revegetated.”³²⁴ FERC needs to be sure that once studies have been done and a plan is established, Adelphia will abide by it. It has been observed and documented

³¹⁹ *Id.* 63.

³²⁰ *Id.* 65.

³²¹ *Id.* 65.

³²² *Id.* 67.

³²³ *Id.* 61.

³²⁴ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 63.

by DRN and Conservation District staff around prior pipeline projects that once the pipeline is moving gas, the final restoration phases by the operator are often not a priority, leading to unnecessary additional harm to sensitive species, due to improper timing or unnecessary delays. Increased runoff as addressed above may introduce contaminants or more sedimentation to the ecosystem. Increased nutrient loading could produce algal blooms and reduce available oxygen in the water. Any impacts to the physical characteristics of wetlands resulting from the construction and operation of the AGP and any associated appurtenances of land, water, air or light transformations must be included in any analysis.

Adverse Impacts to Floodplains, Including Their Permanent Alteration Was Not Given Proper Consideration

Floodplains vegetated with trees and shrubs can be four times as effective at retarding flood flows as grassy areas.³²⁵ In addition, naturally vegetated floodplains provide breeding and feeding grounds for both fish and wildlife, they "create and enhance waterfowl habitat", and they "protect habitat for rare and endangered species."³²⁶ Naturally vegetated floodplains are generally layered with leaf and organic matter which result in organic soils with high porosity and a greater capacity for holding water.³²⁷ The floodplain, in this natural state, is a riparian ecosystem that needs the overbank flows that the natural watershed's hydrology provides in order to remain healthy and in balance.³²⁸ According to the U.S. Environmental Protection Agency, the number one source of pollution to our nation's waterways is from nonpoint sources, including pollution from floodwaters, washed from the land in stormwater runoff.³²⁹ About 40% of the nation's waterways are polluted as a result.³³⁰ Floodplains play a key role in reducing stormwater flows and containing floods, filtering out nonpoint source pollution, thereby reducing pollutant loading and protecting water quality.

The benefits of naturally vegetated and healthy floodplains include:

- Stores and slows floodwaters;
- Intercepts overland flows, capturing sediment;
- Stabilizes streambanks, preventing erosion;
- Protects wetlands and other critical habitats;
- Replenishes groundwater aquifer;
- Filters out and/or transforms pollution;
- Provides recreation and education;
- Trees and other riparian vegetation: provide wildlife habitat; process nutrients and other would-be pollutants; shade and cool waterways; provide food for wildlife and stream insects (detritus); provide beauty and refuge.

³²⁵ *Ibid* 22.

³²⁶ *Ibid* 22

³²⁷ *Ibid* 22

³²⁸ Poff, Allan, Bain, Karr, Prestergaard, Richter, Sparks, and Stromberg, "The Natural Flow Regime", *BioScience*, Vol. 47, No. 11.

³²⁹ Chester L. Arnold Jr., and C. James Gibbons, "Impervious Surface Coverage, the Emergence of a Key Environmental Indicator", *APA Journal*, Spring 1996, p. 245.

³³⁰ *Id.*

Not only are there numerous benefits from naturally vegetated floodplains, they provide protection for local communities as well. Unnatural flood levels and flood damage are experienced by communities living along the Delaware River and tributary streams. In addition, removal of vegetation along water systems removes the natural armoring that helps prevent accelerated erosion from unnaturally high flood flows. The ramifications, individually and cumulatively, of the multitude of proposed stream crossings for flooding, flood peaks, flood damages and erosion must be considered.

Finally, accelerated runoff produced along the ROW and steep slopes of above ground facility sites will result in more erosion and deposition within streams, increased transport and loading of contaminants, increase in flood peaks due to accelerated runoff (in turn reducing the amount of water entering the ground), decrease in groundwater recharge, blocked or diverted groundwater flow, soil compaction, and the removal of habitat and food sources for wildlife and aquatic life. These impacts can also produce a “ripple” effect by upsetting the balanced ecosystem of the landscape through construction activities.

The Delaware River's health and the health of its tributary streams are threatened by loss of its floodplain. Therefore, adverse impacts to beneficial floodplain values must be considered in the short-term, long-term, and cumulative impacts of these alterations.

For the project, portions of the Tilghman Lateral, the Paoli Pike and Schuylkill River BAVs and the permanent access roads to Cromby, Chester Creek, Paoli Pike and Schuylkill River BAVs will be within the Federal Emergency Management Agency 100-year floodplain.³³¹ Additionally, Adelphia plans to replace existing valves with BAVs which would result in minor ground disturbance or burying the components which FERC concludes means that “Project facilities would not discernibly alter the flood storage capacity of affected floodplains.”³³² The information and analysis fails to account for the harm and impacts that could occur as a direct result of the project.

The Destruction of Naturally Vegetated Buffers Along All Wetlands and Waterways Was Not Given Full Consideration

Healthy and vegetated streamside buffers serve our communities by:

³³¹ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 38.

³³² Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 38.

- Providing flood storage,³³³ reducing flood peaks,³³⁴ and slowing the velocity of floodwaters,³³⁵ and thereby reducing flooding and damaging flows in downstream and nearby communities;
- Protecting and enhancing water quality by preventing and filtering pollution³³⁶ and enhancing the ability of the neighboring stream to process pollutants,³³⁷ thereby protecting drinking water supplies, recreational uses of our waterways, commercial and recreational fisheries, ecotourism, and business operations that need clean water;
- Recharging aquifers that supply drinking water and base flow to streams;³³⁸
- Providing and enhancing birding, fishing, hiking, and other recreational opportunities that are so critical to our region's aesthetic beauty and community quality of life;
- Providing and enhancing the quantity and quality of habitat³³⁹ to aquatic life, animals, birds and plants that are important to our watershed ecologically, economically, recreationally and psychologically;
- Providing organic matter critical for supporting aquatic organisms;³⁴⁰
- Providing shading and thereby providing water temperature control³⁴¹ important for the quality of the stream including the health of the habitats and aquatic organisms present;
- Reducing flood damages by ensuring structure-free zones devoid of structures to be harmed;
- Protecting public and private lands from erosion and helping streambanks maintain their integrity in order to prevent/minimize the costs and harms of sedimentation and restoration;³⁴²
- Increasing the market value and marketability of nearby homes and communities;³⁴³
- Increasing the opportunity for and success of ecotourism businesses dependent on the aesthetic beauty of the river and its ecological health; and

³³³ Tourbier, J. Toby "Open Space Through Stormwater Management, Helping to Structure Growth on the Urban Fringe".

³³⁴ Army Corps of Engineers WRAP, "Technical and Scientific Considerations for Upland and Riparian Buffers Strips in the Section 404 Permit Process", ERDC-WRAP-01-6, May 2002, citing DeBano and Schmidt 1990; O'Laughlin and Belt 1995".

³³⁵ *Id.*

³³⁶ NJAC 7:8 NJDEP Agency Proposal Document at NJAC 7:8-5.5(h), USEPA, "Pesticide Tolerance Reassessment and Re-registration, Terbufos IRED Facts", EPA 738-F-01-015, October 2001; *Id.*

³³⁷ Sweeney & Blaine, "Resurrecting the In-Stream Side of Riparian Forests", Journal of Contemporary Water Research & Education, Issue 136, June 2007.

³³⁸ Castelle, Johnson, Conolly, "Wetland and Stream Buffer Size Requirements – A Review", J. Environ. Qual. 23:878-882 (1994); NJAC 7:8 NJDEP Agency Proposal Document at NJAC 7:8-5.5(h), page 77; *Ibid.* 38

³³⁹ *Ibid.* 38, citing DeBano and Schmidt 1990; O'Laughlin and Belt 1995"

³⁴⁰ *Ibid.* 38, citing DeBano and Schmidt 1990; O'Laughlin and Belt 1995".

³⁴¹ *Ibid.* 38, citing DeBano and Schmidt 1990; O'Laughlin and Belt 1995".

³⁴² Water, Science, and Technology Board, Board of Environmental Studies and Technology, "Riparian Areas: Functions and Strategies for Management", 2002, citing Swanson, et al; Center for Watershed Protection, "Impacts of Impervious Cover on Aquatic Systems", Watershed Protection Research Monograph No. 1, March 2003; *Ibid.* 38

³⁴³ Center for Watershed Protection, Better Site Design: A Handbook for Changing Development Rules in Your Community, August, 1998, Pg. 134, Lutzenhiser, M. and N.R. Netusil. "The Effect of Open Spaces on a Home's Sale Price." Contemporary Economic Policy 19.3 (2001): 291-298.

- Maintaining the unique ecological and historical qualities of our River and region that are an international draw.³⁴⁴

Additionally, vegetated buffers and floodplain areas are an important food source for aquatic microorganisms, invertebrates, and fish.³⁴⁵ In small headwater streams, as much as 60 to 90 percent of the organic food base comes from surrounding forests.³⁴⁶ The life cycles of the aquatic invertebrates, and in turn the fish, are closely tied to these organic inputs from the forest.³⁴⁷ In the larger waterbodies, the vegetation provides refuge as well as havens where the smaller fish can find food.³⁴⁸ The roots, fallen logs, pools, overhanging branches, and other habitats that vegetation along the banks creates provides important habitat for fish young to old.³⁴⁹

Multiple studies have documented that waterways surrounded by mature woodlands provide a greater variety of important aquatic habitat, support a greater diversity of fish species, and support fish in healthier physical condition than waterways where the forest cover has been removed.³⁵⁰ The overhead cover provided by forested streamside lands provides shading and temperature control – this directly affects the amount of oxygen the water can support.³⁵¹ Increased temperatures have been found to alter the release rate of nutrients from suspended sediments.³⁵² For example, just small increases in temperature can increase substantially the amount of phosphorus released into water.³⁵³

Shading from buffers reduces overall temperatures but also reduces the daily and seasonal fluctuations in stream temperature, which is important for healthy habitat. Studies have concluded that removal of streamside vegetation can result in a stream temperature increase of 6 to 9 degrees Centigrade.³⁵⁴ Such an increase can cause heavy growth of filamentous algae and encourage³⁵⁵ growth of parasitic bacteria some species simply cannot survive in warmer water so even seemingly slight temperature changes (the 6 to 9 degree range) can shift the structure of the aquatic community.³⁵⁶

Buffers are beneficial also for protecting waterways and communities from other pollutants such as herbicides and pesticides. Removal of forests and vegetation results in polluted runoff, which

³⁴⁴ For example, "Pennypack Park in Philadelphia is credited with a 38% increase in the value of a nearby property." Center for Watershed Protection, Better Site Design: A Handbook for Changing Development Rules in Your Community, August, 1998, p. 134

³⁴⁵ J.C. Klapproth & J.E. Johnson, Virginia Cooperative Extension, Understanding the Science Behind Riparian Forest Buffers: Effects on Plant and Animal Communities, October 2000, Publication number 420-152.

³⁴⁶ *Id.*

³⁴⁷ *Id.*

³⁴⁸ *Id.*

³⁴⁹ *Id.*

³⁵⁰ *Id.*

³⁵¹ *Id.*

³⁵² *Id.*

³⁵³ *Id.*

³⁵⁴ Leavitt, J. 1998. The Functions of Riparian Buffers in Urban Watersheds", page 4, Master of Science Degree Report, University of Washington, Seattle, WA.

³⁵⁵ *Ibid.* 49

³⁵⁶ *Ibid.* 49

because of the lack of a vegetated buffer, will enter directly the neighboring stream or river. This kind of polluted runoff includes sediment, nutrients, pesticides, animal waste, and more. Too many nutrients in a waterbody, including both phosphorus and nitrogen, encourages an overgrowth of algae and other aquatic plants. Sediment can block the penetration of light in water, affecting the growth and reproduction of aquatic plants.³⁵⁷ When sediment settles it can cover stream bottom habitats interfering with the feeding or reproduction of fish and aquatic insects dependent upon them.³⁵⁸ These repercussions will not just be felt where the Project is occurring but through the entire water body. When reaches of a stream with natural function are intersected with dysfunctional reaches there is a net loss in the ability of the stream to provide their water cleaning and protection benefits including processing of nutrients, pesticides, and organic matter.³⁵⁹ Vegetated buffers prevent erosion of stream banks and adjacent lands – including both public lands and private lands. Root systems of woody shrubs and trees do a better job of anchoring these soils — this is a function that turf grass, or low growing vegetation as is often found at pipeline stream crossings, simply cannot do effectively.³⁶⁰ Research has concluded that forested buffer systems, as opposed to grassed systems or other herbaceous plants, provide an enhanced ability to sequester contaminants instream and to degrade them; this is primarily due to increased biological activity. Increased nitrogen attenuation and pesticide degradation are particularly associated with forested stream buffers.³⁶¹

In its scoping comment, DRN identified that the removal of healthy forested buffers along the stream crossings proposed by Adelphia must be assessed – individually and cumulatively. In addition, when the stream crossing includes a cut through a pre-existing mature and healthy forest the degradation of the forest on either side of the Right of Way that results from this forest fragmentation needs also to be considered, both in terms of stream impacts and forest impacts. Yet, the EA failed to assess these and other impacts on waters along the proposed Pipeline route.

In addressing vegetation along the routes, the EA concluded that because “[a]bout 60.6 percent (28.3 acres) of soils within the Project area” that “were determined to have a low revegetation potential.”³⁶² And “[r]evegetating areas affected by construction of the Project may be more difficult in areas with low revegetation potential.” This as well as the fact that 24.3 areas are classified as “urban or made land and 4.0 areas are in areas of previous disturbance where

³⁵⁷ David Welsch, Riparian Forest Buffers, US Dept of Agriculture Forest Service, NA-PR-07-91, Available at: <http://www.na.fs.fed.us/spfo/pubs/n%5Fresource/riparianforests/>

³⁵⁸ David Welsch, Riparian Forest Buffers, US Dept of Agriculture Forest Service, NA-PR-07-91, Available at: <http://www.na.fs.fed.us/spfo/pubs/n%5Fresource/riparianforests/>

³⁵⁹ B.W. Sweeney, Bott, Jackson, Kaplan, Newbold, Standley, Hession and Horwitz, Riparian deforestation, stream narrowing, and loss of stream ecosystem services, Proceedings of the National Academy of Sciences of the United States of America, Vol 101, No. 39, Sept 28, 2004.

³⁶⁰ National Research Council. 2002. Riparian Areas: Functions and Strategies for Management. Water, Science, and Technology Board, Board of Environmental Studies and Technology, National Academy Press, Washington, DC. Also see Stroud Water Research Center, Protecting Headwaters: The Scientific Basis for Safeguarding Stream and River Ecosystems, 2008.

³⁶¹ B.W. Sweeney, Bott, Jackson, Kaplan, Newbold, Standley, Hession and Horwitz, Riparian deforestation, stream narrowing, and loss of stream ecosystem services, Proceedings of the National Academy of Sciences of the United States of America, Vol 101, No. 39, Sept 28, 2004.

³⁶² Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 44.

vegetation has been removed and the areas are covered with gravel.”³⁶³ Means that “[r]evegetation is not a concern.”³⁶⁴

Construction At The RCRA And Superfund Sites Poses An Unknown Threat To Groundwater And Local Water Bodies That The Environmental Assessment Failed To Identify

The EA first states that the project route crosses three known contaminated sites only along the Tilghman Lateral: two RCRA and one Superfund site all which are still contaminated and undergoing clean up and remediation activities.³⁶⁵ Yet, as you go through the section, two more federal cleanup sites are identified near the Mainline Valve 2 site, as well as seven sites under PADEP’s Hazardous Sites Cleanup Activities, Storage Tank Cleanup Activities, and Land Recycling Cleanup sites, all within 0.25 miles of the Tilghman Lateral.³⁶⁶ Below is a breakdown of the sites and issues in the current assessment.

The Congoleum Corporation Plant 3 is a 51 acre site about 10 feet from the Tilghman Lateral. In 2006 it completed the requirements for RCRA corrective action. Currently, institutional controls are in place restricting land and groundwater usage as heavy metals in the soil and groundwater exceed acceptable residential standards.³⁶⁷ Based on the site history and Adelphia’s proposed plans at the site, “USEPA recommended that Adelphia develop a sampling plan” that includes the collection of numerous soil samples for analysis of heavy metals and volatile and semi-volatile organic compounds. Additionally, it was recommended that Adelphia research groundwater data from nearby superfund sites to assess other analytes that should be tested. This data has not been collected. FERC must be sure that this data is collected and the presumption in the EA that such construction will not threaten the groundwater and environmental health in the area is true.

The Metro Container Corporation Superfund site is a 10.4 acre site adjacent to the Tilghman Lateral at MP 2.6.³⁶⁸ It was added to the National Priorities List by the USEPA in 2012. Soil and ground water at this site are contaminated with “polychlorinated biphenyls (PCB), inorganics, polycyclic aromatic hydrocarbons (PAHs) and/or volatile organic compounds (VOCs).”³⁶⁹ The site has had multiple removal actions since 1988 to contain and remove contaminants, including a limited response action at the site from 2013-2014. The EA states that **“The Current extent of the contamination is unknown, as such there is potential for Project activities to expose contamination during construction.”**³⁷⁰ While there is consultation, nothing in the EA identifies information that assures the public that contaminants can or will be contained. In fact,

³⁶³ *Id.*

³⁶⁴ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 45.

³⁶⁵ *Id.* at 45.

³⁶⁶ *Id.* at 48.

³⁶⁷ *Id.* at 45.

³⁶⁸ *Id.* at 46.

³⁶⁹ *Id.* at 46.

³⁷⁰ Adelphia Gateway Project Environmental Assessment, Docket No. CP18-46-000 and CP18-46-001, Accession No. 2019104-3005 at 46. (emphasis added)

the only conclusions were that “there is low probability of workers encounters in site related hazardous substances at unsafe levels” and a list of “precautionary measures” recommended by the USEPA that Adelphia is yet to incorporate into the sampling and analysis plan for the Tilghman Lateral (SAP). Again FERC and Adelphia are standing by claims of precaution and promises of no contamination without any true assessment of the property or facts to back up such claims.

The Monroe Energy sites is 350 acres in size and adjacent to MP 2.7 of the proposed Tilghman Lateral. USEPA initiated a RCRA Facility Assessment at the site in 1989 and investigation and remediation have been ongoing since 1991.³⁷¹ Human exposure and groundwater are listed as “controlled” and corrective actions remain ongoing at this sites. Yet the EA has no identification of how Adelphia is to assure that its construction activities will not result in any disturbance or exposure to contaminants at the site.

In addition, two contaminated sites were identified near MLV 2: The Foote Mineral Company Superfund Site and the Johnson Matthey-West Whiteland CIMC sites. Adelphia has concluded for both that it would not conduct soil or groundwater investigations; instead relying on its Unanticipated Discovery of Contamination Plan. In other words, while Adelphia and FERC have evidence that dangerous substances could be released, rather than research and approach the situation with precaution, they have opted to take a wait and see approach. Where a result could be exposure to harmful contaminants for the workers on the Project as well as the community and environment in the area.³⁷²

Finally, Adelphia is proposing to HDD by some of these sites, which presents the risks of inadvertent release of drilling fluids and mobilization of contaminants. The assessment relies on the fact that Adelphia would simply implement its Inadvertent Return Contingency Plan (IRCP) in the advent of a release, which would assure that drilling returns are sampled, wastes are disposed of properly, and soil and groundwater sampling is conducted to assess the present of contaminations at HDD entry and exit points. Yet the current IRCP, the one used to evaluate the environmental impact of the project, “**does not address mitigation measure in the event of an inadvertent release in an area of existing contamination.**”³⁷³ This is yet again another area in the EA where Adelphia could have provided more information for a better and more informed assessment of the Project’s impacts and assure that the conclusion of no significant impact is based on facts and not presumptions, yet this did not occur.

HDD Drilling Can Help to Save Areas During Construction But Needs to Be Done With Precaution.

Delaware Riverkeeper Network has observed first hand HDD releases and violations along Mariner East 2 pipeline in Delaware County, TGP 300 upgrade, Tennessee Gas Pipeline Northeast Upgrade Project, TGP Orion Project (across the Lackawaxen River), and Atlantic

³⁷¹ *Id.* at 47.

³⁷² *Id.* at 47.

³⁷³ *Id.* at 50.

Sunrise Pipeline. These impacts cause many immediate, cumulative, and cascading impacts to aquatic life and water quality health.

The viscosifier used almost exclusively in HDD drilling fluids is naturally occurring bentonite clay, which is principally sodium montmorillonite. Bentonite is non-toxic and is often touted as being safe for the environment, but it has the potential to impact aquatic habitats and wildlife if discharged to waterways in significant quantities.³⁷⁴ The environment may be impacted if the drilling fluid inadvertently returns to the surface of the ground at a location on a waterway's banks, within a waterway or wetland, or in the vicinity of other potential receptors. When this occurs, it is called an inadvertent return or release. An inadvertent return is an unauthorized discharge of drilling fluids to the ground surface or surface waters, including wetlands, associated with HDD or other trenchless construction methodologies.³⁷⁵

The environmental impacts of the discharge of bentonite and drilling fluids into a waterbody include increases in suspended solids, sedimentation, and local turbidity.³⁷⁶ Increased suspended solids in streams interferes with fish gill development and function, reduces quality of fish spawning and rearing areas, reduces fish refuge sites, reduces food availability to upper trophic levels, smothers and displaces macroinvertebrates, and fills interstitial spaces in substrates.³⁷⁷

Some of these effects, such as the smothering of macroinvertebrates and the interference of fish gill function, occur almost immediately upon the drilling fluids reaching the stream. This means that ecological damage occurs even when inadvertent releases are caught early and cleaned up quickly. However, the effects are likely exacerbated over time. Furthermore, drilling mud deposition rates far exceed the rates of natural sediment deposition and erosion.³⁷⁸

Increased sedimentation in streams causes well-known negative impacts to fish such as trout. In an experimental study in 1983, researchers introduced bedloads of sand sediment to a brook trout stream in Michigan over a period of five years. They found that increasing the bedload 4 to 5-fold resulted in a significant reduction of trout and trout habitat and even small sediment

³⁷⁴ Tetra Tech, Inc. (2018). HDD Inadvertent Return Assessment, Preparedness, Prevention and Contingency Plan. Pennsylvania Pipeline Project. Retrieved from <http://files.dep.state.pa.us/ProgramIntegration/PA%20Pipeline%20Portal/MarinerEastII/Exhibit%201%20-%20HDD%20IR%20Assessment%204-10-2018.pdf>

³⁷⁵ Tetra Tech, Inc. (2018). HDD Inadvertent Return Assessment, Preparedness, Prevention and Contingency Plan. Pennsylvania Pipeline Project. Retrieved from <http://files.dep.state.pa.us/ProgramIntegration/PA%20Pipeline%20Portal/MarinerEastII/Exhibit%201%20-%20HDD%20IR%20Assessment%204-10-2018.pdf>

³⁷⁶ Crowell, H. (2014). Ecological Impacts of Inadvertent Returns from Horizontal Directional Drilling (HDD). HullRAC Science Summit, February 4, 2014. Retrieved from <http://docplayer.net/24197248-Hc-hugh-crowell-hullrac-science-summit-february-4-ecological-impacts-of-inadvertent-returns-from-horizontal-directional-drilling-hdd.html>

³⁷⁷ Crowell, H. (2014). Ecological Impacts of Inadvertent Returns from Horizontal Directional Drilling (HDD). HullRAC Science Summit, February 4, 2014. Retrieved from <http://docplayer.net/24197248-Hc-hugh-crowell-hullrac-science-summit-february-4-ecological-impacts-of-inadvertent-returns-from-horizontal-directional-drilling-hdd.html>

³⁷⁸ *Id.*

concentrations of 80 to 100 ppm had profound effects on the trout and their habitat.³⁷⁹ These effects included a decrease in survival rates, particularly from the egg to fry and/or the fry to fall fingerling stage of the life cycle.³⁸⁰ Additionally, sand deposition aggradated the streambed and eliminated most pools, and both water velocity and summer water temperature increased.³⁸¹

Increased turbidity impacts fish by direct mortality or by reducing their growth rate, lessening their resistance to disease, preventing successful development of eggs and larvae, modifying natural movements and migrations, and reducing the amount of food available.³⁸² Turbidity also affects the growth rate of algae and other aquatic plants in streams and lakes because increased turbidity causes a decrease in the amount of sunlight for photosynthesis.³⁸³ Without enough sunlight, aquatic plants cannot grow properly and will eventually die. Turbidity can also increase water temperature because suspended particles absorb more heat.³⁸⁴ Increased water temperature may cause stress to fish and other aquatic organisms, particularly in the summer months. These factors may lead to a decrease in dissolved oxygen, creating stagnant water conditions detrimental to aquatic life.³⁸⁵

Finally, rain events could help transport drilling fluids into streams and other nearby waterbodies. Erosion and sediment control measures such as silt fences, compost socks, mulching, hay bales, sand bags, fiber rolls, and gravel berms frequently fail and cannot be relied upon as effective protection. The Delaware Riverkeeper Network has documented countless occasions during pipeline construction projects where sediment control structures were damaged, insufficient, overwhelmed, not functioning correctly, or where sediment was directly discharging offsite into adjacent lands, nearby streams, or drains that connect to a body of water. When these measures fail, it opens a pathway for bentonite to reach streams in the event of an inadvertent release. Although non-toxic, bentonite is nevertheless a pollutant that is harmful to ecosystem function and the aquatic environment.

The outstanding and continued and current HDD issues along Sunoco ME2 pipeline must be scrutinized by regulators; HDD releases of the ME2 pipeline are in the region of the proposed Adelphia pipeline (Delaware County). Multiple stop work orders by the state, re-designs of the HDD engineering plans, and serious violations are continued issues and common violations for the Sunoco ME2 (link to the DEP portal that shows all the HDD mishaps) and this information must be considered for Adelphia as not to cause repeated harm. Take note that currently, due to litigation settlement around Sunoco's ME2 pipeline's large scale and repeated violations, there

³⁷⁹ Alexander, G.R., & Hansen, E.A. (1983). Effects of sand bedload sediment on a brook trout population. Michigan Department of Natural Resources Fisheries Division, Fisheries Research Report No. 1906. Retrieved from https://www.researchgate.net/publication/298813106_Effects_of_sand_bedload_sediment_on_a_brook_trout_population_Fisheries_research_report_1906

³⁸⁰ *Id.*

³⁸¹ *Id.*

³⁸² Minnesota Pollution Control Agency (2008). Turbidity: Description, Impact on Water Quality, Sources, Measures - A General Overview. Water Quality/Impaired Waters #3.21. Retrieved from <https://www.pca.state.mn.us/sites/default/files/wq-iw3-21.pdf>

³⁸³ Alaska Department of Environmental Conservation (2015). Fact Sheet: Turbidity in Surface Waters. Retrieved from https://dec.alaska.gov/water/wqsar/trireview/pdfs/Tri_Review_Turbidity_Fact_Sheet_01-08-15.pdf.

³⁸⁴ *Id.*

³⁸⁵ *Id.*

are two new taskforces in Pennsylvania for HDD and 105 alternatives analyses that have just gotten underway last month. To permit or approve any further HDD or open cuts before these taskforces are completed over the next 6-9 months would be premature.

However, DRN adds that if HDD can be used to save mature forest, forested wetlands and other sensitive habitat, this HDD technology should certainly be considered and used to cause less disruption to the soils, mature forest and natural habitats. This is important especially for forests, forested steep slopes and intact habitats like forested wetlands.³⁸⁶ An HDD near Exton, PA in Chester County that was conducted due to public concerns of forested open space to save mature forest in the vicinity of Brandywine Creek is an example of where mature forest was preserved by employing HDD which is often a technique the pipeline company is not eager to employ due to the higher cost. Natural habitats and forests should receive greater clout to employ HDD than what is currently in practice since the technology is often very feasible.” Therefore, HDD drilling is often the preferable method for pipelines installation granted that the process is done right.

The AGP Project Overbuilds Capacity in Conflict With The Commission’s Policy Statement, Indicating Possible Plans For Future Expansions.

The Project is unsupported by market need because there is evidence that Adelphia designed the Project to add capacity to its natural gas infrastructure beyond the amount disclosed in its application; in essence, the Project is “overbuilt” because it is designed to provide excess capacity. The Commission’s Policy Statement regarding the Certification of Natural Gas Pipeline Projects states that to “[o]verbuilt” an energy project means to “build capacity for which there is not a demonstrated market need.” 90 FERC ¶ 61,128, at 61,391 (Feb. 9, 2000).

The new pipeline laterals and associated meter stations and compressor stations would be designed to accommodate 1,440 pounds per square inch (psig). Yet, FERC maintains that Adelphia “would only be authorized to operate these new proposed facilities at pressures up to 1,200 psig,” the maximum allowable operation pressure (MAOP) of the existing mainline and the existing 20-inch diameter pipeline.³⁸⁷

The existing mainline is designed to operate at 1,083 psig and the existing 20-inch diameter pipeline is designed to operate at 1,200 psig. Adelphia has not adequately justified their proposal that new laterals and compressor station be designed to accommodate pressure up to 1,440 psig, or a greater MAOP than the rest of the system. Given the current and proposed MAOPs, it is possible that Adelphia intends further expansions this Project. Therefore, absent additional information it appears that Adelphia has proposed a project that is designed to accommodate future upgrade projects that overbuilds the pipeline for its stated needs.

Had Millennium only wanted this project to function seamlessly at the existing system MAOP, as FERC maintains, it would have designed the additional facilities and laterals to accommodate

³⁸⁶ *Hydrologic and Environmental Rationale to Bury Gas Pipelines Using Horizontal Directional Drilling Technology at Stream and River Crossings*, HydroQuest, June 12, 2012.

the same MAOP. The fact that Adelphia designed it at a higher MAOP than necessary that does not match its existing system indicates that Adelphia clearly overbuilt its Project, possibly in order to support anticipated and planned future upgrades.

FERC Must Draft an EIS as an EA is not Sufficient for FERC to make an Informed Decision about the Environmental Impacts of the Adelphia Pipeline Project.

In addition to the immense deficiencies and inaccuracies highlighted in DRN's comment thus far, FERC has identified numerous other gaps in Adelphia's provided information. Without this information it is difficult to believe that FERC will be able to make informed decisions about whether to continue with this project, as the Commission will be unaware of numerous environmental harms that could take place and, therefore, cannot properly quantify and analyze the numerous environmental impacts that could flow from this project. While in the past, FERC has assumed that companies stating they would abide by FERC policy means that the Commission could assume the project would be okay, recent experiences have shown that once certification is granted, pipeline companies tend to show little regard for the actual effects of the project on the surrounding environment and local communities. By way of example below is a list deficiencies, gaps, and inaccuracies identified by FERC in the EA:

- Adelphia needs to provide a Karst Monitoring Plan for the Existing System, including the frequency and duration of monitoring; conditions requiring remedial action; and the karst remediation measures Adelphia will implement along the Existing System.
- Adelphia needs to provide a final HDD feasibility assessment regarding the potential misalignment of the drilled hole through unconsolidated overburden/bedrock interface(s) along the HDD alignments.
- Adelphia needs to provide a final SAP for the Parkway and Tilghman Laterals, including any USEPA and PADEP comments on the SAP, for review and written approval by the Director of OEP. The Final SAP shall include:
- Adelphia needs to provide a revised IRCP which addresses containment and cleanup measures for inadvertent releases in areas of contamination.
- Adelphia needs to identify an alternative stormwater management configuration at the Transco Meter Station that would not result in impacts on nearby wetlands.
- Adelphia needs to provide a site-specific justification for operational use of AR- 33.97-01 for access to the Perkiomen Creek BAV, or identify an alternative access route for use during operation that avoids impacts on wetlands.
- Adelphia must confirm in a filing with the Secretary that it will install super silt fence barrier at the Schuylkill River BAV during the inactive period of the eastern red belly turtle (October 15 – April 15), and if this timing window cannot be met, then Adelphia will have a qualified biologist on-site to conduct a clearance survey prior to construction.
- Adelphia must identify mitigation measures to use during construction and operation on the Schuylkill River Trail, including signage for trail users.
- Adelphia must file visual screening plans for the Quakertown Compressor and Meter Stations, developed in consultation with West Rockhill Township, and the Delmarva Meter Station. The plans should include photo simulations of the resulting viewshed from the perspective of nearby visual receptors.

- Adelphia must identify parking areas for construction workers at the Marcus Hook Compressor Station and for the two new laterals and associated meter stations
- Adelphia must file a description of the specific noise mitigation measures it will install at the Delmarva Meter Station and the associated noise levels predicted for full flow/load condition operations.

It is unbelievable that FERC determines the Adelphia Gateway Pipeline will not have a significant impact on the environment and communities. This comprehensive and lengthy list makes it obvious that FERC did not conduct the kind of independent, rigorous review anticipated or mandated by NEPA. The EA is filled with key data gaps, misrepresentations, misinformation, missing information, inaccurate information, false information, and conflicting information and is likewise based on submissions from Adelphia that are filled with data gaps, misrepresentations, misinformation, missing information, inaccurate information, false information, and conflicting information. The quality of the EA is so poor that it cannot support any conclusion whatsoever, other than there is a need for a draft EIS that is subject to the rigors of the public process prior to advancement to the final EIS stage.

In addition, it is clear that this EA cannot be relied upon by any government agency, not FERC, not the US Fish & Wildlife Service, not the U.S. Environmental Protection Agency, not the PA Department of Environmental Protection, not the Delaware Department of Natural Resources and Environmental Control, not the Delaware River Basin Commission for evaluation or decision-making purposes. And for any agency to do so would subject them to a legal challenge.

Finally, DRN would like to reiterate that given the lack of need; the high level of environmental, community, and economic harm that will be inflicted; the use of eminent domain purely for private gain; and the threat and harms to the health, safety, and natural resources of the communities impacted as well as to future generations, this project cannot be said to meet the standards for FERC to issue a Certificate of Public Convenience and Necessity.

Respectfully submitted,



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Attachments:

1. Key-Log Economics, LLC, *The Social Cost of Carbon and the Adelpia Gateway Project*, February 2019.
2. Appendix 1: Table A-1. Active, proposed and reported natural gas wells in Pennsylvania, by county.
3. Letter dated September 9, 2016 written by Key-Log Economics to Secretary Kimberly Bose & Deputy Secretary Nathaniel J. Davis.
4. *Professional Review & Comment of the Draft Environmental Impact Statement and Supporting Documents Related to Surface Water Impacts of the Proposed PennEast Pipeline Project*, Michelle Adams & Marc Henderson, Water Resources Engineers, Meliora Design, LLC, September 5, 2016.
5. *The Effects of the Proposed PennEast Pipeline on Exceptional Value Wetlands in Pennsylvania, Prepared for the Delaware Riverkeeper Network*, Schmid and Company, July 2016.
6. Letter dated September 9, 2016 written by Schmid & Company, Consulting Ecologists to Maya K. van Rossum, the Delaware Riverkeeper.
7. *Technical Memorandum Review of Draft Environmental Impact Statement, Proposed PennEast Pipeline*, Docket No. CP15-558-000, FERC\EIS: 0271D, Tom Myers, Ph.D., August 31, 2016.
8. *Opinion on the PennEast Pipeline*, Arthur Berman, Petroleum Geologist, Labyrinth Consulting Services, Inc., September 11, 2016.
9. *Technical Review of Volume I FERC Draft Environmental Impact Statement Submitted for PennEast Pipeline Project*, Princeton Hydro, September 2016.
10. *Field Monitoring Report, Pipeline Construction & Maintenance Irreparably Harms Rivers, Wetlands and Streams. Addendum to Comment for the PennEast Pipeline*, Delaware Riverkeeper Network.
11. *Review of INGAA Foundation Report, "Pipeline Impact to Property Value and Property Insurability"*, Key-Log Economics, March 11, 2015.
12. *Fulper Farm Grain Harvest Graphics*, 4 Images, 2008-2012.
13. *Marcellus/Utica on Pace for Pipeline Overbuild, Says Braziel*, Natural Gas Intelligence, June 8, 2016.
14. *Achieving Higher Quality Restoration Along Pipeline Rights of Way*, Leslie Sauer, May 2014.
15. *Professional Opinion of Proposed PennEast Pipeline Project*, Arthur E. Berman, Petroleum Geologist, Labyrinth Consulting Services, Inc., February 26, 2015.
16. *Analysis of Public Benefit Regarding PennEast*, Skipping Stone, March 9, 2016.
17. *Review of PennEast Pipeline Project Economic Impact Analysis*, Jannette Barth, Pepacton Institute, April 4, 2016.
18. *Expert Report on the PennEast Pipeline Project Economic Impact Analysis for New Jersey and Pennsylvania*, The Goodman Group Report, Nov 4, 2015.
19. *The Potential Environmental Impact from Fracking in the Delaware River Basin*, Steven Habicht, Lars Hanson, and Paul Faeth, August 2015.
20. *Report on Phase 1 Bog Turtle Survey for Wetlands Associated with Hunters Creek, Towamensing Township, Carbon County, Pennsylvania*, Jason Tesauro, September 5, 2015.

21. *Drilling Deeper: A Reality Check on U.S. Government Forecasts for a Lasting Tight Oil and Shale Gas Boom*, J. David Hughes, Post Carbon Institute, October 2014.
22. *Revealed: Contractors Hired by FERC to Review A New Spectra Energy Pipeline Work for Spectra on a Related Project*, Itai Vardi, Desmog, May 26, 2016.
23. *A Bridge Too Far: How Appalachian Basin Gas Pipeline Expansion Will Undermine U.S. Climate Goals*, Oil International, July 2016.
24. *Climate Change in Pennsylvania: Impacts and Solutions for the Keystone State*, Union of Concerned Scientists, October 2008.
25. *Climate Change Impacts and Solutions for Pennsylvania*, Union of Concerned Scientists, 2008.
26. *The Changing Northeast Climate*, Union of Concerned Scientists, 2006.
27. *Cumulative Land Cover Impacts of Proposed Transmission Pipelines in the Delaware River Basin*, Lars Hanson and Steven Habicht, May 2016.
28. *Natural Gas Price Increase Inevitable*, Art Berman, The Petroleum Truth Report, February 21, 2016.
29. *Climate Change Impacts in the United States*, Radley Horton and Gary Yohe, May 2014.
30. *Final Guidance for Federal Departments and Agencies on Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in National Environmental Policy Act Reviews*, Christina Goldfuss, Council on Environmental Quality, August 1, 2016.
31. *Pennsylvania Energy Impacts Assessment*, Nels Johnson, the Nature Conservancy, November 15, 2010.
32. Key-Log Economics, LLC, *Economic Costs of the PennEast Pipeline*, January 2017.
33. Key-Log Economics, LLC, *Economic Costs of the Mountain Valley Pipeline*, May 2016.
34. Key-Log Economics, LLC, *Economic Costs of the Atlantic Coast Pipeline*, February 2016.
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36. Key-Log Economics, LLC, *Atlantic Sunrise Project: FERC's Approval Based on an Incomplete Picture of Economic Impacts*, March 2017.
37. Delaware Riverkeeper Network, *Field-Truthing and Monitoring of the Proposed PennEast Pipeline*, FERC Draft EIS, September 2016.
38. *Clearcutting in Forested Wetlands*, Schmid & Company, Inc., Consulting Ecologists, May 1, 2017.
39. *Expert Report on the Environmental Impacts of the Millennium Eastern System Upgrade*, Princeton Hydro, November 28, 2016.
40. *Thermal Impacts to Exceptional Value Waterbodies in Pennsylvania Cut by Gas Pipeline Projects*, Delaware Riverkeeper Network, September 25, 2016.
41. Letter dated September 23, 2016 written by the US Environmental Protection Agency to Maya K. van Rossum, the Delaware Riverkeeper.
42. *The Economics of Clean Energy Portfolios*, Rocky Mountain Institute, 2018.
43. Comment on FERC Docket No. PL18-1 by Key-Log Economics, LLC, July 23, 2018.
44. *Citizen Input Regarding the Proposed PennEast Pipeline*, Key-Log Economics, LLC, March 2017.
45. *Citizen Input Regarding the Proposed Eastern System Upgrade Project*, Key-Log Economics, LLC, April 2017.
46. Comment Regarding Adelpia Gateway Pipeline Project- Scoping Period, Delaware Riverkeeper Network, June 1, 2018.

47. *Environmental and Geotechnical Considerations Regarding the Proposed Paulsboro Natural Gas Pipeline Crossing Beneath the Delaware River*, HydroQuest, February 16, 2016.
48. *Hydrologic and Environmental Rationale to Bury Gas Pipelines Using Horizontal Directional Drilling Technology at Stream and River Crossings*, HydroQuest, June 12, 2012.
49. *Special Report: Global Warming of 1.5 degrees C*, Intergovernmental Panel on Climate Change, Summary for Policymakers, 2018.
50. *Fourth National Climate Assessment*, US Global Change Research Program, 2018, , available at: <https://nca2018.globalchange.gov/> (exceeded FERC document upload size limit).
51. Comment to the Delaware River Basin Commission by the Delaware Riverkeeper Network regarding Jurisdiction of the Adelpia Gateway Project, September 19, 2018.
52. Comment Regarding Adelpia Gateway Pipeline Amended Application, Delaware Riverkeeper Network, September 28, 2018.
53. *The Art of the Self-Deal, How Regulatory Failure Lets Gas Pipeline Companies Fabricate Need and Fleece Ratepayers*, Oil Change International, September 2017.
54. Comments on the DEIS for the PennEast Pipeline (FERC Docket No. CP15-558), Delaware Riverkeeper Network, September 16, 2016.