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October 24, 2014

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Mr. John Anderson
Office of Fossil Energy
U.S. Department of Energy
Docket Room 3F-056, FE-50
Forrestal Building
1000 Independence Avenue, S.W.
Washington, DC 20585

Re: Application for Long-Term, Multi-Contract Authorization to Export Natural Gas into Canada for Consumption and through Canada to Free Trade and Non-Free Trade Agreement Nations after Conversion into LNG by Pieridae Energy (USA) Ltd, FE Docket No. 14-179-LNG

Dear Mr. Anderson:

In the enclosed Application, Pieridae Energy (USA) Ltd ("Pieridae") seeks long-term, multi-contract authorization, as further described below, to export to Canada up to 292 billion cubic feet per year of natural gas each over the term of the requested authorization or with a heat content of approximately 302.8 trillion British thermal units per year ("Btu/y") or 302,800,000 million Btu/y of natural gas. The natural gas will be exported near Baileyville, Maine on the Maritimes & Northeast US Pipeline at or near meter station ID 30014.

Pursuant to Section 3 of the Natural Gas Act ("NGA") Pieridae requests the Department of Energy, Office of Fossil Energy ("DOE/FE") grant permission to export natural gas into Canada for consumption and through Canada, after conversion in Canada into LNG, to (i) any country with which the United States of America ("US") currently has, or in the future may enter into, a free trade agreement requiring national treatment for trade in natural gas and (ii) any country with which the US does not have a free trade agreement requiring national treatment for trade in natural gas with which trade is not prohibited by US law or policy. Pieridae requests exporting permission for itself, or to act as agent for others, for a term of 20 years beginning on the earliest of the date of first export or seven years from the date requested authorization is granted.

Enclosed is a check for $50.00 in payment of the applicable filing fee pursuant to 10 C.F.R. § 590.207. If you have any further questions, please contact me at 202-662-4555 for information regarding this filing.

Very truly yours,

Erik J.A. Swenson

Erik J.A. Swenson

EJAS/sd

Enclosure

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UNITED STATES OF AMERICA
BEFORE THE DEPARTMENT OF ENERGY
OFFICE OF FOSSIL ENERGY

In The Matter Of:	)	
	)	
Pieridae Energy (USA) Ltd.	)	Docket No. 14-179-LNG
	)	

APPLICATION FOR LONG-TERM, MULTI-CONTRACT AUTHORIZATION TO EXPORT NATURAL GAS INTO CANADA FOR CONSUMPTION AND THROUGH CANADA TO FREE TRADE AND NON-FREE TRADE AGREEMENT NATIONS AFTER CONVERSION INTO LNG

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UNITED STATES OF AMERICA
BEFORE THE DEPARTMENT OF ENERGY
OFFICE OF FOSSIL ENERGY

In The Matter Of:	)	
	)	Docket No. 14 - 179- LNG
PIERIDAE ENERGY (USA) LTD	)	
	)	

APPLICATION FOR LONG-TERM, MULTI-CONTRACT AUTHORIZATION TO EXPORT NATURAL GAS INTO CANADA FOR CONSUMPTION AND THROUGH CANADA TO FREE TRADE AND NON-FREE TRADE AGREEMENT NATIONS AFTER CONVERSION INTO LNG

Pursuant to Section 3 of the Natural Gas Act ("NGA")[1] and the relevant United States Department of Energy ("DOE") regulations,[2] Pieridae Energy (USA) Ltd ("Pieridae US"), in its capacity as the general partner of Goldboro LNG Limited Partnership II, hereby requests that the DOE's Office of Fossil Energy ("DOE/FE"), grant long-term, multi-contract authorization for Pieridae US to engage in exports of up to 292 billion cubic feet of natural gas per year ("Bcf/y") (or approximately 0.8 billion cubic feet of natural gas per day ("Bcf/d") from the United States of America (the "US" or the "United States") to Canada for:

> (a) use as feedstock in a Canadian natural gas liquefaction facility, where the liquefied natural gas ("LNG") produced from such feedstock would be exported from Canada to one or more countries with which the US has a Free Trade Agreement ("FTA") requiring national treatment for trade in natural gas (collectively, the "FTA Countries" and each an "FTA Country") and, thereafter, consumed in one or more FTA Countries;

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1 15 U.S.C. § 717b (2006).

2 10 C.F.R. Part 590 (2014).

(b) use as feedstock in a Canadian natural gas liquefaction facility, where the LNG produced from such feedstock would be exported from Canada to one or more countries which do not qualify as FTA Countries, but with which trade is lawful (collectively, the "Non-FTA Countries" and each a "Non-FTA Country") and consumed in one or more Non-FTA Countries;[3] or

(c) use in Canada as a source of energy in the production of electricity applied, in whole or in part, to operate a Canadian natural gas liquefaction facility and for other potential uses that constitute consumption in Canada for purposes other than as feedstock in the Canadian natural gas liquefaction facility for the production of LNG;

(collectively, the "Specified Purposes" and each a "Specified Purpose").[4]

The volume of 292 Bcf/y of natural gas is the equivalent of approximately 302.8 trillion British thermal units per year ("Btu/y") or 302,800,000 million Btu/y of natural gas.[5] Pieridae

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[3] Upon the DOE/FE authorizing exports to both FTA Countries and Non-FTA Countries, Pieridae US also seeks authorization for the export of natural gas from the US that is converted to LNG to be exported from Canada initially to (a) a FTA Country where the natural gas is ultimately consumed in a Non-FTA Country, and (b) a Non-FTA Country where the natural gas is ultimately consumed in a FTA Country. For example, Pieridae US envisions that, as the market matures, LNG may be unloaded from a carrier in an FTA Country, then reloaded and exported to a Non-FTA Country where the LNG is regasified and ultimately consumed. Similarly, LNG could be exported to a Non-FTA Country, gasified, and then shipped by pipeline for consumption in an FTA Country.

[4] Pieridae US's request is for authorization to export up to 292 Bcf/y of natural gas in the aggregate, divided in any manner it chooses between the Specified Purposes. Pieridae is **not** seeking authorization to export up to a total of up to 876 Bcf/y of natural gas, subject to categorical caps of (a) 292 Bcf/y of natural gas exports to Canada for conversion to LNG to be sent to FTA Countries, (b) 292 Bcf/y of natural gas exports to Canada for conversion to LNG to be sent to Non-FTA Countries, and 292 Bcf/y of natural gas exports to Canada for consumption in Canada.

[5] Based on 1,037 Btu per cubic foot of natural gas, which is representative of natural gas on the US portion of the Maritimes & Northeast Pipeline system (hereinafter referred to as the "M&N Pipeline" with the US portion referred to as the "M&N US Pipeline"). This conversion factor is similar to the average heat content of 1 standard cubic foot of natural gas on the M&N US Pipeline for the six month period from April 1, 2014 to September 30, 2014, based on data from the company's website. *Maritimes & Northeast Pipeline – United States,* LINKSYSTEM INFORMATIONAL POSTINGS, http://infopost.spectraenergy.com/infopost/MNUSHome.asp?pipe=MNUS&mode=1 (follow "Chromatograph Postings" hyperlink under "Gas Quality") (During this period, the simple average heat content over all hours from all stations equaled 1,034 Btu/cf, and the heat content ranged from a maximum of 1,073 Btu/cf to a minimum of 1,011 Btu/cf, with a median of 1,039 Btu/cf.)

US requests that this authorization run for a 20-year term commencing on the earlier of (i) the date of first export; or (ii) seven (7) years from the date of issuance of the authorization requested herein.

In accordance with the DOE/FE's requirements for obtaining such authorization, Pieridae US submits this application ("Application") and states as follows:

I.
COMMUNICATIONS AND CORRESPONDENCES

Pieridae US requests that all communications and correspondences regarding this Application, including all service of pleadings and notices, be directed to the persons listed on the cover page of this Application at the addresses provided.[6]

II.
DESCRIPTION OF THE APPLICANT AND CERTAIN OF ITS AFFILIATES

A. Pieridae US

The exact legal name of Pieridae US is Pieridae Energy (USA) Ltd., which is filing this Application in its capacity as the sole general partner of Goldboro LNG Limited Partnership II. Pieridae US is a corporation formed under the federal laws of Canada, and Goldboro LNG Limited Partnership II is a limited partnership formed under the laws of the Province of Alberta. Their principal place of business is located at 1718 Argyle Street, Suite 730, Halifax Nova Scotia, Canada B3J 3N6. Their telephone number is (902) 492-4752, and their fax number is (902) 492-5211. Pieridae Energy Limited ("Pieridae") owns all of the capital stock of Pieridae US, as well as all of the limited partner interests in Goldboro Limited Partnership II.

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[6] Pieridae US requests waiver of Section 590.202(a) of the DOE regulations, to the extent necessary to include outside counsel on the official service list in this proceeding. 10 C.F.R. § 590.202(a). Pursuant to Section 590.103(b) of the DOE regulations, Pieridae US hereby certifies that the persons listed herein are the duly authorized representatives of Pieridae US. 10 C.F.R. § 590.103(b).

B. Pieridae CA

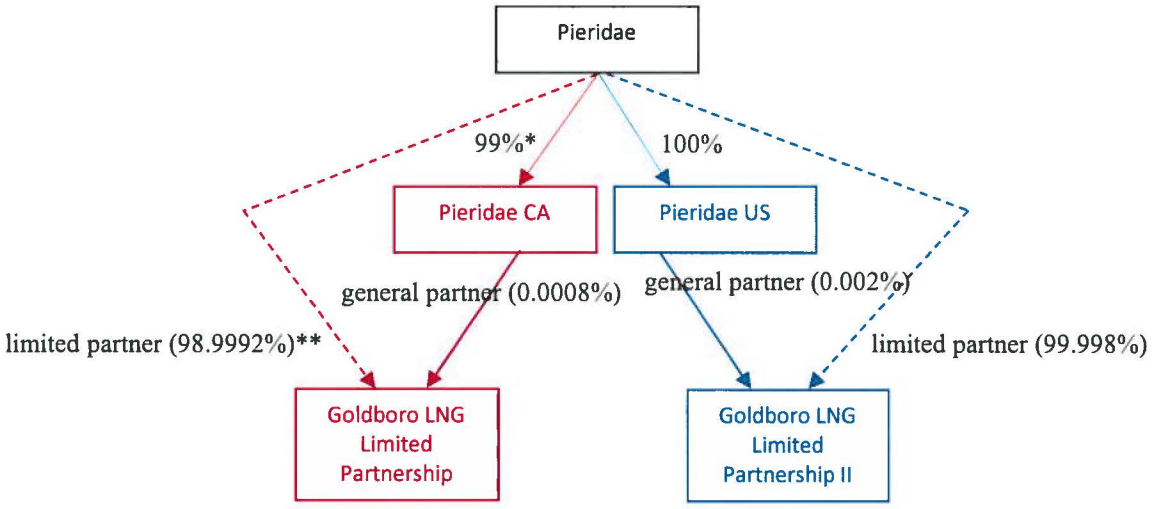
Pieridae Energy (Canada) Ltd. is the sole general partner of Goldboro LNG Limited Partnership (collectively, "Pieridae CA"). Pieridae CA is a corporation formed under the federal laws of Canada, and Goldboro LNG Limited Partnership is a limited partnership formed under the laws of the Province of Alberta. Pieridae owns substantially all of the shares in the capital of Pieridae CA and substantially all of the limited partner interests in Goldboro LNG Limited Partnership.

C. Pieridae

Pieridae is a privately held corporation formed under the federal laws of Canada. Pieridae's shareholders are exclusively comprised of individuals and passive investment companies or partnerships.

The relationship between Pieridae, Pieridae US and Pieridae CA is depicted in Figure 1 below:

Figure 1: Pieridae US's Affiliations and Relationship to the Goldboro LNG Project



* An unaffiliated third party owns the remaining 1% of Pieridae CA.

** An unaffiliated third party owns the remaining 1% limited partnership interest in Goldboro Limited Partnership.

III.
EXECUTIVE SUMMARY

In this Application, Pieridae US is requesting the DOE/FE grant multi-contract, long-term authorization for Pieridae US to engage in exports of up to 292 Bcf/y of natural gas from the US to Canada, where such natural gas would be used in Canada for one or more of the Specified Purposes. Pieridae US understands that the DOE/FE's interpretation of the NGA, in light of other relevant considerations such as the North American Free Trade Agreement, is still evolving, particularly in circumstances involving the export of natural gas from the US to Canada for conversion into LNG and subsequent export of the LNG from Canada.[7] This

[7] The term LNG carries a connotation that wrongly suggests the only difference between (a) the natural gas found in US and Canadian pipelines and (b) LNG is that the former is a gas and the latter a liquid. Certainly, the differences go beyond mere form. LNG is much denser than natural gas, exists only at a substantially lower temperature for a given pressure than natural gas and, unlike natural gas, is not flammable in the presence of oxygen. However, more importantly, even after being reconstituted into natural gas by warming, LNG is chemically distinct from the feedstock gas used to produce the LNG. This is because pipeline-quality natural gas is not pure methane (chemical formula: CH_4) and must typically have its chemical composition altered in a pretreatment facility prior to chilling and conversion into LNG. For example, while it is acceptable to have limited amounts of water vapor, carbon dioxide and heavier hydrocarbon components containing five or more carbon atoms ("C5+ compounds") among the constituents of ordinary pipeline quality gas, these molecules are problematic in producing and transporting LNG because they turn into solids at the temperatures required to liquefy the desirable components of natural gas and, as solids, can plug equipment or otherwise impede the flow of LNG. Further, small amounts of mercury, hydrogen sulfide and other sulfur baring compounds may be present in pipeline quality gas. These minor components do not impair pipeline operations or adversely affect human health, but can damage the equipment used to liquefy natural gas. Thus, special processing, at considerable expense, is required to substantially reduce the levels of water, carbon dioxide, C5+ compounds, mercury, hydrogen sulfide and other sulfur containing components in the natural gas feedstock, as compared to the concentrations that are acceptable for standard pipelines. Depending on market conditions, the C5+ compounds may also be more valuable as separate product streams than as constituents of LNG, leading to even higher fractionation levels than would be strictly necessary. While lighter hydrocarbons generally do not present a freezing issue, they may also be worth more as separate products and fractionated from the natural gas feedstock, further differentiating pipeline natural gas from LNG. Finally, the overall chemical composition of the feedstock gas may need to be adjusted to assure that the LNG meets the heat content and other specifications required by the destination market. Liquefaction also comes at a substantial cost and changes the value of LNG compared to natural gas. In Pieridae US's case, US-sourced natural gas feedstock will be commingled with substantial amounts of Canadian natural gas feedstock in producing LNG at the Goldboro LNG Project, further distancing the relationship between the natural gas Pieridae US proposes to export from the US into Canada and the LNG that the Goldboro LNG Project will produce for export. Though we are unaware of the relevant terms of the North America Free Trade Agreement ("NAFTA") being tested, depending on the circumstances, NAFTA treats LNG produced in Canada as undergoing a tariff change from US natural gas feedstock and considers the country of origin for such LNG to be Canada, not the US. Thus, LNG may be legally, as well as chemically, distinct from the natural gas used in the LNG's production. Upon regasification at its destination, the natural gas is frequently further treated to adjust its qualities to be compatible with the natural gas composition found in the destination market. In short, neither the LNG produced by the Goldsboro LNG Project, nor the

Application covers the full range of potential uses of natural gas to be exported by Pieridae US in order to ensure Pieridae US's activities will be consistent with US law, regardless of how the DOE/FE ultimately interprets the NGA.[8]

Pieridae US requests that such authorization extend for a 20-year term commencing on the earlier of the date of first export or seven (7) years from the date of issuance of the authorization requested herein. Such exports would be made from a point located near Baileyville, Maine on the M&N US Pipeline at or near meter station ID 30014.[9]

Neither Pieridae, nor any corporation or partnership, including Pieridae US and Pieridae CA, in which Pieridae has a direct or indirect interest (each a "Pieridae affiliate") will construct, expand or modify any pipeline facilities in the US in conjunction with the proposed export of natural gas from the US. Moreover, neither Pieridae nor any Pieridae affiliate has entered into an agreement or commitment of any kind with any third party in relation to any proposal to construct or expand or modify any pipeline system in the US.

There are a large number of the new natural gas pipeline projects in the Northeast United States. (For more information refer to Appendix E.) Pieridae may take capacity on existing pipeline systems, and planned new pipelines or planned pipeline expansions. However, no planned new pipeline or planned pipeline expansion will be implemented as a consequence of, or

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regasified LNG from the Project, as will be used in the foreign markets, is a direct substitute for the US natural gas that Pieridae US seeks to export.

[8] Between the beginning of the second quarter of 2012 and the end of the first quarter of 2014, the DOE/FE approved approximately 22 trillion cubic feet per year of natural gas exports to Canada and Mexico with no express limitations on the ability of the exporters to convert such natural gas to LNG and export such LNG from Canada or Mexico to other countries. (This is based on a Pieridae US review of all relevant DOE/FE export authorization orders, posted by the DOE/FE.) Rather than take that route and live with uncertainty with respect to whether the natural gas it exports from the US into Canada may be converted to LNG and transported to other countries under a DOE/FE authorization that expressly approves only exporting natural gas to Canada, this Application requests an explicit authorization for such a use of the exported natural gas.

[9] *See* Appendix B for a map of the Maritimes & Northeast Canada pipeline system ("M&N CA Pipeline") and the M&N US Pipeline (collectively, the "M&N Pipeline"), as well as the location of the export point.

will be dependent upon, Pieridae's decision to take capacity on that pipeline or pipeline expansion. Instead, it is anticipated that transportation services in Maine, Massachusetts and New Hampshire will be provided to Pieridae US primarily by the operators of the M&N US Pipeline, which system includes pipeline facilities on the US side of the proposed export point. Additional transportation services in the US will be provided to Pieridae US by the operators of certain other pipelines, depending on where in the US the natural gas is sourced. Pieridae US will contract directly with the appropriate operators of the relevant pipeline systems in the US, after participating in pipeline open seasons or obtaining capacity through other permissible means.

Pieridae US expects that natural gas transportation services in Canada will be provided to Pieridae US by the operator of the M&N CA Pipeline. Neither Pieridae, nor any Pieridae affiliate, holds any ownership interest in, or otherwise controls the M&N CA Pipeline. Pieridae US expects to consume in Canada a portion of the gas exported by it from the US and, once Train 2 of the Goldboro LNG Project (described below) commences commissioning, a portion of the exported natural gas will be used as feedstock in the production of LNG for sale and export (from Canada) by Pieridae US on behalf of Goldboro LNG Limited Partnership II.

The Goldboro LNG Project is to be located at the Goldboro Industrial Park in Guysborough County, Nova Scotia, Canada. The M&N CA Pipeline extends from the Canadian side of the proposed export point throughout the Provinces of New Brunswick and Nova Scotia, including to a point immediately adjacent to the Goldboro LNG Project. Pieridae US does not anticipate relying on any other onshore Canadian pipelines. Pieridae US will obtain transportation services within Canada in accordance with typical pipeline business practices and Canadian law and regulation.

The Goldboro LNG Project will include two substantially identical liquefaction production facilities (*i.e.*, "Train 1" and "Train 2"), natural gas treatment and compression equipment, LNG storage and marine loading facilities, as well as ancillary facilities, all as required to receive, process and liquefy natural gas, and to store and deliver LNG. While the amount of natural gas to be exported from the US by Pieridae US pursuant to the authorization requested by this Application does not precisely coincide with the amount of LNG to be produced by Train 2, Train 2's feed requirements are expected to represent a substantial amount of the demand for the natural gas exported from the US by Pieridae US. The Goldboro LNG Project will be capable of producing approximately 10 million metric tons per annum ("MTPA"), which is roughly the equivalent of 487 Bcf/y (or 1.33 Bcf/d) of pipeline-quality natural gas. The amount of LNG produced by the Goldboro LNG Project and the amount of US sourced natural gas that will be used as feedstock in Train 2 to produce such LNG will vary with demand for LNG abroad, the availability and cost of US natural gas, and other factors.

Pieridae US's request for approval of natural gas exports to Canada is the consequence of the pressing need for natural gas in the form of LNG in international markets, growing demand for natural gas in the Canadian Maritimes and Northeast Canada, and favorable US gas production. These conditions have resulted in a situation where exporting natural gas is an economically attractive option that has transformed the US from a net importer to a projected net exporter of natural gas.[10] Publicly available information establishes that domestic natural gas

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[10] *See* U.S. ENERGY INFORMATION ADMINISTRATION ("EIA"), ANNUAL ENERGY OUTLOOK 2014, at MT-22 (Apr. 2014), *available at* http://www.eia.gov/forecasts/aeo/pdf/0383(2014).pdf ("The United States transitions from being a net importer of 1.5 Tcf of natural gas in 2012 to a net exporter of 5.8 Tcf in 2040, with 88% of the rise in net exports (6.5 Tcf) occurring by 2030, followed by slower growth through 2040...") (hereinafter "*AEO 2014*"). "In the AEO2014 Reference case, natural gas production grows by an average rate of 1.6%/year from 2012 to 2040, more than double the 0.8% annual growth rate of total U.S. consumption over the period. The growth in production meets increasing demand and exports (liquefied natural gas [LNG] and pipeline exports), while also making up for a drop in natural gas imports. The United States becomes a net exporter of natural gas before 2020.... The 56%

supply in the US far exceeds existing and projected domestic demand during the 20-year term of exports proposed herein by Pieridae US. Such information also demonstrates that the price impact of Pieridae US's proposed exports would not be material, and thus the proposed export would not be expected to negatively impact US consumption of natural gas to any significant degree. The study commissioned by the DOE/FE, and authored by NERA Economic Consulting ("NERA"), *Macroeconomic Impacts of LNG Exports from the United States*, lends further support to this position stating that "LNG exports have net economic benefits in spite of higher domestic natural gas prices."[11] NERA found this to be the case even with unlimited LNG exports from the US.[12]

While there would be no direct investment in a US LNG terminal, nonetheless, the proposed exports would generate significant benefits to the US public. Among other things, the

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increase in total natural gas production from 2012 to 2040 in the *AEO 2014* Reference case results from increased development of shale gas, tight gas, and offshore natural gas resources...." *Id.* at MT-22–MT-23. "Most of the projected growth in exports consists of LNG exported to overseas markets.... Net Exports of LNG increase by 3.5% Tcf from 2012 to 2040, representing 48% of the total increase in U.S. natural gas net exports over the period." *Id.* at MT-24.

[11] NERA ECON. CONSULTING, MACROECONOMIC IMPACTS OF LNG EXPORTS FROM THE UNITED STATES 1 (2012) (hereinafter *"NERA Report"*), *available at* http://fossil.energy.gov/programs/gasregulation/reports/nera_lng_report.pdf. Pieridae US recognizes that the quantitative results of the *NERA Report* are not directly applicable to the situation at hand. In particular, capital investment in Pieridae US's case and jobs associated with the natural gas liquefaction and LNG export facility would occur in Canada, not the US. While, as described in more detail below, there are numerous reasons to anticipate that the quantitative analysis for Pieridae US proposed exports would be quite similar to NERA's results (*e.g.*, NERA assumed no net job creation in the US, the value of the exported gas greatly exceeds the cost of a natural liquefaction and LNG export facility, US investors are free to invest in Canadian facilities, etc.), the key point is that the qualitative conclusion remains unchanged. Specifically, the *NERA Report* states: "In all of [studied export] cases, benefits that come from export expansion more than outweigh the losses from reduced capital and wage income to U.S. consumers, and hence LNG exports have net economic benefits in spite of higher domestic natural gas prices. This is exactly the outcome that economic theory describes when barriers to trade are removed." Because economic theory does not hold true for only a single point on the supply chain, NERA's conclusion is equally true for all points up and down on the supply chain, as long as trade is conducted without distorting barriers. Thus, the public would be benefitted by exports of natural gas, prior to conversion to LNG, and by the export of materials made in the US using natural gas, as well as the export of LNG itself. Because the issue under the NGA is whether exports are inconsistent with the public interest, and not whether some level of benefits is achieved, the DOE/FE need not be presented with a quantitative analysis of the economic benefit that will result from Pieridae US's proposed exports in order to comply with the NGA's requirements.

[12] *Id.* at 12.

purchase from US suppliers of equipment, engineering services and technology (including from General Electric Company, Air Products and Chemicals, Inc. and others for use in the construction, operation and maintenance of the Goldboro LNG Project, as well as the purchase of US natural gas and US pipeline capacity for natural gas would: (i) stimulate local and regional economies through job creation and increasing other forms of personal income; (ii) generate additional tax revenues and other fiscal benefits for governmental entities; (iii) improve national economic activity; and (iv) make a substantial contribution to the US balance of payments. Further, the proposed export of natural gas from the US and the related export of LNG to FTA Countries and Non-FTA Countries would improve security for the US, Canada and the US's other allies and trading partners. Finally, given the close ties between the US and Canadian economies, the investment in a Canadian LNG terminal and related jobs in Canada would produce additional economic benefits for the US.

IV.
AUTHORIZATION REQUESTED

Pieridae US requests the DOE/FE authorize Pieridae US to engage in the long-term, multi-contract authorization to export up to 292 Bcf/y of natural gas from the US into Canada pursuant to long-term, multi-contract authorization in circumstances where such natural gas would be used for the Specified Purposes. Export of the natural gas from the US would occur along the US-Canada border near Baileyville, Maine, at the juncture of the M&N US Pipeline and the M&N CA Pipeline at or near meter station ID 30014. Pieridae US requests this authorization for a 20-year term commencing on the earlier of the date of first export or seven (7) years from the date of issuance of the authorization requested herein.

Pieridae US will comply with all DOE/FE requirements for exporters and agents applicable in its situation. Because Pieridae US will only be exporting natural gas to which it

holds title for its own account, it does not foresee the need to register its customers with the DOE/FE. However, with respect to natural gas exported pursuant to an authorization issued in response to this Application, Pieridae US will include in any subsequent purchase or sale agreement entered into with a downstream customer a clause whereby the purchaser agrees to adhere to any destination restrictions imposed by the DOE/FE in granting this request. This includes the transfer of title of LNG from Pieridae US to Pieridae US's customers where the LNG supplied to such customers is produced with natural gas exported from the US pursuant to an authorization issued in response to this Application and the LNG is to be consumed outside of Canada.

Pieridae US is not submitting long-term supply agreements and long-term export agreements with the instant Application and, therefore, requests that the DOE/FE make a similar finding to that in DOE/FE Order No. 2961 with regard to the transaction-specific information of the type identified in Section 590.202(b) of the DOE regulations.[13] At the time of this Application, Pieridae US has not entered into any long-term gas supply, pipeline capacity or export contracts in conjunction with the natural gas export authorization requested herein. In accordance with the DOE/FE's stated policy in Sabine Pass, DOE/FE Order No. 2961, Pieridae US will submit transaction-specific information when such contracts are executed.[14]

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[13] In the May 20, 2011 order granting Sabine Pass Liquefaction, LLC ("Sabine Pass") long-term export authorization to Non-FTA Countries, the DOE/FE found that Sabine Pass was not required to submit with its application transaction-specific information pursuant to Section 590.202(b) of the DOE regulations. The DOE/FE found that given the state of development for the proposed Sabine Pass export project, it was appropriate for Sabine Pass to submit such transaction-specific information when the contracts reflecting such information are executed. *See Sabine Pass Liquefaction, LLC, Opinion and Order Conditionally Granting Long-Term Authorization to Export Liquefied Natural Gas from Sabine Pass LNG Terminal to Non-Free Trade Agreement Nations*, FE Docket No. 10-111-LNG, DOE/FE Order No. 2961, at 41 (May 20, 2011) (hereinafter *"Sabine Pass, DOE/FE Order No. 2961"*).

[14] The DOE/FE has previously held that the commitment to file contracts once they are executed complies with the requirement of 10 C.F.R. § 590.202(b) to supply transaction-specific information "to the extent practicable." *Id.*

Pieridae US notes that the DOE/FE has recently announced modifications to its practices with respect to granting authorizations to export natural gas to Non-FTA Countries.[15] These changes do not apply to Pieridae US because: (i) Pieridae US is not proposing to export LNG via a LNG export terminal located in the lower 48 States, and (ii) Pieridae US is not requesting that the Assistant Secretary issue a conditional order pursuant to Section 590.402 of the DOE's regulations[16] authorizing the export of LNG requested herein as an interim step before completion of any environmental review required in conjunction with this Application. Physical facilities required to export natural gas from the US at the proposed point of export already exist, and any environmental review by the Federal Energy Regulatory Commission ("FERC") or another other US federal, state or local agency, as appropriate, of changes that may be proposed for such facilities would occur independently of Pieridae US's proposed exports. As such, Pieridae US expects that the DOE/FE will fulfill its responsibilities under the National Environmental Policy Act ("NEPA") by concluding that acting on the Application falls within a existing categorical exclusion or by the DOE/FE making its own finding of no significant impact without an extensive environmental review and the delay attendant to such a review. In such circumstances, the issuance of a conditional order would serve no useful purpose.

Pieridae US requests expedited review of this Application and approval of its request by no later than March 15, 2015 (the "Expedited Deadline"). The DOE/FE's new processing procedures for applications to export LNG from the lower-48 states contemplate that different

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15 Procedures for Liquefied Natural Gas Export Decisions, 79 Fed. Reg. 158 (Aug. 15, 2014), *available at* http://energy.gov/sites/prod/files/2014/08/f18/FR%20Procedures%20LNG%20Exports%2008_15_14.pdf (hereinafter "*DOE/FE New Procedures*").

16 10 C.F.R. § 590.402 (2014) ("The Assistant Secretary may issue a conditional order at any time during a proceeding prior to issuance of a final opinion and order. The conditional order shall include the basis for not issuing a final opinion and order at that time and a statement of findings and conclusions. The findings and conclusions shall be based solely on the official record of the proceeding.").

processing procedures could apply to LNG exports from other locations depending on the circumstances.[17] (Collectively, these new procedures are hereinafter referred to as the "New Procedures"). As discussed herein, Pieridae US's proposed exports of natural gas from the US to Canada differ from exports to be made from a LNG facility in the lower-48 states and such differences justify the application of a separate processing track and different procedures than exports from US LNG export facilities. Among other things, Pieridae US is not proposing to construct, or cause to be constructed, any facilities that would require the DOE/FE to wait for the completion of a parallel FERC process. Thus, pursuant to the New Procedures, the DOE/FE should not delay the processing of this Application until it completes processing of earlier in time applications that are not ready to proceed due to the need to first complete a FERC approval process. In conjunction, with a separate processing track, expedited review is requested for the following reasons.

Firstly, Pieridae is contractually committed to make a final investment decision ("FID") in regard to the construction of Train 1 and Train 2 no later than the end of March 2015. In order to make a positive FID in regard to Train 2, Pieridae must be able to secure sufficient capital (both equity and debt) to fund its construction which, in turn, depends on several contributing factors including, first and foremost, the issuance on or before the Expedited Deadline of the authorization requested in this Application.

Secondly, the construction of the Goldboro LNG Project is supported by the Canadian federal government, as well as the government of the Province of Nova Scotia. Any delay or refusal by the DOE/FE to issue the authorization requested by this Application would

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[17] *DOE/FE New Procedures*, *supra* note 15. http://energy.gov/sites/prod/files/2014/08/f18/FR%20Procedures%20LNG%20Exports%2008_15_14.pdf.

undoubtedly be of concern to those governments particularly in view of the license granted by the Canadian National Energy Board ("NEB") on February 20, 2014, to Jordan Cove LNG L.P. ("Jordan Cove") to export up to 16.03 billion cubic meters of natural gas from Canada for conversion to LNG in the US and subsequent export.[18]

Finally, rising tensions between Russia and the European Union, and the related imposition of sanctions on Russia, have again underscored the importance to many European nations, each an ally of the US by virtue of their membership in the North Atlantic Treaty Organization or a trading partner of the US, in reducing their dependence on natural gas imported from Russia. LNG from North America (including LNG produced by Pieridae US) would be an important means to reduce that dependency. This imperative was recently recognized by The European Commission in its proposed European Energy Security Strategy.[19] In this regard, it should be noted that the entire twenty year output of LNG produced from Train 1 of the Goldboro LNG Project has already been committed for sale by Pieridae CA to a

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[18] Jordan Cove filed with the NEB on September 9, 2014 and the license was granted in 133 days. Letter from Kevin S. King, Senior Vice President, General Counsel & Secretary, Veresen Inc., to Sheri Young, Secretary of the Board, NEB (Sept. 9, 2014), *available at* https://docs.neb-one.gc.ca/ll-eng/llisapi.dll/fetch/2000/90466/94153/552726/1035278/1035410/1035482/A3K9F3_-_Cover_Letter.pdf?nodeid=1035585&vernum=-2. The NEB approval placed no restrictions on the re-exportation from the US of LNG produced with the natural gas exported from Canada to the US by Jordan Cove. Letter Decision from NEB to Kevin King and L.E. Smith, Q.C. (Feb. 20, 2014), *available at* https://docs.neb-one.gc.ca/ll-eng/llisapi.dll/fetch/2000/90466/94153/552726/1035278/1035410/2423890/Jordan_Cove_LNG_L.P._Letter_Decision_-_A3U8K5.pdf?nodeid=2421338&vernum=-2 (hereinafter "*NEB Letter Decision*").

[19] "Accessing more diversified natural gas resources is a priority whilst maintaining significant import volumes from reliable suppliers. LNG will remain and grow as a major potential source of diversification in the years to come. New LNG supplies from Northern [sic] America, Australia, Qatar and new discoveries in East-Africa are likely to increase the size and liquidity of the global LNG markets. In the US, the first liquefaction plant on the East-Coast is expected to be operational by 2015-2017 with a capacity of about 24 bcm/y. Many other projects are being developed. It is expected that most of the volumes would be directed to the Asian markets, but some European companies are already negotiating LNG supply contract with US LNG producers. These evolutions should be facilitated by adequately reflecting priorities in EU external policies, in particular in the on-going negotiations on a Transatlantic Trade and Investment partnership (TTIP)… ." EUROPEAN COMMISSION, *COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT AND THE COUNCIL – EUROPEAN ENERGY SECURITY STRATEGY* 15 (May 28, 2014), *available at* http://ec.europa.eu/energy/security_of_supply_en.htm.

particular German off taker under a long-term supply agreement and it is anticipated that, if Train 2 were constructed, all or a significant portion of its output would be committed for sale by Pieridae US to one or more European off takers. Given the long lead times in developing an LNG export project capable of delivering gas to Europe, there is a critical need to expedite each step of the development process to the extent practicable.

V.
DESCRIPTION OF EXPORT RELATED FACILITIES

A. Transportation Facilities in the US

The natural gas, which will be sourced from the US, is intended to be exported from the US and imported into Canada *via* the M&N Pipeline. The M&N Pipeline consists of a main pipeline and several laterals. The pipeline is approximately 889 miles in length connecting Dracut, Massachusetts,[20] to each of Halifax, Goldboro, and Point Tupper, Nova Scotia.

The M&N US Pipeline is approximately 346 miles[21] in length and is owned by Spectra Energy Partners, LP (77.53%), Emera, Inc. (12.92%) and ExxonMobil Corporation (9.55%) and operated by M&N Operating Company, L.L.C. (collectively, "M&N US").

Although the present capacity of these facilities is not sufficient to accommodate the full volume of exports for which Pieridae US is seeking authorization,[22] M&N US and other third

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20 M&N US interconnects with Portland Natural Gas Transmission System, the Tennessee Gas Transmission System and the Algonquin Gas Transmission System.

21 *U.S. Natural Gas Pipelines,* SPECTRA ENERGY, http://www.spectraenergy.com/Operations/US-Natural-Gas-Pipelines/ (last visited Oct. 9, 2014).

22 *See Maritimes & Northeast Pipeline, L.L.C., Order Amending Presidential Permit and Authorization under Section 3 of the Natural Gas Act*, 128 FERC ¶ 61,070 (July 21, 2009). The maximum capacity specified by the Presidential Permit is 440,000 dekatherms ("dth")/d, whereas the amount proposed to be exported by Pieridae US is equivalent to an average daily throughput of 829,000 dth. (292 Bcf/y / 365 d/yr * 1,000,000,000 cf/Bcf * 1,037 Btu/cf / 1,000,000 Btu/dth = 829,000 dth/d.) Some portion of any absolute physical deficiency might be made up through displacement, that is to the extent an entity wishes to import LNG from Canada into the US at the same point Pieridae US proposes to export LNG from the US into Canada, the two amounts could be netted out without the need to physically transport the offsetting volumes across the proposed point of export.

parties have announced various projects to construct or expand pipeline infrastructure for the purpose of transporting natural gas from the Marcellus and Utica producing regions to customers in northeastern US and eastern Canada. Many of these projects are discussed in greater detail below in Part VIII. The official M&N US website describes the situation well:

> "The Maritimes system has been designed with further expansion capability in mind. With an established pipeline system in place, our company is well-positioned to capture market growth opportunities as new supplies become available. Through the addition of compression and pipeline looping, Maritimes can expand with ease to accommodate various supply increments.
>
> Added benefits - by expanding within its existing pipeline corridor, Maritimes provides a timing advantage to the market, and its expansion provides an environmentally superior alternative to greenfield pipeline projects.
>
> As an established market participant, Maritimes & Northeast Pipeline and managing partner Spectra Energy have built exceptional customer and community relationships. Our vision is to grow our franchise and be the energy transporter of choice in the markets we serve."[23]

Further, on July 4, 2014, CBC News reported: "The company that owns the Maritimes and Northeast Pipeline has announced plans to expand its capacity to ship inexpensive U.S. shale gas into Maine and the Maritimes."[24] The same report noted that the capacity increase would be up to 1 Bcf/d[25] — an amount that is in excess of the capacity needed to serve all of the transportation needs associated with this Application.

In light of these circumstances, and because (a) the development lead time for natural gas transportation facilities is shorter than the development lead time for the Goldsboro LNG Project, and (b) the development path for the border crossing and other pipeline facilities to be used by

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[23] *Marketing & New Projects,* MARITIMES & NORTHEAST PIPELINE, http://www.mnpp.com/us/marketingnewprojects (last visited Sept. 24, 2014) (hereinafter "*M&N Website*").

[24] *M&N Pipeline capacity to be expanded – Spectra Energy plans to ship inexpensive U.S. shale gas into Maine, Maritimes*, CBS NEWS (July 4, 2014), http://www.cbc.ca/news/canada/new-brunswick/maritimes-and-northeast-pipeline-capacity-to-be-expanded-1.2696351.

[25] *Id.*

Pieridae US is well defined, it is appropriate for Pieridae US to file, and the DOE/FE to process, this Application in advance of Pieridae US formalizing its transportation arrangements on the M&N US Pipeline.

Transportation on additional gas pipelines in the US will also be contracted for as necessary to reach sources of natural gas supply in the US.

B. Transportation Facilities in Canada

The M&N CA Pipeline is approximately 543 miles in length and is owned by Westcoast Energy Inc. (77.53%), Emera, Inc. (12.92%) and ExxonMobil Corporation (9.55%) and operated by Westcoast Energy Inc. Both Spectra Energy Partners, LP and Westcoast Energy Inc. are owned directly or indirectly by Spectra Energy Corp.

As discussed previously, Pieridae US will secure transportation on the existing M&N CA Pipeline to move natural gas from the point of export on the US-Canada border to a point adjacent to the Goldboro LNG Project, where it will be used for generation plant operating fuel, LNG plant operating fuel or LNG plant feedstock. Even without Pieridae US's proposed exports for use by the Goldboro LNG Project, the M&N CA pipeline periodically experiences flow reversals and the system, in its current configuration, can accommodate bidirectional flow. [26]

To move the gas beyond Canada to serve overseas markets will require the construction and operation of the Goldboro LNG Project. The Goldboro LNG Project will be developed by Pieridae through one or more Pieridae affiliates. The project will be capable of producing approximately 10 MTPA, roughly the equivalent of 487 Bcf/y (or 1.33 Bcf/d) of pipeline-quality natural gas. Chilling of the natural gas to form LNG will employ a closed-loop heat exchange

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[26] *See Canadian Pipeline Transportation System - Energy Market Assessment*, NEB, http://www.neb-one.gc.ca/clf-nsi/rnrgynfmtn/nrgyrprt/trnsprttn/2014trnsprttnssssmnt/2014trnsprttnssssmnt-eng.html (last visited July 28, 2014).

system. The project will have at least two full containment, cryogenic, LNG storage tanks, each with a capacity of up to 230,000 cubic meters, for a maximum total on site LNG storage capacity equivalent to about 9.7 Bcf of natural gas. Commissioning of the Goldboro LNG Project will occur in two (2) phases, with Train 1 to be commissioned during the first phase and Train 2 during the second. Each train, will have the capability of producing approximately 5 MTPA of LNG. The use of the production capacity of Train 1 will be reserved for Pieridae CA and the use of the production capacity of Train 2 will be reserved for Pieridae US. The two storage tanks will be constructed in concert with phase one. Marine loading facilities will include: a jetty trestle for the LNG transfer lines; an access road; and two LNG ship loading berths, each equipped with four standard Chiksan® marine loading arms.

Common facilities for both phases will include: administration and control buildings; a short supply pipeline with metering and pigging facilities; gas treatment facilities; a natural-gas-fired, primary power generating station ; a diesel back-up power generation plant (sized for essential loads), flare stacks, raw water extraction and storage, plant utilities, wastewater and storm water management facilities, a truck loading facility, a mono-piled jetty trestle and roadway, jetty heads, loading berths, a marginal wharf (for the unloading of construction equipment and materials and for mooring of the tug and pilot vessels) and causeway; boil-off gas compressors; a public information center; and other ancillary systems.

The Goldboro LNG Project will be located at the Goldboro Industrial Park in Guysborough County, Nova Scotia, Canada.

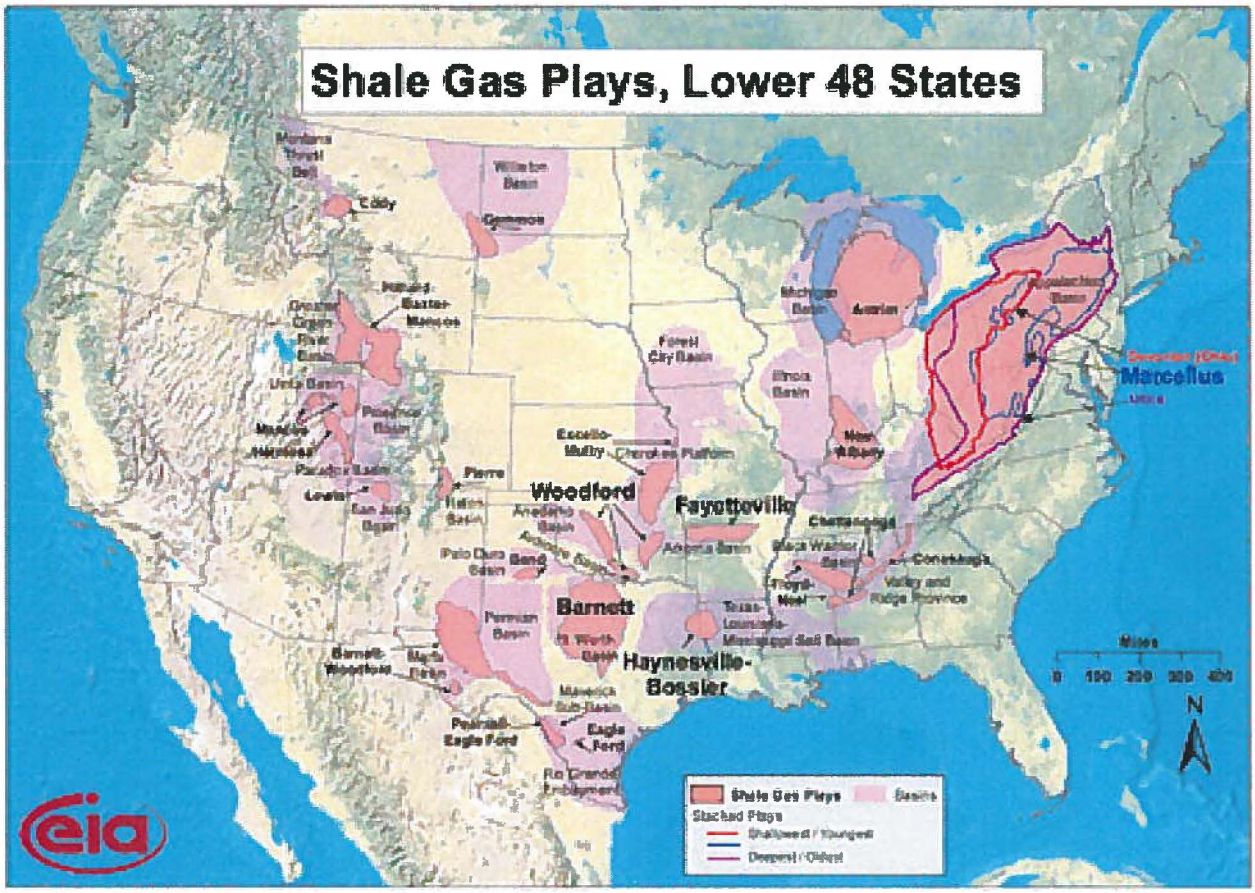
C. Sources of Natural Gas to be Exported from the US

Pieridae US will source natural gas from the US and Canada for use as feedstock in the production of LNG from Train 2 for export to its particular customers.[27] As a result of the existing M&N US Pipeline and its interconnections with other pipeline systems in the eastern US, which in turn connect to the larger national US pipeline system, and the various proposed enhancements to such natural gas transportation facilities, Pieridae US will have the ability to source gas from almost any point on the US natural gas pipeline grid through direct physical delivery or by displacement.

With regard to adequate sources of natural gas, as shown in Figure 2, natural gas from the Marcellus and Utica producing regions can readily be tapped to source Pieridae US's proposed exports. While Pieridae US intends to obtain natural gas from whatever sources offer

[27] In contrast, Pieridae CA will source natural gas from Canada for use as feedstock in the production of LNG from Train 1 for sale and export to its particular customers. However, because the natural gas sourced from Canada and the natural gas sourced from the US will be delivered to the Goldboro LNG Project at the same point on the M&N CA Pipeline, the natural gas from both sources will be physically comingled prior to processing and liquefaction.

Figure 2: US Lower-48 Shale Plays



Source: Energy Information Administration based on data from various published studies.
Updated: March 10, 2013

a reliable supply at a commercially attractive price, there is no question that adequate supplies abound.[28] As the Northeast Gas Association states on its web-site:

> "For the Northeast and Mid-Atlantic in particular, the major potential source of growth is the Appalachian Basin and its Marcellus Shale and Utica Shale basins. These shale gas formations extend from West Virginia into Ohio, Pennsylvania and New York.

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[28] Natural gas production from unconventional gas resources contributed to a 20% increase in the total US gas production over the past five (5) years. *See* EIA, *U.S. Dry Natural Gas Production,* http://www.eia.gov/dnav/ng/hist/n9070us2a.htm (last visited July 31, 2014) (illustrating the U.S.'s dry natural gas production from 1930 to 2013). *See also AEO 2014*, *supra* note 10, at MT-23 ("Shale gas production is the largest contributor [to the 56% increase in total natural gas production from 2012 to 2040 in the AEO 2014 Reference case], growing by more than 10 Tcf, from 9.7 Tcf in 2012 to 19.8 Tcf in 2040. The shale gas share of total U.S. natural gas production increases from 40% in 2012 to 53% in 2040. Tight gas production and offshore gas production increase by 73% and 78%, respectively, from 2012 to 2040, but their shares of total production remain relatively constant.").

> Estimates are that the Marcellus basin may hold from 140 to nearly 500 trillion cubic feet (Tcf) of natural gas. Production in the Marcellus region has grown strongly in just the last few years, to nearly 7 billion cubic feet per day. The Northeast, long accustomed to being "at the end of the pipeline," now finds itself located next to - and indeed on top of - potentially one of the largest natural gas basins in the U.S. Shale resource production is well underway in Pennsylvania."[29]

Thus, these resources alone are about 25 to 100 times larger than the total quantity of gas to be exported by Pieridae US over the full 20-year period. As of March 2014, natural gas production from the Marcellus basin had risen to over 14 Bcf/d, from about 5 Bcf/d in 2011,[30] for an increase of 9 Bcf/d in just 2.5 years, suggesting the region could readily support a further increase in production to accommodate about 0.8 Bcf/d that Pieridae US proposes to export commencing in 2019 or thereafter. Overall, US gas production is expected to be plentiful and growing.[31]

Pieridae US's proposed exports represent no more than 56% of the existing and publicly announced future planned throughput capacity at the proposed point of export.[32] With regard to existing capacity, the decreasing demand for Canadian natural gas in the US has left the M&N US and M&N CA Pipelines available for new uses.[33] Moreover, because Pieridae US's

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[29] Northeast Gas Assoc., *NGA Issue Brief: Supply Outlook March 2014*, http://www.northeastgas.org/nat_gas_supply_trends.php (last visited July 28, 2014) (hereinafter "*NGA Supply Brief*").

[30] Northeast Gas Assoc., *NGA Issue Brief: Marcellus Shale May 2014*, http://www.northeastgas.org/marcellus_shale.php (last visited July 28, 2014) (hereinafter "*NGA Marcellus Brief*") .

[31] According to the EIA, over the entire course of its most current Reference case, total natural gas production will increase by 56% between 2012 and 2040 due to the increased development of shale gas, tight gas and offshore natural gas resources. *AEO 2014*, *supra* at 10, at MT-23–MT-24.

[32] As discussed previously, existing capacity is about 0.4243 Bcf/d and recently announced expansion plans are for up to another 1 Bcf/d for a total of 1.4243 Bcf/d, compared to Pieridae US's proposed exports of up to 0.8000 Bcf/d.

[33] According to a February 12, 2014 posting by the Bangor Daily News, the M&N US and CA Pipelines were "built to carry 800 million cubic feet of gas per day south, but [have] been operating on average at half that capacity or less for the last few years because the [Canadian] offshore projects are not yielding as much gas as anticipated, [Richard] Kruse [Spectra Energy's Vice President of Regulatory Affairs] said. That, coupled with national shifts in

proposed exports represent a counterflow to the prevailing historic flow, any continued traditional demand on the pipeline provides an opportunity to take advantage of offsetting flows in opposite directions to increase the effective throughput capacity.

With regard to planned expansions, in February 2014, M&N US announced the Atlantic Bridge Project, a proposed expansion of the Algonquin Gas Transmission and Maritimes & Northeast pipeline systems to connect abundant North American natural gas supplies with markets in the New England states and Maritime Provinces.[34] Unitil Corporation, a natural gas distribution company serving parts of Massachusetts and New Hampshire and the largest distributor in Maine, has already agreed to be an anchor shipper for the project.[35] This expansion is to increase pipeline capacity by approximately 0.1 Bcf/d for service commencing in 2017.[36] An open season to assess market interest in further capacity of up to 0.6 Bcf/d was also held.[37]

Service to Pieridae US would not result in the impairment of service to other customers. Indeed, Spectra Energy's President of US Transmission and Storage has stated that the proposed pipeline expansion resulting in "additional supply will keep prices lower overall, while also dampening future gas and electricity price volatility, generating savings for homeowners,

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the market for natural gas, makes the prospect of reversing the flow of the Maritimes and Northeast Pipeline an attractive option for the company." Whit Richardson, *Maritimes and Northeast Pipeline Owner Wants to Retrofit Pipeline to Bring Gas from South*, The BANGOR DAILY NEWS (Feb. 12, 2014), http://bangordailynews.com/2014/02/12/energy/maritimes-and-northeast-pipeline-owner-wants-to-retrofit-pipeline-to-bring-gas-from-south/.

34 *Spectra Energy to Expand Pipeline Systems in New England,* SPECTRAENERGY.COM (Feb. 5, 2014), http://www.spectraenergy.com/Newsroom/News-Archive/Spectra-Energy-to-Expand-Pipeline-Systems-in-New-England/.

35 *Id.*

36 *Id.*

37 *Id.*

manufacturers and businesses."[38] In due course, Pieridae US intends to discuss with M&N US arrangements to secure sufficient pipeline capacity in the future.

D. Commercial Arrangements

Pieridae US has not entered into any transportation capacity arrangements at this time. As discussed above, Pieridae US plans on entering into long-term natural gas supply contracts and long-term LNG sales contracts in conjunction with the LNG export authorization requested herein, as well as various commercial agreements with the Pieridae affiliate that will own the Goldboro LNG Project. Pieridae US will timely submit all relevant contracts, with appropriate requests for confidentiality, in accordance with any export authorization issued by the DOE/FE in response to this Application.

VI.
APPLICABLE LEGAL STANDARD

Pursuant to Section 3 of the NGA, the DOE/FE is required to authorize exports to a foreign country unless there is a finding that such exports "will not be consistent with the public interest."[39] Specifically, Section 717b(a) of the NGA states in relevant part:

> **(a) Mandatory authorization order**
>
> [N]o person shall export any natural gas from the United States to a foreign country or import any natural gas from a foreign country without first having secured an order of the Commission authorizing it to do so. The Commission shall issue such order upon application, unless, after opportunity for hearing, it finds that the proposed exportation or importation will not be consistent with the public interest.[40]

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38 *Id.*

39 15 U.S.C. § 717b(a) (2012).

40 *Id.* (emphasis added).

Section 717b(a) thus creates a statutory presumption in favor of approval of this Application, which opponents bear the burden of overcoming.

Moreover, with respect to exports to FTA Countries, this presumption is irrebuttable.[41] The DOE/FE has consistently found that, in light of its statutory obligation, there is no need for it to engage in an analysis of factors affecting the public interest in acting on such applications. In this regard, in *Jordan Cove*, *DOE/FE Order No. 3041*, DOE/FE noted that its authority under NGA Section 3(c), as amended by the Energy Policy Act of 1992, is limited to two (2) areas: "(1) to ensure that applications are filed with sufficient information to confirm that the applicant is engaged in a meaningful (*i.e.*, not frivolous) effort to undertake natural gas export or import activities, and (2) to provide in any order granting a section 3(c) application that the applicant will report its export or import activities in sufficient detail to enable DOE to monitor import and export activities."[42] Pieridae US submits that this Application: (1) demonstrates that Pieridae US is engaged in a serious and substantial, non-frivolous, undertaking to export natural gas from the US, and (2) includes appropriate commitments to cooperate with DOE/FE's monitoring efforts. Thus, Pieridae US has met its burden with regard to applying for an authorization to export

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41 *See* 15 U.S.C. §717b(c) ("For purposes of subsection (a) … the exportation of natural gas to a nation with which there is in effect a free trade agreement requiring national treatment for trade in natural gas, shall be deemed to be consistent with the public interest, and applications for such importation or exportation shall be granted without modification or delay." (emphasis added)). *See also Sabine Pass Liquefaction, LLC, Order Granting Long-Term Authorization to Export Liquefied Natural Gas from Sabine Pass LNG Terminal to Free Trade Nations*, FE Docket No. 10-85-LNG, DOE/FE Order No. 2833, at 5 (Sept. 7, 2010) (stating the "FE is charged with granting the application without delay or modification" because the application falls under Section 3(c) of the NGA); *Jordan Cove Energy Project, L.P., Order Granting Long-Term Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Jordan Cove LNG Terminal to Free Trade Agreement Nations*, FE Docket No. 11-127-LNG, DOE/FE Order No. 3041, at 8 (Dec. 7, 2011) (hereinafter "*Jordan Cove, DOE/FE Order No. 3041*") (rejecting Oregon's protest to Jordan Cove's application to export LNG to FTA Countries because the DOE is bound by section 3(c) of the NGA); *Carib Energy (USA) LLC, Order Granting Long-Term Multi-Contract Authorization to Export Liquefied Natural Gas to Free Trade Agreement Nations in Central America, South America, or the Caribbean by Vessel in ISO Containers,* FE Docket No. 11-71-LNG, DOE/FE Order No. 2993, at 4 (July 27, 2011) ("The instant application falls within section 3(c), as amended, and therefore, DOE/FE is charged with granting the application without delay or modification.").

42 *Jordan Cove, DOE/FE Order No. 3041, supra* note 41, at 8–9.

natural gas from the US that will either: (1) be consumed in Canada; or (2) serve as feedstock for an LNG production and export facility in Canada, which, in turn, will export such LNG from Canada to FTA Countries.

With respect to Pieridae US's request to export natural gas to Canada that is subsequently delivered in the form of LNG to Non-FTA Countries, in evaluating applications for the direct export of LNG from the US to Non-FTA Countries, the DOE/FE has consistently applied the principles described in DOE Delegation Order No. 0204-111, which focuses primarily on whether there is a domestic need for natural gas that trumps exports, and the Secretary's natural gas policy guidelines,[43] which presume the normal functioning of the competitive market will benefit the public. "Although DOE Delegation Order No. 0204-111 is no longer in effect, [DOE/FE]'s review of export applications in decisions under current delegated authority has continued to focus on the domestic need for natural gas proposed to be exported; whether the proposed exports pose a threat to the security of domestic natural gas supplies; and any other issue determined to be appropriate, including whether the arrangement is consistent with DOE's policy of promoting competition in the marketplace by allowing commercial parties to freely negotiate their own trade arrangements."[44] In the past, the DOE/FE also has considered local

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[43] *Policy Guidelines and Delegation Orders Relating to the Regulation of Imported Natural Gas*, 49 Fed. Reg. 6,684 (Feb. 22, 1984) (hereinafter *"Policy Guidelines"*).

[44] *Sabine Pass, DOE/FE Order No. 2961*, *supra* note 13, at 29. In this regard, in DOE/FE Order No. 2961, the first DOE/FE order authorizing exports from the lower-48 states of domestically produced LNG to Non-FTA Countries, the DOE/FE confirmed that, although DOE Delegation Order No. 0204-111 is no longer in effect, it continues to focus on the principles set forth therein in reviewing export applications. *Id.* The DOE/FE has continued to take this approach in a series of subsequent Conditional Orders authoring LNG exports to Non-FTA Countries, most recently in *Jordan Cove Energy Project, L.P., Order Conditionally Granting Long-Term Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Jordan Cove LNG Terminal in Coos Bay, Oregon to Non-Free Trade Agreement Nations,* FE Docket No. 12-32-LNG, DOE/FE Order No. 3413, at 7–8, 143 (Mar. 24, 2014) (hereinafter "*Jordan Cove, DOE/FE Order No. 3413*") (stating that the DOE/FE still continues to look to certain principles established in the DOE Delegation Order No. 0204-111 although it is no longer in effect). *See also Cameron LNG LLC, Order Conditionally Granting Long-Term Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Cameron LNG Terminal in Cameron, Parish, Louisiana to Non-Free Trade Agreement Nations*, FE Docket No. 11-162-LNG, DOE/FE Order No. 3391, at 7–8 (Feb. 11, 2014)

interests, international effects and the environment as factors relevant to the public interest determination.[45]

In the context of the instant Application and existing natural gas market conditions, the longstanding principles of minimizing federal control and involvement in natural gas markets articulated in the *Policy Guidelines* are particularly relevant.[46] The *Policy Guidelines* emphasize free market principles and promote limited government involvement in federal natural gas regulation:

> The market, not government, should determine the price and other contract terms for imported [and exported] gas. U.S. buyers [and sellers] should have full freedom – along with the responsibility – for negotiating the terms of trade arrangements with foreign sellers [and buyers].
>
> . . .

(hereinafter *"Cameron LNG, DOE/FE Order No. 3391"*) (stating the same).

[45] For example, in DOE/FE Opinion and Order No. 2500, which granted ConocoPhillips Alaska Natural Gas Corporation and Marathon Oil Company authorization to export LNG from Alaska, the DOE/FE considered the regional need for the gas by reviewing the natural gas supply and demand projections submitted, cited or relied on, by the parties in the proceeding and determined that there was a reasonable basis for concluding that local supplies were adequate to support the proposed export as well as to meet local demand requirements during the term of the proposed blanket authorization. *ConocoPhillips Alaska Natural Gas Corp. and Marathon Oil Co., Order Granting Authorization to Export Liquefied Natural Gas from Alaska*, FE Docket No. 07-02-LNG, DOE/FE Opinion and Order No. 2500, at 45–47 (June 3, 2008) (hereinafter *"ConocoPhillips, DOE/FE Order No. 2500"*). In addition, the DOE/FE found that: (1) local interests would be well served by a grant of the requested authorization (in this case because the continued operation of the applicant's liquefaction plant provided significant benefits to the local economy); (2) exportation of LNG would help to improve the US's balance of payments with Pacific Rim countries during the term of the proposed blanket authorization; and (3) there was no significant environmental impact. *Id.* at 57–58. *See also Cheniere Marketing, Inc., Order Granting Authorization to Export Liquefied Natural Gas,* FE Docket No. 08-77-LNG, DOE/FE Order No. 2651, at 14 (June 8, 2009) (explaining that, consistent with the *Policy Guidelines* and applicable precedent, the DOE/FE considers the potential effects of proposed exports on aspects of the public interest other than domestic need, including international effects and the environment) (hereinafter *"CMI, DOE/FE Order No. 2651"*).

[46] The DOE/FE recently stated it "continues to subscribe to the principle set forth in [the Policy Guidelines] that, under most circumstances, the market is the most efficient means of allocating natural gas supplies." *Jordan Cove, DOE/FE Order No. 3413, supra* note 44, at 143. While the *Policy Guidelines* deal specifically with imports, the principles are applicable to exports as well. *See Phillips Alaska Natural Gas Corp. and Marathon Oil Co., Order Extending Authorization to Export Liquefied Natural Gas from Alaska*, FE Docket No. 96-99-LNG, DOE/FE Opinion and Order No. 1473, at 14 (Apr. 2, 1999) (hereinafter *"Phillips Alaska, DOE/FE Order No. 1473"*) (acknowledging that the *Policy Guidelines* also apply to exports).

> The government, while ensuring that the public interest is adequately protected, should not interfere with buyers' and sellers' negotiation of the commercial aspects of import [and export] arrangements. The thrust of this policy is to allow the commercial parties to structure more freely their trade arrangements, tailoring them to the markets served.[47]

The *Policy Guidelines* also provide some insight into the public interest standard for evaluating potential import and export applications. In this regard, they state that the "policy cornerstone of the public interest standard is competition."[48] Competitive import/export arrangements are therefore an essential element of the public interest and, so long as the sales agreements are set in terms that are consistent with market demands, they should be considered to "largely" meet the public interest standard.[49] The guidelines continue by saying that "[t]his policy approach presumes that buyers and sellers, if allowed to negotiate free of constraining governmental limits, will construct competitive import [and export] agreements that will be responsive to market forces over time."[50] To date, DOE/FE orders granting authorization to export natural gas continue to reflect and reinforce the principles laid out in the *Policy Guidelines* by emphasizing the concepts of free trade and limited government involvement.[51]

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47 *Policy Guidelines*, *supra* note 43, at 6685. The macroeconomic analysis provided in the *NERA Report* reinforces DOE/FE's continued reliance on the *Policy Guidelines*' free market approach. *NERA Report*, *supra* note 11, at 1. In concluding that LNG exports will have net economic benefits in spite of higher domestic natural gas prices, NERA states "[t]his is exactly the outcome that economic theory describes when barriers to trade are removed." *Id.*

48 *Policy Guidelines*, *supra* note 43, at 6687.

49 *Id.*

50 *Id.* (inserting a reference to "exports" to reflect DOE/FE policy that "the principles are applicable to exports as well" as enunciated in *Phillips Alaska, DOE/FE Order No. 1473*, *supra* note 46, at 14).

51 *See, e.g.*, *Sabine Pass, DOE/FE Order No. 2961*, *supra* note 13, at 29 (referencing DOE/FE's policy of promoting competition in the marketplace by allowing commercial parties to freely negotiate their own trade arrangements); *Phillips Alaska, DOE/FE Order No. 1473*, *supra* note 46, at 51 (stating that the public interest is generally best served by a free trade policy); *ConocoPhillips, DOE/FE Order No. 2500*, *supra* note 45, at 44–45 (stating that DOE/FE's general policy is to minimize federal government involvement and allow commercial parties to freely negotiate their own trade arrangements).

VII.
PUBLIC INTEREST ANALYSIS

Pieridae US's submission of this Application is, in part, due to the hugely positive outlook for US domestic natural gas reserves and production. Improved drilling techniques and extraction technologies have contributed to the rapid growth in new supplies from unconventional gas-bearing formations across the US and have been utilized to enhance production in some conventional fields. Such developments have completely changed the complexion of the US natural gas industry and radically expanded the resource base.

Pieridae US's proposed natural gas exports reflect the free market's reaction to the US's vast energy reserves, putting such reserves to use in a manner that will meaningfully contribute to the public interest through a variety of benefits, including:

- more jobs[52] and personal income, greater tax revenues, and increased economic activity;
- improved US balance of payments through the exportation of natural gas and the displacement of imports of other petroleum liquids;
- enhanced national security, as a result of the US's larger role in international energy markets, assistance provided to our allies, and reduced US dependency on foreign oil through domestic oil and natural gas production;[53]

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[52] The numerous other applicants for authority to export LNG to Non-FTA Countries have consistently shown in their filings with the DOE/FE that exporting LNG from the US via US LNG export terminals will create jobs. For example, in Pangea LNG (North America) Holdings, LLC's request for authorization to export LNG from facilities in Texas, the applicant submitted an expert-prepared report concluding that that project will spur substantial job creation. *Pangea LNG (North America) Holdings, LLC, Application for Long-Term, Multi-Contract Authorization to Export Liquefied Natural Gas to Non-Free Trade Agreement Countries,* FE Docket No. 12-184-LNG, at 8 (Dec. 19, 2012). The statement found on page 2 of the *NERA Report* that "LNG exports are not likely to affect the overall level of employment in the U.S." should not be read to contradict this because NERA had as a base assumption "full employment" within the U.S. economy. *NERA Report*, *supra* note 11, at 103; *see also, Cameron LNG, DOE/FE Order 3391*, *supra* note 44, at 42 (recognizing NERA conducted its study with the assumption that US had full employment, "meaning unemployment rates and the total number of jobs in the US would not change across all cases."). Therefore, NERA could only use its model to assess shifts in employment, which were found to be within industry norms. *NERA Report*, *supra* note 11, at 2.

[53] A March 2013 American Security Project paper authored by Nick Cunningham concludes:

> "There are likely to be significant geopolitical benefits if exports of LNG proceed in large volumes. Many of America's closest allies are in need of reliable energy partners, while others are

- better opportunities to market US products and services abroad, as a result of new competitively priced gas supplies introduced into world markets leading to improved economies among the US's trading partners;
- increased economic trade and closer ties with foreign trading partners and hemispheric allies, while displacing environmentally damaging fuels in those countries;
- increased pipeline transportation capacity and lower pipeline costs;
- increased production capacity able to better adjust to varying domestic demand scenarios; and
- dampened volatility in domestic natural gas prices.

Pieridae US submits that these benefits, and others discussed in this Application, demonstrate that Pieridae US's export proposal is not inconsistent with the public interest. That stance is buttressed by the independent *NERA Report*, which includes overwhelmingly positive key findings related to the macroeconomic impacts of LNG exports. For example, NERA found that "[a]ll export scenarios are welfare-improving for US consumers. The welfare improvement is the largest under the high export scenarios even though the price impacts are also the largest."[54]

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at the mercy of unfriendly neighbors. U.S. LNG exports can provide an alternative source.

Allowing American natural gas to reach world markets will lower the price, offer energy diversity, and undermine expensive oil-indexed contracts. This will enhance our allies' energy security, and weaken the grip of their adversaries.

There are significant and real geopolitical benefits of removing restrictions on LNG exports."

Nick Cunningham, *The Geopolitical Implications of U.S. Natural Gas Exports*, AMERICAN SECURITY PROJECT 9 (Mar. 2013), http://americansecurityproject.org/ASP%20Reports/Ref%200116%20-%20The%20Geopolitical%20Implications%20of%20U.S.%20Natural%20Gas%20Exports.pdf. *See also* John Deutch, *The U.S. Natural-Gas Boom Will Transform the World*, WALL ST. J. (Aug. 14, 2012), http://online.wsj.com/article/SB10001424052702303343404577514622469426012.html. While Mr. Cunningham's remarks were directed toward direct exports of LNG by the US, the impacts he discusses on our allies and their adversaries would be unaffected by the fact that the natural gas was exported first and then converted into LNG outside of the US.

54 *NERA Report*, *supra* note 11, at 55.

NERA recently produced an updated version of the *NERA Report*.[55] The *NERA Update* reached conclusions similar to those contained in the *NERA Report*, refuting allegations by some that the original report was outdated. Among other things, the *NERA Update* states: "Across the scenarios, US economic welfare consistently increases as the volume of natural gas exports increases. This includes scenarios in which there are unlimited exports. Unlimited exports always create greater benefits than limited exports in comparable scenarios."[56]

With regard to gross domestic product ("GDP"), NERA found that "[i]n the short run, the GDP impacts are positive as the economy benefits from investment in the liquefaction process, export revenues, resource income, and additional wealth transfer in the form of tolling charges. In the long run, GDP impacts are smaller but remain positive because of higher resource income."[57] NERA also found that results related to aggregate consumption "suggest that the wealth transfer from exports of LNG provides net positive income for the consumers to spend after taking into account potential decreases in capital and wage income from reduced output."[58]

Both the *NERA Report's* and the *NERA Update's* quantitative conclusions are based on modeling that assumes that natural gas will be exported from the US by way of a natural gas liquefaction and LNG export facility located in the US, rather than by way of exporting natural gas to Canada and converting such natural gas to LNG in Canada prior to export to other countries. This will affect the quantitative results by shifting fees paid for liquefaction and

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55 NERA ECON. CONSULTING, UPDATED MACROECONOMIC IMPACTS OF LNG EXPORTS FROM THE UNITED STATES (2014), *available at* http://www.nera.com/nera-files/PUB_LNG_Update_0214_FINAL.pdf (hereinafter "*NERA Update*"). The *NERA Update* has been placed on the record in DOE/FE Dockets Nos. 13-30-LNG, 13-42-LNG and 13-121-LNG, and Pieridae requests the DOE/FE to take administrative notice of this document for the current docket as well.

56 *Id.* at 7.

57 *NERA Report*, *supra* note 11, at 56.

58 *Id.* at 57.

marine services to the owner/operator of the Canadian LNG export project – *i.e.*, the Goldboro LNG Project – that would otherwise be paid to the owner/operator of a US LNG export project. However, the economic theory explaining why natural gas exports via a US LNG export terminal are beneficial to the US public interest also apply to exporting natural gas from the US for use in a Canadian LNG export terminal.[59] In explaining why "LNG exports have net economic benefits in spite of higher natural gas prices [caused by such exports,]" the *NERA Update* states: "The benefits that come from export expansion more than outweigh the losses from reduced wage income to U.S. consumers. ... This is exactly the outcome that economic theory describes when barriers to trade are removed."[60]

While the fact that fees for liquefactions and marine services will be paid to the owner/operator of a Canadian, rather than a US, LNG export facility, it is important to recognize that most of the benefits to the U.S. economy associated with LNG exports stem from the production and transportation of natural gas, not its liquefaction or the marine services associated with LNG exports. The benefits on natural gas exportation are described in various sections below.

Moreover, it should not be assumed that, because the Goldboro LNG Project will be located in Canada, any benefits of the LNG project will accrue only to Canada with no benefit to the US. As discussed in more detail below, the benefits from the Goldboro LNG Project are likely to flow at least in part to the US. For example, benefits from the project will include:

(1) a return on capital to equity investors,

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[59] Indeed, the *NERA Update* contains a lengthy discussion of the benefits of free trade in raw materials that applies to all natural gas. *NERA Update, supra* note 55, at 72-74.

[60] *NERA Update, supra* note 55, at 9. The *NERA Report* offered a similar explanation. *NERA Report, supra* note 11 and accompanying text.

(2) a return on capital to project lenders,

(3) income from the sales of equipment and supplies,

(4) job creation, and

(5) the payment of taxes.

The development of the project will afford an opportunity for US entities to make equity investments in the project or the project's owners.[61] Similarly, US banking/financing interests will have an opportunity to provide debt capital. A substantial portion of the equipment and supplies for the project are likely to be sourced in the US, as well as a portion of the labor to construct, and possibly, operate the project. All these benefits are in addition to those certain to come from stimulating demand for US natural gas and natural gas production and transportation infrastructure.

A. Analysis Of Domestic Need For Gas To Be Exported

As discussed below, the domestic supply base of natural gas is sufficient to meet future domestic demand and the proposed Pieridae US export volumes over the term of the authorization. In this regard, proved US reserves of dry natural gas have increased by 121 Tcf (65%) between 2002 and 2012.[62] However, as illustrated in Figure 3, consumption has grown at a far slower rate:

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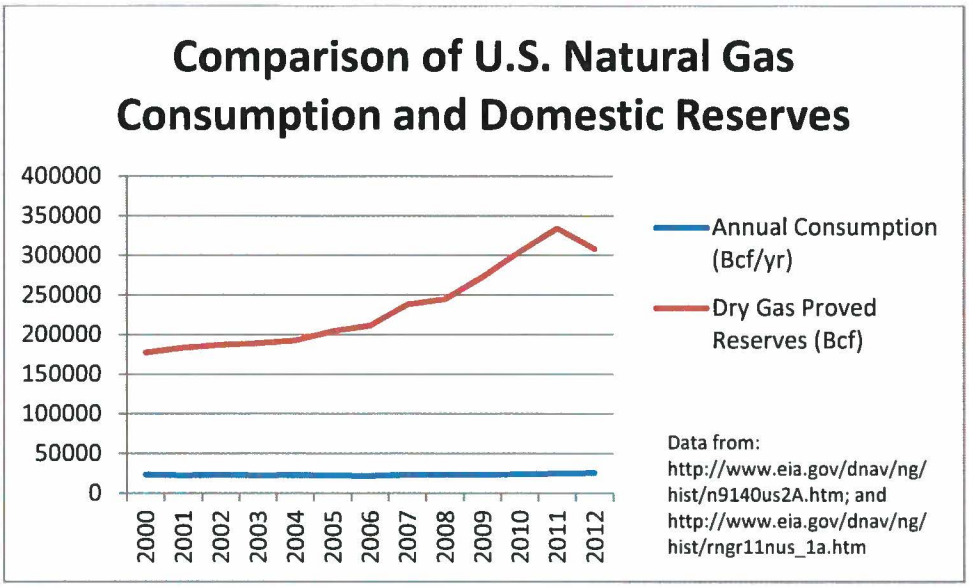
61 "U.S. foreign direct investment … in NAFTA Countries (stock) was $452.5 billion in 2012 (latest data available), up 7.1% from 2011." *North American Free Trade Agreement (NAFTA)*, OFFICE OF THE US TRADE REPRESENTATIVE, http://www.ustr.gov/trade-agreements/free-trade-agreements/north-american-free-trade-agreement-nafta (last visited Aug. 22, 2014).

62 EIA, *U.S. Dry Natural Gas Expected Future Production*, http://www.eia.gov/dnav/ng/hist/rngr11nus_1a.htm (last visited July 28, 2014). It is important to understand that the dip in dry gas proved reserves shown between 2011 and 2012 does not indicate a reduction in the amount of natural gas known to be remaining underground in the US, nor does it reflect some condition for natural gas akin to the concept of peak oil. Instead, it reflects decreasing natural gas prices. Specifically, "proven reserves are estimated volumes of hydrocarbon resources that analysis of geologic and engineering data demonstrates with reasonable certainty are recoverable under **existing economic** and operating conditions." (emphasis added). EIA, *U.S. Crude Oil and Natural Gas Proved Reserves, 2012*, at 6 (April 2014), *available at*

Figure 3: US Natural Gas Consumption Compared to Proved Reserves



In concert with the increases in proved reserves, drilling productivity and extraction technology improvements have enabled rapid growth in the overall US natural gas production capabilities at low cost, thereby increasing the economically recoverable reserves,[63] as well as the technically recoverable reserves,[64] even as natural gas prices were falling.

As a result, US natural gas prices have significantly decreased on a sustained basis. The monthly average Henry Hub price for natural gas fell from over $10.00 per MMBtu in late 2005 to $4.66 per MMBtu or less for the second quarter of 2014.[65] In the *AEO 2014* Reference case,

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http://www.eia.gov/naturalgas/crudeoilreserves/pdf/uscrudeoil.pdf (footnote omitted). As the EIA explains: "U.S. proved reserves of natural gas declined in 2012 because of low natural gas prices. The average reference price of natural gas companies use to estimate reserves declined 34% between 2011 and 2012. Natural gas prices began to decline in the latter part of 2011 and continued to drop through spring 2012. This prompted large downward net revisions of 45.6 trillion cubic feet to the proved reserves of existing gas fields — enough to cancel out almost all the gains from total discoveries in 2012." *Id.* at 2 (footnote omitted).

[63] *See* Arthur P. Steinmetz, *Investing in the U.S. Energy Revolution,* THE ATLANTIC (Oct. 24, 2013), http://www.theatlantic.com/sponsored/oppenheimer/2013/10/investing-us-energy-revolution/23/. The author is the Oppenheimer Funds President & Chief Investment Officer. *Id.*

[64] *See Press Release: Potential Gas Committee Reports Significant Increase In Magnitude Of U.S. Natural Gas Resource Base,* POTENTIAL GAS COMMITTEE (Apr. 9, 2013), http://potentialgas.org/press-release.

[65] EIA, *Henry Hub Gulf Coast Natural Gas Spot Price*, http://www.eia.gov/dnav/ng/hist/rngwhhdm.htm (last visited July 28, 2014) (hereinafter *"Henry Hub"*). Of course, short term affects lead to transient peaks and valleys.

the EIA projects that the annual average Henry Hub spot market price for natural gas will rise at an average rate of 3.7% through 2040, from $2.75 per MMBtu in 2012, reaching approximately $6.00 per MMBtu by 2030, and remaining under $8.00 per MMBtu through 2040.[66]

Moreover, due in large part to plentiful production from the Marcellus and Utica gas reserves, spot prices for natural gas in the Northeast are now often lower than the Henry Hub spot market price. For example, for the week ending July 16, 2014, the EIA reported: "The Henry Hub spot price continued a several week decline, falling from $4.15/MMBtu at the beginning of the week to $4.10/MMBtu. ..."[67] In the same report, the EIA also observed: "[P]rices in New York and Boston rose midweek—but still remained relatively low, and well below the Henry Hub price. Prices at Transcontinental Pipeline's Zone 6 delivery point (serving New York City) bottomed out at $2.23/MMBtu on Friday, before rising to $3.41/MMBtu on Monday and ending the report week at $2.71/MMBtu. Prices at the Algonquin Citygate (serving Boston) settled at $2.59/MMBtu on Friday and ended the week at $3.00/MMBtu yesterday."[68] Thus, current spot market prices in the Northeast are running more than 33% lower than Henry Hub prices, which confirms that there is no shortage of supply in the region at this time.

Overall, prices for natural gas in the US market are now substantially below those of most other major gas-consuming countries.[69] While US gas prices are now similar to or less than

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In April 2012, the monthly average Henry Hub price for natural gas was as low as $1.95 per MMBtu, while in February 2014 the average Henry Hub price was $6.00. *Id.*

66 *See AEO 2014*, *supra* note 10, at MT-21.

67 EIA, *Natural Gas Weekly Update for the week ending July 16, 2014* (July 17, 2014), http://www.eia.gov/naturalgas/weekly/.

68 *Id.*

69 *World Bank Commodities Price Data (The Pink Sheet)* (Mar. 5 2014), http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1111002388669/829392-1389028647906/Pnk_0314.pdf.

they were roughly a decade ago,[70] prices for LNG in other major gas consuming countries have increased markedly over the past decade.[71] The result is that domestic gas can be liquefied and exported to foreign markets on a very competitive basis.

As a threshold matter, it is important to understand that the DOE/FE granting the requested authorization will have no detrimental price impact on the US market as a whole, nor will it adversely affect the adequacy of supply for the US as a whole. This is because, if the DOE/FE denied Pieridae US's current request, Pieridae or a Pieridae affiliate would consider proceeding with the development of the Goldboro LNG Project using Canadian natural gas to meet all the project's natural gas needs, rather than just a portion.[72] Due to the integrated nature of the US and Canadian gas supply and transportation industries, the total natural gas supply available to US markets would not change.[73]

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[70] *See Henry Hub*, *supra* note 65 (referencing a monthly average Henry Hub price of $4.47 per MMBtu in November 2003).

[71] *World Bank Commodity Price Data (The Pink Sheet)* (updated July 3, 2014), http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1304428586133/pink_data_a.xlsx (last visited July 28, 2014). *See also* Matthew Brown, *Gas Golden Age Darkens in Europe on U.S. Coal: Energy Markets*, BLOOMBERG (Oct. 30, 2012), http://www.bloomberg.com/news/2012-10-31/gas-golden-age-darkens-in-europe-on-u-s-coal-energy-markets.html (noting that, in late October 2012, gas traded at more than double the price from four (4) years ago in Europe, reducing the competitiveness of major European industrial users); Dan Milmo, *Nuclear Crisis Forces Up UK Gas Prices*, THE GUARDIAN (Mar. 14, 2011), http://www.guardian.co.uk/business/2011/mar/14/japan-disaster-lng-gas-uk (following Japan's Fukushima nuclear power plant incident, prices for LNG delivery to the UK rose by 6% per therm); Lindsay Wright, *Pipeline Politics: Russia's Natural Gas Diplomacy*, PIPELINE & GAS J. (Aug. 2009), http://www.pipelineandgasjournal.com/pipeline-politics-russia%E2%80%99s-natural-gas-diplomacy?page=show (noting price increases due to politically motivated disruptions in gas transit to parts of Europe from Russia).

[72] Rather than making the Goldboro LNG Project impossible by depriving it of an essential source of natural gas, a DOE/FE denial would deprive the project of one economic source of gas creating disadvantageous economic distortions and leading to otherwise avoidable environmental impacts. Among other things, restricting exports of natural gas into the Canadian market (regardless of the ultimate use of the exported gas) would serve as an artificial bottleneck, forcing consumers, suppliers and transporters across the North America integrated gas industry to adjust to second best options.

[73] Admittedly, every distortion to free trade in natural gas will have some theoretical impact on the North American gas supply. Here, preventing exports of natural gas from the US to Canada could, in theory, lead to slightly higher natural gas prices in Canada, leading to increased production in Canada, while simultaneously lowering demand for US-sourced gas, leading to lower prices and reduced production in the US. However, the integrated nature of the US and Canadian gas industries makes the situation distinct from direct exports of LNG to

Indeed, in granting the Jordan Cove application for exports of natural gas from Canada to supply the Jordan Cove LNG export project in the US, the NEB stated: "In fulfilling this mandate, we recognize that Canadian natural gas requirements are met within a North American integrated market."[74] In making its assessment, NEB concluded: "The Board is satisfied that the gas resource base in Canada, as well as North America, is large and can accommodate reasonably foreseeable Canadian demand, the natural gas exports proposed in this Application, and a plausible potential increase in demand."[75] Thus, any conclusion by the DOE/FE that there is insufficient natural gas available to support Pieridae US's current request in light of other demand and total available supply would suggest that the NEB similarly should conclude that there is insufficient natural gas available to meet requests by US entities to export Canadian gas. Were this to prove to be the case, the DOE/FE's decision would have the effect of depriving the US of natural gas supplies far in excess of what Pieridae US proposes to export – a result clearly inconsistent with the public interest, as well as the spirit of the NGA and NAFTA.

Even if access to Canadian natural gas were not relevant to US natural gas supply, for the reasons discussed below, such exports can be expected to have only a nominal effect on US prices.

1. *National Supply - Overview*

In recent years, the US's total natural gas recoverable resource base has increased. In 2014, the EIA estimated technically recoverable natural gas (dry gas) resources in the US to be

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other nations, which pose no real likelihood of freeing up gas for import into the US. In the case of US and Canada, US natural gas sent to Canada (for any purpose that would exist even if US gas were not available) results in an offsetting reduction in demand for Canadian gas in Canada, leaving such gas available for import to the US.

74 *NEB Letter Decision, supra* note 18, at 2.

75 *Id.*

2,266 Tcf.[76] According to the July 2011 report titled "Shale Gas and U.S. National Security" by the James A. Baker III Institute for Public Policy at Rice University, the break-even prices for some of the more prolific unconventional supply basins in the US are as low as $3 per thousand cubic feet, with a large majority of the resources accessible at below $6, which is a significant cost decrease compared to the end of the prior decade.[77] Further, in 2014, the EIA estimated US onshore lower 48 states shale gas (dry gas) technically recoverable resources to be 611 Tcf.[78]

With copious reserves available, natural gas production is poised to rise with increases in demand. Recently, the EIA projected onshore shale gas production for the lower 48 states in 2020 would reach 13.33 Tcf, and upped its projection for 2035 from 15.33 Tcf to 18.50 Tcf.[79] The EIA also estimates that US dry natural gas production was 24.28 Tcf in 2013, increasing from 24.06 Tcf in in 2012.[80] In *AEO 2014*, the EIA indicates that domestic demand for natural gas will be met, while also allowing for more exports because, US natural gas production is projected to grow by an average rate of 1.6% per year from 2012 to 2040, which is "more than double the 0.8% annual growth rate of total U.S. consumption over the period."[81] Total dry natural gas production in the US is expected to increase 1.6% annually from 2012 to 2040 with

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76 *See* EIA, *Assumptions to the Annual Energy Outlook 2014, Oil and Gas Supply Module,* 115 tbl.9.2 (June 2014), http://www.eia.gov/forecasts/aeo/assumptions/pdf/oilgas.pdf (hereinafter *"2014 Assumptions"*).

77 Kenneth B. Medlock III et al., *Shale Gas and U.S. National Security*, ENERGY FORUM: JAMES A. BAKER III INSTITUTE FOR PUBLIC POLICY 23-24 (July 2011), http://www.bakerinstitute.org/publications/EF-pub-DOEShaleGas-07192011.pdf. The break-even price is the average price needed for development of up to 60% of the identified technical recoverable resource. *Id.*

78 *See 2014 Assumptions*, *supra* note 76, at 114 tbl.9.2.

79 *AEO 2014, supra* note 10, at A-28 tbl.A14; EIA, ANNUAL ENERGY OUTLOOK 2013, at 148 tbl.A14 (Apr. 2013).

80 EIA, *Natural Gas Gross Withdrawals and Production* (Aug. 29, 2014), http://www.eia.gov/dnav/ng/ng_prod_sum_dcu_NUS_a.htm.

81 *AEO 2014*, *supra* note 10, at MT-22.

total production estimated to be 31.86 Tcf in 2025 and 37.54 Tcf in 2040.[82] Although annual offshore natural gas production is expected to decline by 0.3 Tcf from 2017 to 2022, it is expected to increase after 2022, eventually increasing to 2.9 Tcf in 2040.[83] The EIA's projections reflect, among other things, strong growth in domestic natural gas production and reduced pipeline imports.[84] As a result of the growth in production, US natural gas production will exceed consumption by 2020, allowing the US to transition from a net importer of natural gas to a net exporter.[85]

These studies and reports indicate that the US has an inventory of recoverable natural gas resources sufficient to last beyond any practicable planning horizon. Indeed, in his 2012 State of the Union Address, President Obama stated: "We have a supply of natural gas that can last America nearly 100 years."[86] Since then, estimates of gas resources have increased. ICF International recently produced a paper for the Interstate Natural Gas Association of America Foundation, Inc., that reported the North America natural gas resource base is sufficient to "supply US and Canadian gas markets for almost 150 years at current consumption levels."[87]

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82 *AEO 2014*, *supra* note 10, at A-28 tbl.A14.

83 *AEO 2014*, *supra* note 10, at MT-23.

84 *Id.* at MT-22 ("The growth in production meets increasing demand and exports…while also making up for a drop in natural gas imports," which allows the US to become "a net exporter of natural gas before 2020.").

85 *Id.*

86 *President Obama's State of the Union Address*, N.Y. TIMES (Jan. 24, 2012), http://www.nytimes.com/2012/01/25/us/politics/state-of-the-union-2012-transcript.html?pagewanted=all. In his 2014 State of the Union Address, the President added: "We produce more natural gas than ever before …" and pledged that his "administration will keep cutting red tape and speeding up new oil and gas permits" to keep the gas boom going. *Remarks by the President in the State of the Union Address*, THE WHITE HOUSE: OFFICE OF THE PRESS SECRETARY (Feb. 12, 2013), http://www.whitehouse.gov/the-press-office/2013/02/12/remarks-president-state-union-address.

87 Interstate Natural Gas Ass'n of America Foundation, Inc., *North American Midstream Infrastructure through 2035: Capitalizing on Our Energy Abundance*, 5 (March 18, 2014), http://www.ingaa.org/File.aspx?id=21498.

This inventory is expected to continue growing as further advancements in drilling technology are deployed to exploit additional shale gas development opportunities.[88]

2. *Regional Supply*

Pieridae US's proposed exports will be made through the M&N US Pipeline, which, as discussed previously, has access to plentiful natural gas supplies available through the highly integrated and well developed interstate and intrastate natural gas pipeline system.

The past expansions of the M&N Pipeline and the current proposals by its owners to further expand system capacity (as described in Section V.A. of this Application) illustrate the natural gas transportation industry's capability to build and expand the capacity of pipeline infrastructure as needed to ensure adequate regional supply.

Extensive local natural gas reserves and production lend additional support to the proposition that the relevant regional natural gas supply is adequate to meet both the domestic needs of the area and the demand for exported natural gas. As discussed above, current estimates indicate that there is between 140 and 500 Tcf of natural gas in the Marcellus reserve.[89] At the current production rate of 14 Bcf/d,[90] the reserve would not be exhausted for another 27 to 98 years. If Pieridae US's exports were 100% additive to the current production rate, the reserve working life would still be 26 to 93 years.

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88 *See AEO 2014*, *supra* note 10, at MT-25 (noting that "future technology could increase well productivity while reducing costs."). *See also* U.S. GEOLOGICAL SURVEY, ASSESSMENT OF POTENTIAL ADDITIONS TO CONVENTIONAL OIL AND GAS RESOURCES IN DISCOVERED FIELDS OF THE UNITED STATES FROM RESERVE GROWTH, 2012 (Aug. 2012), *available at* http://pubs.usgs.gov/fs/2012/3108/FS12-3108.pdf (hereinafter *"2012 Assessment"*). ("Most reserve growth results from … improved technology that enhances efficiency….")

89 *See NGA Supply Brief*, *supra* note 29 and accompanying text.

90 *See NGA Marcellus Brief*, supra note 30 and accompanying text.

3. *National Natural Gas Demand*

Over the past decade, the US has experienced little growth in the demand for natural gas in the US.[91] The EIA has estimated long-term annual US consumption growth of only 0.8%, with consumption expected to reach 30.44 Tcf in 2035 (compared to 24.38 Tcf of actual demand in 2011).[92] The EIA most recently estimated in the AEO2014 Reference case that natural gas consumption would rise from 25.6 Tcf in 2012 to 31.6 Tcf in 2040.[93] The table below presents a comparison of actual consumption and prices in 2012 and forecasted demand and prices in the year 2025, based on information presented in the *AEO 2014*.[94]

Table 1: Present and Future Demand and Pricing		
	2012	**2025**
Natural Gas Demand (Tcf/d)	25.64	28.35
Henry Hub Spot Price ($/MMBtu)	2.75	5.23

As discussed in Section VII.A.1. above, the EIA estimates that the US has 2,226 Tcf of recoverable natural gas resources. In comparison, the Pieridae US's exports would amount to 5.84 Tcf over the 20-year term of the requested authorization. This represents approximately one-quarter of one percent of total estimated recoverable US natural gas resources.

4. *Supply-Demand Balance Demonstrates the Lack of National and Regional Need*

As discussed in Section VII.A.3. above, the enormous available domestic supply of natural gas dwarfs current US demand and, even if Pieridae US exports the full amount of the requested authorization, the natural gas to be exported by Pieridae US would be only about 0.25

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91 In 2012, natural gas consumption was approximately 11% higher than in 2002. *See* EIA, *Monthly Energy Review Table 4.3 Natural Gas Consumption by Sector* (Feb. 26, 2014), http://www.eia.gov/totalenergy/data/browser/xls.cfm?tbl=T04.03&freq=m.

92 *AEO 2014, supra* note 10, at A-27 tbl.A13.

93 *Id.* at MT-21.

94 *Id.* at CP-10 tbl.CP5.

percent of the available resources. The current low prices of natural gas are a consequence of a buyer's market with plentiful supply and limited domestic needs. The interest in exporting US-sourced natural gas to overseas markets, despite the billions of dollars of investment needed to develop a single LNG export terminal, is driven by these market conditions. Rising domestic prices would tend to reduce overall foreign demand for US natural gas, while simultaneously inducing additional US natural gas production, thereby helping to keep supply and demand in balance and ensuring domestic and regional gas needs are satisfied.

5. *Price Impacts – Natural Gas*

A recent paper prepared by the Majority Staff of the US House of Representatives' Committee on Energy and Commerce summed up the situation with respect to the impact of natural gas exports on domestic US gas prices: "Some policymakers have expressed concern over the price impacts of allowing U.S. natural gas exports. However, the body of evidence, including the study requested by DOE, suggests that price impacts will be moderate and unlikely to be driven by the volume of U.S. gas exported."[95] This view is not limited to Congressmen from the House of Representatives, Senator Murkowski's whitepaper entitled *The Narrowing Window: America's Opportunity to Join the Global Gas Trade* states:[96]

> "Certain interests have objected to the possibility of LNG exports from the U.S. Some petrochemical producers have argued that exports of natural gas would raise the domestic price of natural gas, undercutting their own businesses and product exports by raising the cost of their fuel and feedstock.

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[95] U.S. House of Representatives – Committee on Energy and Commerce, Majority Staff, *Prosperity at Home and Strengthened Allies Abroad – A Global Perspective on Natural Gas Exports*, THE POLICY PAPER SERIES, 6 (Feb. 4, 2014), http://energycommerce.house.gov/sites/republicans.energycommerce.house.gov/files/analysis/20140204LNGexports.pdf.

[96] Lisa Murkowski, *The Narrowing Window: America's Opportunity to Join the Global Gas Trade*, ENERGY 20/20 WHITE PAPER, 13 (Aug. 6, 2013), http://www.energy.senate.gov/public/index.cfm/files/serve?File_id=986351eb-316d-4dc9-9d1a-b75abcf4b5fc (footnotes omitted).

> A robust debate occurred in the analytical community, comprising universities, think-tanks, consultancies, and other research institutions.... Virtually all of these reports concluded that the impact on domestic natural gas prices would be manageable and limited. In addition, many of these reports have found that higher domestic natural gas prices would also actually serve to increase (and stabilize) natural gas production in the U.S. by making it economical to produce additional natural gas resources."

The *NERA Update* illustrates that this view also is not limited to US legislators: "Our analysis suggests that there is no support for the concern that LNG exports, even in the unlimited export case, will obstruct a chemicals or manufacturing renaissance in the United States."[97]

Similarly, a 2013 study by the Deloitte Center for Energy Solutions and Deloitte MarketPoint LLC entitled *Exporting the American Renaissance Global impacts of LNG exports from the United States* concluded: "Prices are projected to ... only marginally increase in the U.S. [due to studied LNG exports]. The projected increase of average U.S. prices from 2016 to 2030 is about $0.15/MMBtu...."[98]

B. Other Public Interest Considerations

1. *Promote Long-Term Stability in Natural Gas Markets*

Lower US natural gas prices have led to decreased capital spending on dry natural gas drilling and development activities.[99] The last time the US natural gas rotary drilling rig counts were as low as those experienced in the Spring and Summer of 2014 was in the Spring of

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97 *NERA Update*, *supra* note 55, at 14.

98 Deloitte Center for Energy Solutions and Deloitte MarketPoint LLC, *Exporting the American Renaissance Global impacts of LNG exports from the United States*, 2 (2013), http://www.deloitte.com/assets/Dcom-UnitedStates/Local%20Assets/Documents/Energy_us_er/us_er_GlobalImpactUSLNGExports_AmericanRenaissance_Jan2013.pdf.

99 *See, e.g.*, Marcus V. McGregor, *The American Shale Gas Revolutions: Fundamental Winners and Losers*, ASSET MANAGEMENT VIEWPOINT, Vol. 16, No. 2, at 2 (Apr. 2012), *available at* https://www.conning.com/uploadedFiles/Asset_Management/Point_of_View/Viewpoint/04-2012%20Shale%20Gas%20Revolution%20FINAL.pdf (noting that "[o]perators have been allocating more capital to exploration and production of liquids in order to mitigate the recent decline in natural gas spot prices ..."); *see also* Chesapeake Energy, *Investor Presentation*, at 11 (last updated May 7, 2014), *available at* http://www.chk.com/investors/documents/latest_ir_presentation.pdf (noting that, in response to low natural gas prices, Chesapeake Energy has been aggressively shifting its capital expenditures to liquid-rich plays).

1995.[100] Exporting natural gas would create increased demand for domestically produced gas and, as noted above, contribute to a small increase in domestic natural gas prices. Both of these factors would help encourage investment and, thereby, help to stabilize the natural gas industry.[101] Of broader importance is the stabilizing effect increased exports would have on both the price and availability of natural gas for domestic uses. The stabilizing effects would stem from multiple causes.

First, simply by increasing the size and diversity of the demand for natural gas to include consumers in other nations, the volatility in demand decreases, which will contribute to more stable prices in the US. This basic economic concept was well explained in a 2007 paper by Ian Down, Associate Professor of Political Science at the University of Tennessee.[102] In that paper, Dr. Down states:

> The greater the number of buyers and sellers the greater the likelihood that shocks emanating from any one source will be offset by equally sized opposite shocks emanating from another source. Moreover, the greater the number of market participants the smaller will be the contribution to total volatility of any single participant, *ceteris paribus*. Accordingly, larger, deeper markets will display less volatility than smaller, shallower markets. The greater size and depth of international markets relative to the markets of any single national economy implies the international

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[100] *See* Baker Hughes, *North American Rotary Rig Count* (Aug. 15, 2014), http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NTUyNzk1fENoaWxkSUQ9MjQ4MDgyfFR5cGU9MQ==&t=1 and compare with http://phx.corporate-ir.net/External.File?item=UGFyZW50SUQ9NTI4OTY4fENoaWxkSUQ9MjE2NDc2fFR5cGU9MQ==&t=1.

[101] For example, in the February 2012 issue of *World Oil Online*, the authors, from Barclays Capital, reported on the results of a survey of 351 oil and gas operating companies: "[r]oughly 27% of companies surveyed plan on increasing spending [on natural gas exploration and production activities] if natural gas prices average $4.50/MMbtu in 2012, and 70% would do so if they average $5.00/MMbtu. Nearly half of surveyed companies would cut back spending if gas averaged $3.50/MMbtu, while $3.00/MMbtu was the most popular threshold for companies to reduce budgets." James C. West et al., *2012 Forecast: E&P Spending to Reach Record $600 Billion*, WORLD OIL ONLINE, Vol. 233, No. 2 (Feb. 2012), http://www.worldoil.com/February-2012-EP-spending-to-reach-record-600-billion.html.

[102] *See* Ian Down, *Trade Openness, Country Size and Economic Volatility: The Compensation Hypothesis Revisited*, BUSINESS AND POLITICS, Vol. 9, Iss. 2, Art. 3 (2007), http://www.unc.edu/depts/europe/conferences/tgsw/iandown-trade_openness.pdf.

> economy is less volatile than any of its constituent national components. Thus, greater trade openness entails a greater degree of domestic production and consumption oriented towards larger, deeper, more stable international markets and away from smaller, shallower, more volatile domestic markets.[103]

Second, an increased domestic production base and upgraded gas transmission capabilities would present an opportunity for rapid, voluntary diversion of gas supply to domestic purposes should domestic demand change rapidly. For example, consider the possibilities if the US were to have a catastrophic event that broadly impacted a large segment of the US electric generating industry in a manner similar to what Japan experienced with regard to its nuclear generation in the past few years. In such a situation, there could be a sudden demand for increased natural-gas-fired generation that could only be immediately satisfied if sufficient natural gas production and transportation infrastructure were already in place. A US natural gas industry that had already expanded production and transportation infrastructure to serve the export market would be in a better position to respond quickly through a global least cost solution, than a smaller natural gas industry sized only to meet US demand as it existed prior to the incident driving a sudden increase in domestic demand.

Subject to commercial requirements, exporters could choose to voluntarily cancel export shipments, thereby immediately freeing up additional natural gas supplies for use in domestic natural-gas-fired generating facilities. In contrast, a smaller US natural gas industry with infrastructure only adequate to serve the pre-existing domestic demand would not have the option to redeploy foreign bound gas, and production and transportation capabilities would be more limited. In that case, producing more gas immediately would not be an option, and trying to expedite the drilling of new wells on an emergency basis would increase the level of

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103 *Id.* at 5.

environmental risk. The only immediately available course of action would involve establishing a new short-term equilibrium in a domestic-only market with fewer options, leading to much higher prices and a greater potential for scarcity of both natural gas and electricity.

2. *Benefits to Local, Regional and National US Economies*

Every entity proposing to export LNG from the US and studying the issue to date has found that the proposed exports would benefit the economy at the local, regional and national level. Pieridae US submits that even though the Goldboro LNG Project would be located in Canada, the exports proposed by Pieridae US would still benefit New England consumers and the nation.[104] While, in developing the Goldboro LNG Project, Pieridae and the Pieridae affiliates participating in the project will likely look to hire locally where qualified workers can be found and would source supplies and equipment locally to the extent it is economically feasible, realistically it can be expected that a portion of the project development labor force and needed supplies and equipment will be obtained from the US.[105] Indeed, Pieridae and one or

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104 A recent ICF International study approaches this issue from another direction – calculating the sum total of the benefits of US exports of LNG to individual states. ICF International, *U.S. LNG Exports: State-Level Impacts on Energy Markets and the Economy*, 1 (Nov. 13, 2013), http://www.api.org/~/media/Files/Policy/LNG-Exports/API-State-Level-LNG-Export-Report-by-ICF.pdf. This study shows that New York and Pennsylvania would be among the top ten states benefitting from LNG exports, even though no LNG export terminals are proposed to be built in either state. *Id.* at 39–40, 48–50, 53–56. (The closest terminal to these states that was considered by the study is proposed for Maryland and most of the terminals studied are proposed for states along the Gulf of Mexico, much farther away from New York and Pennsylvania than the proposed point of export for the Goldboro LNG Project.) *Id.* at 29. Massachusetts also showed significant positive employment and income benefits, and it does not appear that any state suffered any net detriment to employment and income benefits. *Id.* at 55. The study also concluded: "LNG exports have a net positive impact, or negligible net impact, across all states." *Id.* at 27. Given the close ties between the US and Canadian economies, it is reasonable to conclude that exports of natural gas from the US by Pieridae US tied to an export terminal in Nova Scotia would also be beneficial for the economies of states in the Northeast and New England, as well as the US generally.

105 While Canada would like to have a lower unemployment rate and Pieridae and its affiliates intend to look to hire Canadian workers wherever possible for jobs within Canada, Canada has a recognized shortage of skilled labor in certain trades. As a result, "[e]ach year, close to 200,000 foreign skilled workers come to work in Canada on Temporary Work Permits." *Canada Temporary Work Permit,* CANADAVISA.COM, http://www.canadavisa.com/canadian-temporary-work-visa.html (last visited July 31, 2014). About 18 months ago, "[Canada] launched a fast-track immigration program for 43 trades, promising to process work papers within 12 months for applicants who speak English or French and have two years' experience in their field. Among the most wanted: ironworkers, welders, oil and gas well drillers, and heavy-duty equipment mechanics." Meera Louis,

more Pieridae affiliates are committed contractually (subject to certain conditions precedent) to procuring from one or more US suppliers certain engineering and associated services and much of the equipment and installation and testing services necessary for the construction of the Goldboro LNG Project. The cost of the US-sourced equipment, services and technology are expected to be in the many hundreds of millions of dollars. In addition, the strong linkage between the US and Canadian economies suggests that funds expended in Canada to construct and operate the Goldboro LNG Project will lead to increased commerce in the US.

This last point merits particular attention here, as it has not been the subject of numerous treatments in prior export applications. With regard to the relationship between the economies of the US and Canada, a 2011 Congressional Research Service report[106] amply demonstrates the interdependencies between the two countries' economies. Among other things, it states:

> "The economies of the United States and Canada are highly integrated, a process that has been accelerated by the bilateral U.S.-Canada free trade agreement (FTA) of 1989 and the North American Free Trade Agreement (NAFTA) of 1994. The two countries are natural trading partners, given their geographic proximity and their (partial) linguistic and cultural similarities. Because 80% of the Canadian population lives within 200 miles of the U.S. border and due to the impediments of Canadian geography, trade with the United States is often easier and less expensive than Canadian inter-provincial trade."[107]

Canada Looks to Lure Away Skilled U.S. Workers, BLOOMBERG BUSINESSWEEK (May 16, 2013), http://www.businessweek.com/articles/2013-05-16/canada-looks-to-lure-away-skilled-u-dot-s-dot-workers. Those trades include many of the skill sets required to construct an LNG export terminal. The US is a popular and obvious resource for workers with the appropriate skill sets. *See generally id.* (noting that "Canada is opening the door to Americans at the same time the US Congress is battling over whether to let in more skilled workers."); The Conference Board of Canada, *News Release 14-24: U.S. Workers Could Help Plug Skills Gap in Canada* (October 4, 2013), http://www.conferenceboard.ca/press/newsrelease/13-10-04/u_s_workers_could_help_plug_skills_gap_in_canada.aspx (stating Alberta, Canada launched a pilot project to bring approximately 1,000 highly-skilled US workers into Alberta to combat its severe skills shortage).

106 IAN F. FERGUSSON, UNITED STATES-CANADA TRADE AND ECONOMIC RELATIONSHIP: PROSPECTS AND CHALLENGES 1 (Congressional Research Service 2011), *available at* http://fas.org/sgp/crs/row/RL33087.pdf (hereinafter "*CRS Report on US/CA Trade*").

107 *Id.*

While the US is by far Canada's largest trading partner[108] and Canada is the largest export market for the US,[109] the integration transcends the typical relationship between trading partners, where one partner consumes the products of the other and, in a healthy relationship, the other partner produces goods or services of a roughly balancing value that are consumed by the first. In the case of the US and Canada, the two countries also trade substantial volumes of the same goods,[110] representing a deeper intertwining of their economies and economic fates. Moreover, trade is not limited to just goods but includes services, as well. The Canadian Foreign Affairs, Trade and Development Department notes that "Canada is the largest market for U.S. services exports with Canada-U.S. services trade reaching nearly $107.6 B in 2012, a 167.3 percent increase [since 1993]."[111] Finally, the US is the largest single investor in Canada.[112] All these factors support a reasonable expectation that the construction of, investment in, and operation of the multi-billion dollar Goldboro LNG Project will result in benefits to the US's economy, as well as Canada's. US President Barack Obama has summed up the situation well stating: "No two nations match up more closely together, or are woven together more deeply, economically, culturally, than the United States and Canada."[113]

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108 *See* Government of Canada, *Canadian Industry Statistics: International Trade*, http://www.ic.gc.ca/eic/site/cis-sic.nsf/eng/h_00029.html (last visited July 31, 2014) (listing the US as Canada's top export destination and top import source from 2004-2013); Danielle Goldfarb & Kip Beckman, *Canada Competes: Who will Canada's trade partners be in 2025?*, THE GLOBE AND MAIL (Nov. 22, 2012) ("Without a doubt, the United States will remain Canada's largest export market for the foreseeable future.").

109 *See* Office of the US Trade Representative, *U.S. - Canada Trade Facts*, http://www.ustr.gov/countries-regions/americas/canada (last visited September 5, 2014).

110 *CRS Report on US/CA Trade, supra* note 106, at 3.

111 Government of Canada, *Foreign Affairs, Trade and Development Canada: North American Free Trade Agreement (NAFTA)*, http://www.international.gc.ca/trade-agreements-accords-commerciaux/agr-acc/nafta-alena/info.aspx?lang=eng (last visited July 31, 2014).

112 *CRS Report on US/CA Trade, supra* note 106, at 10.

113 *See* Embassy of the US – Ottawa, Canada, *U.S. - Canada Economic Relations*, http://photos.state.gov/libraries/canada/303578/pdfs/us-canada-economic-relations-factsheet.pdf (last visited September 5, 2014).

Moreover, the dollars paid for US natural gas and gas transportation in the US will dwarf the construction and operating costs of the Goldboro LNG Project. If the total price paid for gas and transportation were just $3.00/MMBtu (an extremely conservative estimate), then US gas suppliers and pipeline companies would receive a total of $18,168,240,000,000,000.00 in revenues for supplying Pieridae US with 292 Bcf/yr of natural gas for 20 years.[114] These revenues are not simply payments for the value of gas in the ground. Instead, they are largely related to the cost of infrastructure and workers (labor in the form of increased employment) to produce and move the gas to the Canadian border. As a recent study indicates, there could be as many as eight times more exploration production, transportation and supply chain jobs created upstream of the Goldboro LNG Project than would be required to construct the project itself.[115]

This same study estimates the benefits from 6 Bcf/d of exports through US LNG export terminals at $2.7 to $3.2 billion per year, stating: "The gains from selling gas overseas rather than at home would be approximately $700 million to $1 billion; the gains from new gas production would be roughly $2.3 billion to $2.8 billion; and the losses from lower domestic consumption would be approximately $300 million to $500 million."[116] Conservatively, adjusting these estimates to account for locating the natural gas liquefaction and LNG export facilities in Canada, rather than the US, by eliminating the gains from selling overseas altogether (thereby entirely discounting the likelihood that at least a portion of those gains would flow to

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[114] 292 Bcf/yr * 20 yr = 5.84E+12 cf; 5.84E+12 cf * 1,037 MMBtu/cf = 6.05608E+15 MMBtu; and 6.05608E+15 MMBtu * $3.00/MMBtu = $18,168,240,000,000,000.00.

[115] Michael Levi, *A Strategy for U.S. Natural Gas Exports*, THE HAMILTON PROJECT 6 (June 2012), http://www.hamiltonproject.org/files/downloads_and_links/06_exports_levi.pdf (hereinafter "*Hamilton Project Study*"). Similarly, according to the *NERA Update,* a study by Cheniere estimates "directed, indirect, and induced jobs associated with the development of shale gas in particular and oil and gas sector in general" at "30,000 to 50,000 jobs per 2 Bcf/d of additional natural gas production". *NERA Update*, *supra* note 55, at 115 n.78. In contrast, the *NERA Update* characterizes other studies as concluding that construction of 1 Bcf/d of capacity will provide between 2,500 and 4,000 job-years of direct employment over the 48-month construction period. *Id.*

[116] *Hamilton Project Study*, *supra* note 115, at 14.

the US through US direct investment, sales of equipment and services by US entities to the LNG project, etc.) still leaves a net gain to the US of between $1.8 billion and $2.5 billion per year. Scaling this down (to reflect that granting the Application would result in maximum exports of 0.8 Bcf/d on average) indicates that approving this Application would result in economic benefits to the US of between $240 and $300 million per year.

3. *Benefits from Stimulation of the Natural Gas Industry*

As discussed above, M&N US is actively seeking fiscal support for the increased use and expansion of its system. While M&N US does not expect to significantly expand its pipeline's footprint, it does anticipate increasing the capacity of the system. Increasing capacity of the system allows for the addition of new customers and increased service to existing customers, supporting the development of increased natural-gas-fired generation and other uses (often in lieu of less environmentally friendly options). Through economies of scale, a higher capacity system reduces the unit cost of transportation for all customers on the system. Further, because Pieridae US's point of export is located at what would be the downstream end of the M&N US Pipeline, it would enhance the reliability of the pipeline for all upstream users.[117] Pieridae US's long-term commitment to use a substantial amount of capacity on the M&N US Pipeline, therefore, would support lower transportation units costs and greater reliability for other system users.

Exports by Pieridae US will also likely stimulate additional development of natural gas resources by expanding the market for North American natural gas, thereby further increasing

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[117] From a physical standpoint in the event of extreme demands, shortages of supplies, failures of compression facilities and the like, consumers upstream of the Pieridae US export point are more likely to be able to receive natural gas than Pieridae US. Of course, within limits, Pieridae US would expect the pipeline operator to undertake operational procedures to ensure that all customers are treated equitably and that contingencies would not unduly impact Pieridae US above upstream users. However, other users on the system taking delivery in the US would be better situated physically than Pieridae US.

the overall benefits derived from such proposed exports. This development involves sizable investment in exploration and production activity and, thus, further economic stimulus.

4. *International Considerations*

Recent world events, such as the continuing weakness of certain European Community member country economies, have served as ample reminders that the welfare of US citizens is interdependent on the health of the world economy. In May 2012, the Brookings Institution's Energy Security Initiative released its Policy Brief 12-01, which analyzed the international implications of LNG exports and broke the subject down into three components: pricing, geopolitics, and the environment.[118]

With respect to pricing, the Brookings Study observes: "LNG exports will help to sustain market liquidity in what looks to be an increasingly tight LNG market beyond 2015."[119] Looser or more liquid markets help place downward pressure on the pricing terms of oil-linked contracts, which are common in the world markets for LNG.[120] This has resulted, in turn, in the renegotiation of some contracts, particularly in Europe.[121] Of course, lower prices for energy in Europe and elsewhere can contribute to an uptick in the world economy, fueling increased trade with the US. On the other hand, denying our trading partners a source of reliable, reasonably priced energy could harm the US economy. As a March 2014 paper published by the Brookings Institute notes: "[T]the U.S. economy is increasingly integrated into the global economy and increasingly trade dependent; as of 2012, 25 percent of American GDP was tied to global

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118 Charles Ebinger et al., *Liquid Markets: Assessing the Case for U.S. Exports of Liquefied Natural Gas*, THE BROOKINGS ENERGY SECURITY INITIATIVE 38 (May 2012), http://www.brookings.edu/~/media/research/files/papers/2012/1/natural%20gas%20ebinger/natural_gas_ebinger.pdf (hereinafter *"Brookings Study"*).

119 *Id.* at 39.

120 *Id.* at 38.

121 *Id.*

trade.... This exposes the U.S. to the energy insecurity of its trading partners. If they suffer, it will suffer too."[122]

With respect to geopolitics, the Brookings Study concludes: "A large increase in U.S. LNG exports would have the potential to increase U.S. foreign policy interests in both the Atlantic and Pacific basins."[123] "[T]he addition of a large, market-based producer [*i.e.*, the US] will indirectly serve to increase gas supply diversity in Europe, thereby providing European consumers with increased flexibility and market power.... Increased LNG exports will provide similar assistance to strategic U.S. allies in the Pacific Basin."[124]

Finally, as to the environment, the Brooking Study states:

"According to the [International Energy Agency], natural gas in general has the potential to reduce carbon dioxide emissions by 740 million tonnes in 2035, nearly half of which could be achieved by the displacement of coal in China's power-generation portfolio. Natural gas – in the form of LNG – also has the potential to displace more carbon-intensive fuels in other major energy users, including across the EU and in Japan, which is being forced to burn more coal and oil-based fuels to make up for the nuclear generation capacity lost in the wake of the Fukushima [nuclear] disaster. In addition to its relatively lower carbon-dioxide footprint, natural gas produces lower emissions of pollutants such as sulfur dioxide nitrogen oxide and other particulates than coal and oil."[125]

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122 Bruce Jones *et al.*, *Fueling a New Order? The New Geopolitical and Security Consequences of Energy*, PROJECT ON INTERNATIONAL ORDER AND STRATEGY AT BROOKINGS 10 (March 2014), http://www.brookings.edu/~/media/research/files/papers/2014/04/14%20geopolitical%20security%20consequences%20energy%20jones/14%20geopolitical%20security%20energy%20jones%20steven_fixed.pdf (footnote omitted).

123 *Brookings Study, supra* note 118, at 41. While the study discusses US LNG exports, it is obvious that US natural gas exports to Canada that are converted to LNG for export to other countries yield the same result from a geopolitical standpoint.

124 *Id.* at 43.

125 *Id.* at 44.

The Brookings Study also notes that some have expressed concern that lower gas prices may lead to increased carbon dioxide emissions due to the displacement of nuclear and renewable energy by cheap natural gas.[126] Pieridae US asserts that such concerns are misplaced.

First, as the Brookings Study concludes, the export of US natural gas would not make a substantial impact on the need for other energy sources to generate electricity.[127]

Second, US natural gas exports are driven by the price differential between the destination markets and the US natural gas market. Where the natural gas is to be transported in the form of LNG, destination markets must command a significant price premium in order to cover the cost of liquefaction, transportation and regasification. Such considerations limit the potential for any natural gas exported by Pieridae US to discourage the use of nuclear and renewable energy sources overseas. Indeed, given the East Coast location of the Goldboro LNG Project, much of the gas Pieridae US would export is expected to be delivered to European markets. In such markets, the demand for nuclear and renewable energy is often a function of government policy, and feed-in tariffs are used to isolate favored fuel sources from economic competition. On the other hand, the choice to use coal (and fuel oil) is largely driven by economics and is exposed to competition from natural gas. As the Wall Street Journal has reported, Europe is starved for reasonably priced natural gas and is increasing the use of coal to meet generating needs that are not met with renewables.[128] Exports of LNG from the Goldboro LNG Project could help stem this trend.

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126 *Id.*

127 *Id.*

128 *See* Stephen Fidler, *Rising Coal Use Clouds Europe's Future - Turn Away From Gas Seen Impacting Continent's Industrial Base,* WALL STREET JOURNAL (Feb. 6, 2014), http://online.wsj.com/news/articles/SB10001424052702304450904579367074233771140.

Third, any tendency on the part of natural gas exports to raise the cost of US domestic gas supplies, not only tends to reduce the volume of exports, but also contributes to the increased use of alternative forms of generation in the US, making nuclear and renewable energy relatively more cost-effective. Thus, any loss of competitiveness of such generating technologies abroad would be at least partially mitigated by increased competitiveness of these technologies in the US.[129]

Exports of natural gas by Pieridae US would also improve the US balance of trade. The US has experienced large trade deficits for several decades.[130] In 2013, the US trade deficit was over $470 billion.[131] To date, simply taking advantage of low domestic natural gas prices to produce things for export more cheaply in the US has not substantially reversed the trade deficit. As recognized by the DOE/FE, natural gas exports would have a positive role on US trade with destination countries and reduce US trade imbalances.[132]

In considering the public interest aspects of this request, the DOE/FE should also give consideration to the fact that Canada has historically authorized the export of natural gas from Canada to the US without restricting what the US does with such natural gas. Currently, at least

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[129] While the impacts of natural gas exports on domestic gas prices is unlikely to make switching to other fuels economic in the absence of other changes in market conditions, any increase coupled with decreases in the cost of alternative forms of generation (such as those due to improving technology) would tend to make policies favoring other energy sources relatively less expensive and, thus, more palatable to the public and policy makers.

[130] U.S. Dep't of Commerce, Census Bureau, *U.S. Trade in Goods and Services – Balance of Payments Basis, 1960 through 2012* (Feb. 8, 2013), http://www.census.gov/foreign-trade/statistics/historical/gands.txt (hereinafter *"Census Bureau"*).

[131] U.S. Bureau of Econ. Analysis, U.S. Dep't of Commerce, *U.S. International Trade in Goods and Services Exports, Imports and Balances*, http://www.bea.gov/newsreleases/international/trade/trad_time_series.xls (last visited July 29, 2014).

[132] *See, e.g.*, *Sabine Pass, Order No. 2961*, *supra* note 13, at 35-36 (acknowledging applicant's "uncontroverted analysis indicating that the export authorization . . . will improve the United States trade balance by $1.7 billion annually."); *CMI, DOE/FE Order No. 2651*, *supra* note 45, at 14 (noting no intervener disputed applicant's assertion that US's balance of payments with destination countries would improve); *ConocoPhillips, DOE/FE Order No. 2500*, *supra* note 45, at 58 (finding that a "mitigation of balance of payment issues may result from a grant of the instant application."). *See also Brookings Study*, *supra* note 118, at vi (stating that U.S. LNG exports are likely to make a positive contribution to the U.S. trade balance).

two US LNG export projects intend to rely, in whole or in part, on Canadian-sourced natural gas for feedstock.[133] The DOE/FE has already conditionally approved LNG exports from these facilities in the aggregate amount of 757.25 Bcf/yr.[134] The DOE/FE expects most of the natural gas used as feedstock for these projects to come from Canada.[135] Even if we conservatively assume that the two projects will get just half of their gas from Canada, that amount (378.63 Bcf/y) exceeds Pieridae US's export request by about 30%. Further, as Canada develops its own unconventional natural gas reserves, the US may once again find itself increasingly reliant on Canadian natural gas.

For the US to deny or unnecessarily delay approval of this Application would be tantamount to the US setting policies that attempt to make natural gas exports a one-way street favoring the US over Canada in the short-run. Such action would be contrary to the public interest because of the chilling effect it could have on the cooperative spirit between the two nations. Particularly with regard to trade in natural gas,[136] such asymmetrical action by the US

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133 *See LNG Development Company LLC (d/b/a Oregon LNG), Order Conditionally Granting Long-Term Multi-Contract Authorization to Export Liquefied Natural Gas by Vessel from the Oregon LNG Terminal in Warrenton, Clatsop County, Oregon to Non-Free Trade Agreement Nations*, FE Docket No. 12-77-LNG, DOE/FE Order No. 3465, at 1 (July 31, 2014) (hereinafter *"Oregon LNG, DOE/FE Order No. 3465"*); *Jordan Cove, DOE/FE Order No. 3413*, *supra* note 44, at 1 (Mar. 24, 2014).

134 *See Oregon LNG, DOE/FE Order No. 3465, supra* note 133, at 1; *Jordan Cove, DOE/FE Order No. 3413, supra* note 44, at 1.

135 *See Oregon LNG, DOE/FE Order No. 3465, supra* note 133, at 17 (noting that Oregon LNG will rely on Canadian sourced natural gas for the "vast majority" of its feedstock); *Jordan Cove, DOE/FE Order No. 3413, supra* note 44, at 21 (noting that at the least initially Canadian sourced natural gas will constitute "the more significant portion" of the project's feedstock).

136 EIA "estimates that Canada's proved natural gas reserves were 67 trillion cubic feet (Tcf) at the end of year 2012…." EIA, *Canada – Natural gas* (last updated Sept. 30, 2014), http://www.eia.gov/countries/cab.cfm?fips=CA. Canada consumed just over 3 Tcf of natural gas in the same year. EIA, *Canada – Country Analysis Brief Overview* (last updated Sept. 30, 2014), http://www.eia.gov/countries/country-data.cfm?fips=ca#ng. This equates to about a 22/1 reserve to annual consumption ratio. In 2012, the population of Canada was about 34 million (less than the population of the State of California alone). US Census Bureau, *International Programs – Country Rank*, http://www.census.gov/population/international/data/countryrank/rank.php; US Census Bureau, *State & County Quick Facts – California*, http://quickfacts.census.gov/qfd/states/06000.html. So, it has per capita reserves of about 1.9 million cf. In contrast, in 2012 the US had proved natural gas reserves of about 334 Tcf. EIA, *International*

would encourage Canada to develop its own restrictive policies to rebalance the net flow of natural gas between the two nations.[137] Such activities on both sides would run contrary to the intent of the NAFTA. For example, among NAFTA's purposes, as outlined in the Preamble to NAFTA, are:

> "STRENGTHEN the special bonds of friendship and cooperation among their nations;
>
> CONTRIBUTE to the harmonious development and expansion of world trade and provide a catalyst to broader international cooperation;
>
> CREATE an expanded and secure market for the goods and services produced in their territories;
>
> REDUCE distortions to trade;
>
> ESTABLISH clear and mutually advantageous rules governing their trade; [and]
>
> ENSURE a predictable commercial framework for business planning and investment…."[138]

Each of these purposes would be furthered by granting the authorization requested by this Application and countered by a denial. As the *NERA Update* points out, if every country imposes restrictive export policies, "then everyone is worse off."[139]

Energy Statistics – Natural Gas – Reserves, http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=3&pid=3&aid=6 (last visited Oct. 10, 2014). This is about five times the figure for Canada, but the US consumes gas at a much higher rate – about 25.5 Tcf/y. EIA, *International Energy Statistics – Natural Gas – Consumption*, http://www.eia.gov/cfapps/ipdbproject/IEDIndex3.cfm?tid=3&pid=26&aid=2 (last visited Oct. 10, 2014). This equates to about a 13/1 reserve to annual consumption ratio. Moreover, the population of the US in 2012 was about 314 million. U.S. Census Bureau, *U.S. and World Population Clock*, http://www.census.gov/popclock/?intcmp=home_pop (last visited Oct. 10, 2014). This is more than 9 times the population of Canada and yields a per capita reserves figure of 1.06 million cf. This suggests that, in the long run, the US will have a greater need for Canadian natural gas than Canada will have for US natural gas and the US would suffer more harm from trade barriers in this area than Canada.

[137] *See NERA Update, supra* note 55, at 74.

[138] NAFTA, *Legal Texts — Preamble*, https://www.nafta-sec-alena.org/Default.aspx?tabid=97&ctl=SectionView&mid=1588&sid=b5b817ee-c48a-4dda-b8d9-c4564e34ac4b&language=en-US (last visited Oct. 10, 2014).

[139] *NERA Update, supra* note 55, at 68.

Canada might not be the only country to take exception to the US limiting natural gas exports to Canada for use as a feedstock in producing LNG exported from Canada to other countries. As the *Hamilton Project Study* observes:

> "[I]f the United States were to restrain LNG exports, it would almost certainly face wider trade-related problems. The consequences could be broad, affecting support for open trade in general, but they would likely have special impact on other resource-related disputes. Article XI of the General Agreement on Tariffs and Trade (GATT) prohibits sustained quantitative restrictions on energy exports unless they are related 'to the conservation of exhaustible natural resources if such measures are made effective in conjunction with restrictions on domestic production or consumption' (Selivanova 2007). U.S. policy would be the opposite: it would be made in conjunction with efforts to encourage both domestic production and consumption of natural gas."[140]

VIII.
RELATED AUTHORIZATIONS AND ENVIRONMENTAL IMPACTS

A. The National Environmental Policy Act

The NEPA requires the DOE/FE to determine whether granting the portion of this Application relating to natural gas or LNG that will not be consumed in an FTA Country will have a significant impact on the environment.[141] In order to comply with the NEPA, the DOE/FE must determine, pursuant to the Council on Environmental Quality ("CEQ") regulations[142] and its own procedures, whether a proposed action: (1) is categorically excluded from the preparation of either an Environmental Assessment ("EA") or Environmental Impact Statement ("EIS"); (2)

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140 *Hamilton Project Study, supra* note 115, at 18 (referencing and quoting Yulia Selivanova, *The WTO and Energy: WTO Rules and Agreements of Relevance to the Energy Sector,* Int'l Centre for Trade and Sustainable Development, at vii (Aug. 2007), *available at* http://www.ictsd.org/sites/default/files/research/2012/03/the-wto-and-energy.pdf).

141 National Environmental Policy Act, 42 U.S.C. § 4321 *et seq.* (2006); 10 C.F.R. § 1021.210(b) (2014) ("DOE shall complete its NEPA review for each DOE proposal before making a decision on the proposal. . . ."). The term "DOE proposal" includes a proposal by applicants, such as Pieridae US, for action that requires a DOE decision, such as an order authorizing natural gas exports. *See* 10 C.F.R. § 1021.104(b) (defining the term "DOE proposal").

142 10 C.F.R. § 1021.103 (stating DOE adopts CEQ's NEPA implementation regulations contained in 40 C.F.R. Parts 1500 through 1508).

requires preparation of an EA and a subsequent issuance of a Finding of No Significant Impact ("FONSI"); or (3) requires preparation of an EIS.[143] The NEPA regulations require the DOE/FE to promulgate procedures that identify actions that normally require an EA or EIS and those that do not,[144] and the DOE/FE supplemented the CEQ regulations accordingly.[145] Generally, the level of environmental review associated with authorizing LNG exports depends on whether such authorization will result in (i) the construction of major new natural gas pipelines or facilities, or (ii) minor modifications to existing pipelines or facilities.[146]

B. Applicability of an Existing Categorical Exclusion

Categorical exclusions are actions that have been determined to typically not have a significant impact on the environment, and if a proposed action meets the description of a categorical exclusion – and there are no extraordinary circumstances – then the NEPA review is complete (*i.e.* neither an EA nor an EIS is required).[147] In this instance, a DOE/FE approval of natural gas exports by Pieridae US would fall within the DOE/FE's categorical exclusion B5.7 *Import or export natural gas, with operational changes.*[148] This categorical exclusion applies to "[a]pprovals … of new authorizations … to … export natural gas under section 3 of the Natural Gas Act that involve minor operational changes (such as changes in natural gas throughput, transportation, and storage operations) but not new construction."[149]

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143 *Id.* at § 1021.300(a)(1)-(3).

144 40 C.F.R. § 1507.3(b)(2)(i)-(iii) (2013).

145 10 C.F.R. Part 1021.

146 MICHAEL RATNER ET AL., *U.S. NATURAL GAS EXPORTS: NEW OPPORTUNITIES, UNCERTAIN OUTCOMES* 17-18 (Congressional Research Service, 2013), *available at* http://fas.org/sgp/crs/misc/R42074.pdf.

147 40 C.F.R. § 1508.4 ("Categorical exclusion means a category of actions which do not individually or cumulatively have a significant effect on the human environment . . . and for which, therefore, neither an [EA] nor an [EIS] is required.").

148 10 C.F.R. Part 1021, Subpart D, Appendix B.

149 *Id.*

In reaching this conclusion, it is important to understand the relationships between the proposed exports to be authorized by the DOE/FE and certain facilities to be constructed that would facilitate the proposed exports when built. These facilities can be subdivided into downstream facilities in Canada (*i.e.,* the Goldboro LNG Project) and upstream facilities in the US (*i.e.,* enhancements to the M&N US Pipeline, including the border facilities where the export will physically occur).

As to the downstream facilities in Canada, the DOE's rules do not call for the consideration of impacts outside of the US as part of its NEPA review.[150] Instead, the question of whether to consider the environmental impacts outside of the US, its territories and possession of DOE actions is governed by Executive Order 12114. "Environmental Effects Abroad of Major Federal Actions" (3 C.F.R., 1979 Comp., p. 356; 44 Fed. Reg. 1957, Jan. 4, 1979)("*Executive Order 12114*").[151] *Executive Order 12114* states, in relevant part: "[T]he following actions are exempt from this Order: ... (v) export licenses or permits or export approvals....";[152] In addition, to expressly exempting decisions on export licenses, permits and approvals from having to consider environmental impacts outside of the US, *Executive Order 12114* strongly favors exports and avoiding interference in the affairs of other nations over reviewing extraterritorial environmental impacts. In particular, *Executive Order 12114* gives the DOE the discretion to:

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150 10 C.F.R. § 1021.102(b)(2014)

151 *Id.*

152 *Executive Order 12114,* § 2-5(a). This section of *Executive Order 12114* also exempts "actions relating to nuclear activities except actions providing to a foreign nation a nuclear production or utilization facility as defined in the Atomic Energy Act of 1954, as amended, or a nuclear waste management facility". From the phrasing of the provision, it appears that nuclear activities were called out in order to carve out certain activities from the exemption (specifically providing foreign nations with nuclear production, utilization and waste management facilities), rather than to limit the exemption of export licenses, permits or approvals to such actions related to nuclear activities. However, we believe that this is the first time this exemption has been called to DOE's attention with respect to approving the export of natural gas.

> "provide for appropriate modifications in the contents, timing and availability of documents to other affected Federal agencies and affected nations, where necessary to: (i) enable the agency to decide and act promptly as and when required; (ii) avoid adverse impacts on foreign relations or infringement in fact or appearance of other nations' sovereign responsibilities, or (iii) ensure appropriate reflection of: (1) diplomatic factors; (2) international commercial, competitive and export promotion factors; ... (5) difficulties of obtaining information and agency ability to analyze meaningfully environmental effects of a proposed action; and (6) the degree to which the agency is involved in or able to affect a decision to be made."[153]

Even in situations involving the DOE reviewing applications for the construction of physical border crossing facilities, rather than the mere grant of an export license, DOE has concluded that reviewing the effects in foreign countries of DOE's actions is not required. In this regard, DOE precedent with regard to issuing Presidential Permits for electric transmission facilities that cross the US/Canada border is instructive.[154] For example, in the DOE's Final EIS for the Champlain Hudson Power Express Transmission Line Project, it states:

> "*Impacts in Canada.* Comments stated that impacts in Canada from the hydroelectric facilities that would be the source of the power should be addressed in the EIS, and without this analysis the EIS does not address potential impacts of the entire proposed [Champlain Hudson Power Express Transmission Line] Project. DOE response: DOE does not agree that such an analysis is appropriate or required.
>
> NEPA does not require an analysis of potential environmental impacts that occur solely within another sovereign nation with its own environmental statutes and regulations that result from actions approved by that sovereign nation. The Quebec Provincial Government is conducting an environmental review for impacts in Canada, as applicable, as part of its authorization process associated with the construction of facilities (i.e., a new transmission line from a proposed new [high voltage direct current] converter station at Hertel, in La Prairie, Quebec, to the U.S./Canada border) in the province. The Canadian Government,

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153 *Id.*, § 2-5(b).

154 DOE does not have responsibility for issuing Presidential Permits for natural gas pipeline facilities that cross the US/Canada border.

through the National Energy Board, would also have the authority to authorize the project and consider potential environmental impacts in its analysis...."[155]

Even if Canadian impacts of US export authorizations were not exempt from consideration under NEPA and *Executive Order 12114,* whether DOE must consider impacts hinges upon the relationship between the environmental effect and the cause and whether the impact is "reasonably foreseeable."[156] Here, the Goldboro LNG Project is the cause and the proposed exports are an effect. But for the Goldboro LNG Project, Pieridae US would not be making the current application and would have no use for the natural gas to be exported. Further, the Goldboro LNG Project could, in principle, proceed without US exports of natural gas (by relying on Canadian natural gas), but there would be no facility for Pieridae US's proposed exports without the Goldboro LNG Project. As such, the proposed exports are not a reasonably foreseeable cause of the construction of the downstream facilities, and the

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155 DOE, OFFICE OF ELECTRICITY DELIVERY AND ENERGY RELIABILITY, FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE CHAMPLAIN HUDSON POWER EXPRESS TRANSMISSION LINE PROJECT, Volume 1 – Impact Analyses, S-7 (2014), *available at* http://energy.gov/sites/prod/files/2014/08/f18/EIS-0447-FEIS-Vol%20I-2014.pdf (hereinafter "*CHPE EIS*").

156 40 C.F.R. § 1508.8(b).

environmental impacts of the construction and operation of the Goldboro LNG Project are properly subject to review by Canadian authorities[157] pursuant to Canadian law.[158]

As to the upstream facilities, Pieridae, Pieridae US and Pieridae CA will not construct, expand or modify any pipeline facilities in the US in conjunction with the proposed export of natural gas from the US to Canada. While Pieridae US anticipates that M&N US will modify its pipeline system in a manner that provides for adequate capacity to meet the needs of Pieridae US, M&N US will not be making changes specifically to accommodate Pieridae US, but rather will make changes to meet the overall demand of the market, which changes will depend on

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[157] The NEB addressed the same question in deciding Jordan Cove's application to export natural gas from Canada. *NEB Letter Decision*, *supra* note 18, at 6-7. In those proceedings, Citizens Against LNG Inc. alleged that the NEB was required to conduct an environmental assessment of the construction and operation of the Jordan Cove LNG export project and the Pacific Connector Gas Pipeline (a new pipeline to be constructed to transport natural gas to the LNG export project), including "effects crossing international boundaries; the requirement for the Board to conduct an economic assessment of the entire Jordan Cove project; the obligations of the Government of Canada to prevent Canadian companies from placing Americans at risk; and the lack of significant permits for the project at the local, state and federal level in the U.S. *Id.* at 6. Similarly, in the same proceedings, Landowners United pointed to the lack of completed application reviews by the DOE/FE and the FERC and asserted that the Canadian Environmental Assessment Act 2012 (CEAA 2012) prohibited the NEB from making a decision on a natural gas export license for Jordan Cove until the environmental reviews were completed. *Id.* In responding to these arguments, the NEB decided: "Jordan Cove LNG's [natural gas export] Application does not trigger the environmental assessment requirement of CEAA 2012 as the issuance of an export license is not a designated physical activity under that Act.... [A] decision on this Application does not authorize the construction or operation of the physical facilities in the U.S. of concern to both Landowners United and Citizens Against LNG Inc., including the LNG Terminal." *Id.* at 7. The same logic applies in the case of Pieridae US. The DOE/FE's issuance of an export license is not a physical activity that could give rise to concerns about environmental impacts in and of itself. Further, the DOE/FE's issuance of the authorization requested here also will not approve construction or operation of any physical facilities in Canada. In accordance with the DOE/FE's own regulations and *Executive Order 12144*, such matters are properly left to review by Canadian governmental entities and a second look in the context of the current DOE/FE proceeding is not justified.

[158] The Goldboro LNG Project has completed a provincial environmental assessment as a Class II undertaking and received conditional approval on March 21, 2014, by the Minister of Environment of Nova Scotia pursuant to section 40 of the Environment Act, S.N.S. 1994-95, c. 1 and subsection 26(1) of the Environmental Assessment Regulations, N.S. Reg. 348/2008. For various reasons the Environmental Assessment Agency, an agency of the Canadian federal government, determined that it was not necessary for the Goldboro LNG Project to undergo a federal environmental assessment under the Canadian Environmental Assessment Act, 2012, S.C. 2012, c. 19, s. 52.

expected throughput by multiple customers that will potentially have offsetting demands[159] on the system.

Even if the DOE/FE were to conclude that granting Pieridae US's Application would indirectly cause the expansion of upstream facilities, the DOE/FE's prior decisions lay out precedent establishing that such anticipated construction falls outside the scope of construction that must be accounted for in performing a NEPA review. In particular, in DOE/FE Order No. 2961-A for Sabine Pass Liquefaction, LLC ("Sabine Pass"),[160] the DOE/FE discusses cases that provide guideposts on the scope of impacts to be included within the NEPA review, including: (1) *Central New York Oil and Gas Company*, LLC, 137 FERC ¶ 61,121 (2011), reh'g denied, 138 FERC ¶ 61,104 (2012), *aff'd Coalition for Responsible Growth and Resource Conservation, et al. v. FERC*, No. 12-566, 2012 U.S. App. LEXIS 11847 (2d Cir. June 12, 2012) (hereinafter "*Central New York*"); (2) *Northern Plains Resource Council v. Surface Transportation Board*, 668 F.3d 1067 (9th Cir. 2011) (hereinafter "*Northern Plains*"); and (3) *Scientists' Institute for Public Information, Inc. v. Atomic Energy Commission*, 481 F.2d 1079 (D.C.Cir. 1973) (hereinafter "*Scientists' Institute*").

In *Central New York*, the FERC approved the construction of a natural gas pipeline based on a review of the environmental impacts of a pipeline proposal before it, but excluded from its review the environmental impacts of gathering lines that would be developed to supply gas to the newly approved pipeline. The natural gas pipeline being approved terminated in the midst of the

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159 For example, if a third-party were to seek to export natural gas from Canada for consumption in the US through a point that was also serving to export gas from the US for Pieridae US, the two quantities would tend to net against each other, thereby reducing the physical flow through and capacity requirements of the physical facilities.

160 *Sabine Pass Liquefaction, LLC, Final Opinion and Order Granting Long-Term Authorization to Export Liquefied Natural Gas from Sabine Pass LNG Terminal to Non-Free Trade Agreement Nations*, FE Docket No. 10-111-LNG, DOE/FE Order No. 2961-A, at 14-15 (Aug. 7, 2012) (hereinafter "*Sabine Pass, DOE/FE Order No. 2961-A*").

Marcellus shale region and the gathering lines would connect to such pipeline. The FERC determined that a quantitative analysis of the cumulative impacts of Marcellus shale development in northeastern Pennsylvania and beyond was not necessary because of "the widespread nature and uncertain timing of gas well drilling relative to construction of the [pipeline project under consideration] make it difficult to identify and quantify cumulative impacts."[161] In Pieridae US's case, there are no pipelines facilities being approved directly by the DOE/FE or the FERC in conjunction with Pieridae US's specific proposal, and it is impossible to ascertain now (i) by how much M&N US would expand its pipeline capacity, (ii) what portion of any expansion could be attributed to Pieridae US's service requirements, and (iii) how M&N US will choose to accomplish any future capacity expansion (*e.g.*, adding looping, compression or replacing existing pipe with larger diameter pipes).[162] Thus, not only is there no direct causal relationship[163] between the DOE/FE's action here and M&N US's future modifications to its pipeline system, it is impossible to determine with any certainty what the impacts of such modifications might be and to what extent they would be related to Pieridae US's taking service on the M&N US Pipeline.

In *Northern Plains*, a court reviewing the adequacy of a NEPA review conducted by the Surface Transportation Board ("STB") determined that the STB was required to account for the cumulative impacts of coal bed methane well development as part of its NEPA analysis of a

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161 *Central New York*, 137 FERC ¶ 61,121, at 21.

162 Pieridae US understands that if the only US natural gas exports being carried by the M&N US pipeline were the exports proposed by Pieridae US in this Application, such exports could be accomplished by reversing the direction of compression and possibly increasing the horsepower used for compression. However, Pieridae US does not consider such actions to be likely and does not anticipate that M&N US will dedicate any specific changes to its system to serving Pieridae US. Instead, M&N US will expand its facilities based on its overall view of market demand and Pieridae will seek to use some undivided portion of M&N US's total available capacity.

163 *See Sabine Pass, DOE/FE Order No. 2961-A, supra* note 160, at 28 (noting "a causal connection capable of supporting meaningful analysis of the potential environmental impacts" is required for a NEPA review).

proposed 89-mile rail line intended to serve specific new coal mines in three counties in Montana. This was appropriate because the rail line was being specifically built to serve the coal mines and the details of the new coals mines were known to the STB. In Pieridae US's case, however, improvements to the M&N US Pipeline are taking place for a variety of reasons, rather than specifically to serve Pieridae US, and the details of the improvements are not knowable at this time. Just as the DOE/FE agreed with the FERC distinguishing Sabine Pass's situation from Northern Plains' circumstances based on a lack of information about the timing, location and scope of future shale well development,[164] the DOE/FE should decide here that, even though future changes to the M&N US Pipeline are likely, no analysis of such changes are required pursuant to the NEPA because the timing, location and scope of the improvements are speculative. Of course, as a FERC jurisdictional pipeline, any changes to the M&N US Pipeline will be subject to a NEPA review by the FERC when and if such changes are proposed.

Finally, with respect to the *Scientists' Institute* case, the DOE/FE sided with the FERC's approach in rejecting a reading of *Scientists' Institute* that would require analyzing environmental impacts notwithstanding a lack of detailed or quantifiable information with respect to those impacts.[165] The DOE/FE should use the same approach in this Application because there is no quantifiable information regarding the impact of granting the request herein on M&N US's future construction plans.

Recently, numerous projects have been announced by third parties to construct or expand pipeline infrastructure for the purpose of transporting natural gas from the Marcellus and Utica

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164 *Id.* at 15.

165 *Id.*

producing regions to New York, the New England states and Canada.[166] Such anticipated construction falls outside the scope of construction that must be considered under a NEPA review for this Application because these projects have not been initiated specifically to accommodate Pieridae US, but rather to meet the increasing demand for natural gas in the northeast region of the US and the need for outlets for this economical supply of natural gas. As of the date of this Application, Pieridae US has not entered into any agreement or given any commitment to secure natural gas pipeline transportation capacity with any third party. Therefore, Pieridae US's need for pipeline capacity cannot be regarded as a contributing factor to the expected increase in pipeline infrastructure that would require a NEPA analysis.

In light of M&N US's and other third parties' previously announced plans to construct or expand their pipeline facilities even without any agreement in place with Pieridae US, authorizing Pieridae's US to export natural gas via such pipeline facilities is clearly not a but for cause behind M&N US's, or any other third parties', expansion plans. Moreover, if the DOE/FE undertook to perform an environmental analysis, it would be impossible to ascertain what impacts are likely and to what extent those impacts can be attributed to it authorizing Pieridae US to engage in the requested exports. Under such conditions, interpreting the NEPA to require an environmental review beyond that required to determine the applicability of a categorical exclusion would be unreasonable, as well as futile.

We also note that, to date, the FERC has limited its review of the impacts of new facilities associated with LNG export facilities to the facilities being applied for by the applicant, dedicated pipelines built to serve such facilities, which must also be approved by FERC, and

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166 Appendix E of this Application provides an overview of natural gas pipeline facility expansion plans that have recently become a matter of public record.

certain FERC non-jurisdictional facilities being built or modified specifically to serve the FERC jurisdictional facilities being applied for by the applicant.[167] The DOE/FE has accepted the FERC's approach, and neither the FERC, nor the DOE/FE, have examined, as part of an approval of any LNG terminal or LNG exports, improvements to third-party owned and operated natural gas pipelines that may be used to transport gas that is ultimately liquefied at an LNG facility but is constructed for broader purposes driven primarily by prevailing markets.[168] In short, the DOE/FE has already ruled in its previous non-FTA approvals that the fact that exports may create additional demand for natural gas that leads to the development of upstream facilities does not require the DOE/FE to examine the environmental impacts of upstream facilities where the facilities are being developed independently by third parties and the details of third-party activities are not known.[169]

In addition to determining whether actions caused by an approval of this Application fall within the scope of a categorical exclusion, the DOE/FE must also determine that (1) there are no extraordinary circumstances related to the Application that may affect the significance of the environmental effects of the proposal; (2) the Application is not segmented to meet the definition of a categorical exclusion; and (3) no violation of applicable statutory, regulatory or permit requirements for environment, safety and health have occurred.[170]

With respect to extraordinary circumstances, as explained above, there is no new construction with a sufficient nexus to the exports being requested herein to fall within the scope of a NEPA review. Therefore, there can be no extraordinary circumstances.

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167 *See infra* text accompanying notes 179, 182 and 184.

168 *Id.*

169 *Id.*

170 10 C.F.R. § 1021.410(b)(2)-(3) (2014); *see also Categorical Exclusion Determination Form*, ENERGY.GOV, http://energy.gov/nepa/downloads/categorical-exclusion-cx-determination-form (last visited Sept. 23, 2014).

As to segmentation, segmentation occurs "when a proposal is broken down into small parts in order to avoid the appearance of significance of the total action."[171] Segmentation has not occurred because Pieridae US clearly states its overall purpose in Article IV of this Application – to export up to 292 Bcf/y of natural gas from the US into Canada, where such natural gas would be used in Canada for one or more of the Specified Purposes. This purpose does not entail any environmental impacts or construction in the US since Pieridae US is not proposing to build any facilities in the US. Moreover, the environmental impacts of any facilities in the US that Pieridae US would utilize are subject to a full review by the FERC with regard to relevant cumulative effects associated with any FERC action approving such facilities. A NEPA review by the FERC of any pipeline company proposing to modify existing facilities or construct new facilities is, in fact, the only sensible approach to avoiding segmentation of the impact of such facilities.

Exports of LNG through a US-based LNG facility are quite distinguishable from exports through an interstate natural gas pipeline. In the former, the exports and the facility have a one-to-one relationship, there is direct causation, and the owner/operator of the facility creating the impacts is requesting an export authorization for the entire capacity of the facility. In the case of natural gas exports by one customer through a regulated interstate pipeline with broad service obligations to multiple customers, there is no one-to-one relationship, there is no direct causation, and the facility owner acts independently of the entity seeking the export authorization. These distinctions make reviewing environmental impacts associated with a single specific export request impracticable. In the latter case, the purpose of the NEPA can best be served by the FERC considering all aspects of a pipeline revision or addition at the time an

[171] 10 C.F.R. § 1021.410(b)(3).

applicant proposes such changes. At that point, the FERC will be able to avoid segmentation by reviewing all the changes being proposed by the pipeline owner, which could include changes to facilities that do not play any role in natural gas exports.

Lastly, no violation of applicable statutory, regulatory or permit requirements for environment, safety and health have occurred. Since no exports have occurred to date, no new facilities have been constructed, and obtaining the authorization requested herein is an early stage item in Pieridae US's commercial endeavors, this is not a circumstance that merits a lengthy discussion.

For the foregoing reasons, this Application falls within categorical exclusion B5.7 of the DOE/FE's regulations implementing the NEPA's requirements and no further analysis and documentation in the form of an EA or an EIS is necessary.

C. Environmental Assessments versus Environmental Impact Statements

In the event that the DOE/FE finds that a categorical exclusion does not apply, the DOE/FE is required to prepare an EA in order to assist its decision making when it is unclear whether a project has the potential to cause significant environmental effects.[172] The DOE/FE may perform a limited review to determine whether it can make a FONSI or whether it needs to engage in a full environmental review to determine whether significant environmental impacts will result from such modification by preparing an EIS.[173] For the following reasons, the DOE/FE needs to do no more than perform a simple EA (if the B5.7 categorical exclusion is deemed not applicable) in order to make a FONSI and create a record on decision.

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172 40 C.F.R. § 1501.3(a)-(b).

173 *Id.* at § 1508.9(a)(1).

The DOE/FE has promulgated classes of actions that normally require an EA but not necessarily an EIS.[174] One such class of action (hereinafter "*C13 Class of Action*") includes "[a]pprovals . . . of authorizations to . . . export natural gas under section 3 of the Natural Gas Act involving minor new construction (such as adding new connections, looping, or compression to an existing natural gas or liquefied gas pipeline...)."[175] The circumstances surrounding this Application would fall within the description of the C13 Class of Action if the DOE/FE concludes that the expansion of the M&N US Pipeline would be a consequence of approving Pieridae US's proposal to export natural gas. Even though the particulars of a possible expansion of the M&N US Pipeline capacity is unknown, (a) any effects attributable to action on this proposal would be, at most, minor, (b) therefore, the C13 Class of Action should be applicable, and (c) an EIS unnecessary.

The official website of the M&N US pipeline system fully supports the minor nature of any work required to increase export capacity. It states that the M&N US Pipeline's capacity can easily be increased by adding compression and pipeline looping[176] – two items specifically described in the C13 Class of Action. Furthermore, because M&N US is already planning for expansions without Pieridae US's specific exports, only a portion of any impacts could be properly attributable to Pieridae US's proposal being approved.

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174 10 C.F.R. § 1021.400(a)(2).

175 *Id.* at § 1021.400(2), subpt. D, app. C.13.

176 *M&N Website*, *supra* note 23 and accompanying text. Looping refers to laying multiple pipelines in parallel within a single pipeline right-of-way. This allows the use of smaller diameter pipelines to achieve the capacity of a single, larger diameter, pipeline.

D. Indirect Effects due to Increase US Natural Gas Production Need Not Be Considered Here

Of course, export opponents may argue that such modifications also would have indirect effects[177] on the environment because natural gas production in the US would increase as a result of the increased capacity of the pipeline. Such opponents may also argue that preparation of an EIS is required in reviewing this Application to review such indirect effects. However, such an argument lacks merit because the environmental impact on natural gas production is not "reasonably foreseeable."[178] The impact of the increased capacity on natural gas production is indeterminate, and should not be considered in the DOE/FE's environmental review under the NEPA, because the M&N US Pipeline has access to plentiful natural gas supplies through its highly integrated and developed interstate and intrastate pipeline system.

In analogous circumstances, the FERC and the DOE/FE have determined that it is not necessary to consider the impacts of upstream pipeline systems' decisions to construct new facilities, or expand or modify new facilities that may be used to supply natural gas to US LNG export facilities. For example, in the FERC's review of Freeport LNG Development, L.P.'s ("Freeport") application for authorization to modify a previously authorized LNG import facility to facilitate the export of gas from that facility (the most recent LNG export facility considered by the FERC), the FERC considered Sierra Club's assertion "that the draft EIS [issued by the FERC] was deficient because it failed to consider the indirect effects of induced gas production associated with the projects."[179] The FERC responded:

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177 40 C.F.R. § 1508.8(b) ("Effects" and "impacts" are used synonymously in the CEQ regulations).

178 *Id.*

179 *Freeport LNG Development, L.P., Order Granting Authorizations under Section 3 of the Natural Gas Act*, 148 FERC ¶ 61,076, at 21 (July 20, 2014) (footnotes omitted).

> "We disagree. The CEQ regulations state that "indirect effects" of a proposed action are "caused by the action and are later in time or farther removed in distance, but are still *reasonably foreseeable*." However, no specific shale-play has been identified as a source of natural gas for the project, nor has Sierra Club identified any. Moreover, the purpose of the Projects is not to facilitate additional shale production, which may occur for reasons unrelated to the Project and over which the Commission has no jurisdiction."[180] (emphasis added).

As Pieridae US has access to abundant natural gas sources through the M&N US Pipeline, and there is no particular source of natural gas associated with Pieridae US's proposed exports, the potential environmental impacts associated with such exports are not reasonably foreseeable. In Freeport's case, the FERC also omitted any review of environmental impacts associated with pipelines that might need to be constructed or modified to support delivery of natural gas to the project beyond pipeline applications directly before it as part of the project. Such omission lends support that this Application falls under the DOE/FE's C13 Class of Action and an EIS is not necessary.

Moreover, reaching conclusions with respect to possible upstream impacts could only be accomplished through speculative analysis that would not provide meaningful information to inform the DOE/FE's decision. Such speculative analysis would also be inconsistent with the policy of the NEPA that "[f]ederal agencies shall to the fullest extent possible . . . implement procedures to make the NEPA process more useful to decision makers and the public . . . and emphasize real environmental issues . . . ."[181]

The FERC also disagreed with Sierra Club's similar argument in the Cameron LNG, LLC and Cameron Interstate Pipeline, LLC proceedings involving an application to build and operate facilities to liquefy and export natural gas, as well as associated pipeline and compression

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180 *Id.*

181 40 C.F.R. § 1500.2(b).

facilities, in Louisiana ("Cameron LNG Project").[182] The FERC stated that induced gas production associated with the Cameron LNG Project is not reasonably foreseeable because there is too much speculation on where the potential associated environmental impacts would occur:

> "[The Cameron LNG Project] will interconnect with five major interstate pipelines. Those pipelines cross multiple shale-gas, as well as conventional-gas, plays and, through their interconnections with still other pipeline systems, effectively provide access to essentially all of the production areas in the lower-fort-eight. Thus, it is speculative as to where the gas processed by the [Cameron LNG Project] will originate, much less where the wells, gathering line locations and the potential associated environmental impacts will occur."[183]

Like the expansive reach of the Cameron LNG Project's pipeline interconnects, the M&N US Pipeline and its interconnections with other pipeline systems in the eastern US can provide Pieridae US with gas from almost any point on the US natural gas pipeline grid. Therefore, the environmental impacts from any expansion or modification of the M&N US Pipeline would not be reasonably foreseeable.

Similarly, in addressing assertions that the DOE/FE must consider upstream impacts of shale gas production induced by the conversion of the Sabine Pass LNG Project, the DOE/FE reached the same conclusions as FERC in the Freeport LNG and Cameron LNG projects. Specifically, the DOE/FE stated:

> "We do not agree with the Sierra Club . . . that the nature of DOE's authority over the export of natural gas requires a broader or different environmental analysis than the one performed by the FERC. Because the Commission examined all reasonably foreseeable impacts of the Liquefaction Project, DOE believes that the scope of the [Sabine Pass EA] is appropriate and the EA provides a complete picture for purposes of meeting DOE's NEPA responsibilities and fulfilling its duty to examine environmental factors as a public interest consideration under the NGA.

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182 *Cameron LNG, LLC and Cameron Interstate Pipeline, LLC, Order Granting Authorizations under Section 3 of the Natural Gas Act and Issuing Certificates*, 147 FERC ¶ 61,230, at 25 (June 19, 2014).

183 *Id.*

In reaching this conclusion, DOE/FE is mindful of the Sierra Club's argument that DOE/FE cannot rely on FERC's NEPA review because FERC refused to evaluate the impacts of additional natural gas production that may be induced by allowing exports of LNG. The Commission determined that it is impossible to estimate how much, if any, of the export volumes associated with the Liquefaction Project will come from existing or new shale gas production and that it is also impossible to know the amount, timing, and location of such shale gas development activity. DOE/FE accepts and adopts the Commission's determination that induced shale gas production is not a reasonably foreseeable effect for purposes of NEPA analysis, for the reasons given by the Commission. The Sierra Club has not identified any specific shale gas play that will be or is even projected as likely to be the source of gas processed in and exported through the Liquefaction Project. Additionally, as FERC noted . . ., there are multiple direct and indirect pipeline interconnections to the [Sabine Pass] Liquefaction Project. In ... the present circumstances it is unknown how much, if any, new shale gas production the Liquefaction Project will rely on for its export volumes, much less the location or timing of such production. These factors individually and, even more so when combined, make it impossible to meaningfully analyze when, where, and how shale-gas development will be affected by the Liquefaction Project and the proposed exports.

We hasten to add that DOE/FE is fully aware of concerns over the environmental effects of shale gas production. . . . But, for the reasons set forth in the Commission's orders, the existence of such concerns does not establish a causal connection capable of supporting meaningful analysis of the potential environmental impacts of whether or how the Liquefaction Project and the exports of natural gas from the Project will affect shale gas development."[184]

E. Canada's Environmental Assessment Report

As discussed above, the DOE/FE is not required to conduct an environmental review of impacts on Canada. This would be true even in the extreme case of a situation where DOE's action would require the preparation of an EIS.[185]

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184 *Sabine Pass, DOE/FE Order No. 2961-A, supra* note 160, at 27-28.

185 *Executive Order 12114*, § 3-5 ("If a major Federal action having effects on the environment of the United States or the global commons requires preparation of an environmental impact statement, and if the action also has effects on the environment of a foreign nation, an environmental impact statement need not be prepared with respect to the effects on the environment of the foreign nation.") *See, also, CHPE EIS, supra* note 155 and accompanying text.

However, if the DOE/FE concludes that the environmental impacts associated with the Goldboro LNG Project, nonetheless, should be considered in some manner in the course of the DOE/FE acting upon this Application, it can simply review and summarize the existing Canadian proceedings, in the same manner as the US Department of State's Bureau of Oceans and International Environmental and Scientific Affairs did in developing its Final Supplemental EIS for the Keystone XL Project.[186] The environmental assessment report ("EAR") issued by the Nova Scotia Environmental Assessment Review Panel on March 3, 2014, included an executive summary, which is attached here to as Appendix F.[187] The Canadian environmental assessment process to which the Goldboro LNG Project has been subject is similar to the NEPA review conducted in concert with federal agency decisions related to infrastructure facilities located in the US.

Consistent with the NEPA's policies, the CEQ regulations specifically address the point of coordinating and taking appropriate advantage of existing documents and studies, including through adoption and incorporation by reference. Because "[t]he NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment,"[188] the DOE/FE should utilize the Canadian environmental assessment. "NEPA's purpose is not to

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186 *See* U.S. DEP'T OF STATE, BUREAU OF OCEANS AND INT'L ENVTL. AND SCIENTIFIC AFFAIRS, FINAL SUPPLEMENTAL ENVIRONMENTAL IMPACT STATEMENT FOR THE KEYSTONE XL PROJECT, ES-6 (2014), *available at* http://keystonepipeline-xl.state.gov/finalseis/index.htm ("This Supplemental EIS for the proposed Keystone XL pipeline project builds on the analysis provided in the 2011 Final EIS and the 2013 Draft Supplemental EIS…").

187 NOVA SCOTIA ENVIRONMENTAL ASSESSMENT REVIEW PANEL, REPORT AND RECOMMENDATIONS TO THE NOVA SCOTIA MINISTER OF ENVIRONMENT FROM THE NOVA SCOTIA ENVIRONMENTAL ASSESSMENT REVIEW PANEL FOR THE REVIEW OF THE ENVIRONMENTAL ASSESSMENT REPORT GOLDBORO LNG PROJECT NATURAL GAS LIQUEFACTION PLANT AND MARINE TERMINAL BY PIERIDAE ENERGY (CANADA) LTD. 3–4 (Mar. 3, 2014), *available at* http://www.novascotia.ca/nse/ea/goldboro-lng/goldboro-panel-report-2014-03-07.pdf (hereinafter "*NS EAR Panel Report*").

188 40 C.F.R. § 1500.1(c).

generate paper—even excellent paper—but to foster excellent action."[189] As the CEQ regulations seek to reduce paperwork and delays,[190] the DOE/FE should use the Canadian EAR to meet the policies of the NEPA if DOE/FE concludes the environmental impacts associated with the Goldboro LNG Project must be considered to reach its decision on this Application.

IX.
REPORT CONTACT INFORMATION

The contact for any reports required in connection with the requested authorization is as follows:

Bonnie Sheppard
Administration
Pieridae Energy (US) Ltd.
1718 Argyle Street
Suite 730
Halifax, NS, Canada B3J 3N6
Telephone: (902) 492-4752
Facsimile: (902) 492-5211
Email: bonnie.sheppard@pieridaeenergy.com

X.
APPENDICES

The following appendices are attached hereto and incorporated by reference herein:

Appendix A:	Locator Map and Project Location Information
Appendix B:	M&N US and CA Pipelines Map
Appendix C:	Verification
Appendix D:	Opinion of Counsel
Appendix E:	Overview of Proposed Natural Gas Pipeline Facility Expansions in the Northeastern United States
Appendix F:	Executive Summary from the Environmental Assessment Issued by the Nova Scotia Environmental Assessment Review Panel on March 3, 2014

189 *Id.*

190 *Id.* at § 1500.4, .5.

XI.
CONCLUSION

For the foregoing reasons, Pieridae US respectfully requests that the DOE/FE grant this request for long-term, multi-contract authorization for Pieridae US to engage in exports of up to 292 Bcf/y (or approximately 0.8 Bcf/d) from the US to Canada for the Specified Purposes, provided that, with respect to LNG exported from Canada made with gas sourced in the US, the sale or export of LNG to such country is not prohibited by any law or policy of the US; with such authorization extending for a 20-year term commencing on the earlier of the date of first export or seven (7) years from the date of issuance of such authorization. In order to allow Pieridae and Pieridae affiliates time to secure capital for the construction of Train 2 and to allow Pieridae US time to negotiate long-term off take agreements with potential customers and participate in current open seasons for pipeline transportation capacity that could impact the economics of its business, Pieridae US also requests that the DOE/FE consider this Application on an expedited basis and issue the requested authorization no later than March 15, 2015.

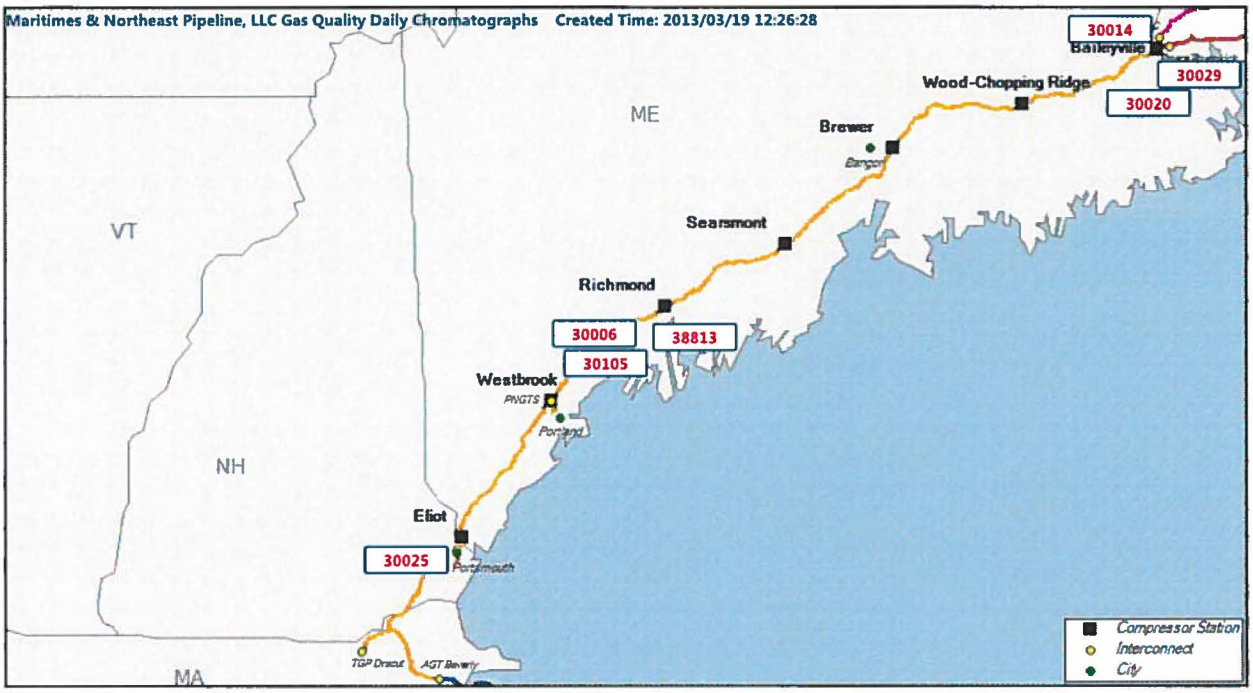
Respectfully submitted,

Erik J.A. Swenson
Islara U. Rodriguez
Attorneys for Pieridae Energy (US) Ltd.

Dated: October 24, 2014

APPENDIX A

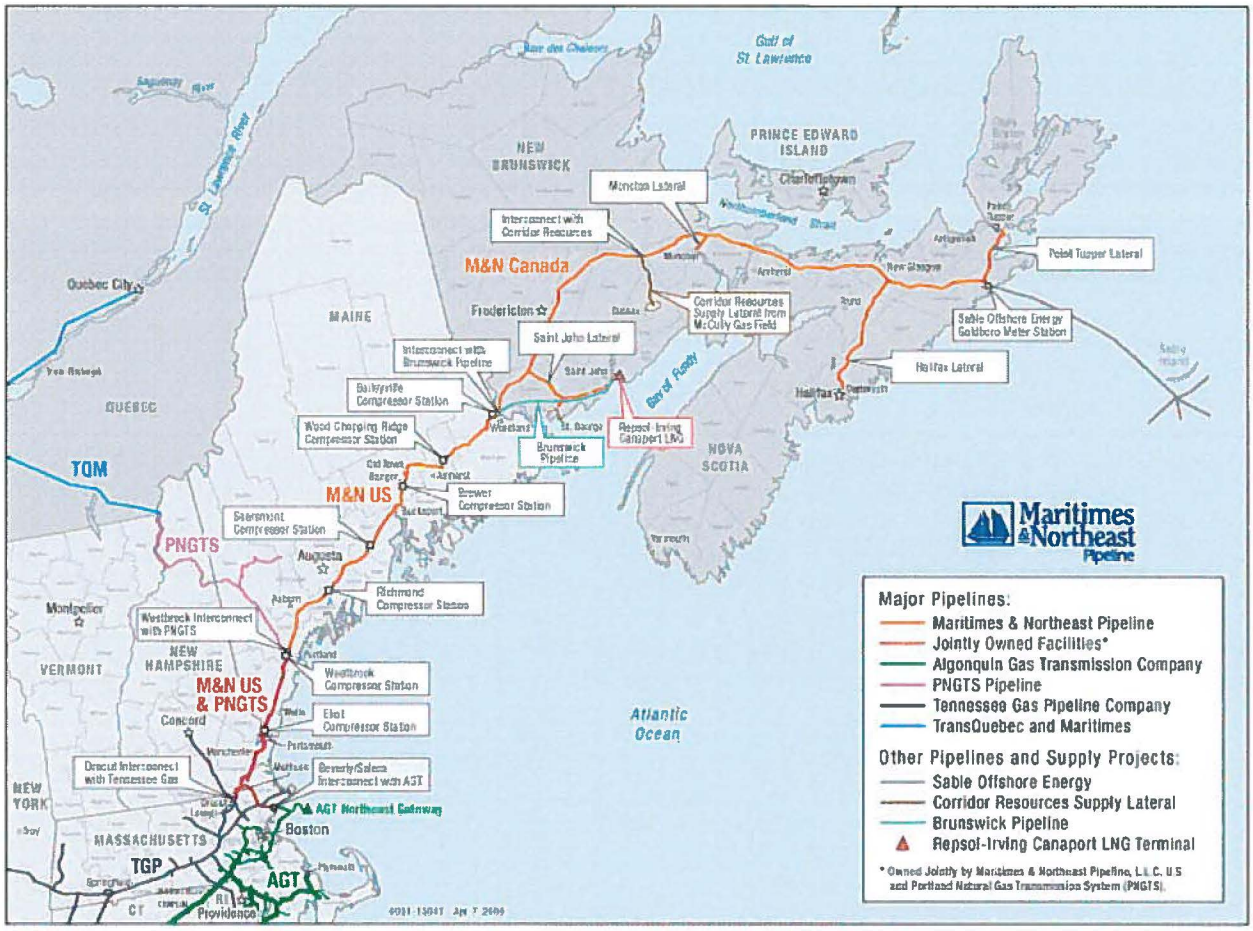
LOCATOR MAP AND PROJECT LOCATION INFORMATION



Export point will be located on US/Canada border near Baileyville, Maine on the M&N US Pipeline at or near meter station ID 30014.

APPENDIX B

M&N US AND CA PIPELINES MAP



APPENDIX C

VERIFICATION

UNITED STATES OF AMERICA DEPARTMENT OF ENERGY

OFFICE OF FOSSIL ENERGY

VERIFICATION

Alfred Sorensen, first being sworn, states that he is President of Pleridae Energy (USA) Ltd. and that he is duly authorized to execute this Verification; that he has read the foregoing filing and is familiar with the contents thereof; and that all of the statements of fact therein contained are true and correct to the best of his knowledge and belief.

Alfred Sorensen

on behalf of

Pleridae Energy (USA) Ltd.

PROVINCE OF ALBERTA

Subscribed and sworn to before me on this 24th day of October 2014, Alfred Sorensen proved to me on the basis of satisfactory evidence to be the person who appeared before me.

Katie M. Stevens
Barrister & Solicitor

APPENDIX D

OPINION OF COUNSEL

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Email Address: tciz@farris.com

Our File No.: 35521-0001-0000

October 24, 2014

Mr. John Anderson
Office of Fuels Programs, Fossil Energy
U.S. Department of Energy
Docket Room 3F-0565, FE-50
Forrestal Building
1000 Independence Avenue, S.W.
Washington, D.C. 20585

Re: Pieridae Energy (USA) Ltd.
FE Docket No. 14- -NG
Application for Long-Term, Multi-Contract Authorization to Export Natural Gas into Canada for Consumption and Through Canada to Free Trade and Non-Free Trade Agreement Nations after Conversion into LNG

Dear Sir:

This opinion of counsel is provided in accordance with the requirements of Section 590.202(c) of the U.S. Department of Energy's regulations, 10 C.F.R. § 590.202(c) (2012). I have examined the organization and governance documents of Pieridae Energy (USA) Ltd., a corporation formed under the *Canada Business Corporations Act*, ("Pieridae") and other documents and authorities as necessary for purposes of this opinion. On the basis of the foregoing, it is my opinion that the proposed long-term, multi-contract export of natural gas by Pieridae, as described in the above-referenced application, is within the corporate powers of Pieridae.

Yours truly,

FARRIS, VAUGHAN, WILLS & MURPHY LLP

Per: Thomas D. Ciz

TDC/
cc: Mr. Erik Swenson

APPENDIX E

OVERVIEW OF PROPOSED NATURAL GAS PIPELINE FACILITY EXPANSIONS IN THE NORTHEASTERN UNITED STATES

On June 13, 2013, Constitution Pipeline Company, L.L.C. filed an application with the FERC for a blanket certificate of public convenience and necessity authorizing the construction and operation of a new 122-mile, 30-inch transmission pipeline (the "Constitution Pipeline"), which will provide 650,000 dekatherms per day[191] ("Dth/d") of firm natural gas transportation capacity from two receipt points in Susquehanna County, Pennsylvania to a proposed compressor station located in Schoharie County, New York, where it will interconnect with the pipeline transmission systems of Iroquois Gas Transmission System, L.P. and Tennessee Gas Pipeline Company, L.L.C. [192] In its application, Constitution Pipeline Company, L.L.C. states that "North Central Pennsylvania is experiencing a dramatic increase in natural gas production, primarily from the development of shale deposits. . . . Constitution's natural gas pipeline system is well-positioned to transport [this] production to major, high-demand markets, including New York and New England."[193]

On December 3, 2013, Iroquois Gas Transmission System, L.P. announced[194] the commencement of a non-binding open season for its "South-to-North Project" which would

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191 This is roughly equivalent to 0.65 Bcf/d (at 1 Dth = 1,000 cubic feet of natural gas), as compared to the 0.8 Bcf/d of exports requested by Pieridae US.

192 *Constitution Pipeline Company, LLC, Application for Certificates of Public Convenience and Necessity,* FERC Docket No. CP13-499, at 2 (June 13, 2013).

193 *Id.* at 16.

194 *Iroquois Announces South-To-North Project Open Season,* IROQUOIS.COM (Dec. 3, 2013), http://iroquois.com/formnoticedetail.asp?Notice_id_out=2783.

allow shippers the opportunity to physically deliver up to 300,000 Dth/d[195] of Marcellus shale gas to points as far north as the U.S.-Canada border.

As discussed in the body of the Application, on February 5, 2014, Algonquin Gas Transmission, L.L.C. ("Algonquin) together with M&N US commenced the open season in relation to the Atlantic Bridge Project and announced the execution of an agreement with Unitil Corporation, which will be the anchor shipper in the project. This project is a proposed expansion of the Algonquin pipeline system and the M&N Pipeline connecting abundant North American natural gas supplies in the Marcellus and Utica regions with markets in the New England states and the Maritime provinces. This project is scalable, with expansion capacity ranging from 100,000 Dth/d to 600,000 Dth/d[196] or more, depending on market commitments, and has a target in-service date of November 2017.[197]

On February 21, 2014, Tennessee Gas Pipeline Company, L.L.C. ("Tennessee Gas") filed an application with the FERC[198] seeking authorization for the construction, installation, modification, operation, maintenance, and abandonment of certain pipeline facilities located in northwestern Pennsylvania and southwestern New York (the "Niagara Expansion Project"). In its application, Tennessee Gas Pipeline Company, L.L.C. states that "[it] proposes to provide

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195 This is roughly equivalent to 0.3 Bcf/d.

196 This is roughly equivalent to 0.1 to 0.6 Bcf/d.

197 *See supra* notes 34-37 and accompanying text.

198 *Tennessee Gas Pipeline Company, L.L.C., Abbreviated Application of Tennessee Gas Pipeline Company, L.L.C. for a Certificate of Public Convenience and Necessity to Construct, Install, Modify, Operate, Maintain and Abandon Certain Pipeline Facilities and Lease Capacity,* FERC Docket No. CP14-88 (Feb. 21, 2014).

incremental long-term firm transportation service to Seneca [Resources Corporation] who has fully subscribed the capacity created by the Project, transporting up to 158,000 [Dth/d][199] of natural gas to northeast U.S. and eastern Canadian markets."[200]

On February 28, 2014, Algonquin filed an application with the FERC[201] seeking authorization for the construction, installation, modification, operation, maintenance, and abandonment of certain pipeline facilities located in New York, Connecticut, Massachusetts and Rhode Island (the "Algonquin Incremental Market Project"). In its application, Algonquin states that "[t]he [project] is designed to enable [it] to provide 342,000 [Dth/d] of firm transportation service from [its] existing receipt point in Ramapo, New York, to various ... delivery point in Connecticut, Rhode Island and Massachusetts. ... In addition, the [project] is expected to alleviate, in part, existing constraints, resulting in increased commodity price competition and reduced gas price volatility in the Northeast markets."[202]

On September 15, 2014, Tennessee Gas filed a request with the FERC[203] for approval to commence the pre-filing process for its proposed "Northeast Energy Direct Project" consisting of (1) approximately 167 miles of new and co-located pipeline and two pipeline looping segments on its existing 300 Line in Pennsylvania, and compression facilities designed to receive gas from its 300 Line for deliveries to its system near Wright, New York, Iroquois Gas Transmission System, LP, and/or the proposed Constitution Pipeline, and (2) approximately 177 miles of new

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199 This is roughly equivalent to 0.16 Bcf/d.

200 *Id.* at 3.

201 *Algonquin Gas Transmission, LLC, Abbreviated Application of Algonquin Gas Transmission, LLC for a Certificate of Public Convenience and Necessity and for Related Authorizations,* FERC Docket No. CP14-96 (Feb. 28, 2014).

202 *Id.* at 2. This is roughly equivalent to 0.34 Bcf/d.

203 Letter from J. Curtis Moffatt, Deputy General Counsel and Vice President, Tennessee Gas Pipeline Company, L.L.C., to Kimberly D. Bose, Secretary, FERC, (Sept. 15, 2014) (requesting approval from the FERC to commence the pre-filing process for its Northeast Energy Direct Project (FERC Docket No. PF14-22)).

and co-located pipeline facilities extending from Wright, New York, to an interconnect with the joint facilities of the M&N Pipeline and Portland Natural Gas Transmission System ("Joint Facilities") at Dracut, Massachusetts and its existing 200 Line near Dracut, Massachusetts. In its request, Tennessee Gas states that "[t]he interconnection with the Joint Facilities, together with the anticipated reversal of the primary flow direction of the Joint Facilities, will enable the ... [project] to access more New England customers in New Hampshire and Maine and in the Atlantic Canada region. ... Potential Atlantic Canada customers include [local distribution companies], power generators, industrials, and liquefied natural gas ... export projects."[204] It is noteworthy that the request filed by Tennessee Gas with the FERC expressly states that "[t]here are no LNG terminal facilities related to or proposed as part of the Project."[205]

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204 *Id.* at 2.

205 *Id.* at 5.

APPENDIX F

EXECUTIVE SUMMARY FROM THE ENVIRONMENTAL ASSESSMENT ISSUED BY THE NOVA SCOTIA ENVIRONMENTAL ASSESSMENT REVIEW PANEL ON MARCH 3, 2014

The *NS EAR Panel Report* includes the following in its Executive Summary:[206]

"Pieridae Energy Canada Limited's proposal to construct and operate the Goldboro Liquefied Natural Gas (LNG) Project (the Project) was registered with Nova Scotia Environment on February 18, 2013. In October, 2013, the Minister of Environment referred the Project to the Nova Scotia Environmental Assessment Review Panel (the panel) for review. The Project is to be located near the community of Goldboro, in Guysborough County, Nova Scotia. The purpose [of] the Project is to liquefy natural gas received from continental and offshore supplies, and transport it to overseas markets via LNG carrier ships. The Project would consist of the following components:

- A LNG facility;
- A 180 megawatt gas fired power plant;
- A water supply intake and pipeline for a potable water supply from a nearby lake; and
- A marine wharf and jetty.

The Project triggers a Class II environmental assessment pursuant to the Nova Scotia Environmental Assessment Regulations, and is therefore subject to a review by the panel. In October, 2013, notice was issued that called for public comments on the Project. The panel considered input received during this comment period, and concluded that public hearings were not necessary. The panel opted instead for a second public comment period, which began in January, 2014 after a public notice was issued. The panel considered the input received from the public and interveners during these two public comment periods, as well as Pieridae's responses to these comments, in preparing this report.

In this report, the panel summarizes the Project background (in section 3) and Project description (in section 4). The panel also summarizes (in section 5) the information presented by Pieridae in the environmental assessment report (EAR) on the baseline environmental conditions, predicted interaction between the Project and the environment, and the mitigation strategies proposed by Pieridae to manage the Project's environmental impacts. The panel also summarizes input received from the public and interveners, and makes conclusions based on the risk that the Project poses to the environment, as well as providing recommendations on how this risk can be further reduced. The panel then summarizes Pieridae's

[206] *NS EAR Panel Report, supra* note 187, at 3-4.

approach to consulting the public on the Project (sections 6). Finally, the panel summarizes the commitments that Pieridae has made to conduct additional studies, implement mitigation measures and preparing management and monitoring plans (in section 7).

The Project is proposed to be located within the Goldboro Industrial Park. This is a rural area along Guysborough County's coastline that has little existing infrastructure, except for the # 316 Highway, and the Sable Offshore Energy Inc. gas plant and its pipeline. The Project site itself is a forested area that encompasses a variety of environmental features, including forests, a watercourse, wetlands, coastline, and saltwater ponds. The marine aspect of the Project, including a wharf and jetty, would extend into Isaac's Harbour, which includes habitat for lobster, fish and sea urchins.

The greater Project area in Guysborough County has suffered a steady decrease in population over the past several decades, as well as a shift in demographics towards an aging population. The area is lacking in significant economic inputs, which has resulted in the area underperforming the provincial average in a number of economic categories.

Pieridae assessed the Project's impacts on a number of individual valued ecosystem components (VECs), including:

- Geology and soil quality;
- Groundwater quality and quantity;
- Surface water quality, quantity and transport;
- Air quality and climate change;
- Acoustic environment (noise);
- Ambient lighting;
- Terrestrial habitat, flora and fauna (including species at risk);
- Wetlands;
- Aquatic habitat and species (including species at risk);
- Agriculture;
- Forestry;
- Fisheries, aquaculture and harvesting;
- Socio-economic conditions, including economic conditions, property value, employment and tourism;
- Human health and safety;
- Existing and planned land uses;
- Transportation;
- Recreational opportunities and aesthetics;
- Aboriginal use of land and resources; and
- Archaeological resources.

The impacts for the majority of these VECs would be minimal to moderate, and should be largely curtailed by the mitigation and management plans proposed by

Pieridae, or through those recommended by the panel and interveners. The Project would, however, result in a number of residual effects which are summarized below:

- The Project would increase Nova Scotia's greenhouse gas emissions by approximately 18% (above 2010 emission levels);
- The Project's marine component would compromise a number of fisheries in its general area; and,
- The Project would generate significant economic input and employment opportunities for Guysborough Country and Nova Scotia as a whole.

The panel believes that the risk that the Project poses to the environment is largely manageable, and that the Project's ability to contribute to economic prosperity for Guysborough Country and Nova Scotia as a whole is extremely significant. After considering the information provided in the EAR submitted by Pieridae, as well as comments and responses received from the public, First Nations, government departments and Pieridae, the panel recommends that the Project be approved with conditions."