

Environmental Assessment Approval

Approval Date: MAR 21 2014

Goldboro LNG - Natural Gas Liquefaction Plant and Marine Terminal Pieridae Energy (Canada) Ltd.

Goldboro, Guysborough County, Nova Scotia

The Goldboro LNG Project (the "Undertaking"), proposed by Pieridae Energy (Canada) Ltd. (the "Approval Holder") is approved pursuant to Section 40 of the *Environment Act* and Section 26(1) of the *Environmental Assessment Regulations*. This Approval is subject to the following conditions and obtaining all other necessary approvals, permits or authorizations required by municipal, provincial and federal acts, regulations and by-laws before commencing work on the Undertaking. It is the responsibility of the Approval Holder to ensure that all such approvals, permits or authorizations are obtained before commencing work on the Undertaking.

This Environmental Assessment Approval is based upon the review of the conceptual design, environmental baseline information, impact predictions, and mitigation presented in the Environmental Assessment Report.

Terms and Conditions for Environmental Assessment Approval

1.0 General Approval

- 1.1 The Environmental Assessment Approval for the Undertaking is limited to the Undertaking as described in the Environmental Assessment Report (EA Report).
- 1.2 Expansion, modification or relocation of any aspect of the Undertaking from that proposed in the EA Report must be submitted to the Environmental Assessment Branch for review and may require an environmental assessment (EA).
- 1.3 The Approval Holder must, within two years of the date of issuance of this Approval, commence work on the Undertaking unless granted a written extension by the Minister.
- 1.4 The Approval Holder must not transfer, sell, lease, assign or otherwise dispose of this Approval without the written consent of the Minister. The sale of a controlling interest of a business or a transfer of an approval from a parent company to a subsidiary or an affiliate is deemed to be a transfer requiring consent.

- 1.5 The Approval Holder must implement all mitigation and commitments in the EA Report and information requests responses, unless approved otherwise by Nova Scotia Environment (NSE).
- 1.6 The Approval Holder must report on the status of conditions of Environmental Assessment Approval at a schedule to be determined by NSE.
- 1.7 Site preparations that include deforestation, clearing and grubbing must be undertaken between September 1st and April 15th in order to minimize impacts on breeding birds.
- 1.8 The Approval Holder is responsible for the cost of any specialized professional or consultation services deemed necessary by NSE to assist in third party technical reviews.

2.0 Phase I - Studies, Inventory & Analysis

Prior to application for Part V approval under the *Environment Act* the Approval Holder must provide for review and approval:

- 2.1 An Air Emissions Management Plan for the project. The plan will include an accounting of all anticipated air emissions, monitoring and reporting protocols, emissions management and reduction targets over the life of the project, and plans for the use of best management practices to control emissions.
- 2.2 A Greenhouse Gas (GHG) Management Plan. The plan will include a full accounting of all anticipated GHG emissions based on detailed facility design, explanation of how major technology choices in the facility design are best-available technology for GHG mitigation, and demonstration of how the facility achieves an overall carbon intensity in line with best-in-class. The plan will also include details on GHG emissions monitoring and reporting, and ongoing GHG management and abatement practices. The GHG Management Plan must include an independent technical review of GHG analysis and estimates. Following the approval of the initial plan, the Approval Holder will then be required to submit an updated GHG Management Plan on or before March 31 of each year to NSE for approval.
- 2.3 Results of pre-construction surface water discharges into Betty's Cove Brook and Dung Cove Pond for all seasons, to establish baseline data for controlling surface water discharges emanating from within the Project area thereby avoiding/minimizing the remobilization of contaminated sediments within Betty's Cove Brook and Dung Cove Pond.

- 2.4 Results of a receiving water assimilative capacity study for Betty's Cove Brook and any other freshwaters receiving runoff or effluent from the project site.
- 2.5 Modelling results to predict the assimilative capacity of all receiving environments for all relevant chemical parameters which are expected to enter the environment as a result of project activities. Such modelling shall include prediction of the potential for bioaccumulation in organisms of any persistent compounds either emitted by the project or re-mobilized by project activities; and provide an evaluation of the potential effects, including both acute and chronic (long term) impacts. Effects evaluation shall focus in particular on any potential impacts on human health and/or on organisms.
- 2.6 Baseline data collection for all relevant chemical parameters which are expected to enter the environment or be remobilized as a result of Project activities in all receiving environments, including those which may impact on human health and/or on organisms.
- 2.7 A pre-blast survey report for water wells within 800 m of the point of blast. The survey must be conducted in accordance with the NSE "Procedure for Conducting a Pre-Blast Survey".
- 2.8 A Wetland Management Plan that details the potential impacts to wetlands, methods and plans for avoidance, wetland assessment, mitigation and/or compensation, developed in consultation with NSE. The Approval Holder must not construct or operate within 30 metres of any wetland or watercourse unless otherwise approved in writing by NSE.
- 2.9 Confirmation of the presence and location of species at risk and those of conservation concern as being in the project area. Appropriate avoidance and mitigation measures must be developed in consultation with Nova Scotia Department of Natural Resources (NSDNR) and Canadian Wildlife Services (CWS).
- 2.10 All digital wildlife survey data for significant habitats, species at risk and those of conservation concern in the form of shape files and point locations. The Approval Holder must report to NSE that these files have been provided to NSDNR.
- 2.11 Completion of the TERMPOL Review Process in consultation with Transport Canada Marine Safety to adequately assess the risks associated with the Goldboro LNG marine terminal.

The Approval Holder must implement and adhere to all recommendations of the TERPOL Review Process, unless otherwise approved by NSE.

The Approval Holder must ensure the marine terminal is fully compliant with the International Ship and Port Facility Security Code in addition to the provisions of the *Marine Transportation Security Act*.

- 2.12 A Traffic Impact Study in consultation with Nova Scotia Transportation and Infrastructure Renewal (NSTIR). The results of the study shall be considered in the development of a transportation management plan for the project.
- 2.13 A survey to identify and delineate tailings deposits and mine openings within the Project area.
- 2.14 A plan to mitigate the human health and environmental impacts of abandoned mine openings, contaminated mine tailings and/or soils and sediments on the Project site, via remediation or risk management. This plan shall be consistent with the Nova Scotia Contaminated Sites Regulations. This plan must be approved prior to commencement of construction.

3.0 Phase II - Monitoring Plans

The Approval Holder, as part of the application for Part V Approval under the Environment Act, must provide for review and approval a project Environmental Effects Monitoring Plan that will include, but not be limited to:

- 3.1 A noise monitoring program, including the anticipated noise levels associated with the project, to be reviewed and approved by NSE. Based on the results of the monitoring program, the Approval Holder must make necessary modifications to mitigation plans and/or operations to prevent any unacceptable environmental effects, to the satisfaction of NSE.
- 3.2 A detailed erosion and sedimentation control (ESC) plan, including a monitoring program for site runoff, to be reviewed and approved by NSE. Based on the results of the monitoring program, the Approval Holder must make necessary modifications to ESC plans and/or operations to prevent any unacceptable environmental effects, to the satisfaction of NSE.
- 3.3 A monitoring program to determine the potential for and extent of sulphide bearing material and a plan to manage any exposed acid generating material and associated drainage, in consultation with NSE.
- 3.4 A groundwater monitoring program to evaluate potential impacts to both groundwater levels and groundwater quality. Based on the results of the monitoring program, the Approval Holder must make necessary modifications to mitigation plans and/or operations to prevent any unacceptable environmental effects, to the satisfaction of NSE.

- 3.5 A plan for monitoring for environmental effects for all relevant chemical and biological parameters which are expected to enter the environment or be remobilized as a result of Project activities in all receiving environments, including those which may impact human health and/or wildlife.
- 3.6 The Approval Holder must monitor and undertake research to understand the impacts of the Project on birds, bats and endangered Mainland Moose and their habitat. Monitoring protocols will be established in consultation with NSDNR, CWS and NSE. Based on the results of the monitoring program, the Approval Holder must make necessary modifications to mitigation plans and/or operations to prevent any unacceptable environmental effects, to the satisfaction of NSE.

The Approval Holder must submit an annual progress reports with results and all data to a standard defined by NSDNR and CWS by January 15th of each year to NSE, NSDNR and CWS.

- 3.7 The Approval Holder must monitor and undertake research on the impacts of gas flaring on birds and bats through radar and onsite monitoring. Methodologies and the approach to research, and monitoring for assaying the impacts on birds and bats must be developed in consultation with NSE, NSDNR and CWS. Based on the results of the monitoring program, the Approval Holder must make necessary modifications to mitigation plans and/or operations to prevent any unacceptable environmental effects, to the satisfaction of NSE.

4.0 Phase III - Mitigation / Contingency Plans

- 4.1 The Approval Holder must submit for review and approval a Contingency Plan developed in accordance with NSE's Contingency Planning Guidelines that addresses:
- Discharges, emissions, escapes, leaks or spills of dangerous goods and/or waste dangerous goods;
 - Collisions, fires, accidents and/or other potential emergencies; and
 - Sensitive shoreline mapping and quantitative risk assessment.

The plan shall be developed in consultation with local fire and emergency service providers, and demonstrate compliance with Federal and Provincial regulatory requirements.

- 4.2 The Approval Holder must develop an emergency evacuation plan to be distributed to NSE, the Municipality of the District of Guysborough, Nova Scotia Emergency Management Office and local police and fire departments for review prior to the start of operation of the facility. A draft

of this plan must be submitted at least six months in advance of operation of the facility.

- 4.3 A mitigation plan to address degradation, reduction, or loss of water quality or quantity of residential water supplies and a contingency plan to address any well interference effects and/or well complaints. If the operation causes water quality or quantity problems to residential water supplies, the Approval Holder must address the problem to the satisfaction of NSE.

5.0 Community Involvement & Archaeological/Heritage Resources

- 5.1 The Approval Holder must form a Fisheries Advisory Committee to provide advice on monitoring programs and to review and advise on monitoring results. As a minimum, the Approval Holder shall seek committee membership from government and the local fishing industry.
- 5.2 The Approval Holder must operate a Community Liaison Committee (CLC) for the duration of the undertaking unless otherwise approved in writing by NSE.

The Approval Holder must solicit CLC membership from the local municipal government, the Mi'kmaq of Nova Scotia, and the general public.

- 5.3 The Approval Holder must develop a complaint resolution plan to address all concerns associated with the Undertaking. The Approval Holder must appoint a contact person designated to deal with complaints, and must provide the contact information to NSE.
- 5.4 Prior to construction, the Approval Holder must develop a Mi'kmaq Communication Plan for communicating project details to the Mi'kmaq. The plan must be developed in cooperation with Kwilmu'kw Maw-klusuaqn Negotiation Office (KMKNO).
- 5.5 Prior to construction, the Approval Holder must submit for review and approval to NSE, an archaeology and heritage resources monitoring and contingency plan. The plan shall be developed in consultation with the KMKNO, African Nova Scotia Affairs, and Nova Scotia Communities, Culture and Heritage (CCH).
- 5.6 At the request of NSE, the Approval Holder must develop and implement an archaeological reconnaissance program to ensure no archaeological resources will be impacted during site development. The archaeological reconnaissance program will be developed in consultation with and to a standard as defined by CCH.

- 5.7 The Approval Holder must cease work and contact the Special Places Coordinator, Nova Scotia Department of Communities, Culture and Heritage immediately upon discovery of an archaeological site or artefact unearthed during any phase of the proposed Undertaking. If the find is of certain or suspected Mi'kmaq origin, the Approval Holder must also contact the Executive Director of the KMKNO.

6.0 Decommissioning and Site Reclamation

- 6.1 The Approval Holder must submit a decommissioning and site reclamation plan to NSE for review and approval at least one year prior to the permanent shutdown of the Undertaking. The Approval Holder must reclaim the site to the satisfaction of NSE.



Randy Delorey, MLA
Minister of Environment

