

Citizen Input Regarding the Proposed PennEast Pipeline

Analysis of Comments to the
Federal Energy Regulatory Commission

March 2017

Delaware Riverkeeper Network

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Authors' Note

Key-Log Economics is grateful to have had the opportunity to conduct this independent analysis with the help of Delaware Riverkeeper Network. We owe a special thanks to the scores of volunteers who gave their time reviewing comment letters. Without their effort this review would not have been possible.

Cover Photo from Faith Zerbe

Policy Setting

The PennEast Pipeline proposed by PennEast LLC would carry natural gas from Luzerne County, Pennsylvania to Mercer County, New Jersey. It would also carry a variety of adverse environmental and economic effects as it crosses multiple Pennsylvania and New Jersey counties and hundreds of private properties. The PennEast Pipeline will likely have a profound impact on the pastoral and scenic landscape of the region and on the many businesses, livelihoods, and quality of life factors that depend on the natural benefits of that landscape.

Under the National Environmental Policy Act (“NEPA”) FERC must consider the environmental effects of its decision. Those effects include impacts on air and water quality, aesthetic value, wildlife, and others, as well as how changes in the physical environment are reflected in effects on people, including through changes in economic well-being. The NEPA process begins with “scoping” or “a scoping period,” during which any person with an interest in the proposed federal action (in this case approval or denial for the PennEast Pipeline) has a chance to tell the lead agency (FERC) what concerns them about the proposed action and what they think the lead agency should include in its ensuing environmental review. FERC is obligated to consider this citizen input when it sets to work on its Environmental Impact Analysis (“EIA”).

FERC reported the results of its analysis in a Draft Environmental Impact Statement (“DEIS”) released on July 22, 2016. A 90-day comment period ensued, giving citizens, public and private interest organizations, and experts in many fields an opportunity to review, respond to, and suggest improvements on the DEIS and the analysis behind it. The public provided input in the form of written letters, entries to FERC’s online eComment site, petitions circulated by groups for or against the proposed pipeline, and verbally at a series of five scoping meetings held in communities along the pipeline’s proposed route. Like the comments received at scoping, FERC is expected to consider this input as it revises its analysis and prepares a Final Environmental Impact Statement (FEIS).

Between the scoping and DEIS comment periods in 2015 and 2016, FERC received thousands of written comments. They took the form of unique letters and eComments composed by individuals and organizations, form letters submitted with or without modification by individuals, and petitions, in the form of a single comment signed by many individuals. (FERC also received oral comments at public meetings held during scoping and during the DEIS comment period, but we have not included them in this analysis unless they were also submitted to FERC as written comments.)

Key-Log Economics, with the help of Delaware Riverkeeper Network, has completed an independent analysis of the written comments. These comments include excellent information about the economic and other effects that citizens, scientific experts, and various stakeholders expect to see, or are already seeing, as a result of the proposed PennEast Pipeline.

The content of these letters is critically important for two reasons.

- First, the letters provide direct and clear information about the issues of concern to the people and communities through which the pipeline would pass as well as to people who, as visitors, downstream water users, business owners, and others, use and enjoy the directly affected landscape. Combined with our review of existing economic studies and with our analysis of primary and secondary data on property values, ecosystem service flows, human health and safety, economic development trends, and community services, the comment letters help FERC understand the nature and extent of the effects of the proposed pipeline.

- Second, under the National Environmental Policy Act, FERC must consider the comments it has received as it finalizes the Environmental Impact Statement. FERC must cover relevant issues raised in comments, and this independent review of what citizens have said in public comments will help ensure that FERC’s legal obligations to consider the full range of environmental effects of the proposed pipeline are met.

Methods

The scoping period officially began on January 13, 2015 with FERC’s “Notice of Intent” to prepare an EIS¹ and officially ended on February 12, 2015. The official DEIS comment period ran from July 22, 2016 to September 5, 2016. However, FERC accepted many comments submitted before and after these comment periods. Due to the large number of comments submitted to FERC—a total of 7,543 comments²—we analyzed a sample of comments submitted between September 25, 2015 and August 21, 2016.³

In total, our analysis covers 3,443 different written messages to FERC. The messages are of three types.

1. 2,175 individual or unique comment letters or eComments.
2. 1,263 copies of 16 different form letters.
There were between 2 and 241 copies of each form letter.
3. 5 petitions with a total of 8,918 signatures.
Signatures per petition ranged from 17 to 8,682.

See also “Comment Type and Commenter Location” graph under “Results.”

To review this volume of communication, we used crowdsourcing—that is, we enlisted the help of a crowd of volunteers to complete the task via the internet. Our crowd consisted of 67 volunteers recruited by Delaware Riverkeeper Network. Each of these volunteers reviewed at least one comment.

The reviewers’ specific task was to read through the comment letter and log details from the comment using an online form. We developed the online form after reviewing a sample of comment letters so that we could include check-off items for the most common concerns. These concerns included recreation, tourism, agriculture, health, safety, and water quality. The form also included space where volunteers could record commenters’ thoughts on items not covered elsewhere on the form. (A copy of the form is included as Appendix A.) For each concern, the form asks whether the commenter views the proposed PennEast Pipeline as likely to have a positive or negative effect. In addition, we asked reviewers to rate how strongly positive or negative each commenter felt the effects would be in several overarching areas: economy; U.S. energy needs; environment; and lifestyle/quality of life.

Once the form was set up, our process, in brief, consisted of the following steps:

1. Download all comment letters.

¹ Bose, K. (2015, January 13). Notice of Intent to Prepare an Environmental Impact Statement for the Planned PennEast Pipeline Project, Request for Comments on Environmental Issues, and Notice of Public Scoping Meetings. Federal Energy Regulatory Commission.

² This number is current as of February 17, 2017, after the official close of the comment period. However, people may continue to submit comments to this docket. Comments were retrieved from FERC’s online elibrary from docket CP15-558.

³ This time frame was chosen by Delaware Riverkeeper Network as a way of managing the tasks of downloading and distributing comment letters for review. We do not think there is reason to expect that comments submitted in this (or any) window are any more or less likely to favor the pipeline proposal.

2. Send a batch of three comment letters to each volunteer along with instructions (see Appendix B) and a link to the online form.
3. Monitor the database linked to the online form and send reminders to volunteers who seemed to have missed the initial email.
4. Send new batches to volunteers who requested them via a prompt that appeared after submitting previous comments using the online form.

FERC received comments that varied widely in length, technicality, and the main concerns addressed. They also came from commenters residing or owning property in one of the six counties the PennEast Pipeline would cross⁴, from other counties in the two PennEast-crossed states (Pennsylvania and New Jersey), and from other states. We were therefore able to stratify the comments according to commenters' location as well as to summarize the various concerns raised by people living nearer to and farther from the proposed route.

As noted, we used a sample of comment letters to develop a survey-like online form for use by our volunteers and our own team in their review of each comment. Based on the sample, we identified dozens of individual factors grouped into four broad categories of economy, energy, environment, and lifestyle. The environment category, for example, includes forests, wildlife, surface water, and erosion. For each category, the form asks [for example] "Does the commenter mention any of the following environmental factors that they say will be impacted either positively or negatively if the PennEast Pipeline is built?" For each factor in the category the reviewer would indicate whether the comment letter writer indicated that the factor would be affected positively or negatively, or that the factor had not been mentioned at all. Some comment letters mention many issues while others mention only one.

After the economy, energy, environment, and lifestyle section, the form includes questions of the form "Overall how does the commenter think the PennEast Pipeline will affect the environment? Please leave blank if they seem to have no opinion."⁵ For comment letters that did indicate an opinion on the category, the reviewer registered the direction and strength of that opinion on a 1-5 Likert scale with 1 being "Extremely Negatively" and 5 being "Extremely Positively."

The next section of the form addresses the compressor station proposed for Carbon County, Pennsylvania. It asked "If the commenter mentions the compressor station proposed for Carbon, PA, do they mention any of the following factors that they say will be impacted either positively or negatively if the compressor station is built?" The factors included quality of life, health, and noise pollution.

We also asked reviewers if the comment mentioned environmental justice positively or negatively. A further section provided space to record commenters' concerns over general or systemic issues such as cumulative impacts or the purpose and need for the project.

Additionally there was a question that asked "What is the desired outcome of the commenter?" We provided choices of "Pipeline is built," "Pipeline is not built," "Unstated/Unsure", and "Other." There was also a question that asked the reviewer "Overall what is the comment's attitude toward the proposed PennEast Pipeline?" The reviewer was asked to again use the 1-5 Likert scale.

⁴ These are Luzerne, Carbon, Northampton and Bucks Counties in Pennsylvania, and Hunterdon and Mercer Counties in New Jersey.

⁵ The energy question was phrased slightly differently: "Overall how does the commenter think the PennEast Pipeline contributes to US energy needs?"

Reviewers aided Key-Log's broader research by answering the question "In your opinion, does this comment letter include a good personal story/testimony that illustrates one or more of the following effects?" The effects included ecosystem services, human health and safety, property values, community services, and attractiveness of the community/region. Details into the results of this research into the economic costs of the proposed PennEast Pipeline can be found on Delaware Riverkeeper Network's website.⁶

The form concludes with space to record references to statistical or other data cited by the commenter, a free-response question for any other items not covered elsewhere in the form, and lastly, the reviewer's judgement regarding whether the comment appeared to be a form letter or a petition, as opposed to an individual letter. (Please see Appendix A for the full form.)

One final note is that some individual comment letters were particularly lengthy and/or technical. We kept that segment (270 comments) out of the pool for volunteer review and assigned their review to one of our team members.

Reviewing the Reviewers

Another important role for our team was to evaluate the volunteers' review of comment letters. To accomplish that, we selected 183 (8.4%) of the individual comment letters at random and assigned a team member to review those letters from scratch. We then compared the team member's review to that of the volunteer who had previously reviewed the same letter. We found that the reviews by volunteers and by our team agreed in nearly all cases and nearly all aspects.

For almost 63% of our sample, our team found either no differences or few differences compared to the review completed by a volunteer. For an additional 15% of our sample, our team found some differences, and for the last 22% we found many differences.

"Few differences" was defined as 1 to 3 differences; "some differences" was defined as 4 or 5 differences; "many differences" was defined as 6 or more differences. Our team did not count trivial differences between volunteer and team member's reviews. An example of a trivial difference would be if the volunteer reviewer had inferred a concern for "forests" from a letter that mentions environmental, habitat, or landscape impacts but where the commenter had not specifically said "forests," per se. An example of a non-trivial difference would be if the volunteer review indicated that a letter mentioned negative or positive effects on forests but our team review of the comment letter found no evidence of the same opinion.

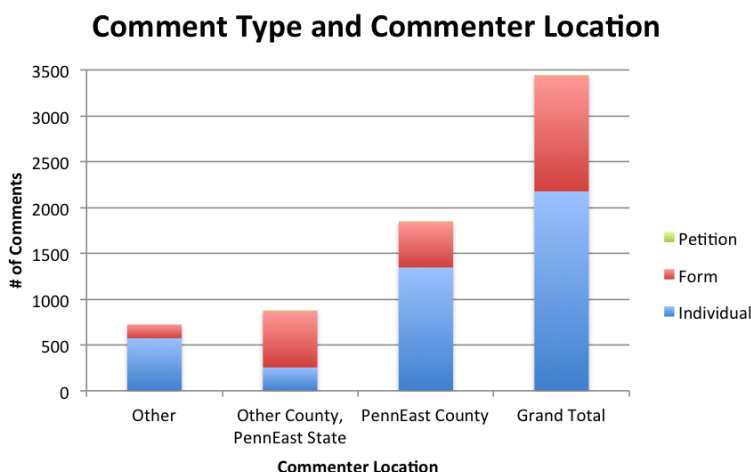
For the reviews where we found many differences between our comment analysis and that of a volunteer, our team pulled all of that volunteer's reviews and examined them for any signs of systematic bias, such as a judgement by the reviewers in question that every comment they reviewed expressed a concern that the pipeline would have either a positive or a negative effect. We found no evidence of such bias, and we are therefore confident that the volunteers' review provided information that is thorough, complete, and reliable as a characterization of commenters' concerns and opinions.

⁶ Direct link: http://delawariverkeeper.org/sites/default/files/EconomicCostsOfThePennEast_TechnicalReport_FINAL.pdf. Also accessible by going to Delaware Riverkeeper Network's homepage, then to resources, then to the link for "Economic Costs of the PennEast Pipeline."

Results

Based on the information from the comment letters, we can stratify comments according to the commenters' location (or the location of their property) in a PennEast-crossed county ("PennEast County"), another county in one of the the PennEast-crossed states ("Other County, PennEast State"), and other states ("Other") (See "Comment Type and Commenter Location").

The results reported here include all types of comments submitted to FERC (i.e. individual, form, and petition). In order to maintain a magnitude that fits on the following graphs, a petition is counted as a single comment, instead of as the number of signatures on the comment. It is important to note that for the 5 petitions FERC received, 97.5% of the signatures were on petitions that opposed the pipeline.



Note: Each individual letter, each form letter, and each petition is counted as one comment. However, petitions were signed by more than one person, and some of the individual and form letters were signed by more than one person (a husband and wife, or a pair of business partners, for example).

Of the comments received as individual/unique comments, some 74% came from residents of Pennsylvania and New Jersey. A strong majority (62%) of the individual letters came from commenters in PennEast-crossed counties.

For any given issue, our analysis considers only those comments that mention the issue. Therefore, the base for all percentages of comments expressing a particular view about the effect of the PennEast Pipeline in the issue area (positive or negative) is total number of comment letters that mentioned the issue. We do not, in other words, count comment letters that are silent on the issue in the percentage calculations.

FERC's Notice of Intent to prepare an Environmental Impact Statement regarding the PennEast Pipeline¹ includes a list of "several issues that we think deserve attention." Not surprisingly, many commenters addressed these issues directly or indirectly. Our survey included the issues identified by FERC as well as many others. The following charts display the number of letters in which the commenter mentions a FERC-defined issue as well as whether, in the commenter's judgement, the PennEast Pipeline would have a positive or negative impact on the issue. Furthermore, each chart provides separate subtotals of the number of

comments from residents of, respectively, PennEast-crossed counties, other counties in PennEast-crossed states, and other or non-PennEast-crossed states.

Each chart answers the question “How do citizens believe the PennEast Pipeline would affect forested areas” (or “...surface water,” “...air quality,” etc.). As the charts indicate, the vast majority of commenters that mentioned these issues believe there will be negative impacts if the PennEast Pipeline is built. Across the 13 categories, between 92.5% and 100% of the comments express a concern that the PennEast Pipeline would have a negative impact on the critical issues. Eight of these categories are displayed below; the additional five categories are displayed in Appendix C.

<h3 style="text-align: center;">How Would the PE Pipeline Affect Forested Areas?</h3> <p>The chart displays the number of comments for three categories: 'Other', 'Other County, PennEast State', and 'PennEast County'. The y-axis represents the number of comments, ranging from 0 to 400. The x-axis represents the Commentor Location. A legend indicates that red bars represent 'Negatively'.</p> <table border="1"> <thead> <tr> <th>Commentor Location</th> <th>Number of Comments (Negatively)</th> </tr> </thead> <tbody> <tr> <td>Other</td> <td>~60</td> </tr> <tr> <td>Other County, PennEast State</td> <td>~60</td> </tr> <tr> <td>PennEast County</td> <td>~350</td> </tr> </tbody> </table>	Commentor Location	Number of Comments (Negatively)	Other	~60	Other County, PennEast State	~60	PennEast County	~350	<ul style="list-style-type: none"> • FERC category: “Forested areas including fragmentation” • 100% mention negative impacts. 				
Commentor Location	Number of Comments (Negatively)												
Other	~60												
Other County, PennEast State	~60												
PennEast County	~350												
<h3 style="text-align: center;">How Would the PE Pipeline Affect Agriculture?</h3> <p>The chart displays the number of comments for three categories: 'Other', 'Other County, PennEast State', and 'PennEast County'. The y-axis represents the number of comments, ranging from 0 to 600. The x-axis represents the Commentor Location. A legend indicates that blue bars represent 'Positively' and red bars represent 'Negatively'.</p> <table border="1"> <thead> <tr> <th>Commentor Location</th> <th>Number of Comments (Positively)</th> <th>Number of Comments (Negatively)</th> </tr> </thead> <tbody> <tr> <td>Other</td> <td>0</td> <td>~120</td> </tr> <tr> <td>Other County, PennEast State</td> <td>0</td> <td>~160</td> </tr> <tr> <td>PennEast County</td> <td>0</td> <td>~530</td> </tr> </tbody> </table>	Commentor Location	Number of Comments (Positively)	Number of Comments (Negatively)	Other	0	~120	Other County, PennEast State	0	~160	PennEast County	0	~530	<ul style="list-style-type: none"> • FERC category: “Agricultural areas and soils” • 99.9% mention negative impacts.
Commentor Location	Number of Comments (Positively)	Number of Comments (Negatively)											
Other	0	~120											
Other County, PennEast State	0	~160											
PennEast County	0	~530											

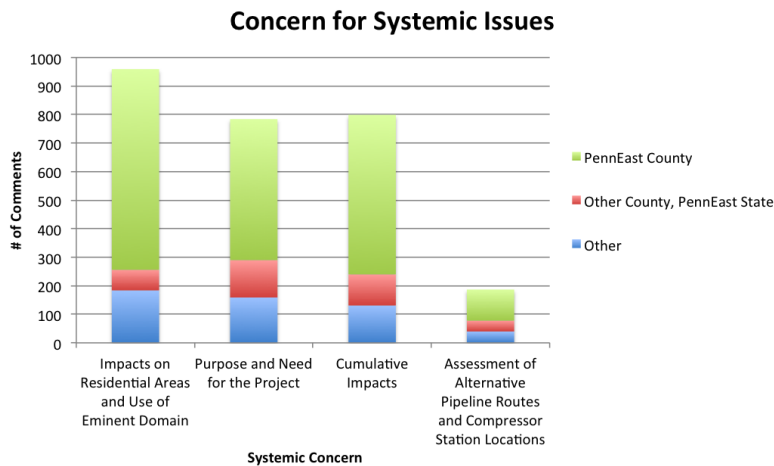
<h3 style="text-align: center;">How Would the PE Pipeline Affect Recreation?</h3> <p>The chart shows that for Recreation, there are approximately 70 negative comments from 'Other' locations, 50 from 'Other County, PennEast State', and 420 from 'PennEast County'. No positive comments were recorded for any category.</p> <table border="1"> <thead> <tr> <th>Commentor Location</th> <th>Positively</th> <th>Negatively</th> </tr> </thead> <tbody> <tr> <td>Other</td> <td>0</td> <td>70</td> </tr> <tr> <td>Other County, PennEast State</td> <td>0</td> <td>50</td> </tr> <tr> <td>PennEast County</td> <td>0</td> <td>420</td> </tr> </tbody> </table>	Commentor Location	Positively	Negatively	Other	0	70	Other County, PennEast State	0	50	PennEast County	0	420	<ul style="list-style-type: none"> • FERC category: “Recreational areas including parks and nature preserves including Appalachian Trail, Sourland Conservancy, and other state-managed and preserved lands” • 99.8% mention negative impacts.
Commentor Location	Positively	Negatively											
Other	0	70											
Other County, PennEast State	0	50											
PennEast County	0	420											
<h3 style="text-align: center;">How Would the PE Pipeline Affect Preservation Easements?</h3> <p>The chart shows that for Preservation Easements, there are approximately 120 negative comments from 'Other' locations, 70 from 'Other County, PennEast State', and 540 from 'PennEast County'. No positive comments were recorded for any category.</p> <table border="1"> <thead> <tr> <th>Commentor Location</th> <th>Positively</th> <th>Negatively</th> </tr> </thead> <tbody> <tr> <td>Other</td> <td>0</td> <td>120</td> </tr> <tr> <td>Other County, PennEast State</td> <td>0</td> <td>70</td> </tr> <tr> <td>PennEast County</td> <td>0</td> <td>540</td> </tr> </tbody> </table>	Commentor Location	Positively	Negatively	Other	0	120	Other County, PennEast State	0	70	PennEast County	0	540	<ul style="list-style-type: none"> • FERC category: “Preservation easements on private lands or conservation easements” • 99.6% mention negative impacts.
Commentor Location	Positively	Negatively											
Other	0	120											
Other County, PennEast State	0	70											
PennEast County	0	540											
<h3 style="text-align: center;">How Would the PE Pipeline Affect Property Values?</h3> <p>The chart shows that for Property Values, there are approximately 150 negative comments from 'Other' locations, 140 from 'Other County, PennEast State', and 590 from 'PennEast County'. No positive comments were recorded for any category.</p> <table border="1"> <thead> <tr> <th>Commentor Location</th> <th>Positively</th> <th>Negatively</th> </tr> </thead> <tbody> <tr> <td>Other</td> <td>0</td> <td>150</td> </tr> <tr> <td>Other County, PennEast State</td> <td>0</td> <td>140</td> </tr> <tr> <td>PennEast County</td> <td>0</td> <td>590</td> </tr> </tbody> </table>	Commentor Location	Positively	Negatively	Other	0	150	Other County, PennEast State	0	140	PennEast County	0	590	<ul style="list-style-type: none"> • FERC category: “Property Value” • This graph represents a combination of answers to our survey question about effects on property values in general and effects on property values related to the proposed compressor station. • 99.8% mention negative impacts.
Commentor Location	Positively	Negatively											
Other	0	150											
Other County, PennEast State	0	140											
PennEast County	0	590											

<h3 style="text-align: center;">How Would the PE Pipeline Affect Groundwater?</h3> <table border="1"> <caption>Groundwater Impact Data</caption> <thead> <tr> <th>Commentor Location</th> <th>Positively</th> <th>Negatively</th> </tr> </thead> <tbody> <tr> <td>Other</td> <td>0</td> <td>~250</td> </tr> <tr> <td>Other County, PennEast State</td> <td>0</td> <td>~100</td> </tr> <tr> <td>PennEast County</td> <td>0</td> <td>~750</td> </tr> </tbody> </table>	Commentor Location	Positively	Negatively	Other	0	~250	Other County, PennEast State	0	~100	PennEast County	0	~750	<ul style="list-style-type: none"> • FERC category: “Groundwater including wells and springs” • 99.5% mention negative impacts.
Commentor Location	Positively	Negatively											
Other	0	~250											
Other County, PennEast State	0	~100											
PennEast County	0	~750											
<h3 style="text-align: center;">How Would the PE Pipeline Affect Threatened, Endangered, and Sensitive Species?</h3> <table border="1"> <caption>Species Impact Data</caption> <thead> <tr> <th>Commentor Location</th> <th>Positively</th> <th>Negatively</th> </tr> </thead> <tbody> <tr> <td>Other</td> <td>0</td> <td>~50</td> </tr> <tr> <td>Other County, PennEast State</td> <td>0</td> <td>~30</td> </tr> <tr> <td>PennEast County</td> <td>0</td> <td>~300</td> </tr> </tbody> </table>	Commentor Location	Positively	Negatively	Other	0	~50	Other County, PennEast State	0	~30	PennEast County	0	~300	<ul style="list-style-type: none"> • FERC category: “Federal and state-listed threatened, endangered, and sensitive species” • 99.7% mention negative impacts.
Commentor Location	Positively	Negatively											
Other	0	~50											
Other County, PennEast State	0	~30											
PennEast County	0	~300											
<h3 style="text-align: center;">How Would the PE Pipeline Affect Air Quality?</h3> <table border="1"> <caption>Air Quality Impact Data</caption> <thead> <tr> <th>Commentor Location</th> <th>Positively</th> <th>Negatively</th> </tr> </thead> <tbody> <tr> <td>Other</td> <td>~10</td> <td>~50</td> </tr> <tr> <td>Other County, PennEast State</td> <td>~10</td> <td>~30</td> </tr> <tr> <td>PennEast County</td> <td>~10</td> <td>~220</td> </tr> </tbody> </table>	Commentor Location	Positively	Negatively	Other	~10	~50	Other County, PennEast State	~10	~30	PennEast County	~10	~220	<ul style="list-style-type: none"> • FERC category: “Air Quality” • This graph represents a combination of answers to our survey question about effects on air quality in general and effects on air quality related to the proposed compressor station. • 92.5% mention negative impacts.
Commentor Location	Positively	Negatively											
Other	~10	~50											
Other County, PennEast State	~10	~30											
PennEast County	~10	~220											

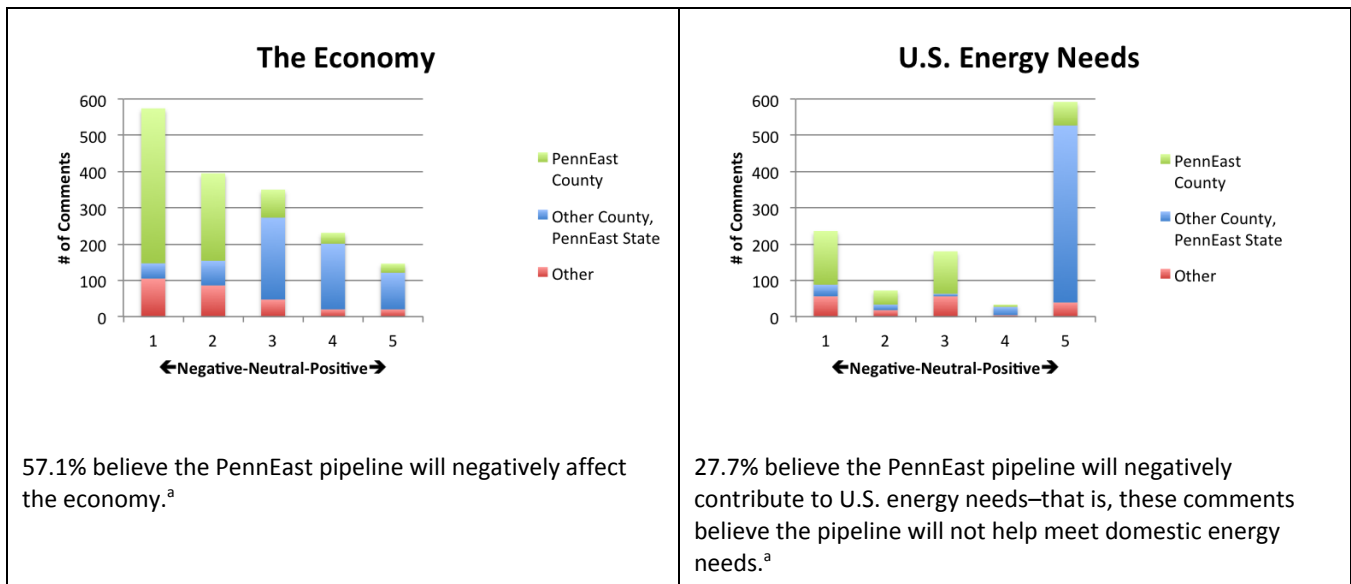
In its notice of intent FERC also discussed four broader systemic issues that may be of concern regarding the PennEast Pipeline. These concerns were: Purpose and need for the Project; Impacts on residential areas and use of eminent domain; Assessment of alternative pipeline routes and compressor station locations; and Cumulative impacts. These concerns received a large amount of attention from comment writers. The graph

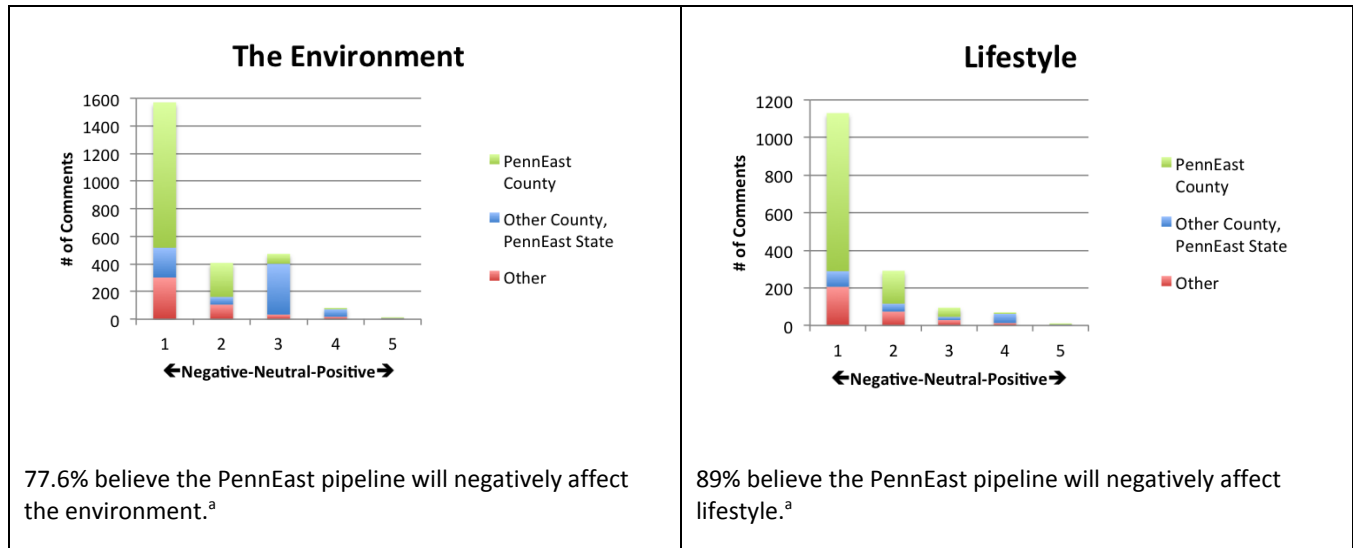
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below shows the number of comments who mentioned concern over each of these issues. People from PennEast crossed counties voice the majority of the concern over these issues (68.3%).



The four Likert-scale questions included in the comment review form allow us to gauge the strength of commenters' concern for four overarching issues: effects on the economy; contribution to U.S. energy needs; effects on the environment; and effects on lifestyle/quality of life. For each, the reviewer answered the question "Overall how does the commenter think the PennEast Pipeline will affect the economy [for example]?" by selecting a number on a 1-5 scale, with 1 being "Extremely Negatively" and 5 being "Extremely Positively."² For comment letters containing no discernable opinion on the issue, the question was left blank.





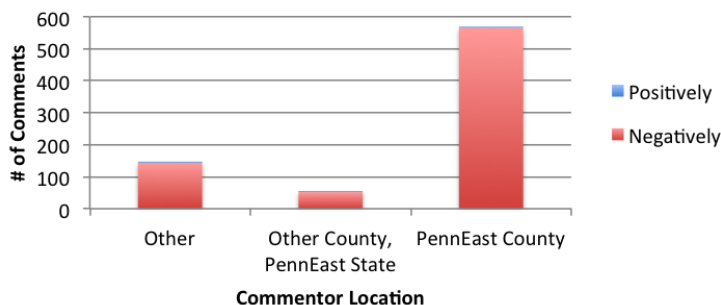
Note: 1 corresponds to “Extremely Negatively”; 5 corresponds to “Extremely Positively.”

a. The percentages that believe the PennEast Pipeline will affect each category negatively are defined as those commenters who ranked the category as either a 1 or 2.

With the exception of the contribution to U.S. energy needs, the majority of commenters believe the PennEast Pipeline will have a negative effect (1 or 2 on the scale). Of all commenters who mentioned the economy, 57.1% think the PennEast Pipeline will harm the economy; 77.6% of those mentioning the environment said the effect will be negative; and 89% of those mentioning lifestyle expect a negative effect. Interestingly (because it is where the impact of spending on construction and operation of the pipeline is most likely to occur⁷), commenters closest to the proposed route are least likely to believe the PennEast Pipeline would help the economy or contribute to U.S. energy needs. Only 6.9% of such commenters indicated that the PennEast Pipeline would be good for the economy (a score of 4 or 5), and just 19% thought there would be a positive contribution to U.S. energy needs.

⁷ As part of its application, PennEast Pipeline LLC submitted a report on socioeconomics (“Resource Report 5”) including an economic impact study that estimates regional job and income impacts of spending on the construction and operation of the pipeline as well as estimated energy savings due to the increase in regional gas delivery represented by the PennEast Pipeline (PennEast Pipeline Company, LLC. (2015). *PennEast Pipeline Project Resource Report 5* (p. 50). PennEast Pipeline Company, LLC.).

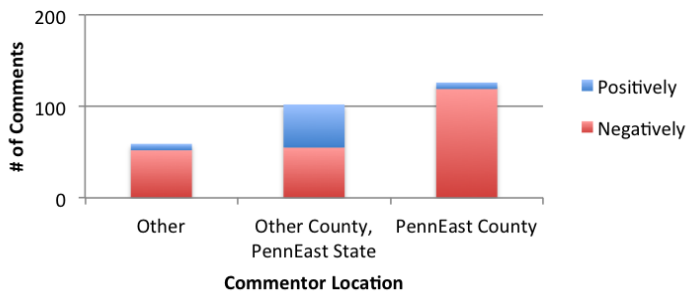
How Would the PE Pipeline Affect Health?



Many comments, 767, also mentioned the issue of health, both in general and related to the proposed compressor station. 99.3% of these commenters believe the PennEast Pipeline will negatively affect health. Health concerns were wide ranging, but they included concerns about potential leaks from the pipeline and health effects caused by pollution from the compressor station.

PennEast advocates claim that the pipeline will facilitate a shift away from coal in electricity generation and, therefore, a reduction in greenhouse gas emissions.⁸ Citizens commenting on the pipeline, however, are rightly dubious of this claim. Of 287 comments that mentioned climate change, 226 voice the opinion that the PennEast Pipeline would negatively impact climate change.

How Would the PE Pipeline Affect Climate Change?



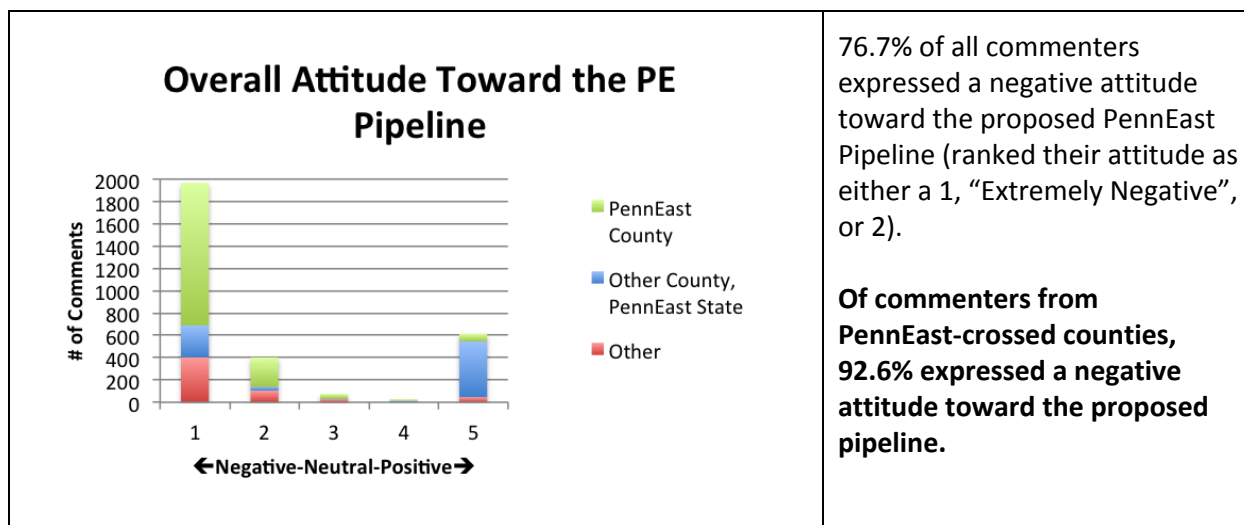
Science agrees. While burning natural gas (methane) emits less carbon dioxide than coal when it is burned, methane itself is a much more powerful greenhouse gas. According to the U.S. Environmental Protection Agency, just one ton of methane has as much of an impact on climate change as 84 tons of carbon dioxide (CO₂) over 20 years.⁹ One would therefore have to add the effect of methane emissions at well sites, from gathering lines, from compressor stations, and all along the PennEast pipeline to the effect of CO₂ emissions

⁸ See, for example, “Energy Explained”, <http://pennestpipeline.com/natural-gas-renewables/>. Such claims focus exclusively on CO₂ emissions at the point of combustion, but it is total emissions of CO₂ equivalent, including emissions of methane from the well to the point of combustion, that matters.

⁹ U.S. EPA, Climate Change Division. “Methane Emissions.” Overviews & Factsheets. Accessed March 1, 2016. <http://www3.epa.gov/climatechange/ghgemissions/gases/ch4.html>.

at the points of combustion to have a true picture of the climate implications of switching from coal to natural gas that the PennEast is expected to encourage. In a recent study tallying total greenhouse gas emissions, Hall, Penniman, and Bowers found that pipelines similar to the PennEast Pipeline, the Atlantic Coast Pipeline and the Mountain Valley Pipeline, would actually increase greenhouse gas emissions in the region.¹⁰

Given the input of citizens regarding individual issues reported thus far, it will come as no surprise that most commenters have an overall negative opinion of the proposed PennEast Pipeline. Over 75% have negative feelings toward the pipeline. Among commenters who live or own property in a PennEast-crossed county, the proportion of commenters opposed to the pipeline rises to 92.6%.



Conclusions

This analysis demonstrates the wealth of concerns that citizens have expressed to FERC through the NEPA process and shows the depth and breadth of those citizens’ beliefs that the proposed PennEast Pipeline will have negative or adverse effects on the environment, the economy, and people’s quality of life. This citizen input is what FERC is required to consider and address as it finalizes its Environmental Impact Statement (EIS).

The opportunity for citizen input is a core principal of the NEPA process. Citizens possess a wealth of knowledge that can be extremely helpful and enlightening for federal agencies. Moreover, these comments voice real concerns over aspects of the PennEast proposal that FERC itself has flagged as important. Thus FERC will best serve the public by carefully considering the content of the citizen input summarized here and, moreover, by addressing citizens’ concerns fully in its analysis of the potential adverse effects of the PennEast Pipeline.

For their part, citizens and their representatives can use this analysis and the data behind it to evaluate how well FERC succeeds in addressing the adverse effects of the proposed PennEast Pipeline. Delaware Riverkeeper Network can provide interested readers with further information about the PennEast Pipeline and how to become or stay involved in the review process at the federal and state levels going forward.

¹⁰ Hall, Richard, William Penniman, and Kirk Bowers. 2016. “GHG Emissions Associated with Two Proposed Natural Gas Transmission Lines in Virginia.” Virginia Chapter Sierra Club. 17 pp. http://www.ourenergypolicy.org/wp-content/uploads/2016/02/GHG-Emissions-Associated-with-Proposed-Natural-Gas-Transmission-Lines-in-Virginia_Final-edit5-1.pdf.

Appendix A: Comment Analysis Form

Note: Reads from left to right.

PennEast FERC Comment Analysis

Thank you so much for helping to analyze the input received by the Federal Energy Regulatory Commission (FERC) regarding the proposed PennEast Pipeline.

You don't have to be an expert on the issues to help out, but your help will enable detailed economic and policy analysis that will lead to better information being brought to bear on FERC's decisions regarding the pipeline over the coming year.

Just as a reminder here's how to analyze your comment:

1. With your comment letter open in another window, fill out the form below to the best of your ability. Select (and sometimes type) answers to the questions on the survey using the information in the comment.
2. You may want to read or skim the comment before you begin answering questions in order to get the idea of the commenter's points first.
3. Please understand that we are trying to record as accurately as possible what the commenter is portraying in their comment, regardless of what his/her opinion might be regarding the pipeline itself. Our goal is to have a fair and accurate accounting of what people have said to FERC.
4. When you have finished filling out this form click submit.
5. Choose 'submit another response' to repeat for another comment letter.

Most of all, please accept our great thanks for your help.

Please e-mail keeper@delawariverkeeper.org if you have any other questions about this process.

* Required

Please enter your email. *

Your answer _____

Please enter the "Submittal Number" of the comment. This is the title of the PDF comment you were sent. *

It will be numbers in the form XXXXXXXX-XXXX (12 total digits).

Your answer _____

How does the person who submitted the comment describe him/herself?

Check all that apply

- Individual (including landowner)
- Business
- Association or Organization
- Government Official
- Expert Report
- Other: _____

- Other PA County
- Any Other State
- Unstated/Unsure

Please list the name of the commenter, including any associations they list.

Association Examples: PennEast Pipeline Company, Owner/Employee of _____, Member/officer of [organization] (Homeowners Association, Delaware Riverkeeper Network, Chamber of Commerce, etc.)

Your answer _____

If the commenter specifically states, or if you know from other information they give, check off the County in which they reside (or own property/do business). *

The specific counties listed are those crossed by the proposed pipeline route.

- Bucks, PA
- Carbon, PA
- Luzerne, PA
- Northampton, PA
- Hunterdon, NJ
- Mercer, NJ
- Other NJ County

If the commenter lists his/her residence or other property near the proposed pipeline route, please indicate, as specifically as possible, the property's location.

For example "123 main street, Mercer, NJ," "Luzerne," or just "Pennsylvania."

Your answer _____

Does the commenter mention any of the following economic factors that they say will be impacted either positively or negatively if the PennEast Pipeline is built?

Please choose a rating for all that are mentioned. Leave blank any others.

	Positively	Negatively	Did Not Mention
Economy (generally)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Jobs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Citizen Input Regarding the Proposed PennEast Pipeline

Attractiveness of the Region for Business Development	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recreation and Tourism Businesses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Other Local Businesses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Property Values	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impacts on Preservation Easements on Private Lands or Conservation Easements	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Overall how does the commenter think the PennEast Pipeline will affect the economy?

Please leave blank if they seem to have no opinion.

	1	2	3	4	5	
Extremely Negatively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely Positively

Does the commenter mention any of the following energy factors that they say will be impacted either positively or negatively if the PennEast Pipeline is built?

Please choose a rating for all that are mentioned. Leave blank any others.

	Positively	Negatively	Did Not Mention
"Clean"/Renewable Energy Supply (Solar, Wind, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Energy Reliability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Cost of Energy	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
U.S. Energy Independence	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Shale Gas/Drilling/Fracking	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
LNG/Shale Gas Exports	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Overall how does the commenter think the PennEast Pipeline contributes to US energy needs?

Please leave blank if they seem to have no opinion.

	1	2	3	4	5	
Extremely Negatively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely Positively

Does the commenter mention any of the following environmental factors that they say will be impacted either

positively or negatively if the PennEast Pipeline is built?

Please choose a rating for all that are mentioned. Leave blank any others.

	Positively	Negatively	Did Not Mention
Environment (generally)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Surface Water (including Susquehanna, Delaware, and Lehigh Rivers)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Groundwater (including wells and springs)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wetlands	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Habitat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Agricultural Areas and Soils	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Wildlife	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Vegetation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Federal and State-Listed Threatened, Endangered, and Sensitive Species	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Forested Areas (including fragmentation)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

	Positively	Negatively	Did Not Mention
Recreation Areas including Parks and Nature Preserves (including the Appalachian Trail, Sourland Conservancy, and other state-managed and preserved lands)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Air Quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Geologic Hazards Including Karst and Seismic Areas	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Livestock	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Erosion	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sedimentation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Climate Change	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Overall how does the commenter think the PennEast Pipeline will affect the environment?

Please leave blank if they seem to have no opinion.

	1	2	3	4	5	
Extremely Negatively	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely Positively

Citizen Input Regarding the Proposed PennEast Pipeline

Does the commenter mention any of the following lifestyle factors that they say will be impacted either positively or negatively if the PennEast Pipeline is built?

Please choose a rating for all that are mentioned. Leave blank any others.

	Positively	Negatively	Did Not Mention
Recreational Opportunities and/or Quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Educational Opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality of Life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Impacts Related to Noise During Construction and Operation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local/Rural Character (including aesthetics)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Property Rights	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Risk of Accidents or Other Risks to Safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Culture	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Overall how does the commenter think the PennEast Pipeline will affect lifestyle?

Please leave blank if they seem to have no opinion.

	1	2	3	4	5	
Extremely Negative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely Positive

If the commenter mentions the compressor station proposed for Carbon, PA, do they mention any of the following factors that they say will be impacted either positively or negatively if the compressor station is built?

Please choose a rating for all that are mentioned. Leave blank any others.

	Positively	Negatively	Did Not Mention
Quality of Life	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Health	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal/Family/Others' Safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Air Quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Water Quality	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Noise Pollution	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Property Values	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Local Economics	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Did the commenter mention environmental justice?

Environmental Justice is the fair treatment of all people regardless of race, color, national origin, or income when it comes to environmental impacts. Leave blank if they did not mention.

- Positively
- Negatively

Does the comment express concern over any of the following systemic issues?

Check all that apply.

- Purpose and Need for the Project
- Impacts on Residential Areas and Use of Eminent Domain
- Cumulative Effects of Multiple Pipeline Proposals
- Assessment of Alternative Pipeline Routes and Compressor Station Locations

Cumulative Impacts

What is the desired outcome of the commenter?

- Pipeline is built
- Pipeline is not built
- Unstated/Unsure
- Other: _____

Overall what is this comment's attitude toward the proposed PennEast Pipeline?

	1	2	3	4	5	
Extremely Negative	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	Extremely Positive

In your opinion, does this comment letter include a good personal story/testimony that illustrates one or more of the following effects?

Check all that apply:

—

Citizen Input Regarding the Proposed PennEast Pipeline

- Effects on ecosystem services, or the capacity of natural systems to provide clean water, air, recreation, beauty, etc. to people
- Effects on human health and safety
- Effects on property values (including on market prices, appraisals, insurability, and ability to get a mortgage)
- Effects on the community services like fire, police, road maintenance, and the costs of providing them
- Effects on the attractiveness of the community/region as a place to live, work, do business, or retire

If the commenter used or referenced any statistics in their comment please list them here with the source of the statistic, if available.

Please be as specific as possible to enable our researchers to find the source data if needed.

Your answer _____

Please list anything else the comment said that you felt was of importance and not covered in previous questions.

Your answer _____

Does this comment appear to be a form letter?

A form letter is a letter written from a template, rather than being specially composed by each individual.

- Yes
- No
- Maybe

Does this comment appear to be a petition

- Yes
- No
- Maybe

NEXT

Never submit passwords through Google Forms.

Appendix B: Instructions for Volunteers

Dear Volunteer,

Thank you so much for helping to analyze the input received by the Federal Energy Regulatory Commission (FERC) regarding the proposed PennEast Pipeline. The comments you will review are part of the “scoping” phase, in which citizens, experts and interested parties are to advise FERC on what questions and issues it should consider when writing an Environmental Impact Statement for the PennEast Pipeline. This is all part of FERC’s obligations under the National Environmental Policy Act, or NEPA.

You don't have to be an expert on the issues to help out, but your help will enable detailed economic and policy analysis that will lead to better information being brought to bear on FERC's decisions regarding the pipeline over the coming year. If you'd like to learn more about the pipeline proposal and DRN's associated efforts, you can read about it at <http://bit.ly/DRN-StopPennEastPipeline>.

Here's how your citizen-science participation works:

1. Attached to this e-mail is a "packet" of 3 comment letters for you to review.
2. For each comment letter in the packet:
 1. Open the comment letter right in your browser, or download it and open it using Adobe Acrobat Reader or a similar program.
 2. Click on [this link](#) to open a fresh copy of the review/summary form. If that link doesn't work automatically, please paste the following into the address bar of a new browser window and hit <enter>:
<https://docs.google.com/a/keylogeconomics.com/forms/d/1qDyf6CMQ7os4tqQt5nKxMM7TB8PIBk4mkRJ4NMf1Rfw/viewform>
 - i. To the best of your ability, select (and sometimes type) answers to the questions on the survey using the information in the comment.
 - ii. You may want to read or skim the comment before you begin answering questions in order to get the idea of the commenter's points first.
 - iii. Please understand that we are trying to record as accurately as possible what the commenter is portraying in their comment, regardless of what his/her opinion might be regarding the pipeline itself. Our goal is to have a fair and accurate accounting of what people have said to FERC.
3. Repeat steps 2.1 through 2.3 for the other two comments in your packet.
4. Please be sure to answer the last questions on the survey about your progress with your packet. This step will be extremely helpful for us so that we can keep track of which of the many thousands of submitted comments have been reviewed. If you decide you don't want to participate please email to let us know you won't be doing any of your comments or perhaps that you only did 1 or 2 of the packet. That is still helpful work and good for us to know! We'll ask a different volunteer to review the other comment(s). We ask that you finish your packet within 7 days of receiving it if possible.
5. At the end of the survey you will have an option to request more comments to review if you would like. We'll be thrilled if you do! Please feel free to spread the word and pass information about this opportunity along to anyone else you think might be interested in helping out!

Most of all, please accept our great thanks for your help. Thanks to your participation and that of many other volunteers we know we can get through the thousands of comments submitted to FERC and help ensure better decisions for the people, communities, and economies concerned about the proposed pipeline.

We are so grateful for your time. Please email me at keeper@delawariverkeeper.org if I have left anything out of the instructions that you need to proceed. Either I or my assistant Bridget will get right back in touch to help out.

Yours,

Maya K. van Rossum
the Delaware Riverkeeper

Appendix C: Additional Issues Listed in FERC’s Notice of Intent to Prepare an EIS¹

<h3>How Would the PE Pipeline Affect Surface Water?</h3> <table border="1"> <caption>Data for Surface Water Impact Chart</caption> <thead> <tr> <th>Commentor Location</th> <th>Positively</th> <th>Negatively</th> </tr> </thead> <tbody> <tr> <td>Other</td> <td>0</td> <td>~180</td> </tr> <tr> <td>Other County, PennEast State</td> <td>0</td> <td>~120</td> </tr> <tr> <td>PennEast County</td> <td>0</td> <td>~650</td> </tr> </tbody> </table>	Commentor Location	Positively	Negatively	Other	0	~180	Other County, PennEast State	0	~120	PennEast County	0	~650	<ul style="list-style-type: none"> • FERC category: “Surface water including Susquehanna, Delaware, and Lehigh Rivers” • 99.6% mention negative impacts.
Commentor Location	Positively	Negatively											
Other	0	~180											
Other County, PennEast State	0	~120											
PennEast County	0	~650											
<h3>How Would the PE Pipeline Affect Wildlife?</h3> <table border="1"> <caption>Data for Wildlife Impact Chart</caption> <thead> <tr> <th>Commentor Location</th> <th>Positively</th> <th>Negatively</th> </tr> </thead> <tbody> <tr> <td>Other</td> <td>0</td> <td>~80</td> </tr> <tr> <td>Other County, PennEast State</td> <td>0</td> <td>~40</td> </tr> <tr> <td>PennEast County</td> <td>0</td> <td>~370</td> </tr> </tbody> </table>	Commentor Location	Positively	Negatively	Other	0	~80	Other County, PennEast State	0	~40	PennEast County	0	~370	<ul style="list-style-type: none"> • FERC category: “Wildlife” • 99.6% mention negative impacts.
Commentor Location	Positively	Negatively											
Other	0	~80											
Other County, PennEast State	0	~40											
PennEast County	0	~370											
<h3>How Would the PE Pipeline Affect Vegetation?</h3> <table border="1"> <caption>Data for Vegetation Impact Chart</caption> <thead> <tr> <th>Commentor Location</th> <th>Positively</th> <th>Negatively</th> </tr> </thead> <tbody> <tr> <td>Other</td> <td>0</td> <td>~70</td> </tr> <tr> <td>Other County, PennEast State</td> <td>0</td> <td>~50</td> </tr> <tr> <td>PennEast County</td> <td>0</td> <td>~360</td> </tr> </tbody> </table>	Commentor Location	Positively	Negatively	Other	0	~70	Other County, PennEast State	0	~50	PennEast County	0	~360	<ul style="list-style-type: none"> • FERC category: “Vegetation” • 100% mention negative impacts.
Commentor Location	Positively	Negatively											
Other	0	~70											
Other County, PennEast State	0	~50											
PennEast County	0	~360											

<h3 style="text-align: center;">How Would the PE Pipeline Affect Geologic Hazards?</h3> <table border="1"> <caption>Data for Geologic Hazards Chart</caption> <thead> <tr> <th>Commentor Location</th> <th>Positively</th> <th>Negatively</th> </tr> </thead> <tbody> <tr> <td>Other</td> <td>0</td> <td>~45</td> </tr> <tr> <td>Other County, PennEast State</td> <td>~15</td> <td>~15</td> </tr> <tr> <td>PennEast County</td> <td>0</td> <td>~185</td> </tr> </tbody> </table>	Commentor Location	Positively	Negatively	Other	0	~45	Other County, PennEast State	~15	~15	PennEast County	0	~185	<ul style="list-style-type: none"> • FERC category: “Geologic hazards including karst and seismic areas” • 99.2% mention negative impacts.
Commentor Location	Positively	Negatively											
Other	0	~45											
Other County, PennEast State	~15	~15											
PennEast County	0	~185											
<h3 style="text-align: center;">How Would the PE Pipeline Affect Noise?</h3> <table border="1"> <caption>Data for Noise Chart</caption> <thead> <tr> <th>Commentor Location</th> <th>Positively</th> <th>Negatively</th> </tr> </thead> <tbody> <tr> <td>Other</td> <td>0</td> <td>~45</td> </tr> <tr> <td>Other County, PennEast State</td> <td>~15</td> <td>~15</td> </tr> <tr> <td>PennEast County</td> <td>0</td> <td>~205</td> </tr> </tbody> </table>	Commentor Location	Positively	Negatively	Other	0	~45	Other County, PennEast State	~15	~15	PennEast County	0	~205	<ul style="list-style-type: none"> • FERC category: “Noise during construction and operation” • This graph represents a combination of answers to our survey question about effects on noise in general and effects on noise related to the proposed compressor station. • 99.2% mention negative impacts.
Commentor Location	Positively	Negatively											
Other	0	~45											
Other County, PennEast State	~15	~15											
PennEast County	0	~205											