

## 2023/24 Estimates Note Advice to the Minister

**Ministry:** Ministry of Energy, Mines and Low Carbon Innovation  
**Minister Responsible:** Josie Osborne

**Title:** Project and Five Conditions

**Drafted** March 17, 2023

**Issue:** Five Conditions for the LNG Canada export facility and Coastal GasLink pipeline projects

**Response:**

- Government has set five conditions to ensure that LNG projects are constructed and operated in a way that benefits British Columbians and meets the Province's climate commitments.
- LNG investment in B.C. will:
  - Deliver jobs and training opportunities for British Columbians,
  - Provide a fair return for our resources,
  - Respect and make partners of First Nations,
  - Protect our clean air, water and land, and
  - Mitigate community impacts and enhance community benefits.
- The LNG Canada project has created many benefits. Government plays an active role in monitoring the projects' impacts on local communities and First Nations.

**Background/Status:**

- In 2018, the provincial government announced four conditions for LNG investment to ensure long-term benefits for British Columbians while maintaining strong environmental protections.
- In 2022, British Columbia developed a fifth condition for LNG projects to ensure that companies mitigate impacts and enhance benefits for local communities and First Nations.
- The LNG Implementation Secretariat (Secretariat) continues to monitor LNG Canada and Coastal GasLink's (CGL) progress on these five conditions:

**Jobs and Training:**

- Total construction workforce: 12,891<sup>1</sup> workers (3,910 British Columbians: 1,571 women and 979 self-identified Indigenous peoples).
- Over \$7.6 million has been spent by LNG Canada/CGL on skills training in B.C., including \$1.5 million towards LNG Canada's Trades Training Fund, resulting in 1,538 apprentices trained and an additional 120 women introduced to construction through the "Your Place" work readiness initiative.

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<sup>1</sup> Total using the most recent data from the two projects; January 2023 for LNG Canada and December 2022 for CGL.

## 2023/24 Estimates Note Advice to the Minister

**Ministry:** Ministry of Energy, Mines and Low Carbon Innovation  
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### Fair Return for Resources:

- \$23 billion in new government revenues over the life of the project.
- Construction of the project represents a 0.7% increase to real GDP for B.C.
- Over \$5.4 billion in subcontracts and procurements awarded by LNG Canada and Coastal GasLink to B.C. businesses.

### First Nations Partnerships:

- LNG Canada and CGL have agreements in place with all elected First Nations communities along the pipeline right of way, and facility footprint.
- Collectively, approximately \$4 billion in subcontracts and procurement has been awarded to Indigenous businesses. Over 200 Indigenous businesses have been involved with construction activities.
- Sixteen of 20 First Nations have 10% equity agreements on the GCL pipeline.
- All CGL prime contractors have signed agreements with Indigenous communities in whose territories they are operating. First Nations-led service sector companies are also employed for security, catering and other workforce lodge supports.
- LNG Canada requires employees sign a Workers Code of Conduct and complete Cultural Awareness Training. Coastal GasLink's Community Workforce Advisor program employs members from neighbouring Indigenous communities to lead cultural training programs, and the Construction Monitoring and Community Liaison Program involves Indigenous community members to participate in construction in their territory and report back to their communities.

### Environment:

- LNG Canada Phase 1 is accounted for in CleanBC.
- The LNG Canada project is expected to have the lowest GHG emission intensity of any major LNG facility currently in the world – 35% lower than the world's best performing facilities and 60% lower than the global weighted average.
- Vessels assembled by HaiSea Marine will use battery-electric power and natural gas instead of diesel, reducing CO<sub>2</sub>e emission by up to 10,000 tonnes a year (at the LNG Canada export facility).
- CGL is using a new kind of technology called Enclosed Vapour Combustors to reduce emissions across project lines.

### Community Well-Being:

- Over \$6 million has been spent by LNG Canada and CGL on local community benefits. Examples:
  - \$1.2 million to the Northwest Regional Airport Terrace-Kitimat.
  - \$500,000 provided to the City of Terrace Fire Department for a new highway rescue vehicle.

## 2023/24 Estimates Note Advice to the Minister

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- \$350,000 provided to Coast Mountain Children's Society to support 14 childcare spaces program in the Kitimat/Haisla area.
- \$125,000 provided to the Tamitik Status of Women to support programs and services for women and families affected by social issues.
- \$100,000 provided to Chetwynd and District Hospital.
- \$100,000 provided to Chetwynd Public Library.
- The Environmental Assessment Certificates (EACs) for the LNG Canada export facility and CGL pipeline projects each have a condition requiring the companies to develop plans to mitigate, and adaptively manage, potential socio-economic effects on community services and infrastructure in their area of construction.
  - In accordance with Condition #14 of their EAC, LNG Canada developed a Community Level Infrastructure and Services Management Plan (CLISMP).
  - In accordance with Condition #24 of their EAC, CGL developed a Socio-economic Effects Management Plan (SEEMP).
- LNG Canada's non-local workers are housed at Cedar Valley Lodge – a world class industrial accommodation to reduce community housing displacement.

**Cross Reference:** LNG Canada Project Overview  
Coastal GasLink Pipeline Overview

**Contact:**

Suzanne Manahan	A/Assistant Deputy Minister	LNG Canada Implementation Secretariat	250 952-0729
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## 2023/24 Estimates Note Advice to the Minister

**Ministry:** Ministry of Energy, Mines and Low Carbon Innovation  
**Minister Responsible:** Josie Osborne

**Title:** LNG Canada Project Overview

**Drafted:** March 16, 2023

**Issue:** LNG Canada Export Terminal Project overview

**Response:**

- LNG Canada is creating new, significant economic opportunities for British Columbia. The project is currently in its fifth year of construction.
- LNG Canada continues to hit critical construction milestones and the plant construction is close to 80% complete. The project is on track to export LNG around mid-decade.
- At \$40 billion, LNG Canada is the largest private sector investment in Canadian history. The project is expected to generate approximately \$23 billion in public revenue over 40 years.
- To date, the LNG Canada project has awarded over \$4 billion in contracts to businesses in B.C. and Canada. That includes around \$2.7 billion to Indigenous-owned businesses.
- The project has a workforce of over 5,000 people as of January 2023.
- Government is working closely with First Nations, local communities and industry to ensure benefits are being realized and that proponents continue to meet the conditions in their Environmental Assessment Certificate and permits.

**Background/Status:**

- The LNG Canada project is a joint venture comprised of Shell Canada (40%), PETRONAS (25%), PetroChina (15%), Mitsubishi Corporation (15%) and KOGAS (5%).

**Project Description:**

- On October 1, 2018, LNG Canada made a positive Final Investment Decision (FID) to construct a liquefied natural gas (LNG) export facility in Kitimat, B.C. It is the largest private sector investment in Canadian history.
- The project received a provincial Environmental Assessment Certificate (EAC) and federal approval through a substituted environmental assessment process (single process covering both the Province and Canada) in June 2015. The EAC is inclusive of Phase 1 and Phase 2. Federal export approval was obtained from the National Energy Board in January 2016.
- LNG Canada has all major permits in place from the BC Energy Regulator (BCER) including B.C.'s first LNG facility permit.

## 2023/24 Estimates Note Advice to the Minister

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- LNG Canada requires that the Coastal GasLink (CGL) pipeline be built as it will supply natural gas for the export facility. The CGL pipeline will have one compressor station that has a capacity of 2.1 billion cubic feet per day {bcf/d}. The LNG Canada export facility will have two liquefaction trains that will produce 14 million tonnes per annum.
- Phase 2 of the LNG Canada project would require two more trains at the Kitimat export facility and an expansion of CGL's capacity with the addition of up to seven compressor stations, totalling 5bcf/d. A final decision on whether to pursue Phase 2 has not been made.

### Construction Update:

- The export facility is now in its fifth year of construction. LNG Canada and their engineering procurement and construction contractor, JGC Fluor BC LNG JV (JFJV), continue to hit critical construction milestones and the project is on track to export LNG around mid-decade.
- Various infrastructure modules are arriving at the site on schedule and the vapour flare erection has started. All major works on the berth have been completed and remaining activities, such as testing and coating repairs, are scheduled for Q1 2023.

### Benefits:

- Jobs and training: The most recent details provided directly from LNG Canada identifies the total workforce as 5,828 (January 2023), with these numbers estimated to reach a peak of approximately 7,000 later in the year. LNG Canada has invested over \$4 million since 2015 in trades workforce development programs. LNG Canada has prioritized local hiring first, followed by workers from within B.C. and Canada.
- Economic: LNG Canada will generate approximately \$23 billion in public revenue over 40 years.
- Indigenous Nations: LNG Canada has entered into agreements with all affected First Nations. Over \$2.7 billion has been awarded in contracts and procurement to Indigenous businesses.
- Environment/climate: LNG Canada is expected to have the lowest GHG emissions intensity of any LNG facility of its kind in the world. Consultations on Phase 2 will be considerate of B.C.'s new action energy framework.

**Cross Reference:** Coastal GasLink Pipeline Project Profile  
LNG Canada Phase 2

### **Contact:**

Suzanne Manahan	A/Assistant Deputy Minister	LNG Canada Implementation Secretariat	250 952-0729
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## **2023/24 Estimates Note Advice to the Minister**

**Ministry:** Ministry of Energy, Mines and Low Carbon Innovation  
**Minister Responsible:** Josie Osborne

**Title:** LNG Canada Phase 2

**Drafted:** March 16, 2023

**Issue:** British Columbia is discussing a possible Phase 2 expansion with LNG Canada; the project must continue to meet provincial conditions and consultations will consider the new energy action framework.

**Response:**

- The provincial government is discussing a possible Phase 2 expansion with LNG Canada, and how that can be achieved while meeting British Columbia's five conditions for LNG development.
- Discussions will also consider B.C.'s new energy action framework.
- There will be a task force established to accelerate the electrification of our economy.
- BC Hydro has an expression of interest out now to identify demand for electricity in northern B.C. Cost and time estimates will be developed as potential transmission upgrade projects proceed.
- At this time, LNG Canada has not made a final investment decision about Phase 2.

**Background/Status:**

- The LNG Canada project received a provincial Environmental Assessment Certificate (EAC) and federal approval through a substituted environmental assessment process (single process covering both the Province and Canada) in June 2015. The EAC is inclusive of Phase 1 and Phase 2.
- On October 1, 2018, LNG Canada made their final investment decision (FID) to construct Phase 1 of their export facility in Kitimat, B.C. on the traditional territory of the Haisla Nation.
- Currently, LNG Canada's liquefaction process will operate on natural gas turbines as permitted. Phase 1 of the facility consist of two liquefaction trains that will produce 14 million tonnes per annum.
- LNG Canada has all the necessary permits they need to build Phase 2. These permits allow for the use of gas-fired turbines to power two additional trains at the site in Kitimat. The Coastal GasLink (CGL) project would require up to an additional seven compressor stations along the pipeline's right-of-way.
- BC Hydro is aware of LNG Canada's Phase 2 ambitions to electrify. An assessment is underway to consider the industrial demand for new transmission

## 2023/24 Estimates Note Advice to the Minister

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infrastructure to the North Coast of B.C. BC Hydro has released an expression of interest to identify potential industrial customers.

- Provincial engagement and consultations will move forward in recognition of British Columbia's four key action items associated with the new energy action framework:
  - require all proposed LNG facilities in or entering the environmental assessment (EA) process to pass an emissions test with a credible plan to be net zero by 2030;
  - put in place a regulatory emissions cap for the oil and gas industry to ensure B.C. meets its 2030 emissions-reduction target for the sector;
  - establish a clean-energy and major projects office to fast-track investment in clean energy and technology and create good, sustainable jobs in the transition to a cleaner economy; and
  - create a BC Hydro task force to accelerate the electrification of B.C.'s economy by powering more homes, businesses and industries with renewable electricity.
- To date, LNG Canada has not made a FID for Phase 2.

**Cross Reference:** LNG Canada Project Overview  
Government's Five Conditions for LNG

**Contact:**

Suzanne Manahan	A/Assistant Deputy Minister	LNG Canada Implementation Secretariat	250 217-1567
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**Title:** Project and Five Conditions

**Drafted** March 17, 2023. Updated June 13, 2023

**Issue:** Five Conditions for the LNG Canada export facility and Coastal GasLink pipeline projects

**Response:**

- Government has set five conditions to ensure that LNG projects are constructed and operated in a way that benefits British Columbians and meets the Province's climate commitments.
- LNG investment in B.C. will:
  - Deliver jobs and training opportunities for British Columbians,
  - Provide a fair return for our resources,
  - Respect and make partners of First Nations,
  - Protect our clean air, water and land, and
  - Mitigate community impacts and enhance community benefits.
- The LNG Canada project has created many benefits. Government plays an active role in monitoring the projects' impacts on local communities and First Nations.

**Background/Status:**

- In 2018, the provincial government announced four conditions for LNG investment to ensure long-term benefits for British Columbians while maintaining strong environmental protections.
- In 2022, British Columbia developed a fifth condition for LNG projects to ensure that companies mitigate impacts and enhance benefits for local communities and First Nations.
- The LNG Implementation Secretariat (Secretariat) continues to monitor LNG Canada and Coastal GasLink's (CGL) progress on these five conditions:

**Jobs and Training:**

- Total construction workforce: 13,214<sup>1</sup> workers (4,290 [32%] British Columbians: 1,590 [12%] women and 1,138 [9%] self-identified Indigenous peoples.
- Over \$7.6 million has been spent by LNG Canada/CGL on skills training in B.C., including \$1.5 million towards LNG Canada's Trades Training Fund, resulting in 1,538 apprentices trained and an additional 120 women introduced to construction through the "Your Place" work readiness initiative.

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<sup>1</sup> Total using the most recent data from the two projects; April 2023 for LNG Canada and March 2023 for CGL.

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### Fair Return for Resources:

- \$23 billion in new government revenues over the life of the project.
- Construction of the project represents a 0.7% increase to real GDP for B.C.
- Over \$5.6 billion in subcontracts and procurements awarded by LNG Canada and Coastal GasLink to B.C. businesses.

### First Nations Partnerships:

- LNG Canada and CGL have agreements in place with all elected First Nations communities along the pipeline right of way, and facility footprint.
- Collectively, approximately \$4 billion in subcontracts and procurement has been awarded to Indigenous businesses. Over 200 Indigenous businesses have been involved with construction activities.
- Sixteen of 20 First Nations have 10% equity agreements on the GCL pipeline.
- All CGL prime contractors have signed agreements with Indigenous communities in whose territories they are operating. First Nations-led service sector companies are also employed for security, catering and other workforce lodge supports.
- LNG Canada requires employees sign a Workers Code of Conduct and complete Cultural Awareness Training. Coastal GasLink's Community Workforce Advisor program employs members from neighbouring Indigenous communities to lead cultural training programs, and the Construction Monitoring and Community Liaison Program involves Indigenous community members to participate in construction in their territory and report back to their communities.

### Environment:

- LNG Canada Phase 1 is accounted for in CleanBC.
- The LNG Canada project is expected to have the lowest GHG emission intensity of any major LNG facility currently in the world – 35% lower than the world's best performing facilities and 60% lower than the global weighted average.
- Vessels assembled by HaiSea Marine will use battery-electric power and natural gas instead of diesel, reducing CO<sub>2</sub>e emission by up to 10,000 tonnes a year (at the LNG Canada export facility).
- CGL is using a new kind of technology called Enclosed Vapour Combustors to reduce emissions across project lines.

### Community Well-Being:

- Over \$6 million has been spent by LNG Canada and CGL on local community benefits. Examples:
  - \$1.2 million to the Northwest Regional Airport Terrace-Kitimat.
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**Cross Reference:** LNG Canada Project Overview  
Coastal GasLink Pipeline Overview

**Contact:**

LNG Canada  
Implementation  
Secretariat

**MINISTRY OF ENERGY, MINES AND LOW CARBON INNOVATION**

**BRIEFING NOTE FOR INFORMATION**

**PREPARED FOR:** Honourable Josie Osborne, Minister of Energy, Mines and Low Carbon Innovation

**ISSUE:** Minister tour of the LNG Canada Facility

**SUMMARY:**

- The LNG Canada export facility is approximately 80% complete and it's on track to export LNG around mid-decade.
- There are over 7,000 people employed at the project site in Kitimat. Hundreds of workers self-identify as Indigenous.
- To date, the LNG Canada project has awarded approximately \$4 billion in contracts to businesses in British Columbia. That includes over \$2.7 billion to Indigenous-owned businesses.
- LNG Canada is planning for Phase 2 construction, but a final investment decision has not been announced. Executive staff representing the project are appreciative of B.C.'s new energy action framework and are looking forward to consultations.

**BACKGROUND:**

On October 1, 2018, LNG Canada made their final investment decision (FID) to construct Phase 1 of their export facility in Kitimat, on the traditional territory of the Haisla Nation. At \$40 billion it marked the largest private sector investment in Canadian history.

The LNG Canada project is in its fifth year of construction. It's approximately 80% complete and on track to export LNG mid-decade. The provincial government continues to measure the project's milestones under the five conditions for LNG development:

1. Job and training opportunities for British Columbians
2. A fair return for B.C.'s resource
3. Respect and make partners of First Nations
4. Protect B.C.'s air, land and water, and live up to the province's climate commitments
5. Benefit local communities (and offset socio-economic effects)

**Benefits:**

As of January 2023, 5,828 workers were employed at the LNG Canada project site in Kitimat. Of that total, 2,335 are from B.C. (other independent categories of workers include 708 individuals from the local area; 390 people that self identify as Indigenous; 751 women<sup>1</sup>).<sup>2</sup> LNG Canada has

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<sup>1</sup> Reported values are not cumulative. Individuals may qualify under multiple categories.

<sup>2</sup> The Coastal GasLink pipeline project that links to the LNG Canada facility also employs thousands of workers.

spent over \$4 million in workforce development programs designed to increase the participation of local area residents, Indigenous communities and British Columbians.

To date, LNG Canada and its contractors and subcontractors have awarded over \$4 billion in contracts and procurement to businesses in British Columbia, which includes over \$2.7 billion to Haisla and other Indigenous-owned businesses. One of the major contracts includes \$500 million for the Haisla Nation/Seaspan joint venture, called HaiSea Marine, to build and operate tugs required for the export facility.

LNG Canada began recruitment for operational jobs in 2021 and has hired for a total of 190 full time positions. Recruitment efforts remain underway.

### **Phase 2:**

The LNG Canada project received a provincial Environmental Assessment Certificate (EAC) and federal approval through a substituted environmental assessment process in June 2015. The EAC is inclusive of Phase 1 and Phase 2.

LNG Canada has publicly announced their intention to build Phase 2 of their facility (attachment 1)<sup>3</sup>. Led by Shell, the joint venture partners have been in discussions with the Province and the federal government on a phased electrification approach that would see Phase 2 electrified, Phase 1 retrofitted, and the electrification of accessible compressor stations.

Executive staff representing LNG Canada are appreciative of B.C.'s new energy action framework. Engagement and consultations will move forward in recognition of the provincial government's four key action items associated with the framework:

- require all proposed LNG facilities in or entering the environmental assessment (EA) process to pass an emissions test with a credible plan to be net zero by 2030;
- put in place a regulatory emissions cap for the oil and gas industry to ensure B.C. meets its 2030 emissions-reduction target for the sector;
- establish a clean-energy and major projects office to fast-track investment in clean energy and technology and create good, sustainable jobs in the transition to a cleaner economy; and
- create a BC Hydro task force to accelerate the electrification of B.C.'s economy by powering more homes, businesses and industries with renewable electricity.

To date, LNG Canada has not made a FID for Phase 2.

### **CONCLUSION:**

- The LNG Canada project has demonstrated substantial progress and economic benefits associated with construction.
- British Columbia supports any and all measures LNG Canada is implementing to ensure benefits are flowing to First Nations and local communities.

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<sup>3</sup> Currently the export facility will operate on natural gas turbines as permitted.

- The provincial government is attentive to LNG Canada's plans to develop Phase 2 of the project. Discussions will continue with consideration of B.C.'s new energy action framework.
- The project must continue to meet British Columbia's five conditions for LNG development.

**Attachment:**

News Article - Electricity constraints force Canada's first LNG terminal to delay renewable shift

**DRAFTED BY:**

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A/Sr. Policy Analyst  
LNG Canada Secretariat

**APPROVED BY:**

Suzanne Manahan, A/ADM ✓  
Shannon Baskerville, DM, EMLI ✓

## Attachment 1

### **Exclusive: Electricity constraints force Canada's first LNG terminal to delay renewable shift**

Jan 16 (Reuters) - Shell PLC's (SHEL.L) LNG Canada export project in British Columbia plans to start building its proposed second phase with natural gas-powered turbines and switch to electricity as more renewable power becomes available, a top executive said, a decision that means the expansion project will initially generate high greenhouse gas emissions.

LNG Canada, in which Japan's Mitsubishi Corp (8058.T) owns a 15% stake, is set to be Canada's first liquefied natural gas (LNG) export terminal. The first phase is expected begin shipments around 2025.

With global demand for natural gas from sources other than Russia accelerating after its invasion of Ukraine last year, LNG Canada is weighing whether to build by 2030 a second phase to double annual capacity to 28 million tonnes.

LNG Canada now plans to initially build Phase 2 with natural gas-powered turbines and switch to electric motors as more power becomes available, pending a final investment decision, CEO Jason Klein told Reuters on Friday.

LNG Canada has previously described this approach as only one of the options it was considering.

The company's move to only gradually switch to renewable electricity risks means the Phase 2 project would produce initially high emissions that would run up against ambitious emissions reduction goals set by the British Columbia and federal governments.

Running the turbines using B.C.'s hydro electricity to cool the gas to liquid for shipping would limit emissions, but requires hundreds of kilometers of new transmission lines to reach the province's remote northwest coast.

"We can't do an immediate and wholesale electrification of the plant and the pipeline. It's not possible today because the transmission infrastructure just isn't there," Klein said, adding that LNG Canada is discussing with both governments and utility BC Hydro when lines may be in place.

"If the power was there today it would be a pretty straightforward decision."

LNG Canada's dilemma illustrates the practical challenges of a global push to electrify buildings and vehicles to curb climate-warming emissions. The move requires the world's grid to generate significantly more power and build infrastructure to deliver it.

Klein said LNG Canada had not directly asked for financial assistance from either government to build transmission lines and electrify Phase 2, and is still assessing the project's economics.

"I wouldn't expect to be able to attract capital to a project that's not competitive," Klein said.

LNG Canada has full environmental permits from both governments to use natural gas turbines for Phase 2, making it unclear what leverage governments have to force electrification.

Government cooperation is critical to constructing transmission lines, however.

"It would be difficult to make an investment on this scale without some level of alignment and the support of host governments," Klein said.

## CLIMATE GOALS

Russia's invasion of Ukraine upended gas deliveries to Europe, prompting a scramble for alternative supplies. Some of Canada's allies, including Germany and Japan, have asked Prime Minister Justin Trudeau to play a major role in increasing LNG supplies.

Ottawa wants to develop a Canadian LNG industry to boost the economy, but has also pledged to cut emissions by at least 40% by 2030.

The terminal, which LNG Canada says would have the lowest emissions intensity in the world, will emit 4 million tonnes of greenhouse gases annually with both phases based on natural gas power. That's the equivalent of 0.6% of Canada's total 2020 emissions.

Electrifying Phase 2 is expected to be more expensive than using natural gas. But buyers may pay more for LNG produced with lower emissions, Klein said, noting that some buyers already purchase carbon offsets for LNG cargoes.

He said he is satisfied the province of B.C. can generate enough electricity for the terminal - the issue is how quickly it can build new transmission lines and how that would impact Phase 2 costs.

Mora Scott, a BC Hydro spokesperson, said the utility expects to have more than enough power until the end of the decade and is planning for scenarios including rapid growth from mining and LNG development.

Future LNG projects need to fit within B.C.'s climate goals, the province's ministry of energy said in a statement, while federal Environment Minister Steven Guilbeault said it was up to B.C. to decide what to do with its electricity.

LNG production accounts for only 15% of the greenhouse gases associated with it, and the rest enters the atmosphere when consumers burn the gas, suggesting the governments' emphasis on electrification of the terminal is misplaced, said Bruce Robertson, an analyst at the Institute for Energy Economics and Financial Analysis, an independent energy research group.

"This is a classic example of how perverse carbon accounting is," he said. "The LNG industry in Canada is conveniently excluding where most of the emissions occur."