



EAO's Assessment of an Application for Certificate Amendment Amendment #4 – Tug Berth and Diesel/LNG Fueling Area

LNG CANADA EXPORT TERMINAL PROJECT

REQUESTED BY:
LNG CANADA DEVELOPMENT INC.

November 29, 2022

Pursuant to Section 32 of the Environmental Assessment Act, S.B.C 2018, C.51



EAO

Environmental
Assessment Office

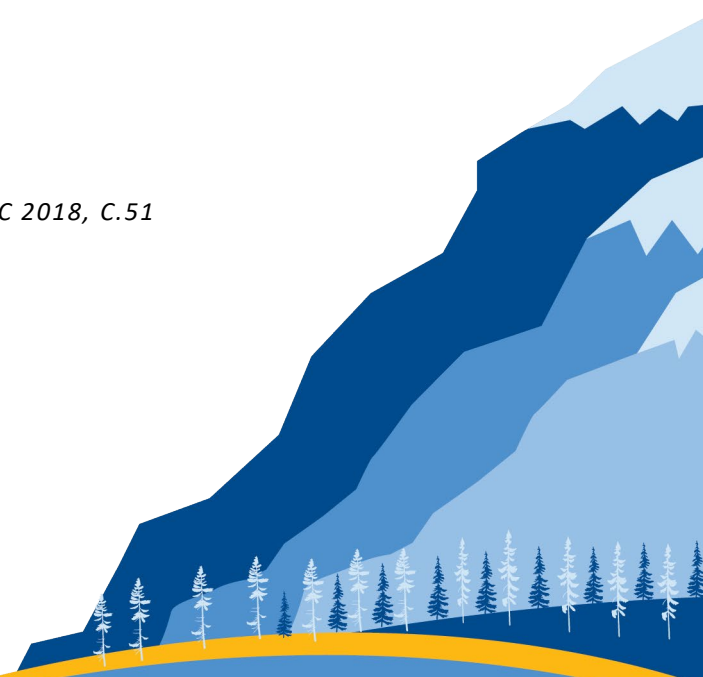


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ACRONYMS AND ABBREVIATIONS

The Act	<i>Environmental Assessment Act</i> , S.B.C. 2018, c. 51
Amendment Assessment	An assessment under the <i>Environmental Assessment Act</i> (2018) of a reviewable project's potential effects that is conducted in relation to an Application for an amendment of an Environmental Assessment Certificate
Application	The application to amend the Environmental Assessment Certificate
B.C.	British Columbia
Certificate	Environmental Assessment Certificate # E15-01
DFO	Fisheries and Oceans Canada
EA	Environmental Assessment
EAO	Environmental Assessment Office
ECCC	Environment and Climate Change Canada
ENV	Ministry of Environment and Climate Change Strategy
GHG	Greenhouse Gases
ha	Hectare
LNG	Liquefied natural gas
LNG Canada	LNG Canada Development Inc. (the Certificate Holder)
LNG Terminal	LNG Canada Export Terminal Project
m ²	Square metres
MAP	Marine Activities Plan
MMP	Marine Monitoring Plan
OGC	B.C. Oil & Gas Commission
Schedule A	Certified Project Description in the Certificate
Schedule B	Table of Conditions in the Certificate
TAC	Technical Advisory Committee convened by the EAO and comprised of representatives from Haisla Nation, local governments, provincial and federal government agencies
TC	Transport Canada
Report	The EAO's Assessment of the Amendment Assessment
VC	Valued Component

1.0 OVERVIEW OF PROPOSED AMENDMENT

Background

On June 17, 2015, the Environmental Assessment Office (EAO) issued LNG Canada Development Inc. (LNG Canada) Environmental Assessment Certificate #E15-01 (Certificate), under the *Environmental Assessment Act* (2002), for the LNG Canada Export Terminal Project (LNG Terminal). LNG Canada is proposing the construction, operation, and decommissioning of the LNG Terminal located in northwest British Columbia (B.C.) in the District of Kitimat. The LNG Terminal includes a liquefied natural gas (LNG) processing facility with LNG storage, power generation, a marine terminal, supporting and temporary construction infrastructure, as well as shipping of LNG in LNG carriers during operations. On June 17, 2015, the federal Minister of Environment issued a decision statement to LNG Canada with legally binding conditions following the substituted environmental assessment (EA) conducted by the EAO.

The Certificate (with the amendments made to the Certificate to date) includes the Certified Project Description (Schedule A) that outlines the project components and the Table of Conditions (Schedule B) that contains the 24 legally binding conditions enforceable throughout the life of the project.

To date, the Certificate has been amended three times, as follows:

- Amendment 1, August 5, 2016 – Revisions to the Schedule A to capture relocation of temporary construction facilities, relocation of the Kitimat River water supply intake and pump station, realignment of water intake pipelines, upgrade of North Haul Road and connection to Sandhill Materials Quarry, confirmation of the stockpile location, and reconfiguration of tree clearing at the facility perimeter;
- Amendment 2, October 18, 2019 – Revision of the unit of maximum volume of total combined production of LNG from tonnes of LNG per year to cubic metres (as natural gas equivalent) per year; and
- Amendment 3, February 24, 2021 – Revisions to the Schedule A to authorize construction of temporary access trails and upgrade the existing roads as supplementary haulage routes.

Amendment Request

On March 31, 2022, the EAO received an application from LNG Canada to amend the Certificate for the LNG Terminal (Application). The Application requested an amendment to Schedule A of the Certificate to allow for:

1. Construction of a tug berth facility to accommodate six chartered boats (tugs) at the existing non-operational jetty (formerly operated by Methanex and owned by Rio Tinto) as part of the terminal operational and navigational requirements to receive the LNG carriers (Figure 1); and
2. Construction of a diesel and LNG bunkering area (Figure 1) allocated at the northeast corner of the (currently under construction) Materials Offloading Facility.

LNG Canada indicated that the proposed changes would eliminate the need for dredging during berth development and initial operational use. Also, the planned changes and re-use of existing facilities would reduce the required in-water marine construction work. The tug berth facility is the most proximal location available for limiting tug movements in support of the LNG carrier berthing, arrival, and departure. Finally, access to and availability of electrical grid power is also critical to successfully implementing the battery-powered operation of the harbour tugs to reduce associated emissions.

The proposed changes to the Certificate are:

- Add a tug berth facility, to accommodate six tugboats, to the Marine Terminal Area; and
- Add a diesel and LNG fueling area for tugboats to the Marine Terminal Area.



2.0 AMENDMENT REVIEW PROCESS

In considering the changes proposed in the Application, the EAO determined it was a “typical amendment.”¹ This was based on the number and scope of the changes proposed, and the scope of the engagement that would occur on the Application.

The EAO convened a Technical Advisory Committee (TAC) to assist the EAO with its review of the amendment. The EAO made requests to participate in the TAC based upon the potential interactions of the proposed changes and previous participation in the LNG Terminal EA and amendment assessments.

The following participating Indigenous nations, local governments, and provincial and federal government agencies were invited to participate in the TAC:

- Haisla Nation;
- Gitga’at First Nation;
- Gitxaala Nation;
- Kitsumkalum First Nation;
- District of Kitimat;
- Kitimat-Stikine Regional District;
- Northern Health;
- Ministry of Forests, Lands, Natural Resource Operations and Rural Development;
- Ministry of Transportation and Infrastructure;
- Ministry of Environment and Climate Change Strategy (ENV);
- Ministry of Health;
- Ministry of Energy, Mines and Low Carbon Innovation;
- B.C. Oil & Gas Commission (OGC);
- Environment and Climate Change Canada (ECCC);
- Fisheries and Oceans Canada (DFO);
- Health Canada;
- Natural Resources Canada;
- Transport Canada (TC); and
- Impact Assessment Agency of Canada.

LNG Canada submitted their Application on March 31, 2022, and the TAC was given the opportunity to review and comment on the draft Valued Components (VC) and the Section 25(2) assessment matters selected. LNG Canada submitted their Supplemental Information document on July 18, 2022, and the TAC was given three weeks to review and comment on the document. The Supplemental Information included the assessment of the identified VCs and the Section 25(2) matters of the *Environmental Assessment Act* (2018) (the Act). A draft of this Report was provided to the TAC on October 31, 2022, and the TAC was given two weeks to review and comment on this Report.

A Community Advisory Committee was not established for this amendment under Section 22(1) of the Act. This decision was based on the scope of the amendment, with the project mostly using existing infrastructure in an industrial port that is anticipated to have limited impact to the public; the use of tugs was assessed in the original EA and the effects to the public from this amendment is not anticipated to change; and the low level of community interest on previous amendments. Further to this, and for the same reasons, the EAO did not carry out public engagement for this amendment.

¹ <https://www2.gov.bc.ca/gov/content/environment/natural-resource-stewardship/environmental-assessments/guidance-documents/2018-act-guidance-materials>

3.0 SUMMARY OF ISSUES AND EFFECTS

The following VCs, which were assessed during the original EA of the LNG Terminal, were carried forward to be assessed in the Amendment Assessment and this Report:

- Freshwater and Estuarine Fish and Fish Habitat;
- Marine resources; and
- Marine Transportation and Use.

Additional issues that were raised by the TAC are related to the following matters:

- Infrastructure and Services; and
- Greenhouse Gases (GHGs).

Freshwater and Estuarine Fish and Fish Habitat

The Amendment Assessment stated that the proposed changes in project footprint and construction activity may interact with estuarine fish and fish habitat through marine pile installation. Residual effects could include: a change in underwater acoustic levels during pile installation, which could change the behaviour of anadromous fish or mortality risk to anadromous fish; and remediation of the Methanex causeway would require the placement of riprap and concrete blocks, and the placement of these new materials has the potential to change water quality due to the release of fine sediment from the material, or a loss of habitat due to existing riprap being covered with the placement of new material.

Condition 4 of the Certificate requires that LNG Canada develop a fish management and monitoring plan in consultation with DFO and the OGC. Based on the conditions of the Certificate, the conditions within the *Fisheries Act* and authorization(s) issued for the Project, LNG Canada prepared and implemented a Marine Activities Plan (MAP) and a Marine Monitoring Plan (MMP) to mitigate, manage, and monitor project-related effects. These plans, as well as adaptive management, would be implemented to mitigate effects for proposed amendment construction activities.

Specific to mitigations for Oolichan, LNG Canada and Environmental Monitors will actively monitor for Oolichan during construction. As well, LNG Canada will work with Haisla Fisheries to share information about Oolichan presence and observation. The Amendment Assessment states that no potential effects to freshwater or estuarine habitat are anticipated with the implementation of these mitigation measures. However, in the event of an observation of Oolichan, LNG Canada will notify Haisla Nation and work with the Nation to develop acceptable mitigations as per the requirements of condition 4 of the Certificate.

A Request for Review was submitted to DFO (file # 22 HPAC-00897) and DFO provided a Letter of Advice on October 3, 2022, outlining avoidance and mitigations for construction activities. The Letter of Advice recommends measures to avoid and mitigate the potential effects to fish and fish habitat. The Request for Review outlines the measures to mitigate the harmful alteration, disruption, or destruction of fish habitat, as well as adaptive management measures, including: an underwater acoustic monitoring program, establishment and monitoring of a Marine Mammal Exclusion Zone, use of a combination of vibratory and impact hammers to reduce overall noise, soft start procedure for piling, a turbidity monitoring program based on visual observations with compliance monitoring completed as needed, use of an Environmental Monitor, and standard Best Management Practices for concrete work near water.

The Amendment Assessment indicates that there will be no residual effects to freshwater or estuarine fish or fish habitat. The residual effects will not change the cumulative effects assessment conclusions provided in the EAO Assessment Report and the previous amendment assessment reports.

Marine Resources

The Amendment Assessment states that the proposed changes in the Project footprint and construction activity may interact with marine fish and fish habitat, and marine mammals through marine pile installation. Disturbance to the local seabed and loss of soft sediment habitat from installation of piles are potential residual effects. Much like the description in the above section (Freshwater and Estuarine Fish and Fish Habitat VC), remediation of the causeway and replacement of riprap has the potential to change water quality from release of trace fines from the material. There would be a localized increase in tug movement between the LNG Canada and Rio Tinto harbours, but it is not anticipated that this movement would change behaviour or mortality risk to marine mammals, including impacts from sound levels.

LNG Canada's MAP and MMP, as well as adaptive management, will be implemented to mitigate the effects of construction activities. Sections 6.8 and 6.9 of the MMP, and section 7.1.9 of the MAP outline the details of underwater acoustic and marine mammal monitoring programs that will be implemented during pile driving activity. These programs will include an underwater acoustic monitoring program that will be implemented during pile driving activity, the establishment and monitoring of marine mammal monitoring zones for marine mammal presence by a qualified marine mammal observer, and the use of bubble curtains during impact pile driving to reduce underwater noise levels.

As noted in the Freshwater and Estuarine Fish and Fish Habitat VC, DFO's Letter of Advice outlines avoidance and mitigations for construction activities. The Request for Review outlines measures to mitigate the harmful alteration, disruption, or destruction of fish habitat as well as adaptive management measures as described above.

Comments were made by ECCC regarding the lack of sediment quality and toxicity data in the tug berth facility footprint. ECCC requested that sediment quality in the tug berth facility footprint be assessed or mitigation measures and monitoring for sediment dispersion and re-suspension of contaminants during pile driving be provided to minimize the risk of potential contaminant redistribution. The issue was resolved by LNG Canada committing to make modifications to their MMP, including consideration of adaptive management measures.

LNG Canada committed to monitoring turbidity using the appropriate instrumentation on a twice per week schedule, instead of through visual observation as originally proposed. Based on the absence of sediment quality data in the tug berth facility footprint and to provide additional assurance, LNG Canada also proposed to expand the water quality monitoring program for the tug berth to include a compliance site for water quality monitoring and a reference site at the mouth of Kitimat River, where turbidity and other contaminants of potential concern would be sampled and compared to Canadian Environmental Quality Guidelines and B.C. Water Quality Guidelines once a week prior to piling, and twice a week during piling. Any exceedances will be reported to the appropriate regulatory authorities, as required in condition 6 of the Certificate. LNG Canada also indicated that should an exceedance of a water quality guideline occur for any parameter, an immediate review of available information would be conducted to identify the source of the exceedance and the risk to aquatic life. If construction activities are identified as a potential cause of adverse effects on the environment, LNG Canada would implement additional mitigation measures.

ECCC confirmed that they had no further comments on the issues they raised with the understanding that changes recommended by ECCC and committed to by LNG Canada are reflected in the updated MMP for Amendment activities.

Marine Transportation and Use

The Amendment Assessment states that the proposed tug berth and fuelling facilities have the potential to affect marine traffic within the LNG Terminal and Rio Tinto harbours, but no changes are expected outside the harbours. Potential effects to marine transportation and use during marine construction and decommissioning of the proposed facilities, and from tug vessel movements during operations, include interference with marine navigation, interference with marine fisheries and shoreline harvesting, and interference with marine recreation and tourism. Construction of the tug berth and tug fuelling facility would have no change on access to marinas and moorage facilities from what was previously assessed as there is no public access to the LNG Terminal site.

Condition 17 of the EAC requires LNG Canada to prepare a MAP that requires: identification of construction and operational activities that may impact navigation, existing and traditional fishing areas, harvesting areas, recreational and tourism use, Indigenous nation's use and any associated timing windows; specific actions to inform affected stakeholders and Indigenous nations of potential interference with marine navigation as result of Project activities; specific activities to monitor the effects of shipping activities on marine users during construction and operations; specific actions to coordinate activities with other marine users, particularly with Rio Tinto; and mitigations to reduce disruption of marine navigation as a result of construction and operations. Implementation of the Marine Traffic Access Plan and Marine Response Plan during construction and operations, under condition 17 of the Certificate, are expected to limit residual effects such that there is no change in interference with marine and recreation tourism, no change in interference with marine fisheries and shoreline harvesting, and minor changes in vessel traffic in port of Kitimat.

The Supplemental Information indicates that the proposed changes do not result in changes to the characterization of residual effects in the EAO Assessment Report. The residual effects will also not change the cumulative effects assessment conclusions of the original EA that identified potential moderate adverse cumulative effects on marine transportation and use related to vessel movements in Principe and Douglas Channels.

Kitsumkalum had concerns regarding the additional transportation and movement of dangerous goods through Kitsumkalum territory. Kitsumkalum asked for clarification on if there would be additional trucks for fuel delivery, and about bunkering protocols or policies. LNG Canada confirmed that the estimate of 1-2 diesel trucks per week is the current estimate for both the onshore diesel needs and the marine fueling combined. LNG Canada stated that with respect to marine fuel bunkering, they are confident that the commitment to plan and implement measures in accordance with TC's regulations and standards, along with the current provisions of the Federal Decision Statement, sufficiently address the proposed tug berth and fueling from an assessment perspective. LNG Canada stated that the *Transportation of Dangerous Goods Act* applies to the regulation of fuel, including road transport and delivery.

Infrastructure and Services

Northern Health inquired about the addition of 200 workers for the amendment construction and if these workers would be housed at the existing Cedar Valley Lodge, as well as how the additional workers will impact the local health services, noting it is already stretched beyond capacity. LNG Canada responded by stating that the workforce for the amendment construction would be able to be accommodated at Cedar Valley Lodge based on the latest Project workforce estimates and the expectation that the peak of the tug berth-related construction requirements will take place following the estimated Project workforce peak. However, if the Project peak shifts or overlaps with the tug berth-related construction, then LNG Canada may need to plan for the workforce personnel to be accommodated in a local and existing third-party industrial workforce accommodation, either fully or partially depending on the Cedar Valley Lodge availability. LNG Canada stated however, that all construction workforce personnel, regardless of the location of their accommodation, would be covered under the LNG Canada Health and Medical Services program, have access to the LNG Canada site-based medical and health services, and not be expected to impact local health services. Northern Health confirmed that their comments had been resolved.

Greenhouse Gases

Comments were made by ECCC that requested an estimation of GHG emissions through all phases and a summary of impact on carbon sinks based on area of disturbance. LNG Canada responded that the proposed construction would require the disturbance and clearing of trees and vegetation which encompasses an area of 308 m² (0.0308 hectares). This is 0.01% of the initial land (297.9 hectares) cleared to build LNG Canada's onshore facility, and therefore the impacts on carbon sinks were considered small in comparison to what was assessed in the original assessment.

Required Assessment Matters

[Section 25\(2\)](#) of the Act sets out the required assessment matters. LNG Canada reported that [Section 25\(2\)](#) matters were considered in the Amendment Assessment in following ways:

- a. Positive and negative effects on VCs were considered as part of the assessment of the VCs;
- b. Risks and uncertainty were considered as part of the Application assessment of the VCs including Marine Resources, Freshwater and Estuarine Fish and Fish Habitat, and Marine Transportation and Use VCs;
- c. The addition of new tug berth and refuelling areas introduces additional risks of malfunctions and accidents, which is addressed in the Marine Response Plan;
- d. The proposed changes are not anticipated to have disproportionate effects on distinct human populations, including populations identified by gender;
- e. The amendment is not anticipated to result in effects to biophysical factors that support ecosystem function by avoiding having to dredge and reducing the requirement for piling by building onto the existing Methanex trestle, and thereby not altering water and nutrient flow in the marine environment;
- f. The amendment is not anticipated to result in residual effects on current or future generations because any unforeseen effects on marine navigation during construction would be addressed by the use of the Canadian Coast Guard Marine Communication and Traffic Services, and any effects to marine water quality from potential spills would be prevented through following the *Oil Handling Facilities Regulations* and the measures outlined in the Marine Response Plan;
- g. The amendment is consistent with any land-use plan since the proposed changes are located within industrial land as designated in the District of Kitimat Official Community Plan;
- h. Increases in GHG emissions would be negligible during construction, and during operations reduced GHG emissions are anticipated because escort tugs will be fuelled primarily by LNG, and harbour tugs will mostly be powered by electricity;
- i. Alternative means of carrying out the amendment were assessed with consideration of technical and economical feasibility, including the use of best achievable technologies, and the potential effects, risks and uncertainties of those alternatives; and
- j. The potential changes caused to the Project by the environment were assessed during the original EA, and the proposed changes will not alter those assessments.

Given the limited potential for proposed amendment effects as described in [section 3](#), the EAO concludes that there would be no or negligible impacts to [Section 25\(2\)](#) matters as a result of the amendment. [Section 25\(2\)](#) matters were not assessed separately in the original assessment because the original assessment occurred under the previous *Environmental Assessment Act* (2002).

Indigenous Nation Engagement

In response to the EAO's invitation to participate in the assessment of the proposed amendment, the following Indigenous nations self-identified as participating Indigenous nations in the amendment assessment process:

- Haisla Nation;
- Gitga'at First Nation;
- Gitxaala Nation; and
- Kitsumkalum First Nation.

The following Indigenous nations were also notified of the amendment assessment process:

- Kitselas First Nation;
- Lax Kw'alaams First Nation; and
- Metlakatla First Nation.

In addition to participating on the TAC, the EAO had regular meetings with all of the participating Indigenous nations individually to discuss the amendment request. During the comment period, comments were received from Gitga'at First Nation, Gitxaala Nation, and Kitsumkalum First Nation. These comments, and LNG Canada's responses, are in the TAC issues tracking table.

[Section 25\(1\)](#) of the Act requires an assessment of the effects of the project on Indigenous nations and rights. LNG Canada anticipated that potential effects on Indigenous nations and their rights would be similar to those described in the original Application, and no new mitigation measures were proposed.

Based on the review of LNG Canada's Amendment Assessment, as well as input by Indigenous nations, the EAO's opinion is that there would be no incremental or additional impacts to Indigenous nations or their rights as a result of the proposed amendment.

4.0 CONCLUSIONS

Based on:

- The information contained in LNG Canada's Amendment Assessment;
- LNG Canada and the EAO's consideration of [Section 25](#) matters;
- LNG Canada's consultation with Haisla Nation, Gitga'at First Nation, Gitxaala Nation, and Kitsumkalum First Nation;
- The EAO's engagement with members of the TAC, which included representatives of Haisla Nation, Gitga'at First Nation, Gitxaala Nation, and Kitsumkalum First Nation;
- Comments on the Amendment Assessment from the TAC, including Indigenous nations, and LNG Canada's responses to those comments; and
- LNG Canada's requirements under the Certificate to mitigate and monitor the effects of the LNG Terminal.

The EAO is satisfied that:

- The potential changes to the positive and negative effects of the LNG Terminal resulting from the project changes proposed in the Application have been adequately identified and assessed, and given that the scope of the proposed changes are limited and are largely positive in nature, it is unlikely there would be measurable or meaningful changes regarding the assessment matters set out in [Section 25](#) of the Act;
- The clarifications requested by TAC members, which were within the scope of the assessment of the Application and the Supplemental Information, were adequately and reasonably addressed by LNG Canada;
- The changes outlined and assessed in the Application and the Supplemental Information are unlikely to change the residual effects predicted in the original EA of the LNG Terminal;
- The changes outlined and assessed in the Application and the Supplemental Information are unlikely to cause incremental or additional negative effects to the Indigenous nations or their Section 35 rights;
- Efforts to seek consensus on any concern that Indigenous nations raised during the assessment of the Application and the Supplemental Information were undertaken, with consideration given to the purpose of the EAO to support reconciliation with Indigenous peoples in B.C. as set out in [Section 2\(2\)\(b\)\(ii\)](#) of the Act; and
- The provincial Crown has fulfilled its statutory and constitutional obligations owed to Indigenous nations relating to the issuance of an amendment to the Certificate for the changes proposed in the Application.

The EAO recommends that the Deputy Chief Executive Assessment Officer of the EAO, upon consideration of the conclusions in this Report and any other relevant factors, issue an Amended Certificate under [Section 32](#) of the Act to allow the requested changes.