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July 27, 2018

Electronic Filing of Comments Using Online Form:
https://fossil.energy.gov/app/docketindex/docket/index/10.

U.S. Department of Energy (FE-34)
Office of Regulation and International Engagement
Office of Fossil Energy
P.O. Box 44375
Washington, DC 20026-4375

RE: Comment Re 2018 LNG Export study: *Macroeconomic Outcomes of Market Determined Levels of U.S. LNG Exports*

Dear Ladies and Gentlemen at the U.S. Department of Energy:

I would like to request additional time to comment on the U.S. Department of Energy (DOE) 2018 LNG Export study *Macroeconomic Outcomes of Market Determined Levels of U.S. LNG Exports*. This is due to fact that there have been other permit commenting processes that are also underway at this time for the Jordan Cove Energy Project, L.P. LNG. (FE Docket 12-32-LNG) Surrebuttal comments under Coos County file Nos. AP-18-001 and AP-18-002 are also due today July 27, 2018, rebuttal comments were due on July 20, 2018. Comments on the Federal Energy Regulatory Commission Notice of Inquiry under FERC Docket PL-18-1-000 concerning their Certification of New Interstate Natural Gas Facilities were due on July 25, 2018. There have also been commenting processes that have been underway for the Army Corps 404/408 and the Department of Environmental Quality 401 permit processes on the Jordan Cove Energy Project with comments due until recently on July 20, 2018. Those involve thousands and thousands of pages and dozens of binders of documents. The commenting deadline was only recently extended to August 20th. There is only so much a person is able to do with all the stuff you regulatory agencies continually throw at us.

I have already commented extensively to the U.S. DOE on how the EIA reports are not correctly determining the LNG export market due to their not including other LNG export terminals being developed internationally including LNG export terminals that are in the works in North America in both Canada and Mexico. See links to some of these prior comments further below.

INTERNATIONAL MARKET DOES NOT SUPPORT HIGHER LEVELS OF U.S. LNG EXPORTS

There are too many competitors in the international market currently and there is a glut of LNG that will last for many years. Due to this fact a higher level of scrutiny and independent review

is required in order to prevent an overbuild of pipelines and LNG facilities, particularly when considering the negative impact these facilities can have on U.S. Manufacturing, jobs in other industries, American landowners and rural / low-income communities. The U.S. Department of Energy needs to fully consider the American public interest and need and not just what is best for corporations who may or may not have the best interest of Americans.

The International Gas Union (IGU) reported in their 2017 World LNG Report (***See pages 4 & 5 of Report as Exhibit 1***) that 258 million tonnes (MT) of LNG was trade in 2016 while global liquefaction capacity reached 340 million tonnes per annum (MTPA) as of January 2017. Despite 82 MTPA of excess LNG being produced, an additional 114.6 MTPA of capacity was also under construction as of January 2017. Even with an increase of 5% a year in export trading capacity, which would mirror the increase that occurred from 2015 to 2016 (13.1 MT), it would take 15 years (82MTPA + 114.6 MTPA = 196.6 MTPA excess LNG divided by 13.1MTPA yearly increase = 15yr) until the current excess of LNG volumes would likely be absorbed into the international LNG export markets. The current excess of LNG available for export would take until 2032 to be absorbed using these calculations (2017 + 15yr = 2032), and that is 'without' the addition of other projects that are also in the works. **It should be very clear that liquefied natural gas export plans face years of oversupply**.[1] In addition, the press reported in August of 2016 that Japan's JERA had plans to cut long-term LNG contracts by 42 percent by 2030.[2]

The U.S. Energy Information Administration (EIA) reported on October 20, 2017 in an article titled, "*Australian domestic natural gas prices increase as LNG exports rise"* that:

> *Australia became the world's second-largest exporter of liquefied natural gas (LNG) in 2015 and is likely to overtake Qatar as the world's largest LNG exporter by 2019**. As Australia's LNG exports have increased, primarily from LNG projects in eastern Australia, the country has had natural gas supply shortages in eastern and southeastern Australia and an increase in domestic natural gas prices**...*[3]
> (Emphasis added)

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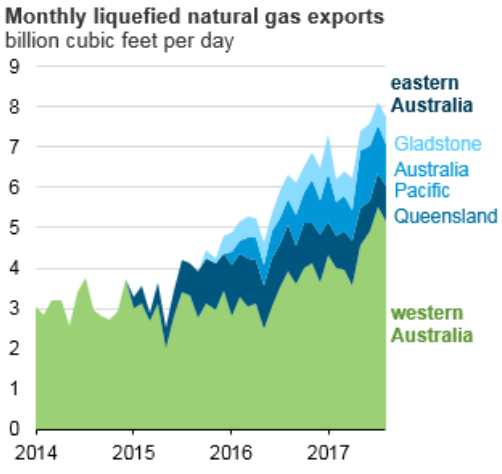
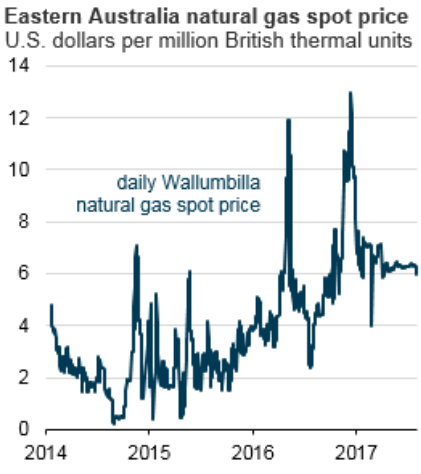
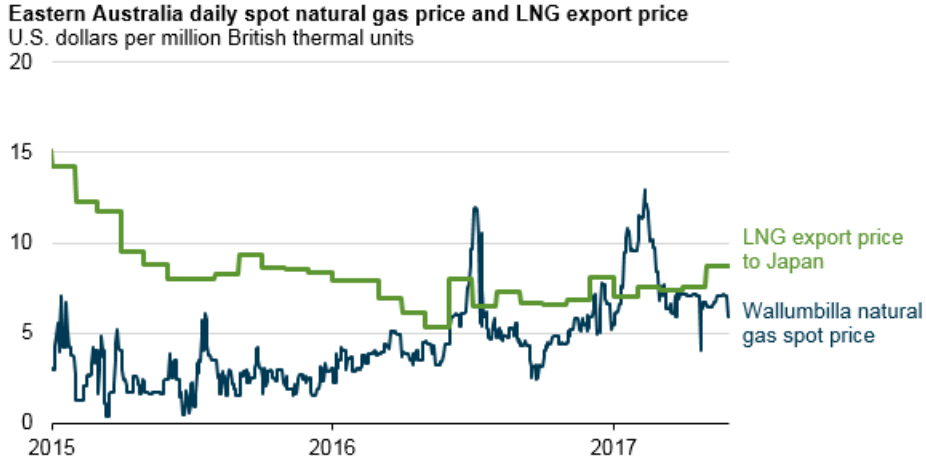
[1] Liquefied Natural Gas Export Plans Face Years of Oversupply (July 18, 2017)
https://www.bna.com/liquefied-natural-gas-n73014461925/

[2] Japan's Jera plans 42 percent cut in long-term LNG contracts by 2030 (August 10, 2016)
https://wwwreuters.com/article/us-lng-jera/japans-jera-plans-42-percent-cut-in-long-term-lng-contracts-by-2030-idUSKCN10L117

[3] EIA Australian domestic natural gas prices increase as LNG exports rise Oct 20, 2017
https://www.eia.gov/todayinenergy/detail.php?id=33412#







The EIA October 20, 2017 Report also states:

> *The U.S. experience with growing LNG exports is unlikely to be similar to Australia's.* ***More than half of Australia's total natural gas production was exported in 2016****. Australia's Energy Market Operator expects Australia's LNG exports will account for 80% of domestic production by 2020. Despite the rapid LNG export capacity growth, EIA's latest Annual Energy Outlook 2017 (AEO2017) Reference case—which reflects current policies and regulations—projects U.S. LNG exports to amount to only about 9% of total domestic natural gas production by 2020.* (Emphasis added)

This EIA statement above concerning U.S. impacts is misleading due to the fact that as of April 9, 2018 the U.S. Dept of Energy (DOE) had accepted applications for **LNG export volumes totaling 57.14 Bcf/d to Free Trade Agreement Nations and 54.46 Bcf/d to Non-Free Trade Agreement Nations**.[4] Most of these volumes have already been approved either directly or conditionally.

[4] https://www.energy.gov/sites/prod/files/2018/06/f53/Summary%20of%20LNG%20Export%20Applications_0.pdf

The U.S. EIA reported in an August 9, 2017 article titled, *United States expected to become a net exporter of natural gas this year* [5] that:

> *Natural gas production in the **United States increased from 55 billion cubic feet per day (Bcf/d) in 2008 to 72.5 Bcf/d in 2016**. Most of this natural gas—about 96% in 2016—**is consumed domestically**.* (Emphasis added)

The U.S. EIA was wrong to not consider in their analysis that the U.S. DOE has ALREADY APPROVED LNG Exports in excess of the EIA projected U.S. production and is HEADING THE U.S. FOR WORSE THAN WHAT IS HAPPENING IN AUSTRALIA where unfettered LNG Exports have tripled natural gas prices, harmed domestic consumers and caused manufacturing plants that rely on natural gas to close, throwing people out of work.[6]

This is NOT IN THE PUBLIC INTEREST.

On July 11, 2017, The Industrial Energy Consumers of America (IECA) President, Paul N. Cicio, issued the following statement following a July 11, 2017 Wall Street Journal story titled "*How Energy-Rich Australia Exported Its Way Into an Energy Crisis*."[7]

> *"We applaud the Wall Street Journal on their story on how the Australian government failed the public and their manufacturing sector by failing to put consumer safeguards in place. Foreign consumers benefited from LNG exports, while Australian consumers saw natural gas prices skyrocket. Shortages forced power plant outages and manufacturers were forced to cut back production or shutdown. Manufacturers continue to leave the country, resulting in the loss of good paying jobs.*
>
> *"The U.S. is following the same failed policy. There are no consumer protections in place on U.S. LNG exports. Currently, a breathtaking volume equal to 71 percent of 2016 U.S. natural gas supply has been approved for exports.*

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[5] EIA *United States expected to become a net exporter of natural gas this year* - August 9, 2017
https://www.eia.gov/todayinenergy/detail.php?id=32412

[6] • *Everyone's a Loser in Australia's LNG Boom* By David Fickling March 26, 2017
https://www.bloomberg.com/gadfly/articles/2017-03-26/everyone-s-a-loser-in-australia-s-lng-boom
• *IECA to Congress: Australians' Gas Bills Soar Amid LNG Export Boom*
(view letter to U.S. House / Senate) October 3, 2014
http://www.ieca-us.com/wp-content/uploads/10.03.14_Australia-LNG-Article_Senate1.pdf
http://www.ieca-us.com/wp-content/uploads/10.03.14_Australia-LNG-Article_House2.pdf
• *Australian Nitrogen Fertilizer CEO Confirms Unfettered LNG Exports Have Tripled Natural Gas Prices*
April 15, 2014
http://www.ieca-us.com/wp-content/uploads/04.15.14_Australia-Congressional-Communication_Incitec-Pivot.pdf

[7] The Wall Street Journal "*How Energy-Rich Australia Exported Its Way Into an Energy Crisis*"
The world's No. 2 seller abroad of liquefied natural gas holds so little in reserve that it can't keep the lights on in Adelaide—a cautionary tale for the U.S. By Rachel Pannett; July 10, 2017
On a sweltering night this February, the world's No. 2 exporter of liquefied natural gas didn't have enough energy left to keep its own citizens cool.
A nationwide heat wave in Australia drove temperatures above 105 degrees Fahrenheit around the city of Adelaide on the southern coast. As air –conditioning demand soared, regulators called on Pelican Point, a local gas –fueled power station running at half capacity to crank up….
https://www.wsj.com/articles/how-energy-rich-australia-exported-its-way-into-an-energy-crisis-1499700859

> *"The Energy Information Administration's (EIA) Annual Energy Outlook (AEO) 2017 forecasts that cumulative demand in 2050, only 33 years away, indicates that 56 percent of all U.S. natural gas resources in the lower 48 states will be consumed. Natural gas is unique and a valuable resource for manufacturing jobs and investment, for which there is no substitute.*
>
> *"**The U.S. still has time to put common-sense consumer safeguards in place now**."* [8] (Emphasis added)

On August 16, 2017, the Industrial Energy Consumers of America (IECA) sent a letter to Secretary Perry which outlines how the previous Administration failed to properly conduct public interest determinations on LNG application volumes for export to non-free trade agreement (NFTA) countries, as required under the Natural Gas Act (NGA). (***See Exhibit 2***) On August 22, 2017, the Industrial Energy Consumers requested that the DOE conduct a legal review of this matter. (***See Exhibit 3***) **We continue to stand in solidarity with the Industrial Energy Consumers of America (IECA) and fully support their urgent request for a legal review**.

On March 1, 2018 Reuters reported in an article titled "*U.S. trade group urges halt to further LNG export applications*"[9]

> *A U.S. manufacturing trade group on Thursday urged the U.S. Department of Energy not to approve further liquefied natural gas (LNG) export applications, citing concerns that **the country was consuming and exporting the fuel at a faster clip than it was finding new resources**.*
>
> ***The agency's approval of LNG export volumes equal almost 70 percent of 2016 U.S. demand for periods of 20 to 30 years, which cannot possibly be in the "public interest**," the Industrial Energy Consumers Of America (IECA) said….* (Emphasis added)

Why on earth would we harm our American manufacturing base like this, not to mention American consumers, property owners and rural and low income communities?

U.S. DOE MUST AVOID THE ENERGY MISTAKES OF THE PAST

In the 1970's, the Washington Public Power Supply System (WPPSS, aka "whoops") began the largest nuclear power plant construction project in U.S. history: reactors 1, 2, and 4 at Hanford, and reactors 3 and 5 at Satsop, west of Olympia. By 1983, cost overruns, delays, a slowing of electricity demand growth, concerns over nuclear power and several other factors, one having to do with geology, led to cancellation of two plants and a construction halt on two others. The agency in the end defaulted on $2.25 billion of municipal bonds,

> *"Those who cannot remember the past are condemned to repeat it."* - Philosopher George Santayana

[8] IECA Press Release "*WSJ Story Illustrates How Australian LNG Exports Resulted in a Domestic Shortage for Consumers*" July 11, 2017 http://www.ieca-us.com/wp-content/uploads/07.11.17_WSJ_Australian-LNG-Story-Press-Release.pdf

[9] https://www.reuters.com/article/us-lng-tradegroup/u-s-trade-group-urges-halt-to-further-lng-export-applications-idUSKCN1GD6FY

which is still the largest municipal bond default in U.S. history. The monumental court case which followed took nearly a decade to fully resolve. At Satsop, construction was well along on plants 3 and 5, with plant number 3 being about 85% complete, with the reactor in place when the default occurred. **Cooling towers, 480 feet tall, never saw a breath of steam, and demolition costs are estimated to be in the hundreds of millions. Ironically, the energy blackouts predicted by the industry to justify the building of the plants never occurred after the projects were stopped**.

Photo above: Defunct Satsop Nuclear Power Plant sits as an eyesore on the horizon – April 2017 [10]

The New York Times
Failure of Power Project Creates a Blank Canvas[11]
By Carey Goldberg
Published: March 09, 1997

> *"…A colossal white elephant that cost several billion dollars but was never finished, the plant was part of the boondoggle that led to the biggest municipal bond default in United States history, when the Washington Public Power Supply System — known locally as Whoops — defaulted on $2.25 billion in bonds in 1983.*
>
> *The plant has been sitting here in limbo since then — too expensive to tear down, too unwieldy to be bought, too costly to maintain in mothballs forever.* ***There is no demand for the expensive energy it would have produced, and proposals to turn it into everything from a nuclear weapons demolition plant to a theme park have come and gone****…"* (Emphasis added)

[10] https://www.youtube.com/watch?v=ZxW7_jPB4CE By marantz2010; Published on Apr 10, 2017
[11] http://www.nytimes.com/1997/03/09/us/failure-of-power-project-creates-a-blank-canvas.html?pagewanted=all&src=pm

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The New York Times / Elma Journal

Can Unused A-Plant Become a Princess?[12]

By Jessica Kowal

Published: April 21, 2006

> "…*ELMA, Wash. — The stillborn Satsop nuclear plant,* ***a product of cheap-power fantasies run amok*** *here a quarter-century ago, stands ominously on a hill in this economically depressed corner of western Washington.*
>
> ***Because local officials cannot afford to tear the plant down, they are trying to market their nuclear lemon as job-creating lemonade. Sometimes, though, even they sound doubtful****…."* (Emphasis added)

See additional comments with respect to the Purpose and Need assessments of FERC projects below under bullet item #3 concerning FERC's evaluation of the environmental impact of a proposed project.

Clean Energy Development Creates Far More Jobs Than Fracked Gas Developments.

Each dollar invested in clean energy creates two to seven times as many jobs as spending that dollar on fossil fuels.[13] Businesses, elected officials, and community residents in Oregon have been working together to speed our transition to cleaner energy like solar and to greater energy efficiency. The export of fracked gas threatens all the progress we are making.

U.S. DOE MUST ADDRESS CLIMATE ISSUES

Increasing LNG export volumes increases lifecycle greenhouse gas (GHG) emission volumes. This contributes to increased planet warming impacts, increased droughts and ocean acidification. Droughts have already negatively affected our U.S. west coast states and our food production.[14] As of July 17, 2018, abnormal dryness or drought is currently affecting approximately 3,789,000 people in Oregon, which is about 99% of the state's population.[15] **Ocean Acidification has already cost the Oregon and Washington shellfish industries $110 million, and endangered some 3,200 jobs**.[16] (***See Exhibits 6 &7***)

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[12] http://www.nytimes.com/2006/04/21/us/21nuke.html

[13] http://www.sightline.org/2016/02/16/why-oregon-needs-the-healthy-climate-act/

[14] ● "*Drought prompts cuts to farm irrigation in California, Oregon"* Portland, Ore**.** | By Courtney Sherwood
http://www.reuters.com/article/2015/05/15/us-usa-drought-farming-idUSKBN0O02BL20150515
● *Oregon Governor Expands Drought Declaration* - Reuters 04/06/2015 By Courtney Sherwood
http://www.huffingtonpost.com/2015/04/06/oregon-drought_n_7014406.html
● *Kitzhaber declares drought emergency for four southern Oregon counties, opens up assistance*
By Bruce Hammond; Feb 14, 2014;
http://www.oregonlive.com/environment/index.ssf/2014/02/kitzhaber_declares_drought_eme.html

[15] https://www.drought.gov/drought/states/oregon

[16] *Study outlines threat of ocean acidification to coastal communities in the U.S.*; Feb 23, 2015
http://today.oregonstate.edu/archives/2015/feb/study-outlines-threat-ocean-acidification-coastal-communities-us

George Waldbusser, an Oregon State University marine ecologist and biogeochemist, said the spreading impact of ocean acidification is due primarily to increases in greenhouse gases. Waldbusser recently led a study that documented how larval oysters are sensitive to a change in the "saturation state" of ocean water - which ultimately is triggered by an increase in carbon dioxide. The inability of ecosystems to provide enough alkalinity to buffer the increase in CO_2 is what kills young oysters in the environment.

> "*This clearly illustrates the vulnerability of communities dependent on shellfish to ocean acidification," said Waldbusser, a researcher in OSU's College of Earth, Ocean, and Atmospheric Sciences and co-author on the paper. "We are still finding ways to increase the adaptive capacity of these communities and industries to cope, and refining our understanding of various species' specific responses to acidification*."

"Ultimately, however, **without curbing carbon emissions, we will eventually run out of tools to address the short-term and we will be stuck with a much larger long-term problem**," Waldbusser added. [31] (Emphasis added)

Researchers and fishermen worry ocean acidification *could* be impacting Dungeness crab life cycles already. Dungeness crab represents the most valuable fishery on the West Coast, generating $167 million[17] in ex-vessel value in California in 2011. Like oysters, Dungeness crabs are a key driver of the fishing industry, so lucrative that many fishermen rely on them to guarantee an annual income. Fishermen have seen increased closures due to elevated levels of domoic acid, directly linked to lower ocean Ph levels as temperatures rise.[18] (***See Exhibit 8***) These closures have been devastating to the fishing industry. As reported on Feb 19, 2018,[19] the industry was already in a volatile state due to the latest start to a crab season most Oregon fishermen have ever remembered. These problems are likely to get worse in the coming decades.

U.S. DOE MUST CONSIDER THE ENVIRONMENTAL AND ECONOMIC COSTS OF CLIMATE CHANGE

On the 26th of September 2012 – the most comprehensive assessment ever of the current global impact of climate change was released by DARA.[20] (*See* ***Exhibits 13 to 15***) 20 governments commissioned the independent report, the first of its kind to show that tackling the global climate

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[17] https://www.psmfc.org/crab/2014-2015 files/DUNGENESS_CRAB_REPORT_2012.pdf
[18] https://newfoodeconomy.org/ocean-acidification-oysters-dungeness-crabs/
[19] http://theworldlink.com/news/local/new-legislation-to-localize-domoic-acid-closures/article_6933a960-59bd-5949-a9cc-c6191ae31de8.html
[20] *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
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

crisis **would reap significant economic benefits for world, major economies and poor nations alike**. The DARA press release states:

> *"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***

***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."*[21] (Emphasis added)

IMPACTS FROM HYDRAULIC FRACTURING OF SHALE BEDS

On March 13, 2018 the Concerned Health Professionals NY and Physicians for Social Responsibility released the **5th edition of their Compendium on the risks and harms of fracking**.[22] Drawing on news investigations, government assessments and **more than 1,200 peer-reviewed research articles**, the study finds that fracking – shooting chemical-laden fluid into deep rock layers to release oil and gas – is poisoning the air, contaminating the water and imperiling the health of Americans across the country. (***See Exhibit 16***)

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

A special report that was released in October 2013 titled, *"Fracking by the Numbers – Key Impacts of Dirty Drilling at the State and National Level,"* (***See Exhibit 17)*** explains in detail the environmental, public health and safety implications of hydraulic fracturing of shale beds.[23] 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 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.* (Emphasis added)

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[21] Dara Press Release: http://daraint.org/wp-content/uploads/2012/09/CVM_RELEASE_FINAL_ENGLISH.pdf

[22] concernedhealthny.org/compendium/ and psr.org/resources/fracking-compendium.html

[23] *"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

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*"[24] 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.*

A November 2015 report out of Australia entitled, "*Be careful of what you wish for - The economic impacts of Queensland's unconventional gas experiment and the implications for Northern Territory policy makers,"*[25] states: (***See Exhibit 18***)

> ***Gas companies routinely exaggerate the economic and jobs benefits of their projects. Policy makers often accept these claims unquestioningly****.*
>
> *The Northern Territory is fortunate to have the Queensland unconventional gas experiment to reflect upon.* ***The Queensland experience is that most of the economic benefits do not materialise, and serious collateral damage is done to existing industries and local communities***. (Emphasis added)
>
> *If policy makers in the Northern Territory naively accept the economic claims of speculative gas companies and use taxpayer money to support this industry, Territorians will live the consequences for decades to come.*

LNG EXPORTS INCREASE FRACKING / GREENHOUSE GASES

Fracking and other unconventional oil and gas extraction techniques require infrastructure to move the fracked extracted gas to markets.

While the gas industry looks to reap huge profits, local communities are left to deal with the consequences such as poisoned drinking water, devastated coasts, and extreme air pollution. Many of these rural communities have limited resources and are not able to address these critical issues. Both the gas liquefaction and fracking process contribute to an increase in greenhouse gasses emissions, thus contributing to climate-disrupting global warming pollution and more violent weather and storms. In addition, the massive super-cooling process needed to create the liquefied natural gas (LNG) for export uses an incredible amount of energy. **That is energy that could have been used here domestically.**

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[24] "*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, 2011http://journalistsresource.org/studies/environment/energy/natural-gas-hydrofracking-greenhouse/

[25] *Be careful of what you wish for The economic impacts of Queensland's unconventional gas experiment and the Implications for Northern Territory policy makers*; Discussion paper by Mark Ogge; November 2015 http://www.tai.org.au/sites/defualt/files/Be%20careful%20what%20you%20wish%20for%20FINAL_0.pdf

The main component of LNG is methane. Methane is a potent greenhouse gas that can come from many sources, both natural and manmade. The largest source of industrial emissions is the oil and gas industry. While methane doesn't linger as long in the atmosphere as carbon dioxide, it is initially far more devastating to the climate because of how effectively it absorbs heat. In the first two decades after its release, methane is 84 times more potent than carbon dioxide. ***Both* types of emissions must be addressed if we want to effectively reduce the impact of climate change**. The oil and gas industry loses enough methane every year through leaks and intentional venting and flaring to meet the heating and cooking needs of over 5 million homes.[26]

Exporting hydraulic fracked gas coming from shale formations is a very polluting process that leaks methane into the atmosphere which increases lifecycle greenhouse gas (GHG) emissions. A 2007 Carnegie Mellon University study entitled, "*Comparative Life-Cycle Air Emissions of Coal, Domestic Natural Gas, LNG, and SNG for Electricity Generation*," [27] 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.

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.***

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[26] *New Federal Rules Target Methane Leaks, Flaring and Venting - As Aliso Canyon disaster continues, the Obama administration wants equipment updated and flaring of excess gas reduced*.; By Katherine Bagley, InsideClimate News ; Jan 22, 2016 https://insideclimatenews.org/news/22012016/new-federal-methane-rules-aim-reduce-leaks-flaring-oil-and-gas-industry

[27] "*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/~gdrg/readings/2007/09/13/Jaramillo_ComparativeLCACoalNG.pdf

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....[28] (Emphasis added)

We should not have to keep commenting and stating these issues over and over again only to be ignored. Please include the following comments and exhibits into the record and review of the DOE 2018 LNG Export study:

- CALNG / McCaffree 1-24-2013, Initial Comments on NERA study:
  https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/export_study/jody_mccafree_lam01_24_13_Final.pdf

- CALNG / McCaffree 2-25-2013, Rebuttal Comments on NERA study:
  https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/export_study/reply_comments/Citizens_Against_LNG02_26_13.pdf
  and
  https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/export_study/reply_comments/Citizens_Against_LNG02_25_13.pdf

- CALNG / McCaffree July 21, 2014, Comments on 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:*
  https://fossil.energy.gov/app/DocketIndex/docket/DownloadFile/202
  and Exhibits:
  https://fossil.energy.gov/app/DocketIndex/docket/DownloadFile/203

- CALNG / McCaffree February 12, 2016, Comments on U.S. DOE LNG Export Economic Consulting Studies
  CALNG-McCaffree_Comment_2-12-2016.pdf:
  https://fossil.energy.gov/App/DocketIndex/docket/DownloadFile/537
  DOE_CALNG-McCaffree_Index-for-Exhibits_2-12-2016....
  https://fossil.energy.gov/App/DocketIndex/docket/DownloadFile/538
  DOE_CALNG-McCaffree_Exhibits_1-to-10.pdf
  https://fossil.energy.gov/App/DocketIndex/docket/DownloadFile/539
  DOE_CALNG-McCaffree_Exhibits_11-to-20.pdf
  https://fossil.energy.gov/App/DocketIndex/docket/DownloadFile/540
  DOE_CALNG-McCaffree_Exhibits_21-to-26.pdf
  https://fossil.energy.gov/App/DocketIndex/docket/DownloadFile/541
  DOE_CALNG_McCaffree_Exhibits_27-to-31.pdf
  https://fossil.energy.gov/app/DocketIndex/docket/DownloadFile/556

[28] 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

- McCaffree March 23, 2016 Notice of Intervention, Protest and Comment re Jordan Cove's Amended Application [29]
  https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/2012/applications/March_23_2016_12-32-LNG/McCaffree_-_NOI_correct03_23_16.pdf
  Exhibits A – F
  https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/2012/applications/March_23_2016_12-32-LNG/1Comment_6_attach_1_of_8_USDOE_Exb-A-to-.pdf
  Exhibit G-1
  https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/2012/applications/March_23_2016_12-32-LNG/2Comment_6_attach_2_of_8_USDOE_Exb-G-1_M.pdf
  Exhibit G-2 (Exb 1-10)
  https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/2012/applications/March_23_2016_12-32-LNG/3Comment_6_attach_3_of_8_USDOE_Exb-G-2_M.pdf
  Exhibit G-3 (Exb 11-20)
  https:/fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/2012/applications/March_23_2016_12-32-LNG/4Comment_6_attach_4_of_8_USDOE_Exb-G-3_M.pdf
  Exhibit G-4 (Exb 21-26)
  https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/2012/applications/March_23_2016_12-32-LNG/5Comment_6_attach_5_of_8_USDOE_Exb-G-4_M.pdf
  Exhibit G-5 (Exb 27)
  https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/2012/applications/March_23_2016_12-32-LNG/6Comment_6_attach_6_of_8_USDOE_Exb-G-5_M.pdf
  Exhibit G-6 (Exb 28-31)
  https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/2012/applications/March_23_2016_12-32-LNG/7Comment_6_attach_7_of_8_USDOE_Exb-G-6_M.pdf
  Exhibits H to K
  https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/2012/applications/March_23_2016_12-32-LNG/8Comment_6_attach_8_of_8_USDOE_Exb-H-to-.pdf

- McCaffree May 9, 2018 Comment and Protest of February 6, 2018 Amendment Application of Jordan Cove Energy Project, L.P Amended Application [30]

[29] https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/2012/applications/FR_Notice_12-32-LNG_Signed_02_26_16.pdf

[30] https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/2012/applications/FR_Notice_12-32-LNG_Signed_02_26_16.pdf

https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/JMcCaffree_Comment_FE-12-32_05_09_18.pdf
Index of Exhibits:
https://fossil.energy.gov/ng_regulation/sites/default/files/programs/McCaffree_Index-for-Exhibits_5-9-2018.pdf
Exhibits 1 to 9:
https://fossil.energy.gov/ng_regulation/sites/default/files/programs/Exb1_JMcCaffree12-32-LNG_05_09_18.pdf
https://fossil.energy.gov/ng_regulation/sites/default/files/programs/Exb2_JMcCaffree12-32-LNG_05_09_18.pdf
https://fossil.energy.gov/ng_regulation/sites/default/files/programs/Exb3_JMcCaffree12-32-LNG_05_09_18.pdf
https://fossil.energy.gov/ng_regulation/sites/default/files/programs/Exb4_JMcCaffree12-32-LNG_05_09_18.pdf
https://fossil.energy.gov/ng_regulation/sites/default/files/programs/Exb5_JMcCaffree12-32-LNG_05_09_18.pdf
https://fossil.energy.gov/ng_regulation/sites/default/files/programs/Exb6_JMcCaffree12-32-LNG_05_09_18.pdf
https://fossil.energy.gov/ng_regulation/sites/default/files/programs/Exb7_JMcCaffree12-32-LNG_05_09_18.pdf
https://fossil.energy.gov/ng_regulation/sites/default/files/programs/Exb8_JMcCaffree12-32-LNG_05_09_18.pdf
https://fossil.energy.gov/ng_regulation/sites/default/files/programs/Exb9_JMcCaffree12-32-LNG_05_09_18.pdf

In addition, I also respectfully ask the U.S. Dept of Energy Assistant Secretary to consider comments that have been filed in the course of this proceeding (1-27-13) from the DOW Chemical Company,[31] the Industrial Energy Consumers of America,[32] Alcoa,[33] American Forest & Paper Association,[34] American Iron and Steel Institute,[35] American Public Gas Association,[36]

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[31] https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/export_study/peter_molinaro_em01_24_13.pdf

[32] https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/export_study/satterfield_emai.pdf
-and-
https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/2012/applications/March_23_2016_12-32-LNG/2Cicio_IECA_03_23_16.pdf

[33] https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/export_study/colon_yvette_em01_24_13.pdf

[34] https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/export_study/Missimer_em01_24_13.pdf

[35] https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/export_study/Thomas_Gibson01_24_13.pdf

[36] https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/export_study/Bertram_Kalisch01_24_13.pdf
-and-

CarbonX Energy Corporation Inc,[37] Nucor Corp,[38] Rentech Inc,[39] the Aluminum Association,[40] the Fertilizer Institute[41] along with the many other participants. The issues and concerns raised by these companies continue to be relevant and need to be fully considered under FE Docket 12-32-LNG.

CONCLUSION

The U.S. DOE is NOT including all the necessary data and impacts of LNG exports into their 2018 LNG Export study and thus the study's conclusions cannot be valid.

Sincerely

/s/ Jody McCaffree

Jody McCaffree

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https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/2012/orders/apga08_06_12.pdf
37

https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/export_study/107_carmen_legato_em01_24_13.pdf
38

https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/export_study/diggins_jennifer01_23_13a1.pdf
39

https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/export_study/James_McVaney01_24_131.pdf
40

https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/export_study/aluminum_ext__comments01_29_13_Redacted.pdf
41

https://fossil.energy.gov/ng_regulation/sites/default/files/programs/gasregulation/authorizations/export_study/06.The_Fertilizer_Institute01_04_13.pdf