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July 21, 2014

John Anderson  
U.S. Department of Energy (FE-34)  
Office of Oil and Gas Global Security and Supply  
Office of Fossil Energy  
P.O. Box 44375  
Washington, DC 20026-4375

By Electronic Filing Using Online Form:  
<http://energy.gov/fe/Procedures>

**RE: Proposed Procedures for Liquefied Natural Gas Export Decisions. Environmental Review Documents concerning Exports of Natural Gas from the United States. LifeCycle Greenhouse Gas Perspective on Exporting Liquefied Natural Gas from the United States.**

Dear Mr. Anderson:

We would like to request that the U.S. Department of Energy (DOE) Office of Fossil Energy (FE) provide more than 45 days to comment on the proposed changes to procedures for natural gas exports and the U.S. Department of Energy's (DOE's) two environmental reports. We support the Industrial Energy Consumers of America and their June 12, 2014, request to the U.S. Department of Energy that the comment period be extended to 120 days.

The damage the U. S. Department of Energy, Office of Fossil Energy, caused when they approved the Jordan Cove LNG export project's application to export LNG to non-free trade agreement nations, prior to the project's safety and environmental reviews being completed, cannot be understated. The decision not only caused the Jordan Cove Energy Project to have an unfair advantage in uncompleted local, state and federal permit processes, it also violated the spirit and intent of the National Environmental Policy Act (NEPA). The DOE decision caused stock prices to immediately rise for Jordan Cove's parent company, Veresen, and gave investors a false sense that the Jordan Cove Energy Project had met its major permit requirements and hurdles. The industry played this card well and used it to raise millions of dollars after the DOE March 2014 decisions.<sup>1</sup> (*See Exhibit 1*) This has given citizens an extreme unfair advantage in

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<sup>1</sup> MONEY STARTS FLOWING -Jordan Cove parent company looks at financing, ownership options, expansion -  
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having the entire project and all its impacts properly analyzed and considered without any bias. Many of the projects negative impacts were previously explained in comments that were submitted to your agency. See Exhibits 2 and 3 and also comments found at the following DOE weblinks:

DOE Export Study Initial Comments

•[http://www.fossil.energy.gov/programs/gasregulation/authorizations/export\\_study/jody\\_mccafree\\_lam01\\_24\\_13\\_Final.pdf](http://www.fossil.energy.gov/programs/gasregulation/authorizations/export_study/jody_mccafree_lam01_24_13_Final.pdf)

DOE Export Study Reply Comments

•[http://www.fossil.energy.gov/programs/gasregulation/authorizations/export\\_study/reply\\_comments/Citizens\\_Against\\_LNG02\\_25\\_13.pdf](http://www.fossil.energy.gov/programs/gasregulation/authorizations/export_study/reply_comments/Citizens_Against_LNG02_25_13.pdf)

•[http://www.fossil.energy.gov/programs/gasregulation/authorizations/export\\_study/reply\\_comments/Citizens\\_Against\\_LNG02\\_26\\_13.pdf](http://www.fossil.energy.gov/programs/gasregulation/authorizations/export_study/reply_comments/Citizens_Against_LNG02_26_13.pdf)

The National Environmental Policy Act (NEPA) expressly prohibits certain actions while an Environmental Impact Statement (EIS) process is underway. Specifically, until a final record of decision is issued, the Applicant and the Federal Energy Regulatory Commission (FERC) are not to take any action concerning the proposal which would limit the choice of reasonable alternatives addressed in the EIS.<sup>2</sup> The U.S. DOE approval decision of the Jordan Cove Energy Project's application prior to the release of the Draft EIS and FERC Record of Decision has clearly given Jordan Cove an unfair advantage. This violates the spirit and intent of the NEPA.

**1. The true public environmental and economic costs of Jordan Cove's air pollutants are not being considered in their Environmental Impact Reviews.**

On the 26<sup>th</sup> of September 2012 – the most comprehensive assessment ever of the current global impact of climate change was released by DARA.<sup>3</sup> (See Exhibits 4-6) 20 governments commissioned the independent report, the first of its kind to show that tackling the global climate crisis **would reap significant economic benefits for world, major economies and poor nations alike.** The DARA press release states:

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[http://theworldlink.com/news/local/govt-and-politics/jordan-cove-parent-company-looks-at-financing-ownership-options-expansion/article\\_5fe9f9ec-b521-11e3-9421-001a4bcf887a.html](http://theworldlink.com/news/local/govt-and-politics/jordan-cove-parent-company-looks-at-financing-ownership-options-expansion/article_5fe9f9ec-b521-11e3-9421-001a4bcf887a.html)

<sup>2</sup> CEQ, Regulations for implementing the National Environmental Policy Act, 40 CFR 1500-1508, July 1, 1986, Section 1506.1(a)(2).

<sup>3</sup> **Ignore climate change and 100m people will die by 2030, shocking new report claims** "By DAILY MAIL REPORTER, PUBLISHED: 26 September 2012 <http://www.dailymail.co.uk/sciencetech/article-2208953/Shock-report-claims-100m-people-die-economic-growth-drop-3-2-2030-climate-change-ignored.html>

Dara Press Release:

[http://daraint.org/wp-content/uploads/2012/09/CVM\\_RELEASE\\_FINAL\\_ENGLISH.pdf](http://daraint.org/wp-content/uploads/2012/09/CVM_RELEASE_FINAL_ENGLISH.pdf)

Dara Report Published - September 26, 2012:

<http://www.daraint.org/wp-content/uploads/2012/09/EXECUTIVE-AND-TECHNICAL-SUMMARY.pdf>

2nd Edition - Climate Vulnerability Monitor - A guide to the cold calculus of a Hot Planet - Executive Summary

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*“Climate Vulnerability Monitor” study’s findings point to unprecedented harm to human society and current economic development that will increasingly hold back growth, on the basis of an important updating and revision of previous estimates of losses linked to climate change. (Emphasis added)*

The “Climate Vulnerability Monitor” Executive Summary states:

***This report estimates that climate change causes 400,000 deaths on average each year today, mainly due to hunger and communicable diseases that affect above all children in developing countries. Our present carbon-intensive energy system and related activities cause an estimated 4.5 million deaths each year linked to air pollution, hazardous occupations and cancer.***

*Climate change caused economic losses estimated close to 1% of global GDP for the year 2010, or 700 billion dollars (2010 PPP). The carbon-intensive economy cost the world another 0.7% of GDP in that year, independent of any climate change losses. Together, carbon economy-and climate change related losses amounted to over 1.2 trillion dollars in 2010.*

*The world is already committed to the substantial increase in global temperatures - at least another 0.5% C (1°F) due to a combination of the inertia of the world’s oceans, the slow response of the carbon cycle to reduced CO2 emission and limitations on how fast emissions can actually be reduced. The world economy therefore faces an increase in pressures that are estimated to lead to more than a doubling in the costs of climate change by 2030 to an estimated 2.5% of global GDP. Carbon economy costs also increase over this same period so that global GDP in 2030 is estimated to be well over 3% lower than it would have been in the absence of climate change and harmful carbon-intensive energy practices.*

***Continuing today’s patterns of carbon-intensive energy use is estimated, together with climate change, to cause 6 million deaths per year by 2030, close to 700,000 of which would be due to climate change. This implies that a combined climate-carbon crisis is estimated to claim 100 million lives between now and the end of the next decade...***  
(Emphasis added)

Report Panel member, DARA Trustee and Former President of Costa Rica, José María Figueres stated in the DARA press release:

*“1.3 billion people are still fighting their way out of the most extreme forms of poverty while major economies are today fighting their way out of crippling financial and economic crises. We simply cannot afford to part with more growth. The prospect of economic losses that rise with every decade could destabilize the world economy far before the worst impacts of climate change set in. Governments and international policy makers must act decisively to combat the spiraling costs to national and global GDP resulting from inaction on climate change. The Monitor shows how failure to do so has*

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*already caused unprecedented damage to the world economy and threatens human life across the globe. With the investment required to solve climate change already far below the estimated costs of inaction, no doubt remains as to the path worth taking.*"<sup>4</sup>  
(Emphasis added)

In February 2014 an article that appeared in Politico written by Bill McKibben and Mike Tidwell stated the following:

*...The industry bombards the public with ads saying natural gas is 50 percent cleaner than coal. **But the claim is totally false.** Gas is cleaner only at the point of combustion. If you calculate the greenhouse gas pollution emitted at every stage of the production process—drilling, piping, compression—it's essentially just coal by another name. Indeed, the methane (the key ingredient in natural gas) that constantly and inevitably leaks from wells and pipelines is **84 times more powerful at trapping heat in the atmosphere than CO2 over a 20-year period**, according to the Intergovernmental Panel on Climate Change...*

*...When you add it all up, using numbers from the EPA, the International Energy Agency and the U.S. gas industry itself, **the final climate impact of fracked-and-liquified-and-exported Appalachian gas is basically as bad as burning coal in Asia.** And that's using really conservative pollution estimates. More realistic projections (i.e. assuming India's pipeline leakage rate is higher than the United States') **would make our gas worse than coal. Worse!** And Europe's not much better. If we shipped our gas to France, for example, where the leakage rate of gas pipelines is confirmed at 3 percent, **then our gas would—from day one—be worse than if the French just burned coal.***

*Why in the world, then, would we frack our mountains, lay disruptive pipelines across America, build gigantic, spewing liquefaction plants like Cove Point [or Jordan Cove] and inflict economic pain on U.S. consumers, farmers, and manufacturers—all for something tantamount to coal? The plan is radical and absurd on its face, benefits no one in the long run but the super-rich fossil-fuel industry and does real harm to an already ailing global climate....<sup>5</sup> [Emphasis added]*

## **2. The cumulative negative lifecycle air pollution impacts of Jordan Cove's operations are not being considered in their air quality permit application analysis.**

The liquefaction of natural gas requires a great amount of energy to compress methane into a liquid. This inherently wastes a substantial portion of the natural gas, which is burned in order to

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<sup>4</sup> Dara Press Release:

[http://daraint.org/wp-content/uploads/2012/09/CVM\\_RELEASE\\_FINAL\\_ENGLISH.pdf](http://daraint.org/wp-content/uploads/2012/09/CVM_RELEASE_FINAL_ENGLISH.pdf)

<sup>5</sup> A Big Fracking Lie - President Obama isn't just not fixing climate change—he's making it worse - January 21, 2014 - By BILL MCKIBBEN and MIKE TIDWELL

[http://www.politico.com/magazine/story/2014/01/fracking-natural-gas-exports-climate-change-102452.html?ml=lb\\_9](http://www.politico.com/magazine/story/2014/01/fracking-natural-gas-exports-climate-change-102452.html?ml=lb_9)

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provide power to run compressors at liquefaction facilities. According to Jordan Cove’s own study:

*“Approximately 6.2 percent of the gas delivered to the JCEP terminal would be either consumed as fuel to operate the liquefaction process or be removed from the feed gas stream (trace sulfur compounds, carbon dioxide, nitrogen and water) prior to or during the liquefaction step. Any hydrocarbons recovered that have a higher molecular weight than methane will fuel the power plant.”*<sup>6</sup> (Emphasis added).

A 2007 Carnegie Mellon University study “*Comparative Life-Cycle Air Emissions of Coal, Domestic Natural Gas, LNG, and SNG for Electricity Generation*”<sup>7</sup> found that upstream Green House Gas emissions of Natural Gas and LNG have a higher impact in the total life cycle emissions than upstream coal emissions. This is a significant point when considering a carbon-constrained future in which combustion emissions are reduced.

## **2.1 Air pollution impacts from Hydraulic Fracturing of Shale Beds to obtain the gas supply.**

Many Countries, States, Regions and Cities have already imposed an outright ban on the hydraulic fracturing process due to pollution impacts. See - <http://keptapwatersafe.org/global-bans-on-fracking/>

A special report that was recently released in October 2013 entitled, “*Fracking by the Numbers – Key Impacts of Dirty Drilling at the State and National Level,*” (See Exhibit 7) explains in detail the environmental, public health and safety implications of hydraulic fracturing of shale beds.<sup>8</sup> The Reports Executive Summary States:

### ***Air pollution: Fracking-related activities release thousands of tons of health-threatening air pollution.***

- *Nationally, fracking released 450,000 tons of pollutants into the air that can have immediate health impacts.*
- *Air pollution from fracking contributes to the formation of ozone “smog,” which reduces lung function among healthy people, triggers asthma attacks, and has been linked to increases in school absences, hospital visits and premature death. Other air*

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<sup>6</sup> ECONorthwest Construction Impact Study, at page 4.

<sup>7</sup> “*Comparative Life-Cycle Air Emissions of Coal, Domestic Natural Gas, LNG, and SNG for Electricity Generation*”- Paulina Jaramillo; W. Michael Griffin; and H. Scott Matthews – Civil and Environmental Engineering Department, Tepper School of Business, and Department of Engineering and Public Policy, Carnegie Mellon University, 5000 Forbes Avenue, Pittsburgh, Pennsylvania 15213-3890 – July 25, 2007  
[http://www.ce.cmu.edu/~gdrgr/readings/2007/09/13/Jaramillo\\_ComparativeLCACoalNG.pdf](http://www.ce.cmu.edu/~gdrgr/readings/2007/09/13/Jaramillo_ComparativeLCACoalNG.pdf)

<sup>8</sup> “*Fracking by the Numbers – Key Impacts of Dirty Drilling at the State and National Level*” by Elisabeth Ridlington – Frontier Group and John Rumpler – Environment America Research & Policy Center; Environment America; Oct 2013;

[http://www.environmentamerica.org/sites/environment/files/reports/EA\\_FrackingNumbers\\_scrn.pdf](http://www.environmentamerica.org/sites/environment/files/reports/EA_FrackingNumbers_scrn.pdf)

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*pollutants from fracking and the fossil-fuel-fired machinery used in fracking have been linked to cancer and other serious health effects.*

***Global warming pollution: Fracking produces significant volumes of global warming pollution.***

- *Methane, which is a global warming pollutant 25 times more powerful than carbon dioxide, is released at multiple steps during fracking, including during hydraulic fracturing and well completion, and in the processing and transport of gas to end users.*
- *Global warming emissions from completion of fracking wells since 2005 total an estimated 100 million metric tons of carbon dioxide equivalent.*

The Department of Environmental Quality should be conducting a thorough analysis since the U.S. Federal Energy Regulatory Commission and the National Energy Board of Canada have all stated that they will not be considering the environmental impacts and affects of hydraulic fracturing of shale beds in with their analysis, despite the gas Jordan Cove plans to export coming from hydraulic fracturing of shale beds in Canada and in the United States. The United States Federal Energy Regulatory Commission (FERC) is currently undergoing an environmental impact review of the Jordan Cove and Pacific Connector project under FERC Docket No. CP13-483-000 and CP13-492-000,<sup>9</sup> but that review will not be complete because FERC has publicly stated that they will not be considering or analyzing the environmental and cumulative impacts of hydraulic fracturing.

A study that was published by Cornell University on April 12, 2011, entitled “*Methane and the greenhouse-gas footprint of natural gas from shale formations*”<sup>10</sup> found that:

- *Between 3.6-7.9% of the methane escapes into the atmosphere during shale-gas production due to venting and well leaks; this level is at least 30% higher than that released during conventional natural gas production.*
- *On a 20-year time horizon, the GHG footprint for shale gas is up to 43% higher than conventional natural gas, 50% greater than oil and 20% higher than coal for the same amount of energy produced by each of those other sources.*

## **2.2 Air Pollution impacts from Jordan Cove LNG Ships, Deliver Points and Points of Consumption.**

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<sup>9</sup> FERC’s “Official Notice” of the Jordan Cove Energy Project, L.P.’s 5/21/13 Application here: [http://elibrary.FERC.gov/idmws/file\\_list.asp?accession\\_num=20130530-3012](http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20130530-3012)

FERC’s “Official Notice” of the Pacific Connector Gas Pipeline, L.P.’s 6/6/13 Application here: [http://elibrary.FERC.gov/idmws/file\\_list.asp?accession\\_num=20130619-3035](http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20130619-3035)

<sup>10</sup> “*Methane and the greenhouse-gas footprint of natural gas from shale formations*”

A letter – Robert W. Howarth, Renee Santoro and Anthony Ingraffea – Published April 12, 2011 <http://journalistsresource.org/studies/environment/energy/natural-gas-hydrofracking-greenhouse/>

DEQ representatives stated at the March 18, 2014, public meeting held in Coos Bay that the LNG ships were not a part of their permit analysis. Despite this statement, ship pollution impacts had been included in Jordan Cove's DEQ air quality permit application. Jordan Cove's LNG ships and all their necessary support vessels will contribute to a significant additional air pollution impact on local residents in the Coos Bay/ North Bend Area. Many people have moved here to get away from such impacts. The cumulative air pollution impacts should be included in DEQ's analysis utilizing the worst case scenarios that would occur and should include a full analysis of various vessel sizes used, number of shipments (which will exceed 90), and all the additional support safety and security measures that will be needed to safely transport LNG ships in and out of the Coos Bay harbor at full operational levels of the Jordan Cove facility.

Transoceanic transport and regasification of LNG is an energy intensive process. According to a life-cycle assessment prepared by researchers with the Tepper School of Business, and Department of Engineering and Public Policy Carnegie Mellon University comparing coal and LNG:

*"The rated power of the LNG tankers ranges between 20 and 30 MW, and they operate under this capacity around 75% of the time during a trip (24, 25). The energy required to power this engine is 11.6MMBtu/MWh(26). As previously mentioned, some of this energy is provided by BOG and the rest is provided by fuel oil. A loaded tanker with a rated power of 20MW, and 0.12% daily boil-off rate would consume 3.88 million cubic feet of gas per day and 4.4 tons of fuel oil per day. The same tanker would consume 115 tons of fuel oil per day on they way back to the exporting country operating under ballast conditions. A loaded tanker with a rated power of 30 MW, and a 0.25% daily boil-off rate would get all its energy from the BOG, with some excess gas being combusted to reduce risks of explosion (22). Under ballast conditions, the same tanker would consume 172 tons of fuel oil per day.*

*"For LNG imported in 2003 the average travel distance to the Everett, MA LNG terminal was 2700 nautical miles (13, 27). In the future LNG could travel as far as far as 11,700 nautical miles (the distance between Australia and the Lake Charles, LA LNG terminal (27)). This range of distances is representative of distances from LNG countries to U.S. terminals that could be located on either the East or West coasts. To estimate the number of days LNG would travel (at a tanker speed of 20 knots (22)), these distances were used. This trip length can then be multiplied by the fuel consumption of the tanker to estimate total trip fuel consumption and emissions, and these can then be divided by the average tanker capacity to obtain a range of emission factors for LNG tanker transport between 2 and 17 lb CO<sub>2</sub> equiv/MMBtu.*

*"Regasification emissions were reported by Tamura et al. to be 0.85 lb CO<sub>2</sub> equiv/MMBtu (21). Ruether et al. report an emission factor of 3.75 lb of CO<sub>2</sub> equiv/MMBtu for this stage of the LNG life-cycle by assuming that 3% of the gas is used to run the regasification equipment (28). The emission reported by Tamura et al. differs because they assumed only 0.15% of the gas is used to run the regasification terminal, while*

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*electricity, which maybe generated with cleaner energy sources, provides the additional energy requirements. These values were used as lower and upper bounds of the range of emissions from regasification of LNG.”<sup>11</sup>*

These researchers with Carnegie Mellon University concluded.

*“In addition to LNG, SNG has been proposed as an alternative source to add to the natural gas mix. The decision to follow the path of increased LNG imports or SNG production should be examined in light of more than just economic considerations. In this paper, we analyzed the effects of the additional air emissions from the LNG/SNG life-cycle on the overall emissions from electricity generation in the United States. We found that with current electricity generation technologies, natural gas life-cycle GHG emissions are generally lower than coal life-cycle emissions, even when increased LNG imports are included. However LNG imports decrease the difference between GHG emissions from coal and natural gas... ..It is also important to note that upstream GHG emissions of NG/LNG/SNG have a higher impact in the total life-cycle emissions than upstream coal emissions. This is a significant point when considering a carbon-constrained future in which combustion emissions are reduced.”<sup>12</sup>*

The magnitude of the environmental benefits of natural gas fade away when natural gas is liquefied for export and importation. In general, natural gas supplies should be consumed on the continent they are produced, without liquefaction.

Sincerely,

/s/ Jody McCaffree

Jody McCaffree

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<sup>11</sup> Jaramillo, P., et al (Sep 2007) “Comparative Life-Cycle Air Emissions of Coal, Domestic Natural Gas, LNG, and SNG for Electricity Generation Environ Sci Technol. 41(17):6290-6.  
[http://www.fossil.energy.gov/programs/gasregulation/authorizations/2011\\_applications/exhibits\\_11-128-LNG/32\\_Jaramillo\\_ComparativeLCACoalNG.pdf](http://www.fossil.energy.gov/programs/gasregulation/authorizations/2011_applications/exhibits_11-128-LNG/32_Jaramillo_ComparativeLCACoalNG.pdf)

<sup>12</sup> Ibid., at page 6294.