



Friday, 25<sup>th</sup> September, 2020

**To:**

Associate Deputy Minister Scott Bailey

Hon. George Heyman, Minister of Environment and Climate Change Strategy

Hon. Bruce Ralston, Minister of Energy, Mines and Petroleum Resources

*via email*

**RE: Proposed 5-year extension to Woodfibre LNG's environmental assessment certificate (#E15-02)**

Dear Ministers and Associate Deputy Minister Scott Bailey,

My Sea to Sky is a people-powered environmental organization that was founded in 2014 to defend, protect, and restore Átl'ka7tsem / Howe Sound. We currently represent more than 20,346 people that have signed the Howe Sound Declaration in opposition to the proposed Woodfibre LNG project.

Woodfibre LNG has applied for a 5-year extension to its environmental assessment certificate (EAC), which expires on 26<sup>th</sup> October, 2020.<sup>1</sup> While the BC EAO has chosen not to engage the general public on this contentious decision, we have evaluated Woodfibre LNG's request to extend their EAC as per the new BC EAO 2020 Certificate Extension Policy and we request that you take our comments into consideration.<sup>2</sup>

Our understanding is that the purpose of the review process is to assess the proponent's rationale for requesting an extension to their EAC, and to identify new information that has come to light since the EAC was granted that could change the conclusions reached in the original environmental assessment. This could include: new scientific or technical information; government policy changes; legal/regulatory expectations; physical changes to the airshed, watershed, or equivalent; previously unknown or undetected effects; and new information regarding Indigenous interests.

To highlight our key concerns:

- 1) Woodfibre LNG submitted its application for an extension two months late, which reduces the amount of time available for the BC EAO and the Technical Working Group to thoroughly review the application.
- 2) There is no update on timelines for a Final Investment Decision, and no mention of actual construction plans in Woodfibre LNG's extension application. Woodfibre LNG's past FID in November 2016 does not appear to have been genuine which calls into question the credibility of the proponent (see Section 3.6).
- 3) The price of LNG in Asia collapsed long before COVID-19 due to a glut in supply and unusually warm winters that have reduced demand. Before Woodfibre LNG is granted an extension to their EAC, they should be able to demonstrate a solid business case for their project, confirm project financing and insurance, and make a Final Investment Decision (see Section 1.5).
- 4) To use the current COVID-19 pandemic as a reason for delay is unconscionable and opportunistic. We provide evidence why COVID-19 should not be considered a valid excuse for delay in Section 1.4. We posit

that the delays encountered to date are instead due to poor judgement and poor management over the last five years.

- 5) Since the EAC was granted in October 2015, new scientific research has emerged that we believe would change the conclusions reached in the original environmental assessment (see Section 6 for additional references and more information), for example:
- a. 2018 Intergovernmental Panel on Climate Change (IPCC) report warns that **we must immediately reduce greenhouse gas emissions by 45–60% below 2010 levels by 2030** in order to limit warming to 1.5 °C to avoid worsening the long-lasting and irreversible impacts of climate change.
  - b. **Committed emissions from existing energy infrastructure jeopardize the 1.5°C climate target.** This means that we cannot build new fossil fuel infrastructure if we want to achieve climate targets that ensure a livable planet for future generations.
  - c. **Declaration of a “climate emergency” by 11,258 scientists** was published in BioScience, with recommendations to: replace fossil fuels with low-carbon renewables; leave remaining stocks of fossil fuels in the ground; support poorer nations in transitioning away from fossil fuels; eliminate fossil fuel subsidies; and increase carbon pricing.
  - d. British Columbia is not on track to achieve its climate targets, and **developing an LNG export industry threatens BC’s ability to meet these climate targets.**
  - e. **Life-cycle emissions from BC LNG are worse than coal**, and methane emissions from fossil fuel extraction is 25–40% higher than previously estimated.
  - f. **LNG exports are likely to increase global greenhouse gas emissions**, and *“future LNG export facilities could become today’s coal plants, where entrenched interests fight meaningful action to reduce climate emissions, with significant negative impacts on the global public.”*
  - g. **LNG is in direct competition with renewables**, and may delay the transition to renewable energy.
  - h. New baseline data for Howe Sound is now available through the 2017 and 2020 OceanWatch reports, and **several species and habitats in Howe Sound are listed as “Critical.”**
- 6) Policy changes that have occurred since October 2015 that would affect the BC EAO’s decision include:
- a. Declaration of a climate emergency by 475 communities across Canada, including City of Vancouver, West Vancouver, Bowen Island, Squamish, and Islands Trust.
  - b. Clean BC and the newly legislated targets of 40% below 2007 levels by 2030; 60% by 2040; and 80% by 2050.
  - c. Declaration of a climate emergency by the Federal government in 2019, with a pledge to achieve net zero by 2050.
  - d. 2019 Climate Change Accountability Act.
  - e. 2019 Changes to the Fisheries Act.



- 7) Woodfibre LNG has failed to meaningfully engage with Howe Sound communities and incorporate their feedback into project design and development. Citizens feel that their concerns have been ignored, disregarded, and dismissed. This is reflected in the need for two amendments, both of which could have been avoided if the proponent had listened to initial community feedback provided in 2014 and proactively adjusted their project design, or planned to build legacy housing for construction workers prior to applying for an EAC (see Section 1.2).
- 8) Local governments around Howe Sound have expressed continued opposition to Woodfibre LNG (see Section 6.5.6 and Appendix 3).

We do not believe that Woodfibre LNG should receive an extension to their environmental assessment certificate due to these changes in economic context; changes to local, provincial, and federal policies; new and emerging scientific understanding; and the implications of developing new fossil fuel infrastructure in a climate emergency.

We strongly urge the BC EAO not to grant Woodfibre LNG an extension to its environmental assessment certificate. However, if an extension is granted, the following conditions should apply:

- Woodfibre LNG must demonstrate that it can reduce its greenhouse gas emissions by 45% by 2030 and be net zero in its local and upstream operations by 2050.
- Woodfibre LNG must demonstrate that there is a viable business case for LNG exports given the current economic climate for LNG.
- Henriette Lake Dam must be upgraded prior to the start of construction to ensure the safety of workers at the site should the floatel amendment be granted by BC EAO/IAAC/Squamish Nation.

If Woodfibre LNG receives an extension to their environmental assessment certificate, it commits Howe Sound to forty years of fossil fuel exports, with impacts to human health, our safety, our environment, our communities, and our climate.

This is an opportunity to right past wrongs and make a different decision today.

Please see our detailed review of Woodfibre LNG's extension application below.

Sincerely,

**Tracey Saxby BA/BSc (Hons I)**  
**Executive Director**  
**My Sea to Sky**  
**Email: [tracey@myseatosky.org](mailto:tracey@myseatosky.org)**  
**Phone: +1 (604) 892-7501**

**Eoin Finn B.Sc., Ph.D., MBA**  
**Director of Research**  
**My Sea to Sky**  
**Email: [eoin@myseatosky.org](mailto:eoin@myseatosky.org)**  
**Phone: +1 (604) 715-7991**



## MY SEA TO SKY

### **Copied to:**

Squamish Nation Band Council

Jonathan Wilkinson, MP, North Vancouver, and Minister of Environment and Climate Change

Peter Schiefke, Parliamentary Secretary to the Minister of Environment and Climate Change

Patrick Weiler, MP, West Vancouver—Sunshine Coast—Sea to Sky Country

Sonia Furstenu, Leader of the BC Greens

Andrew Wilkinson, Leader of the BC Liberals

Jordan Sturdy, MLA, West Vancouver-Sea to Sky

Nicolas Simons, MLA, Powell River-Sunshine Coast

Bowinn Ma, MLA, North Vancouver-Lonsdale

Rick Glumac, MLA, Port Moody-Coquitlam

Hon. Mike Farnworth, MLA, Port Coquitlam

Jane Thornthwaite, MLA, North Vancouver-Seymour

Hon. Judy Darcy, MLA, New Westminster

Ian Paton, MLA, Delta South

Ravi Kahlon, MLA, Delta North

Hon. Selina Robinson, MLA, Coquitlam-Maillardville

Joan Isaacs, MLA, Coquitlam-Burke Mountain

Hon. Katrina Chen, MLA, Burnaby-Lougheed

Raj Chouhan, MLA, Burnaby-Edmonds

Hon. Anne Kang, MLA, Burnaby-Deer Lake

Janet Routledge, MLA, Burnaby North

Teresa Wat, MLA, Richmond North Centre

Linda Reid, MLA, Richmond South Centre

Jas Johal, MLA, Richmond-Queensborough

John Yap, MLA, Richmond-Steveston

Stephanie Cadieux, MLA, Surrey South

Marvin Hunt, MLA, Surrey-Cloverdale

Jagrup Brar, MLA, Surrey-Fleetwood

Rachna Singh, MLA, Surrey-Green Timbers

Garry Begg, MLA, Surrey-Guildford

Hon. Harry Bains, MLA, Surrey-Newton

Jinny Sims, MLA, Surrey-Panorama

Sam Sullivan, MLA, Vancouver-False Creek

Hon. George Chow, MLA, Vancouver-Fraserview

Hon. Shane Simpson, MLA, Vancouver-Hastings

Mable Elmore, MLA, Vancouver-Kensington

Hon. Adrian Dix, MLA, Vancouver-Kingsway

Michael Lee, MLA, Vancouver-Langara

Hon. Melanie Mark, MLA, Vancouver-Mount Pleasant

Hon. David Eby, Q.C., MLA, Vancouver-Point Grey

Spencer Chandra Herbert, MLA, Vancouver-West End

Ralph Sultan, MLA, West Vancouver-Capilano

David Keane, Woodfibre LNG

## **Review of Woodfibre LNG’s application for a 5-year extension to its Environmental Assessment Certificate (EAC)**

As per the BC EAO’s 2020 guidance documents,<sup>2</sup> the proponent is required to provide supporting rationale to answer the questions below. We have interspersed our comments to Woodfibre LNG’s responses below:

### **1.0 Why does the Holder wish to extend the Environmental Assessment Certificate (EAC) and why is project development delayed?**

#### *1.1 Challenges associated with site clean-up and remediation*

As Woodfibre LNG notes, site clean-up and remediation was a condition of purchasing the Woodfibre site from Western Forest Products in February 2015.<sup>3,4,5,6</sup> If Woodfibre LNG conducted its proper due diligence prior to purchase of the property, the condition of the site should not have been unexpected, and therefore should not be considered an excuse for delay.

#### *1.2 Environmental Assessment Certificate (EAC) amendments diverted internal resources away from advancing pre-construction requirements*

Two of the amendments listed below demonstrate a significant failure on behalf of the proponent to adjust their project proposal in response to initial community and stakeholder feedback in 2014. We argue that any delays experienced by the proponent due to these amendments to their EAC were caused by their unwillingness to listen to and meaningfully engage with the community.

##### ***1.2.1 EAC amendment to switch from seawater cooling to air-cooling required by Squamish Nation***

In their original project description, Woodfibre LNG proposed to use an outdated seawater cooling system to cool the onshore liquefaction plant.<sup>7</sup> Local community members, local governments, citizen scientists, and environmental organizations first raised concerns about the impacts of once-through seawater cooling on herring as early as March 2014.<sup>8,9,10,11</sup>

Forage fish such as herring are a vital link in the food web, as an abundant source of food for salmon, birds, seals, and humpback whales, as well as many other species.<sup>12</sup> Fisheries and Oceans Canada (DFO) guidelines recommend industrial marine water intake pipes be located at least 2 km from documented herring spawn areas as herring eggs and larvae are particularly vulnerable, and warns that marine intakes can have “*severe impacts on marine resources.*”<sup>13</sup>

Local citizen scientist, John Buchanan, has been monitoring herring spawn around Howe Sound since 2010, and his data, along with photographic and video evidence, showed that herring are spawning directly at the proposed Woodfibre LNG site and at other nearby locations well within the 2 km DFO guideline.<sup>10,11</sup>

Woodfibre LNG selectively chose to ignore this data, and instead relied on data provided by DFO that was out of date (Figure 1 & 2).<sup>14</sup> DFO later admitted that they had not surveyed herring in Howe Sound in recent years, and relied on local residents or streamkeeper groups to document herring spawn locations.<sup>15</sup>

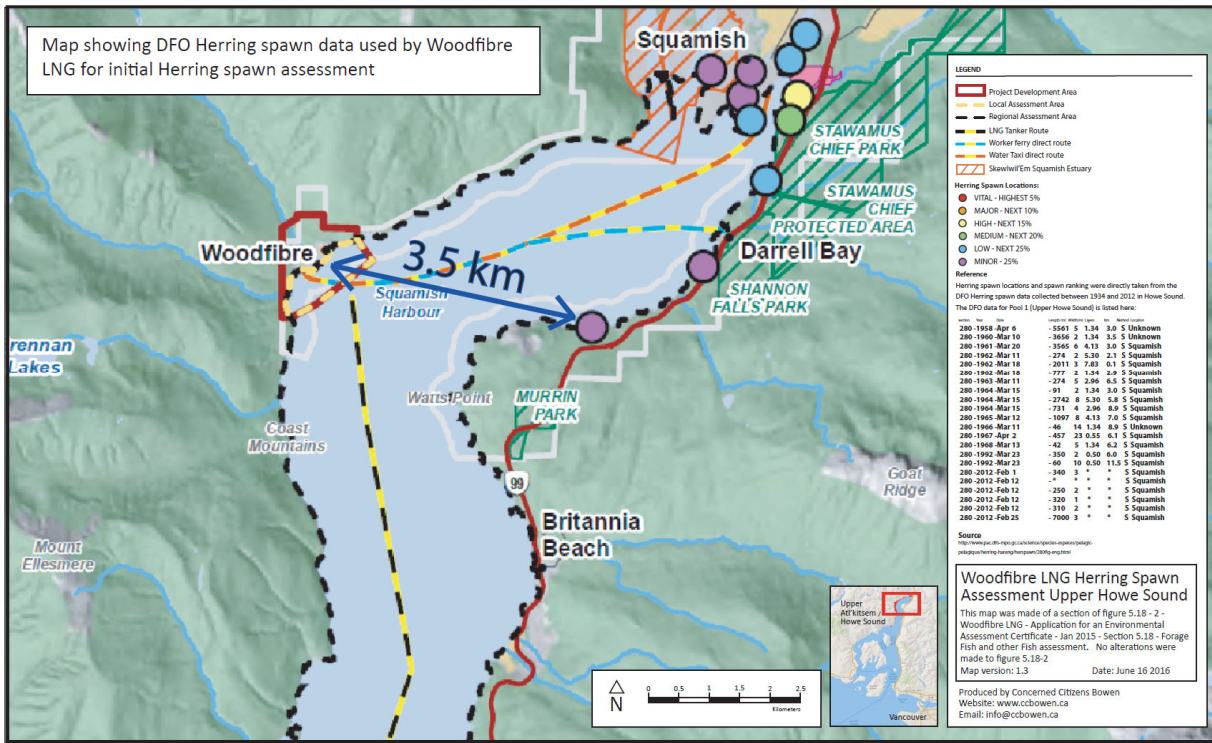


Figure 1: DFO herring spawn data used by Woodfibre LNG for initial herring spawn assessment in 2015.<sup>14</sup>

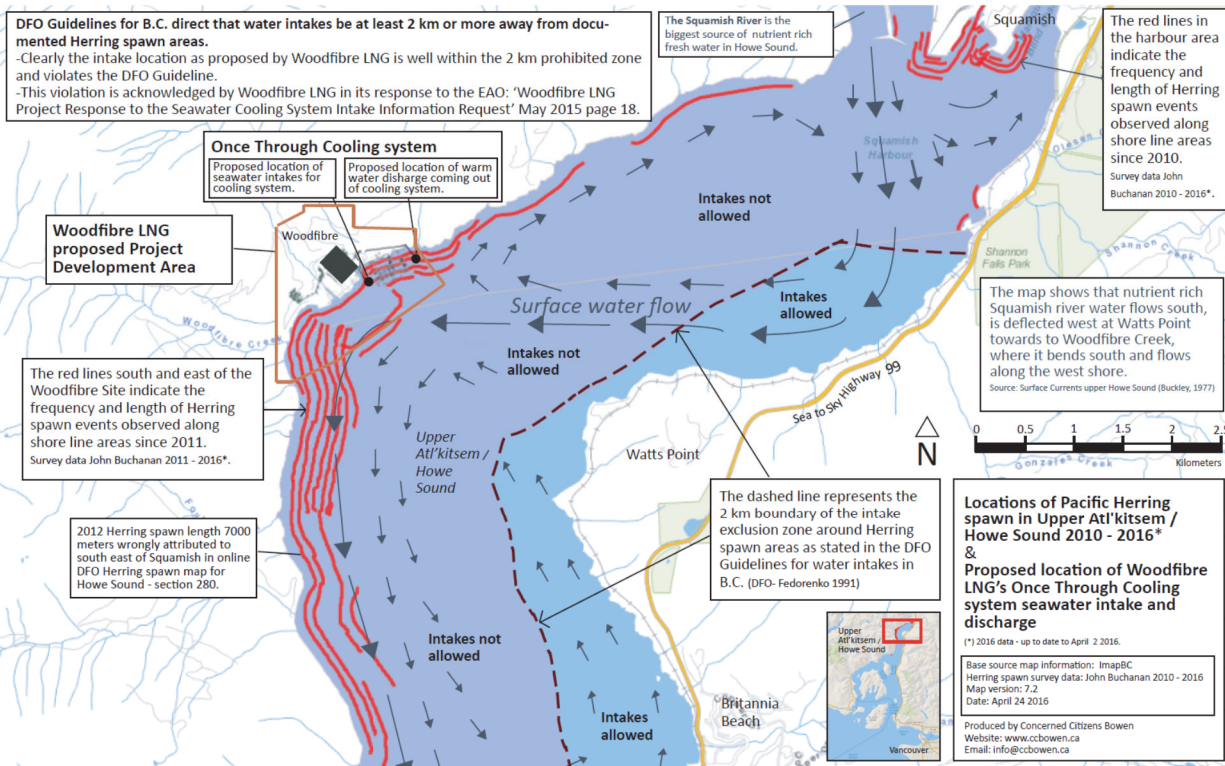


Figure 2: Herring spawn data collected by local citizen scientist, John Buchanan, from 2010 to 2016. Red lines indicate herring spawn occurrence. Map created by Anton van Walraven from our partner organization, Concerned Citizens Bowen.

Additional studies required by the BC EAO demonstrated that yes, herring were spawning at the site, and the consultant, Hemmera, recommended that herring surveys be continued in 2016.<sup>16</sup> To our knowledge, Woodfibre LNG did not continue these herring surveys.

Despite these concerns, the Environmental Assessment Certificate for the Woodfibre LNG project was approved by both the Provincial<sup>17</sup> and Federal<sup>18</sup> EA processes.

When the same existing citizen scientist data was provided to Squamish Nation, the nation required Woodfibre LNG to provide further information on alternative cooling techniques through their separate environmental assessment process, and to allow Squamish Nation to make the final decision on what cooling system Woodfibre LNG must use.<sup>19</sup>

This amendment could have been avoided if Woodfibre LNG had listened to local expert knowledge and community concerns about the impacts to herring, and pro-actively adjusted their project design prior to starting the environmental assessment process.

### ***1.2.2 EAC amendment to clarify that site clean-up and remediation did not constitute construction***

Woodfibre LNG asserts that *“To date, all works completed to advance the Project are related to clean up and remediation of the historic pulp mill site and related infrastructure and/or are administrative in nature.”*<sup>1</sup>

Given the approaching deadline for their EAC, we find it curious that Woodfibre LNG felt it necessary to apply for this amendment. This may be due to the continued delay in any Final Investment Decision, and the lack of project financing as the price of LNG has collapsed (see Section 1.5). If so, Woodfibre LNG entered into this amendment of their own volition, and this should not constitute rationale for a delay.

While cleanup and remediation is necessary and commendable in any event, we note that such work is not necessarily specific to the continuation of the Project. That is, if the continuing delay in the Final Investment Decision reflects a lack of commitment to the Project, then the remediation work will simply have increased the proponent’s ability to sell the lands into the real estate market or propose that they be directed to some alternative use. We again note that the proponent was required to undertake this activity as a condition of purchasing the land.<sup>1,5,6</sup>

### ***1.2.3 EAC amendment for a floating hotel or “floatel” for worker accommodation***

Woodfibre LNG has known since early 2014 that housing and accommodation were a major concern for Howe Sound communities, but these concerns have been ignored, disregarded, and dismissed. As a good corporate citizen, Woodfibre LNG could have invested in building legacy housing for Squamish that could help to relieve the current housing crisis, and instead they opted for a cheap, temporary solution. This amendment could have been avoided by the proponent if they had listened to initial community feedback in 2014 and planned accordingly.

See Appendix 1 for more information.

### *1.3 Financial difficulties of preferred contractors*

Woodfibre LNG states that the bankruptcy of their preferred contractor in January 2020, has caused complications in commercial negotiations regarding an Engineering, Procurement, and Construction (EPC) contract. This should not be considered an adequate excuse for delay, as alternative contractors are available, and the timing of bankruptcy in January 2020 is too recent to be an adequate excuse for five years of delay.

### *1.4 Impacts of COVID-19 on manufacturing facilities and fabrication yards in China*

Based on the information provided by Woodfibre LNG that their preferred contractor for an EPC contract filed for bankruptcy in January 2020, we suspect that their preferred contractor is the Houston-based company, McDermott International.<sup>20</sup>

If this is the case, it is likely that the manufacturing facilities and fabrication yards in China that Woodfibre LNG refers to is Qingdao McDermott Wuchuan (QMW), “a joint venture between McDermott and CSIC Wuchuan to cater to the FPSO/FLNG and Offshore/Onshore Module construction market, managed by McDermott.”<sup>21</sup>

Given that Woodfibre LNG notes that the EPC contract was never finalized due to the “financial challenges” of their preferred contractor, it cannot be argued that COVID-19 has delayed the timelines for manufacture of specialized equipment and fabrication of modules. In the absence of a final EPC contract this is irrelevant.

However, it should be noted that if/when Woodfibre LNG finalizes their EPC contract with McDermott, that the fabrication yards in Qingdao are located approximately 950 km northeast of Wuhan, the epicenter of the COVID-19 outbreak in China. It should also be noted that Qingdao, where the fabrication yards are located, was not shut down during the COVID-19 outbreak.<sup>22</sup>

Therefore, Woodfibre LNG cannot use the impacts of COVID-19 on manufacturing facilities and fabrication yards in China as an excuse for delays.

### *1.5 Economic impacts of COVID-19 may affect project financing or commercial negotiations*

#### ***1.5.1 The global LNG price collapsed long before COVID-19***

We agree that COVID-19 may have long-lasting and uncertain economic impacts worldwide. However, Woodfibre LNG fails to acknowledge that the global LNG price collapsed long before COVID-19, due to a glut in supply and unusually warm winters that have reduced demand.<sup>23</sup> The price of LNG in Asia dropped from \$19.03 US per MMBtu in February 2014, to \$2.17 US per MMBtu in April 2020 (See Figure 3),<sup>24</sup> forcing many Asian importers to declare Force Majeure on LNG cargoes.<sup>25</sup>

Energy Finance Analyst, Clark Williams Derry, wrote in a report for the Institute for Energy Economics and Financial Analysis that: “The financial prospects for Liquefied Natural Gas (LNG) – once one of the globe’s hottest energy commodities – seem to be imploding before our eyes.”

*“In most cases, the companies pinned the delays on the novel coronavirus, while ignoring the fact that LNG prices were already deflating long before the worst impacts of the pandemic were being felt. And what’s notable is the sheer number and scope of the LNG announcements. Companies of all scales—from giant state-*



owned enterprises, to publicly traded oil and gas supermajors, to smaller and more speculative start-ups—are pulling back from their LNG commitments and reevaluating their options.”

“The LNG industry entered today’s crisis on shaky footing. And now that the economic slowdown is in full swing, all previous LNG supply and demand projections have been rendered moot, and all crystal balls remain cloudy. In that context, delay is a smart decision.”<sup>26</sup>

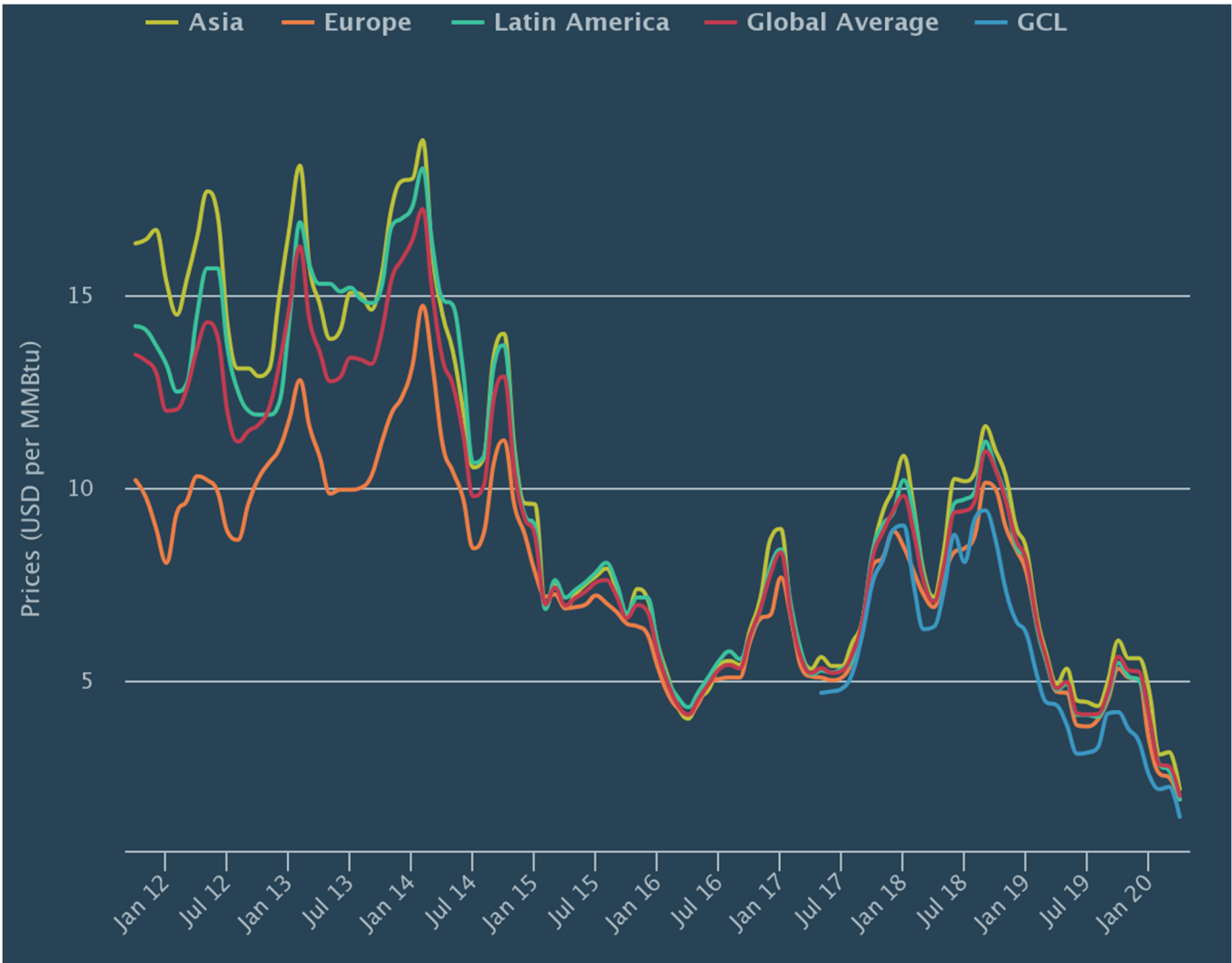


Figure 3: Regional LNG prices (monthly average) for Asia, Europe, Latin America, and the global average LNG price. Data source: Bluegold Research, 2020.<sup>24</sup>

### 1.5.2 BC LNG is not economically viable at current Asian prices

BC LNG supply costs are estimated at \$8.09–\$8.35 per MMBtu when natural gas is produced by the owners of LNG export facilities.<sup>27</sup> Since Woodfibre LNG has recently acquired Canbriam Energy Inc.<sup>28</sup> which produces oil and gas in northeastern British Columbia, it may be possible for Woodfibre LNG to produce LNG at these prices. However, when natural gas is bought on the market, BC LNG supply costs are estimated at \$9.85–\$11.17 per MMBtu.<sup>27</sup>

While the price of LNG in Asia has recovered somewhat to \$4.80 US per MMBtu in September 2020, no new LNG projects were approved in 2020 as companies have delayed decisions and written down investments on existing plants.<sup>29</sup> The failure rate for proposed LNG export terminals from 2014–2020 is 61%.<sup>25</sup>

BC LNG export projects are not economically viable at current Asian prices.

### ***1.5.3 BC LNG cannot compete with cheaper renewable energy***

The International Energy Agency (IEA) notes that there is a three-way race between coal, natural gas, and renewable energy to provide China’s power and heating needs, with renewable energy as the main challenger to coal.<sup>30</sup> The IEA estimates that LNG prices need to fall below USD 4/MMBtu to generate market-based switching from coal to natural gas, which again means BC LNG is not economically viable, and cannot compete with new onshore wind and solar.<sup>30</sup>

According to a new report by the International Renewable Energy Agency (IRENA), unsubsidized renewable energy is now most frequently the cheapest source of energy generation.<sup>31</sup> Analysts are also warning that long-term LNG contracts are at risk as countries transition to net-zero emissions by 2050.<sup>32</sup>

Before Woodfibre LNG is granted an extension to their EAC, they should be able to demonstrate a solid business case for their project, confirm project financing and insurance, and make a Final Investment Decision (See Section 3.6). Otherwise, the benefits projected for exporting a publicly-owned, non-renewable resource will not be realized.

## **2.0 What was the length of time of the original EAC and why?**

Note that this question has not been answered by the proponent, as it only appears in the 2020 Certificate Extension Policy.<sup>3</sup>

## **3.0 What work has the Holder done to advance the project?**

### ***3.1 Clean up and remediation of the historic pulp mill site and related infrastructure***

See comment 1.1 above. Given that site clean-up and remediation was a condition of land purchase,<sup>5,6</sup> it should not be used to demonstrate progress for Woodfibre LNG or cited as a reason why the timeframe for the original EAC was inadequate.

### ***3.2 Participation in EAC amendments***

As noted in section 1.2, the EAC amendments—to switch from sea-water cooling to air cooling, and to provide adequate worker accommodation—demonstrate a failure on behalf of the proponent to adjust their project proposal in response to initial community feedback in 2014. Both of these amendments could have been avoided if the proponent had engaged with the community in a meaningful way, and proponent participation in these amendments should not be considered as advancement of the project.

### 3.3 Advanced engineering design

#### **3.3.1 Invested greater than \$40 million to date on FEED and detailed engineering;**

No comment.

#### **3.3.2 Procured candidate vessels for use as Floating Storage Tanks in 2014;**

According to the Canadian Standards Association, the typical lifespan of an LNG tanker is 15–20 years, to a maximum of 40 years.<sup>33</sup> Woodfibre LNG has purchased the LNG Capricorn (built in 1978, which makes it 42 years old)<sup>34</sup> and the LNG Taurus (built in 1979, which makes it 41 years old).<sup>35</sup> Both of these LNG tankers are out of service and already past their viable lifespan, and additional delays to the start of construction and operation make the purchase of these LNG tankers even more questionable as they continue to age.

#### **3.3.3 Ordered the main cryogenic heat exchanger in August 2019, critical to the liquefaction of natural gas and part of a procurement process to de-risk the Project schedule by purchasing long lead items;**

It is highly unusual that any LNG proponent would purchase very expensive equipment prior to making a Final Investment Decision. Given that the preferred EPC vendor makes no mention of such a contract we doubt the veracity of this statement.

### 3.4 Advanced permitting and pre-construction commitments in the EAC

#### **3.4.1 Initiated TERMPOL review process through submission to Transport Canada in 2015;**

While yes, Woodfibre LNG did initiate the TERMPOL process in 2015, our understanding from Transport Canada is that the TERMPOL process stalled in June 2017, when *“Transport Canada was specifically mandated through Order-in-Council #2017-0813 ([www.pco-bcp.gc.ca/oic-ddc.asp](http://www.pco-bcp.gc.ca/oic-ddc.asp)) to recover costs associated with TERMPOL Reviews.”*<sup>36</sup>

We were further advised by Transport Canada in February 2019 that the *“Status remains the same, we are waiting for Woodfibre to make a decision on when to enter into an agreement with Transport Canada to complete the TERMPOL review process. Until then the review is on hold.”*<sup>37</sup>

In August 2019 we were advised by Transport Canada that *“The TERMPOL review for Woodfibre is still on hold. The process is voluntary and is not a requirement to proceed with construction.”*<sup>38</sup>

In December 2019, Ruth Simons from Future of Howe Sound was advised that *“Woodfibre is now stating that they will update the relevant chapters of their original TERMPOL submission and submit the update to Transport Canada by Nov 2020.”*<sup>39</sup>

Given that the TERMPOL process is voluntary, and given that no progress has been made since 2017, this does not demonstrate progress for Woodfibre LNG.

### ***3.4.2 Obtained National Energy Board export licence to export LNG for 40 years in June 2017;***

Woodfibre LNG's licence to export LNG for 40 years raises significant concerns that the proponent has failed to adequately take into account the current scientific consensus on climate change, and the need to immediately reduce emissions by 45% by 2030, and achieve "net zero" by 2050.<sup>40</sup> See Section 6.1 for more information.

Woodfibre LNG needs to demonstrate how the development of new fossil fuel infrastructure that is intended to export LNG starting in 2025 to 2065 is consistent with the need to reduce emissions to "net zero" by 2050. Is there a business case for exporting LNG beyond 2050, and does this affect the economic outlook for the project?

### ***3.4.3 Obtained British Columbia Oil and Gas Commission Facilities Permit in July 2019;***

No comment.

### ***3.4.4 Development of draft EMPs required by the EAC and initiation of associated consultation with regulatory agencies and Indigenous groups;***

The continued delay in development of draft Environmental Management Plans (EMPs) as required by the EAC demonstrates the inability of Woodfibre LNG to progress the project. Woodfibre LNG has failed to provide any updates on the status of EMPs to the community, as required in condition 24 and condition 25 of Woodfibre LNG's Environmental Assessment Certificate.<sup>17</sup>

### ***3.4.5 Conducted numerous meetings with relevant federal, provincial and municipal agencies and community groups on EAC conditions and Project permitting;***

To our knowledge, Woodfibre LNG only began community engagement in fall 2019, following concerns expressed by the District of Squamish that they were failing to fulfill condition 24 and condition 25 of their EAC. Requests to post a project timeline have been ignored by the proponent.

The stakeholder engagement that we attended on 22<sup>nd</sup> October 2019 was farcical, with no meaningful engagement on the impacts to our health and emergency services. It should be noted that even though My Sea to Sky now represents more than 20,000 citizens from around Howe Sound, we were not originally invited to participate as a stakeholder at this meeting. Invitations were instead mostly targeted to organizations that have either accepted funding from Woodfibre LNG, or have not expressed concerns about the project. It was only after we became aware of the stakeholder engagement and requested to attend (copying the media and relevant politicians) that we were extended an invitation to participate at this meeting as a stakeholder.

At a more recent stakeholder meeting hosted by Woodfibre LNG on 3<sup>rd</sup> December 2019 to discuss the floatel amendment, the number of stakeholders (three in total) were outnumbered by three security guards and five representatives from Woodfibre LNG and their consultants, Hill + Knowlton.

Woodfibre LNG continues to deny access to the most basic requests for information, or to respond appropriately to questions asked of them, demonstrating an ongoing lack of interest in the concerns of local residents and stakeholders, and an unwillingness to engage.

***3.4.6 Developed and maintained a dedicated Project website to keep external parties informed of Project activities consistent with EAC Condition 25. This website is currently undergoing renovation and updating, with a relaunch planned for Q2 2020;***

Woodfibre LNG's Project website prior to the relaunched website in April 2020 was notably out-of-date, with little to no information available on project activities, project timelines, development of Environmental Monitoring Plans, or the fulfillment of conditions required in their EAC.

The new website launched in April 2020 provides even less information about the current project status.

To date, Woodfibre LNG has failed to fulfill EAC Condition 25.

***3.4.7 Conducted consultation meetings with forest tenure holders, consistent with EAC Condition 19.***

No comment.

***3.5 No statement of progress for associated project components***

Woodfibre LNG fails to note the status of the associated project components, such as the FortisBC Eagle Mountain to Woodfibre pipeline, or the BC Hydro upgrades. From the transcript of FortisBC's Q4 2019 Earnings Conference Call, CEO Barry Perry noted FortisBC is still waiting on a decision from Woodfibre LNG. There appears to be some uncertainty that the Eagle Mountain to Woodfibre pipeline project will be part of FortisBC's five-year plan come September 2020.<sup>41</sup>

***3.6 No update on timelines for a Final Investment Decision (FID). Woodfibre LNG's past FID in November 2016 does not appear to be genuine.***

Despite the "Final Investment Decision" that Woodfibre LNG appeared to make in November 2016 in the presence of Premier Christy Clark,<sup>42</sup> Woodfibre LNG has repeatedly delayed their actual Final Investment Decision. This brings into question the reliability of Woodfibre LNG's public statements, and whether future FID announcements are to be considered reliable and genuine.

Below is an incomplete timeline:

**5<sup>th</sup> November 2016:** The Vancouver Sun reports "*Premier Christy Clark donned a hard hat Friday to join Woodfibre LNG executive Byng Giraud, as he announced what amounts to his company's funding approval for a proposed \$1.6-billion natural gas liquefaction plant.*

*Giraud, country manager for Woodfibre LNG, said **the board's decision is the equivalent of a final investment decision for the project**, which will export 2.1 million tonnes of LNG per year to Asia starting in 2020.*"<sup>43</sup>

**4<sup>th</sup> November 2016:** Macleans reports that "*Woodfibre LNG gives green light to what would be B.C.'s first LNG project*" and "*British Columbia's efforts to launch a liquefied natural gas industry were given a boost Friday after Woodfibre LNG said it will proceed with its \$1.6-billion project in the Lower Mainland, the first proposed LNG development to go ahead in the province.*"<sup>44</sup>

**7<sup>th</sup> November 2016:** Offshore Energy reports *“Woodfibre LNG on Friday said its parent company Pacific Oil & Gas Limited, part of the Singapore-based RGE group of companies, has made the final investment decision for the project.”*<sup>45</sup>

**18<sup>th</sup> November 2016:** BIC Magazine headline reads *“Woodfibre LNG becomes the first Canadian LNG project to receive Final Investment Decision.”* The accompanying text states that *“Earlier this month, Woodfibre LNG became the first Canadian liquefied natural gas (LNG) project to receive a Final Investment Decision (FID) to build an LNG export facility.”*<sup>46</sup>

**25<sup>th</sup> July 2017:** Reuters reports that *“Of more than a dozen projects proposed for British Columbia, only the C\$1.6 billion privately held Woodfibre project has so far been given the green light by its developers.”*<sup>47</sup>

**26<sup>th</sup> July 2017:** Global News reports that *““Woodfibre LNG near Squamish, B.C., is the only Canadian project where the company has reached a final investment decision to proceed,” the NEB noted.”*

**IMPORTANT! Note that even the National Energy Board believed that Woodfibre LNG had achieved FID in November 2016. Then in 2018 the story changed.**

**28<sup>th</sup> September 2018:** The Financial Post reports that *“LNG Canada would be the **first** major domestic gas export project to be commissioned in the country and provide a sentiment boost to the country’s beleaguered gas sector. The smaller Woodfibre LNG project in Squamish, near Vancouver, has also been progressing but is awaiting an announcement on tariffs on imported steel components before ramping up construction.”*<sup>48</sup>

**17<sup>th</sup> October 2018:** The Financial Post reports that *“Woodfibre LNG is nearing a decision that would make it the **second** LNG project in British Columbia. “We’re looking for a notice to proceed to construction in Q1 (of 2019),” company president David Keane said.*

*Keane said the company is currently working to finalize an impact-benefits agreement with the Squamish First Nation, looking at ways to reduce the project’s costs and seeking relief on anti-dumping tariffs for fabricated industrial components imported from Asia.*

*“The federal government has been clear that if you get to a position where you need to make a final investment decision and (tariffs are) the last remaining issue, then they would be willing to take a serious look at it, but they would prefer you exercise all other options, which everybody is doing,” Keane said. The company is awaiting a decision on the tariffs from the Federal Court of Appeal.”*<sup>49</sup>

**3<sup>rd</sup> December 2018:** Natural Gas News reports that *“LNG projects line up for FID... These include the front-running 2.1mn mt/yr Woodfibre LNG project, which could achieve FID in Q1 2019.”*<sup>50</sup>

**19<sup>th</sup> August 2019:** The Financial Post headline reads: *“Woodfibre LNG poised to proceed with \$1.6-billion project within weeks.”* Inside the article: *“David Keane stated: “...we are hoping to have a final investment decision at the end of the summer or shortly thereafter.””*<sup>51</sup>

**18<sup>th</sup> September 2019:** Upstream reported *“The developers (sic) Woodfibre liquefied natural gas export terminal in British Columbia expects to finalise (sic) the engineering, procurement and construction contracts for the facility in the coming weeks, with a final investment decision to follow.”*<sup>52</sup>

**24<sup>th</sup> March 2020:** The Squamish Chief reported that *“Construction, expected to begin this summer, is now expected to start in the summer of 2021.”* **No mention is made of a revised timeline for a Final Investment Decision.**<sup>53</sup>

As per Section 1.5, before Woodfibre LNG is granted an extension to their EAC, they should be able to demonstrate a solid business case for their project, confirm project financing, and make a Final Investment Decision.

#### **4.0 What plans, including timelines, does the Holder have for advancing the project if the EAC is extended?**

There is a notable absence of timelines or commitment to a Final Investment Decision by Woodfibre LNG’s parent company, and no mention of actual construction plans. Instead Woodfibre LNG focuses on site clean-up and remediation; continued consultation with First Nations, government, and stakeholders; and advancing Environmental Management Plans.

Given that the market for LNG has collapsed, we suspect that Woodfibre LNG is on hold as it is not currently economically viable.<sup>23,24,26</sup>

Before Woodfibre LNG is granted an extension to their EAC, they need to demonstrate a solid business case with guaranteed offtake buyers for their LNG, and prove that they have the financing necessary to proceed.

#### **5.0 What are the details of Indigenous nation, stakeholder and other agency engagement on the proposed extension? With who has the Holder engaged, what did they hear and what response have they given?**

Note that this question has not been answered by the proponent, as it only appears in the 2020 Certificate Extension Policy.<sup>3</sup> To our knowledge, no stakeholder engagement has taken place on the proposed extension. Many local governments on the Technical Working Group have informed My Sea to Sky that they first heard about the proposed extension from our email dated 30<sup>th</sup> April, 2020.<sup>54</sup>

#### **6.0 Has new information come to light since the original EAC was granted that could change the conclusions reached in the EAO’s assessment of the project?**

According to the BC EAO’s 2016 guideline for EAC extensions, “The time limit is in place to ensure that certificate conditions do not become outdated as a result of changes over time in government policy, technical standards, scientific information, legal/regulatory expectations, and other factors.”<sup>55</sup>

Woodfibre LNG completely fails to mention any new scientific or technical information that could change the conclusions reached in the EAO’s assessment of the project.<sup>1</sup> To be fair, it is not in their best interest to do so, as this new information could jeopardize the success of their application. We have highlighted key scientific findings, physical changes, and policies that we believe would change the conclusions reached in the EAO’s assessment.

## 6.1 New scientific and technical information (for example, a new dataset in respect of a key valued component (VC) of interest or a new best management practice);

### **6.1.1 The need to limit warming to 1.5°Celsius**

In September 2018, the Intergovernmental Panel on Climate Change (IPCC) warned that we must take significant action by 2030 in order to limit warming to 1.5 °Celsius (C) to avoid worsening the long-lasting and irreversible impacts of climate change.<sup>40</sup> The IPCC report recommends that human-caused emissions of carbon dioxide (CO<sub>2</sub>) need to fall 45–60% below 2010 levels by 2030, and achieve “net zero” by 2050.<sup>40</sup> This will require a rapid, far-reaching culture shift to immediately reduce greenhouse gas (GHG) emissions and minimize impacts on ecosystems and human health.<sup>40</sup>

However, the IPCC’s recommendations have been criticized as too conservative.<sup>56,57</sup> Other scientific studies suggest that limiting warming to 1.5°C will not be sufficient to mitigate climate change impacts to ecosystems and communities.<sup>58,59,60</sup> Climate change is happening much faster than scientists predicted,<sup>40,61,62</sup> and new research shows that climate scientists have consistently underestimated the pace and severity of climate change.<sup>63</sup>

### **6.1.2 Existing oil and gas infrastructure jeopardizes the 1.5°Celsius target**

In August 2019, an article published in Nature warns that the emissions from existing fossil-fuel burning energy infrastructure threatens the 1.5°C target recommended by the IPCC.<sup>64</sup> The authors note that “*little to no new CO<sub>2</sub>-emitting infrastructure can be commissioned, and that existing infrastructure may need to be retired early (or be retrofitted with carbon capture and storage technology) in order to meet the Paris Agreement climate goals.*”<sup>64</sup>

### **6.1.3 Natural gas can only increase production if it is coupled with carbon storage and capture**

The IPCC report identified several different pathways to stay within 1.5°C, noting that natural gas needs to decrease by 13–62% from 2020 to 2050, and it can only increase if carbon capture and storage is deployed to control carbon emissions.<sup>40</sup> Given that Woodfibre LNG is currently planning to begin operations in 2025, and that it has a 40-year export license from the National Energy Board, it will still be producing and exporting LNG in 2065, fifteen years after the IPCC has stated that we need to be at net zero emissions.

### **6.1.4 More than 11,258 scientists declared a climate emergency, calling to replace fossil fuels with low-carbon renewables, leave fossil fuels in the ground, support poorer nations in transitioning away from fossil fuels, eliminate subsidies, and steadily escalate carbon pricing.**

In November 2019, more than 11,258 scientists from 153 countries signed a declaration stating that:

*“Scientists have a moral obligation to clearly warn humanity of any catastrophic threat and to “tell it like it is.” On the basis of this obligation and the graphical indicators presented below, we declare, with more than 11,000 scientist signatories from around the world, clearly and unequivocally that planet Earth is facing a climate emergency.”<sup>58</sup>*



The declaration recommends that:

*“The world must quickly implement massive energy efficiency and conservation practices and must replace fossil fuels with low-carbon renewables and other cleaner sources of energy if safe for people and the environment. We should leave remaining stocks of fossil fuels in the ground (see the timelines in IPCC 2018) and should carefully pursue effective negative emissions using technology such as carbon extraction from the source and capture from the air and especially by enhancing natural... Wealthier countries need to support poorer nations in transitioning away from fossil fuels. We must swiftly eliminate subsidies for fossil fuels and use effective and fair policies for steadily escalating carbon prices to restrain their use.”<sup>58</sup>*

### 6.1.5 British Columbia is not on track to achieve its climate targets

From 2007 to 2017, BC’s emissions only decreased by 0.5%, while from 2015 to 2017 emissions increased 2.4%.<sup>65</sup> According to Canada’s National Inventory Report, BC’s emissions increased a further 3 megatonnes (Mt) in 2018.<sup>66</sup> BC is not on track to achieve its current climate targets, or the IPCC targets of 45–60% below 2010 emissions by 2030 and net zero by 2050 (Figure 4).

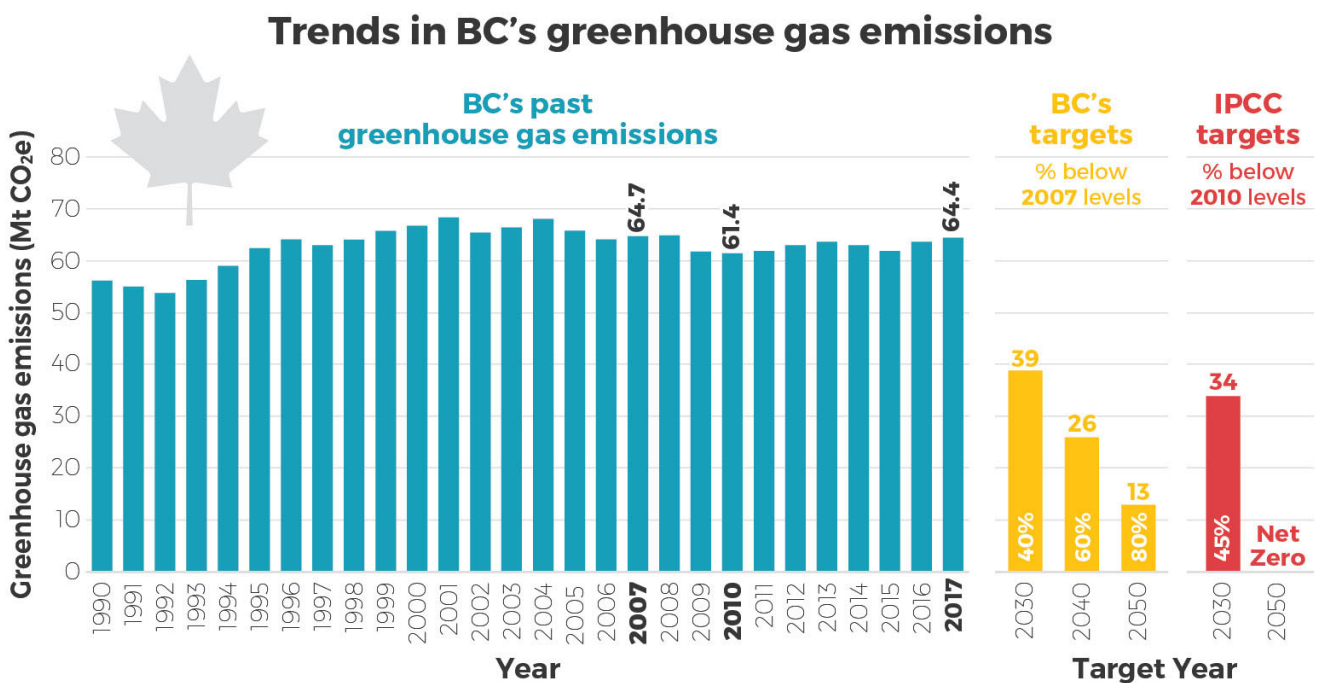


Figure 4: Trends in British Columbia’s greenhouse gas emissions from 1990 to 2017 (in blue), compared to BC’s current Clean BC climate targets (in yellow), and the recommended IPCC targets (in red).

### 6.1.6 Developing an LNG export industry threatens BC’s climate targets

Projected emissions by the Canada Energy Regulator for oil and gas production alone exceeds BC’s 2050 target by 54 per cent.<sup>67</sup> Increasing oil and gas production for LNG exports by Woodfibre LNG, Kitimat LNG, and LNG Canada will result in 22.6 megatonnes (Mt) of greenhouse gas emissions in 2050, which exceeds BC’s climate target by 227%,<sup>67</sup> and is incompatible with the 1.5°C target of net zero by 2050 recommended by the IPCC report.<sup>40, 68</sup>

### **6.1.7 LNG is not “clean” or “green” and should not be considered a “transition fuel”**

A letter published in the reputable scientific publication, Nature, notes that “...without new climate policies, abundant supplies of natural gas will have little impact on greenhouse-gas emissions and climate change.”<sup>69</sup>

The Union of Concerned Scientists have warned that “a natural-gas dominated electricity system will continue to heat up the planet.”<sup>70</sup>

The Global Energy Monitor warns that expansion of an LNG industry is incompatible with the IPCC’s climate targets.<sup>71</sup>

According to a report by Pembina Institute, “The argument that exporting LNG from BC to Asia helps to reduce greenhouse gas (GHG) emissions typically hinges on two assumptions: 1) that the lifecycle GHG emissions of LNG are lower than those of coal; and 2) that increasing the natural gas supply will result in decreasing coal use.” The report concludes that both of these assumptions are unsubstantiated, and states that: “Claiming that natural gas, and specifically LNG from BC is a climate solution is inaccurate.”<sup>72</sup>

And finally, a peer reviewed paper in Energy Policy notes that the “transition fuel” argument for gas development in BC is unsubstantiated by the best available evidence, and expressed concern that for the Provincial government to be using this label risks legitimizing carbon-intensive development, essentially “green-washing” gas.<sup>73</sup>

### **6.1.8 Life-cycle emissions from BC LNG are worse than coal**

Woodfibre LNG has recently commissioned a report that claims that the life cycle emissions of LNG exports from their facility is 45% less than coal.<sup>74</sup> However, it is important to note the inherent conflict of interest and potential for bias with this report, as the client has a vested interest in a particular outcome. The report has received criticism from experts that found problems with Woodfibre LNG’s data, calling it “misleading.”<sup>75</sup>

Woodfibre LNG also refers to a peer-reviewed article that estimates a 34–62% reduction in BC LNG when compared to coal.<sup>76</sup> This article also has an inherent conflict of interest as the studies were funded by Seven Generations Energy, or 7G, which is a Calgary-based natural gas company.<sup>75</sup> It’s also important to recognize the “Deep State” that has formed in Canada, where the oil and gas industry has embedded itself within government, civil servants, universities, and the media.<sup>77</sup>

In contrast, David Hughes, former federal government geoscientist and expert in unconventional energy calculated that emissions from BC LNG are 18.5% worse than best technology coal over a twenty-year timeframe. This means that LNG exports will worsen the climate crisis over the next few decades.<sup>67</sup>

### **6.1.9 Methane emissions from fossil fuel extraction is 25-40% higher than previously estimated**

New research published this year in the journal Nature compared current methane levels to pre-industrial era levels using ice-core measurements. The study showed that methane emissions, mostly from fossil fuel extraction, are 25–40% higher than previously estimated. This means that fugitive methane from the fossil fuel industry is contributing much more to our climate emergency than previously thought.<sup>78</sup>

### **6.1.10 One-third of the increase in methane emissions since 2009 is due to fracking in North America**

Methane, the most potent greenhouse gas, has been increasing rapidly in our atmosphere since 2008, due to increased fracking for natural gas. The authors “...suggest that the best strategy is to move as quickly as possible away from natural gas, reducing both carbon dioxide and methane emissions.” They also state that “Natural gas is not a bridge fuel.”<sup>79</sup>

### **6.1.11 British Columbia is underreporting fugitive methane emissions**

A 2015 survey of well pads and facilities in Northeastern British Columbia revealed that the oil and gas sector is underreporting fugitive methane emissions.<sup>80</sup> While the upstream impacts of fracking were not assessed in the environmental assessment for Woodfibre LNG, government support for LNG is predicated on the notion that LNG is “clean.”

A different assessment of the US oil and gas industry revealed that supply chain emissions were ~60% higher than the U.S. Environmental Protection Agency inventory estimate, “likely because existing inventory methods miss emissions released during abnormal operating conditions.”<sup>81</sup>

### **6.1.12 LNG exports will likely increase global greenhouse gas emissions**

There is no guarantee that exports from Woodfibre LNG will reduce emissions in China, as claimed.

*“...exporting LNG is likely to increase global greenhouse gas emissions. While uncertainty remains, methane leakage, additional energy demand, and decreased domestic coal displacement have the very real potential to undermine any prospective climate benefit in the long term.”<sup>82</sup>*

*“...policymakers, including regulators and legislators, must consider the complete climate ramifications of LNG exports.”<sup>82</sup>*

*“The sheer scale of potential LNG exports, corresponding increases in global emissions under the most probable scenarios, and lifetimes of LNG infrastructure make enhanced regulatory scrutiny not only necessary but imperative. Future LNG export facilities could become today's coal plants, where entrenched interests fight meaningful action to reduce climate emissions, with significant negative impacts on the global public.”<sup>82</sup>*

### **6.1.13 LNG is likely to displace nuclear power, renewables, and natural gas**

A letter written by 90 International Climate Change Scientists notes that “There is no evidence that LNG will replace coal in Asia,” and that “LNG will also likely displace nuclear power, renewables, and natural gas from other sources in many importing countries.”<sup>83</sup>

### **6.1.14 Natural gas is still a fossil fuel and is not a solution to climate change**

In their 2019 report, *The Role of Natural Gas in Today's Energy Transitions*, the International Energy Agency states that:

- Natural gas is still a fossil fuel and remains a source of emissions.
- Unabated consumption of fossil fuels is not a long-term solution to climate change.

- New gas infrastructure will lock in emissions for the future.
- Natural gas is in direct competition with renewables.
- Renewable energy is cheaper to install.
- Deployment of carbon capture and storage will be crucial for natural gas if we are to achieve our climate targets.

## 6.2 Physical changes to the airshed, watershed, landscape, or equivalent;

### **6.2.1 Howe Sound continues to recover, however several species and habitats are “critical.”**

In 2016, the Coastal Ocean Research Institute at Vancouver Aquarium Marine Science Centre (now called OceanWise) published a new report called “OceanWatch: Howe Sound edition.”<sup>12</sup>

The report notes that *“Howe Sound is showing signs of recovery. Recent observations of herring, dolphins, whales, and salmon tell us so. In parallel with this environmental recovery has been the rise of community groups to take on the responsibility of citizen science, restoration, and repair in this era of declining government capacity. Nature is proving resilient, but as we go forward, we need to foster a stewardship of Howe Sound that shows we have learned from our past mistakes.”*<sup>12</sup>

This report provides baseline data for Howe Sound that was not available prior to 2016. My Sea to Sky has repeatedly informed the BC EAO that the lack of baseline data and peer-reviewed science was a key concern. The absence of data meant that the decisions by the BC EAO were made in a vacuum, with limited data or perspective to properly assess the potential impacts of Woodfibre LNG throughout the environmental assessment process.

The data available in the OceanWatch reports should be reviewed by the BC EAO, and used to evaluate whether Woodfibre LNG should receive an extension to their EAC. We believe this new data would change the conclusions reached in the BC EAO’s assessment.

### **6.2.2 Spatial data on Howe Sound marine ecology and priority conservation areas is now available**

The Coastal Ocean Research Institute and David Suzuki Foundation have partnered to create a Atl’ka7tsem/Howe Sound marine conservation map, that incorporates *“scientific and local knowledge data layers that reflect this region’s unique and treasured marine ecology.”*<sup>84</sup>

The map identifies Woodfibre Creek, located at the Woodfibre site, as a Priority Conservation Area, and states: *“The area where Woodfibre Creek (along with nearby Mill and Foulger creeks) flows into Atl’ka7tsem/Howe Sound is at the epicentre of the ongoing tension between development and ecological recovery. Some of B.C.’s most culturally and ecologically important fish species have returned to the former site of the Woodfibre pulp mill, which was a major contributor to the sound’s degradation until environmental upgrades began in the 1990s.*

*Salmon and trout have returned to Mill Creek, the location of Swiyát, a traditional Squamish fishing village. Herring, which some believe are at the heart of the sound’s spectacular resurgence of marine life, are once again laying eggs along the shoreline. Herring are an important food source for cetaceans such as grey whales, orcas and dolphins, as well as seals, sea lions, salmon and many seabirds.*

*Removal of pilings treated with toxic creosote at the old Woodfibre pulp mill site, in anticipation of the proposed liquefied natural gas plant, could support further herring recovery. But this hotly contested development could also jeopardize ongoing ecological recovery of the site and the wider At'l'ka7tsem/Howe Sound ecosystem.”<sup>84</sup>*

### **6.2.3 Unique glass sponge reefs have been identified in Howe Sound**

Several glass sponge reefs have been identified and confirmed by Fisheries and Oceans Canada (DFO) in Howe Sound, several of which are located along the proposed LNG tanker route.<sup>12,85</sup> The impacts of Woodfibre LNG on these exceptionally fragile glass sponge reefs has never been assessed.

*6.3 Previously unknown or undetected effects (for example, a VC that was not a key concern during the initial EA has had a substantial change in condition that makes it a key concern presently);*

#### **6.3.1 Impacts of underwater noise on herring, salmon, and marine mammals**

In their assessment of alternative cooling methods, Woodfibre LNG notes that seawater cooling systems produce less noise than air cooling systems.<sup>86</sup> However, the impact of this increased noise pollution from the change to an air cooling system, the resulting increase in underwater noise pollution, and its impact on marine organisms was not assessed in the BC EAO’s Environmental Assessment Certificate Amendment process (note that only atmospheric sound was assessed).<sup>87</sup> The impact of underwater noise from the floating storage units has also not been assessed during either the original EA application or the amendment process.

Woodfibre LNG’s own consultants, Hemmera, noted that *“herring are at increased risk during spawning season and are sensitive to noise and physical disturbance.”<sup>16</sup>* A study published this month found that fish that are exposed to noise pollution are likely to die early.<sup>88</sup>

Why wasn’t the impact of underwater noise assessed through the amendment process? This is a grave oversight, and studies should be requested to determine the impact of underwater noise on herring, salmon, and marine mammals.

#### **6.3.2 Susceptibility of floating storage units to extreme weather**

New floating storage units commissioned for LNG export or import terminals in Bangladesh and Malta have been relocated, shut down, or replaced with onshore terminals due to their susceptibility to extreme weather.<sup>25</sup> In 2018, Bangladesh declared that it will no longer utilize floating storage units for LNG due to the difficulties of operating during extreme weather.<sup>25</sup>

Extreme storms are common in Howe Sound, and winds as high as 50+ knots are documented in the winter.<sup>89</sup> In winter of 2018, there was an extreme wind storm in Howe Sound that resulted in \$XX in damage to boats, docks, and piers.

Given that climate change will result in even more extreme storms,<sup>40</sup> it is critical to re-evaluate whether the proposed floating storage units for Woodfibre LNG are safe.

#### **6.4 New information regarding Indigenous interests.**

No comment.

#### **6.5 Policy changes that would affect the BC EAO's decision**

We believe the following changes to Local, Provincial, and Federal government policy would change the conclusions reached in the EAO's assessment of the project, as Woodfibre LNG is incompatible with these new policies and legislation:

##### **6.5.1 More than 475 communities across Canada declared a climate emergency in 2019**

This includes the City of Vancouver, Richmond, Islands Trust Council, Squamish, North Vancouver, West Vancouver, Burnaby, Bowen Island, and Surrey.<sup>90</sup>

##### **6.5.2 Squamish's climate action plan is incompatible with development of Woodfibre LNG**

The District of Squamish has adopted the IPCC climate targets of 45% below 2010 levels by 2030 and 100% below 2010 levels by 2050,<sup>91</sup> and developed a climate action plan.<sup>92</sup>

##### **6.5.3 Clean BC and the Climate Change Accountability Act**

In 2018 the Government of British Columbia released its CleanBC plan aimed at reducing climate pollution.<sup>93</sup> Using 2007 as the baseline, B.C. is committed through legislation to reductions of: 40% by 2030; 60% by 2040; and 80% by 2050.

In 2019, the BC government introduced requirements to set sectoral emissions targets and an interim emissions target on the path to our 2030 goal, through the Climate Change Accountability Act.<sup>94,95</sup>

##### **6.5.4 The Federal government's declaration of a national climate emergency and commitment to net zero by 2050**

The legislation passed by the House of Commons described climate change as a “*real and urgent crisis, driven by human activity, that impacts the environment, biodiversity, Canadians' health and the Canadian economy;*” and committed to meet the Paris Agreement targets, as well as deeper reductions to keep global warming below 1.5°C.<sup>96</sup>

In December 2019, the Government of Canada stated that “*Canada will develop a plan to achieve net-zero emissions by 2050 and will set legally-binding, five-year emissions reduction milestones, based on the advice of experts and consultations with Canadians.*”<sup>97</sup>

In the 2020 Throne Speech, the Government of Canada reiterated its commitment to net zero by 2050, promising to legislate Canada's goal of net-zero emissions by 2050.<sup>98</sup>

### ***6.5.5 Changes to the Fisheries Act***

In June 2019 the Federal Government modernized the Fisheries Act.<sup>99</sup> We believe the changes made to this legislation would change how the impacts to salmon and herring as well as critical fish habitat were assessed in the original environmental assessment for Woodfibre LNG.

### ***6.5.6 Continued opposition to Woodfibre LNG from local governments in Howe Sound***

Local governments around Howe Sound have reiterated their opposition to Woodfibre LNG, or are calling for conditions to be added to hold Woodfibre LNG accountable for their locally produced greenhouse gas emissions, if an extension to its EAC is granted. See Appendices 2 and 3.

## **7.0 Additional project considerations**

Additional concerns that should be considered include:

### ***7.1 High staff turnover***

Woodfibre LNG has demonstrated an inability to retain staff, with high staff turnover within the company.

### ***7.2 Local job opportunities have not materialized***

To date, other than some construction and site remediation jobs, the majority of job opportunities have been contracted to US-based consulting companies.<sup>100</sup>

Given that the project has stated that they will be building the project as modules overseas in order to save costs, it appears that the calculations of benefits for BC need to be re-evaluated.

### ***7.3 Exemption from 48% steel tariff sends steel jobs to China***

The Canadian Institute of Steel Construction slammed the Federal Government for exempting LNG projects from a 48% steel tariff, which enabled Woodfibre LNG and LNG Canada to import steel modules from China at the expense of Canadian workers.

*“These two projects, if done in Canada, would have created hundreds of thousands of construction jobs for all trades across the country. Projects like these employ skilled workers from all over Canada and not just in the local area. This is a hundreds-of-thousands-of-jobs-lost kind of mistake,”* said Ed Whalen, President & CEO of the Canadian Institute of Steel Construction (CISC).<sup>101</sup>

The calculations of benefits for BC need to be re-evaluated.

### ***7.4 Tax breaks and subsidies mean less benefits for BC and Canada***

The Provincial and Federal governments have granted several tax breaks and subsidies for Woodfibre LNG since the project was approved in October 2015, including:

- E-drive subsidy<sup>102</sup>
- Exemption from the BC Carbon tax<sup>103</sup>

- 3% reduction in corporate income tax<sup>104</sup>
- Deferral of provincial sales tax on construction materials<sup>103</sup>
- Exemption on 48% anti-dumping steel tariff<sup>105</sup>
- Accelerated depreciation rate<sup>106</sup>

The calculations of economic benefits that appeared in the original assessment need to be re-evaluated.

### *7.5 Woodfibre LNG has lost its biggest customer, and new agreements have not been announced.*

In August 2019 Woodfibre LNG lost its biggest prospective customer, as Guangzhou Gas walked away from their Heads of Agreement for 1 million tonnes of LNG per annum for 25 years due to delays.<sup>107</sup>

LNG plants need binding long-term contracts to secure investor funding. Woodfibre LNG now has no effective customer. Currently they have a non-binding agreement with CNOOC for 750 thousand tonnes of LNG per annum for 13 years.<sup>108</sup> They also have the agreement announced in June 2019 with BP Gas Marketing Limited for 750 thousand tonnes of LNG over 15 years.<sup>109</sup> However, BP Gas Marketing Limited is not an end user of LNG, and would have to find buyers to sell Woodfibre LNG's pricey product which is not guaranteed, especially as LNG prices in Asia have collapsed.<sup>23,24</sup>

Woodfibre LNG needs to secure buyers for their LNG to prove that their economic business model is viable.

### *7.6 Henriette Lake Dam needs to be upgraded prior to construction to ensure the safety of workers on site, should Woodfibre LNG's floatel amendment be approved.*

The Henriette Lake dam is located in Howe Sound 800 metres directly above the Woodfibre site. It houses a run-of-river generating station owned and operated by Woodfibre LNG. The dam impounds over 10 million cubic metres of water of Henriette Lake, which has a natural outfall along Woodfibre Creek. It is classified by BC Dam Safety as a Class 3 (high failure consequence) dam.

We recently became aware of the 2010 Sandwell report on the seismic stability of the dam, which examined structural issues of the dam in the event of a significant seismic event. The report highlighted the deterioration of the condition of the structure and recommended that it be repaired and brought up to modern seismic standards.<sup>110</sup> This has not been done.

Condition 31(d) of Woodfibre LNG's July, 2019 permit from the BC Oil & Gas Commission states that *"The Permit Holder must not undertake commissioning or operation of the LNG facility until it has submitted ... confirmation that the Henriette Lake Dam (Water licence F126618) has sufficiently addressed the recommendations and conclusions from the 2010 seismic assessment completed by Sandwell Engineering."*<sup>111</sup>

This is of serious concern given that Woodfibre LNG has applied for an amendment to house 600 construction workers in a "floatel" moored very close to the outfall of Woodfibre Creek.<sup>112</sup> As Woodfibre LNG is not currently required by BC OGC to upgrade Henriette Lake Dam prior to construction, this puts construction workers living and working at the Woodfibre site in deadly peril.





MY SEA TO SKY

A letter sent by Star Morris to BC Dam Safety Section asked if *“the siting of a ‘floatel’ accommodation for up to 600 workers near the mouth of Woodfibre Creek necessitate a change in the dam’s failure consequence classification?”*<sup>113</sup>

The BC Dam Safety Section responded that Woodfibre LNG is responsible for alerting their office regarding changes to the failure consequence classification of Henriette Lake Dam, and has not done so.<sup>114</sup>

Henriette Lake Dam must be upgraded prior to the start of construction to ensure the safety of workers at the site should the floatel amendment be granted by BC EAO/IAAC/Squamish Nation.

## Conclusion

We recommend that Woodfibre LNG should **not** receive an extension to its environmental assessment certificate due to these changes in economic context; changes to local, provincial, and federal policies; new and emerging scientific understanding; and the implications of developing new fossil fuel infrastructure in a climate emergency.

## Appendix 1: EAC amendment for a floating hotel or “floatel” for worker accommodation

### Lack of housing and accommodation

In the latest amendment application for the proposed floatel, dated October 2019, Woodfibre LNG writes in their Executive Summary (page i) that:

*“The approved Certified Project Description (CPD) did not include worker accommodation because, at the time of publication, enough accommodation options were thought to be available in the local communities for workers. Following issuance of the Project’s environmental assessment approvals, the detailed planning process identified the need for additional accommodation options to support the construction phase of the Project. Housing affordability and availability have come to the forefront for local government planning initiatives. In addition, community engagement discussions have suggested that there is a lack of rental housing and temporary accommodation options in Greater Vancouver and Squamish areas; a large influx of works into at-market housing could create challenges for permanent residents to find affordable housing in an already restrictive local housing market.”*

However, the underlined statement above is patently false, as My Sea to Sky shared our concerns about the lack of available housing for temporary workers with both Woodfibre LNG and the BC EAO in 2014, and the proponent also demonstrated knowledge and awareness about the lack of available housing at that time, as documented below.

In Woodfibre LNG’s initial submission dated June 2014 to identify Valued Components (VC), under the Infrastructure and Community Services VC the proponent notes that:

*“Temporary influx of Project-related construction workers may lead to pressures on accommodation availability and cost.”*

\*\*\*\*\*

In our submission to the BC EAO for the initial review of valued components dated 25<sup>th</sup> July 2014, we highlighted the lack of accommodation in Squamish, and noted that Squamish had a near-zero vacancy rate for rental properties, and asked:

*“Where will these temporary construction workers be housed? Squamish currently has a near zero vacancy rate for rental properties.*

*→ We request studies to determine impacts on the cost of housing and rental accommodation, and how this will impact low income families living in Squamish.*

*→ Will there be displacement of local residents from rental housing?*

*→ We request a study of short and long-term housing availability for both the Woodfibre LNG and Fortis Eagle Mountain pipeline project labour. The study needs to detail remediation and mitigation measures.”*

\*\*\*\*\*

In Woodfibre LNG's Environmental Assessment Application dated January 2015,<sup>115</sup> the proponent noted that”  
*“Due to high demand for rental accommodations in Squamish and Whistler, there is little to no available rental stock. In Squamish, the overall vacancy rate for the 351 private townhouse and apartment units available in the community in April 2014 was only 0.3%, compared to the previous overall vacancy rate of 5.6% in April 2013 (CMHC 2014). Squamish was one of six BC urban centres (i.e., communities with over 10,000 residents) to experience a rapid vacancy rate decline of more than 3% between 2013 and 2014. Squamish experienced lower vacancy rates for townhouse and apartment units than the Vancouver Census Metropolitan Area (1.8%), or the collective vacancy rate of BC's 27 urban centres (2.5%) for townhouse and apartment rental accommodations. In April 2014, Squamish had no private townhouse or apartment vacancy (0.0%) for bachelor apartments, one-bedroom or two-bedroom apartments. Townhouses and apartments with three or more bedrooms had a 1.6% vacancy rate. Vacancy rates in Metro Vancouver averaged 2.8% in April 2014, with the lowest rates for bachelor suites (2.5%) and highest availability for units with three or more bedrooms (3.7%).”*

AND

*“Affordable housing is an issue in Squamish and Whistler because the local workforce, tourists, and non-resident vacation housing owners created segment specific and significant demands on the supplies of local housing and temporary accommodation. Lack of affordable housing was one of the most common reasons noted as to why employment positions went unfilled in recent years in Whistler.”*

AND

*“The District of Squamish developed an Affordable Housing Framework for Squamish (Forbes 2013), which was based on an Affordable Housing Strategy adopted by the District in 2005 to facilitate stakeholder engagement in development of affordable housing actions. The need for government-subsidized housing, affordable rental housing for families and individuals with low income, and affordable home ownership in the community are identified in the framework document as key issues (Forbes 2013).*

AND

*“Affordable housing is a concern throughout the SLRD Electoral Area D and consequently, the SLRD has incorporated affordable housing as one of its 20-year strategic growth management goals (SLRD 2008).”*

Woodfibre LNG concluded in their January 2015 application that *“workers sourced from outside the LAA could lead to increased demand on local housing and/or temporary accommodation and create availability and affordability issues for LAA housing and temporary accommodation”* for both the Construction and Operation Phases of the project.

\*\*\*\*\*

The BC EAO noted in its EA Certificate Assessment Report, dated 19<sup>th</sup> August 2015, that:

*“The Application reported that there has been substantial population growth in the DOS and other areas in the LAA in recent years. Table 7-1 shows population growth between 2001 and 2011. As a result there is a high demand for housing in the area and real estate prices are increasing.”*

AND

*“The Application indicated that the supply of affordable and accessible housing continues to be a key concern for the communities in the LAA. The Application also indicated that rental accommodation is limited and in high demand in Whistler and Squamish, resulting in high rental costs... The Application noted that in April 2014, the overall vacancy rate for private townhouses and apartment buildings in Squamish was only 0.3 %.”*

AND

*“The Application stated that during construction, workers sourced from outside of the LAA (approximately 40 % of the required labour force) would require temporary accommodation within the LAA.”*

AND

*“The proposed Project would not include provisions for temporary accommodation such as construction work camps for non-local construction workers. Instead, the Proponent expects that workers would rely on available rental housing and temporary accommodation in Metro Vancouver, Whistler and Squamish. This could increase the demand for rental housing and temporary accommodation, further increasing pressures on housing availability and costs in these areas.*

*The temporary increase in population during the initial two years of operations would amount to approximately 130 persons, the majority of whom would be permanent residents of the LAA. A smaller portion of these workers would be temporary residents for approximately two years, responsible for training resident local staff.*

*Key proposed measures to mitigate the potential adverse effects to housing and accommodation include:*

- *A local hiring strategy to minimize the number of non-local workers requiring temporary housing and accommodation; and*
- *A housing and accommodation advisor during construction and the initial operations stage to serve as a resource for non-local workers seeking accommodation in the LAA.”*

\*\*\*\*\*

Woodfibre LNG cannot claim with any truth that they are only now aware that accommodation is a problem. Both Woodfibre LNG and the BC EAO have known for five years that housing and accommodation were a major concern for our communities and they have failed to act.

As a good corporate citizen, Woodfibre LNG could have invested in building legacy housing for Squamish that could help to relieve our housing crisis, and instead they have opted for a cheap, temporary solution. This is unacceptable.

The BC EAO failed to hold Woodfibre LNG accountable that the proposed mitigation measures to deal with the lack of accommodation within the LAA were completely inadequate and failed to incorporate appropriate mitigation measures such as building legacy housing as a condition of the environmental assessment. Instead, in approving the Environmental Assessment for Woodfibre LNG, the BC EAO opined that the project would have “no significant impact” on the availability of rental units in Squamish.

## Impacts of workers on local services and community dynamics

In its current amendment for the floatel, Woodfibre writes on page 4 that:

*“...during review of the Application and in subsequent discussions with Squamish, concerns were expressed regarding increased demand on local services if workers were housed in the community.”*

Again, we highlighted this as an issue in our previous submissions to the BC EAO for the initial review of valued components dated 25<sup>th</sup> July 2014, noting that:

*“Studies during construction of similar industrial projects show that:*

- *the number of workplace accidents increase.*
- *crime and substance abuse and misuse increase which leads to an increase in traffic accidents and collisions, as well as increased domestic violence.*
- *the additional demands on hospitals, counselling, police, and ambulance services results in reduced service capacity for residents.”*

We requested studies to quantify the impacts of temporary construction workers on emergency and health services and how that would impact service capacity for residents of Squamish and Howe Sound. We also asked for studies to determine the social and health impacts of increased crime and substance abuse/misuse, domestic violence, and demand for sex trade workers. None of these concerns were adequately addressed, and we believe that no studies have been undertaken, despite the available evidence of impacts from work camps at Site C and LNG Canada.

## Appendix 2: 2020 resolutions by local governments in Howe Sound

### District of Squamish

In a 4-3 vote, the District of Squamish ratified the following resolution on 19th May 2020 stating that:

*"...the District of Squamish does not support an extension of the Environmental Certificate for Woodfibre LNG unless the extension includes a condition that Woodfibre LNG must meet the IPCC targets for its operation within the District of Squamish to reduce its GHG emissions by 45% by 2030 and 100% by 2050."*

The DoS staff report to the BC EAO includes the complete resolution and can be accessed [here](#).

### Bowen Island Municipality

In a 5-2 vote, Bowen Island Municipality has reiterated their opposition to Woodfibre LNG by passing the following resolution on 25th May 2020, stating:

*"That Council direct staff to communicate to the Provincial Environmental Assessment Office that Bowen Island Municipality continues to not support the Woodfibre LNG project."*

The BIM staff report to the BC EAO can be accessed [here](#). The resolution can be accessed in the meeting minutes [here](#).

### Squamish Lillooet Regional District

In a unanimous vote, the Squamish Lillooet Regional District supported the following motions on 27th May 2020:

*"THAT the Squamish-Lillooet Regional District (SLRD) Board generally supports the Environmental Assessment Certificate extension application submitted by Woodfibre LNG Limited ("Woodfibre") but such SLRD support is conditional upon the certificate extension including a condition that the greenhouse gas emissions in relation to the Woodfibre LNG facility/operations must be net zero by 2050."*

AND

*"THAT staff respond to the Environmental Assessment Office in respect of the Environmental Assessment Certificate extension application submitted by Woodfibre LNG Limited to provide the Board's comments as follows:*

- *The SLRD's Regional Growth Strategy contains a goal and strategic directions to take action on climate change and any certificate extension should incorporate strong climate change targets;*
- *Any certificate extension should be in accordance with new legislation, including current climate action legislation, Greenhouse Gas Reduction Targets Act and the CleanBC Plan, as well as the new Fisheries Act;*
- *The Board has concerns with the timing and lack of stakeholder or public engagement undertaken by the applicant;*
- *The Board has concerns with future disturbance/increased activity on herring spawn; and*

- *The Board has concerns with the proponent using housing as a rationale for the need for a certificate extension, as housing was raised at the outset of the process.”*

These motions can be accessed in the meeting minutes [here](#).

## **Town of Gibsons**

In a unanimous vote, Town of Gibsons passed the following resolution in support of the District of Squamish’s resolution on 2nd June 2020.

*“THAT the Town of Gibsons supports the following resolution from the District of Squamish:*

*THEREFORE be it resolved that the Council of the District of Squamish does not support an extension of the Environmental Certificate for Woodfibre LNG unless the extension includes a condition that Woodfibre LNG must meet the IPCC targets for its operation within the District of Squamish to reduce its GHG emissions by 45% by 2030 and 100% by 2050.*

*AND THAT a letter be drafted and sent to the BC Environmental Assessment Office and copied to the District of Squamish.”*

These motions can be accessed in the meeting minutes [here](#).

## **District of West Vancouver**

In a unanimous vote, District of West Vancouver supported the following motion on 8th June 2020:

*“WHEREAS on July 21, 2014, the District of West Vancouver passed the following resolution:*

- 1) the District of West Vancouver Council advise the environmental assessment office of our concerns regarding super tanker safety, rogue waves, foreshore erosion, conflicting waterway uses, and the LNG terminal in Howe Sound and tanker traffic, in response to their request for feedback on the Woodfibre LNG project; and*
- 2) the District of West Vancouver be included in any existing and future committees, working groups and consultative bodies regarding the tanker traffic and location and operation of the LNG plant; and that*
- 3) the District of West Vancouver Council write to the federal government with a suggestion to ban the passage of LNG tankers in the waters of Howe Sound;*

*WHEREAS on May 12, 2020, Nina Leemuis, Chief Administrative Officer of the District of West Vancouver (DWV) sent a letter to the Environmental Assessment Office (EAO), as the EAO had not advised nor consulted the DWV of Woodfibre LNG’s application for an extension to the deadline of their EAC;*

*WHEREAS the BC Environmental Assessment Office published a new Certificate Extension Policy on 22 April 2020 that requires any EA extension application to detail “new information that has come to light since the original EAC was granted that could change the conclusions reached in the EAO’s assessment of the project”;*

*WHEREAS the International Panel on Climate Change published a Special Report in October 2018 that finds it necessary to limit global warming to 1.5 degrees Celsius, and that doing so will require “rapid and far-reaching”*



*changes in all aspects of society so that net human-caused emissions of CO<sub>2</sub> fall by 45% of 2010 levels by 2030 and reach 'net zero' by 2050;*

*WHEREAS the Province of BC has adopted the GHG Reduction Act and the CleanBC plan and commits B.C. by legislation to achieve GHG emissions reductions of 40% by 2030 and 80% by 2050 (over a 2007 baseline);*

*WHEREAS the District of West Vancouver declared a Climate Emergency on July 8, 2019, and established goals to reduce its emissions of CO<sub>2</sub>e/year in-line with the IPCC goals of 45% reduction by 2030 and net zero by 2050; and*

*WHEREAS the estimated GHG emissions of the Woodfibre LNG facility are estimated to be 129,400 tonnes CO<sub>2</sub>e/year based on their submission to the EAO and there are no current plans in place to mitigate or offset these emissions to achieve net zero;*

*"Therefore be it resolved that:*

- 1) the Council of the District of West Vancouver not support an extension of the Environmental Assessment Certificate for Woodfibre LNG unless the extension includes the condition that Woodfibre LNG must meet the IPCC targets for its operation within the District of Squamish to reduce its GHG emissions by 45% by 2030 and 100% by 2050, and*
- 2) This resolution be included in the District of West Vancouver's feedback to the EAO as part of our response to Woodfibre LNG's application for an extension to their EA certificate."*

These motions can be accessed in the meeting minutes [here](#).



## Appendix 3: Past resolutions by local governments in Howe Sound

### Village of Lion's Bay, 20<sup>th</sup> May, 2014

"the Village of Lions Bay urges the federal government to ban the passage of LNG tankers in the waters of the Malaspina, Georgia, Juan de Fuca and Haro Straits, and Boundary Pass."

<http://files.lionsbay.ca/2014%20Content/Council/Minutes/20140520%20Regular%20Meeting%20Minutes%20-%20signed.pdf>

### Powell River Regional District, 22<sup>nd</sup> May, 2014

Resolution 9.1 Ban LNG Tankers from Howe Sound & Georgia/Haro Strait

D.Murphy/P. Brabazon THAT the Board concur with the recommendations of the Committee of the Whole to send a letter to the Premier of BC, the Prime Minister of Canada and copy to other appropriate local governments to advise the Regional District's support for the 2008 UBCM resolution to ban LNG tanker traffic in the Georgia/Haro Straits is still in effect.

### Town of Gibsons, 15<sup>th</sup> July, 2014

*"Gibsons Council urge the federal government to ban the passage of LNG tankers in the waters of Howe Sound and the Georgia Strait, and to request the support of other communities around the Howe Sound to support this resolution."*

<http://www.gibsons.ca/include/get.php?nodeid=808>

### District of West Vancouver, 21<sup>st</sup> July 2014

*"to write to the federal government with a suggestion to ban the passage of LNG tankers in the waters of Howe Sound."*

<http://westvancouver.ca/sites/default/files/dwv/council-minutes/2014/July/14jul21.pdf>

### District of Squamish, 20<sup>th</sup> January 2015

*"Council votes no to LNG pipeline test drilling in Squamish estuary"*

<http://www.squamishchief.com/news/local-news/council-votes-no-to-fortis-drilling-1.1737742>

### Bowen Island Municipality, 24<sup>th</sup> February, 2015

*"Resolution regarding an LNG tanker ban in Howe Sound carried"*

<https://bowenisland.civicweb.net/document/59416/150223%20RC%20MinutesFINAL%28E%29.pdf>

## **District of Squamish, 28<sup>th</sup> April 2015**

“Squamish Council voted 4-3 to send a letter to the Environmental Assessment office stating that the Woodfibre LNG project is not supportable as it stands.”

<http://squamish.ca/assets/WLNG/DOS-Council-EAO-Response-Apr30-2015-combined.pdf>

## **Islands Trust continues to support a ban on LNG tankers, 2008, 2015, and 2020**

In 2008 the Islands Trust Council voted to support a ban on the passage of LNG tankers in the waters of the Malaspina, Georgia, Juan de Fuca and Haro Straits, and Boundary Pass.

In a [letter](#) dated 2015, the Chair of Islands Trust Council, Peter Luckham, wrote that “The Islands Trust’s position on the subject has not changed since the 2008 position.”

In a more recent email communication in 2020, Islands Trust Vice Chair, Dan Rogers, affirmed that this decision still stands, and wrote that “Local Trust Committee and local trustees took positions opposing the project and asking that it be rejected by the EAO.”

## **Union of BC Municipalities resolution, 2008**

WHEREAS the waters of Georgia and Malaspina Straits provide a vital habitat for diverse bird and fish species, a corridor for commercial and recreational marine traffic and an attraction for upland settlement; AND WHEREAS WestPac LNG is soliciting interest to build an LNG import facility and associated 600MW gas-fired electricity generating plant on Texada Island, which will involve the passage of a significant number of LNG tankers in the Georgia Strait, which will interfere with existing marine traffic, put at risk these ecologically important and sensitive inland waters, and negatively impact upland development along this route: THEREFORE BE IT RESOLVED that the UBCM urge the federal government to ban the passage of LNG tankers in the waters of the Malaspina, Georgia, Juan de Fuca and Haro Straits, and Boundary Pass.

UBCM resolution B143 on LNG Tanker Traffic Ban in Georgia Strait



## References

---

- <sup>1</sup> Keane, D (2020) David Keane, Woodfibre LNG to Michael Shepard, BC Environmental Assessment Office, 24<sup>th</sup> March 2020. Letter re: Extension to Woodfibre LNG Limited's Environmental Assessment Certificate (#E15-02). 8 pp. Retrieved from: <https://www.projects.eao.gov.bc.ca/api/public/document/5e7e843bbd1578001a125b86/download/Woodfibre%20LNG%20EAC%20E15-02%20Extension%20Request%2020200324.pdf>
- <sup>2</sup> BC EAO (2020) Certificate Extension Policy, Version 1.0. Published 24<sup>th</sup> April 2020. 9 pp. Retrieved from: [https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/environmental-assessments/guidance-documents/2018-act/certificate\\_extension\\_policy\\_final\\_22apr2020.pdf](https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/environmental-assessments/guidance-documents/2018-act/certificate_extension_policy_final_22apr2020.pdf)
- <sup>3</sup> Thuncher, J (2015) Woodfibre LNG finalizing \$25m land purchase in Squamish. Business in Vancouver, published 2015-01-22. <https://biv.com/article/2015/01/woodfibre-lng-finalizing-25m-land-purchase-squamish>
- <sup>4</sup> Offshore Energy (2015) Western Forest Products completes sale of pulp mill site to Woodfibre LNG. Offshore Energy, published 2015-02-09. <https://www.offshore-energy.biz/western-forest-products-completes-sale-of-pulp-mill-site-to-woodfibre-lng/>
- <sup>5</sup> Aldous, R (2013) Former Woodfibre site tentatively sold. Squamish Chief, published 2013-01-13. <https://www.squamishchief.com/news/local-news/former-woodfibre-site-tentatively-sold-1.1044101>
- <sup>6</sup> Aldous, R (2014) Woodfibre environmental cleanup ongoing: official. Squamish Chief, published 2014-07-11. <https://www.squamishchief.com/news/local-news/woodfibre-environmental-cleanup-ongoing-official-1.1203423>
- <sup>7</sup> Woodfibre LNG (2015) Application for an Environmental Assessment Certificate, Executive Summary. 82 pp. <https://projects.eao.gov.bc.ca/api/public/document/5886919de036fb0105768fe1/download/Executive%20Summary.pdf>
- <sup>8</sup> Saxby, T (2014) More answers needed on Woodfibre LNG. Letter to the editor in The Squamish Reporter, published 2014-03-01. <http://www.squamishreporter.com/2014/03/01/more-answers-needed-on-squamish-woodfibre-lng/#.V2-xYZN97kl>
- <sup>9</sup> Finn, E (2014) The re-industrialization of Howe Sound would devastate BC's environment and tourism economy. Letter to the editor in Vancouver Observer, published 2014-03-24. <https://www.vancouverobserver.com/opinion/re-industrialization-howe-sound-would-devastate-bcs-environment-and-tourism-economy>
- <sup>10</sup> Barrett, B (2015) Scientists say Woodfibre LNG's planned cooling system could devastate herring. Pique Newsmagazine, 2015-04-23. <https://www.piquenewsmagazine.com/whistler/scientists-say-woodfibre-lngs-planned-cooling-system-could-devastate-herring/Content?oid=2645410>
- <sup>11</sup> Thuncher, J (2015) Herring spawn at risk from Woodfibre LNG: biologist. Squamish Chief, published 2015-04-23. <https://www.squamishchief.com/news/local-news/herring-spawn-at-risk-from-woodfibre-lng-biologist-1.1846807>
- <sup>12</sup> Coastal Ocean Research Institute (2017) OceanWatch: Howe Sound Edition. Vancouver Aquarium. 364 pp. [www.oceanwatch.org/](http://www.oceanwatch.org/)
- <sup>13</sup> Fedorenko, AY (1991) Guidelines for minimizing entrainment and impingement of aquatic organisms at marine intakes in British Columbia. Ottawa - Ontario : Fisheries and Oceans Canada 1991. 99 pp. <http://publications.gc.ca/site/eng/9.562585/publication.html>
- <sup>14</sup> Woodfibre LNG (2015) Application for an Environmental Assessment Certificate. Section 5.18: Forage fish and other fish assessment. January 2015. 65 pp. See Figure 5.18-2 on page 19 for the original herring spawn location maps used in Woodfibre LNG's EA application. <https://projects.eao.gov.bc.ca/api/public/document/58869193e036fb0105768fc6/download/Section%205.18%20Forage%20Fish%20Other%20Fish.pdf>
- <sup>15</sup> Thuncher, J (2016) No log dump here please, say herring advocates. Squamish Chief, 2016-02-11. <https://www.squamishchief.com/community/no-log-dump-here-please-say-herring-advocates-1.2169654>
- <sup>16</sup> Hemmera Envirochem Inc. (2015) Woodfibre LNG Project: Herring Survey Summary Report. Prepared May 2015. 25 pp. <https://projects.eao.gov.bc.ca/api/public/document/588691b4e036fb0105769000/download/Woodfibre%20LNG%20Project%20Herring%20Survey%20Summary%20Report%20C%20May%202015..pdf>
- <sup>17</sup> BC EAO (2015) Environmental Assessment Certificate #E15-02 for Woodfibre LNG Project. Issued by the Honourable Mary Polak, Minister of Environment, and the Honourable Rich Coleman, Minister of Natural Gas Development, October 26 2015. <https://projects.eao.gov.bc.ca/api/public/document/58869290e036fb01057690bb/download/Certificate%20%2315-02.pdf>
- <sup>18</sup> CEAA (2016) Decision Statement Issued Under Section 54 of the Canadian Environmental Assessment Act, 2012. Issued by The Honourable Catherine McKenna, Minister of the Environment, March 17 2016. <https://www.ceaa-acee.gc.ca/050/evaluations/document/109540?culture=en-CA>

- <sup>19</sup> Squamish Nation (2016) Squamish Nation Process/Woodfibre LNG Project Update. November 2016. 8 pp. <http://www.squamish.net/woodfibre-nov2016/>
- <sup>20</sup> Chapa, S (2020) Houston-based McDermott confirms oilfield service company will file for bankruptcy. Houston Chronicle, published 21<sup>st</sup> January 2020. <https://www.houstonchronicle.com/business/energy/article/McDermott-oil-field-company-files-bankruptcy-14991364.php>
- <sup>21</sup> McDermott (2020) Fabrication facilities, Qingdao, China. Website accessed 2020-05-04. <https://www.mcdermott.com/What-We-Do/Fabrication-Services/Fabrication-Facilities/Qingdao-China>
- <sup>22</sup> Woodward A and Perper R (2020) Wuhan, China, and at least 15 other cities have been quarantined as China attempts to halt the spread of the coronavirus. That's about 50 million people on lockdown. Business Insider, published 2020-01-28. <https://www.businessinsider.com/wuhan-coronavirus-officials-quarantine-entire-city-2020-1>
- <sup>23</sup> Williams-Derry, C (2020) IEEFA update: Financial prospects falter for LNG projects. Institute for Energy Economics and Financial Analysis (IEEFA), published 2020-04-20. <https://ieefa.org/the-financial-prospects-for-liquefied-natural-gas-lng-%e2%80%92-once-one-of-the-globes-hottest-energy-commodities-seem-to-be-imploding-before-our-eyes-in-the-most-recent-step-i/>
- <sup>24</sup> Bluegold Research (2020) Regional LNG Prices (Monthly Average). Website accessed 2020-05-03. <https://bluegoldresearch.com/regional-lng-prices>
- <sup>25</sup> Plante L et al (2020) Gas Bubble 2020: Tracking global LNG infrastructure. Global Energy Monitor. 21 pp.
- <sup>26</sup> Williams-Derry (2020) Financial prospects falter for LNG projects: Cancellations mount due to coronavirus and falling demand. IEEFA update, published 2020-04-24. <https://ieefa.org/the-financial-prospects-for-liquefied-natural-gas-lng-%e2%80%92-once-one-of-the-globes-hottest-energy-commodities-seem-to-be-imploding-before-our-eyes-in-the-most-recent-step-i/>
- <sup>27</sup> Canadian Energy Research Institute (2018) Competitive Analysis of Canadian LNG. Report published July 2018. 145 pp. [https://ceri.ca/assets/files/Study\\_172\\_Full\\_Report.pdf](https://ceri.ca/assets/files/Study_172_Full_Report.pdf)
- <sup>28</sup> The Canadian Press (2019) Developer of BC Woodfibre LNG project buys Calgary-based natural gas producer. CBC, published 2019-05-13. <https://www.cbc.ca/news/canada/calgary/woodfibre-lng-canbriam-energy-calgary-1.5134624>
- <sup>29</sup> Kravtsova E & DiSavino S (2020) LNG investments vanish in 2020 as coronavirus slashes oil and gas prices. Reuters, published 2020-09-09 <https://www.reuters.com/article/us-lng-exports-investment-analysis/lng-investments-vanish-in-2020-as-coronavirus-slashes-oil-and-gas-prices-idUSKBN25Z2D7>
- <sup>30</sup> International Energy Agency (2020) World Energy Outlook 2019: Executive Summary. 11 pp. <https://www.iea.org/reports/world-energy-outlook-2019>
- <sup>31</sup> IRENA (2019), Renewable Power Generation Costs in 2018, International Renewable Energy Agency, Abu Dhabi. 88 pp. <https://www.irena.org/publications/2019/May/Renewable-power-generation-costs-in-2018>
- <sup>32</sup> Smith M (2020) Decarbonisation imperils long-term LNG contracts. Petroleum Economics, published 2020-09-17. <https://www.petroleum-economist.com/articles/midstream-downstream/lng/2020/decarbonisation-imperils-long-term-lng-contracts>
- <sup>33</sup> CSA Group (2018) End of Life treatment for CNG containers and tanks – A review of the 3D's. Accessed 14<sup>th</sup> October 2018. <https://www.csagroup.org/article/end-life-cng-containers-tanks-review-3ds/>
- <sup>34</sup> Marine Traffic (2020) LNG Capricorn, LNG Tanker IMO: 7390208. Website accessed 2020-05-03 via [https://www.marinetraffic.com/en/ais/details/ships/shipid:711386/mmsi:538001387/imo:7390208/vessel:LNG\\_CAPRICORN](https://www.marinetraffic.com/en/ais/details/ships/shipid:711386/mmsi:538001387/imo:7390208/vessel:LNG_CAPRICORN)
- <sup>35</sup> Marine Traffic (2020) LNG Taurus, LNG Tanker IMO: 7390167. Website accessed 2020-05-03 via [https://www.marinetraffic.com/en/ais/details/ships/shipid:711390/mmsi:538001391/imo:7390167/vessel:LNG\\_TAURUS](https://www.marinetraffic.com/en/ais/details/ships/shipid:711390/mmsi:538001391/imo:7390167/vessel:LNG_TAURUS)
- <sup>36</sup> Gowe, B (2016) Bob Gowe, Transport Canada to Laurie Parkinson, My Sea to Sky, 20<sup>th</sup> October 2017. Email communication re: How far is Woodfibre LNG through the TERMPOL review?
- <sup>37</sup> Gowe, B (2019) Bob Gowe, Transport Canada to Laurie Parkinson, My Sea to Sky, 12<sup>th</sup> February 2019. Email communication re: How far is Woodfibre LNG through the TERMPOL review now – February 2019?
- <sup>38</sup> Gowe, B (2019) Bob Gowe, Transport Canada to Laurie Parkinson, My Sea to Sky, 20<sup>th</sup> August 2019. Email communication re: Old and new questions about Woodfibre LNG and TERMPOL.
- <sup>39</sup> Gowe, B (2019) Bob Gowe, Transport Canada to Ruth Simons, Future of Howe Sound, 23<sup>rd</sup> December 2019. Email communication re: Woodfibre LNG Termpol review.



- 
- <sup>40</sup> IPCC (2018) Global Warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty. 630 pp.  
[https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15\\_Full\\_Report\\_High\\_Res.pdf](https://www.ipcc.ch/site/assets/uploads/sites/2/2019/06/SR15_Full_Report_High_Res.pdf)
- <sup>41</sup> Fortis Inc. (2020) Fortis, Inc. (FTS) CEO Barry Perry on Q4 2019 Results - Earnings Call Transcript, published 2020-02-13.  
<https://seekingalpha.com/article/4324041-fortis-inc-fts-ceo-barry-perry-on-q4-2019-results-earnings-call-transcript?part=single>
- <sup>42</sup> Prystupa, M (2017) Did Christy Clark Pull a Too-Fast PR Stunt on LNG? The Tyee, published 2017-01-04.  
<https://thetyee.ca/News/2017/01/04/PR-Stunt-LNG/>
- <sup>43</sup> Hoekstra G & Penner D (2016) Woodfibre proceeding with B.C.'s first major LNG project in Squamish. Vancouver Sun, published 2016-11-05. <https://vancouversun.com/news/local-news/premier-clark-making-woodfibre-lng-announcement-in-squamish/>
- <sup>44</sup> Macleans (2016) Woodfibre LNG gives green light to what would be B.C.'s first LNG project. Macleans, published 2016-11-04.  
<https://www.macleans.ca/news/canada/woodfibre-lng-gives-green-light-to-what-would-be-b-c-s-first-lng-project/>
- <sup>45</sup> Offshore Energy (2016) FID reached on Woodfibre LNG project in Canada. Offshore Energy, published 2016-11-07.  
<https://www.offshore-energy.biz/fid-reached-on-woodfibre-lng-project-in-canada/>
- <sup>46</sup> BIC Magazine (2016) Woodfibre LNG becomes the first Canadian LNG project to receive Final Investment Decision. BIC Magazine published 18<sup>th</sup> November 2016.  
<https://www.bicmagazine.com/industry/natgas-lng/woodfibre-lng-becomes-the-first-canadian-lng-project-to-rece/>
- <sup>47</sup> Williams N, Lou E, and Chow E (2017) Malaysia's Petronas scraps \$29 billion western Canada LNG project. Reuters, published 2017-07-25.  
<https://www.reuters.com/article/us-canada-lng-petronas-idUSKBN1AA2C8>
- <sup>48</sup> Morgan G (2018) Natural gas sector poised for big boost if LNG Canada moves ahead. Financial Post, published 2018-09-28.  
<https://business.financialpost.com/commodities/energy/natural-gas-sector-poised-for-big-boost-if-lng-canada-project-moves-ahead>
- <sup>49</sup> Morgan G (2018) 'Dream scenario': Two more Canadian LNG projects inching towards construction. Financial Post, published 2018-10-17.  
<https://business.financialpost.com/commodities/dream-scenario-two-more-canadian-lng-projects-inching-towards-construction>
- <sup>50</sup> Bowden J (2018) LNG Projects line up for FID. Natural Gas World, published 2018-12-03.  
<https://www.naturalgasworld.com/lng-projects-line-up-for-fid-ngw-magazine-66409>
- <sup>51</sup> Morgan G (2019) Woodfibre LNG poised to proceed with \$1.6-billion project within weeks. Financial Post, published 2019-08-19.  
<https://business.financialpost.com/commodities/energy/woodfibre-lng-poised-to-proceed-with-1-6-billion-project-within-weeks>
- <sup>52</sup> Evans C (2019) Woodfibre LNG EPC award expected soon. Upstream, published 2019-09-18.  
<https://www.upstreamonline.com/lng/woodfibre-lng-epc-award-expected-soon/2-1-674378>
- <sup>53</sup> Squamish Chief (2020) Woodfibre LNG extends timeline on Squamish project. Squamish Chief, published 24<sup>th</sup> March 2020.  
<https://www.squamishchief.com/news/local-news/woodfibre-lng-extends-timeline-on-squamish-project-1.24104727>
- <sup>54</sup> Saxby T (2020) Tracey Saxby, My Sea to Sky to Howe Sound municipal governments, 30<sup>th</sup> April 2020. Email communication re: Woodfibre LNG's request to extend their EA certificate.
- <sup>55</sup> BC EAO (2016) Requesting a Certificate Extension. Published April 2016. 10 pp. Retrieved from:  
<https://www2.gov.bc.ca/assets/gov/environment/natural-resource-stewardship/environmental-assessments/guidance-documents/eao-guidance-certificate-holder-requesting-certificate-extension.pdf>
- <sup>56</sup> Ahmed N (2018) The UN's devastating climate change report was too optimistic. Vice. 15<sup>th</sup> October 2018.  
[https://www.vice.com/en\\_us/article/43e8yp/the-uns-devastating-climate-change-report-was-too-optimistic](https://www.vice.com/en_us/article/43e8yp/the-uns-devastating-climate-change-report-was-too-optimistic)
- <sup>57</sup> Waldman S (2018) New climate report was too cautious, some scientists say. Scientific American. 11<sup>th</sup> October 2018  
<https://www.scientificamerican.com/article/new-climate-report-was-too-cautious-some-scientists-say/>
- <sup>58</sup> Ripple WJ et al. (2019) World scientists' warning of a climate emergency. BioScience, biz088. <https://doi.org/10.1093/biosci/biz088>
- <sup>59</sup> Steffen W et. al (2018) Trajectories of the earth system in the Anthropocene. PNAS August 14 2018, 115 (33) 8252–8259.  
<https://www.pnas.org/content/115/33/8252>
- <sup>60</sup> Spratt D & Dunlop I (2019) Existential climate-related security risk: a scenario approach. Breakthrough – National Centre for Climate Restoration. 11 pp.
- <sup>61</sup> Xu Y et al (2018) Global warming will happen faster than we think. Nature 2019-12-08: Vol. 564 pp. 30–32.  
<https://www.nature.com/articles/d41586-018-07586-5>

- <sup>62</sup> Cheng L et al (2019) How fast are the oceans warming? *Science* 11 Jan 2019: Vol. 363, Issue 6423, pp. 128–129  
<https://science.sciencemag.org/content/363/6423/128.summary>
- <sup>63</sup> Oreskes N et al (2019) Scientists Have Been Underestimating the Pace of Climate Change. *Scientific American*, published 2019-08-19.  
<https://blogs.scientificamerican.com/observations/scientists-have-been-underestimating-the-pace-of-climate-change/>
- <sup>64</sup> Tong D et al (2019) Committed emissions from existing energy infrastructure jeopardize 1.5°C climate target. *Nature*, 572, 373–377.  
<https://doi.org/10.1038/s41586-019-1364-3>
- <sup>65</sup> BC Climate Action Secretariat (2019) Provincial Greenhouse Gas Emissions Inventory. Website accessed 2020-04-06.  
<https://www2.gov.bc.ca/gov/content/environment/climate-change/data/provincial-inventory>
- <sup>66</sup> Environment and Climate Change Canada (2020) 2020 National Inventory Report 1990-2018, Greenhouse gas sources and sinks in Canada. Canada’s submission to the United Nations Framework Convention on Climate Change. Executive Summary. 15 pp.  
<https://www.canada.ca/en/environment-climate-change/services/climatechange/greenhouse-gas-emissions/inventory.html>
- <sup>67</sup> Hughes D (2020) BC’s Carbon Conundrum. Why LNG exports doom emission reduction targets and compromise Canada’s long-term energy security. Canadian Centre for Policy Alternatives. Report published July 2020. 60 pp.  
<https://www.corporatemapping.ca/bc-carbon-conundrum/>
- <sup>68</sup> Lee, M (2018) LNG is incompatible with BC’s climate obligations. Policy Note. Published 11<sup>th</sup> July 2018.  
<https://www.policynote.ca/lng-is-incompatible-with-bcs-climate-obligations/>
- <sup>69</sup> Davis SJ and Shearer C (2014) A crack in the natural gas bridge. *Nature* 514, pp. 436–437. <https://www.nature.com/articles/nature13927>
- <sup>70</sup> Union of Concerned Scientist (2014) Infographic: The Climate Risks of Natural Gas. Published on 3<sup>rd</sup> February 2014.  
<https://www.ucsusa.org/resources/climate-risks-natural-gas>
- <sup>71</sup> Nace, T, Plant, L, and Browning J (2019) The New Gas Boom: Tracking Global LNG Infrastructure. *Global Energy Monitor*. Published June 2019. 21 pp. <https://globalenergymonitor.org/wp-content/uploads/2019/06/NewGasBoomEmbargo.pdf>
- <sup>72</sup> Horne M and MacNab J (2014) LNG and climate change: the global context. The Pembina Institute, October 2014.  
<http://www.pembina.org/pub/lng-and-climate-change-the-global-context>
- <sup>73</sup> Stephenson E et. al., (2012) Greenwashing gas: might a ‘transition fuel’ label legitimize carbon-intensive natural gas development? *Energy Policy* 46, pp. 452–459. <https://www.sciencedirect.com/science/article/pii/S0301421512003102>
- <sup>74</sup> Woodfibre LNG (2020) GHG Emissions Impact. Website accessed 2020-09-25.  
<https://woodfibrelng.ca/about-woodfibre/sustainability/ghg-emissions-impact/>
- <sup>75</sup> Chua, S (2020) Can a Squamish liquefied natural gas terminal reduce global emissions? *Squamish Chief*, published 9<sup>th</sup> June 2020.  
<https://www.squamishchief.com/news/local-news/can-a-squamish-liquefied-natural-gas-terminal-reduce-global-emissions-1.24149098>
- <sup>76</sup> Nie Y et al (2020) Greenhouse-gas emissions of Canadian liquefied natural gas for use in China: Comparison and synthesis of three independent life cycle assessments. *Journal of Cleaner Production*, Volume 258. <https://doi.org/10.1016/j.jclepro.2020.120701>
- <sup>77</sup> Taft K (2017) How the oil industry created a ‘deep state’ in Canada. *Macleans*, published 6<sup>th</sup> October 2017.  
<https://www.macleans.ca/opinion/is-there-a-deep-state-in-albertas-oil-industry/>
- <sup>78</sup> Hmiel, B., Petrenko, V.V., Dyonisius, M.N. et al. Preindustrial <sup>14</sup>CH<sub>4</sub> indicates greater anthropogenic fossil CH<sub>4</sub> emissions. *Nature* 578, 409–412 (2020). <https://doi.org/10.1038/s41586-020-1991-8>
- <sup>79</sup> Howarth, RW (2019) Ideas and perspectives: is shale gas a major driver of recent increase in global atmospheric methane? *Biogeosciences*, 16, 3033–3046. <https://doi.org/10.5194/bg-16-3033-2019>
- <sup>80</sup> Atherton, E et al (2017) Mobile measurements of methane emissions from natural gas developments in Northeastern British Columbia, Canada. *Atmospheric Chemistry and Physics*, 17, 12405–12420. <https://doi.org/10.5194/acp-17-12405-2017>
- <sup>81</sup> Alvarez, RA et al (2018) Assessment of methane emissions from the U.S. oil and gas supply chain. *Science* 13 Jul 2018: Vol. 361, Issue 6398, 186–188. <https://science.sciencemag.org/content/361/6398/186>
- <sup>82</sup> Gilbert, AQ and Sovacool, BK (2017) US liquefied natural gas (LNG) exports: Boom or bust for the global climate? *Energy* 141, 1671–1680.  
<https://doi.org/10.1016/j.energy.2017.11.098>
- <sup>83</sup> International Climate Change Scientists and Policy Experts (2016) Unjustified adverse greenhouse gas impacts of the Pacific Northwest LNG proposal. 26<sup>th</sup> May 2016. [http://media.wix.com/ugd/f85bab\\_86eaddc3c8f04f5f967f0a5ccb333cda.pdf](http://media.wix.com/ugd/f85bab_86eaddc3c8f04f5f967f0a5ccb333cda.pdf)
- <sup>84</sup> CORI (2020) Atlika7tsem/Howe Sound Marine Conservation Assessment’s online map. Website accessed 2020-05-04.  
<https://www.myseatosky.org/PO-Box-2668-Squamish-BC-V8B-0B8>



- 
- <sup>85</sup> Woodroffe S (2020) New Howe Sound glass sponge reefs identified. Coast Reporter, published 2020-08-24. <https://www.coastreporter.net/news/local-news/new-howe-sound-glass-sponge-reefs-identified-1.24191587>
- <sup>86</sup> Woodfibre LNG (2015) Assessment of alternative cooling methods: Response to EAO Supplemental Information Request. April 2015. 28 pp. <https://projects.eao.gov.bc.ca/api/document/588691b5e036fb0105769008/fetch>
- <sup>87</sup> Woodfibre LNG (2017) Application for an Amendment to Environmental Assessment Certificate #E15-02. January 2017. 129 pp. <https://projects.eao.gov.bc.ca/api/document/589385a2d3cfab001dff700d/fetch>
- <sup>88</sup> Masud N et al (2020) Noise pollution: acute noise exposure increases susceptibility to disease and chronic exposure reduces host survival. Royal Society Open Science. Published 16<sup>th</sup> September 2020. <https://doi.org/10.1098/rsos.200172>
- <sup>89</sup> Squamish Windsports Society (2020) Terminal wind meter. Website accessed 2020-09-09. <https://squamishwindsports.com>
- <sup>90</sup> Random Acts of Green (2019) 475 Canadian Municipalities have Declared a Climate Emergency. Published 2019-04-03 and updated 2019-11-14. Accessed on 2020-01-11. <https://raog.ca/2019/04/03/457-canadian-municipalities-have-declared-a-climate-emergency/>
- <sup>91</sup> District of Squamish (2019) Climate Emergency Resolution. 2019-07-02. <https://squamish.ca/yourgovernment/projects-and-initiatives/climate-emergency-resolution/>
- <sup>92</sup> District of Squamish (2020) Community Climate Action Plan. Adopted 7<sup>th</sup> April 2020 by the District of Squamish. 93 pp. [https://squamish.ca/assets/e52fbd762a/2020\\_04\\_28\\_CCAP.PDF](https://squamish.ca/assets/e52fbd762a/2020_04_28_CCAP.PDF)
- <sup>93</sup> Government of BC (2018) CleanBC plan to reduce climate pollution, build a low-carbon economy. Press release, 2018-12-05. <https://news.gov.bc.ca/releases/2018PREM0088-002338>
- <sup>94</sup> Government of BC (2018) Climate action gets new teeth with accountability act. Press release, 2019-10-30. <https://news.gov.bc.ca/releases/2019ENV0110-002082>
- <sup>95</sup> Government of BC (2020) Climate Planning & Action. Website accessed 2020-05-04. <https://www2.gov.bc.ca/gov/content/environment/climate-change/planning-and-action>
- <sup>96</sup> House of Commons, Canada (2019) Vote No. 1366, 42<sup>nd</sup> Parliament, 1<sup>st</sup> Session, Sitting No. 435, Monday, 17<sup>th</sup> June 2019. <https://www.ourcommons.ca/Parliamentarians/en/votes/42/1/1366/>
- <sup>97</sup> Government of Canada (2019) Government of Canada releases emissions projections, showing progress towards climate target. Press release, 2019-12-20. <https://www.canada.ca/en/environment-climate-change/news/2019/12/government-of-canada-releases-emissions-projections-showing-progress-towards-climate-target.html>
- <sup>98</sup> Government of Canada (2020) Speech from the Throne: A stronger and more resilient Canada. To open the second session of the forty-third parliament of Canada. 23<sup>rd</sup> September 2020. 34 pp. <https://www.canada.ca/en/privy-council/campaigns/speech-throne/2020/stronger-resilient-canada.html>
- <sup>99</sup> Fisheries and Oceans Canada (2020) Introducing Canada's modernized Fisheries Act. Website accessed 2020-05-04. <https://www.dfo-mpo.gc.ca/campaign-campagne/fisheries-act-loi-sur-les-peches/introduction-eng.html>
- <sup>100</sup> Jaremko D (2017) KBR emerges as winner in Woodfibre LNG FEED, moves on to next step. JWN Energy. Published 2017-12-06. <https://www.jwnenergy.com/article/2017/12/kbr-emerges-winner-woodfibre-lng-feed-moves-next-step/>
- <sup>101</sup> Canadian Institute of Steel Construction (2019) The Liberal Government Hands \$42 Billion In Construction Projects to China At Expense Of Canadians. Press release published 2019-08-20 by the Canadian Institute of Steel Construction. <https://www.cisc-icca.ca/the-liberal-government-hands-42-billion-in-construction-projects-to-china-at-expense-of-canadians/>
- <sup>102</sup> BC Hydro (2016) New eDrive electricity rate for LNG facilities. Press release published 2016-11-04 by BC Hydro. [https://www.bchydro.com/news/press\\_centre/news\\_releases/2016/new-edrive-electricity-rate-for-lng-facilities.html](https://www.bchydro.com/news/press_centre/news_releases/2016/new-edrive-electricity-rate-for-lng-facilities.html)
- <sup>103</sup> Zussman, R (2018) B.C. government promises rebates to carbon tax and PST for LNG industry. Global News. Published 2018-03-22. <https://globalnews.ca/news/4099444/b-c-government-promises-carbon-tax-and-pst-rebates-for-lng-industry/>
- <sup>104</sup> Government of BC (2019) Legislation introduced to complete fiscal framework for LNG investment, jobs and benefits. Press release, 2019-03-25. <https://news.gov.bc.ca/releases/2019FIN0035-000478>
- <sup>105</sup> Thuncher, J (2019) Woodfibre LNG purchases essential equipment for Squamish project. Squamish Chief, published 2019-08-09. <https://www.squamishchief.com/news/local-news/updated-woodfibre-lng-purchases-essential-equipment-for-squamish-project-1.23910913>
- <sup>106</sup> Government of Canada (2015) Accelerated capital cost allowance for liquefied natural gas. Press release, 2015-02-19. <https://www.canada.ca/en/news/archive/2015/02/accelerated-capital-cost-allowance-liquefied-natural-gas.html>



<sup>107</sup> Upstream (2019) Guangzhou Gas still seeking LNG after Canada deal lapses. Upstream, published 2019-08-14.  
<https://www.upstreamonline.com/weekly/guangzhou-gas-still-seeking-lng-after-canada-deal-lapses/2-1-652228>

<sup>108</sup> Squamish Chief (2018) Woodfibre LNG signs preliminary 13-year export deal. Squamish Chief, published 2018-10-01.  
<https://www.squamishchief.com/news/local-news/woodfibre-lng-signs-preliminary-13-year-export-deal-1.23447997>

<sup>109</sup> Thuncher, J (2019) Woodfibre LNG has a new customer. Squamish Chief, published 2019-06-26.  
<https://www.squamishchief.com/news/local-news/updated-woodfibre-lng-has-a-new-customer-1.23868640>

<sup>110</sup> Sandwell Engineering (2010) Henriette Lake Dam, Seismic Assessment of the Concrete Ambursen-Type Buttress Dam, 3D Dynamic Analysis, 20<sup>th</sup> January 2010.

<sup>111</sup> BC OGC (2019) Application Determination Number 100105360. Permit issued 2<sup>nd</sup> July 2019.  
<https://www.bco.gc.ca/files/projects/woodfibre-lng/100105360-PERMIT-LNG-FACILITY.pdf>

<sup>112</sup> Woodfibre LNG (2019) Worker Accommodation: Application to amend Environmental Assessment Approvals. October 2019. 136 pp.  
[https://projects.eao.gov.bc.ca/api/public/document/5db883d3cc52100021d0a1d3/download/191028\\_WLNG\\_Floatel\\_Amendment\\_Final\\_v2.pdf](https://projects.eao.gov.bc.ca/api/public/document/5db883d3cc52100021d0a1d3/download/191028_WLNG_Floatel_Amendment_Final_v2.pdf)

<sup>113</sup> Morris S (2020) Star Morris to Scott Morgan, BC Dam Safety Section, 7<sup>th</sup> July 2020. Letter re: Henriette Lake Dam and worker safety.

<sup>114</sup> Morgan S (2020) Scott Morgan, BC Dam Safety Section to Star Morris, 16<sup>th</sup> July 2020. Letter re: Henriette Lake Dam and worker safety.

<sup>115</sup> Woodfibre LNG (2015) Application for an Environmental Assessment Certificate. Section 7.0 Assessment of potential social effects. January 2015. 11 pp.  
<https://projects.eao.gov.bc.ca/api/public/document/5886918ce036fb0105768fbf/download/Section%207.0%20and%207.1%20Social%20background.pdf>