

ATTACHMENT:

Federal Authority Advice Record

Response due by August 30, 2021.

Please submit the form to: KsiLisimsLNG@jaac-aeic.gc.ca

Ksi Lisims LNG - Natural Gas Liquefaction and Marine Terminal Project – Nisga'a Nation,
Rockies LNG Limited Partnership and Western LNG LLC

Agency File: 005806

Department/Agency	Health Canada (HC)
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1. Is it probable that your department or agency may be required to exercise a power or perform a duty or function related to the Project to enable it to proceed?

If yes, specify the Act of Parliament and that power, duty or function.

[Not applicable](#)

2. Is your department or agency in possession of specialist or expert information or knowledge that may be relevant to the conduct of an impact assessment of the Project?

Specify as appropriate.

[As a federal authority, HC will provide specialist or expert information and knowledge in the Department's possession \(expertise\) to support the assessment of impacts on human health from projects considered individually and cumulatively under the *Impact Assessment Act* \(IAA\). The Department provides expertise in the areas described below; it does not play a regulatory role. How the expertise provided by HC will be used in the impact assessment process will ultimately be determined by the reviewing body\(ies\). It should also be noted that expertise related to assessing human health that is relevant to impact assessments may be held by other federal, provincial and municipal partners, reflecting the shared jurisdiction for environmental and human health within Canada. For example, the Public Health Agency of Canada has expertise in the social determinants of health approach and health equity, and may provide that expertise through HC, upon request from the reviewing body\(ies\).](#)

[To support the implementation of the IAA, HC can provide expertise in the following areas:](#)

- Air quality
- Recreational and drinking water quality
- Traditional foods (Country Foods)
- Noise
- Human Health Risk Assessment (HHRA)
- Methodological expertise in conducting Health Impact Assessment (HIA)
- Electromagnetic fields
- Radiological emissions
- Public health emergency management of toxic exposure events

Available HC guidance:

HC has published the following guidance documents for evaluating human health impacts:

Guidance for Evaluating Human Health Impacts in Environmental Assessment:

- Human Health Risk Assessment
 - Air Quality
 - Drinking and Recreational Water Quality
 - Country Foods
 - Noise
 - Radiological Impacts
- <https://publications.gc.ca/site/eng/search/search.html?st=1&e=0&f=0&ssti=on&ast=Guidance+for+Evaluating+Human+Health+Impacts+in+Environmental+Assessment&cnst=&adof=on&hpp=10&psi=1&rq.ssp=-5>

Guidance prepared by HC on management of crude oil incidents is available through the following link:

- *Guidance for the environmental public health management of crude oil incidents: a guide intended for public health and emergency management practitioners:*
<http://publications.gc.ca/site/eng/9.849592/publication.html>

Information on power lines and electrical appliances can be found at:

<https://www.canada.ca/en/health-canada/services/health-risks-safety/radiation/everyday-things-emit-radiation/power-lines-electrical-appliances.html>

3. Has your department or agency considered the Project; exercised a power or performed a duty or function under any Act of Parliament in relation to the Project; or taken any course of action that would allow the Project to proceed in whole or in part?

Specify as appropriate.

Not applicable.

4. Has your department or agency had previous contact or involvement with the proponent or other party in relation to the Project? (for example, enquiry about methodology, guidance, or data; introduction to the project)

Provide an overview of the information or advice exchanged.

No

5. Does your department or agency have additional information or knowledge not specified, above?

Specify as appropriate.

No

6. From the perspective of the mandate and area(s) of expertise of your department or agency, what are the issues that should be addressed in the impact assessment of the Project, should the Agency determine that an impact assessment is required?

For each issue discussed, provide a concise, plain-language summary that is appropriate for inclusion in the Summary of Issues.

Based on the limited information provided in the initial Project Description (iPD), HC has identified the following key issues and information requirements that are likely to be relevant to the Ksi Lisims LNG - Natural Gas Liquefaction and Marine Terminal Project (the Project). These are not to be construed as an exhaustive list of requirements pertaining to human health for the Project.

Human Health Setting

HC would like to see the locations of all potential human receptors, including residences, cabins and temporary/seasonal traditional use sites such as those used for hunting, fishing, trapping, berry picking, and ceremonial or other uses (e.g., recreational) within the Project area. Sensitive human receptor locations, such as schools, hospitals, retirement complexes or assisted care homes, should also be included. The distances between human receptor locations and the key components of the Project that may have potential impacts on these receptors should also be identified.

Health Impact Assessment (HIA)

The Project site is remote and the Village of Gingolx and other Nisga'a villages may become supply and service centres for the Project. A detailed HIA would be appropriate to capture potential positive and adverse effects on social, economic and health conditions in addition to the environmental (biophysical) conditions typically included in an impact assessment. An HIA emphasizes that physical, mental, and social well-being are determined by a broad range of conditions, or factors, from all sectors of society known as the determinants of health. The HIA would consider community concerns (e.g., food security, other social effects associated with accidents and malfunctions) and incorporate Gender-based Analysis Plus to reflect how Project activities can affect subgroups of the population in different ways.

Traditional Foods

The iPD indicates: "Significant economic, cultural and social value near the Site and marine waters of the region are derived from the harvest of aquatic resources." Possible dredging for the construction of the barge berth, the floating liquefaction module and the LNG carrier berth may impact aquatic resources. During operation, maintenance dredging may also be required.

If dredging is required during Project construction and/or operation where marine sediments may be disturbed and suspended, and where contaminants are present in these sediments, it would be necessary to identify the contaminants of potential concern (COPCs). It would be similarly necessary to understand the potential uptake of these COPCs into traditional foods consumed by residents in the area. Additionally, if Project activities are anticipated to emit any contaminants (e.g., mercury) into the air that may deposit onto foods consumed by people, this potential impact on traditional food should also be considered. Note that HC recommends a human health risk assessment be conducted when elevated levels of COPCs are identified in environmental media, and when there are possible exposure pathways to humans (i.e., through the consumption of traditional foods, drinking water).

Air Quality

The iPD indicates that the Project may emit air pollutants such as nitrogen oxide (NO_x), carbon monoxide (CO), sulphur dioxide (SO₂), particulate matter (PM) and volatile organic compounds (VOCs) during construction and/or operation (e.g., from vehicles, diesel-powered generators, heavy equipment, gas-fired power generation facilities, safety flares, liquefied natural gas or LNG carriers, etc.). Given there are potential human receptors near the Project area, including off-duty workers and the community of Gingolx (approximately 15 km to the east of the Project), HC recommends an air quality assessment be conducted to assess scenarios such as: baseline; Project alone; baseline+Project; and cumulative. HC is of the

opinion that the most stringent air quality objectives or standards (e.g., CAAQS¹) should be used when undertaking an air quality assessment.

In addition, HC recommends that the air quality assessment considers NO₂, SO₂, CO, VOCs, polycyclic aromatic hydrocarbons (PAHs), fine particulate matter (PM_{2.5}) and diesel particulate matters (DPM). Given DPM from diesel generators and heavy equipment is likely emitted from the Project, it is important that both the carcinogenic and non-carcinogenic health impacts of DPM be assessed (separately from PM_{2.5}).

Furthermore, HC recommends that the air quality assessment considers emissions during construction and operation, including activities associated with LNG carriers and associated vessels at the Project site, and possibly along the marine shipping route. The assessment should also consider an "accidents and malfunction" scenario which may impact human health resulting from unplanned releases of air pollutants.

Water Quality

The iPD indicates that there are no water supplies nearby, and that potable water will either be shipped on site and/or come from on-site water treatment facilities. The sources of potable water may include groundwater wells, freshwater streams with suitable annual available volumes or from desalination units. If local residents and/or off-duty workers are anticipated to have access to treated drinking water produced on-site, a confirmation of the water source(s), and selected water treatment technology and capacity may be required to confirm adherence to applicable water quality standards or guidelines (e.g., Guidelines for Canadian Drinking Water Quality). In addition, if Project activities have the potential to change the quality of any water sources used by residents in the area, this should also be described.

Surface and ground water quality may be affected by sedimentation or spills, which may impact human health through dermal contact. HC therefore suggests identifying water bodies that are currently being used, or may be used in the future, for recreational and ceremonial purposes (e.g., swimming, fishing) and that may be affected by Project activities.

Noise

The Project is located in a sparsely populated area, and the locations of all human receptors near the Project site have not been clearly described. As mentioned above, it is important that the locations of all potential human receptors are identified (including residences, cabins and temporary/seasonal traditional use sites such as hunting, fishing, trapping, berry picking, ceremonial or other uses within the Project area). As well, the Project site has some history of commercial fishing, tourism and forest harvesting, and these activities may still be undertaken. HC therefore recommends that a noise assessment be conducted in accordance with HC guidance. The noise assessment should identify and describe human receptors who may have a heightened sensitivity to noise exposure (e.g., Indigenous peoples, schools, child care centres, places of worship, etc.). It should be noted that human receptors in rural areas can have a greater expectation of "peace and quiet". Particular attention will need to be given to the potential for sleep disturbance to local residents, including off-duty workers residing in, or near, the Project area.

Cumulative Effects Assessment

Finally, HC would be supportive of marine shipping being considered in the impact assessment should it be required under the IAA. HC is also supportive of including any proposed ancillary infrastructure which the Project cannot proceed without, such as the electric transmission line and natural gas pipeline being considered in the Project assessment, such that there can be a full understanding of potential impacts (both positive and negative) on human health.

¹ The Canadian Ambient Air Quality Standards (CAAQS) consider nitrogen dioxide, fine particulates and ozone to be "non-threshold" air pollutants; meaning that health effects may occur at any level of exposure to these air pollutants.

[Herbert Antill](#)

Name of Departmental / Agency Responder

[Manager](#)
[Environmental Health Program](#)
[Health Canada](#)

Title of Responder

[August 19, 2021](#)

Date