Flaring: Air Quality

Flaring is a routine, safe part of operating an LNG facility. This fact sheet explains what's released into the air when flaring occurs and how air quality is monitored and protected.

Will emissions from flaring impact air quality?

Flaring will have little to no effect on air quality in nearby communities.

Nearby residents are already exposed to more emissions (common pollutants, volatile organic compounds and hydrocarbons) from everyday local sources — like cars, trucks, boats, home heating and businesses — than they would be from the Woodfibre LNG facility.

Is air quality in the region monitored?

Monitoring will extend beyond the Woodfibre LNG site. An air-quality monitoring station already operates in Squamish and additional community-based monitoring is being considered. This monitoring would help compare real-world air quality where people live with the results of our modelling.

The ambient air monitoring station in Squamish monitors the air quality in the airshed, including nitrogen dioxide (NO_2), sulphur dioxide (SO_2), particulate matter ($PM_{2.5}$) and ozone (O_3). NO_2, $PM_{2.5}$ and O_3 are used to calculate the hourly Air Quality Health Index, which illustrates the level of air quality risk. The data is publicly available on the **B.C. Ministry of Environment and Parks website**.

What's released into the air when flaring occurs?

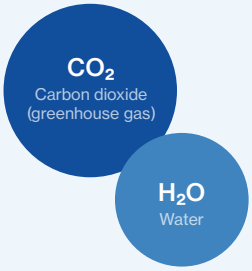
When natural gas is flared, it burns with oxygen to produce mostly CO_2 and water; everything else is a trace byproduct of the combustion process.

The gas being burned in the flare stack is domestic quality — the same gas commonly used in home stoves, fireplaces and heating.

Dispersion Modelling

The dispersion modelling completed by Stantec for Woodfibre LNG's Waste Discharge Authorization permit for air emissions shows that on the highes-emission days at the facility, including during flaring events, levels of key pollutants associated with air quality (NOx, SO_2 and particulate matter) will be **well below British Columbia's Air Quality Objectives in nearby communities.**

Emissions From Flaring



Very Small Percentages of

- CO — Carbon monoxide
- NOx — Nitrogen oxides
- $PM_{2.5}$ — Fine particulate matter
- SO_2 — Sulphur dioxide
- VOC — Volatile organic compounds

Levels of key pollutants associated with air quality will be well below B.C's air quality standards in nearby communities.

Circle sizes are illustrative, not measured data. Flaring produces mostly CO_2 and water; everything else is a trace byproduct of combustion.

Why Flare Rather Than Vent?

Flaring
Gas is burned, becoming mostly CO_2 + water

Venting
Raw methane escapes — a more potent greenhouse gas

Burning natural gas — even imperfectly — releases significantly fewer greenhouse gases than releasing raw natural gas (methane) directly into the atmosphere.

Waste Discharge Authorization – Air

Under the *Environmental Management Act*, Woodfibre LNG is required to obtain a Waste Discharge Authorization (WDA) permit from the BC Energy Regulator (BCER). The permit will authorize air emissions from the facility, including discharge and emissions limits for routine flaring.

Woodfibre LNG's WDA permit application for air emissions includes dispersion modelling for NOx, SO_2, $PM_{2.5}$ and CO emissions for several flaring scenarios. The modelling also accounts for baseline conditions (using the monitoring data from the existing Squamish air monitoring station), emissions from other sources within the LNG facility, emissions from LNG carriers and supporting tugs, plus emissions from the neighbouring FortisBC compressor station. Woodfibre LNG will be applying for this permit this fall.

On the traditional territories of the Sḵwx̱wú7mesh Úxwumixw, Tsleil-Waututh and Musqueam Nations

Woodfibre LNG

Flaring: Air Quality

What Woodfibre LNG Will Do to Reduce Air Quality Impacts

Woodfibre LNG's goal is to minimize flaring as much as possible. The facility has a combination of design, operational and monitoring measures in place to keep flaring to the minimum needed for safe operations.

Flaring Design & Operations

Compressors are a critical component of the cooling process and require large amounts of power to run. Compared to gas-powered compressors, electric-driven compressors require less maintenance and therefore fewer required shutdowns. This reduces the amount of flaring and emissions associated with restarts at Woodfibre LNG.

Minimization

- Multi-nozzle flare tip designed for more efficient, complete burning to reduce the likelihood of black smoke
- Systems will reuse and recycle gas where possible rather than sending it to be flared

Tracking & Reporting

- Flow meters track the volume of gas flared for accurate reporting of emissions from flaring
- BC Energy Regulator (BCER) -approved flaring management report with approximately 20 flaring mitigation measures, used to audit performance

How Flaring Impacts on Air Quality Are Monitored

Ongoing Monitoring
Flow meters & gas chromatographs track flared gas volume, rate & composition

→

Emissions Data
Discharge rates & emissions submitted to BCER (as per WDA permit)

→

BCER Review
Verify compliance with permit requirements and minimization of flaring

→

Assess Impacts
Assess air quality impacts

Regulatory pre-flaring notification: If Woodfibre LNG needs to flare gas in a quantity over 10,000 m^3, the BCER must be notified at least 24 hours in advance. All flaring activity is tracked and reported to the BCER to ensure Woodfibre LNG is operating as expected.

Regulatory Oversight

Regulatory and environmental standards govern flaring in B.C. to protect workers, communities and the surrounding environment.

Woodfibre LNG operates under a multi-level regulatory framework that involves federal, provincial and local agencies and Sḵwx̱wú7mesh Úxwumixw. The BCER provides regulatory oversight for the technical operations of the facility, including use of the flare system.

The BCER will require Woodfibre LNG to measure air emissions from facility sources and monitor air quality in the receiving environment as part of the WDA permit.

Questions or Feedback?

For up-to-date information on flaring at Woodfibre LNG, visit woodfibrelng.ca/flaring.

Share your feedback on flaring notifications and communications at info@wlng.ca.

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