

Executive Summary

Overview

LNG Canada Development Inc. (the Proponent) is proposing the construction, operation, and decommissioning of the LNG Canada Export Terminal Project (proposed Project), located in northwest British Columbia (BC) in the District of Kitimat. The proposed Project would include a facility with liquefied natural gas (LNG) storage, power generation, a marine terminal and any incidental physical activities, as well as shipping of LNG in LNG carriers during operations. The proposed Project would be operational for a minimum of 25 years, and would produce an estimated 26 million tonnes of LNG per year at full build out. The Proponent is a joint venture comprised of Shell Canada Energy (Shell), Diamond LNG Canada Ltd. (an affiliate of Mitsubishi Corporation), KOGAS Canada LNG Ltd. (an affiliate of Korea Gas Corporation), and Brion Kitimat LNG Partnership (an affiliate of PetroChina Investment [Hong Kong] Ltd).

The proposed Project is subject to an environmental assessment under BC's *Environmental Assessment Act* by the BC Environmental Assessment Office (EAO), and the *Canadian Environmental Assessment Act, 2012* (CEAA 2012) by the Canadian Environmental Assessment Agency (the Agency). On May 21, 2013 the federal Minister of the Environment approved the substitution of the federal environmental assessment process under CEAA 2012 with the process conducted under BC's *Environmental Assessment Act*. The substitution decision was granted in consideration of the approach set out in the *Memorandum of Understanding between the Canadian Environmental Assessment Agency and BC's Environmental Assessment Office on the Substitution of Environmental Assessments, 2013*.

EAO prepared an Assessment Report in consultation with an Advisory Working Group, made up of federal, provincial and local government representatives with the mandates and skill sets relevant to the review of the proposed Project, as well as representatives of potentially affected Aboriginal groups listed on Schedules B and C of the Section 11 Order. The Agency also provided advice to EAO in relation to fulfilling the requirements of CEAA 2012.

EAO undertook public consultation activities during the course of the environmental assessment, including holding two public comment periods. All public comments, and the Proponent's responses to these comments, were considered in completing the environmental assessment.

In conducting this environmental assessment, EAO considered the potential environmental, economic, social, heritage and health effects, including cumulative effects of other projects or activities, of the proposed Project for the provincial environmental assessment. For the purposes of meeting the CEAA 2012 substitution requirements, EAO considered effects that the proposed Project may have on environmental effects described in subsections 5(1) and 5(2) of CEAA 2012, as well as the *Species at Risk Act*, subsection 79(2).

Assessment of Effects

EAO uses valued components as an organizing framework for the assessment of the potential effects of proposed projects. Valued components are components of the natural and human environment that are considered by the Proponent, public, Aboriginal Groups, scientists and other technical specialists, and

government agencies involved in the assessment process to have scientific, ecological, economic, social, cultural, archaeological, historical or other importance.

The environmental assessment focused on the valued components related to air quality, greenhouse gas emissions, acoustics, water quality, fish and fish habitat, marine resources, vegetation and wetlands, wildlife and birds, economics, infrastructure and services, community health and well-being, marine transportation and use, visual quality, archaeological and heritage resources, and human health.

EAO assessed the potential for the proposed Project to have significant adverse effects on the valued components and on the requirements of CEAA 2012. The assessment also considered how accidents and malfunctions and changes to the environment could affect the valued components. These assessments were based on the Application provided by the Proponent and informed by comments received from the Advisory Working Group, Aboriginal Group consultation, and the public.

The Proponent proposed mitigation measures to avoid or minimize the adverse effects of the proposed Project. In consideration of the Proponent's proposed mitigation measures and the comments received during the review of the Application, EAO is proposing 22 conditions, each of which includes measures to mitigate the effects of the proposed Project. If provincial Ministers issue an Environmental Assessment Certificate, they may establish these conditions as legally binding requirements. Additional mitigation conditions may be proposed by the Agency for consideration by the federal Minister of the Environment as legally binding conditions in a CEAA 2012 decision statement should the Project proceed.

The following are some of the key mitigation measures and follow-up programs that are included in the conditions EAO proposes to provincial ministers, some of which may also be incorporated in a decision statement under CEAA 2012:

- Air quality management and monitoring, which includes design measures to reduce nitrogen oxide (NOx) emissions and participation in regional airshed monitoring activities;
- Monitoring of air emissions impacts to air, soil, water, and/or vegetation;
- Development of a greenhouse gas emissions management plan, which includes use of aero-derivative gas turbines and measures to meet provincial regulatory requirements;
- Marine mammal monitoring and mitigation during construction and operations;
- Management and monitoring of marine water quality and the availability of contaminated sediments during and after construction dredging, to ensure protection of the health of marine life and humans;
- Seek to maintain at least a 30 metre vegetation buffer between the Kitimat River and the project area to minimize impacts to vegetation, old forest and visual quality;
- Offsetting impacts to ecologically important wetlands;
- Development of a wildlife management plan to minimize impacts to wildlife, including timing of flaring events to reduce risks to birds, reducing human-wildlife conflicts, and maintaining wildlife movement through the estuary;
- Development of a socio-economic effects management plan to coordinate with government agencies to minimize impacts to community infrastructure and services;
- Development of a health and medical services plan to manage workforce health;
- Development of a traffic management plan to minimize construction disruption on transportation infrastructure;
- Communication of marine activities during construction and operations with impacted stakeholders and Aboriginal groups;

- Development of a marine activities plan that monitors and mitigates impacts to marine users;
- Monitoring to verify the assessment of the wake effects from LNG carriers, particularly in relation to potential safety hazards to marine and shoreline users, and including adaptive management measures;
- Development of an emergency response plan to address both land and marine based emergencies, including accidents and malfunctions; and
- Ongoing consultation with the public and Aboriginal groups throughout all phases of the proposed Project.

Other mitigation measures that would be requirements of subsequent regulatory processes, if an Environmental Assessment Certificate is issued, include:

- A waste discharge permit under the *Environmental Management Act*, which would establish the allowable criteria air contaminant emission levels and detailed mitigation requirements;
- Fish habitat offsetting, as required under authorization contemplated under paragraph 35(2)(b) of the federal the *Fisheries Act*;
- Provincial laws related to greenhouse gas emissions, including payment of the carbon tax and requirements associated with the intensity benchmark for LNG facilities of 0.16 tonnes of CO₂e per tonne of LNG produced;
- A disposal at sea permit, contemplated under the *Canadian Environmental Protection Act, 1999*, which would require that dredge material is suitable for disposal at sea and establish specific disposal locations and methods; and
- Maintenance and preservation of marine access under the *Navigation Protection Act*.

In consideration of the mitigation measures that would be required of the proposed Project, either in the Environmental Assessment Certificate, if approved, or in subsequent regulatory processes, EAO concludes that the proposed Project would result in key residual adverse effects that include:

- Increase in emission of air contaminants, particularly from the facility operations, which would contribute to the potential acidification of some lakes and streams;
- Greenhouse gas emissions, particularly from the facility operations;
- Increase in ambient sound levels during construction and operations;
- The removal and alteration of freshwater, estuarine and marine fish habitat, including marine plants, as well as the potential for physical injury or mortality to fish from habitat isolation during construction;
- Change in human health risk from ingestion of contaminated marine country foods resulting from construction dredging;
- Potential harm to fish or marine mammals due to underwater noise or pressure waves during construction;
- Potential avoidance behaviour of marine mammals due to underwater noise from shipping during operations;
- A loss of habitat for two BC Conservation Data Centre listed plant species, 12 listed wetland and floodplain ecological communities, 51 hectares of old forest, and 25 species of traditional use plants;
- A loss or change in terrestrial wildlife and bird habitat, sensory disturbance or behavioral alteration to wildlife and birds, and increased risk of injury or mortality to wildlife and birds, including migratory birds as defined under the *Migratory Birds Convention Act*;
- Negative social effects largely resulting from the temporary and permanent change in population, including on community health and wellbeing, and community infrastructure and services;

- Increase in traffic and pressure on transportation infrastructure, including air and road corridors, during construction;
- Interference with marine navigation and marine and shoreline activities due to shipping; and
- A change in visual quality due to the establishment of the facility and ongoing shipping activity.

For the purposes of the assessment required under CEAA 2012, EAO concludes that the proposed Project would result in key residual adverse effects that, in addition to those above, include:

- Increase in emission air contaminants, particularly from the facility operations, on federal lands;
- Increase in ambient sound levels during construction and operations on federal lands;
- Impacts to Aboriginal peoples due to decreased air quality and increased availability of marine contaminants;
- Increase in ambient sound levels during construction and operations for Aboriginal peoples;
- Change in visual quality for Aboriginal peoples at terrestrial and marine viewpoints; and
- Impacts to the harvesting and consumption of traditional marine and non-marine foods by Aboriginal peoples.

Aboriginal Consultation

EAO and the Agency worked together to identify which Aboriginal groups could potentially be impacted by the Project based on the following factors:

- Strength of the case for the claimed Aboriginal rights and title (Aboriginal Interests) that may be adversely affected; and
- Seriousness of the proposed Project's potential to adversely impact these Aboriginal Interests.

EAO consulted these groups throughout the EA and assessed the potential adverse effects of the proposed Project on Aboriginal Interests.

Potential direct effects from the proposed facility would occur in the asserted traditional territory of Haisla Nation. Potential effects along the shipping route would occur in the asserted traditional territories of Haisla Nation, Gitga'at First Nation, Gitxaala Nation, Metlakatla First Nation, Lax Kw'alaams Band, Kitsumkalum First Nation, and Kitselas First Nation. EAO consulted with these Aboriginal groups throughout the environmental assessment process, including the Métis Nation British Columbia on behalf of the federal government.

The proposed Project has the potential to impact Aboriginal rights related to hunting, fishing, trapping, gathering, trails and travelways, and archaeological and heritage resources and sites. The proposed Project also has the potential to impact Aboriginal title at the facility location. The key mitigation measures and proposed conditions would accommodate the assessed potential effects to Aboriginal Interests. In the context of potential impacts on Aboriginal Interests EAO also considered: the importance of the proposed Project to the local, regional, and provincial economy; the resources or values that may no longer be available for future generations; and the benefits of the proposed Project to Aboriginal groups.

Conclusion

EAO concludes that, considering the analysis and implementation of the proposed conditions, the proposed Project would not result in significant adverse effects, with the exception of a significant residual adverse effect related to greenhouse gas emissions.