



# COLD GAS HOT AIR



**LNG IN BC**



## LIQUEFIED NATURAL GAS PLANS CLASH WITH CLIMATE ACTION



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@EoinWC

Does anyone else feel like the past year has been jam-packed with promises from the BC government? The idea is always the same: Have no fear, LNG is here.

LNG, or liquefied natural gas, has been trumpeted as British Columbia's economic saviour. However, more and more people are coming to realize that this new industry – which is based on the extraction, production and export of fossil fuels – will never be as “clean and prosperous” as we've been led to believe.

What troubles me most is that the promise of a gigantic new fossil fuel industry has distracted us from the reality of climate change, and the need for immediate action to avoid its worst effects.

BC's proposed LNG industry is guaranteed to add massive amounts of greenhouse gases to the atmosphere, which will have a serious impact on our climate. This is partly because nine

out of ten new gas wells required to supply the LNG industry will be drilled using the destructive technique of hydraulic fracturing, or “fracking.”<sup>1</sup>

**Fracking has a harmful effect on our climate and so does the burning of fossil fuels like LNG.** These impacts

fly in the face of the BC government's claim that LNG is a “clean, green” energy source.

BC's Environment Minister brought this “clean, green LNG” claim to the world stage in December 2014 at the international climate talks in Peru.

There, officials declared that BC would do its part to address global climate

change by providing the world with a “cleaner-burning fossil fuel.”<sup>2</sup>

The main idea behind this claim is that less coal will be consumed in Asia when LNG is available from BC. But there is no independent evidence suggesting that BC's LNG will replace

Asian coal use. Experts have also challenged the idea that fracked gas is less harmful to our climate than coal.

We already know what climate change looks like here

in BC. Vast swathes of our evergreen forests have been turned a violent red,

### WHAT IS LNG?

**LNG, or Liquefied Natural Gas,** is gas that has been cooled and condensed into liquid form for ease of storage or transport. To produce LNG, gas is often burned at three different steps in the process – during extraction, production (to power the cooling process) and when the finished product is burned for energy.

by an insect that thrives in warming temperatures: the mountain pine beetle. Our west coast waters have soaked up climate-changing gases for decades, making them much more acidic.

Warnings from international agencies keep rolling in: we need to cut our societies loose from fossil fuels. In the face of these warnings, and despite the impacts visible across BC's landscape, the provincial government continues to hype up its dream of a new LNG industry.

There are many other downsides to the construction of gas export plants along our west coast – not to mention the multitude of pipelines that would feed the proposed LNG terminals. Read on to find out more about the climate impacts, learn about the LNG-related risks to salmon and communities, and see why other jurisdictions in North America are taking bold action to stop fracking.

We can have a thriving economy without fracking and LNG. **It's time for the BC government to face the facts – this industry is not a clean, green option for BC.**



Photo left: Haida Gwaii coast, where proposed LNG plants would bring hundreds of tankers each year, right: Marine invertebrates (Don Johnston).

Cover photo: Lelu Island, proposed site of Pacific Northwest LNG (Brian Huntington), inset: Pacific Northwest LNG illustration

# BC'S LNG: NOT CLEAN, NOT GREEN

More than a dozen LNG facilities have been proposed along BC's west coast, some of which are at more advanced stages than others.<sup>3</sup> Since the companies involved have yet to make final investment decisions (or "FIDS") on their proposals, it is difficult to anticipate how far each one will go.

However, even if we look at just the five LNG plants most likely to proceed, the potential effects on our climate are disastrous.<sup>4</sup> Fracking for gas allows enormous quantities of methane to escape into the atmosphere.

Methane drives climate change at a much higher rate than other climate-changing greenhouse gases. Experts estimate that over the first 20 years it is 80 times more potent than the most



Photo: **Fracking operation in northern BC** (Jeremy Williams).

well-known climate-changing gas: carbon dioxide.<sup>5</sup>

Concerns about methane emissions from gas wells have been building ever since fracking became the industry's standard practice. As the older, more conventional gas reserves ran out over the last decade, fracking became the primary method used to

extract gas in North America.

The first signs that fracking could cause a large-scale build-up of methane came recently from New Mexico. There, NASA scientists identified an enormous methane plume above the vast gas fields in the state's deserts.<sup>6</sup> With discoveries such as this one in New Mexico, many people fear that the magnitude of fracking's impact on our climate has been grossly underestimated.

When new gas wells are opened up, dangerous amounts of methane and carbon dioxide can build up.

These buildups can happen at the wellhead, or anywhere along the production line to the LNG tankers on

our west coast. These gases are often purposely leaked into the atmosphere in a process known as "venting." Alternatively, those gases may be intentionally burned off at the site in a process known as "flaring."

In BC, the provincial carbon tax demands that all companies account and pay for the climate-



Photo: **Humpback whale** (John E. Marriot).

## CLIMATE CHANGE HITS HOME IN BC

When it comes to describing the impact of climate change on local communities, British Columbians can point to some very significant examples.

Back in the early 2000s, people started noticing a strange red hue in the interior valleys and mountainsides of BC. Vast evergreen pine forests were quickly being replaced by dead and dying trees.

**The mountain pine beetle, a black insect about the size of a grain of rice, was spreading across the landscape.**

Female beetles lay their eggs beneath the bark of pine trees, and those eggs are much more likely to survive in the warmer winters brought to BC by climate change.

BC's forests have now lost more than 18 million hectares of timber resources<sup>8</sup> plus billions of dollars in sales and stumpage fees to this troublesome little insect. Since 1990, one third of the lumber mills operating in the interior of BC have closed down<sup>9</sup>, primarily because of the pine beetle – and climate change.

The enormous impact of climate

change has not just been felt in BC's interior. The world-renowned shellfish industry on our west coast has also been feeling the heat.

As increasing amounts of climate-changing gases like carbon dioxide build up in our atmosphere, the world's oceans are forced to absorb them. As a result, coastal waters have become much more acidic.

**The world's oceans are now roughly 30 per cent more acidic than what they were prior to the industrial revolution, when we ramped up our use of fossil fuels.**<sup>10</sup>

Ocean acidification has a disastrous effect on sea creatures like shellfish, as it hampers their ability to form hard skeletons and shells. This is causing serious problems for seafood businesses on BC's west coast.<sup>11</sup>

We have suffered enough at the hands of this new, unpredictable climate that has resulted from the burning of fossil fuels. If we continue to ignore the realities of climate change, we risk facing economic peril. Setting ourselves up for more damage by producing and exporting LNG is simply not worth it.

changing greenhouse gases they create. From Lululemon shirts to Okanagan plums, the carbon tax is applied to almost every producer, with one glaring exception: **the gas industry is exempted from taxes on gases that escape during the production process.** Why is the industry given a free ride when it has such an extreme effect on our climate?

All of the BC LNG destined for Asia will be burned for energy. When burned, it will release the climate-changing gases contained within it. Other sources of energy, such as solar, wind and geothermal, are viable alternatives for generating that power.

The claim that LNG is cleaner than coal has been disputed by scientists.<sup>7</sup> When you look at the life cycle of LNG – from gas well to combustion – its overall climate impact begins to rival the impact of coal.

**The simple fact remains: LNG is not good for our future.**

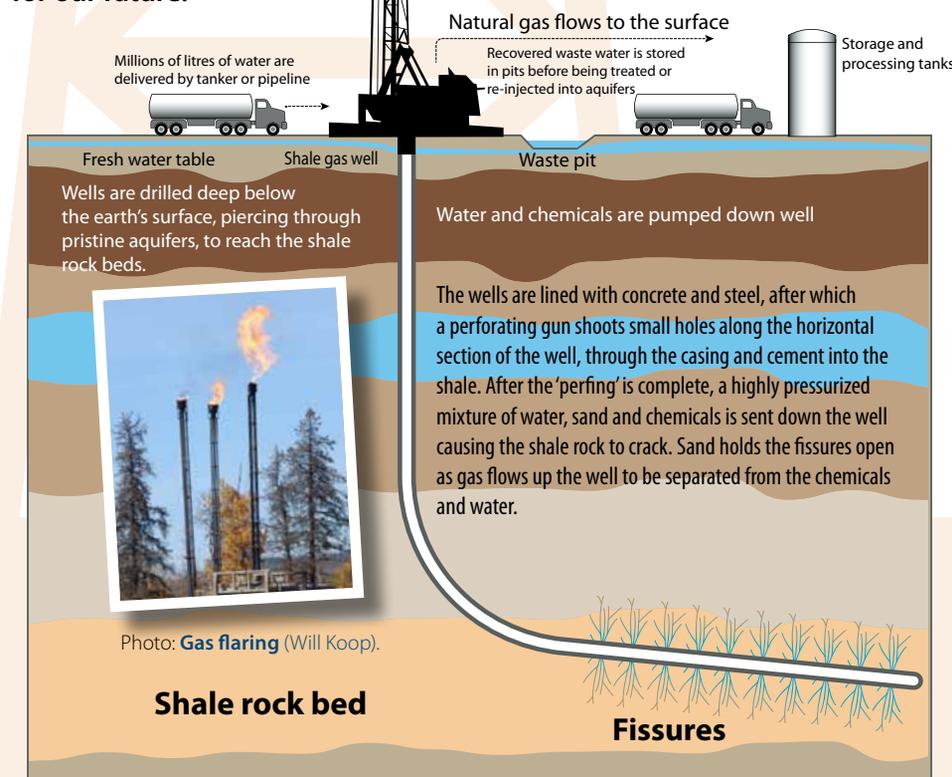


Photo: **Gas flaring** (Will Koop).



Photo: **Grizzly bear, BC** (Roberta Olenick).

### WHAT IS FRACKING?

#### Hydraulic fracturing ("fracking")

is a gas extraction method that involves injecting large amounts of pressurized water, sand and hazardous chemicals into wells drilled underground. This process "fractures" hard shale rock formations to release trapped gas.



Photos clockwise from left: **Sea otter eating shellfish** (Isabelle Groc), **Flagging tape in beetle-infested forest** (Alexis Stoymenoff), **Red pines killed by mountain pine beetle** (Katie Rompala).

### ACIDIFYING OCEANS

Burning fossil fuels releases greenhouse gases like carbon dioxide. When carbon dioxide is dissolved in the ocean, it creates carbonic acid – the same substance that is added to soda pop to make it "fizzy."

# SKEENA SALMON HABITAT: NO PLACE FOR LNG

The mighty Skeena River runs for 610 kilometres across the northwest of BC, from its headwaters high in the mountains at the edge of the Spatsizi Plateau to the Pacific Ocean. Its source is known by local First Nations as the “Sacred Headwaters” for an important reason: the river supports hundreds of populations of all five species of wild salmon, and is the second largest salmon-producing river in Canada.

Juvenile salmon (or “smolts”) are born and die in freshwater, but they travel through the Skeena estuary on their way to the ocean where they mature. In this estuary, where the Skeena meets the Pacific Ocean, an underwater bed of eelgrass known as Flora Banks makes the perfect resting ground for juvenile salmon. It is in the direct path of 331 million juvenile salmon heading to sea every year.<sup>12</sup>

**This very unique place is adjacent to the proposed sites of two giant new LNG plants – Pacific Northwest LNG and Prince Rupert LNG – as well as the large pipelines needed to supply them.** When added to a proposed potash loading facility and expanded transportation corridors in the area, it’s clear the Skeena estuary is slated for a tsunami of industrial activity.

To build just one of the LNG plants proposed, millions of cubic metres of sediment would need to be dredged (scooped out and removed from the estuary floor) – enough to fill 2,424 hockey rinks with sediment two metres deep.<sup>13</sup> In addition to removing habitat, dredging can also bring buried contaminants from the sediment back up to the surface, which has a negative impact on fish.

**As a vital part of the ecosystem and a sustainable economic driver for the region, the Skeena’s prized salmon, and their habitat, must be protected from LNG development.**



Photo: Canoeing near the Skeena River (Tim Irvin).



Photo: Sockeye salmon (Shel Neufeld).

## PUBLIC SAFETY RISKS FLAMMABLE GAS AND BC COMMUNITIES

Ironically, the federal government has fought to keep US shipments of LNG out of eastern Canadian waters since 2010. When a number of LNG terminals were proposed in the US state of Maine in recent years, our government sent clear messages to US regulators that it was against the proposals.

In letters to the US Federal Energy Regulatory Commission (FERC), Canada’s government stated it was defending a “unique and highly productive marine ecosystem” near New Brunswick from the threat of LNG tanker traffic. In those same letters, the government also cited “public safety risks” associated with LNG shipments.<sup>14 15</sup>

Those risks are outlined in a report released in 2008, after US authorities employed a military laboratory to look at the safety threat posed by LNG ships. The lab made conclusions on the “areas of concern” surrounding LNG tanker shipments. Within these areas, escaped LNG can represent a threat to the general public – especially when ignited. The report recommended a response system

with areas of refuge in case of an incident in these “areas of concern,” as well as the development of community warning procedures.<sup>16</sup>

As a result of such military testing, precautions have been taken with regard to LNG shipments in the US. For instance, LNG shipments arriving at Boston Harbour are flanked by security boats, and authorities coordinate flights into and out of Boston’s main airport so there is no chance of the ships being targeted.<sup>17</sup>

Despite its concerns over US LNG shipments in eastern waters, the Canadian government is supportive of LNG shipments in ecologically sensitive areas of BC, such as Howe Sound.

There are some very heavily populated areas along the shores of Howe Sound, many of which are linked by the busy Sea-to-Sky highway. **The double standard here is obvious: why does our federal government feel these LNG shipments are safe enough for our west coast, but not for our east?**



Photo: Bald eagle (Jakob Dulisse).

### LNG TANKER HAZARD ZONES IN HOWE SOUND

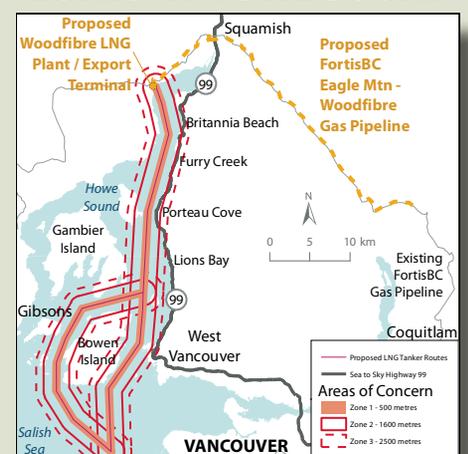


Photo: Killer whale (Isabelle Groc).



Photo: LNG tanker (Creative commons).

**LNG IS A FRACKIN' MESS**

# ALTERNATIVES: FORESTRY NOT FRACKING

Contrary to what we may hear from the BC government and the oil and gas industry, BC's economy is not a resource-based one. It certainly may have been in the past, but our economy has followed the natural trajectory of most economies and now develops mostly knowledge and service-based jobs.

In 2013, the oil and gas industry created just one per cent of all the jobs in BC. The province's high-tech and service sectors continue to grow, and we are fast becoming a hub for the world's most advanced technologies.<sup>18</sup>

When it comes to generating jobs by extracting resources in BC, our forests remain the best option. If properly managed and preserved, they could provide livelihoods on a potentially infinite basis – while helping to mitigate climate change at the same time.

Unfortunately, the current industrial model that has dominated forestry in western Canada is based on endless extraction and minimal domestic processing of timber resources. This approach has harmed watersheds and

degraded entire ecosystems. At the same time, we've seen more unprocessed or under-processed timber leave the province, resulting in a downward spiral of mill closures and layoffs.

British Columbia lags far behind other jurisdictions in terms of jobs created per unit of timber harvested.

In BC, to create one full-time, year-round job we must cut 1,189 cubic metres of timber – one cubic metre roughly equals one city telephone pole. In Ontario,

the forest industry produces one job for every 205 cubic metres of timber harvested, meaning they can cut the same amount of trees and employ almost six times as many people (or cut one-sixth of the trees and provide the same amount of jobs).<sup>19</sup>

Instead of addressing our shortfall in sustainable forestry jobs, the BC government is fixated on the extraction and export of liquefied fracked gas.

**BC needs to drop fracking and LNG, and re-invest in responsible forestry for a cleaner economic future.**



Photo: Raw log exports protest (WC files).

# FRACKING BANS IN NEW YORK AND BEYOND

In December 2014, the state of New York joined a growing list of states, municipalities and provinces that have imposed indefinite moratoriums or outright bans on fracking.

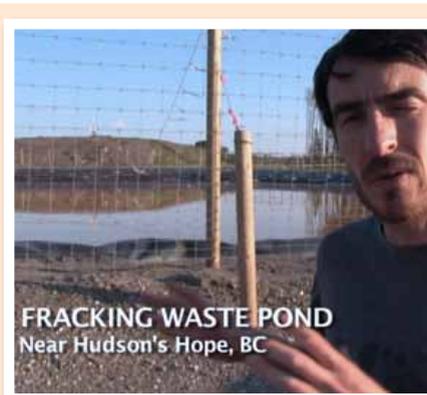
The massive anti-fracking campaign in the state of New York started with local activist groups pushing their local city governments to ban fracking within their city limits, using zoning laws or passing new ones if necessary. Cities, towns and villages began using municipal laws to ban fracking locally, and the gas industry failed when it tried to overturn those local bans in New York's highest court.

Citizens also spoke out frequently to pressure Governor Andrew Cuomo on the issue of fracking. The head of New York's Department of Health, Howard Zucker, drove the final nail in the fracking coffin by declaring that he would not want his own family to live near fracking operations.<sup>20</sup>

Ireland, France, Quebec and Nova Scotia are just a few of the other places where fracking has been

restricted or banned, yet there are no signs of a fracking ban being imposed here in BC.

How can an industry practice deemed unsafe for New Yorkers be acceptable for the communities of northern BC?



Having stood beside the toxic wastewater holding ponds that dot the fracked landscape of northern BC, I can tell you that the practice here looks and smells just as bad as anywhere else in North America. **- Eoin Madden**

# TAKE ACTION

Please write to the Premier of BC and urge the province to:

- Put an end to reckless LNG plans that put our climate, salmon and communities at risk
- Strengthen the provincial carbon tax to cover ALL greenhouse gas emissions from the oil and gas industry
- Prioritize responsible forestry for a stronger, resilient economy



Photo: Anti-fracking protest in New York (Adrian Kinloch).



Photo: Harbour seal on BC coast (John E Marriott).

## Premier of BC

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@ premier@gov.bc.ca

To sign the petition for a frack-free future in BC, visit [WildernessCommittee.org/fracking](http://WildernessCommittee.org/fracking)

Keep up with campaign news, events, action opportunities and more!

Sign up for Climate Action E-alerts at [WildernessCommittee.org/climateaction](http://WildernessCommittee.org/climateaction)

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# YES! I WANT CLIMATE ACTION, NOT LNG!

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