



LADNER ROTARY CLUB

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LIQUIFIED NATURAL GAS “LNG” IN BC

WHAT'S THE STORY



Natural Gas

Average home – 2,700 cubic meters or 100 GJs

1 metric tonne – 52 million GJ's/52,000 homes

Enormous supply in Northwest BC – in four key areas:

- Horn River Basin
- Montney
- Liard Basin
- Cordova Embayment

WHAT'S THE STORY

Liquified Natural Gas

LNG is natural gas that has been chilled to -160°C .

Once chilled, the gas becomes a liquid, condensing to $1/600^{\text{th}}$ of its original volume.

It is now safer and efficient to transport overseas.

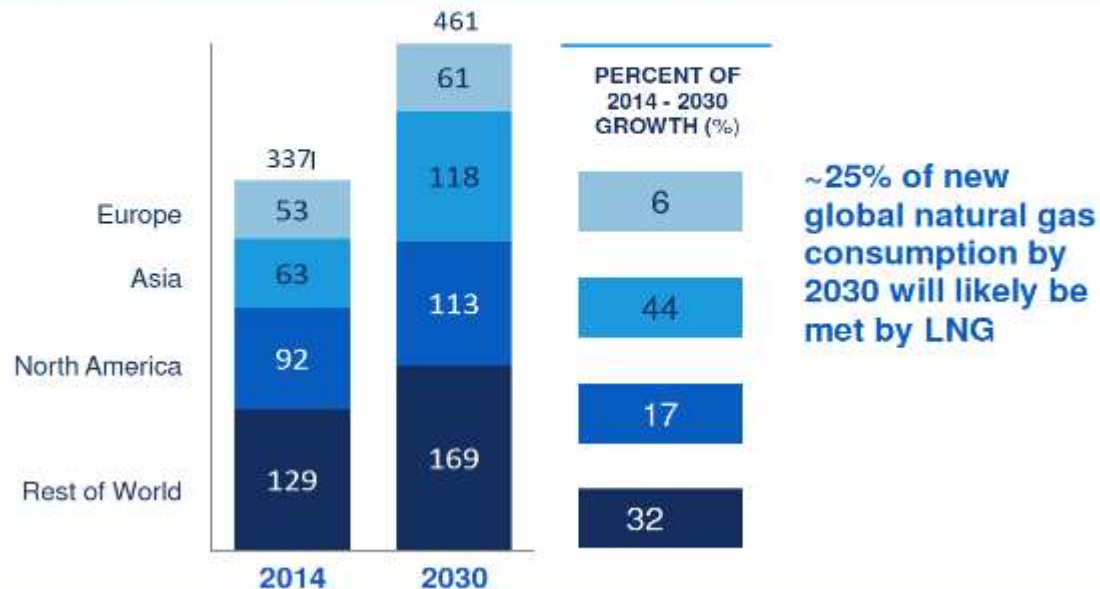
There it is converted back into a gas and used to generate power and heat homes.



GLOBAL DEMAND

Emerging markets driving growth in gas demand – *LNG is likely to meet most of this*

Global natural gas consumption – Billion cubic feet per day (bcfd)



WHAT'S PROPOSED

Pipelines

There are 40,000 km of pipelines in BC.

Additional pipelines are required to transport natural gas to LNG plants

- Pacific Trail Pipeline (PG to Kitimat) – 480 km
- Coastal Gas Link (Dawson Creek to Kitimat) – 650 km
- Prince Rupert Gas Transmission Project (Hudson Hope to Port Edward) – 900 km

LNG Plants

18 projects proposed to produce LNG for export along BC's coast.

- Nine have been granted export approval so far.

2 LNG facilities in BC are serving domestic needs

- Fortis BC's Mt. Hayes storage facility in Ladysmith
- Tilbury LNG in Delta

Economic Development

It is expected that BC's LNG industry will:

- Generate \$150 billion in tax revenue
- Contribute up to \$1 trillion to the provincial GDP
- Create 100,000 direct, indirect jobs

SELECT PROJECT DETAILS

Pacific Northwest LNG/Progress Energy/PRGT - 18 MMTPA

Petronas, JAPEX, Sionpec, Indian Oil, Petroleum Brunei, TransCanada Pipelines Limited FID 2015, Anticipated In Service - 2018

LNG Canada/Coastal Gas Link Pipeline – 24 MMTPA

Shell Canada, PetroChina, Korea Gas Corp, Mitsubishi Corp/TransCanada Pipelines
Waiting for FID

Woodfibre LNG Project/Eagle Mountain Woodfibre Pipeline – 2 MMTPA

Fortis BC
Waiting for FID

WestPac Tilbury Marine Jetty Project – 3 MMTPA

Westpac Midstream – Vancouver LLC
EA in process

FIRST NATION COMMITMENTS

BC SUPPORT FOR FIRST NATIONS

Revenue sharing – Significant income year over year

- Project Agreements provide legacy payments for life of the project(s)

Skills training - \$30 Million

- Labor Market Partnership – Strengthening ties between First Nations and Industry

Shared decision making – \$30 Million

- Environmental Stewardship Initiative (ESI) – Reconcile relationships between the Crown and First Nations, develop technical capacities to improve environmental stewardship.

CLOSE TO HOME



WesPac Tilbury Marine Jetty Project

- Marine jetty, access trestle, loading platform and mooring dolphins.
- LNG infrastructure to receive processed LNG for transfer to marine vessels.
- Natural gas supply via existing adjacent FortisBC Tilbury LNG Plant

OPPORTUNITIES AND CHALLENGES

CHALLENGES

- Low oil and natural gas prices
- Competition from other countries
- Labour uncertainty
- Environmental challenges
- Costs are becoming a bigger issue



OPPORTUNITIES

- Large natural gas resources
- Cold Climate – 25% increase in production
- Close proximity to Asian Markets
- Federal and Provincial support
- First Nation generally supportive
- 2,200,000,000 new middle class consumers by 2030.