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# LATE TO THE PARTY

## THE BUSINESS AND CLIMATE RISKS OF CANADIAN LNG

INVESTORS *for*  
PARIS COMPLIANCE

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*Patrick DeRochie, Senior Manager, Shift Action for Pension Wealth and Planet Health*

*Christopher Doleman, LNG/Gas Specialist, Asia, Institute for Energy Economics and Financial Analysis*

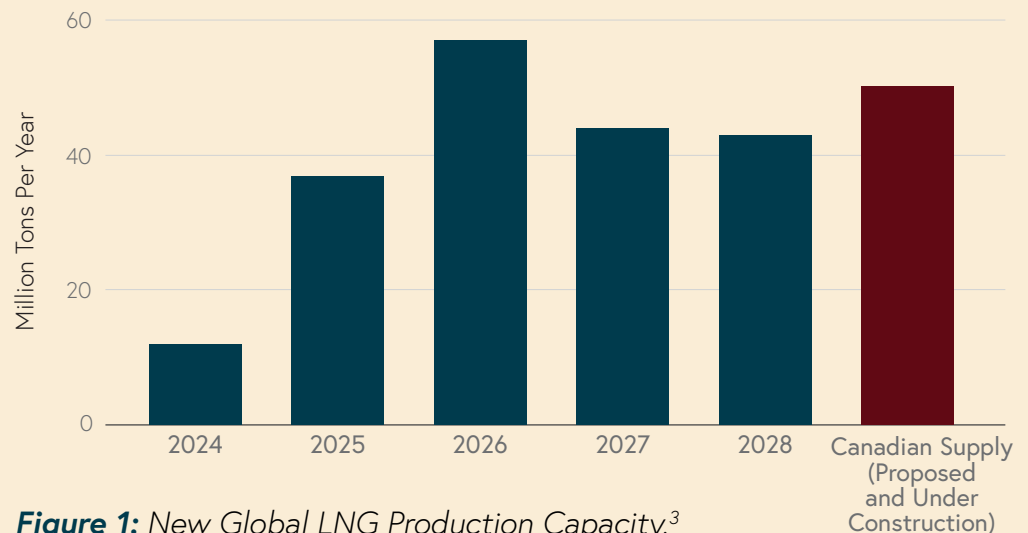
*Philip Gass, Director, Energy Program, Just Transitions and Canada, International Institute for Sustainable Development*

*Andrea Harden, Senior Strategist, The Sunrise Project*

## EXECUTIVE SUMMARY

Canadian investors are rolling the dice on LNG. While Canada has no major LNG exports today, between now and 2030 projects in various stages of development are expected to add up to 50.3 million tons per year (MTPA) of LNG export capacity,<sup>1</sup> over ten percent of existing global supply. This rapid expansion requires large capital expenditures for multi-decade transportation and liquefaction infrastructure to bring the product to Asian markets. This bet on Canadian LNG is happening in tandem with a global explosion of LNG production capacity, expected to grow by 40% between 2024 and 2028.<sup>2</sup>

### NEW GLOBAL LNG PRODUCTION CAPACITY



**Figure 1:** New Global LNG Production Capacity.<sup>3</sup>

Canadian LNG supply growth is driven by a number of factors, including past tightness in global gas markets and the argument that it is a transition fuel that provides lower-emitting energy. Some Canadian financial institutions have framed the financing of LNG as contributing to a global goal of net zero by 2050.

But, the case for new Canadian LNG projects — both their business viability and their role as a bridge or transition fuel in emissions reduction — is shaky, resting upon assumptions that have shifted. Canadian LNG export projects face a number of business risks, which taken together are cause for significant scepticism for long-term investors. These include:

- An overbuild of LNG supply, now underway globally;
- Uncertain demand for LNG in core markets targeted by Canadian LNG;
- Higher Canadian production costs; and
- Political risk that could end subsidies that make Canadian LNG viable.

1 Natural Resources Canada, [Canadian liquified natural gas projects](#) (May 2024).

2 IEEFA, [Global LNG Outlook 2024-2028](#), (Apr. 2024) at 7.

3 IEEFA, [Global LNG Outlook 2024-2028](#) (Apr. 2024) at 7 & Natural Resources Canada, [Canadian liquified natural gas projects](#) (May 2024).

These factors present risks that rise in materiality through the lifetime of LNG projects. Canada's banks, which have increased their financing of the industry while cheerleading its merits, have a shorter-term exposure to the industry. But equity and long-term debt holders are exposed to what many analysts predict will be a glut in global LNG supply, and will be left holding the bag should the industry falter.

The argument that LNG is a climate solution if used as transition fuel — replacing coal on the path to non-emitting sources — is prevalent in certain circles, yet does not accord with the following facts:

- On a lifecycle basis, LNG can be worse than coal, and is never much better; and
- Even if this is ignored, there are already enough LNG projects under construction to exceed what is needed to replace all coal consumption and to overshoot the carbon budget allotted to *all gas* — including from pipelines — under a Paris-aligned pathway.

Today, even more Canadian LNG projects are being pitched. But, with Canada late to the party, long-term investors would do well to evaluate the many business risks associated with these proposals, and consider instead viable non-fossil based energy to meet net zero targets.

## SECTION 1 — LNG BUSINESS RISK

In 2011 the International Energy Agency (IEA) published a report titled *Are we entering a golden age of gas?*, suggesting that gas had the potential to take over a large proportion of the global energy mix.<sup>4</sup> A widely dispersed resource base, favourable economics, supposed environmental advantages, and flexibility of use were cited as reasons that gas could effectively displace coal, oil and nuclear power.

Gas — or LNG when condensed for shipping — has a reputation as being the fuel of the future, bolstered by its perception as an emissions-reducing "bridge" or "transition" fuel. This has contributed to substantial growth over the last 15 years. Annual trade of LNG has increased from under 30 billion cubic feet per day (bcf/d) in 2010, passing 50 bcf/d in 2022.<sup>5</sup>

In the 13 years since the IEA released its white paper, financiers have invested massively in the expansion of gas, particularly LNG export capacity in Canada. However, in 2023 the IEA updated its stance, stating that, "the golden age of gas is now appearing in the rear-view mirror," citing an array of broad shifts in global energy demand dynamics explored in this report.<sup>6</sup>

LNG projects have significant upfront costs which are typically amortised over their life spans, which range from 20 to 60 years.<sup>7</sup> As such, these projects are dependent on sustained demand for LNG, and are particularly sensitive to long-term shifts in energy markets. Canadian LNG, in particular, faces challenging economics. Any proposed new Canadian LNG projects will have to contend with:

- A global overbuild of LNG supply;
- Uncertain demand;
- High relative production costs in Canada; and
- Political risk to LNG subsidies over the long project lifespans.

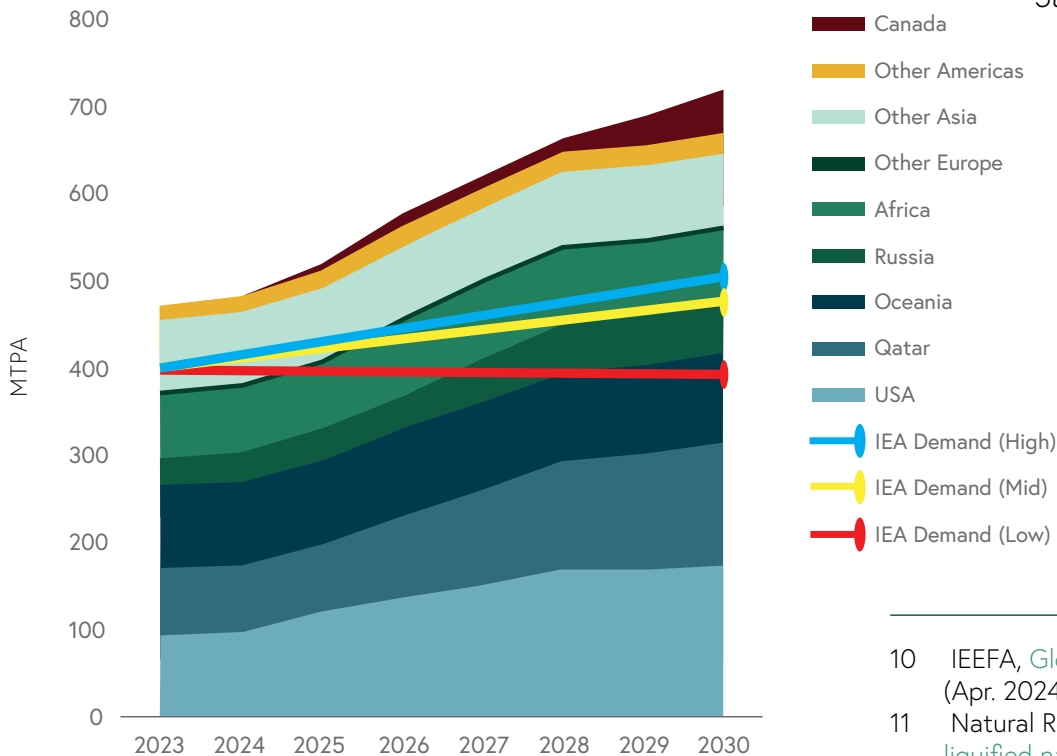
### 1.1 LNG IS BEING OVERBUILT GLOBALLY

The 2020s have been marked by a persistent volatility in global gas markets. While the pandemic drove down gas prices, the drive away from coal and the Russian invasion of Ukraine resulted in a tight market. Between January 2020 and August 2022, Henry Hub spot prices for gas more than quadrupled,<sup>8</sup> while both UK NBP and Dutch TTF spot and future prices increased almost 20 times.<sup>9</sup>

- 4 IEA, *World Energy Outlook 2011, Special Report: Are we entering a golden age of gas?* at 7.
- 5 IEA, *Global trade in liquefied natural gas continued to grow in 2023* (Jul. 2024).
- 6 IEA, *Outlooks for gas markets and investment* (2023) at 4.
- 7 Pembina Institute, *Squaring the Circle* (May 2023) at 7.
- 8 IEA, *Henry Hub Natural Gas Spot Price* (Sept. 2024).
- 9 ERCE, *UK NBP Gas Spot Price* (Sept. 2024) and Investing.com, *Dutch TTF Natural Gas Futures*, (Sept. 2024).

This discrepancy between supply and demand has driven global production to ramp up. As LNG export projects take years to plan, finance, and complete, substantial new LNG capacity now in development will enter the market in the late 2020s. The Institute for Energy Economics and Financial Analysis (IEEFA) projects that between 2024 and 2028, global LNG production will increase about 40%, from 474 MTPA to 666.5 MTPA.<sup>10</sup>

## LNG CAPACITY GROWTH AND PROJECTED DEMAND



**Figure 2:** Projected LNG Supply and Demand Change.<sup>13</sup>

Canadian companies are bringing gas to market in that same time window. Canada currently has seven planned LNG export projects, projected to add up to 50.3 MTPA of LNG to market between 2025 and 2030 if they are all built.<sup>11</sup> LNG Canada, set to begin exports in 2025, will be Canada's first large-scale LNG export facility.<sup>12</sup>

While in January of 2024 the American government placed a temporary moratorium on new LNG export permits to countries which do not have free trade agreements with the United States — bringing into question the severity of the impending glut — there are no indications that this has slowed projected American LNG export growth. No American LNG projects stopped construction, and a judge ultimately instructed the Department of Energy to halt its moratorium.<sup>14</sup> The U.S. Department of Energy issued its first post-moratorium LNG permit in September of this year.<sup>15</sup> The slowing of LNG export permits is unlikely to continue under the Trump administration.

10 IEEFA, [Global LNG Outlook 2024-2028](#) (Apr. 2024) at 7.

11 Natural Resources Canada, [Canadian liquified natural gas projects](#) (accessed Oct. 2024).

12 Ibid.

13 Supply: Figures from 2023 to 2028 sourced from IEEFA, [Global LNG Outlook 2024-2028](#) (Apr. 2024) at 44; USA, Qatar, and Canada supply projections to 2030 sourced from IEEFA, [As the U.S. builds new LNG terminals, Europe reduces gas demand and diversifies energy sources](#) (Jan. 2024); Newswire, [H.E. Minister Al-Kaabi announces raising Qatar's LNG production capacity to 142 MTPA before the end of 2030](#) (Feb. 2024); Natural Resources Canada, [Canadian liquified natural gas projects](#) (May 2024); Demand figures refer to STEPS, APS, and NZE scenarios presented in IEA, [World Energy Outlook 2024](#) (Oct. 2024) at 144.

14 Reuters, [U.S. Judge halts Biden administration's pause on LNG permits](#) (Jul. 2024).

15 BNN Bloomberg, [Biden Grants First New LNG Approval Since Freezing Permits](#) (Sep. 2024).

Added up, this puts projected global supply of LNG above import demand for the foreseeable future. As seen in figure 2, even under the IEA's least ambitious model (STEPS) for global energy transition in which no new climate policies are enacted, there will be over a third more LNG produced than consumed by 2030. That figure grows to about a half under the IEA's 1.5°C-aligned 2050 scenario.

## 1.2 LNG DEMAND IS UNCERTAIN

Just as Canadian LNG is set to enter the global market, it faces uncertain demand. While LNG was once positioned to dominate global energy growth, the IEA finds that tight markets and high spot prices have curtailed demand.<sup>16</sup>

While tight markets incentivize supply development, they also disincentivize prospective LNG importers from increasing intake capacity, and drive demand toward lower cost alternative energy sources. This, paired with the increasing stringency and maturing climate plans of major LNG importers, has seen gas demand plateau, and even drop, for some of the largest buyers. In 2021, Asia — led by China, Japan, and South Korea — made up 73.2% of global LNG imports.<sup>17</sup> Europe made up an additional 20.2%.

### ASIAN DEMAND IN FLUX

In 2023, Japanese LNG imports dropped 8%, to its lowest since 2009.<sup>18</sup> In 2023 LNG imports from Japan, South Korea, and Taiwan dropped 5.4%, with IEEFA concluding that "long-term climate and energy plans in Japan and South Korea could cause LNG demand to decline rapidly in the coming decade."<sup>19</sup>

Japan and Korea are both increasing their share of power generation derived from nuclear energy, stifling potential LNG demand. While Japan ceased operations at all 54 of its nuclear power plants following the Fukushima disaster, 13 reactors have since reopened, with 12 more slated for reopening.<sup>20</sup> It aims to generate 20% of its power from nuclear reactors by 2030.<sup>21</sup> Japan has become a major distributor of LNG due to its over-contracted supply.<sup>22</sup>

Meanwhile, South Korea has steadily increased its share of nuclear power generation, with a 38% increase in capacity between 2010 and 2024.<sup>23</sup> The current government's plan would increase its nuclear generating capacity another 28% by 2036.<sup>24</sup>

Even China, the world's largest LNG importer, has uncertain demand due to a myriad of domestic policies regarding energy procurement.<sup>25</sup> China has developed a number of new technologies supporting domestic production of gas, and has reduced its domestic pipeline tariffs which Columbia's Center on Global Energy Policy suggests will increase domestic production.<sup>26</sup>

16 IEA, [Outlooks for gas markets and investment](#) (2023) at 4.

17 International Group of Liquefied Natural Gas Importers, [LNG Imports](#) (accessed Oct. 2024).

18 Reuters, [Japan's 2023 preliminary LNG imports down 8% to lowest in 14 years](#) (Jan. 2024).

19 Ibid, at 27.

20 World Nuclear Association, [Nuclear Power in Japan](#), (Oct. 2024).

21 Ibid.

22 Reuters, [Japan builds gas markets in Asia to boost LNG trading, energy security](#), (Jul 2024).

23 World Nuclear Association, [Nuclear Power in South Korea](#), (May. 2024).

24 Ibid

25 Ibid, at 6.

26 Center on Global Energy Policy, [Rising Production, Consumption Show China is Gaining Ground in Its Natural Gas Goals](#), (Oct. 2024).

A significant wild card regarding Chinese LNG demand is the proposed Russian *Power of Siberia 2*, a 50-billion cubic metre per year gas pipeline to China, equivalent to about 36 MTPA of LNG.<sup>27</sup> Russian pipeline gas is currently supplying China at less than half the cost of LNG (\$5.97 vs. \$13.44),<sup>28</sup> a huge incentive for China to eventually approve the project, which would exacerbate the global LNG glut.

Waning demand for LNG across East Asia spells uncertainty for Canadian exports. All proposed Canadian LNG export projects are in British Columbia, shipping through the Pacific Ocean. Summit Lake PG LNG, LNG Canada, Woodfibre LNG and Ksi Lisims have all cited Asia as being a core market for Canadian exports.<sup>29</sup> The Canada Energy Regulator has cited Western Canada's proximity to Asian markets, and relatively short shipping times, as a key competitive advantage for Canadian LNG.<sup>30</sup>

However, South and Southeast Asia are not a safe bet on demand growth either. IEEFA highlights indicators that Southeast Asia will face uncertain demand growth as intake infrastructure is costly and time-intensive, alternative energy sources compete on price, and while South Asia is already facing inconsistent demand due to cost pressures.<sup>31</sup>

The Russian invasion of Ukraine additionally impacted the trajectory of Southeast Asia's LNG demand. At a time when intake capacity could have been growing substantially in order to absorb the incoming glut of LNG anticipated as soon as 2026,<sup>32</sup> European nations have been outbidding Southeast Asia for the commodity.<sup>33</sup> Pakistan's decision to halt production of power plants reliant on LNG imports highlights the demand risks associated with volatile prices and limited supply that stifle emerging markets from competitive access to LNG.<sup>34</sup>

Furthermore, the narrative of LNG as replacement for coal usage in Asia faces substantial barriers. Between 2000 and 2018, global LNG prices were an average of three times that of coal,<sup>35</sup> and as explored in the section *Canadian LNG Projects are not Cost Competitive*, new builds are projected to require high prices to meet breakeven costs. The IEA's 2024 World Energy Outlook states that significant growth in coal-to-gas switching is contingent on very low LNG prices, as the result of a significant global oversupply.<sup>36</sup>

- 27 Downs et al., [The Future of the Power of Siberia 2 Pipeline](#) (May 2024).
- 28 Ibid. Converted from USD to CAD using Bank of Canada exchange rate of 1.35 (September 13, 2023).
- 29 Canada Energy Regulator, [Market Snapshot: Exploring Canada's Future in LNG Exports](#) (Sept. 2024), LNG Canada, [LNG Canada's export terminal will enable coal-reliant customer nations to reduce GHG emissions](#) (Jan. 2019), Woodfibre LNG, [Pacific Energy and Enbridge Announce Partnership in Woodfibre LNG | Woodfibre LNG](#) (Jul. 2022) and Ksi Lisims LNG, [Project Overview](#) (accessed Sept. 2024).
- 30 Canada Energy Regulator, [Market Snapshot: Exploring Canada's Future in LNG Exports](#) (Sept. 2024).
- 31 IEEFA, [Global LNG Outlook 2024-2028](#) (Apr. 2024) at 5.
- 32 Bloomberg, [Global Gas Glut to Be Delayed by Another Year](#), (May 2024).
- 33 Center for Strategic and International Studies, [Clean Energy and Decarbonization in Southeast Asia: Overview, Obstacles, and Opportunities](#) (May 2023).
- 34 Bloomberg, [Pakistan Plans U-Turn on Fuel Imports After Prices Surge](#), (Feb. 2023).
- 35 McKinsey, [The future of liquefied natural gas: Opportunities for growth](#), (Sept. 2020).
- 36 IEA, [World Energy Outlook 2011, Special Report: Are we entering a golden age of gas?](#) at 178.



## EUROPEAN DEMAND IN DECLINE

Meanwhile, Europe's demand for LNG is facing a drop after the demand growth of the last few years. According to the Agency for the Cooperation of Energy Regulators (ACER), the European Union increased its LNG intake capacity in the immediate wake of the war in Ukraine,<sup>37</sup> and increased its LNG imports by over two thirds between 2021 and 2023.<sup>38</sup> However, under the EU's REPower EU plan — which focuses investments into industrial decarbonization, improvements in energy efficiency, increased renewable capacity, and broad energy infrastructure investments — ACER projects a 2024 peak for European LNG imports, followed by a steep decline between 2024 and 2030.<sup>39</sup> This would create an oversupply of LNG in Europe due to existing contracts. This unused LNG can be resold and diverted, resulting in an extra 22 MTPA of LNG in the market in 2027, increasing to over 30 MTPA by 2030.<sup>40</sup>

While Europe is not a significant market for Canadian LNG, faltering demand has the potential to more broadly impact global pricing dynamics. Qatar and the United States — the two largest exporters of LNG — have access to both Asian and European markets. As neither Asia nor Europe, the two largest markets for LNG, have stable mid-term demand growth projections, waning demand in European markets may drive up competition for Asian buyers.

## GLOBAL ENERGY TRANSITION ALSO IMPACTS DEMAND

The IEA projects that global demand is set to be far outpaced by supply. Under the IEA's net zero scenario (NZE), none of the current LNG export projects proposed or under construction are needed to meet import demand.<sup>41</sup> Under its announced pledges scenario (APS), the bulk of projects under construction are still redundant, and no proposed projects should be built. All told, under its APS and NZE demand projections, the IEA has suggested that 30%-70% of LNG export projects under construction would face difficulties in recuperating invested capital.<sup>42</sup> Even under its least ambitious stated policies scenario (STEPS), where no new policies take effect, existing projects and those under construction will supply global LNG demand until past 2040.

According to the International Institute for Sustainable Development, "by the time Canadian LNG from most new facilities reaches markets near the end of the decade, global LNG supply is expected to have already outpaced demand, deflating global prices."<sup>43</sup>

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37 ACER, [Analysis of the European LNG market developments](#) (April 2024).

38 *Ibid*, at 16.

39 *Ibid*, at 21.

40 *Ibid*, at 8.

41 IEA, [The Oil and Gas Industry in Net Zero Transitions](#), (Feb. 2024) at 45.

42 IEA, [World Energy Outlook 2024](#) (Oct. 2024) at 53.

43 IISD, [Why Liquefied Natural Gas Expansion in Canada Is Not Worth the Risk](#) (June 2024).

### 1.3 CANADIAN LNG PROJECTS ARE NOT COST COMPETITIVE

Given high levels of competition in bringing LNG to market, downward pricing pressure is anticipated. For Canadian LNG projects to be viable in an oversupplied global market, they will need to compete on cost. McKinsey, which is more bullish on LNG demand than the IEA, projects that to remain competitive through the 2030s, new LNG projects will need to maintain a breakeven price of under \$9.45/MMBTU.<sup>45</sup> Existing market players that are no longer paying down the cost of capital have a market advantage. The IEA places the current average delivered cost of LNG at just over \$6/MMBTU,<sup>46</sup> whereas it estimates that projects now under construction will cost \$10.8/MMBTU.<sup>47</sup> Meanwhile, the IEA's newest report on energy suggests that uptake on LNG in emerging economies would require prices in the \$4-\$6.75/MMBTU range.<sup>48</sup> Canada is late to the game, and Canadian LNG has faced significant setbacks in developing infrastructure, driving up cost.

LNG Canada, for example, is using the Coastal GasLink pipeline to bring gas from Northeastern British Columbia to a terminal in Kitimat. While the project was originally estimated to cost \$6.6 billion,<sup>49</sup> last year TC Energy announced an updated cost projection of \$14.5B, up from a previous amendment of \$11.2 billion.<sup>50</sup> While Coastal GasLink was initially projected to be under 15% of the capital cost of LNG Canada, that has nearly doubled, holding all other projected costs constant. TC Energy, which owns the pipeline, blamed "challenging conditions in the Western Canadian labour market; shortages of skilled labour; impacts of contractor underperformance and disputes; as well as other unexpected events like drought conditions and erosion and sediment control challenges" for the 134% cost increase.<sup>51</sup>

#### BREAKEVEN PRICE OF LNG

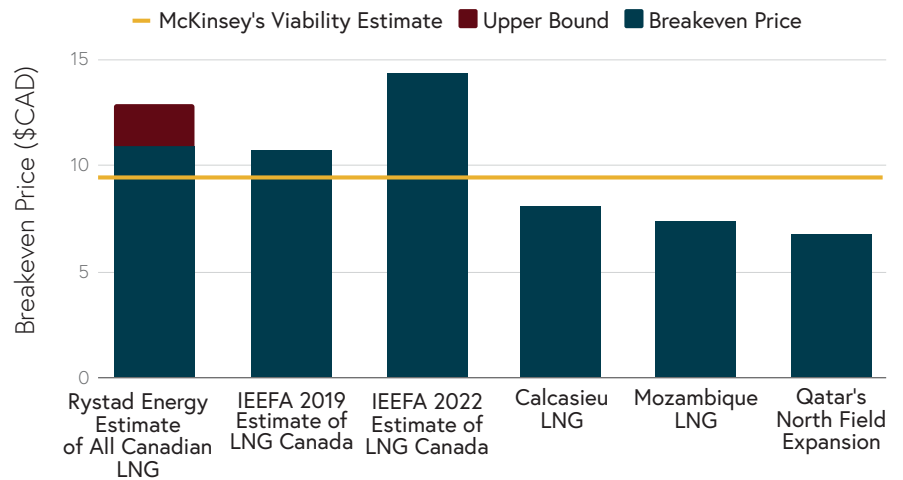


Figure 3: Breakeven Price of LNG<sup>44</sup>

- 44 Sourced from: IEEFA, [British Columbia LNG Project Costs Rising Again](#), (Feb 2023) at 8;; Canadian Energy Centre, [North America LNG Project Cost Competitiveness](#), (Apr. 2024) at 3;; ING, [The US and Qatar to Drive LNG Supply Growth](#), (Jul 2024);, and The American Oil & Gas Reporter, [LNG Exports Continue To Set New Records](#), (Oct. 2019).
- 45 McKinsey & Company, [Setting the bar for global LNG cost competitiveness](#) (Oct. 2019) at 2. (Note: Some figures have been converted from USD to CAD using Bank of Canada exchange rate of 1.35 (September 13, 2023).)
- 46 IEA, [World Energy Outlook 2024](#) (Oct. 2024) at 50.
- 47 Ibid, at 51.
- 48 Ibid, at 19.
- 49 Jacobs, [Proposed Coastal GasLink Pipeline Ltd. Groundbirch Connector Application to Amend Environmental Assessment Certificate #E14-03 \(Amendment #3\)](#) (Oct. 2020) at 91.
- 50 TC Energy, [TC Energy Provides Coastal GasLink Project Update](#) (Feb. 2023).
- 51 Ibid.

In 2021, IEEFA projected that just a 15% cost overrun could give the Coastal GasLink pipeline a negative net present value.<sup>53</sup> It projected the infrastructure costs alone of LNG Canada to be about \$2.50/MMBTU higher than the average US Gulf Coast LNG project.<sup>54</sup> The latest cost overruns bring Coastal GasLink's projected return on investment into the red, barring the ability for it to raise transportation costs and still attract gas suppliers. Meanwhile, Woodfibre LNG's infrastructure costs also put its profitability into doubt. Where most global LNG infrastructure projects are completed at approximately \$1,350/TPA of capacity, Woodfibre LNG is coming in at almost \$3,300.<sup>55</sup>

Only one Canadian export terminal — LNG Canada Phase 1 — meets the \$1,350/TPA benchmark. However that figure excludes the massive overruns associated with Coastal GasLink. Other Canadian projects are running between \$1,400 - \$1,800/TPA.<sup>56</sup> These examples bring into question Canada's ability to produce LNG at a competitive cost.

S&P Global has now estimated transportation costs alone along the Coastal GasLink pipeline to amount to \$2.60/MMBTU.<sup>57</sup> Tourmaline Oil, a Canadian oil and gas company, projects the cost of shipping Canadian gas from the basins that would otherwise feed LNG Canada to a Louisiana facility to be less than half that.<sup>58</sup>

## INFRASTRUCTURE COSTS OF BUILDING LNG EXPORT TERMINALS

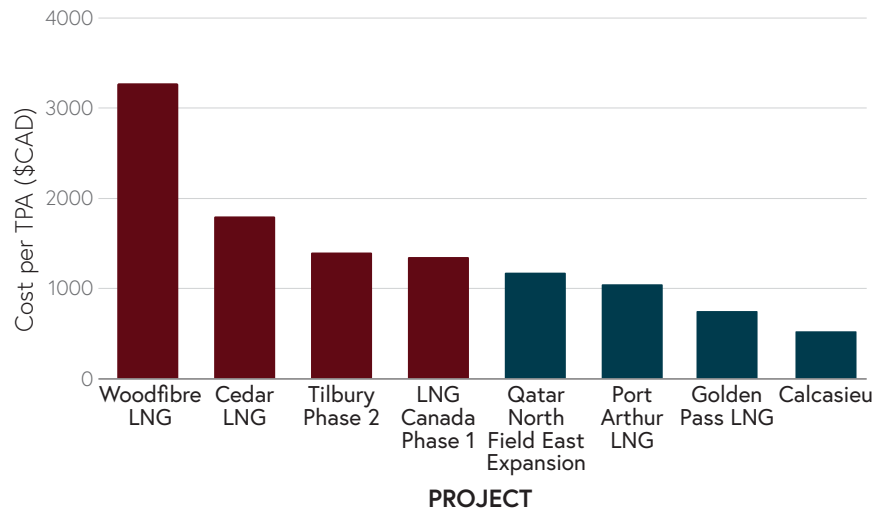


Figure 4: Cost of Building New LNG Terminals<sup>52</sup>

- 52 From left to right: Enbridge, [Woodfibre LNG](#) (Accessed Oct. 2024); Cedar LNG, [Cedar LNG Announces Positive Final Investment Decision](#) (Jun 2024); Fortis, [Tilbury Phase 2 LNG Expansion Project](#), (Jan. 2022). IEEFA, [Review of LNG Canada Project](#) (Nov. 2021) at 4; Offshore Technology, [Qatar Petroleum makes FID on \\$28.7bn North Field East project](#) (Feb. 2021); S&P Global, [Sempra reaches final investment decision on Port Arthur LNG export project](#) (Mar. 2023); Offshore Energy, [No Golden Pass for \\$10 billion US LNG project](#) (Aug. 2024); Reuters, [Venture Global seeks to commence some service at Louisiana Calcasieu LNG plant](#) (Oct. 2023).
- 53 IEEFA, [Review of LNG Canada Project](#) (Nov. 2021) at 15.
- 54 Ibid.
- 55 Gas Outlook, [Canada's Woodfibre LNG rests on shaky financial prospects](#) (Sep. 2023). (Note: Converted from USD to CAD using Bank of Canada exchange rate of 1.35 (September 13, 2023).
- 56 [Woodfibre LNG](#) (Accessed Oct. 2024); Cedar LNG, [Cedar LNG Announces Positive Final Investment Decision](#) (Jun 2024); Fortis, [Tilbury Phase 2 LNG Expansion Project](#), (Jan. 2022). IEEFA, [Review of LNG Canada Project](#) (Nov. 2021) at 4.
- 57 IEEFA, [British Columbia LNG Project Costs Rising Again](#) (Feb 2023) at 6.
- 58 Tourmaline Oil, [Corporate Presentation](#) (Sept. 2022) at 24.
- 59 Terrace Standard, [Lax Kw'alaams remain](#)

## RATINGS AGENCIES UNDERPLAY ESG RISK

LNG infrastructure projects in Canada have faced controversy and rising costs as a direct result of ESG risks, but rating agencies don't always take them into account when assessing LNG-related securities.

- The Coastal GasLink pipeline faced protests and delays after failing to acquire consent from Hereditary Chiefs of the Wet'suwet'en Nation, whose unceded territory the pipeline crosses through.
- While the Nisga'a first nation is a partner in the Ksi Lisims project, it has also faced opposition from other Indigenous groups, such as the Lax Kw'alaams Band, who say the project "cannot proceed on Lax Kw'alaams' traditional territory" without their consent.<sup>59</sup>
- The Prince Rupert Gas Transmission pipeline is facing criticism from environmental groups for its impacts on ecosystems, as it crosses a number of environmentally sensitive waterways.<sup>60</sup>
- Additionally, all LNG pipelines face environmental risk from the energy transition and associated policy developments.

And yet, investors may not see these risks identified in Canadian LNG infrastructure investments. Coastal Gaslink was able to issue notes to debtholders, worth \$7.2 billion, with a credit rating by Morningstar DBRS stating it had no material ESG risk.<sup>61</sup> On the other hand, S&P Global ascribes midstream oil and gas projects as having substantial material environmental and social risk on both a stakeholder and a credit basis.<sup>62</sup>

Morningstar DBRS similarly ascribed no material ESG risk in the ratings of a number of companies with exposure to LNG, including TC Energy Corporation and a number of its subsidiaries.<sup>63</sup> Where material LNG risk is not appropriately taken into account, investors may be offered lower returns on credit issuances than appropriate for the actual risk level.

staunchly opposed to proposed Ksi Lisims LNG project (Nov. 2023).

- 60 The Narwhal, 5 projects you need to know about as B.C.'s oil and gas sector heats up (Mar. 2024).
- 61 Morningstar DBRS, Morningstar DBRS Assigns Issuer Rating and Senior Notes Credit Rating of A (low) to Coastal GasLink Pipeline Limited Partnership (Jun. 2024).
- 62 S&P Global, ESG Materiality Map Midstream Energy (May 2022) at 3.
- 63 Morningstar DBRS, DBRS Morningstar Confirms Ratings on TC Energy Corporation and TransCanada PipeLines Limited (Jun. 2022), & Morningstar DBRS, Morningstar DBRS Confirms NGTL Limited Partnership at BBB (high) With a Stable Trend (Aug. 2024).
- 64 IEEFA, British Columbia LNG Project Costs

IEEFA estimates the cost of shipping LNG to Asia via LNG Canada to be \$14.35/MMBTU,<sup>64</sup> up 33.6% from 2019, and over 50% higher than McKinsey's estimated viable price.

Canada is competing with other large projects set to come online. Qatar, whose gas already accesses markets Canada hopes to sell to, is set to increase its production capacity by 85% to 142 MTPA by 2030,<sup>65</sup> and is able to break even at \$6.75/MMBTU shipping to Asian markets.<sup>66</sup> Qatar's North Field Expansion project is set to be the world's largest.

In addition, Canada is competing with the 27 MTPA Rio Grande LNG terminal, and Russia's 19.8 MTPA Arctic LNG 2 terminal — even as Russia simultaneously aims to bring more of its gas to Asia more cheaply by pipeline. Even if demand were to rise as a result of lower prices in an oversupply scenario, there is additional risk of Canadian projects remaining operational but at a lifetime loss, if prices were to drop below the breakeven costs of these projects, but above their marginal cost to bring LNG to market.

## 1.4 LNG SUBSIDIES FACE POLITICAL RISK

Because Canadian LNG projects cannot compete on cost, they resort to federal and provincial subsidies to make them viable. Yet, because LNG projects have long lifespans, these subsidies are subject to political risk as governments and government priorities change, particularly in the era of climate change. The long lifespans of LNG projects make them sensitive to shifts in public sentiment and regulatory environments.

The current Canadian government is already sending mixed messages on LNG. Natural Resources Minister Jonathan Wilkinson stated that, "increasingly, there is a lot of scepticism about how many more LNG facilities are going to be required and the risk of stranded assets is a real one."<sup>67</sup>

This stance is substantiated by the Canada Energy Regulator (CER), the body which assesses and approves LNG export licences. *Canada's Energy Future 2023*, the CER's flagship energy modelling report, tacitly acknowledges that a net-zero aligned energy future would result in the vast majority of Canadian LNG capacity becoming stranded. The CER's net-zero scenario estimates Canadian LNG exports at just 6.5% of the sector's full export capacity by 2046.<sup>68</sup> This does not take into account projects not yet under construction.

Despite the federal government's commitment to net zero, and the associated impact that would have on LNG exports, Canada's federal government and its provincial counterparts have continued to subsidize LNG projects.

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[Rising Again](#) (Feb 2023) at 8.

65 [Newswire, H.E. Minister Al-Kaabi announces raising Qatar's LNG production capacity to 142 MTPA before the end of 2030](#) (Feb. 2024).

66 [S&P Global, Qatar takes center stage in LNG market as buyers seek supplies](#) (Feb. 2022).

67 [Bloomberg, Risk of stranded LNG assets is 'real,' Canada's energy minister says](#) (Feb. 2024).

68 [Canada Energy Regulator, Canada's Energy Future 2023](#) (Nov. 2023) at 37.

69 [Government of Canada, Government of](#)

The Canadian federal government has historically provided financing for LNG projects such as \$275 million for LNG Canada in 2019.<sup>69</sup> Despite the Government of Canada committing to ending public financing of fossil fuels,<sup>70</sup> the sector still receives favourable tax and regulatory treatment, and public agencies like Export Development Canada (EDC) continue to provide considerable favourable financing (see *Export Development Canada Still Bankrolling Fossil Fuel*).

## EXPORT DEVELOPMENT CANADA STILL BANKROLLING FOSSIL FUELS

EDC is a federal crown corporation with a mandate to "support and develop trade between Canada and other countries and Canada's competitiveness in the international market-place."<sup>71</sup> EDC has set a net zero commitment, and publicly recognizes the risk associated with unsustainable investment strategies.<sup>72</sup>

In 2020, then again in June of this year, EDC extended up to \$500 million in financing for Cedar LNG,<sup>73</sup> a 3 MTPA project slated for completion in 2028,<sup>74</sup> whose 25-year export licence would allow it to sell LNG past both Canada's and EDC's net zero commitment dates. More specifically, it provided financing both for the expansion of the over-budget Coastal GasLink pipeline in order to supply Cedar LNG,<sup>75</sup> as well as for Cedar LNG infrastructure itself.<sup>76</sup>

In its most recent loan, EDC defined the facility financing itself as 'Category A', or "likely to have significant adverse environmental and social effects that are sensitive, diverse, or unprecedented," while defining Coastal GasLink's expansion under 'Category B', or "less adverse than Category A projects."<sup>77</sup>

EDC's financing for the Coastal GasLink pipeline is the second occurrence of such a loan, the first occurring in 2020, providing as much as \$500million.<sup>78</sup> EDC's 2020 loan to Coastal GasLink was initially defined as a 'Category A' project; the downgrading of its risk level to a 'Category B' has not been clearly explained.

- Canada confirms support for largest private investment in Canadian history (Jun. 2019).
- 70 IISD, *Ending Canadian Domestic Public Financing for Fossil Fuels*, (Jun. 2024) at 2.
- 71 Government of Canada, *Export Development Act*, (1985) at iii.
- 72 Export Development Canada, *EDC Net Zero 2050*, (Jul. 2022) at 4.
- 73 National Observer, *Loan for half a billion approved for LNG project in BC*, (Jun. 2024).
- 74 Cedar LNG, *Project Overview*, (accessed September 2024).
- 75 Export Development Canada, *Signed Category B Projects*, (Jun. 2024).
- 76 Export Development Canada, *Signed Category A projects after Nov. 1, 2010*, (Jun. 2024).
- 77 Export Development Canada, *Environmental and Social Review Directive*, (2010) at 5.
- 78 Export Development Canada, *Signed Category A projects after Nov. 1, 2010*, (Apr. 2020).
- 79 Natural Resources Canada, *Canada is*

In terms of favourable regulatory treatment, Natural Resources Canada promotes accelerated capital cost allowances, and extended export licence term lengths for LNG export projects.<sup>79</sup> The federal government also provided a break on steel tariffs for LNG Canada amounting to \$1 billion.<sup>80</sup>

The government of British Columbia has extended subsidies for LNG export projects in order to incentivise favourable final investment decisions. LNG Canada has received discounted electricity (\$32-\$59 million per year), carbon tax exemptions (\$62 million per year), a corporate income tax break, and a deferral on sales tax (\$17-\$21 million per year).<sup>81</sup> All told, the BC government estimates total incentives for LNG Canada at \$5.35 billion.<sup>82</sup>

While current subsidies may allow for project viability today, longer-term return on capital estimates need to consider evolving policy scenarios. Development of more robust global climate agreements and changing public opinion driving shifts in energy strategies could both alter future governments' ability or willingness to continue to subsidise the industry.

creating a competitive environment for liquefied natural gas (Feb. 2020).

80 CCPA, *A critical look at BC's new tax breaks and subsidies for LNG*, (May 2019) at 2.

81 Ibid.

82 The Narwhal, *LNG Canada project called a 'tax giveaway' as B.C. approves massive subsidies* (Oct. 2018).

83 IEEFA, *Global LNG Outlook 2024-2028*, (Apr. 2024) at 7 & Natural Resources Canada, *Canadian liquefied natural gas projects*, (May 2024).

84 Banking on Climate Chaos, *Methane Gas (LNG) Financing*. Converted from USD to CAD using Bank of Canada exchange rate of 1.35 (September 13, 2023).

85 Leach, C., & Hussain, Y., *Canada's*

## 1.5 BANK FINANCING IS NOT A GOOD LNG RISK BAROMETER

Investors may feel reassured regarding the viability of LNG projects given bullish LNG activity by Canadian banks. They have financed \$108.5 billion in LNG-related projects between 2016 and 2023.<sup>84</sup> Across the board, annual financing has risen. TD's increased 48% over this period, while RBC's 2023 LNG financing was over two and a half times that of its 2016 figure. Scotiabank, CIBC, and BMO increased financing levels by 92%, 140%, and 162%, respectively. In 2023, RBC was the 4<sup>th</sup> largest LNG financier in the world.

### LNG FINANCING AT CANADA'S BANKS

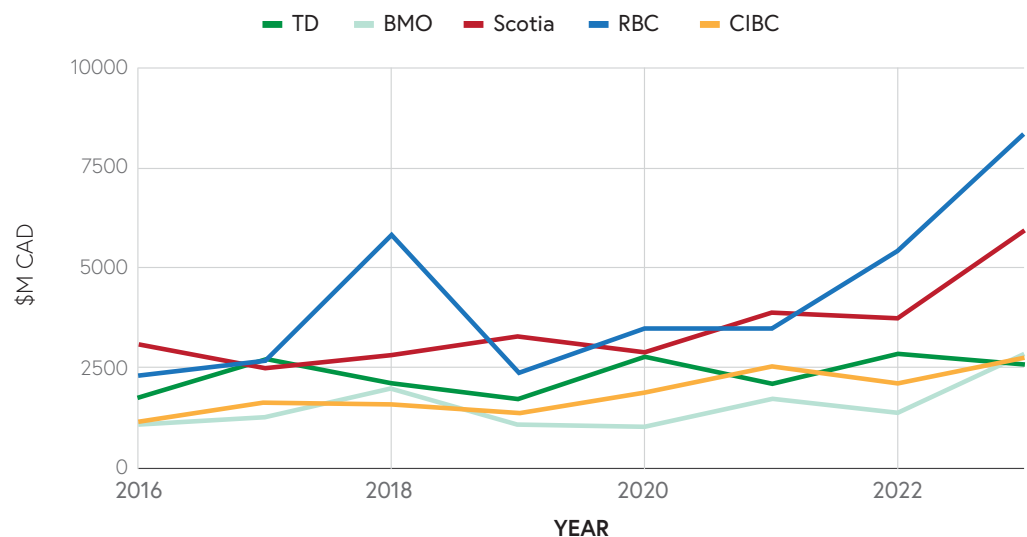


Figure 5: Canadian Banks' LNG Financing, 2016-2023<sup>83</sup>

This increase in financing has been accompanied by unfounded environmental claims, as discussed in the following section. RBC released a report claiming expansions to Canada's LNG exports could slash global emissions.<sup>85</sup> BMO CEO Darryl White called LNG the "cleanest of the fossil fuels."<sup>86</sup> A report by National Bank suggested that expansion of Canadian LNG by replacing coal plants would "have a more profound impact on the planet than shutting down the Canadian economy entirely."<sup>87</sup>

And yet Canada's banks do not maintain long-term exposure to LNG projects, which insulates themselves against the future market volatility and climate-related energy transition outlined in this report. Bank credit is shorter-term compared with equity and bond holdings. Banks are content to take profits of shorter-term loans and bond underwriting, and have others hold the longer-term risk.

An example of this longer-term risk can be found with Enbridge's 2022 issuance of a 50-year bond.<sup>88</sup> Enbridge supplies gas to five LNG terminals on the U.S. Gulf Coast,<sup>89</sup> and recently bought into the Woodfibre LNG project in BC.<sup>90</sup> Investors in these bonds therefore hold LNG risk in instruments maturing in 2083, well past the date the world needs to reach net zero. Enbridge shareholders are similarly exposed to this longer-term risk.

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[Conundrum: Three Ways To Address The World's Gas & Climate Crises](#), (Apr. 2024).

- 86 [White, D., Enabling Canada's Prosperity in the 21st Century](#), (Nov. 2022).
- 87 [Marion, S., & Sidhu, B., World Watch Vol. XXIV, No. 7](#), (Feb. 2023).
- 88 [Enbridge, US\\$500,000,000 7.375% Fixed-to-Fixed Rate Subordinated Notes Series 2022-B due 2083 Preference Shares, Series 2022-B Issuable Upon Automatic Conversion](#) (Jul. 2022).
- 89 [Canadian Press, Enbridge to spend \\$700M to build new oil and natural gas pipelines in Gulf of Mexico](#) (Oct. 2024).
- 90 [Enbridge, Enbridge Secures Stake in Woodfibre LNG Facility in BC](#) (Jul. 2022).
- 91 [Ecojustice, What does LNG stand for](#), (Jul.



## SECTION II — LNG & CLIMATE RISK

LNG is being promoted as a "transition fuel." Proponents argue that LNG could replace coal, reducing global emissions, and giving renewable energy technology the time to develop and scale. There's been a concerted push, including public advertising campaigns such as the one claiming that "B.C. LNG will reduce global emissions,"<sup>91</sup> to market LNG as a climate solution.

This perception of LNG as a transition fuel has made its way to investment teams, with Brookfield Infrastructure CEO Sam Pollock writing to investors that "natural gas, and more specifically LNG, will continue to be a leading transition fuel in the move toward net zero and is also expected to play a key role in providing global energy security."<sup>92</sup> Scotiabank cites the use of LNG to displace other high-emitting energy sources in its most recent climate report.<sup>93</sup>

However, the premise that LNG is a climate solution is flawed. At best, the development of new LNG means that either those assets will ultimately become stranded in meeting net zero commitments, or that they will continue to operate past 2050, limiting the possibility of a 1.5-degree future. LNG Canada, a planned LNG export terminal in Kitimat, British Columbia, for example, is presenting itself as a "40-year asset."<sup>94</sup>

Despite assertions from business leaders that LNG is well placed to displace emissions from coal-fired power, it is not clear that imported LNG is a lower-emitting energy source than coal on a lifecycle basis. This presents a significant risk for any financial institution aiming to integrate LNG into its portfolio while attempting to follow through on a Paris-aligned transition plan.

### 2.1 LNG MAY BE WORSE THAN COAL ON A LIFECYCLE BASIS

The climate argument given to justify LNG expansion is that LNG has the opportunity to displace higher-emitting sources of energy. According to the World Bank, at point of combustion, gas emits approximately a third less CO<sub>2</sub> than oil, and approximately half that of coal.<sup>95</sup>

However, gas, and particularly LNG, has significant upstream emissions. During the liquefaction process — the process in which gas is cooled to a liquid state — LNG is refined to predominantly methane.<sup>96</sup> The global warming potential of methane in the atmosphere is 84-87 times that of CO<sub>2</sub> over a 20-year timeframe, and 28-36 times that of CO<sub>2</sub> over a 100-year timeframe.<sup>97</sup>

2024).

92 Nasdaq, [Brookfield Sees Natural Gas as an Essential Fuel for the Future](#) (May 2022).

93 Scotiabank, [2023 Climate Report](#), at 29.

94 The Narwhal, [There's a place for B.C.'s gas in a net-zero future. But not for long](#) (July 2023).

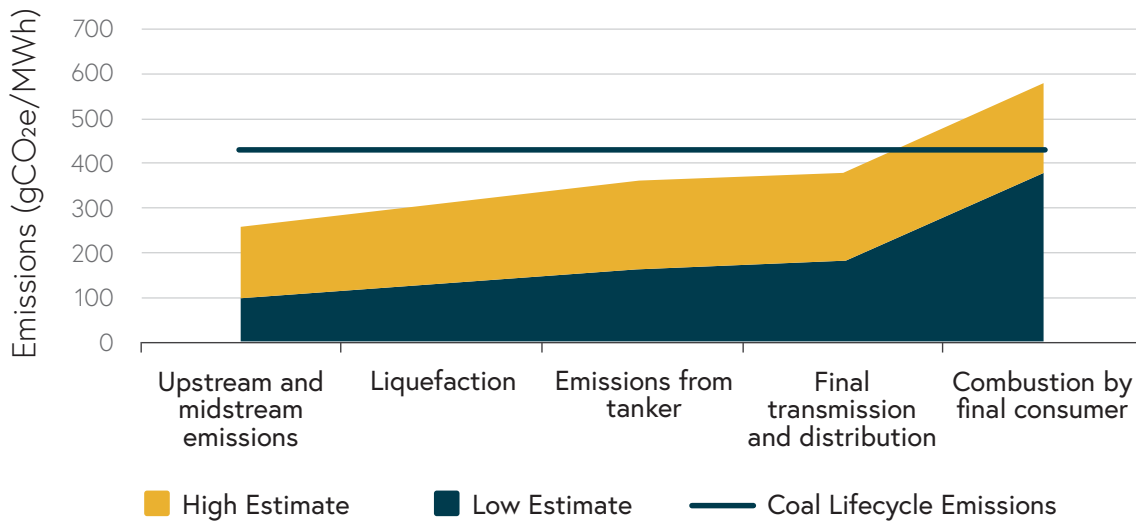
95 World Bank, [Metadata Glossary](#), (2020).

96 Natural Resources Canada, [Liquefied Natural Gas in Canada](#), (Dec. 2023).

97 IEA, [Methane and Climate Change](#), (2021).

98 High-range estimate is derived from

## UNCERTAIN EMISSIONS OF LNG AT EVERY STEP OF PRODUCTION



**Figure 6:** High and low end estimates of LNG lifecycle emissions<sup>98</sup>

Leaks and intentional releases at every step of the supply chain mean that LNG production has substantial upstream emissions. The Natural Resources Defense Council (NRDC) estimates that upstream emissions — inclusive of extraction, processing, and domestic transport — from exported LNG make up 29%-52% of 20-year emissions and 16%-34% of 100-year emissions on a lifecycle basis.<sup>99</sup>

NRDC also estimates that liquefaction, tanker transport, and regasification, make up an additional 8%-21% of lifecycle emissions. With emissions from combustion making up as little as 40% of lifecycle emissions in the short-term, the supposed emissions savings from converting foreign coal usage to imported LNG begin to disappear.

A peer-reviewed 2024 study in *Energy Science and Engineering* found that the combustion of American LNG exports make up only 34% of lifecycle emissions.<sup>100</sup> The study, using a 3.2% lifecycle methane leakage rate, found that American LNG exports are 33% more emitting than coal on a 20-year basis, and equal or higher-emitting on a 100-year basis.<sup>101</sup>

Howarth, *The greenhouse gas footprint of liquefied natural gas (LNG) exported from the United States*, (Oct. 2024), using emissions from four-stroke engine tankers powered by LNG. Low-range estimate is derived from Howarth, *The greenhouse gas footprint of liquefied natural gas (LNG) exported from the United States*, (Oct 2024), using the average emissions across tanker types, with methane adjustments based on BRG, *Comparative GHG Footprint Analysis for European and Asian Supplies of USLNG, Pipeline Gas, and Coal*, (Apr. 2024) for upstream and midstream emissions, and IEA, *Understanding methane emissions*, (2023), for liquefaction and tanker emissions.

- 99 NRDC, *Sailing to Nowhere*, (Dec. 2020) at 9.
- 100 Howarth, *The greenhouse gas footprint of liquefied natural gas (LNG) exported from the United States*, (Oct. 2024).
- 101 Howarth, *The greenhouse gas footprint of liquefied natural gas (LNG) exported from the United States*, (Oct. 2024).
- 102 Deborah Gordor et al., *Evaluating net life-*

The rate of fugitive gas emissions — the leaks and releases of gas prior to combustion — is a core component as to whether there are emissions savings via LNG. A 2023 study found that, depending on lifecycle assumptions, gas with as little as a 0.2% leakage rate could have a greater climate impact than low-methane coal.<sup>102</sup> On average, it found that depending on the timeframe being considered, gas leakage of 4.7% or 7.6% rendered gas production as being on par with average coal consumption. And these results were from gas pipeline systems, so did not factor in the carbon-intensive liquefaction and shipping processes of LNG.

The challenge in assessing whether widespread LNG adoption would reduce global emissions is the fact that there is no agreed-upon average leakage rate. Where the U.S. Environmental Protection Agency (EPA) estimates that the average methane leak rate from U.S. oil and gas is about 1.4%, the Environmental Defense Fund published a study suggesting that this number was off by almost two thirds, and that the methane leakage rate is closer to 2.3%.<sup>103</sup>

A study in *Nature* found methane emissions ranging from 0.75%-9.63% of total production.<sup>104</sup> Its weighted average of 2.95% is more than double the EPA estimate. The aforementioned 2023 study found gas production systems leak methane at rates varying from <1% to >66%.

These estimated rates fail to take into account leakage during the liquefaction and shipping of LNG. Those midstream emissions, while understudied, may be material. The IEA estimates that fugitive methane emissions from liquefaction and shipping make up 0.1% of total LNG transported, which is significant when compared to a low-end estimate of the threshold to reduce emissions relative to coal.<sup>105</sup> Another 2023 study found a further 0.018% of methane to be leaked during the regasification process.<sup>106</sup>

Even at end use, the degree to which LNG burns cleaner than other fossil fuels is unclear. Gas-fired power plants, for example, have not been able to reliably estimate methane leakage rates. A 2017 study found that actual methane emissions rates from gas-fired power plants to be 21-120 times higher than reported estimates, with as much as 0.42% of methane being leaked.<sup>107</sup>

Ultimately, no comprehensive understanding of methane emissions from the LNG supply chain has been developed. While the EPA has published estimates regarding the broader gas industry, these estimates have been disputed. They also fail to account for emissions unique to LNG processing and shipment. The expansion of LNG production, marketed as a move to displace the dirtiest of fossil fuels, is not based on sound evidence.

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cycle greenhouse gas emissions intensities from gas and coal at varying methane leakage rates, (Jul. 2023) at 4.

- 103 Alvarez et al., *Assessment of methane emissions from the U.S. oil and gas supply chain*, (Jun. 2018) at 186.
- 104 Sherwin et al., *US oil and gas system emissions from nearly one million aerial site measurements*, (Jan. 2024) at 328.
- 105 IEA, *Understanding methane emissions*, (2023).
- 106 Innocenti et al., *Comparative Assessment of Methane Emissions from Onshore LNG Facilities Measured Using Differential Absorption Lidar*, (Feb 2023).
- 107 Lavoie et al., *Assessing the Methane Emissions from Natural Gas-Fired Power Plants and Oil Refineries*, (Feb. 2017) at 3373.
- 108 IEA, *Net Zero by 2050*, (2021) at 102.

## 2.2 NEW LNG INVESTMENT IS INCONSISTENT WITH NET ZERO COMMITMENTS

While there is ongoing controversy regarding LNG lifecycle emissions, even setting that aside, new LNG projects are still incompatible with a Paris-compliant emissions pathway. The IEA's 2021 Net Zero Roadmap states that a net-zero aligned trajectory requires no new gas fields beyond those already in development, and that many of the liquefaction facilities currently under construction or being planned are not needed.<sup>108</sup>

A study in *Environmental Research* made clear the core incompatibilities of projected LNG expansion with a 1.5°C future. Taking into account existing and proposed LNG projects, output would take up 13% of the entire emissions budget in a 1.5°C-aligned 2050 scenario.<sup>109</sup> That figure alone exceeds the IPCC's 1.5°C scenario which allows *all* gas to take up 10% of the emissions budget.<sup>110</sup>

Furthermore, it notes emissions reductions are only attained in the switch from coal to LNG, which may not be the case. Nonetheless, the current trajectory of global LNG capacity will exceed that need.<sup>111</sup> Assuming there are emissions reductions in switching from coal to gas, those benefits are eroded by 2030, as the decline in global coal usage indicates that there is insufficient coal power to be replaced. As such, any additional LNG capacity creates excess emissions. As noted in the section *Asian Demand in Flux*, there are also significant cost barriers for coal-to-gas switching.

Ultimately, any new LNG capacity extending past 2050 is incompatible with net zero. According to Natural Resources Canada, there are currently seven LNG export facilities proposed or under construction in Canada. Four of those projects — LNG Canada phases 1 & 2, Woodfibre LNG, and Ksi Lisims LNG — have either applied for, or have, 40-year export licences, adding a cumulative 42.1 MTPA extending well past 2050.<sup>112</sup>

Two more projects applying for 25-year export licences would add 5.5 MTPA more, and Summit Lake PG LNG in Prince George, which has not yet applied for an export licence, would add 2.7 MTPA.

The false narrative justifying LNG on climate grounds deflects criticism for the financing of fossil fuel expansion, but will not protect LNG investors from ballooning financed emissions on their balance sheets, and associated climate transition risk.

International standard setters have not indicated that new LNG is a mechanism through which financial institutions can book emissions reductions. For example, UNEPFI has classified LNG companies as having a high degree of emissions materiality across all scopes of emissions.<sup>113</sup> Furthermore, while it describes steps along the supply chain which can mitigate emissions, all potential scope 3 reductions associated with LNG are attributed to its phaseout and replacement.<sup>114</sup>

109 Yang et al., *Global liquefied natural gas expansion exceeds demand for coal-to-gas switching in paris compliant pathways*, (2022) at 6.

110 *Ibid.*, at 6.

111 *Ibid.*, at 7.

112 Natural Resources Canada, *Canadian liquefied natural gas projects*, (May 2024).

113 UNEPFI, *Emerging Practice: Climate Target Setting for Oil & Gas Financing*, (May 2024) at 10 & 11.

114 *Ibid.*

115 Canadian Climate Institute, *The*

The Canadian Climate Institute has explored this issue from a policy perspective, noting that proposals to use Canadian LNG to gain carbon credits are not feasible.<sup>115</sup> There is no credible guidance suggesting that financial institutions will be able to achieve financed emissions savings through LNG. Rather, particularly as scope 3 emissions become mandated in emissions accounting, financial institutions will have to account for the full breadth of LNG supply chain emissions.

### LNG VS COAL OR LNG VS RENEWABLES?

An article published by Harvard Business School outlines how LNG may be competing more directly against renewable energy than against oil and coal.<sup>116</sup> Particularly in the context of power generation, gas-fired plants are in competition with renewables, which are projected to grow from under a third to 42% of global power generation by 2028.<sup>117</sup>

This both undermines the supposed emissions savings from LNG expansion, and raises the question of LNG facing demand pressure from another angle.

Renewables are increasingly able to compete on cost. Between 2010 and 2022, the cost of producing solar energy has dropped almost 90%.<sup>118</sup> The price of onshore wind electricity decreased by 70% between 2009 and 2019.<sup>119</sup> Meanwhile, the National Renewable Energy Laboratory projects that the price of utility-scale battery storage will drop by as much as 47% between 2023 and 2030.<sup>120</sup>

Overall, renewable power is increasingly well-suited to help meet growing global power demand. A number of Southeast Asian nations, for example, have set strong renewable power targets, such as Thailand's goal of 50% renewable power by 2040 and Vietnam's goal of 75% renewable power by 2045.<sup>121</sup> In 2023 alone, wind and solar capacity in Southeast Asia grew by 20%.<sup>122</sup>

Meanwhile, in the first half of 2024 the EU surpassed 50% of its power consumption from renewables.<sup>123</sup> Between 2018 and 2024, the renewable share of EU power generation spiked from just over 30% to 50%, driven by increases in solar and onshore wind.<sup>124</sup> Over that same timeframe, gas dropped in market share from 17.3% to 13.7%.<sup>125</sup>

inescapable math of emissions, LNG, and international trade, (Jun. 2024).

- 116 Weiss et al., *LNG and Renewable Power*, (Jan. 2016) at ii.
- 117 IEA, *Renewables 2023*, (Jan. 2024) at 15.
- 118 Our World in Data, *Solar photovoltaic module price*, (accessed Sept. 2024).
- 119 Our World in Data, *Why did renewables become so cheap so fast?*, (Dec. 2020).
- 120 National Renewable Energy Laboratory, *Cost Projections for Utility-Scale Battery Storage: 2023 Update*, (Jun. 2023) at 4.
- 121 Center for Strategic and International

Studies, *Clean Energy and Decarbonization in Southeast Asia: Overview, Obstacles, and Opportunities*, (May 2023).

- 122 Global Energy Monitor, *A Race to the Top Southeast Asia 2024*, (Jan 2024).
- 123 Clean Energy Wire, *EU surpasses 50% renewable power share for first time in first half of 2024*, (Jul 2024).
- 124 Eurelectric, *Electricity Generation by Fuel*, (accessed September 2024).
- 125 Ibid.
- 126 EIA, *Price of Liquefied U.S. Natural Gas*

## CONCLUSION

The favourable market conditions of the 2010s that drove energy companies to try to make Canada a major player in the global LNG market have softened. The \$14.5/MMBTU LNG prices of 2011<sup>126</sup> which helped spur LNG Canada are no longer reality. Likewise for the argument that LNG is a climate solution.

Canadian LNG faces an array of economic risks, rising in severity over the lifetimes of the projects. As a glut of supply comes online and as demand faces uncertainty, longer-term equity and debt exposures to Canadian LNG projects will be increasingly risky. Canadian LNG projects' poor location on the cost curve exacerbates that risk, and provincial and federal governments may not always want to subsidize the industry to keep it competitive.

Yet multiple new Canadian LNG projects are being proposed and are seeking investor support. Banks are boosting more Canadian LNG, protected from the long-term risk by their shorter-term involvement in projects. Misleading lobbying and public relations campaigns touting LNG as better for the climate continue.

The more we know about the lifecycle emissions of LNG and about our carbon budget in a net zero world, the less sense that LNG makes as a transition fuel. Together with the economic risks, longer-term investors are correct to be sceptical about new projects. As the LNG gold rush ends, *carpe diem* has been replaced with *caveat emptor*.

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[Exports](#), (Accessed October 2024).