



## Liquefied Natural Gas Environmental Incentive Program

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### Background

BC's Liquefied Natural Gas Strategy includes the goal of keeping British Columbia at the forefront of climate leadership. To meet this goal and to address legislated greenhouse gas (GHG) targets, the B.C. government has committed to having the cleanest LNG facilities in the world; this will be accomplished through the development of new GHG and air emissions regulatory requirements.

The *Greenhouse Gas Industrial Reporting and Control Act* ("GGIRCA") will require LNG operations to achieve a greenhouse gas emissions intensity benchmark (the "LNG Benchmark") of 0.16 metric tonnes of carbon dioxide equivalent ("CO<sub>2</sub>e") per metric tonne of LNG produced ("tCO<sub>2</sub>e/tLNG"). This is lower than any other LNG export facility in the world. Facilities not meeting this world-leading benchmark directly by the incorporation of lower emissions technologies or the use of clean energy, will be able to achieve compliance with the benchmark through flexible options including purchasing "compliance units" under GGIRCA. Compliance units include "offset units", "earned credits" and "funded units" as those terms are defined under GGIRCA.

To manage cost implications of GHG compliance and address competitiveness of the BC LNG industry, the BC Government has created an *LNG Environmental Incentive Program*. By incenting investment in advanced technology and rewarding achievement of world-leading performance, the program will help ensure the development of the cleanest LNG facilities in the world.

### LNG Environmental Incentive Program

To be eligible for the LNG Environmental Incentive Program, an LNG operation must show that its "Eligibility GHG Intensity" during a calendar year is less than or equal to 0.23 tCO<sub>2</sub>e/tLNG. "Eligibility GHG Intensity" means the product of the following formula:

$$\frac{(\text{Total Annual GHG Emissions} - \text{Entrained CO}_2 \text{ Emissions} - \text{Emergency Emissions (tonnes CO}_2\text{e)})}{\text{Total Annual LNG Production (tonnes LNG)}}$$

Where

"Emergency Emissions" means the quantity, as determined by the director under GGIRCA (the "Director") and measured in tonnes of CO<sub>2</sub>e, of emissions that

- (a) have occurred as a direct result of
  - (i) an accident, fire, explosion, technical failure or effect of the forces of nature, or
  - (ii) actions in response to an unplanned event taken by an LNG operation to avoid or respond to an imminent threat of accident, fire, explosion, technical failure or effect of the forces of nature or to mitigate the effects of same

where such accident, fire, explosion, technical failure or effect of the forces of nature creates or would create a direct threat to the health, safety or welfare of a person or substantial damage to property, and

- (b) are attributable to an LNG operation under GGIRCA during a calendar year, but does not include emissions occurring after the threat described in paragraph (a) has ended, or emissions that could be avoided by the exercise of due diligence by the operator;

“Entrained CO<sub>2</sub> Emissions” means total emissions of carbon dioxide removed from transmission of pipeline-quality natural gas by an LNG operation or a facility purifying transmission pipeline quality natural gas for use by LNG operations, excluding any emissions of such greenhouse gases that are not attributable to the LNG operation under GGIRCA during a calendar year;

“Total Annual GHG Emissions” means total emissions of greenhouse gases that are attributable to an LNG operation under GGIRCA during a calendar year;

“Total Annual LNG Production” means total annual LNG production during a calendar year as determined under GGIRCA.

If an LNG operation’s Eligibility GHG Intensity during a calendar year exceeds 0.23tCO<sub>2</sub>e/tLNG, no incentive is payable under this program for that calendar year.

For LNG operations that are eligible for the program, the Environmental Incentive will be a graduated payment from 50% to 100% of the purchase price of up to 100% of compliance units made available in the compliance account of an LNG operation for the purposes of complying with section 6 of GGIRCA. More specifically, the amount paid to an LNG operation in respect of any calendar year will be equal to the following:

Eligible Fraction of Costs x Excess Emissions below 0.23 x Average Compliance Unit Cost

where

“Average Compliance Unit Costs” means the average per compliance unit purchase price paid by the operator of an LNG operation for those compliance units made available in the compliance account of the LNG operation for the purposes of complying with section 6 of GGIRCA for a calendar year, provided that

- (a) if a compliance unit is acquired by an operator in a transaction other than an arms-length transaction involving transfer of compliance units in exchange for payment of a purchase price, the purchase price will be deemed to be the fair market value,
- (b) the purchase price shall be exclusive of any taxes paid by the compliance unit vendor or purchaser in respect of the transaction,
- (c) the purchase price for any compliance unit that exceeds the amount prescribed for the purposes of section 11 of GGIRCA shall be deemed to be the prescribed amount;

“Eligible Fraction of Costs” means

- (a) if the LNG operation’s Total Facility GHG Intensity is equal to or exceeds 0.23tCO<sub>2</sub>e/tLNG, means 0.5,
- (b) if the LNG operation’s Total Facility GHG Intensity is less than 0.23tCO<sub>2</sub>e, means the fraction derived from the following formula:

$$\left\{ \frac{0.07 - [Total\ Facility\ GHG\ Intensity - 0.16tCO_2e/tLNG]}{0.07\ tCO_2e/tLNG} \right\} + 0.5$$

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“Excess Emissions below 0.23” means the difference between

- (a) the lower of
  - (i) 0.23tCO<sub>2</sub>e/tLNG multiplied by Total Annual LNG Production, as defined above,
  - (ii) Total Annual GHG Emissions, as defined above, and
- (b) Total Annual LNG Production multiplied by the LNG Benchmark;

“Total Facility GHG Intensity” means the quotient of Total Annual GHG Emissions, as defined above, divided by Total Annual LNG Production, as defined above.

**Example 1:** A facility that produces 1 metric tonne per annum of LNG and achieves a Total Facility GHG Intensity of 0.23 tCO<sub>2</sub>e/tLNG will pay a compliance cost (offsets and/or technology fund units) of \$1.75 (at the maximum compliance unit cost of \$25/tCO<sub>2</sub>e) and will receive an environmental incentive of \$0.875.

**Example 2:** Another facility that produces 1 metric tonne of LNG and achieves a Total Facility GHG Intensity of 0.26 and Eligibility GHG intensity of 0.22, will pay a compliance cost of \$2.50 (assuming compliance unit cost of \$25/tCO<sub>2</sub>e) and will receive an environmental incentive of \$0.875. (The incentive will only be paid for the compliance costs of Total Annual GHG Emissions below 0.23. No incentives will be paid for compliance costs in relation to Total Annual GHG Emissions above 0.23.)

LNG facilities that perform better than the GHG performance benchmark of 0.16 tCO<sub>2</sub>e/tLNG will receive earned credits at a rate of 1 credit per tonne of CO<sub>2</sub>e below the benchmark per year. Earned credits are tradable and may be used by other operators of regulated operations in a similar way to offset units.

## Program Operation

Ministry of Environment is developing draft regulations regarding the contents and timing of compliance reports and emissions reports that will need to be submitted by operators of LNG operations. It is anticipated that by May 31st of the calendar year after production begins at an LNG operation, and every year after, operators will submit verified emissions reports and verified compliance reports to the

Director. It is anticipated that these reports will include reports of Total Annual GHG Emissions, Total Annual LNG production, Total Facility GHG Intensity, Entrained CO<sub>2</sub> Emissions and information related to Emergency Emissions for the preceding calendar year, and the number of compliance units applied by the operator to meet the LNG Benchmark. To qualify for the incentive, operators of LNG operations will need to show receipts indicating the purchase price paid by the operator for the compliance units that have been applied by the operator for the purposes of meeting the LNG Benchmark in a calendar year and any additional information necessary for determining eligibility or amount of the incentive. The Province reserves the right to withhold incentive payments in the absence of adequate documentation allowing the Director to determine eligibility for, or the amount of, any incentive.

The LNG Benchmark and calculations of Total Facility Emissions will take into consideration virtually all GHG emissions from the point where natural gas enters an LNG operation via pipeline, to where LNG is loaded onto a ship, train or other transportation system for delivery to market. All electricity generated off-site will be included in the reported GHG emissions. No GHG emissions will be attributable to electricity supplied by BC Hydro for ancillary (i.e. non-compression) needs. Annual production will be calculated based on the amount of gas liquefied in a calendar year, whether that LNG is stored on site or transported offsite to markets.

Ministry of Environment will review verified reports for compliance. Failure to meet the LNG Benchmark directly or through application of compliance units will result in a penalty of an additional 3 tonnes of funded units for each tCO<sub>2</sub>e exceeding the LNG Benchmark that year. Payment of the penalty will not relieve the LNG operator of their compliance obligation and the operator would still need to apply compliance units to meet the benchmark for that year.

Ministry of Environment will assess eligibility for the incentive program and calculate the amount of Environmental Incentive using the formula described above. Subject to adequate reporting allowing determinations of eligibility and quantum of incentives by the Director, MoE will issue a cheque to LNG facilities during Q3 (Oct-Dec) of the fiscal year following the calendar year in respect of which the incentive is claimed.