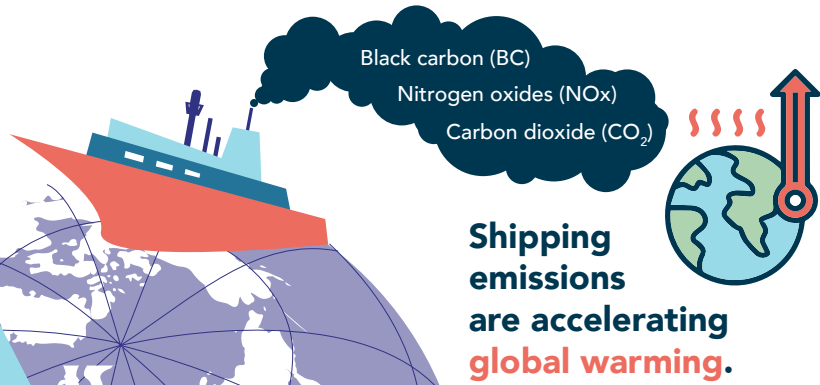


Liquefied Natural Gas (LNG) is a threat to the Arctic



Black carbon (BC)
Nitrogen oxides (NOx)
Carbon dioxide (CO₂)

Shipping emissions are accelerating global warming.

On route to shipping decarbonisation...

In an effort to reduce black carbon and greenhouse gas (GHG) emissions, shipping is looking to move away from oil based fuels.



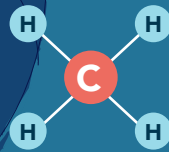
However some alternatives including Liquefied Natural Gas (LNG), are still fossil fuels.

...but LNG must not be part of the solution.

LNG is predominantly made up of **methane**, a short-lived climate forcer more potent than CO₂.



The Arctic is warming **4 times** faster than the global average!



Methane is a dangerously **potent greenhouse gas** (CH₄).

It has a **warming effect up to 80 times** more powerful than CO₂ over a 20 year period (GWP20).

Emissions from LNG-fueled ships grew by **150%** between 2012 to 2018.

The pathway of methane emissions from LNG fuel



When **burned by ships**, LNG releases **methane** and other pollutants into the atmosphere.



Additionally, the **process of extracting, processing, and transporting of LNG** results in **methane leakage**. These activities can also cause significant environmental impacts including habitat destruction, water pollution, and climate heating.

Global heating is speeding the Arctic permafrost thaw

The **fragile Arctic permafrost ecosystem** already under threat from global heating could be reaching a **global tipping point**.

- Arctic terrestrial permafrost contains 2x carbon as in the atmosphere.
- As the Arctic heats up, shallow permafrost starts to thaw.
- Thawing permafrost releases CO₂ and CH₄ into the atmosphere.
- Released CO₂ and CH₄ add to the global burden of GHGs - speeding global warming.
- Burning LNG as fuel adds to the acceleration of Arctic permafrost thaw and a potential and irreversible tipping point being reached.



The alarming rise in LNG puts the Arctic at a crossroads



LNG production



LNG use



The United States, Canada, Norway and Russia with vast natural gas reserves show little sign of moving away from fossil gas and are even expanding exploitation.

LNG bunkering (i.e. ports where ships can refuel) has grown since 2010 to over 30 operational and proposed facilities. Russia, Finland and Sweden have made substantial infrastructure investments.

LNG use as fuel has grown across ship types:

Norway has the largest fleet of ice class LNG ships in the region, followed by Sweden and Finland.

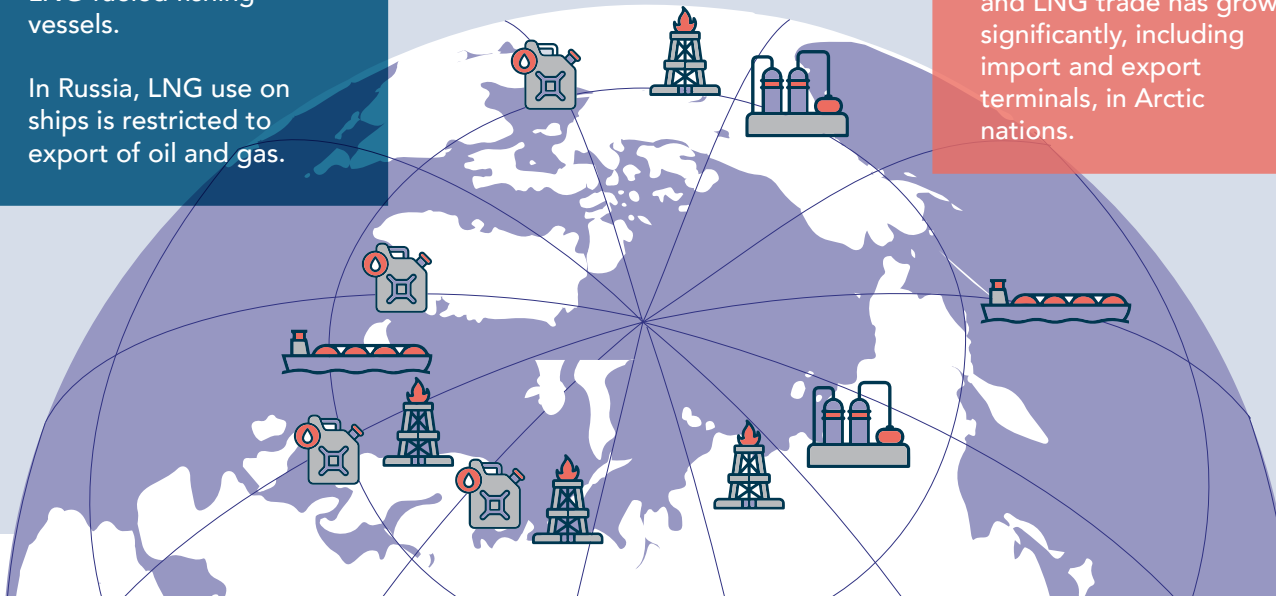
Norway also has LNG-fueled fishing vessels.

In Russia, LNG use on ships is restricted to export of oil and gas.

Russia is the world's second-largest natural gas producer, with approximately **83%** of its gas coming from Arctic territories.

LNG production and use in the Arctic is growing!

Gas extraction, processing and LNG trade has grown significantly, including import and export terminals, in Arctic nations.



The Arctic is at a crossroads that could reshape its maritime future. Promoting the continued use of any fossil fuels, including LNG, will impede the transition to a zero-emission economy.

The Clean Arctic Alliance is calling for:

- 1 Arctic nations to require all ships to **urgently reduce emissions of CO₂, black carbon, and methane by 2030**, and move to alternative, non-fossil fuels and other forms of propulsion;
- 2 ships operating in the Arctic to immediately **switch from heavy fuels to distillate fuels or cleaner non-fossil fuels** in order to cut ship black carbon emissions;
- 3 the **shipping industry to focus on energy-saving practices and technologies**, such as wind propulsion, batteries, low and zero-emission fuels that can deliver air quality and climate benefits; and
- 4 public and private sectors to **stop investing in LNG infrastructure** that will cause further delays for the sector to transition to low and zero emission propulsion and fuels in the future.

Sign the Beyond Methane pledge
<https://saynotolng.org/beyond-methane-pledge/>