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**Submission on Application for the Ksi Lisims LNG project on behalf of  
Douglas Channel Watch**

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David Hughes  
Global Sustainability Research Inc.  
December 1, 2023

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### **1. Overview**

This submission is in response to the B.C. Environmental Assessment Office (EAO) request for public input on the application of Ksi Lisims LNG for an environmental assessment certificate. The application documentation is reviewed in the context of federal and provincial legislation on climate change and other environmental considerations including commitments required from third-parties to achieve objectives.

Principal concerns with the Ksi Lisims LNG project (hereinafter termed “the Project”), which are documented in more detail in the following sections, include:

- There is no scenario under which natural gas could be supplied to the Project without adversely affecting the federal government’s legislated mandate for Canada to achieve net-zero emissions by 2050.
- Emissions from upstream production, processing and transportation of the natural gas required by the Project are not subject to the B.C. government’s requirement that LNG projects be net-zero by 2030. As a result, only 7% of the in-Canada emissions from the Project will be abated.
- The proponent’s claim that full-cycle emissions from the Project will not be incremental on a world scale is not supported by recent life-cycle studies of LNG. Unless clear documentation of the displacement and shutdown of higher-emitting sources will be a requirement, the claim that the Project will not add to global emissions is highly unlikely to be valid. LNG from the Project could just as easily be used to displace higher cost, lower-emitting, energy sources, or add to incremental energy supply without retiring higher-emitting energy sources.
- The claim that the Project will have one of the lowest-emitting liquefaction terminals in the world is contingent upon the construction of a high-voltage transmission line to serve it. As there is no assurance that this transmission line will be built, the proponent provides an alternative case, with much higher emissions, in the event that this transmission line is not built in a timely manner.
- The Project is also dependent on the construction of a natural gas pipeline which would, along with the high-voltage transmission line, have significant environmental impacts that are not being considered as part of the impact of this project, even though the Project would be the pipeline’s major user and is dependent on power from the transmission line.

These concerns are discussed in more detail in the following sections.

## 2. Natural gas supply given Canada’s net-zero commitment

Both Canada and B.C. have committed to reduce emissions to net-zero by 2050. In 2021, Canada passed the “Canadian Net-Zero Emissions Accountability Act”<sup>1</sup> followed in 2022 by the “2030 Emissions Reduction Plan: Canada’s Next Steps for Clean Air and a Strong Economy”,<sup>2</sup> which increased the 2030 interim emissions reduction goal to 40-45% below 2005 levels by 2030. Also in 2021, B.C. released “Clean BC Roadmap to 2030” which committed to a 40% reduction in emissions from 2007 levels by 2030 and net-zero by 2050.<sup>3</sup>

In June, 2023, the Canada Energy Regulator (CER), a departmental corporation and agent of the Crown established under the Canadian Energy Regulator Act, released “Canada’s Energy Future 2023”<sup>4</sup> (hereinafter termed “EF2023”), which defined two scenarios to achieve net-zero emissions by 2050. CER’s “global net-zero” scenario assumed that both Canada and the world would reach net-zero emissions by 2050, whereas CER’s “Canada net-zero” scenario assumed Canada would reach net-zero emissions but the world as a whole would not. Both of these scenarios considered policies in place and announced as of March, 2023, as well as hypothetical policies which were expressed as the aggregate cost of carbon. CER’s aggregate cost of carbon begins in 2030 and reaches \$330 to \$380 per tonne by 2050, on top of the legislated 2030 price on carbon of \$140 per tonne (all prices expressed in constant 2022 Canadian dollars).

CER’s EF2023 net-zero scenarios assume a 15-25% reduction in total energy demand by 2050 and a rapid growth in the proportion of electricity meeting end-use energy demand. Although both of CER’s net-zero scenarios require major reductions in Canada’s oil and gas production, natural gas production is somewhat higher in its Canada net-zero allowing a higher level of oil and gas exports than in its global net-zero scenario. Both of CER’s net-zero scenarios define maximum allowable LNG exports.

Canada’s nascent LNG export industry will begin in 2025 with the commissioning of LNG Canada’s Phase 1 terminal currently under construction in Kitimat (although there have been low-volume LNG exports from FortisBC’s Tilbury project in the Fraser delta for some time). Three other projects, Woodfibre LNG at Squamish and Cedar LNG and LNG Canada Phase 2 at Kitimat, have received Environmental Assessment Certificate approvals from the B.C. EAO. The Project and Tilbury Phase 2 are proposed LNG export projects undergoing review by the B.C. EAO. Figure 1 illustrates the natural gas requirements of the approved and proposed B.C. LNG

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<sup>1</sup> Canadian Net-Zero Emissions Accountability Act, passed June, 2021, <https://publications.gc.ca/site/eng/9.909338/publication.html>.

<sup>2</sup> 2030 Emissions Reduction Plan: Canada’s Next Steps for Clean Air and a Strong Economy, March, 2022, [https://publications.gc.ca/collections/collection\\_2022/eccc/En4-460-2022-eng.pdf](https://publications.gc.ca/collections/collection_2022/eccc/En4-460-2022-eng.pdf).

<sup>3</sup> CleanBC Roadmap to 2030, 2021, [https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/cleanbc\\_roadmap\\_2030.pdf](https://www2.gov.bc.ca/assets/gov/environment/climate-change/action/cleanbc/cleanbc_roadmap_2030.pdf).

<sup>4</sup> Canada Energy Regulator, June, 2023, Canada’s Energy Future 2023: Energy Supply and Demand Projections to 2050, <https://www.cer-rec.gc.ca/en/data-analysis/canada-energy-future/2023/#:~:text=Canada's%20Energy%20Future%202023%20focuses,zero%20world%20could%20look%20like>

projects, along with the maximum gas supply available for LNG exports in CER’s net-zero scenarios.

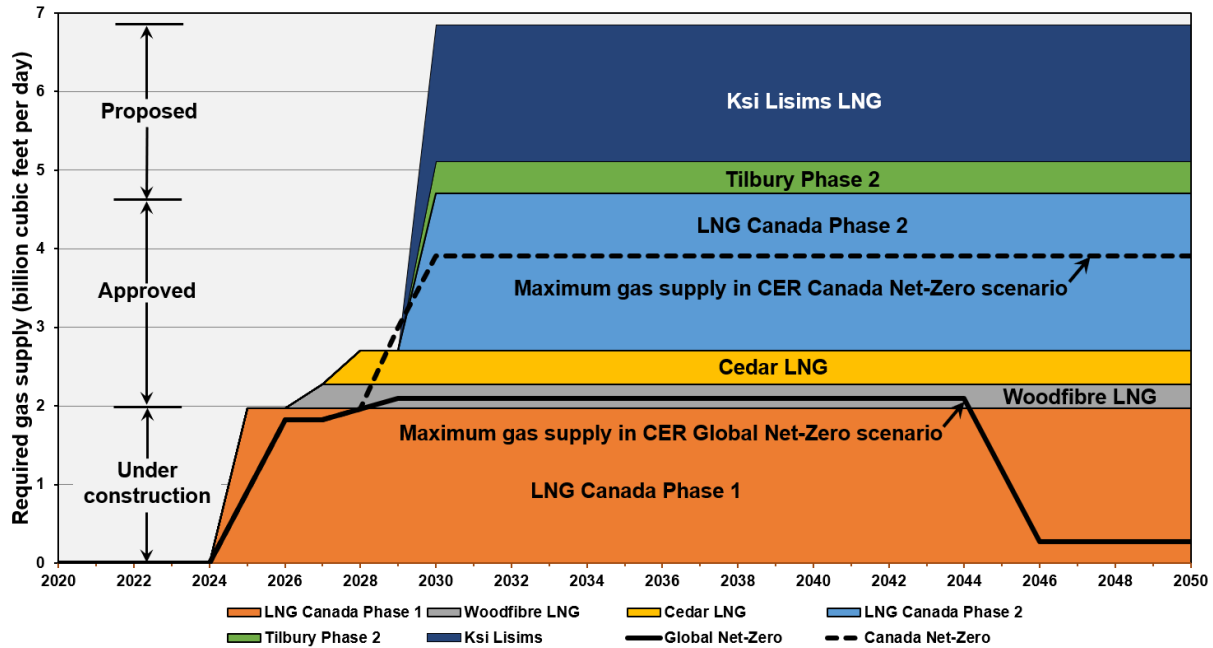


Figure 1 – Gas production required by approved, proposed and under construction LNG projects in B.C.<sup>5</sup> The maximum gas supply available for LNG export projects in the two CER net-zero scenarios is also shown.<sup>6</sup> There is no gas supply available for the proposed Ksi Lisims LNG and Tilbury Phase 2 projects in either CER scenario.

There is no available gas supply for the Project, for Tilbury Phase 2, and for a significant portion of the gas required for LNG Canada Phase 2 in either of CER’s net-zero scenarios. In CER’s global net-zero scenario, Woodfibre LNG would have insufficient natural gas supply to meet its planned capacity and would have to shut down in 2045, before the end of its design lifetime, and LNG Canada Phase 1 would have to reduce output by nearly 90% beginning in 2045. Figure 2 outlines in more detail the lack of available gas supply for the project and other approved and proposed LNG terminals in the CER net-zero scenarios.

<sup>5</sup> Data from B.C. Environmental Assessment Office filings, <https://www.projects.eao.gov.bc.ca/projects-list>.

<sup>6</sup> Canada Energy Regulator, June, 2023, Canada’s Energy Future 2023: Energy Supply and Demand Projections to 2050, see Figure A-6 on page 36, <https://www.cer-rec.gc.ca/en/data-analysis/canada-energy-future/2023/#:~:text=Canada's%20Energy%20Future%202023%20focuses,zero%20world%20could%20look%20like>

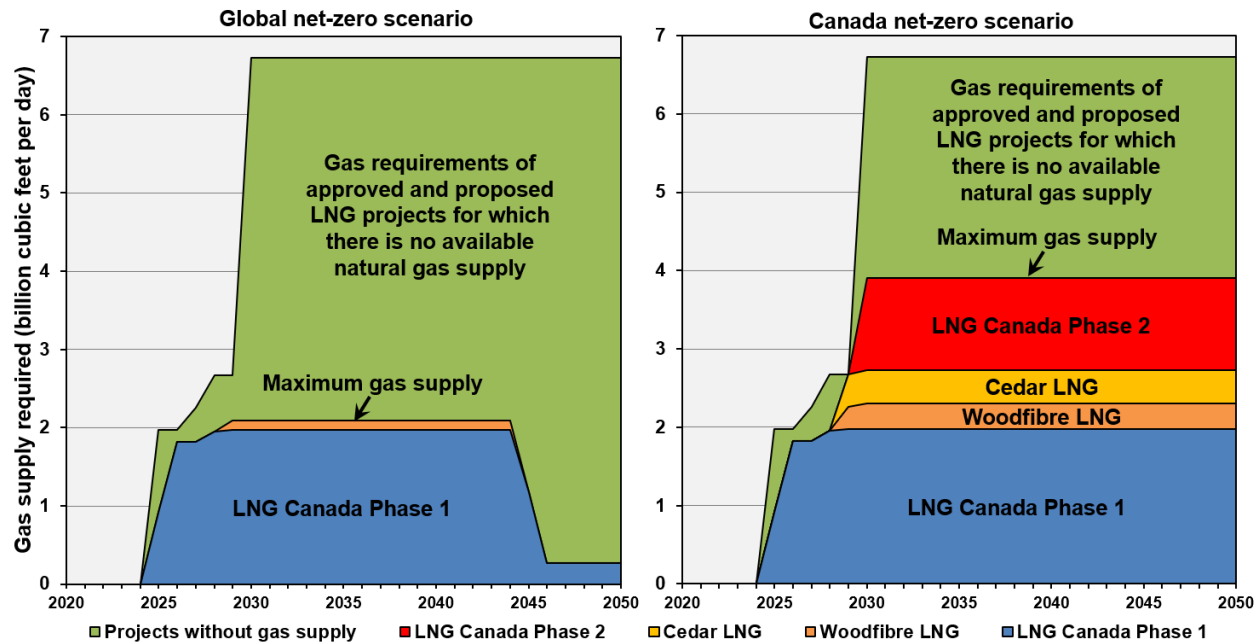


Figure 2 – Maximum gas supply available for LNG exports in the two Canada Energy Regulator net-zero scenarios. In the global net-zero scenario, LNG Canada Phase 1 will have to reduce its production by nearly 90% in 2045, and there is only enough gas supply for a portion of the Woodfibre LNG project which will have to close in 2045, 10-20 years before its planned lifetime. In the Canada net-zero scenario there would be enough gas available for all approved projects except for LNG Canada Phase 2, which would have to operate at 60% of its planned capacity. There is no gas supply available for the proposed Ksi Lisims LNG and/or Tilbury Phase 2 projects in either of CER’s net-zero scenarios (see Figure1).

Figures 3 and 4 illustrate natural gas production projections in the global- and Canada-net-zero scenarios, respectively, and natural gas production required if all the LNG projects were to go ahead. These figures illustrate what production would look like if all projects were supplied from within B.C. or if some of the gas was provided by other provinces.

If all gas was produced within B.C., gas production required for approved and proposed LNG projects would exceed B.C.’s projected gas production rate in 2050 by 247% in CER’s global net-zero scenario and by 52% in its Canada net-zero scenario. If some gas was provided from other provinces, production required would exceed Canada’s projected gas production rate in 2050 by 117% in CER’s global net-zero scenario and by 26% in its Canada net-zero scenario.

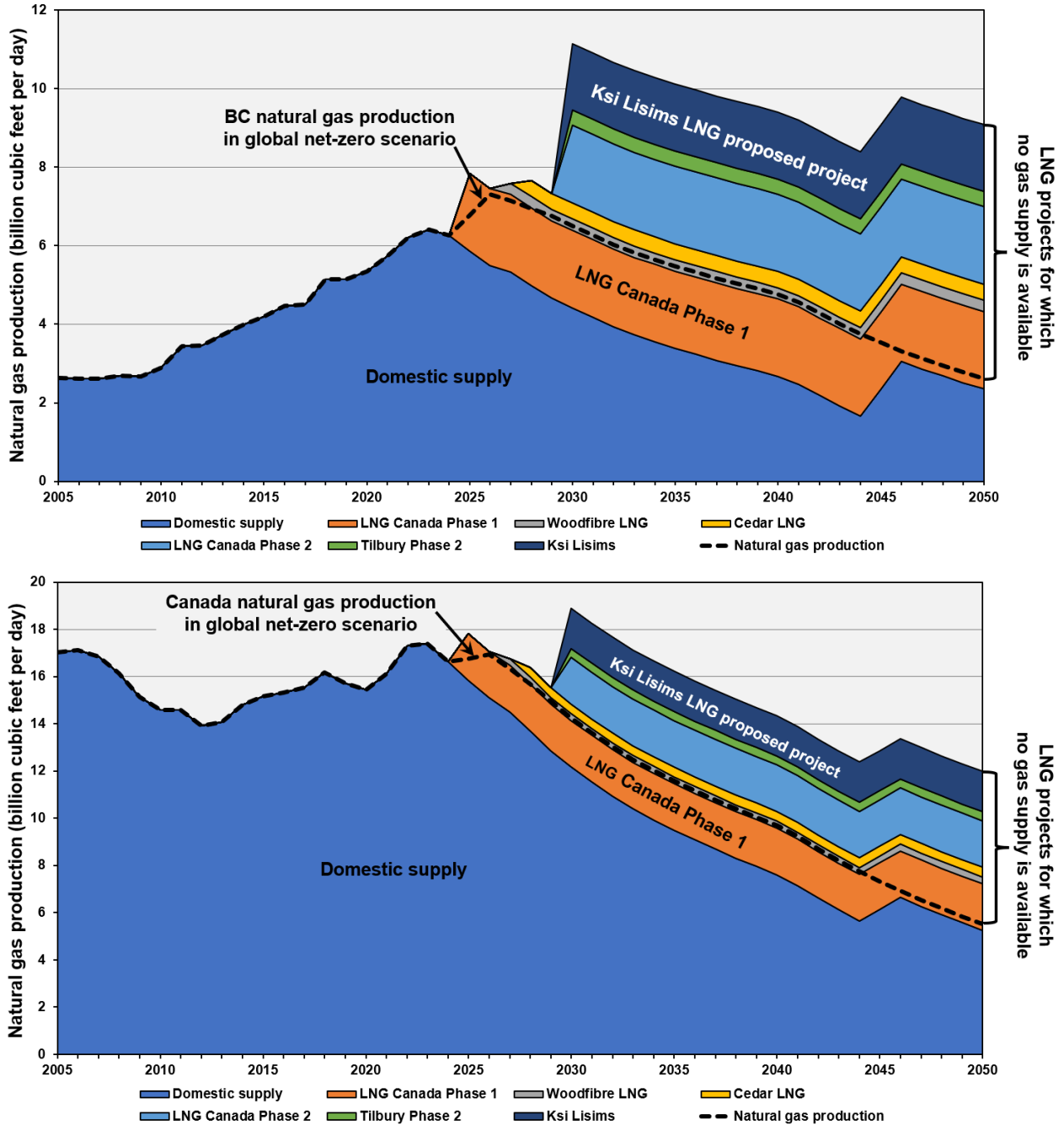


Figure 3 – Natural gas production projections for B.C. (upper) and Canada (lower) in CER’s global net-zero scenario.<sup>7</sup> Also shown are production rates required if all approved and proposed LNG projects go ahead and CER’s projected gas volumes available for LNG export. Gas requirements in 2050 exceed available B.C. production by 247% if all supply were to come from B.C. and 117% of total Canada production if some of the gas were to come from other provinces.

<sup>7</sup> Canada Energy Regulator, June, 2023, Canada’s Energy Future 2023: Energy Supply and Demand Projections to 2050, see data appendices, <https://www.cer-rec.gc.ca/en/data-analysis/canada-energy-future/2023/#:~:text=Canada's%20Energy%20Future%202023%20focuses,zero%20world%20could%20look%20like>

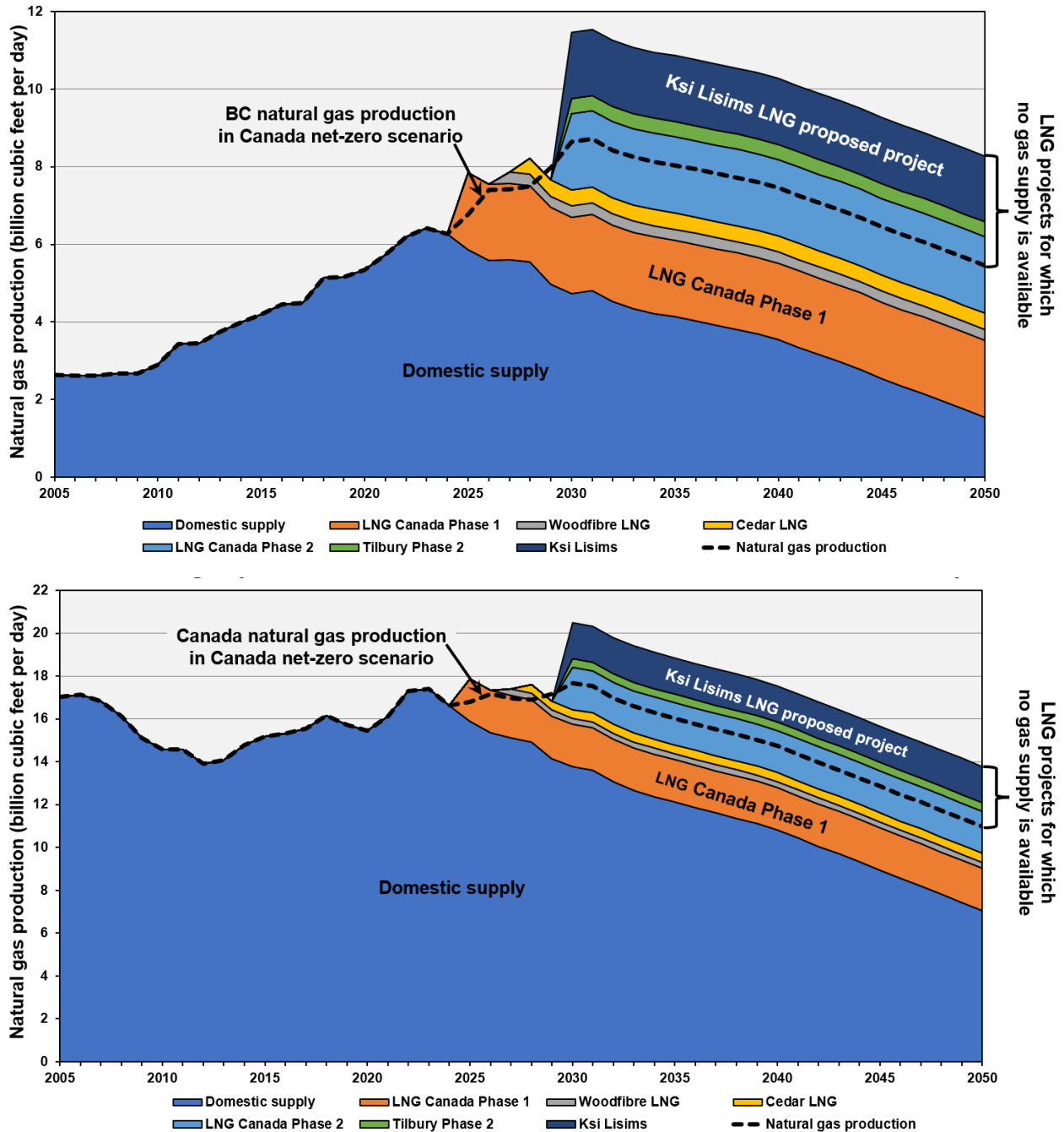


Figure 4 – Natural gas production projections for B.C. (upper) and Canada (lower) in CER’s Canada net-zero scenario.<sup>8</sup> Also shown are production rates required if all approved and proposed LNG projects go ahead and CER’s projected gas volumes available for LNG export. Gas requirements in 2050 exceed available B.C. production by 52% if all supply were to come from B.C. and 26% of total Canada production if some of the gas were to come from other provinces.

<sup>8</sup> Canada Energy Regulator, June, 2023, Canada’s Energy Future 2023: Energy Supply and Demand Projections to 2050, see data appendices, <https://www.cer-rec.gc.ca/en/data-analysis/canada-energy-future/2023/#:~:text=Canada's%20Energy%20Future%202023%20focuses,zero%20world%20could%20look%20like>

An examination of the assumptions made in the CER net-zero scenarios suggest they are overly optimistic on the amount of fossil fuels that can be produced given the amount and cost of carbon removal required to offset emissions. This means that fossil fuel production will have to decline even more steeply than assumed by CER if Canada is to achieve its net-zero commitments.

For example, Figure 5 illustrates CER’s assumed growth in carbon capture and storage (CCS) for each of its net-zero scenarios. Canada currently has about 10% of the world’s CCS with 4.2 megatonnes per year of capacity developed over the past 15 years. The Global CCS Institute reports that the world added about 2.1 megatonnes per year of capacity over the past six years, so CCS is growing very slowly globally compared to what is required.<sup>9</sup> Can Canada really build 34-39 times its existing CCS capacity by 2050? This would require increasing the Canadian rate of CCS additions by up to three times the current world average CCS growth rate starting immediately.

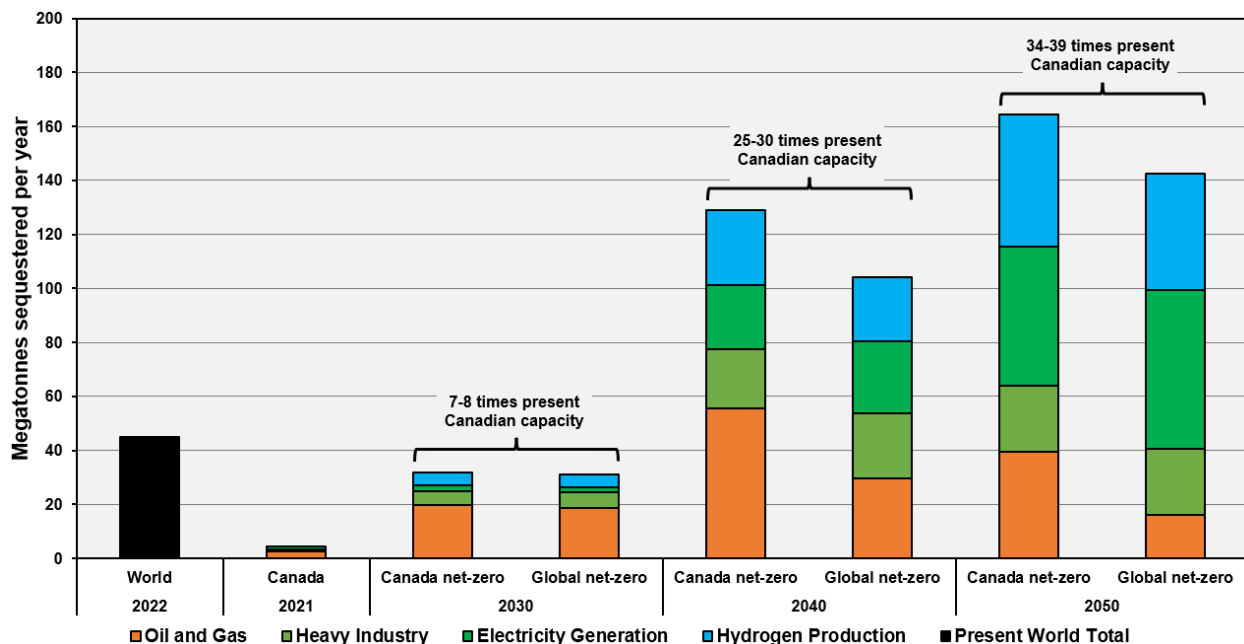


Figure 5 – CER projections of the amount of CCS required in its net-zero scenarios.<sup>10</sup> Also shown is the present world CCS capacity of about 45 megatonnes per year.

Similarly, CER’s assumptions on the amount of carbon capture that could be achieved through direct air capture (DAC) seem very optimistic. There are currently about 10,000 tonnes per year of DAC capacity in the world. Although there are plans for megatonne-scale DAC plants in the U.S., they will take years to develop and it remains to be seen how successful they will be. CER

<sup>9</sup> Global CCS Institute, 2023, Global Status of CCS in 2022, <https://www.globalccsinstitute.com/resources/global-status-of-ccs-2022/>.

<sup>10</sup> Canada Energy Regulator, 2023, Canada’s Energy Future 2023: Energy Supply and Demand Projections to 2050 – Data Supplement, see Figure 5, <https://www.cer-rec.gc.ca/en/data-analysis/canada-energy-future/2023-data-supplement/>.



assumes that DAC capacity in Canada will increase to 4,600-5,500 times present world capacity by 2050. The chances of this happening are likely very small, considering the scale of growth that would be required. Other assumptions in the CER net-zero scenarios that are arguably optimistic are a three-fold increase in sequestration from Canada’s forests, as Canada’s forests have become net emitters over the past two decades, and significant declines in the cost of CCS, renewable energy and other inputs.<sup>11</sup>

Figure 6 illustrates the proportion of end-use energy supplied by different energy sources in the two CER net-zero scenarios compared with the IEA’s net-zero roadmap<sup>12</sup> published in September, 2023. Although the total reduction in end-use energy is similar between the IEA and CER global net-zero scenario, fossil fuel use is lower, at 19% in the IEA compared to 35-38% in the CER scenarios, and electricity use is higher, at 56% compared to 39-41%, respectively. Given the aforementioned optimism in the CER scenarios with respect to CCS and maintaining relatively high levels of fossil fuel consumption, the IEA scenario is likely considerably more realistic in terms of the probability of reaching net-zero by 2050.

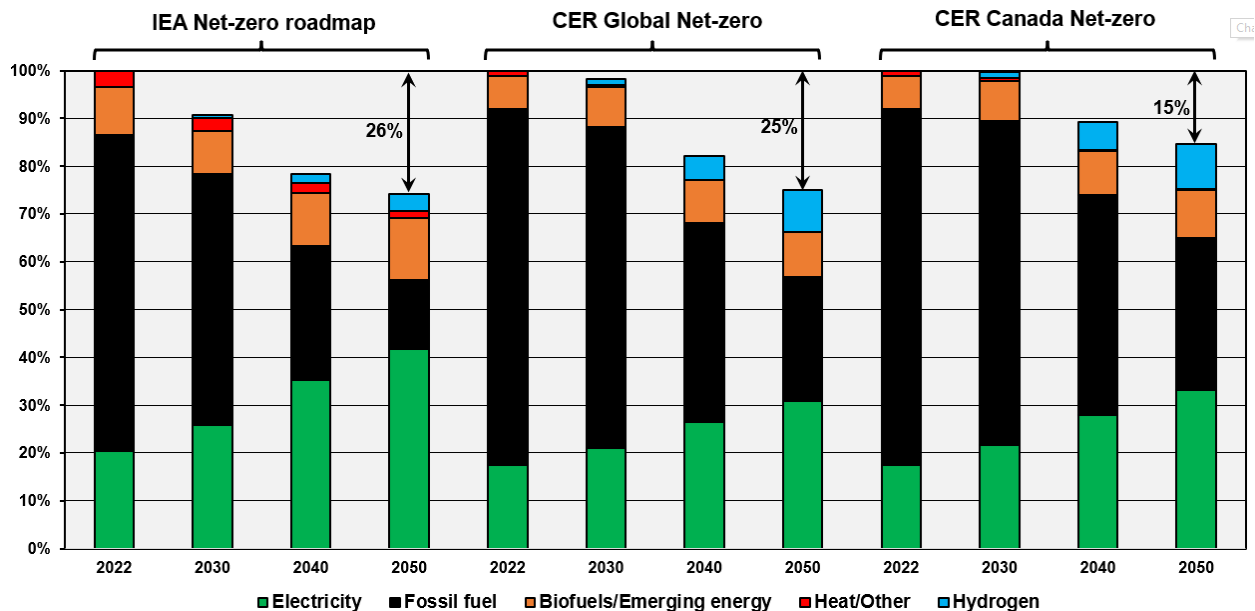


Figure 6 – The proportion of end-use energy sources in the IEA net-zero roadmap scenario compared to CER net-zero scenarios. Electricity use is much higher and fossil fuel use is much lower in the IEA scenario compared to the CER net-zero scenarios (see text).

These overly optimistic assumptions mean that fossil fuel production and consumption will have to be reduced more than assumed in the CER net-zero scenarios if Canada is to have any chance of meeting its legislated net-zero commitments. From the standpoint of LNG exports, CER’s

<sup>11</sup> Hughes, J.D., in press, Getting to net-zero in Canada: scale of the problem, government projections and daunting challenges, to be published by the Canada Centre for Policy Alternatives in early 2024.  
<sup>12</sup> International Energy Agency, 2023, Net Zero Roadmap: A Global Pathway to Keep the 1.5 °C Goal in Reach – 2023 Update, p. 39, [https://iea.blob.core.windows.net/assets/d0ba63c5-9d93-4457-be03-da0f1405a5dd/NetZeroRoadmap\\_AGlobalPathwaytoKeepthe1.5CGoalinReach-2023Update.pdf](https://iea.blob.core.windows.net/assets/d0ba63c5-9d93-4457-be03-da0f1405a5dd/NetZeroRoadmap_AGlobalPathwaytoKeepthe1.5CGoalinReach-2023Update.pdf).

global net-zero scenario should be considered the best case. The LNG Canada Phase 1 project will strain B.C. and Canada’s ability to meet emissions reduction commitments when it comes on stream in 2025, even without additional LNG projects being built.

### 3. Emissions and incrementality

Emissions from the Project are tabulated in the Strategic Assessment of Climate Change volume of the Project’s documentation and are illustrated in Figure 7.<sup>13</sup> Although 93% of the Project’s emissions occur upstream of the liquefaction terminal to produce, process and transport the natural gas required, only liquefaction terminal emissions are considered in the B.C. government’s regulation requiring LNG projects to be net-zero by 2030.<sup>14</sup>

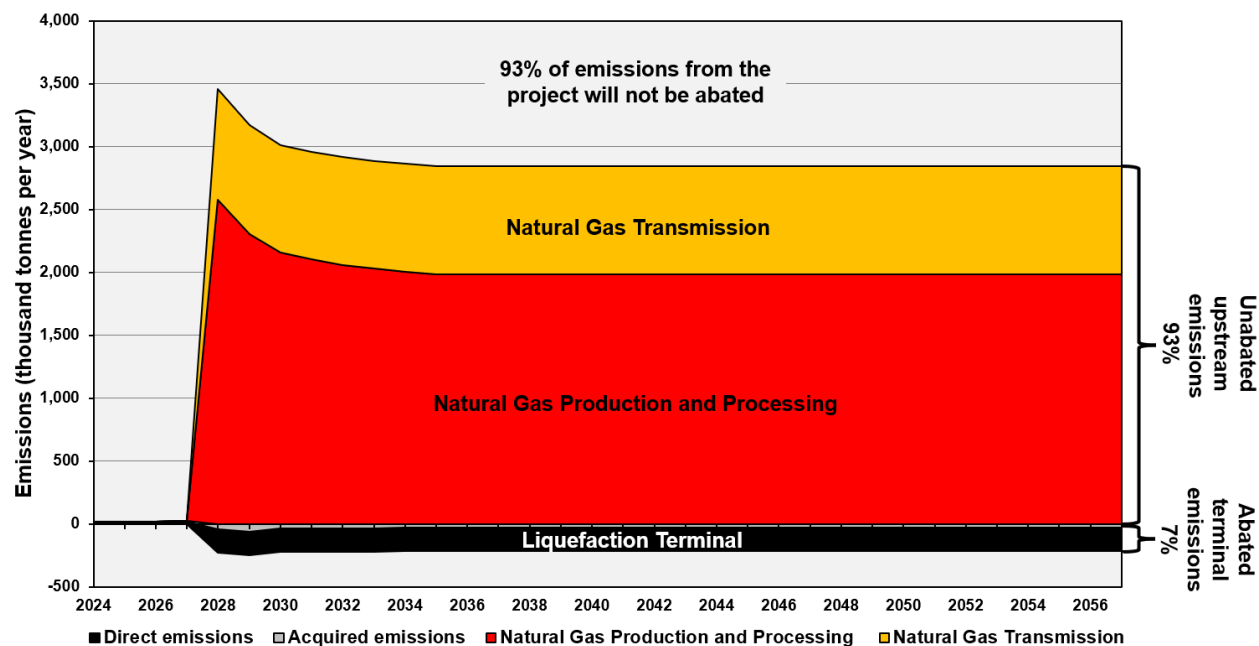


Figure 7 – Emissions from the Ksi Lisims LNG project from upstream natural gas production, processing and transportation, and from the liquefaction terminal using the Base Case in the application materials.<sup>13</sup> Only emissions from the liquefaction terminal are required to be abated by the B.C. government’s net-zero regulation, which means that 93% of emissions from the Project will not be abated.

Upstream emissions from the Project would accelerate climate change and diminish Canada’s chances of meeting its net-zero mandate. These emissions are clearly incremental to what would be emitted if the Project were not built, and are outside the boundaries of pathways to meet Canada’s net-zero mandate defined by CER’s net-zero scenarios. The Project’s proponents

<sup>13</sup> Stantec, October, 2023, Technical Data Report - Strategic Assessment of Climate Change Ksi Lisims LNG – Natural Gas Liquefaction and Marine Terminal Project, [https://projects.eao.gov.bc.ca/api/public/document/652f6ccebfc3c002295de2f/download/35\\_KsiLisimsLNG\\_8B\\_Strategic\\_Assess\\_Climate\\_Change%20.pdf](https://projects.eao.gov.bc.ca/api/public/document/652f6ccebfc3c002295de2f/download/35_KsiLisimsLNG_8B_Strategic_Assess_Climate_Change%20.pdf).

<sup>14</sup> B.C. Government, March, 2023, New Energy Action Framework, <https://news.gov.bc.ca/releases/2023PREM0018-000326>.

attempt to introduce uncertainty on the incrementality of the Project by saying, without evidence, that:

*“The incrementality of the upstream production associated with the Project to Canadian production will depend on a variety of factors and is difficult to assess with certainty. If the Global Net-zero scenario or Canada Net-zero scenario were to be realized, upstream production associated with the Project could be entirely incremental, not incremental at all, or a mixture of incremental and current production of Canadian supply.”<sup>15</sup>*

The Project’s proponents go on to claim:

*“Upstream natural gas production and associated GHG emissions are not expected to be incremental on a global scale, given the high risk of carbon leakage in the event the Project is not constructed... ...If the Project does not proceed, facilities with higher well-to-market emissions intensities would be developed or would continue producing to meet global demand.”<sup>16</sup>*

Although emissions from gas are about half that of coal when measured at the burner-tip, life-cycle emissions from production, processing, transportation and combustion can be equivalent to or greater than coal, due to the leakage of methane and associated greenhouse gases. Methane has a global warming potential (GWP) of 29.8 times that of carbon dioxide over 100 years and 82.5 times that of carbon dioxide over 20 years. Nitrous oxide, another potent greenhouse gas found in natural gas, has a GWP of 273 times that of carbon dioxide over both 20- and 100-year timeframes. A recent peer-reviewed study has found that natural gas emissions can be worse than coal over a 20-year period with methane leakage rates as low as 0.2%.<sup>17</sup>

LNG incurs additional emissions compared to gas produced and used within Canada as a result of the liquefaction, shipping and regasification processes. Figure 8 summarizes results from a recent study comparing life-cycle emissions of coal to LNG for different scenarios of cruise length and tanker fuel.<sup>18</sup> LNG transported by LNG-fueled tankers from Canada to Asia would have significantly higher life-cycle emissions than coal.

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<sup>15</sup> Stantec, October, 2023, Technical Data Report - Strategic Assessment of Climate Change Ksi Lisims LNG – Natural Gas Liquefaction and Marine Terminal Project, see page 23, [https://projects.eao.gov.bc.ca/api/public/document/652f6ccebfc3c002295de2f/download/35\\_KsiLisimsLNG\\_8B\\_Strategic\\_Assess\\_Climate\\_Change%20.pdf](https://projects.eao.gov.bc.ca/api/public/document/652f6ccebfc3c002295de2f/download/35_KsiLisimsLNG_8B_Strategic_Assess_Climate_Change%20.pdf).

<sup>16</sup> Stantec, October, 2023, Technical Data Report - Strategic Assessment of Climate Change Ksi Lisims LNG – Natural Gas Liquefaction and Marine Terminal Project, see page 26, [https://projects.eao.gov.bc.ca/api/public/document/652f6ccebfc3c002295de2f/download/35\\_KsiLisimsLNG\\_8B\\_Strategic\\_Assess\\_Climate\\_Change%20.pdf](https://projects.eao.gov.bc.ca/api/public/document/652f6ccebfc3c002295de2f/download/35_KsiLisimsLNG_8B_Strategic_Assess_Climate_Change%20.pdf).

<sup>17</sup> Gordon, D., et. al., 2023, Evaluating net life-cycle greenhouse gas emissions intensities from gas and coal at varying methane leakage rates, Environmental Research Letters, 18 (2023) 084008, <https://iopscience.iop.org/article/10.1088/1748-9326/ace3db/pdf>.

<sup>18</sup> Howarth, R.W., 2023, The Greenhouse Gas Footprint of Liquefied Natural Gas (LNG) Exported from the United States, [https://www.research.howarthlab.org/publications/Howarth\\_LNG\\_assessment\\_preprint\\_archived\\_2023-1103.pdf](https://www.research.howarthlab.org/publications/Howarth_LNG_assessment_preprint_archived_2023-1103.pdf).

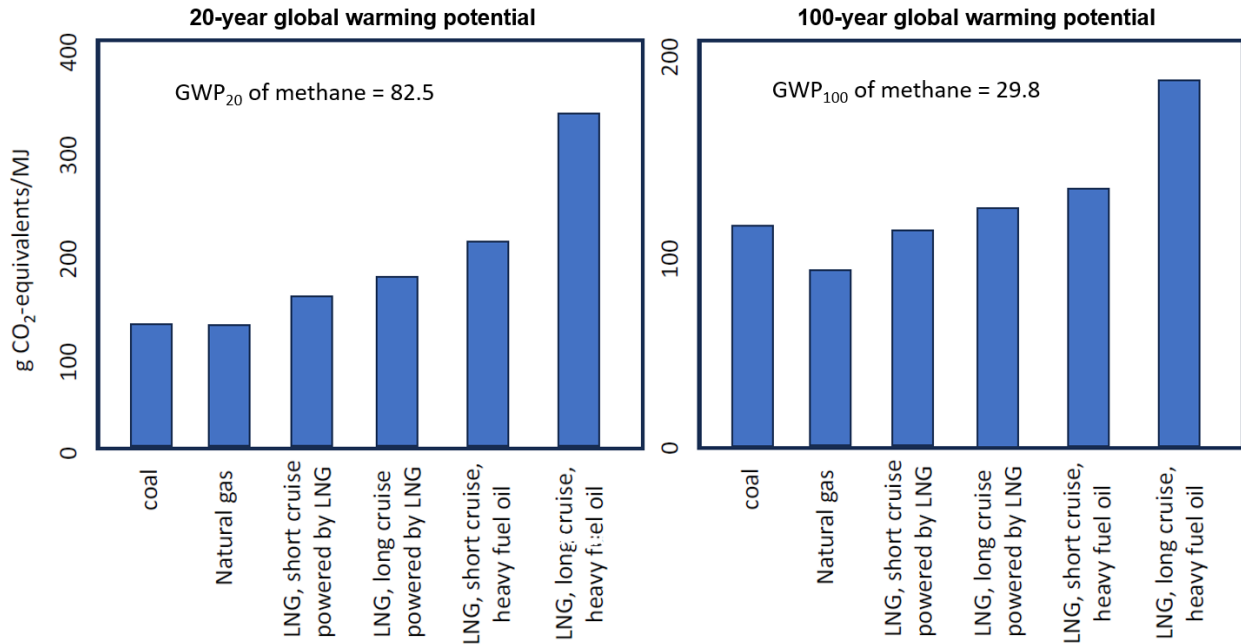


Figure 8 – Life-cycle emissions of coal compared to LNG over short- and long-cruise distances in tankers fueled with LNG or heavy fuel oil. Life-cycle emissions of LNG transported by LNG-fueled tankers from Canada to Asia would be significantly higher than coal over both 20-year and 100-year timeframes.

The Project proponent’s claim that LNG from the Project would lower global emissions is therefore not supported by the facts. LNG from the Project would increase global emissions in most situations even if the alternative is modern coal plants. LNG could also simply provide additional capacity without shutting down older plants or be used as an alternative to higher cost, but much lower emitting, renewable energy projects. Documented evidence should be a requirement in the rare instances where LNG would result in the closure of higher-emitting infrastructure.

Table 1 summarizes the terminal and upstream emissions for all approved and proposed LNG export projects in B.C., assuming they all would meet the emissions intensity of the proposed Ksi Lisims LNG project (this is an optimistic assumption as Ksi Lisims LNG plans to have the lowest emissions intensities of all projects proposed to date). Emissions for maximum allowable LNG export capacity under the CER net-zero scenarios are also shown. For reference, B.C.’s total emissions in 2021 were 62 megatonnes. Unabated upstream emissions from approved and proposed LNG projects would total 11.35 megatonnes, which is equivalent to nearly 20% of B.C.’s 2021 emissions.

LNG Project	Status	LNG Output (Mt/year)	Terminal Emissions (MtCO <sub>2</sub> /year)	Upstream Emissions (MtCO <sub>2</sub> /year)	Total Emissions (MtCO <sub>2</sub> /year)
LNG Canada Phase 1	Approved	14.0	0.25	3.32	3.57
Woodfibre LNG	Approved	2.1	0.04	0.50	0.54
Cedar LNG	Approved	3.0	0.05	0.71	0.77
LNG Canada Phase 2	Approved	14.0	0.25	3.32	3.57
Tilbury Phase 2	Proposed	2.8	0.05	0.66	0.71
Ksi Lisims	Proposed	12.0	0.22	2.84	3.06
Total approved		33.1	0.60	7.84	8.44
Total proposed		14.8	0.27	3.51	3.77
Grand total		47.9	0.87	11.35	12.22
Maximum allowable capacity under CER Global net-zero scenario (2029-2044)		14.8	0.27	3.50	3.76
Maximum allowable capacity under CER Canada net-zero scenario (2030-2050)		27.6	0.50	6.54	7.04

Table 1 – Emissions for approved and proposed LNG export projects in B.C. assuming all projects would meet the emissions intensities of the proposed Ksi Lisims LNG project. Also shown are emissions for the maximum allowable LNG export capacity under the two CER net-zero scenarios.

#### 4. Environmental impacts of pipeline and transmission line integral to the Project

Considering the Project as a standalone entity gives an incomplete picture of its true environmental impacts. The Project cannot be completed without the construction of the Westcoast Connector Gas Transmission pipeline (WCGT) and a high-voltage transmission line, each of which would add substantial environmental impacts. WCGT, for example, would have between 1370 and 1382 watercourse crossings, 693-718 of which are fish-bearing, and up to 4.4 megatonnes of greenhouse gas emissions per year when fully operational.<sup>19</sup> Similarly, the emissions projections of the Project’s liquefaction terminal cannot be achieved without electrification, which requires the construction of a high-voltage transmission line. Constructing this line would involve considerable additional environmental impacts, even without consideration of the need for more electricity generating capacity to meet the additional demand.

<sup>19</sup> B.C. Environmental Assessment Office, November 3, 2014, Westcoast Connector Gas Transmission Project Assessment Report, <https://projects.eao.gov.bc.ca/api/public/document/58868f85e036fb01057683c4/download/Assessment%20Report%20for%20the%20WCGT%20Project%20dated%20November%202014..pdf>. ASSESSMENT REPORT Northwest Institute, 2023, <https://northwestinstitute.ca/index.php/ing/open-letter-allow-public-input-on-enbridges-fracked-gas-pipeline-extension>.

In addition, the liquefaction terminal and portions of the pipeline and high-voltage transmission line required by the Project lie within the traditional territory of the Lax Kw'alaams First Nation. The Lax Kw'alaams are strongly opposed to the Project on environmental grounds.<sup>20</sup>

## 5. Conclusions

The evidence against the Ksi Lisims LNG project is very clear if B.C. and Canada are serious about meeting their legislated commitment to achieve net-zero emissions by 2050. The Canada Energy Regulator, at the direction of the Minister of Natural Resources, has completed a comprehensive assessment of viable scenarios to achieve this net-zero commitment. Projects already approved by the B.C. government exceed the maximum allowable LNG export capacity defined by the CER scenarios. There is no capacity available to consider additional projects such as Ksi Lisims LNG if B.C. and Canada are to achieve their net-zero mandates.

In CER's global net-zero scenario, which assumes the world will be successful in reducing emissions to net-zero by 2050, there is only enough LNG export capacity available to meet the first 20 years of LNG Canada Phase 1 and a portion of Woodfibre LNG's requirements. In 2045, LNG Canada Phase 1 would have to reduce output by nearly 90% and Woodfibre LNG would have to shut down.

In CER's Canada net-zero scenario, which assumes that Canada will meet its net-zero mandate but the rest of the world will not, CER assumes that higher LNG export volumes would be possible. In this scenario there would be enough export capacity for approved LNG projects, except that LNG Canada Phase 2 would have to reduce its planned output by 40% throughout its project life.

A comparison of the CER net-zero scenarios to the IEA net-zero roadmap suggests that CER is too optimistic on the growth of carbon capture and storage capacity to offset emissions along with other assumptions. CER assumes that Canada, already a leader in CCUS, can increase its CCS capacity by 34-39 times by 2050, and also that direct air capture of carbon dioxide equivalent to 4,600-5,500 times current world capacity can be developed by 2050. This allowed CER to assume a greater proportion of fossil fuel in end-use energy demand while still achieving Canada's net-zero mandate. The IEA, in contrast, assumed that a much lower level of fossil fuel in end-use demand would be necessary, along with a greater proportion of electricity. Given CER's optimism on carbon capture and other assumptions, its global net-zero scenario, which limits LNG projects to LNG Canada Phase 1 and a portion of Woodfibre LNG, should be considered a best-case scenario if Canada is to meet its net-zero commitment.

The proponent's claim that the Project would reduce emissions on a global scale is not supported by recent peer-reviewed studies. Although gas has about half the emissions of coal at the burner-tip, the life-cycle emissions of gas from production and transportation through combustion can be equivalent to coal, even at relatively low levels of methane leakage. LNG adds further

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<sup>20</sup> Northern BC Business, November 17, 2023, Lax Kw'alaams staunchly opposed to proposed north coast LNG project, <https://www.northernbcbusiness.ca/lax-kwalaams-remain-staunchly-opposed-to-proposed-ksi-lisims-lng-project/>.

emissions from long-distance ocean transport, liquefaction and regasification. LNG is most likely to be used as an alternative supply source for existing gas-fired infrastructure or for new capacity, in which case it may displace higher-cost alternatives that have lower life-cycle emissions. Building new gas-fired infrastructure dependent on LNG locks in emissions for decades.

In addition to the adverse impact the Project would have on Canada's ability to meet its net-zero emissions mandate, the Project would also necessitate other significant environmental impacts. These include land disturbance from drilling required to produce the gas, from building the pipelines needed to transport the gas, and from building the high-voltage transmission line required to power the liquefaction terminal. These environmental impacts have resulted in strong opposition to the Project by the Lax Kw'alaams First Nation, whose traditional territory includes the site of the proposed liquefaction terminal as well as portions of the high-voltage transmission line and pipeline that would be required.