

TOWNSHIP OF KINGWOOD

Environmental Commission Meeting:
Fourth Tuesday of Each Month – 7:30pm
Municipal Building:
Corner of Rt. 519 & Oak Grove Rd.
Fax: (908) 996-7753



Address Reply To:
Cynthia Keller, EC Secretary
P.O. Box 199
Baptistown, NJ 08803-0199
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Cheryl A. LaFleur, Chairman
Federal Energy Regulatory Commission
888 First Street Northeast, Room 1A
Washington, DC 20426

RE: Docket PF15-1-000

September 24, 2015

Dear Ms. LaFleur,

The Kingwood Township Committee adopted RESOLUTION NO. 2014 – 98 RESOLUTION CONCERNING PENNEAST PIPELINE, which objects to the proposed PennEast Pipeline¹ Kingwood Township filed written comments to FERC on 2/5/2015 and 2/25/2015, and oral and written comments at the Scoping Meetings detailing some of the township’s concerns about environmental, economic, health and safety impacts of the pipeline. However, we found that the scoping comments summaries and the Resource Reports have failed to address these concerns. We therefore take issue with PennEast’s characterization that, “100 percent of municipalities in New Jersey are being uncooperative.”² The evidence of PennEast’s lack of response to Kingwood Township’s (and its citizens’) concerns and questions; the company’s refusal to hold a public meeting in Kingwood; Kingwood officials’ willingness to meet with PennEast representatives; and PennEast’s efforts to ignore or skirt NEPA, NJDEP, DRBC and BPU regulations tell a different story.

On 8/18/2015, we submitted comments on Resource Reports 8, 9 and 11 and on 9/17/2015 we submitted comments on Resource Report 3. This letter presents our comments on Resource Reports 1, 4, 5 and 10. These are merely examples. Since it would be inappropriate for us volunteers to do PennEast’s work for them, we did not undertake to identify each and every omission or deficiency in PennEast’s responses. It may, however, be indicative of the company’s attention to detail and work ethic, and call into question if this company should be responsible for controlling a billion cubic feet of explosive gas on a daily basis. **We would like to underscore that, even if all these inadequacies are addressed, the fact remains that the project confers no public benefit, and the route PennEast has chosen jeopardizes local and regional resources that are so sensitive that the impacts cannot be mitigated. We can obtain our energy needs from many sources, but we cannot replace our precious natural resources nor is financial gain for a private company adequate justification for impacts to public health and the economy.**

¹ Township of Kingwood Resolution 2014-98. 12/12/2014. <http://elibrary.ferc.gov/idmws/common/opennat.asp?fileID=13717767> .

² MEETING MINUTES, PennEast Pipeline Company, LLC (PennEast) (Applicant), Docket Number PF15-1-000. 9/10/2015

Subject: Penn East Resource Report 1: General Project Description

Land Requirements

In Resource Report 1, PennEast states, “The PennEast Project requires a 50-foot permanent ROW and, on average, an approximately 50-foot temporary construction workspace for a nominal 100-foot-wide construction corridor. This corridor width is based on construction conditions of similar projects within Pennsylvania. From the center of the ditch, the spoil side of the construction ROW is proposed to be 35 feet. This footprint will serve as the primary spoil storage area. Thus, the working side of the construction ROW will typically be 65 feet wide from the center of the ditch and will serve to accommodate trench excavation, bank sloping, topsoil segregation and safe equipment mobilization. Agricultural areas where full topsoil segregation of 12 inches deep will require an additional 25 feet totaling a 125-foot-wide construction corridor.”³ Why is the ROW so wide, when other pipeline corridors are not this wide? What will be done with the spoils during and after construction to prevent arsenic in the bedrock from entering our air (via particulates) and water? If it is disposed of outside of the municipality, will the recipient know that the rocks may contain high levels of arsenic, which is mobilized by exposure to oxygen?

In Table 1.3-2, PennEast proposes to construct an access road (“AR-045”) off Horseshoe Bend Road approximately 0.3 miles in length at Mile Marker 86.8.⁴ How was this location selected? We feel that PennEast should have assessed this location before selecting it and should have known that this narrow, dirt, private driveway is inappropriate for large construction vehicles. The turn to negotiate this driveway is difficult for a passenger vehicle, and likely impossible for heavy equipment, pipes, trucks cranes etc. It is hemmed between Copper Creek and solid bedrock cliffs with an old narrow bridge which is unsuitable for ordinary trucks. Does PennEast plan to replace this bridge? Any road improvements of the proposed access road would result in stream encroachment, destruction of the riparian buffer, increased runoff (raising the potential for downstream flooding) and sedimentation into the stream, impacts to approximately 0.25 miles of wetland length, loss of old growth trees (which would reduce shading of the stream and impact water quality), and removal of scenic cliffs. In addition, the road that would be used to get to this driveway (Horseshoe Bend Road), like so many other roads in Kingwood, is narrow (in some places one lane), with winding S-turns and old narrow bridges with low weight limits that cannot be negotiated by large or long vehicles. This section of Horseshoe Bend Road cannot be traversed by school buses. We find PennEast’s lack of analysis and foresight in selecting this location as a major access road to be disturbing in a company that expects to be given responsibility for a project that infringes on citizens’ life, liberty and the pursuit of happiness.

PennEast proposes to use Kingwood Block 36 Lot 8 for a pipeyard⁵ (Note: this is not actually specified in RR1, since the coordinates in the report were off the route by 50 miles, but corrected coordinates were obtained by email).⁶ We are concerned about the impacts of this activity on the soils, wetlands and forests on this site. While it isn’t stated, presumably this means they would use the closest road, which is Featherbed Road, as a major thoroughfare for transporting the pipe sections to the pipeline corridor, since the route does not touch on this property. Again, is PennEast aware that this is another tiny lane unsuitable for large heavy vehicles? We’re not even sure if County Route 519, on which the proposed

³ PennEast Pipeline Company, LLC. PENNEAST PIPELINE PROJECT RESOURCE REPORT 1: General Project Description. FERC Docket No. PF15-1-000. Pre-Filing Draft April 2015, page 1-15.

⁴ PennEast Pipeline Company, LLC. PENNEAST PIPELINE PROJECT RESOURCE REPORT 1: General Project Description. FERC Docket No. PF15-1-000. Pre-Filing Draft April 2015, page 1-21.

⁵ PennEast Pipeline Company, LLC. PENNEAST PIPELINE PROJECT RESOURCE REPORT 1: General Project Description, page 1-25.

⁶ Kevin Kelleher, Director – Midstream Business Development, UGI, email to D.Kratzer RE: Kingwood. 4/23/2015.

pipeyard property abuts, can handle the size vehicles that would be involved in pipeline construction. Is PennEast going to cut all the trees along Horseshoe Bend Road, the proposed access road and Featherbed Road? Stripping or removing trees along these roads will forever alter not only the bucolic nature of these back roads, but also will increase storm water runoff, raising the potential for extreme road damage from storm events. Is PennEast going to repair all of the light-load bridges and roads damaged by construction equipment?

Subject: Penn East Resource Reports 4: Cultural Resources

Resource Report 4⁷ failed to identify what is arguably one of the most significant cultural resources in the region: A Native American village site located near the confluence of the Muddy Run and the Lockatong Creek, which was documented in a 1917 study.⁸ Even after this was brought to PennEast's attention, the proposed route plows straight through this important cultural resource. An additional concern has arisen in this regard due to PennEast's recent cultural resources survey activities on the nearby property owned by the State of NJ. On this property, many (>75) test pits were dug and the areas were not restored to the condition of the land prior to disturbance. This calls into question PennEast's commitment and ability to restore and mitigate the damage they cause.

One further note of concern: An actual excavation to accommodate the pipeline would be much deeper and wider than the test holes, cutting deep into Mesozoic bedrock, and increasing the likelihood of encountering Triassic or Jurassic vertebrate fossils. Research by the late Dr. Donald Baird (Princeton University) and more recently by Dr. Paul Olsen (Lamont-Dougherty Earth Observatory, Columbia University) illustrates the diversity of vertebrate fossils that could be found along the proposed route of the pipeline (Shirley Albright, Assistant Curator of Natural History (retired), New Jersey State Museum, personal communication, September 24, 2015). Discoveries to date have clustered along river banks and cliff-sides, but once excavation begins the rock strata that contain those fossils will be exposed. Basing any conclusion about the impact of construction on anything shallower and narrower is analogous to comparing apples with apple seeds. In other words, the survey needs to take into account not only the top soil but the basement rock. That is especially true in Kingwood Township where the soil layer is so shallow, and yet blasting and/or drilling for pipeline construction would destroy any cultural or paleontological specimens.

Furthermore, what has become of any cultural or paleontological specimens collected by PennEast and its contractors? What oversight does NJDEP require to ensure that prehistoric cultural artifacts and/or vertebrate paleontological specimens are recognized as such, reliably identified, contextual data recorded, and the objects themselves correctly handled and labeled? IF any artifacts, fossils, rocks and/or soil samples were collected by permit on public lands, those objects and associated documentation should be placed in a repository designated by NJDEP, preferably an accredited museum or research institution where they will be professionally maintained in perpetuity as a cultural and scientific resource for the people of the State of New Jersey.

⁷ PennEast Pipeline Company, LLC PENNEAST PIPELINE PROJECT RESOURCE REPORT: Cultural Resources. FERC Docket No. PF15-1-000 Pre-Filing Draft. April 2015.

⁸ Max Schrabisch, NJ Geological Survey. 1917. Archeology of Warren and Hunterdon Counties (with map). Bulletin 18 (Geologic Series). <http://www.nj.gov/dep/njgs/enviroed/oldpubs/bulletin18.pdf>

Subject: Penn East Resource Reports 5: Socioeconomics

Local Economy

PennEast considers only positive impacts that could result from its proposed pipeline. However, PennEast must be required to analyze the negative impacts, as well. Kingwood Township's economy is closely entwined with its aesthetics and natural resources. The PennEast pipeline's potential economic impacts include: reduced property values throughout the township due to loss of aesthetics and real or perceived threats to safety and drinking water; loss of tax revenue due to reduced property values; potential damage to structures, well casings and septic systems⁹; potential need for additional water treatment in private wells¹⁰; potential lowering of water table; potential need for additional water treatment of Delaware River and D&R Canal water; loss of the benefits of wetlands that cannot be fully remediated; damage to roads and bridges from increased truck traffic during construction; increased deer overpopulation, causing impacts to agriculture and deer-vehicle collisions; loss of the benefits of trees that have been removed; loss of forest resources and forest related jobs; loss of farm productivity and farm related jobs; and loss of ecotourism.

Kingwood Township relies exclusively on individual wells for water and individual septic systems for waste disposal. Blasting, drilling and other construction activities may impact septic systems, wells, foundations and structures, not just the properties crossed by the pipeline, but throughout the township. Damage to well casings could result in pollution entering the well water. Damage to septic systems could result in failure to function, causing effluent to be inadequately treated (endangering downstream wells and surface water). However, damage to underground infrastructure isn't going to be visible. What if our aquifer is contaminated and/or the water yields lowered? What financial restitution would homeowners receive? Due to environmental constraints, public infrastructure is not an option. The economic costs of potential damage to septic systems, wells, structures and the aquifer must be considered in the economic analysis of the pipeline.

The report claims that the proposed pipeline will not impact property values.¹¹ However, our perception is that our area is much different than the areas the industry studied for their report. People choose to live in relatively remote Kingwood Township to pursue their American dream, including peace, quiet, nature, independence and a measure of distance from urban trappings and dangers, such as pipelines. Every home and business relies on private wells and septic systems. Many of these are in the *direct* route of the proposed pipeline, and PennEast has not addressed this issue at all. Furthermore, wells and septic systems both near and far from the pipeline route are vulnerable to damage caused in the short-term by construction activities (blasting and drilling through our shallow bedrock) and long-term by changes to hydrology and possible releases of arsenic previously chemically bound in the rocks. One real estate broker estimates the impact of the PennEast pipeline on property values to be up to 20%.¹² Without a functioning aquifer, wells and septic systems, homes are worth nothing.

⁹ Septic systems cost up to \$50,000, according to the Raritan Headwaters Association's Septic Care brochure, although anecdotal evidence suggests septic system costs are 40% higher than that in Kingwood.

¹⁰ Arsenic removal systems cost about \$2,740 to install + \$.67 to \$1/day to maintain the system, according to NJGS, http://www.nj.gov/dep/pwta/Arsenic_Treatment.pdf.

¹¹ PennEast Pipeline Company, LLC. PENNEAST PIPELINE PROJECT RESOURCE REPORT 5: Socioeconomics. FERC Docket No. PF15-1-000 Pre-Filing Draft. April 2015, page 5-19.

¹² Walter Klim, ReMax Real Estate Broker, to Dennis and Joan Kager. April 12, 2015. Letter RE: Impact of the Pipeline on Property Values.

Economic Benefits of Trees

PennEast will impact primarily forests,¹³ and yet does not consider the socioeconomic impacts of the loss of trees, both within forested settings and residential and street trees, that would result due to the pipeline. In Kingwood Township alone, according to PennEast, the proposed pipeline would destroy 49.1 acres of forest (959.3 acres for the entire ROW),¹⁴ although this number doesn't take into account the loss of residential and street trees. Approximately 62% of the impacted forests in Kingwood are mature forests. Destroying the old growth trees cannot be mitigated.

A few of the benefits of trees are summarized by the Arbor Day Foundation:^{15, 16}

- Landscaping, especially with trees, can increase property values as much as 20 percent. - *Management Information Services/ICMA*
- One acre of forest absorbs six tons of carbon dioxide and puts out four tons of oxygen. This is enough to meet the annual needs of 18 people. - *U.S. Department of Agriculture*
- The net cooling effect of a young, healthy tree is equivalent to ten room-size air conditioners operating 20 hours a day. - *U.S. Department of Agriculture*
- Trees properly placed around buildings can reduce air conditioning needs by 30 percent and can save 20–50 percent in energy used for heating. - *USDA Forest Service*
- Trees can be a stimulus to economic development, attracting new business and tourism. Commercial retail areas are more attractive to shoppers, apartments rent more quickly, tenants stay longer, and space in a wooded setting is more valuable to sell or rent. - *Arbor Day Foundation*
- The planting of trees means improved water quality, resulting in less runoff and erosion. This allows more recharging of the ground water supply. Wooded areas help prevent the transport of sediment and chemicals into streams. - *USDA Forest Service*
- In laboratory research, visual exposure to settings with trees has produced significant recovery from stress within five minutes, as indicated by changes in blood pressure and muscle tension. - *Dr. Roger S. Ulrich, Texas A&M University*
- Nationally, the 60 million street trees have an average value of \$525 per tree. - *Management Information Services*
- A single 12 inch Shagbark Hickory (a common tree species in Kingwood Township) is estimated to provide overall benefits of \$192 every year (including intercepting 1,480 gallons of stormwater runoff and reducing atmospheric carbon by 469 pounds, among other benefits). - *National Tree Benefit Calculator*

National Economy

We also question the impacts of PennEast on the wider economy. Could PennEast be the next Enron? The issues raised by then-US Senator Joe Lieberman are astoundingly similar to what we're encountering today with FERC and PennEast's proposed pipeline, "In view of the "Governmental Affairs Committee Chairman Joe Lieberman, D-Conn., Tuesday said an exhaustive committee investigation has concluded that federal energy oversight of Enron Corp. was 'an embarrassing and unacceptable' failure of government that came at the expense of energy consumers, Enron employees, and Enron investors. The Federal Regulatory Energy Commission [sic], which had responsibility over Enron's energy business, more often than not trusted Enron's assertions about its business affairs, failed to anticipate and

¹³ PennEast Pipeline Company, LLC. PENNEAST PIPELINE PROJECT RESOURCE REPORT 1: General Project Description, Page 1-27.

¹⁴ PennEast Pipeline Company, LLC. PENNEAST PIPELINE PROJECT RESOURCE REPORT 8: Land Use, Recreation, and Aesthetics FERC Docket No. PF15-1-000. Pre-Filing Draft April 2015, page 8-7.

¹⁵ Arbor Day Foundation. Quotes and Stats. <https://www.arborday.org/celebrate/quotes-stats.cfm> (accessed 9/21/2015).

¹⁶ Arbor Day Foundation. National Tree Benefit Calculator Beta. <https://www.arborday.org/calculator/> (accessed 9/22/2015).

prepare for changes in the energy market, reacted belatedly to many serious offenses, and made no effort to address the gaps, flaws, and inadequacies that allowed Enron to escape scrutiny. ‘Again and again, FERC failed to ask critical questions about Enron’s business practices—questions that might have exposed the fissures in Enron’s fiscal foundation sooner and spared investors, employees, and consumers some of the pain they have endured,’ Lieberman said.... ‘Oftentimes, FERC seemed to view itself not as a regulator but as a facilitator—not as a market cop, but as a market cheerleader, which left consumers without protection.’”¹⁷ The cumulative impacts of all pipelines, and PennEast’s contribution within that context, on the economy and the energy industry, as well as the environment and climate, should be closely scrutinized to determine if there is, in fact, any benefit to the public of this proposed pipeline.

Climate Change and the Economy

An investment in infrastructure that commits to *increased* fossil fuel use in the coming decades is contrary to our economic need to address climate change. The US EPA released a report that estimates “to what degree climate change impacts and damages to multiple U.S. sectors (e.g., human health, infrastructure, and water resources) may be avoided or reduced in a future with significant global action to reduce GHG [greenhouse gas] emissions, compared to a future in which current emissions continue to grow. Importantly, only a small portion of the impacts of climate change are estimated, and therefore this report captures just some of the total benefits of reducing GHGs.”¹⁸

Here are a few of the US EPA’s conclusions (note that the examples show benefits in a particular year, but there are similar benefits in *each* year that GHGs are reduced):¹⁹

- **AIR QUALITY** An estimated 57,000 fewer deaths from poor air quality in 2100
- **ELECTRICITY DEMAND** An avoided increase in electricity demand of 1.1%-4.0% in 2050
- **ELECTRICITY SUPPLY** An estimated \$10-\$34 billion in savings on power system costs in 2050
- **EXTREME TEMPERATURE** In 49 major U.S. cities, an estimated 12,000 fewer deaths from extreme temperature in 2100
- **BRIDGES** An estimated 720-2,200 fewer bridges made structurally vulnerable in 2100
- **ROADS** An estimated \$4.2-\$7.4 billion in avoided adaptation costs in 2100
- **LABOR** Approximately \$110 billion in avoided damages from lost labor due to extreme temperatures in 2100
- **WATER QUALITY** An estimated \$2.6-\$3.0 billion in avoided damages from poor water quality in 2100
- **URBAN DRAINAGE** In 50 U.S. cities, an estimated \$50 million-\$6.4 billion in avoided adaptation costs in 2100
- **COASTAL PROPERTY** Approximately \$3.1 billion in avoided damages and adaptation costs from sea level rise and storm surge in 2100
- **INLAND FLOODING** Estimates range from approximately \$2.8 billion in avoided damages to \$38 million in increased damages in 2100
- **AGRICULTURE** An estimated \$6.6-\$11 billion in avoided damages to agriculture in 2100
- **FORESTRY** An estimated \$520 million to \$1.5 billion in avoided damages to forestry in 2100
- **DROUGHT** An estimated 40%-59% fewer severe and extreme droughts in 2100

¹⁷ U.S. Senate Committee on Homeland Security & Governmental Affairs. 11/12/2002. FERC Oversight of Enron Ranged from "Naive" to "Negligent". <http://www.hsgac.senate.gov/media/minority-media/ferc-oversight-of-enron-ranged-from-naive-to-negligent>

¹⁸ US EPA. 2015. Climate Change in the United States: Benefits of Global Action. United States Environmental Protection Agency, Office of Atmospheric Programs, EPA 430-R-15-001, page 4.

¹⁹ US EPA, pages 8-9.

- **SUPPLY & DEMAND** An estimated \$11-\$180 billion in avoided damages from water shortages in key economic sectors in 2100
- **WILDFIRE** An estimated 6.0-7.9 million fewer acres burned by wildfires in 2100
- **FRESHWATER FISH** An estimated 230,000-360,000 acres of coldwater fish habitat preserved in 2100.

Granting PennEast a certificate of convenience would be the opposite of the global action that is needed to prevent the impacts listed above. Of course, many other actions are needed to slow climate change, but additional pipelines equal accelerated methane and other greenhouse gases being released into the atmosphere. The US EPA states, "...decisions we make today can have long-term effects, and delaying action will likely increase the risks of significant and costly impacts in the future."²⁰

Subject: Penn East Resource Report 10: Alternatives

No-Action Alternative (no pipeline)

PennEast opens their discussion of the no-action alternative (i.e. not building their proposed pipeline) by saying, "The no-action alternative would result in not constructing the PennEast Project, and would therefore not meet the Project shippers' need for the firm transportation capacity commencing on November 1, 2017 as reflected in their commitments in the precedent agreements." This is a convoluted way of saying "if we don't build a pipeline, we wouldn't have a pipeline," which is inadequate justification for a project that will cost \$1 billion to build and cost untold environmental, economic, health and safety impacts to local communities.

PennEast expends exactly 351 words in their entire "analysis" of the no-action alternative, despite the fact that it's the only alternative that doesn't put our environment, health and safety at risk, and therefore is the only acceptable alternative to 100% of the New Jersey municipalities, not because we are uncooperative, but because we have looked at this project with a critical eye. Not a single source is referenced to substantiate statements claiming need, that a different project *might possibly* cause more impacts, that energy shortages exist, that energy prices would decrease as a result of this project (and that the price of pipeline construction wouldn't be passed on to consumers), to substantiate "adverse consequences," "limited electrical resources," "expanding mid-Atlantic Market" or "benefits to regional economic growth." PennEast has not provided an analysis of the market impacts or of the impact of PennEast's surplus gas on existing pipelines. PennEast has failed to substantiate any of the statements in this section with unbiased research, without which FERC cannot grant PennEast the authority to seize private property for corporate gain (again, no public good has been shown).

The section concludes "...no further analysis of this alternative was conducted. Therefore, the no-action alternative is not considered a viable alternative to the proposed action, because it would not accomplish the stated Project purpose and need to provide the volumes of natural gas transportation service to the expanding mid-Atlantic market in an efficient, safe, reliable, and environmentally sound manner."²¹ The concluding paragraph introduces additional unsubstantiated claims of safety (refuted by many comments to FERC and studies of pipeline safety) and environmental soundness (refuted by many comments to FERC and studies of environmental impacts, including permit violations, of pipelines). Again, their foregone conclusion is that a pipeline is needed to transport gas with no evidence of need for a pipeline or for 1 billion cubic feet per day of gas.

²⁰ US EPA , page 6.

²¹ PENNEAST PIPELINE PROJECT RESOURCE REPORT 10: Alternatives FERC Docket No. PF15-1-000. Pre-Filing Draft April 2015, page 10-4.

Energy Conservation

In the energy conservation section of Resource Report 10, PennEast says, “However, natural gas continues to be considered the preferred non-renewable fuel because of its inherent clean-burning properties....”²² This is a widely held misconception perpetuated by the gas industry. If comprehensive impacts from the industry are evaluated, studies have shown that fracked natural gas is NOT cleaner than other fossil fuels. One such study concluded, “Considering the 20-year horizon, the GHG [greenhouse gas] footprint for shale gas is at least 20% greater than and perhaps more than twice as great as that for coal when expressed per quantity of energy available during combustion For the 20 year horizon, the GHG footprint of shale gas is at least 50% greater than for oil, and perhaps 2.5- times greater.”²³

PennEast then concludes, “In summary, natural gas demand in the marketplace is continuing to grow....”²⁴ However, there is no preceding analyses of market demand. Are they referring to the NJ or global marketplace? What are the market projections over the expected lifetime of the pipeline? How does that compare to existing (and under construction) pipeline infrastructure? How does pipeline capacity relate to the total gas available in the Marcellus Shale and decreased time until gas production is no longer technically and/or financially feasible?

Energy Alternatives

We found Section 10.1.2 (Energy Alternatives)²⁵ to provide a superficial evaluation of solar photovoltaic power, at best. In fact, **current solar power generation within Kingwood Township’s borders provides 197% of the township’s average annual residential energy use** (calculations are presented in Attachments A and B), and this doesn’t even count residential solar panels, of which there are many. We will also point out that, in contrast to your land-intensive examples, the existing solar production in Kingwood provides nearly twice the power needs of Kingwood on roughly 80 acres, compared to PennEast’s expectation of directly impacting 128.9 acres in Kingwood.²⁶ Since these photovoltaic systems are connected to the grid and do not presently have energy storage capacity, it is obvious that other power sources supplement Kingwood’s energy use. Nevertheless, solar panels do not put our environment, economy, health and safety at risk the way the proposed pipeline would. They were required to follow local and state ordinances and laws, and did so without seizing any properties from private citizens for their corporate gain. We will also reiterate that only a handful of properties in Kingwood are served by natural gas. We will explain to you, again, that Kingwood Township has no need for PennEast’s gas, therefore the only alternative acceptable is the no-action alternative.

Cumulative Impacts and Climate Action

PennEast needs to include an analysis of the alternatives to investment in infrastructure that commits the United States to increased belching of methane and carbon dioxide into the atmosphere for many decades into the future. The analysis must include consideration of the *cumulative* impacts of pipelines

²² PENNEAST PIPELINE PROJECT RESOURCE REPORT 10: Alternatives, page 10-4

²³ Howarth, R. W., R. Santoro, and A. Ingraffea. 2011. Methane and the greenhouse gas footprint of natural gas from shale formations. Climatic Change Letters, DOI: 10.1007/s10584-011-0061-5 http://www.eeb.cornell.edu/howarth/publications/GHG_update_April_11_2011.pdf and Howarth, R. W., R. Santoro, and A. Ingraffea. 2012. Venting and leakage of methane from shale gas development: Reply to Cathles et al. Climatic Change. doi:10.1007/s10584-012-0401-0. http://www.eeb.cornell.edu/howarth/publications/Howarthetal2012_Final.pdf

²⁴ PENNEAST PIPELINE PROJECT RESOURCE REPORT 10: Alternatives, page 10-4

²⁵ PENNEAST PIPELINE PROJECT RESOURCE REPORT 10: Alternatives, pages 10-5 to 10-6.

²⁶ PENNEAST PIPELINE PROJECT RESOURCE REPORT 8: Land Use, Recreation, and Aesthetics FERC Docket No. PF15-1-000, Pre-Filing Draft April 2015, pages 8-55 to 8-57, 8-14, 8-69, 8-16 and 8-16.

Temporary: ROW 51.6 acres + ATWS 11.8 acres + pipe yard 25 acres = 88.4 acres, although “temporary” may be debatable
Permanent: ROW 39.5 acres + access road 0.9 acres + valve 0.1 acres = 40.5 acres

in the entire region, including the impacts of greenhouse gas releases from fracking and fugitive emissions, as well as environmental, economic, health and safety impacts from fracking and pipelines during construction and for the entire life of the pipelines, not only while burning the fuel. Conveniently, the US EPA recently did some of this research for you, available in a report titled "Climate Change in the United States: Benefits of Global Action."²⁷

This analysis of cumulative impacts must also include consideration of the link between greenhouse gas emissions, climate change, and extreme weather events. According to a report in National Geographic News, "Top climate models predict ... that extremes will increase just about everywhere."²⁸ Superstorm Sandy is still fresh in the minds of New Jersey residents, and it's fair to say that we need to choose alternatives that *decrease* the likelihood of similar future storms and their impacts.

Conclusion

Please recognize that the residents of Kingwood Township *do understand* what is at stake here. We need a safe, healthy place to call home and raise our families. We need to be free to own and enjoy property without fear of having it seized by a private company for corporate gain. We need clean air. We need a clean, reliable source of water, as do the millions of people in central and south Jersey who also rely on our watersheds. We would really like it if sea level rise and more superstorms don't leave us without power for weeks and ruin our favorite New Jersey shore vacation spots. We do not need PennEast's pipeline. We do not need PennEast's gas.

Thank you for your consideration of Kingwood Township's concerns and for standing up for American values.

Sincerely,



Deborah J. Kratzer
Chair, Kingwood Environmental Commission

CC: Kingwood Township Committee
Kingwood Planning Board
Kingwood Board of Health
Congressman Leonard Lance
Senator Robert Menendez
Senator Cory Booker
Assemblyman John DiMaio
Assemblyman Erik Peterson
Senator Michael J. Doherty
Hunterdon County Freeholders
Ruth W. Foster, PhD, NJDEP Office of Permit Coordination and Environmental Review

²⁷ EPA. 2015. Climate Change in the United States: Benefits of Global Action. United States Environmental Protection Agency, Office of Atmospheric Programs, EPA 430-R-15-001.

²⁸ Brian Handwerk. 2/18/2011. Extreme Storms and Floods Concretely Linked to Climate Change? National Geographic News. <http://news.nationalgeographic.com/news/2011/01/110116-climate-change-greenhouse-gas-floods-storms-water/> (accessed 9/21/2015).

John Gray, Acting Director, NJDEP Office of Permit Coordination and Environmental Review
Frank J. Cianfrani, Chief Regulatory Branch, U.S. Army Corps of Engineers
Steve Tambini, Executive Director, Delaware River Basin Commission
Barbara Rudnick, P.G. NEPA Team Leader, EPA Region III
Medha Kochhar, Project Manager, FERC
Sean Sparks, Tetra Tech EC, Inc.
Anthony C. Cox, PennEast Pipeline Company, LLC

Attachment A: Solar Photovoltaic Power Generation in Kingwood Township Compared to Average Annual Electricity Use

Table 1: Solar Power Generation in Kingwood Township¹

Owner	Type	Location	System (kw) ²	kWh per Year ³
Garden Solar	Commercial	Route 12	3000	3,703,158
Garden Solar	Commercial	Slacktown Rd	3000	3,703,158
Sundancer	Commercial	Barbertown-Pt Breeze Rd	13000	16,047,017
Kingwood Township	Municipal, roof	Union Rd	33.63	41,512
Various landowners	Residential	Various	Unknown	Unknown
Total:			19033.63	23,494,845

¹Note: Many residential rooftop and ground mounted solar panels exist in the township but are not counted here.

²Source: Planning Board meeting minutes.

³Source: National Renewable Energy Laboratory (NREL). <http://pvwatts.nrel.gov/pvwatts.php> (accessed 9/18/2015). See Attachment B.

Table 2: Residential Electricity use in Kingwood Township¹

# Kingwood Households ⁴	Average Monthly Electricity Consumption (NJ) (kWh)	Average Annual Electricity Consumption (NJ) (kWh)	Average Annual Electricity Consumption by Kingwood Households (kWh)
1,446	687	8,244	11,920,824

⁴2010 census via wikipedia accessed 9/14/2015

US Energy Information Administration (EIA). Average monthly residential electricity consumption, prices, and bills by state. Accessed 9/14/2015. http://www.eia.gov/electricity/sales_revenue_price/xls/table5_a.xls

Table 3: Percent of Residential Electricity in Kingwood Township Provided by Solar Energy

Solar Power Generation in Kingwood Township (not including residential rooftop systems) (kWh)	÷	Average Annual Electricity Consumption by Kingwood Households (kWh)	x 100 =	Percent of Residential Electricity in Kingwood Township Provided by Solar Energy
23,494,845	÷	11,920,824	x 100 =	197%

Attachment B: Solar Photovoltaic Power Generation Estimate

Source: <http://pvwatts.nrel.gov/pvwatts.php>

PVWatts Calculator
Page 1 of 2



Caution: Photovoltaic system performance predictions calculated by PVWatts® include many inherent assumptions and uncertainties and do not reflect variations between PV technologies nor site-specific characteristics except as represented by PVWatts® inputs. For example, PV modules with better performance are not differentiated within PVWatts® from lesser performing modules. Both NREL and private companies provide more sophisticated PV modeling tools (such as the System Advisor Model at <http://sam.nrel.gov>) that allow for more precise and complex modeling of PV systems.

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RESULTS

23,494,846 kWh per Year *

Month	Solar Radiation (kWh / m ² / day)	AC Energy (kWh)	Energy Value (\$)
January	2.67	1,337,315	168,502
February	3.39	1,625,853	192,258
March	4.47	2,152,187	271,176
April	5.34	2,407,037	303,287
May	5.64	2,510,568	316,332
June	5.78	2,460,128	309,976
July	6.04	2,606,086	328,367
August	5.44	2,357,267	297,016
September	4.72	2,033,349	256,202
October	3.92	1,793,972	226,040
November	2.52	1,166,821	147,019
December	2.30	1,144,262	144,177
Annual	4.35	23,494,845	\$ 2,960,352

Location and Station Identification

Requested Location	Frenchtown, NJ	
Weather Data Source	(TM2) ALLENTOWN, PA	22 mi
Latitude	40.65° N	
Longitude	75.43° W	

PV System Specifications (Residential)

DC System Size	19033.63 kW
Module Type	Standard
Array Type	Fixed (open rack)
Array Tilt	20°
Array Azimuth	180°
System Losses	17%
Inverter Efficiency	96%
DC to AC Size Ratio	1.1

Initial Economic Comparison

Average Cost of Electricity Purchased from Utility	0.13 \$/kWh
Initial Cost	3.30 \$/Wdc
Cost of Electricity Generated by System	0.22 \$/kWh

<http://pvwatts.nrel.gov/pvwatts.php>
9/18/2015

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