

Ucci, Nicholas (DOA)

From: Klinkman Solar Design <info@klinkmansolar.com>
Sent: Tuesday, June 21, 2016 10:23 AM
To: DOA Energy Public Comment
Subject: Testimony on Invenergy plant

Dear Commissioners,

The Invenergy proposal contains unsupportable financial projections. I ask that the commission have a visceral aversion to approving any blatantly unworkable business assumption on Invenergy's part.

The Bulletin of the Atomic Scientists notes, "The probability of global catastrophe is very high, and the actions needed to reduce the risks of disaster must be taken very soon." They specifically point to climate change, along with global thermonuclear war. We can't build the Invenergy natural gas generation plant because our world can't afford to turn it on after it's built. We can be certain that it won't be running for 40 years plus construction time, which is typically the length of the loan. If the plant somehow stays running for 40 years, along with every other such methane gas power plant on earth, money won't be worth much. If, on the other hand, the plant stops running, it won't be paying back its loan.

Next, I happen to be intimately acquainted with the solar electricity field. All solar electricity costs are plummeting. More important, the problem of intermittency is disappearing within the solar industry, and as the holder of U.S. Patent #8823197, I'm one of the players in that subfield. It's a nascent, cutthroat industry. I'm worried about my solar electric competition and they're probably a bit worried about being eclipsed by dark horse solar innovators such as myself. The Invenergy natural gas plant has as much chance of competing in ten years as Curt Schilling's game company had against the manufacturers of the X-box.

Rhode Island's state government is still reeling after it gave an uneducated baseball pitcher \$100 million dollars to start a software company, and the state won't tolerate another wrongway economic call on the state government's part.

Yours,
Paul Klinkman
Klinkman Solar Design

Ucci, Nicholas (DOA)

From: Peter Galvin <pd.galvin@verizon.net>
Sent: Wednesday, June 22, 2016 7:47 PM
To: DOA Energy Public Comment
Subject: initial comment, measure GHG impact of Clear River Energy Center
Attachments: review of FERC final EIS request to McCarthy v2.pdf

Attached for your consideration is a position paper concerning the proper accounting method for measuring net greenhouse gas emissions from new projects. I am pleased you are undertaking such an analysis.

The attached paper is not directed to the Clear River Energy Center project per se. Rather, it was prepared in connection with the environmental impact analysis by the FERC of GHC emissions that should be anticipated from the construction of the Algonquin pipeline. It was submitted to the White House which had recently requested comments on its new interim guidance on this topic, and subsequently added to the FERC docket. However, the analysis deals with how to evaluate GHC emissions in any EIS, and hence is directly relevant to your efforts. See, e.g., the discussion beginning on p.5 of emissions resulting from gas production.

You will note the analysis makes reference to EPA's official position on the shortcomings of the FERC analysis (notwithstanding some EPA staff participation in its development), which the FERC (as an independent Federal agency) chose to ignore. As the analysis of GHC emissions in an EIS remains somewhat new, I would encourage you to consult with the EPA regional director (and not just staff) in preparing your estimates.

Thank you for your attention to this matter.

Peter Galvin
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This document has been submitted electronically at <https://www.whitehouse.gov/webform/submit-comments-revised-draft-guidance-greenhouse-gas-emissions-and-climate-change-impacts>

Christy Goldfuss
Council on Environmental Quality
Washington, DC

March 23, 2015

Dear Ms. Goldfuss,

This is in response to the December 18, 2014 request of the Council on Environmental Quality (CEQ) for comments on a document entitled "Revised Draft Guidance on the Consideration of Greenhouse Gas Emissions and the Effects of Climate Change in NEPA Review"¹ (hereinafter the "Proposed Revised Draft Guidance").

I would like to bring to your attention in this regard a recent Federal agency proceeding which demonstrates the critical need for such guidance. The proceeding, before the Federal Energy Regulatory Commission (FERC), concerned a proposal to expand an existing gas pipeline, known as the "Algonquin" Incremental Market (AIM) proposal.² The final EIS of the FERC failed to take existing CEQ guidance into account in evaluating the environmental impact of the release of greenhouse gas (GHC) emissions.³ Moreover, the FERC failed to take into account

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http://www.whitehouse.gov/sites/default/files/docs/nepa_revised_draft_ghg_guidance_searchable.pdf

² FERC Docket No. CP14-96-000. The final EIS was issued by the FERC on January 23, 2015. http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20150123-3038 The final EIS itself was too large to make available by web; a copy on a disk can be obtained from the FERC.

On March 3, 2015, FERC issued a certificate for this project, shortly after the minimum 30 waiting day period expired. http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20150303-3044 (hereinafter referred to as the "FERC decision". It should be noted that interveners are entitled to seek a rehearing from the FERC until April 2 of this year. Whether or not they do so is not dependent on the concerns set forth in this letter, nor should that decision undermine the need for CEQ to take these concerns into account in issuing new guidance and any other appropriate changes.

³ "Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions," (February 18, 2010) <https://www.whitehouse.gov/sites/default/files/microsites/ceq/20100218-nepa-consideration-effects-ghg-draft-guidance.pdf>

On August 7, 2014, the CEQ denied a petition seeking rulemaking on these matters. <http://energy.gov/nepa/downloads/ceq-s-response-petition-rulemaking-and-issuance-guidance-require-inclusion-climate> The CEQ pointed out, at some length, that climate change considerations

guidance it received although the Environmental Protection Agency EPA).⁴ Moreover the lessons from the Keystone XL pipeline experience appear not to have been absorbed by either agency.⁵ These problems evidence the need for CEQ to promptly issue revised guidance, and for some related actions discussed herein.

A) The Importance of this Action for the President's Priorities

The fact that GHC emissions from the production and transportation of natural gas pose a serious public risk is no longer in doubt,⁶ and no agency can choose to ignore them -- notwithstanding

were clearly encompassed in the agency's regulations, and noted actions it has taken in addition to the 2010 proposed guidelines to ensure that Federal agencies recognized this obligation (e.g., page 5). The 2010 proposed guidance was not lengthy, but is packed with information on an agency's obligations and how the analysis of GHC emissions should be performed. Hence according to the CEQ, the FERC should have been well aware of its obligations at the time it was considering the AIM petition. These comments will not extensively cite from the 2010 proposed guidance, nor will they cite extensively the pending revisions, but the FERC's failure to reference them in detail in the final EIS is telling.

⁴ See, e.g. page ES-1 of the executive summary for references to the EPA's participation. Based on a subsequent communication, cited in the next paragraph, we know that the consultation during the FERC's preparation of the EIS included specific advice from the EPA on how to analyze greenhouse gas emissions associated with this project. The extent of the work is briefly described in a letter from the EPA regional administrator, dated September 29, 2014, included without the specific comments in Appendix 2 of the final EIS as heading FA-4. At that time, the EPA letter states it rated the FERC draft as "EC-2. Environmental Concerns--Insufficient Information." The letter also recommended that additional information the FERC was seeking from the applicant after the draft was issued be released to the public for review. The FERC response is that the material was placed into the online record and was thus available. Comment FA4-1, page FA-12.

The FERC issued its approval of the project based on the final EIS on March 3, 2015 (http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20150303-3044), The views of EPA on the final EIS does not arrive until a week later, on March 9, 2015.

http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20150309-0133 although they are dated March 2. This review will note the issues raised by EPA in its March 2015 comments in the relevant discussions.

In section D.1 of this paper, I recommend that the CEQ revise its rules so that agencies dealing with these complex GHC emission situations should be required to provide more comment time on final EISs, providing them time to receive and consider the comments of EPA and interested parties on final EISs. See *infra*, section D.1.

⁵ See heading B.

⁶ In 2013, a review of more than 200 studies was published in the journal *Science*. See <http://www.cgmf.org/blog-entry/92/Study-America's-naturalgas-system-is-leaky-and-in-need-of-a-fix.html>. The study found that EPA prior estimates of the amount of methane being released into the atmosphere were a significant understatement. Moreover, other studies have also found that EPA

past practices on what an EIS should cover, nor in-house capabilities to perform the required analysis. This conclusion is evidenced by the direction of President Obama in 2014 to develop a strategy for reducing methane emissions⁷ (hereinafter “White House strategy paper”). Moreover in January of 2015, following a year of work by the EPA further evaluating the scope of the problem,⁸ the President instructed the Administrator of the EPA to develop new rules to limit such emissions⁹ (hereinafter the “White House Instruction to EPA”)¹⁰ The latter action is part of a cross-agency project announced by the President to reduce US methane emissions by 2025 to 40-45% from 2012 levels, and explicitly includes the FERC in this effort.

comparisons of the harmful effects of methane gas on the atmosphere, as compared to the harmful effects of carbon dioxide, are significantly underestimated. <http://www.energyjustice.net/naturalgas>, citing the International Panel on Climate Change Fifth Assessment Report, 2013 (see Table 8.7 on p714 in Chapter 8 of that report). The most recent international consensus of climate scientists is that we are about to burst through the GHC emissions budget that keeps us from global disaster, and to prevent that we are going to have to leave most of our fossil fuel resources in the ground. See, e.g., <http://www.theguardian.com/environment/2013/sep/27/ipcc-world-dangerous-climate-change>. Accordingly, every project that would add to methane or other greenhouse gas emissions in even small quantities raises questions that require careful consideration. Projects that may increase methane releases thus require careful evaluation. As noted infra in section C.1, the FERC did not even attempt to quantify the GHC emissions in this case.

⁷https://www.whitehouse.gov/sites/default/files/strategy_to_reduce_methane_emissions_2014-03-28_final.pdf,

⁸ The White House Strategy Paper noted: “During the spring of 2014, the EPA will release a series of white papers on several potentially significant sources of methane in the oil and gas sector and solicit input from independent experts. The papers will focus on technical issues, covering emissions and control technologies that target both VOC and methane —with particular focus on oil and co-producing wells, liquids unloading, leaks, pneumatic devices and compressors. The agency will use these technical documents to solidify its understanding of these potentially significant sources of methane. This robust technical understanding will allow the agency to fully evaluate the range of policy mechanisms that will cost-effectively cut methane waste and emissions. The EPA will make peer reviewer comments available this summer.” I have not reviewed this mass of additional material nor cited to it in our comments, but it was all available to the FERC during the course of its review of the AIM pipeline.

⁹ <http://www.whitehouse.gov/the-press-office/2015/01/14/fact-sheet-administration-takes-steps-forward-climate-action-plan-anno-1>

¹⁰ There was considerable support for this initiative from the members of the US Senate. <http://www.whitehouse.senate.gov/news/release/senators-urge-administration-to-address-methane-pollution>. The EPA has indicated that it may implement these controls through its 2012 New Source Performance Standards for the oil and natural gas industry. <http://yosemite.epa.gov/opa/admpress.nsf/0/BA7961BF631C87BF85257DCD00526FF7>

While the FERC enjoys an independent status, it is subject to the requirements of the National Environmental Policy Act (NEPA), and the preparation by the agency of accurate and complete EISs are essential if the country is to reduce methane and other GHG emissions. Like other agencies, its mission is not that of an environmental regulator; but notwithstanding its obligation to implement its major mission, and pressures upon it from the regulated industry to proceed as quickly as feasible, it would render the NEPA a nullity if ever agency decided to ignore NEPA requirements in pursuance of its main mission. Both, after all, are Congressional mandates. Moreover, proper preparation of EISs by the FERC is also essential to ensure that the agency is not perceived as a captive of the industry it is mandated to regulate. There are many other pending projects coming before the FERC on the expanded use and transmission of natural gas, particularly in the Northeast, and the proper implementation of the law by the FERC is essential if the President's objectives are to be fulfilled.¹¹

B) The Continued Misapplication of the NEPA by Federal Agencies.

The shortcomings of the FERC analysis suggest that major lessons in the implementation of NEPA have not worked their way down into the bureaucracy of the various agencies, including the EPA.

One example of this is the lack of attention being paid to the lessons learned from the EIS discussion of the proposed Keystone XL oil pipeline project. The EPA found serious flaws in State's initial analysis.¹² Examples include: failure to consider the impact of GHG emissions

¹¹ Recent remarks of the FERC chair concede they are subject to the NEPA, but are very troubling in their interpretation of NEPA requirements. "Our review is project specific and confined to the information in the docket. Speculating about unquantifiable impacts is not part of that process. I think that our nation is going to have to grapple with our acceptance of gas generation and gas pipelines if we expect to achieve our climate and environmental goals." p. 6, http://www.press.org/sdites/default/files/20150127_lafleur.pdf But in fact, it is inappropriate for FERC to simply conclude that any emissions from gas generation and pipelines is speculative, individually or cumulatively, without performing the kind of analysis explicitly required by the NEPA and its implementing regulations, as discussed in the 2010 draft guidance. Agency analytical capabilities to conduct such analyses could be one factor in a reluctance to undertake their NEPA obligations, but it is not an excuse. See the discussion in Part D2 of these comments.

¹² There have been several set of EPA comments. The EPA commented on the Keystone Draft EIS were filed in 2010. EPA's comments on the supplemental final EIS (2013) are available at: <http://www.epa.gov/compliance/nepa/20140032.pdf> filed in 2011 on the Supplemental EIS (June 06, 2011), currently available at <http://switchboard.nrdc.org/blogs/ddroitsch/EPA%202011%20letter%20on%20KXL.pdf>. Most recently, the EPA filled comments on the Keystone project in 2015, available at <http://www.epa.gov/compliance/nepa/20140032.pdf>.

To avoid confusion, references in my comments, unless otherwise specified, refer to the 2011 comments.

due to introduction of a significant volume of tar sands into the environment, failure to fully consider the health implications of the action; the assumption that the adverse impacts would occur whether or not the pipeline was built; and serious deficiencies of the market analysis. These deficiencies were widely discussed in the press for over three years.¹³ It is therefore hard to understand why FERC, in considering the consequences of opening up a major underground resource in this country, would not at least consider the similarities and try to avoid the same problems, especially since the FERC received comments on the draft EIS pointing out some of these similarities.¹⁴ Yet the final EIS of the FERC does not appear to review the similarities (or differences), nor does the EPA address them in its comments on the final EIS.¹⁵ This can only add to agency confusion about dealing with future NEPA analyses.

To minimize the potential that agencies will ignore the lessons about the application of NEPA to greenhouse gas emissions, appropriate reference to the Keystone project experience would be valuable addition to the updated guidance currently under consideration.

C) The Specific Problems with the FERC EIS

There are four basic problems raised in the FERC analysis that mirror the deficiencies the EPA noted with the State Department's initial analysis of the Keystone pipeline project. The final EIS:

- 1) fails to consider GHG emissions from production and transportation of more natural gas;
- 2) fails to consider the health risks of GHG emissions, including the environmental justice implications of those health risks;
- 3) fails, in conducting the market analysis, to correctly base its analysis on the energy needs of the region, incorrectly using the stated demand by the gas industry as a surrogate; and

¹³ See, for example, the many articles of the New York Times alone on the subject. These can be perused with a web search for "Keystone KXL New York Times."

¹⁴ Statement of Rhode Island chapter of the Sierra Club, September 16, 2014 (Burrillville hearing), Appendix II of the Final EIS, CO-9.

¹⁵ The final EIS and its appendices are voluminous, and I have not examined every page. However, the document cited in note 9 (comments of RI Sierra club), which direct the attention of the FERC to the Keystone example, is in the form of a side by side showing the response of the agency to its various particulars. These comments make no mention of the Keystone similarities in that document, nor is it mentioned in the Executive Summary of the EIS, nor is it mentioned in the FERC's decision on the AIM project. Moreover, the comparison is not discussed in the EPA comments on the EIS.

4) fails, in evaluating the no build option, to adequately consider the availability of renewable alternatives to the project, nor consider the negative impact that approval of the project will have on the development of renewable alternatives.

In addition, the final AIM EIS also has a fifth problem that did not present itself as clearly in the Keystone EIS, namely impermissible project segmentation. While threads of this problem are relevant to each of the four concerns discussed, we include a separate discussion on this point at the end of this section (#5).

1) Failure of the EIS to consider the GHC emissions from production and transportation of more natural gas.

The FERC decided to exclude consideration of any additional GHC emissions that would be generated as a result of approval of this project from both production sites (the Marcellus shale region which would introduce the natural gas into the proposed pipeline project), and emissions from the pipeline itself due to leaks.

At various points in the final EIS, the FERC offers four different arguments for its decision not to consider the impact of increased GHC production at the wellhead:

- a) The FERC claims that these emissions are not part of the project scope as they define it, and hence need not be considered in their EIS.¹⁶
- b) The FERC claims that the emissions are in any event not “reasonably foreseeable” as contemplated under the NEPA.¹⁷

¹⁶ “We received numerous comments during scoping and on the draft EIS for the Project about cumulative impacts associated with development of natural gas reserves (including hydraulic fracturing) in the Marcellus shale region. Activities associated with Marcellus shale development would occur outside of the Project area’s region of influence. As a result, the local resources that may be affected by Marcellus shale development would not be affected by the Project, and local resources affected by the Project would not be affected by development in the Marcellus shale region.” Executive Summary of final EIS, page ES9.

Along similar lines, the FERC also states that: “The Project does not include the production of natural gas. The scope of this EIS focuses on the natural gas transmission facilities that Algonquin would construct and operate. Our authority under the NGA and NEPA review requirements relates only to natural gas facilities that are involved in interstate commerce. Thus, the facilities associated with the production of natural gas are not under FERC jurisdiction.” (Section 1.2 of final EIS).

¹⁷ “Commenters also noted that the EIS should address the indirect impacts of induced Marcellus shale development. Impacts that may result from additional shale gas development are not “reasonably foreseeable” as defined by the Council on Environmental Quality (CEQ) regulations. Nor is such additional development, or any correlative potential impacts, an “effect” of the Project, as contemplated by the CEQ regulations, for purposes of a cumulative impact analysis. The development of

c) The FERC asserts that since the future growth in production from the Marcellus Shale will not come entirely from this project, it need not consider the part of the growth due to this project.¹⁸

d) The FERC argues that it cannot “meaningfully consider” the matter.¹⁹.

Following are comments on each of these arguments. Thereafter, we turn to the failure of the FERC to even consider the extent of GHC emissions from the transportation of the gas to market, including a consideration of whether any of the mitigation measures required of the project applicant.

a) **Scope.** The first FERC argument, that production is outside of the scope of the project under review, means that no pipeline project that goes outside the physical location of the production site needs to take increased production into question. However, the adverse impacts of GHCs are not physically limited to the physical location of the production. To put those emissions

the Marcellus shale, which is regulated by the states, continues to drive the need for takeaway interstate pipeline capacity to allow the gas to reach markets. Therefore, companies are planning and building interstate transmission facilities in response to this new source of gas supply. In addition, many production facilities have already been permitted and/or constructed in the region, creating a network through which natural gas may flow along various pathways to local users or the interstate pipeline system, including Algonquin’s existing system. Algonquin would receive natural gas through its interconnection with other natural gas pipelines. These interconnecting pipeline systems span multiple states with shale formations in the northeast, as well as conventional gas formations. We cannot estimate how much of the Project volumes would come from current/existing shale gas production and how much, if any, would be new production “attributable” to the Project.

“We also note that the EPA and the states have imposed regulations within the past 2 to 3 years on natural gas production to minimize leaks and methane emissions. Therefore, past studies on production leaks and methane emissions cannot be used to appropriately predict future methane emissions. Predicting methane emissions and associated climate impacts is speculative given the newly required minimization efforts.” (Final EIS section 1.2.)

¹⁸ “The Project does not depend on additional shale gas production that may occur for reasons unrelated to the Project and over which the Commission has no control, such as state permitting for additional gas wells. An overall increase in production of shale gas may occur for a variety of reasons, but the location and subsequent production activity is unknown and too speculative to assume based on the interconnected interstate natural gas pipeline system. Accordingly, the factors necessary for a meaningful analysis of when, where, and how shale gas development would occur are unknown at this time. (Final EIS section 1.2)

¹⁹ “It is simply impractical for this EIS to consider impacts associated with additional shale gas development in separate geographic areas than the proposed Project because cumulative impacts resulting from the Project must, under CEQ regulations, be meaningfully analyzed by this Commission.” (Final EIS, section 1.2)

beyond the boundaries of a project analysis would be to render the goals of the President's plan to reduce national methane emissions. By way of example, had the FERC's position here been taken by the Department of State in connection with its consideration of the Keystone EIS, it would have meant no consideration needed to be given to the GHC impact of increased production of tar sands from Canadian soil.

Moreover this approach was the subject of explicit criticism from the EPA in its review of the final EIS for the AIM project:

"EPA continues to believe that the EIS should have more fully considered the potential for increased gas production associated with the development of project related pipeline capacity. In addition, we note that the FEIS discussion continues to make reference to gas extraction occurring more than 10 miles from the proposed project location as a rationale for limiting the discussion of cumulative impacts. Geographic proximity is not in and of itself the standard for NEPA's requirement to consider impacts that have a reasonably close causal relationship to the proposed federal action." p.5

The example of the Keystone pipeline is also relevant with respect to FERC's argument that it is beyond the scope of its responsibilities under NEPA to look at anything other than natural gas facilities that are within its jurisdiction. The fact that it does not "regulate" production is not an excuse for not considering the impacts of the project in approving a specific project to enable that resource to be transmitted to a market, let alone to ignore the impacts of any emissions that emanate from the transmission of that resource.

b) **Reasonably foreseeable.** The second FERC argument is that the emissions from production are not "reasonably foreseeable." It argues that the development of the Marcellus shale drives the amount of production, rather than the addition of pipelines to carry the gas to market, and it cannot anticipate how this growth will occur.

The FERC argument is backwards. The whole point of the project in question is to provide additional capacity to get gas to market. Without a market, and a means to getting the gas to market (be it truck, rail or pipeline), the gas will remain in the ground.

The 2010 CEQ Guidance, available to FERC, provided a number of suggestions on methods it might apply to calculate the emissions.²⁰ One way the amount of additional gas that will be produced in this case can be calculated is to start with submissions by the applicant of added capacity created by the pipeline, and then factor in the anticipated project lifetime. The range of GHC leakage rates from production wells has been established in a series of studies, enabling the

²⁰ See page 4, 2010 guidance.

simple calculation of likely GHG emissions.²¹ Based upon this calculation, the social cost of the added GHG emissions can then be calculated and included in the evaluation.²²

The situation here is completely analogous to the one analyzed by the Department of State with regard to the Keystone XL pipeline. One pipeline involved a pipeline to carry tar sands, and this one involves a pipeline to carry natural gas, but both present questions of whether production emissions will or will not be accelerated by pipeline construction. The uncertain development of the tar sands region in Canada was not considered a reason to determine that the emissions from production were not reasonably foreseeable. Instead, the Department of State did undertake an effort to examine the emissions that might be generated from the increased production of tar

²¹ Howarth and Ingraffea, *Climate Change*, May 2011, <http://www.acsf.cornell.edu/Assets/ACSF/docs/attachments/Howarth-EtAl-2011.pdf> concluded that somewhere between 3.6 percent and 7.9 percent of the methane from fracking wells was escaping into the atmosphere as it's made its way from underground to end user. McKibben, *Mother Jones*, September 8, 2014, <http://www.motherjones.com/environment/2014/09/methane-fracking-obama-climate-change-bill-mckibben>, adds that "Other researchers ...went to work trying to disprove Howarth and Ingraffea's hypothesis. Some of the research found lower rates of leakage—though the lowest estimates tended to come from estimates provided by industry, or from examinations of the best-performing wells. Some of the research found much higher rates of leakage—these tended to be from teams flying airplanes over fracking fields and actually measuring how much of the gas was in the atmosphere, and it's likely they focused their flights on worse-than-average wells. Over time, academic research has done what it's supposed to do, providing an ever-narrower range of numbers. In April, Howarth published a review of all the data sets so far, and they showed that his original numbers were pretty likely correct: Up to 5 percent of the methane probably leaks out before the gas is finally burned." Many more studies are due to come out this year. <http://insideclimatenews.org/news/20150107/frackings-methane-leakage-be-focus-many-studies-year>

²² In commenting on the SDEIS of the Keystone XL project, the EPA, referring to the 2010 CEQ guidance, provided some suggestions on factors that should be taken into consideration in conducting such an analysis: e.g., the project lifetime and the social cost of such emissions. "...recognizing the proposed Project's life time is expected to be at least fifty years, we believe it is important to be clear that under at least one scenario, the extra GHG emissions associated with this proposed Project may range from 600 million to 1.15 billion tons CO₂-e, assuming the lifecycle analysis holds over time (and using the SDEIS' quantitative estimates as a basis). In addition, we recommend that the Final EIS explore other means to characterize the impact of the GHG emissions, including an estimate of the "social cost of carbon" associated with potential increases of GHG emissions. The social cost of carbon includes, but is not limited to, climate damages due to changes in net agricultural productivity, human health, properly damages from flood risk, and ecosystem services due to climate change. Federal agencies use the social cost of carbon to incorporate the social benefits of reducing CO₂ emissions into analyses of regulatory actions that have a marginal impact on cumulative global emissions; the social cost of carbon is also used to calculate the negative impacts of regulatory actions that increase CO₂ emissions." EPA 2011 comments, page 6.

sands. Its initial analysis fell short in various areas, and was the subject of comment by the EPA,²³ but it least it understood the proper question and made the effort.

c) **Relationship to future growth.** The third FERC argument is clearly irrelevant to their determination not to try to analyze the impacts of this project with respect to additional GHC emissions. Of course the FERC does not have to speculate on how many new wells will come on line in this country or globally. But that is not a rationale for determining that they do have to analyze what extra production is due to the project in question.

d) **Meaningfully consider.** The fourth argument of the FERC appears to be that because it couldn't decide how to do the analysis, they didn't have to do it. This argument might have some relevancy were there evidence in the record that FERC had made a serious effort to look into how they might proceed. However, there is no indication in the final EIS or the agency's decision on the project that the draft 2010 CDQ guidelines or other guidance available was considered, let alone that it was not sufficient to answer any questions. The failure of the FERC to mention either of these suggests that the agency sidestepped its obligation to conduct a meaningful analysis. It does not evidence that they such an analysis was not feasible.

Transportation emissions. We next turn to why the FERC did not consider GHC emissions due to the transportation of additional gas to the market. The FERC ignores questions about the extent of GHC emissions from the pipeline itself from leaks that may develop over time. Its analysis of pipelines leaks is confined to safety and cleanup considerations.²⁴

The FERC offers no explanation of why it decided not to consider the environmental impact of GHC emissions from the proposed pipeline. We infer, however, that FERC decided it could not quantify the matter pending EPA consideration and action on the President's initiative to limit methane emissions.²⁵ This is circular reasoning. The fact that the President has instructed the

²³ Id. Moreover, as already discussed, comments to the FERC on its draft EIS drew attention to the Keystone EIS. CO-18.

²⁴ For example: "Algonquin has developed a Spill Prevention Control and Countermeasure Plan/Preparedness, Prevention, and Contingency Plan for the Algonquin Incremental Market Project (SPCC Plan) that identifies preventive measures to reduce the likelihood of a spill, such as secondary containment for petroleum products, daily equipment inspections for leaks, and restrictions on the transport of potentially hazardous materials to the construction work area. The SPCC Plan also specifies measures to contain and clean up a spill should one occur." (emphasis added) Final EIS section 4.3.1.7.

²⁵ "We also note that the EPA and the states have imposed regulations within the past 2 to 3 years on natural gas production to minimize leaks and methane emissions. Therefore, past studies on production leaks and methane emissions cannot be used to appropriately predict future methane emissions. Predicting methane emissions and associated climate impacts is speculative given the newly required minimization efforts." Final EIS, section 1.2

EPA to look into reducing such methane emissions evidences the fact that this Administration recognizes that there are there, and the FERC is required to review what evidence is available on the matter.

Their failure to do such an analysis was the subject of explicit EPA criticism in their review of the final EIS, which also directed the FERC to the evidence it should consult:

“We also continue to recommend that FERC consider relevant studies regarding methane leaks and emissions. With regard to EPA regulations concerning methane emissions from natural gas processing and transmission sources, please note that EPA is planning to issue a proposed rule later this year that will set standards for emissions from these sources (see "FACT SHEET: Administration Takes Steps Forward on Climate Action Plan by Announcing Actions to Cut Methane Emissions," I/14/2015... The link above provides information regarding EPA white papers that address various technical issues in the construction of gas pipelines. These papers may be helpful in developing estimated methane emissions from the entire project, as well as providing a basis for developing mitigation measures.” EPA March letter, p.5

There is, in fact, evidence that the FERC could have examined in this regard, and it did not do so. In January of this year, a study of emissions from Boston’s aging pipelines, using the latest technology, found that emissions of GHCs from those pipelines were much greater than had been thought.²⁶ In addition, the need to examine emissions from pipeline leaks was raised in comments filed in response to the draft EIS, comments to which the FERC did not respond in the final EIS.²⁷

The final EIS for the AIM project recommends a number of mitigation measures that the FERC ultimately adopted as a condition of its approval of the project. Most of these are clearly directed at safety concerns.²⁸

There are mitigation requirements with respect to pipeline maintenance that, on first impression, would seem to limit leakage of GHCs during the pipeline’s lifetime. These include compliance

²⁶ <http://www.csmonitor.com/Environment/Global-Warming/2015/0124/Cities-may-be-leaking-more-heat-trapping-methane-than-previously-thought>

²⁷ Statement of Rhode Island chapter of the Sierra Club, September 16, 2014 (Burrillville hearing), Appendix II of the Final EIS, CO-9. The citation refers to a side by side version of the comments showing the response of the agency to its various particulars. There is no mention of FERC’s views on the section of those comments pointing to the need to evaluate the GHC emissions from pipeline leaks.

²⁸ Mitigation requirements recommended in the final EIS are listed in section 5.2 of the final EIS.

with Department of Transportation rules,²⁹ and the use of devices (“pigs”) that will travel through the pipeline for maintenance purposes.³⁰ Unfortunately, there is no evidence discussed in the final EIS that these requirements result in a discernable effect in reducing GHC emission leaks, nor did the FERC make such a claim.³¹

The FERC does assert that fugitive methane emissions from compressors along the pipeline will be minimized through management actions.³² While important, this does not address leaks from the miles of additional pipeline to be build; only the compressor stations.

²⁹ “The pipeline and aboveground facilities associated with the AIM Project would be designed, constructed, operated, and maintained to meet or exceed the Pipeline and Hazardous Materials Safety Administration’s (PHMSA) Minimum Federal Safety Standards in 49 CFR 192 and other applicable federal and state regulations. The regulations include specifications for material selection and qualifications; minimum design requirements; and protection of the pipeline from internal, external, and atmospheric corrosion. By designing and operating the Project in accordance with the applicable standards, the Project would not result in significant increased public safety risk”. ES-8.

³⁰ “Algonquin would also modify three existing mainline valve (MLV) sites and five existing pig 1 launcher/receiver sites, construct five new launcher/receiver sites, construct new MLV cross over piping at two locations, and construct a new MLV. [Footnote. A pipeline “pig” is a device to clean or inspect the pipeline. A pig launcher/receiver is an aboveground facility where pigs are inserted or retrieved from the pipeline”.]. ES1

³¹ The fact that emissions of GHCs from pipelines are taking place in Boston evidence that requiring compliance with the PHMSA requirements is, by itself, not going to effectively preventing GHC emissions at least in the case of aging pipelines. The FERC is free to consider whether the fact that the project is replacing an old pipeline with a new one inherently reduces GHC emissions, but the EIS does not do so. Nor does the EIS evaluate whether any other existing or pending Federal or State requirement might reduce emissions, other than referencing EPA’s examination of the problem.

³² “101. Commenters also expressed specific concern about methane emissions released from the project. As described in the final EIS, Algonquin provided a summary of practices to minimize methane emissions that will be implemented at modified compressor stations associated with the project, and that are currently implemented at its other facilities. Specifically, Algonquin will use highly efficient turbine technology at the modified compressor stations, which will minimize emissions because the technology will be appropriately sized and efficient, and will include dry seals. Algonquin also has a program in place for minimizing methane emissions at all of their facilities. Measures include replacing wet seals with dry seals at compressors, replacing older infrastructure to reduce blowdowns, installing leak detection monitoring systems, and participating in the EPA’s National Gas Star Program to share best practices for reducing methane emissions. We believe these measures will be sufficient to adequately address any potential issues related to methane emissions from the project.” Page 35, final FERC decision.

In its March 2015 comment on the final AIM EIS, the EPA indicated that the Algonquin intends to apply “best management practices to minimize fugitive emissions” and the EPA urged “FERC to adopt those (applicant supported) measures as a condition of the project approval.” EPA March 2015 letter, p.5.

There are additional mitigation measures that the FERC could have imposed that would help the EPA in developing appropriate practices or rules to address pipeline emissions. The FERC should have evaluated the information already collected by EPA (and to which it was referred by EPA) to determine whether there are any standards in this regard that have been (or are being) developed by states, localities, or engineering associations to try and deal with this problem, and required the applicant to adhere to the strictest of these pending the completion of any EPA guidance or requirements. And to avoid any misunderstandings about the applicability of future standards, the final certification should have explicitly required the company to comply with any EPA guidelines or requirements concerning methane leaks that are issued during its projected life, both during and after construction. There is also some precedent for the EPA to seek additional monitoring.³³

However, even if such mitigation requirements are added, caution must be exercised for the time being in predicting their effectiveness. In fact, it has been asserted by some that there may not be much in the way of successful mitigation that can be accomplished when it comes to controlling leaks.³⁴ In this regard, the emissions should be counted and deemed to be uncontrollable until the EPA determines otherwise in the course of its current review. Baseline studies of leaks in the existing AIM pipeline (the one to be upgraded as a result of the project in question) would provide relevant information; such a study could have been requested from the applicant.

2) Failure of the EIS to consider the health risks from GHC emissions, including the environmental justice implications of those health risks.

The health effects of methane exposure as a result of gas extraction were discussed in the 2014 White House Strategy Paper.³⁵ The problem has been widely discussed in the press³⁶ and was

³³ "We also recommend consideration of external pipe leak detection systems ... to improve the ability to detect pinhole (and greater) leaks that could be substantial, yet below the sensitivity of the current proposed leak detection system." EPA letter of June 6, 2011, p.3. It appears the recommendation was confined to areas of special concern, like reservoirs, but it provides an example of how additional monitoring techniques could be helpful in measuring small GHC leaks.

³⁴ McKibben, Mother Jones, September 8, 2014, <http://www.motherjones.com/environment/2014/09/methane-fracking-obama-climate-change-bill-mckibben>

³⁵ "Public Health: Actions to reduce methane also improve the quality of the air we breathe. Methane is a contributor to ground level ozone, so cutting methane emissions reduces smog, which is associated with higher rates of asthma attacks. Moreover, methane is often co-emitted with volatile organic compounds, some of which are hazardous air 2 pollutants, and many measures can cost-effectively reduce both pollutants." p.1

the subject of a 2010 documentary (“Gasland”) and sequel (“Gasland 2”).³⁷ The filmmakers note that “As of 2015, over 400 peer-reviewed scientific papers on fracking related subjects have been published, the overwhelming majority of which confirm the facts of Fox's reporting on water contamination, air pollution, health effects, earthquakes and other fracking related ills.”³⁸ Legislation to help those impacted by exposures to learn more about the chemical composition of the emissions responsible has been introduced several times in the US Congress.³⁹ It was consideration of health effects that led to a decision by the Governor of New York to ban fracking in the State.⁴⁰ Concern about health impacts was cited as one of the main concerns of those who opposed the AIM project.⁴¹ A detailed compilation of these health issues has recently been compiled by the New York chapter of the American Academy of Pediatrics.⁴²

A failure to consider these questions also undermines the FERC’s analysis of environmental justice considerations in section 4.9.10 of the EIS. To the extent that GHC leaks along the pipeline contribute to health problems, the location of the pipeline raises environmental justice considerations. By way of example, it should be noted that the 2011 EPA letter on the Keystone pointed out the need for a NEPA review of such projects to conduct a careful analysis of environmental justice concerns including the health of those living near that pipeline.⁴³

3) The market analysis fails to correctly base its analysis on the energy needs of the region, incorrectly using the stated demand by the gas industry as a surrogate.

The rationale in the EIS for proceeding despite adverse environmental consequences is set forth in section 3.1:

³⁶ See, e.g., <http://www.usatoday.com/story/money/business/2014/09/10/people-near-fracking-wells-health-symptoms/15337797/>

³⁷ <http://www.gaslandthemovie.com/>

³⁸ Id. A full database of these peer-reviewed papers can be found here: https://www.zotero.org/groups/pse_study_citation_database/items

³⁹ <http://grist.org/climate-energy/congress-makes-moves-to-close-loopholes-for-fossil-fuels/>

⁴⁰ <http://www.nytimes.com/2014/12/18/nyregion/cuomo-to-ban-fracking-in-new-york-state-citing-health-risks.html>

⁴¹ <https://www.credomobilize.com/petitions/stop-the-algonquin-pipeline-expansion>

⁴² <http://nysaap.org/update-on-hydrofracking/>

⁴³ Page 5.

“Under the no-action alternative, the short- and long-term environmental impacts described in this EIS would not occur, but the objectives of the Project would not be met. The Project would create an additional 342,000 Dth/d of natural gas delivery from growing supply areas in the Northeast region to local distribution companies and municipal utilities (i.e., the Project Shippers) in southern New England. This would help meet existing and future demand for natural gas in the Project area, eliminate supply constraints on existing systems, and increase competition in regional energy markets. The Project additionally would provide new delivery points for local gas utilities in Connecticut and Massachusetts, which would provide natural gas in areas where it is needed and enhance the reliability of local distribution systems, particularly in Boston.

In support of the “need” for the gas, the FERC points to the commitment of shippers to move the extra gas to market.⁴⁴ It appears that the FERC has misconstrued the nature of the demand to meet the energy needs of the Northeast. The immediate problem has to do with a significant increase in electricity prices.⁴⁵ Gas is currently the major fuel which is used to generate electricity in the region, and therefore it is natural that gas shippers want to fill the additional demand for electricity with gas.

But there are other possible causes for the electricity price rise, in particular poor planning by those who have been purchasing the gas for such use. That has been the subject of considerable discussion before the Public Utilities Commission.⁴⁶ Legislation to investigate the circumstances has been introduced,⁴⁷ and calls have been made by some for the attorney generals of the NE states to conduct a joint investigation.⁴⁸ Indeed, while the gas used to generate the electricity was more expensive than that purchased for heating and other uses (because it was apparently purchased on the spot market rather than contracted well in advance), the gas was

⁴⁴ In its response to comments on the draft EIS, FERC responds that: “Section 1.1 of the EIS discusses the purpose and need for the Project. Ten separate shippers have signed precedent agreements to ship gas on the AIM Project pipeline; therefore, a characterization of the market need for the facilities is not “speculative.” Comment CO9.5, page CO-17.

⁴⁵ E.g., <http://www.npr.org/2014/11/05/361420484/new-england-electricity-prices-spike-as-gas-pipelines-lag>

⁴⁶ <http://ripr.org/post/packed-hearing-ri-puc-ponders-national-grid-24-percent-requested-rate-hike>;
<http://www.providencejournal.com/breaking-news/content/20141216-despite-outcry-over-hike-in-r.i.-electric-rates-national-grid-tells-state-panel-it-has-no-choice.ece>

⁴⁷ For example, see H5130 (2015, McLaughlin and others).

⁴⁸ This position was advanced by a member of the public at one of the PUC hearings cited in note 45.

provided through the existing pipeline. This calls into serious question whether there is, in fact, a shortage of pipeline capacity at the present time.⁴⁹

Moreover, while gas companies anticipate that they can sell the amount they would receive if the AIM project is approved, this is not necessarily the case if the competitive economics of fuels change. One example would be if a carbon fee on fossil fuels is imposed to compensate for the damage caused by GHCs from their production and use.⁵⁰

A number of commenters objected to the FERC's characterization of the need for the project, but the FERC did not respond in its decision to their arguments.⁵¹

4) Failure in evaluating the no build option to neither adequately consider the availability of renewable alternatives to the project, nor consider the negative impact that approval of the project will have on the development of renewable alternatives.

CEQ regulations⁵², require that a discussion of a “no action” (often referred to as a “no-build”) alternative be considered. Unfortunately in the case of the FERC's final EIS of the AIM project, the policymakers were not presented with a proper analysis of this option.

The FERC summarizes its approach to the no build option in section 3.1 of the Final EIS:

⁴⁹ If the demand the applicants see are only in the future (e.g., additional demand for electrical power), then the analysis of the market, and the ability renewable alternatives to keep up with that demand, needs to be presented in light of how swiftly this demand is expected to grow year by year.

⁵⁰ Such proposals have been advanced in the Congress by Sen. Sheldon Whitehouse, and others. See, e.g., <http://thinkprogress.org/climate/2014/11/19/3594242/sheldon-whitehouse-carbon-tax/> Proposals at the State level have been advanced in Massachusetts, , <http://www.bostonglobe.com/business/2014/12/19/study-recommends-state-carbon-tax-fight-climate-change/KYT00y1ByR4EOicNqqugHP/story.html> and in Rhode Island <http://www.rifuture.org/a-cleaner-rhode-island-through-carbon-pricing.html>.

⁵¹ “22. Several parties and commenters question the need for the project. They contend that the proposed capacity exceeds the volume of natural gas committed for purchase by local gas distributors. One party states that natural gas prices in New England have declined, indicating reduced demand for natural gas. Several parties argue that increased gas production and declining domestic demand as the result of conservation efforts and increased reliance on renewable energy sources will result in the export of natural gas using excess project capacity. In support of their position, several commenters assert that the need for Algonquin's proposed expansion of pipeline capacity is overstated in light of a study commissioned by the New England States Committee on Electricity that showed if current levels of state energy efficiency programs continue, there is no need for additional natural gas infrastructure even with economic growth taken into account.” Page 9, FERC decision to approve the AIM project.

⁵² 40 CFR 1502.14(d).

“The No Action Alternative was considered for the Project. While the No Action Alternative would eliminate or delay the short and long-term environmental impacts identified in this EIS, Algonquin would be unable to supply an additional 342,000 dekatherms per day of natural gas to its existing mainline system; increase deliveries to the Project shippers at existing delivery points in southern New England; or provide three new delivery points for the Project shippers.”

In fact, the balancing used in considering the no build option was based on a series of incorrect analyses. As discussed in sections C1 and C2 of these comments, the “short and long-term environmental impacts identified in the EIS” fall far short of the impacts that should have been considered. As discussed in section C3 of these comments, reliance on the willingness of Project shippers to move the gas to market is an incorrect approach to the market analysis.

In addition, there were two additional assertions that the FERC used to support its decision not to adopt the no build alternative:

- a) the gas will get to market whether or not this project is approved, and
- b) renewable resources are insufficient to provide the energy needed.

a) The gas is going to be produced and reach the market anyway.

The FERC asserts that:

“Natural gas development, including development of the Marcellus shale region, will continue and indeed is continuing, with or without the AIM Project, because multiple existing and proposed transportation alternatives for production from the region are available.” Final decision to approve the project, p.45⁵³

This argument is very similar to that made by the Department of State with respect to the Keystone project. That analysis, which was sharply contested by the EPA, at least had some information about how the fossil fuel in question could be transported to market through

⁵³ Similarly, the FERC asserts that:

“If Algonquin’s proposed facilities are not constructed, the Project Shippers may need to obtain an equivalent supply of natural gas from new or existing pipeline systems. In response, Algonquin or another natural gas transmission company would likely develop a new project or projects to provide the volume of natural gas contracted through the Project’s binding precedent agreements with the Project Shippers.” Section 3.1.

The argument that somebody else will obtain FERC approval for an equivalent approach has no basis in fact, for each proposal would have to go through the same process.

alternative means – pipelines going across Canada in one or another direction,⁵⁴ or by increasing shipments by rail.⁵⁵ In its analysis of the AIM project, by contrast, the FERC offers no evidence whatsoever that the fossil fuel would move to market in the absence of this pipeline.⁵⁶

b) The sufficiency of renewables as an alternative.

The FERC reviewed various possible sources of renewable resources (e.g., wind and solar) in section 3.2.2. It concluded that these renewables “do not presently serve as practical alternatives to the project.”⁵⁷ It reached a similar conclusion with respect to the potential of energy efficiency to impact the need for the proposed pipeline.⁵⁸

There are four major shortcomings in the consideration by FERC in the final EIS, which, had they been considered, might well have led the FERC to a different conclusion.

1) The FERC analysis ignores readily available information that should have informed its decisions on the extent to which the use of renewables, and increased efficiency measures, could meet the needs of New England without the pipeline. For example:

a) The FERC did not consider the views of senior Federal officials on the price and availability of renewables.⁵⁹

⁵⁴ See, e.g., <http://www.vox.com/2014/11/25/7281893/energy-east-canada-keystone>

⁵⁵ See, e.g., <http://www.usnews.com/news/articles/2014/03/06/experts-rail-a-feasible-alternative-for-keystone-xl>; By contrast with the view expressed in this article, the Department of State eventually acknowledged that rail shipment would be more expensive (Final SEIS p 1.4.190). There were also many concerns about oil spills from rail transportation. See, e.g. <http://www.washingtonpost.com/blogs/wonkblog/wp/2015/02/20/its-a-lot-riskier-to-move-oil-by-train-instead-of-pipeline/>

⁵⁶ As noted by the FERC, it is considering the expansion of other pipelines in the region. It does not allege that these pipelines could presently carry the extra gas; indeed, alteration of alternative routes for getting the gas to market are considered and rejected. The fact that the project is needed to get the gas to market is the very reason the applicant is seeing approval of its project.

⁵⁷ See final EIS, section 3-2, issued January 23, 2015; also FERC decision p.10.

⁵⁸ The FERC’s final decision concedes that “state energy efficiency programs and conservation efforts have the potential to reduce the amount of additional pipeline capacity that will be needed in the future”, but asserts they are currently insufficient to handle the need. FERC decision, p.10

⁵⁹ For example, at a September 5, 2014 Federal Policy Roundtable organized by Sen. Sheldon Whitehouse to discuss Federal the development of renewable power (including, e.g., the Administrator of the E{A, the Principal Deputy Assistant Secretary of the Office of Energy Efficiency and Renewable Energy, the Administrator of the New England Region of EPA, as well as academic and other experts), it was uniformly agreed that a wide range of renewable sources of energy are now on the market in this

b) The FERC analysis contains no reference to the myriad articles in trade journals and the general press about the daily technological advances in renewables⁶⁰ and the declining price of renewables.⁶¹

c) The FERC analysis contains no reference to the rapid adoption of renewables already in other countries, under conditions that may be similar to those in the project reasons.⁶²

d) The FERC analysis contains no reference to advances in technology being heavily promoted by the Department of Energy to lower electrical demand (e.g., changing appliance standards,⁶³ a new generation of light bulbs⁶⁴, thermostats⁶⁵, and devices that conserve “vampire” energy⁶⁶),

region at competitive prices, that state and federal funds are available to encourage their use, and the only thing stopping that widespread use is probably a lack of public familiarity with these developments.

⁶⁰ A popular daily publication from Inside Climate News (<http://insideclimatenews.org/>) is devoted to clean energy developments, and the stories are retained on the web site. For example, one major technology anticipated to be in widespread use soon are a new generation of storage batteries that can retain the power generated by wind and solar sources for use during those periods when the wind and sun are not available. See, e.g., <http://www.greentechmedia.com/articles/featured/Storage-Is-the-New-Solar-Will-Batteries-and-PV-Create-an-Unstoppable-Hybrid>. Indeed, California already requires the use of such storage for major installations. <http://www.greentechmedia.com/articles/read/california-passes-huge-grid-energy-storage-mandate>. And there are new blade designs that allow wind powered turbines to work with increased efficiency. <http://cleantechnica.com/2015/03/03/wind-turbine-blade-design-rapidly-evolving/>.

⁶¹ See sources identified in note 58. As a prime example of how changing prices can influence a NEPA decision involves the Keystone pipeline. In that case, a concern about changing oil prices prompted a detailed recommendation from the EPA to give weight to the implications of lower prices when evaluating the viability of alternative means of getting tar sands to the market. In this case, the question is about the availability of renewable resources to fill the energy needs of the northeast.

⁶² For example, see the September 14, 2014 New York Times describing the extensive use of renewables in Germany and other nations. (<http://www.nytimes.com/2014/09/14/science/earth/sun-and-wind-alter-german-landscape-leaving-utilities-behind.html?hpid=hp-science&action=click&pgtype=Homepage&version=HpHedThumbWell&module=well-region®ion=bottom-well&WT.nav=bottom-well&r=0>)

⁶³ <http://energy.gov/public-services/homes/saving-electricity/appliances-electronics>

⁶⁴ <http://energy.gov/energysaver/articles/lighting-choices-save-you-money>

⁶⁵ <http://energy.gov/energysaver/articles/thermostats>

⁶⁶ <http://energy.gov/energysaver/articles/choose-right-advanced-power-strip-you>

nor to government and efforts in the Northeast region to invest in further efficiency measures (e.g., a proposed infrastructure bank to supplement existing Federal and state programs that fund winterization⁶⁷, efforts by the utility to promote energy efficiency⁶⁸).

This is not to suggest that the FERC has an obligation to consult all of the literature on renewables and energy efficiency and put it into the record for consideration. But neither can an agency ignore information that is readily available and known to the general public, let alone the gas industry, notwithstanding that this or that piece of information has not been placed into the record by the applicant or commenters.

2) The EIS analysis fails to fully consider the growth in distributed generation systems. For example, in the case of solar photovoltaic systems, the FERC says:

“...The scale at which customers would choose to install solar panels based on existing or future incentives is unclear. These systems generally are not well suited for use as large-scale generation in the Northeast region due to relatively low direct insolation, lower efficiencies, and higher capital costs.” Section 3.2.2

This conclusion is not supported by readily available facts. The technology is rapidly changing, including the imminent availability of storage devices.⁶⁹ Moreover, the electric grid system in the Northeast is preparing itself to accept power from multiple distributed generation systems, and a rate schedule is soon to be set that will enable many more homeowners and businesses to net meter such distributed power generation.⁷⁰ And financial mechanisms are being established to encourage banks to lend funds for the capital expenditures in installing small distributed generation systems.⁷¹

3) The FERC also overstates the environmental risks of large scale renewable projects.⁷²

⁶⁷ <http://www.providencejournal.com/article/20150318/NEWS/150319236/0/SPORTS;>
<http://www.energy.ri.gov/lowincome/wap.php>

⁶⁸ <https://www1.nationalgridus.com/EnergyEfficiencyPrograms-RI-RES?gclid=Cluvwpiyi7cCFYNx4AodnVgAjA>

⁶⁹ See note 60, supra.

⁷⁰ In the case of Rhode Island, see http://www.energy.ri.gov/documents/DG/RI%20Office%20of%20Energy%20Resources%20-%20Senate%20Environment%20Commit_1.pdf.

⁷¹ In the case of Rhode Island, see https://www.nationalgridus.com/narragansett/business/energyeff/4_net-mtr.asp.

⁷² “Alternatively, customers of the Project Shippers could seek to use alternative fuel or renewable energy sources, which could require new facilities. In either case, construction of new pipelines or other

4) The FERC considered only the potential contribution that might be made by each type of renewable power (e.g., solar, wind), albeit in an unquantified way, but did not evaluate the combined potential of all types of renewable power.⁷³ Accordingly the FERC did not satisfy its obligation to evaluate the extent to which renewable resources could fulfill any energy demand.

5) Finally, the FERC failed to consider the potential negative impact on the development of a market for renewables in the reason of a project that would facilitate the delivery of additional natural gas to the market.

This was a serious mistake that could benefit from additional CEQ guidance. It is the policy of this Administration to encourage a conversion to renewables to minimize the continued ill effects of adding GHGs to an already overloaded atmosphere.⁷⁴ In fact, it appears that the entire world is almost ready to adopt a common policy to timely eliminate fossil fuels.⁷⁵ Thus any action which would slow the conversion from fossil fuels to renewables requires careful analysis.

energy infrastructure would result in environmental impacts that could be equal to or greater than those of the Project. For these reasons, the no-action alternative would not be preferable to or provide a significant environmental advantage over the Project.” Section 3.1

With respect to photovoltaic power, for example, the FERC asserts: “... solar power generation on an industrial/commercial scale would require cooperation or agreements with the owners of existing infrastructure to use existing buildings or other structures for mounting the solar arrays, or large areas of land with impervious cover and no shading, which would need to be rededicated to permanent solar collection facilities, to allow for the photovoltaic panels to gather energy. In contrast, the permanent right-of-way of the proposed Project area would be restored to pre-construction contours and maintained as herbaceous cover. Therefore, a large, industrial/commercial scale, solar power generation facility would result in greater visual, vegetation, and habitat impacts than the proposed Project. Impacts of new electric transmission lines associated with solar power generation facilities would be similar to or greater than the impacts from the proposed Project because Algonquin would primarily use its existing right-of way whereas a new electric transmission line would need to acquire and disturb new land.” 3.2.2, photovoltaic discussion. The FERC does not evidence its presumption that serious environmental problems will be involved at all potential large scale solar sites.

⁷³ The summary of the potential use of renewables to provide the required power, at the end of section 3.2.2, does not attempt to quantify the total potential of the various renewable technologies, nor does it appear the FERC attempted to determine the answer to this key question.

⁷⁴ White House Climate Plan. Moreover, according to the consensus scientific view, we may have to eliminate them completely within the next 20 years to avoid an increase in temperature that will make it very difficult for humanity to survive. International Panel on Climate Change Fifth Assessment Report, 2013

⁷⁵ <http://www.bloomberg.com/news/articles/2015-02-13/fossil-fuel-limits-emerge-as-target-for-deal-on-warming>

The introduction of more fossil fuels into the New England region, which do not reflect the costs or serious consequences to society of additional GHG emissions, will slow the widespread conversion to renewables that is ultimately needed, notwithstanding the rapid drop in renewable prices. This negative impact needs to be evaluated and taken into account in the assessment of environmental harm in the EIS.

5) Impermissible project segmentation and cumulative impacts.

As set forth in comments from a number of concerned groups to CEQ on February 19, 2015, including a review of applicable case law, the final EIS issued by FERC impermissibly segments the environmental impacts of closely related projects.

http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20150220-5023,

The AIM project is one of only 3 pipeline expansion projects proposed by a single company and its subsidiaries to bring more gas to the northeast. The FERC's decision document (p.38) offers the following reason for not looking at the impact of the projects together:

Improper segmentation of a project occurs when interrelated projects are artificially divided into smaller, less significant components to avoid comprehensive environmental review under NEPA. Improper segmentation, however, is concerned with projects that have reached the proposal stage,⁷⁶ which is not the case here.⁷⁷ Section 102(C) of NEPA requires agencies to prepare an environmental document for "proposals" for major federal actions affecting the human environment. The CEQ's regulations state that "proposals" exist when the action is at the stage when "an agency subject to the Act has a goal and is actively preparing to make a decision . . . and the effects [of that action] can be meaningfully evaluated." (2 footnotes to statutory references deleted)

The exact status of each project clearly makes it more complicated for the FERC to estimate the cumulative impact of the projects in one proceeding, but it does not mean it is either

⁷⁶ (FERC citation) See, e.g., *Transcontinental Gas Pipe Line Company, LLC*, 149 FERC ¶ 61,258, at P 66 (2014). This is, of course, only a FERC decision, and hence the argument involves a bit of bootstrapping.

⁷⁷ The FERC asserts the two other projects are not even at the proposal stage. "The Atlantic Bridge and Access Northeast Projects are still in the development phase and precedent agreements are under consideration. Algonquin just filed a request for approval of pre-filing review process for the Atlantic Bridge Project on January 30, 2015, which Commission staff approved on February 20, 2015. As for the Access Northeast Project, Algonquin is still evaluating the project's potential development based on interest for additional natural gas supplies in New England and the Canadian Maritime provinces. Algonquin has not filed an application with the Commission for either project. Without an application, the Commission cannot actively prepare to make a decision on the projects and the effects of the projects cannot be meaningfully evaluated. Therefore, the Atlantic Bridge and Access Northeast Projects are not fully defined "proposals" and cannot (sic) be segmented by the Commission from its environmental review of the AIM Project under NEPA." (Final decision, p.37-38)

impracticable or impossible for the FERC to do a meaningful analysis. In fact, with respect to the Atlantic project, the FERC admits that it already has a good idea of the project's impacts.⁷⁸

There is a real danger that if the FERC approach is adopted, even for closely related projects such as these, the scope of project proposals for pipeline additions in the future could be manipulated in such a way as to minimize the GHC impact of each (hence enabling the cumulative impact overall to be ignored). If each of the three projects has roughly the same impact, as conceded by the FERC, and the FERC has concluded that the impacts of this single project do not result in significant GHC emissions, this is exactly the same conclusion it is likely to reach for the other two. Hence none of the GHC emissions will be taken into account. The same is true with respect to the manipulation of project application timing.

Alternative approaches to assessing the cumulative impact of multiple projects could well be more complicated and unfair to later project applicants. For example, consider the approach of taking the effects of the AIM project, the first to be considered by the FERC, into account when considering the 2nd and 3rd projects on the board. This would clearly result in the GHC emissions of the first project to be considered to the disadvantage of the other applications.

Given the overlapping pipeline routes in the region and their common purpose and ownership, the FERC in this case should have proceeded with the best available information from the three related companies. Were the other projects not even on the drawing boards at the time, a more difficult problem would be presented, one on which the CEQ might provide additional guidance so as to ensure there is some way to take the GHC emissions of prior approved pipeline projects into account when considering additional projects in the future.

The CEQ is correct that it has provided plenty of guidance over the last few years to agencies on how to implement NEPA. Nevertheless, the FERC has not taken the time to develop a viable approach for defining and evaluating individual projects which clearly will have a cumulative impact on GHC emissions in a single region and from the same source.

It would be particularly unfortunate if the proposed revision of the CEQ guidelines makes this problem worse, rather than better. The revised version would continue to advise agencies to consider a release less than 25,000 metric tons of carbon dioxide equivalent emissions on an annual basis as a reference point below which a quantitative analysis of greenhouse gas is not recommended unless it is easily accomplished based on available tools and data. The very existence of a cut point is problematic. A cut point could lead to design and manipulation of multiple projects that are now and will be on the drawing board to increase production and

⁷⁸ "If this project moves forward as currently planned, it would impact resources in many of the same areas as the AIM Project and the level of impacts would be similar to those of the AIM Project." Page ES-10, final EIS.

transmission of natural gas. If a cut point is retained in the guidance, the CEQ should provide examples of how agencies can avoid such manipulation.

D) Other problems that should be addressed by CEQ

1) Timeframe for review of final EIS.

In addition to issuing the new guidance, and reiterating existing policy in the manner noted, the CEQ should propose a rule change, with respect to any EIS involving a review of greenhouse gas emissions, to take account of the added complexity required by such an analyses.

The current rules (40 CFR 1506.10) only provide for 30 days of review before final agency action on the matter in question. The FERC issued its decision in this matter soon after the expiration of the 30 day period. The speed with which the FERC acted on the final EIS did not offer adequate time to bring to the agency's attentions the deficiencies we have noted in this letter, nor did it even allow EPA to complete its review of the final EIS.⁷⁹

Environmental impact statements that review the impact of a project on greenhouse gases, and assess alternatives, involve an extra level of complexity. The purpose of the NEPA is completely defeated if an agency acts only 30 days after an EIS is issued in such situations, because the agency itself cannot realistically evaluate the EIS, particularly in light of the President's efforts to focus attention on such questions. CEQ review in such cases also becomes impractical. Accordingly, we recommend that 90 days are provided, the same as for a draft EIS, for comment on a final EIS in cases involving the analysis of greenhouse gas impacts, ensuring that both the public and the agency have an opportunity to fairly consider the results.

2) Agency staffing issues.

In recent comments by the FERC chair on their environmental reviews, she noted that: "We're blessed to have a wide range of engineers and scientists and we look at a wide range of environmental issues: water, soil, geology, fish and wildlife, and others. And we look at air quality including greenhouse gas emissions."⁸⁰

It takes nothing away from the agency or its experts to point out that the evaluation of greenhouse gases poses complex questions which require familiarity with CEQ guidance and recent precedents, and that this experience is different from those that the FERC has used in the past to assess more localized environmental concerns. While this does not excuse FERC's decision not to accept the guidance that was available to it, the CEQ should consult with

⁷⁹ Supra, note 4. In its final letter, the EPA observed that it had a "brief opportunity" to discuss its concerns with the FERC before the final decision was issued. P.3

⁸⁰ p. 6, http://www.press.org/sdites/default/files/20150127_lafleur.pdf

individual agencies who work on projects involving GHC emissions to ensure that they have the proper expertise available to adequately evaluate the questions posed by GHC emissions.

Summary

This concludes my comments on the proposed new draft guidelines. The deficiencies in the AIM final EIS with respect to GHC emissions should be of great concern to the CEQ. The Keystone XL pipeline, proposed some years ago, is still under consideration because of poor initial analysis by the Department of State, and has caused considerable friction. Decisions by the FERC and other agencies are subject to judicial review, and could well be challenged if they are laced with problems in their EISs. In turn, this will bring great uncertainty to those seeking approval of projects to expand the use of natural gas, or who are otherwise seeking timely Federal determinations in other contexts.

We would all be better served if the CEQ would take more leadership on this matter and, after reviewing all the comments on its proposal, issue new guidance and take other related actions to be sure agencies are fulfilling their NEPA obligations. On its part, the EPA should consider how it could bring about additional consistency in its reviews until these NEPA obligations are better understood by Federal agencies. And the FERC, of course, needs to rethink the implications of ignoring its NEPA requirement.

Sincerely,

/s/

Peter Galvin

pd.galvin@verizon.net

Ucci, Nicholas (DOA)

From: Roberts, J. Timmons <j_timmons_roberts@brown.edu>
Sent: Wednesday, July 20, 2016 10:37 PM
To: DOA Energy Public Comment
Subject: Comments on the proposed Clear River/Burrillville facility and the Resilient Rhode Island Act
Attachments: roberts submitted comments to the RI OER on Burrillville.pdf

My comments are attached. I will be at the event tomorrow to read and discuss them. Thank you all for holding this event and considering our input--your serious consideration of input is crucial to the public's trust in the system.

--

Timmons

www.climatedevlab.brown.edu

Collaboration|Impact|Mentorship|Sustainability|Justice

Just out June 2016: *The Globalization and Environment Reader*. Peter Newell and Timmons Roberts.

<http://www.wiley.com/WileyCDA/WileyTitle/productCd-1118964136.html>

J. Timmons Roberts

Ittleson Professor of Environmental Studies and Sociology

Brown University

<https://vivo.brown.edu/display/jr17>

Non-Resident Senior Fellow, Brookings Institution, 2012-14 <http://www.brookings.edu/experts/robertst>

Co-Director, The Climate and Development Lab: <http://www.climatedevlab.brown.edu>

timmons@brown.edu; skype: timmonsroberts; on Twitter @timmonsroberts



BROWN

Institute at Brown for Environment
and Society

20 July 2016

Comments to the Rhode Island Office of Energy Resources on the Resilient Rhode Island

J. Timmons Roberts

Ittleson Professor, Brown University

Member of the Scientific and Technical Advisory Board (STAB) of the EC4

Re: In the matter of Invenergy Thermal Development LLC Application to Construct and Operate the Clear River Energy Center, Burrillville, Rhode Island, Docket # SB-2015-06, the Energy Facility Siting Board (EFSB) directed the Office of Energy Resources (OER), in collaboration with the Rhode Island Executive Climate Change Coordinating Council (EC4) and with assistance from the Department of Environmental Management (DEM), to render an advisory opinion as to (i) the impacts of the Clear River Energy Center on anticipated greenhouse gas emissions that would result from the proposed Facility and the cumulative impact over the life of the project and (ii) whether the Facility will conform to the requirements and provisions of the Resilient Rhode Island Act, R.I. Gen Laws §§ 42-6.2-1 to 42-6.2-8, and state energy policies.

Dear colleagues:

Thank you for the opportunity to provide input on how the Burrillville power plant proposal will have an impact upon the ability of the state to meet its Resilient Rhode Island Act targets for emissions of greenhouse gases. These comments are my own, not necessarily those of my institutions, nor of the EC4 Scientific and Technical Advisory Board on which I serve.

I appreciate the effort by the state to decide on the siting of this crucial plant through an open and complete review process. Local residents and many others have raised a long series of issues with the facility, and their trust in participatory processes will be affected greatly by how it is handled. In the discussion of the plant, somewhat less attention has been paid to the impact of the plant on the state's greenhouse gas emissions, about our existing targets for emissions reductions, and why little Rhode Island matters on climate change at all. I will speak about three points: the Resilient RI Act and why it matters, the tricky business of accounting methods for emissions, and why building the Burrillville plant would make it nearly impossible for our state to meet the emissions reductions targets in the Resilient Rhode Island Act, and fatally undermine any future claims by the state or its representatives to be leaders on climate change.

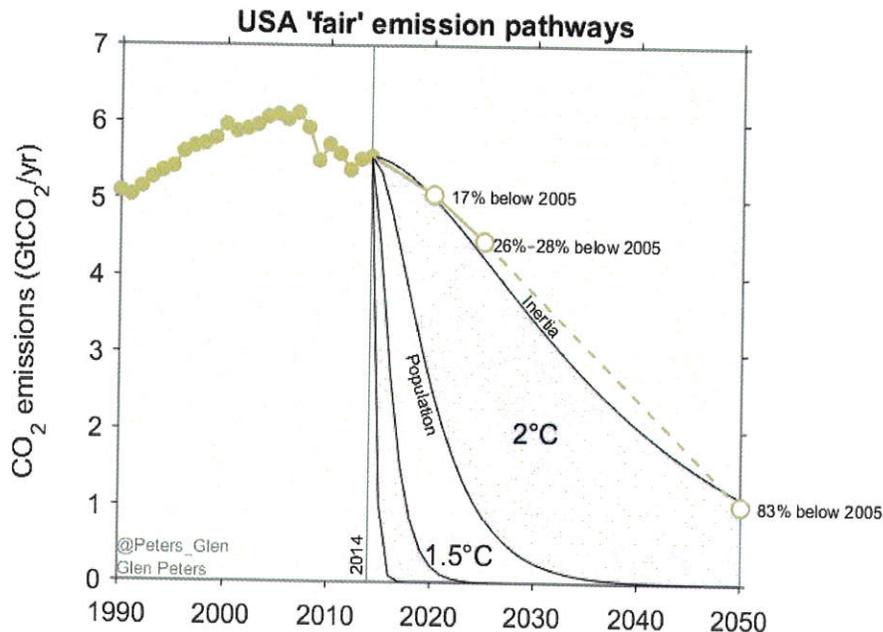
Part 1: The Resilient Rhode Island Act and why it matters

I co-led a team working to develop climate legislation starting in November of 2013, which we drafted with experts and community members through January of that year, and named the Resilient Rhode Island Act. Introduced in the House, it included a structure for planning for addressing the state's many vulnerabilities to climate change, and included targets for greenhouse gas emissions. We were pleased by then Governor Chafee's executive order on climate change that winter, and worked with Senate leadership and the Governor's office to agree a bill that was ambitious but practical. The targets in the bill for reducing emissions: 10% by 2020, 45% by 2035, and 80% by 2050, were ambitious but were informed by the state's energy plan draft built on a study by the consulting group NESCAUM. That study found nearly no cost in taking a pathway that led to the 2035 target, and projecting that forward to 2050 got us to the 80% target, with the great benefit of diversifying away from our dependence on imported fossil fuels and natural gas in particular. We were very proud of the Resilient Rhode Island Act when it was passed unanimously in the Senate and nearly unanimously in the House, and was signed into law on August 1st, 2014.

Still, new science and the observation of climate impacts coming much faster than predicted suggests that the RRI targets are not nearly strong enough, and I believe they will have to be revised in the next two to five years. In particular, the Paris Agreement, signed by over 195 countries and likely to come into force this year, called for keeping the global mean temperature increase to "well below 2 degrees C," and to strive to keep us below 1.5 degrees increase. The effort for including 1.5 degrees was led by the Most Vulnerable Forum, a group of small island states and African countries, where the impacts are far worse. Rhode Island, with its 400 miles of coastline, arguably belongs in that group. Thousands of peer-reviewed scientific studies support these concerns about impacts if we surpass 2 degrees, and a science is emerging on 1.5 degrees.

To slow, stop and reverse our rising global emissions of carbon pollution in time to avoid the worst impacts, we need to make an extremely rapid transition to net zero technologies, and to reduce our energy waste sharply. We have a global carbon budget within which we have to learn to live, and quickly. Living within our budget suggests far stronger set of targets will be needed: see for example GP Peters, RM Andrew, S Solomon, P Friedlingstein. 2015.

Measuring a fair and ambitious climate agreement using cumulative emissions, Environmental Research Letters 10 (10), 105004. This study uses a global carbon budget producing (just) a 66% chance of staying below 2 degrees, and shows the U.S. emissions needing to drop near zero by 2030. Calculations by Glen Peters of the CICERO research institute in Norway done since Paris by the same methods included the 1.5 degree C target, and shows our emissions need to drop even more rapidly, essentially to zero by 2020:



This sounds radical, but a recent Oxford study by Pfeiffer A, Millar R, Hepburn C, Beinhocker E. (2016. The '2 C capital stock' for electricity generation: Committed cumulative carbon emissions from the electricity generation sector and the transition to a green economy. *Applied Energy*. Mar 24) showed that to stay below 2 degrees C **no new emitting electricity infrastructure can be built after 2017**, unless other infrastructure is retired early or Carbon Capture and Storage is used (which is unproven, expensive, and may be dangerous). We need **systematic early retirement** of the highest emitting facilities one by one in our state and region. This shows clearly the inadequacy of the 80% by 2050 targets in the Resilient Rhode Island legislation. That bill was a very important step, but the science behind it was largely based on the 2007 Intergovernmental Panel on Climate Change report. The law is already out of date: we simply need to move to 100% renewables now, not adopt half-measures like the construction of major fossil fuel power plants like the one proposed.

Still, the Resilient Rhode Island Act matters. It matters because while Rhode Island is small, it *needs* to be an example. We are literally the best place to begin taking necessary action to show the rest of the country the value of early action. RI has a 400 mile coastline, so is highly vulnerable; the public here is concerned about climate change and supportive of rapid action; RI has no fossil fuels, so all we spend on them is money pouring out of the state (currently \$3 billion a year); RI politicians are largely Democratic, a party more supportive of climate action; and RI is the most Catholic state in the country, a group more likely to support climate action. RI can benefit greatly by distinguishing itself globally with a plan for rapid decarbonization. By doing so the state could attract international investors who are looking for a bridgehead into

the North American markets of renewable energies, which are truly vast. If we don't act, who will?

Rapid transition is possible, and will probably even be beneficial. Sovacool, Benjamin K. 2016. "How long will it take? Conceptualizing the temporal dynamics of energy transitions." *Energy Research and Social Science*. 13: 202-215. They argue that future transitions can be expedited if they are planned and coordinated, supported by social movements "or progressive government targets." That is what the Resilient RI Act made possible. Unless we support those targets, they become impossible and cynicism sets in, and we will never address this problem in time.

In order to make the right choice here, we should ask ourselves the following question: What would the world be like if everyone followed our decision and followed our example? Like the Paris Agreement, our own Resilient Rhode Island Act only inspires change if nations, states, and cities take bold and constructive action. In this case, that means denying a permit for a plant that will lock us into 20-40 years of vast emissions. The world simply won't be changed without examples, by people waiting for others to act.

Part II. Accounting

Accounting methods matter. The Resilient Rhode Island Act was written with targets based on "production-based accounting." That is, places where emissions take place are the places that get "charged" with their production. The alternative approach is "consumption based accounting," which counts only the amount of emissions from energy use within the state. Under the current production-based accounting, with its power going largely to Connecticut and Massachusetts through the regional ISO grid, the Burrillville power plant electricity and its emissions will be counted against Rhode Island, with little energy benefit to us. That is, the plant will help Massachusetts meet its targets, and make it impossible for Lil' Rhody to meet ours.

The Resilient Rhode Island Act required a study be conducted to lay out pathways by which the state might meet its targets under the act. Consultants NESCAUM and SEI conducting the study for the OER and the EC4 requested the switch to consumption-based accounting in its calculations. This is a very debatable move: this approach is technically not meeting the mandate in the law. Production-based accounting is the way the entire world still accounts for emissions, including our neighboring states. Until the whole region and really the whole country changes, we need to continue to use production based accounting, or we are playing accounting tricks and will never resolve this problem.

A second difficulty with consumption-based accounting is that the numbers are meaningless and incomplete if upstream impacts of fossil fuels--for example the releases of methane in the

fracking of natural gas for the proposed Burrillville facility-- are not counted. In the current NESCAUM study, these emissions are not being counted.

Third, any analysis of this plant's benefits must be balanced with a full accounting of its costs, direct and indirect. In particular, the plant will largely reduce the demand for renewable energy in the state, and this will sharply reduce hiring in that booming sector. In 2015 alone, Rhode Island created 4,000 new jobs in clean energy, a 40% increase, according to the OER's 2016 Clean Energy Jobs Report. The massive job creation possible with a rapid transition off of fossil fuels should be considered in any claims of cost/benefit analysis of this study.

Part III. The Numbers: Why Clear River shreds the Resilient RI Act

Invenergy's pending Clean Air Act operating permit application before the RI Department of Environmental Management asks for allowances to run its two turbines for 30 days a year on fuel oil (at 1,227 lbs of CO₂ per MegaWatt Hour), and natural gas for the rest of the year, at 781 lbs CO₂/MWh. At this level, the plant would generate over **3.5 million tons of CO₂ per year**. Note that the ISO grid average electricity now has 726 lbs of CO₂ per MWh, so this plant when it's burning "clean" natural gas is **actually increasing the emissions intensity** of our electricity. Even if they only burn fuel oil 5 days a year, the plant will still pump out 3.4 million tons of CO₂ per year. That is 6.8-7 billion pounds of CO₂ a year. Over its 40 years expected life, that is up to 280 billion pounds of CO₂.

This is devastating for the climate, and **this does not include methane emissions in the extraction, delivery, distribution, and use of the natural gas**. These leaks can be major, ubiquitous, and hard to stop. The science is shifting quickly on methane leaked directly to the atmosphere, suggesting that it can be 80 to 100 times worse than carbon dioxide over the short term.

How big an increase would that be over the RI emissions? My read of the 2015 RI Energy Plan suggests our 1990 emissions were about 11.5 million metric tons. They rose to about 13-14 MMT in the 1990s and have since slowly declined, to about 11.2 million in 2010. This plant alone could represent a **34-38 percent increase in emissions over our 1990 baseline**. I don't see how we could meet the Resilient Rhode Island Act's short or medium term targets with this plant online, as it is expected to be fully in 2021. Beyond making it impossible for us to meet our prudent targets, this installation will delay the real action we need to take, and deal a devastating blow to climate efforts in the state.

The goal of the state Energy Plan "Energy 2035" was to diversify energy use, and the Burrillville plant would drive us into a risky position of even greater dependence on one fuel with a bad tendency to price spikes and shortages. Wars in the Middle East and bans on

fracking aside, with the regulations that will come with the U.S. and the world finally addressing the climate change crisis, natural gas prices might skyrocket.

Again, the Resilient Rhode Island Act is aspirational, but it is the public policy of the state on climate change. It represents prudent policy for an orderly transition we have to make as a state. This crucial law only becomes real with the actions of state agencies, particularly the ESRB and the OER. Perhaps the most important and binding part of the Resilient Rhode Island Act was the last one, section 42-6.2-8, stating that state agencies must act in accordance with this law:

42-6.2-8. Powers and duties of state agencies – Exercise of existing authority. -- Consideration of the impacts of climate change shall be deemed to be within the powers and duties of all state departments, agencies, commissions, councils and instrumentalities, including quasi-public agencies, and each shall be deemed to have and to exercise among its purposes in the exercise of its existing authority, the purposes set forth in this chapter pertaining to climate change mitigation, adaptation and resilience in so far as climate change affects the mission, duties, responsibilities, projects or programs of the entity.

The Energy Facility Siting Board has asked for your input in their extremely important and perhaps excruciating decision. The OER must be visionary on what RI can do, because we must do this. More than that: this law says that you must consider the impacts and causes of climate change. By this mandate, I conclude that a plant that would increase our state's emissions 34-38 percent must be rejected. The Resilient Rhode Island Act will be worthless if this plant is approved.

Thank you again for the opportunity to provide input into our state's decision-making on this crucial piece of long-lasting fossil fuel based infrastructure. Our future and that of our children is at stake. Please recommend this facility not be approved. There are far better alternatives.

Sincerely,



J. Timmons Roberts
Ittleson Professor of Environmental Studies and Sociology

Ucci, Nicholas (DOA)

From: Paul Roselli <proseli@cox.net>
Sent: Thursday, July 21, 2016 8:42 AM
To: DOA Energy Public Comment
Subject: Advisory Opinion Public Comment/Roselli
Attachments: BLTOERInvenergyCover.pdf; ATT00001.htm; PastedGraphic-2.tiff; ATT00002.htm

Greetings:

The attached is for

Invenergy Thermal Development LLC Application to Construct and Operate the Clear River Energy Center, Burrillville, Rhode Island, Docket # SB-2015-06

Additional materials will be sent.

Paul



Burrillville Land Trust

Protecting our open space and rural character
PO Box 506, Harrisville, Rhode Island 02830
(401) 447-1560 • e-mail: proseli@cox.net

July 21, 2016

Rhode Island Office of Energy Resources
Commissioner Carol Grant
Advisory Opinion Public Comment
RI Office of Energy Resources
One Capitol Hill, 4th Floor
Providence, RI 02908

RE: anticipated greenhouse gas emissions that would result from the proposed fracked gas/oil fired power plant (Facility) and the cumulative impact over the life of the project and will the Facility will conform to the requirements and provisions of the Resilient Rhode Island Act, R.I. Gen Laws §§ 42-6.2-1 to 42-6.2-8, and state energy policies.

Dear Commissioner Grant:

The Burrillville Land Trust is writing to you regarding the fracked gas/oil fired power plant proposed for northwestern Rhode Island.

This letter and accompanying document (document will be sent via a separate email) will demonstrate some of the impacts of the Facility:

- I. The power plant is not in line with statewide planning, not in line with historic statewide land conservation efforts in this region and will make it impossible to fulfill the greenhouse gas emissions reductions of the Resilient Rhode Island Act;
- II. Anticipated greenhouse gas emissions amounts must include the power plant and all the ancillary projects as outlined in Burrillville Land Trust (BLT) motion to close submitted to the Rhode Island Energy Facility Siting Board dated January 8, 2016,¹ the BLT response to FERC regarding the Access Northeast Project dated June 6, 2016,² and in the RI Department of Environmental Management third data set request dated July 13, 2016.³ For example, in the case of construction of the Project, the following construction and impacted areas from other projects should be considered:

¹ Rhode Island Energy Facility Siting Board, Motion to Close - Burrillville Land Trust, available at http://www.ripuc.ri.gov/efsb/efsb/SB2015_06_m_BLT1.pdf January 8, 2016

² Federal Energy Regulatory Commissions public comment on Docket No. PF16-1-000, Burrillville Land Trust, June 6, 2016

³ Rhode Island Energy Facility Siting Board, Rhode Island Department of Environmental Management, Data Set request number 3, available at http://www.ripuc.ri.gov/efsb/efsb/SB2015_06_Dreq_DEM_3.pdf Page 3 July 13, 2016

- a) construction of a new 150-foot wide, 0.8 mile 345 kV overhead transmission line ROW;⁴
- b) construction of two two-hundred foot CO2 and ash emitting towers;
- c) construction of one two-million gallon ultra low-sulfur diesel fuel tank;
- d) construction of a gas-fired electric generating facility (67 acres)⁵ and the surrounding impacted areas (83 acres)⁶;
- e) construction of a new overhead transmission line ROW to the Sherman Road Substation in Burrillville, Rhode Island;
- f) construction of a connection from the power plant to the existing NationalGrid 345 kV line⁷;
- g) construction of a new switchyard;
- h) construction of a new gas line connection to the newly re-constructed compressor station owned by Spectra Energy;
- i) construction of a new facility access road;
- j) the construction of an underground pipe to a sewer main to the Burrillville Sewage Treatment Plant;
- k) the construction of an underground water main from well 3A in Pascoag, RI near the Pascoag Utility District;
- l) the expansion of an existing gas compressor station;
- m) the construction and operation of a 40,000 gallon 19% aqueous ammonia storage tank;
- n) the construction, operation and maintenance of three granulated activated charcoal (GAC) filtration tanks next to well 3A in Pascoag;
- o) transport and maintenance of ammonia and MTBE toxic GACs;
- p) and, the construction of a 6.8 mile new 345 kV line along an existing 17.7 mile ROW constructed by NationalGrid as part of the Interstate Reliability Project.

⁴ If the new overhead transmission line is 0.8 miles long, as stated in the Invenergy application, that amounts to 4224 linear feet. If the corridor for the new transmission line is 150 feet wide, the product of 4224 x 150 amounts to 633,600 sq.ft. There are 43560 sq.ft. in one acre. This line would take up an area of approximately 14.55 acres. Not the 1.53 as stated in the application.

⁵ Clear River Energy Center application section 6.6.2.2 Impacts to Wildlife and Ecology p.76 paragraph 6

⁶ Invenergy application section 6.6.2.2 Impacts to Wildlife and Ecology p.77 paragraph 1 Invenergy states in this section that your own analysis indicates that “The existing forest interior habitat indirectly affected by the proposed limits of work includes an additional 83 acres.” yet they do not provide any indication of the biodiversity impacts for this or for any of the proposed wetlands and forest disturbances.

⁷ Invenergy application section 6.3.3.1 Permitt Impacts to Wetlands / Forested Wetland Conversion p.66 paragraph 1

It is important to note here, that in the October 29, 2015 application to the Rhode Island Energy Facility Siting Board, Invenegy cites impacts from the addition of many of those stated above ancillary activities. In essence, Invenegy has included those activities into the scope and scale of their Project.⁸

In addition, RIDEM third data set request dated July 13, 2016 lists the following additional projects that should be included “For the purposes of comparing costs and benefits to wildlife, all of the existing and proposed work related to increased natural gas operations (processing and transport) in Burrillville should be reviewed as a single and complete project.” and goes further on to say “In addition to CREC, [the Facility] these projects include all aspects of Spectra Energy’s Aim Project; Eversource Energy, National Grid and Spectra Energy’s Access Northeast project; and TransCanada’s Ocean State Power in Burrillville.”⁹. The Burrillville Land Trust is asking the Rhode Island Office of Energy Resources to include all of these projects as listed as cumulative impacts to climate change and the release of greenhouse gasses;

III. Facility water usage exceeds capacity of Pascoag Utility District well 3A;

IV. Wastewater from the Facility will be transported via a high pressure line from the Facility to the Burrillville Wastewater Treatment facility at a stated temperature of 140 degrees Fahrenheit¹⁰ and may enter the Clear River at temperature well above the cold river water temperature of the Clear River;

V. Ground water depletion - “Although neither PUD nor the Harrisville Fire District has a surface water intake on the Clear River, the Clear River groundwater reservoir and the river are hydraulically connected. As a result, water supplied to the Project from PUD’s well #3A should be considered to decrease the water flow available in the Clear River and for the purposes of this analysis it will be assumed that there is a one for one reduction in the Clear River flow based on water supplied to the Project from PUD’s well #3A.”¹¹;

VI. 60% to over 78% of daily water used for cooling will go up two stacks 200 feet above grade - 22 feet inside diameter as Consumptive Evaporative Loss - that is nearly 135,360 gallons per day in Summer and nearly 724,329 gpd in Winter¹²;

⁸ Rhode Island Energy Facility Siting Board, October 29, 2015 Invenegy application to the Rhode Island Energy Facility Siting Board, SB-2015-06 Section 6.3.3 Project Impacts: pp 65 - 82

⁹ Rhode Island Energy Facility Siting Board, Rhode Island Department of Environmental Management, Data Set request number 3, available at http://www.ripuc.ri.gov/efsb/efsb/SB2015_06_Dreq_DEM_3.pdf Page 3 July 13, 2016

¹⁰ Rhode Island Energy Facility Siting Board Application – Clear River Energy Center, October 28, 2015 Table 6.2-2 page 49

¹¹ Invenegy application to the RI EFSB Received October 29, 2015, Table 6.2.4 - Impacts of Withdrawals on Clear River, page 51

¹² Invenegy application to the RI EFSB Table 6.2-3 - Daily Water use, Wastewater generated and Evaporative Water Use Received October 29, 2015, page 50

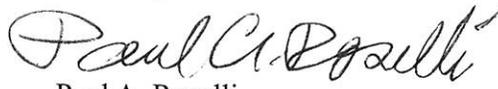
VII. The area within the Project site has been designated and publicized for nearly thirty years as a Natural Heritage Area. This is a mature forest contains understory, oak and maple forests. Nearly 67 acres will be destroyed for the power plant and another 140 acres will be destroyed for all of the other projects. Carbon sequestration must be factored into the the climate change equation. Species of state concern (Bats, the Black-throated Blue Warbler and the Wood Turtle) are threatened;

VIII. The Project is being categorically and purposely broken up into segments to avoid a federal and/or state Environmental Impact Statement. "Insubmissible segmentation" is not allowed by federal court and district court case law.

The Burrillville Land Trust submits these comments in accord with the Notice of Public Workshop, Thursday, July 21, 2016 at the Center for Biotechnology & Life Sciences at URI .

If you have any questions or comments, please direct them to me using one of the means of contact listed above.

Sincerely,

A handwritten signature in cursive script that reads "Paul A. Roselli".

Paul A. Roselli

President - Burrillville Land Trust

Ucci, Nicholas (DOA)

From: ray trinque <raytrank101@gmail.com>
Sent: Thursday, July 21, 2016 10:46 AM
To: DOA Energy Public Comment
Subject: roberts / brown Letter
Attachments: SB2015_06_ADV_OER1.pdf

Notice of Public Workshop
Rhode Island Office of Energy Resources

Date & Time: Thursday, July 21, 2016 at 10:00 a.m. – 1:00 p.m.

Location: Center for Biotechnology & Life Sciences
Ryan Family Auditorium, Room 100
University of Rhode Island (Kingston Campus)
120 Flag Road, Kingston, Rhode Island 02881

Background: In the matter of *Invenergy Thermal Development LLC Application to Construct and Operate the Clear River Energy Center, Burrillville, Rhode Island*, Docket # SB-2015-06, the Energy Facility Siting Board (EFSB) directed the Office of Energy Resources (OER), in collaboration with the Rhode Island Executive Climate Change Coordinating Council (EC4) and with assistance from the Department of Environmental Management (DEM), to render an advisory opinion as to (i) the impacts of the Clear River Energy Center on anticipated greenhouse gas emissions that would result from the proposed Facility and the cumulative impact over the life of the project and (ii) whether the Facility will conform to the requirements and provisions of the Resilient Rhode Island Act, R.I. Gen Laws §§ 42-6.2-1 to 42-6.2-8, and state energy policies.

Workshop Overview: The purpose of this workshop is to provide the public with information regarding OER's approach to issuing the advisory opinion described above and to solicit comments from the public on the issues specific to its advisory opinion. The workshop will include an administrative update and technical presentation given by OER, followed by an opportunity for public comment.

Procedural Matters: The workshop will be informational only. No formal action will be taken at the workshop and OER has no permitting authority related to this project. There will be no sworn testimony or cross-examination of participants, but OER staff may opt to respond to comments and/or ask clarifying questions. The workshop is an opportunity for interested persons to provide input to OER. Participants should limit the scope of their comments to the issues on which OER has been asked to render an advisory opinion to the EFSB.

Written Comments: In addition to this public workshop and public comment opportunity, OER will accept written comments on the issues related to its advisory opinion. Comments may be submitted in advance of the workshop or until 4:00 PM on Monday, August 1, 2016. Electronic submittals are encouraged, and may be sent to: DOA.publiccomment@energy.ri.gov. Written comment may also be mailed to: Attn: Advisory Opinion Public Comment, RI Office of Energy Resources, One Capitol Hill, 4th Floor, Providence, RI 02908.

* If special accommodations are needed to ensure equal participation, please contact OER at (401) 574-9100 at least (5) five business days prior to the meeting so arrangements can be made to provide such assistance.