

CRYOPEAK
LNG SOLUTIONS



Arctic LNG Feasibility Study



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LNG SOLUTIONS

LNG is complementary to renewables!

25th January 2022

Company Overview

Cryopeak's mission is to be the leading low carbon fuel provider in North America supporting a transition to cleaner more efficient energy sources

Founded in 2012

- Cryopeak enables customers to make a successful transition to a lower carbon energy solution
- 30 Employees based out of Vancouver BC, Canada
- ISO 9001 - Expertise in Engineering, Project Management and Operations
- Proprietary onsite liquefaction, storage, and regasification technology
- Optimized LNG distribution using marine and land based transportation
- Portfolio Company of BP Energy Partners – Dallas, Texas

Virtual Pipeline Solutions



Liquefaction



Transportation



Storage & Vaporization

Northern Canada LNG Facility

Fort Nelson - Facility details

- Phase 1 – capacity 27,000 gpd
- Phase 2 – capacity 100,000 gpd
- 4" gas supply line from the Enbridge T-North Pipeline
- Single Mixed Refrigerant process
- 380m³ LNG storage with truck loadout



The closest supply point to Northern Canada

Optimized transport fleet ensures lowest transportation costs

- LNG transportation is a significant cost in the value chain
- Safely delivered 20,000,000 gallons and travelled over 7,000,000 kms
- Cryopeak maximizes the payload transported to customer sites minimizing transportation costs
- Proprietary fleet of LNG Super B-trains (40% extra payload)



Cryopeak Super B-Trains



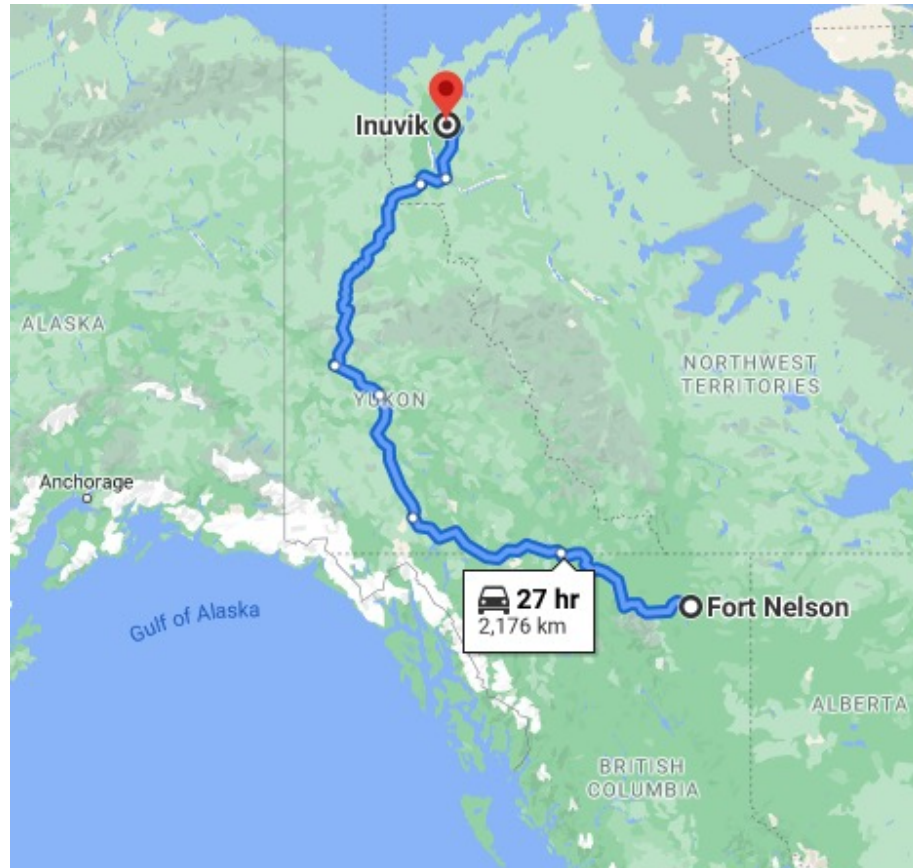
- Cryopeak can provide the largest LNG delivered payload in North America via Super B-Trains 18,500 Gallons / 1,600GJ per delivered load

Remote industrial Power Solutions

- **Mobile LNG storage solutions for various applications**



LNG for Utility Power Generation



LNG in Whitehorse - Utility Power Generation



LNG in Fairbanks AK (Heating)



LNG in Inuvik – power generation



LNG advantage 1 – Emissions



Carbon Dioxide Emissions Coefficients by Fuel

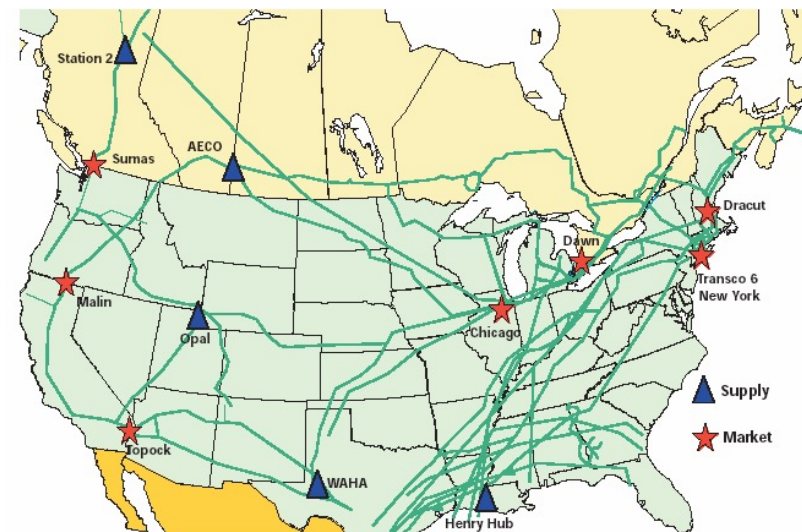
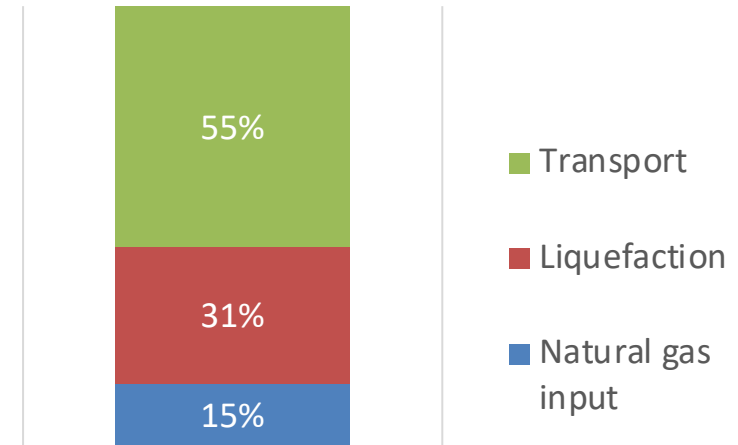
Carbon Dioxide (CO ₂) Factors	Pounds CO ₂	Kilograms CO ₂	Pounds CO ₂	Kilograms CO ₂
	Per Unit of Volume or Mass	Per Unit of Volume or Mass	Per Million Btu	Per Million Btu
For homes and businesses				
Propane	12.61/gallon	5.72/gallon	138.63	62.88
Diesel and Home Heating Fuel (Distillate Fuel Oil)	22.46 /gallon	10.19 /gallon	163.45	74.14
Kerosene	21.78/gallon	9.88/gallon	161.35	73.19
Coal (All types)	4,027.93/short ton	1,827.04/short ton	211.06	95.74
Natural Gas	121.31/thousand cubic feet	55.03/thousand cubic feet	116.65	52.91
Gasoline	18.74/gallon	8.50/gallon	155.77	70.66
Residual Heating Fuel (Businesses only)	24.78/gallon	11.24/gallon	165.55	75.09
Other transportation fuels				
Jet Fuel	21.50/gallon	9.75/gallon	159.25	72.23
Aviation Gas	18.32/gallon	8.31/gallon	152.46	69.15

***Natural Gas has the lowest emissions
Also can fill both heating and power generation needs***

LNG Advantage – Cost and supply

- Northern BC has the lowest gas prices in North America
- Cryopeak buys natural gas from “Station 2”
- Possible to lock in prices for up to 10 years
- Volatile gas commodity is a small part of the delivered price to the customer
- When gas prices increased 100% in 2021, Cryopeak’s delivered price increased 7.5%
- LNG pricing was far more stable than other fuels
- In Canada Gas Powered Electrical generation expected to increase market share (at the expense of coal)

LNG PRICE BREAKDOWN



Power Generation

- Renewable fuels are the best source of electrical power but have some challenges
- May be intermittent or can not keep up with demand growth or uneconomic to meet peak demands
- Back up power generation is normally required
- LNG can fill the gap as the cleanest and lowest cost fuel source

Heating

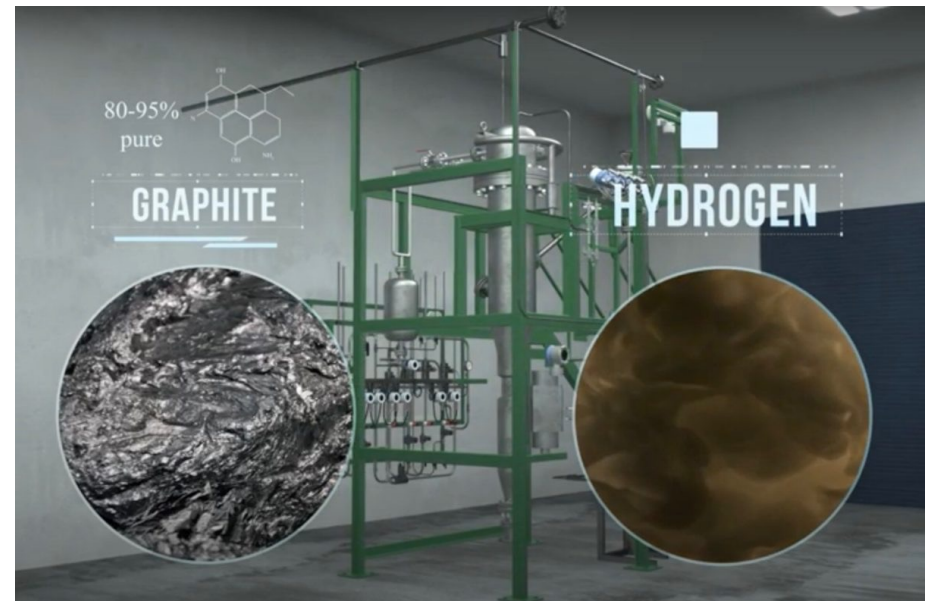
- Gas heating is highly efficient for space and water heating
- Local gas grid enables consumers to connect with a centralized facilities
- Local gas grids are common across Canada traditionally
- LNG / Natural Gas is good for very low temperature ambient environments

LNG enables communities not connected to the major gas pipelines to have access to natural gas

Possibilities in the future

- Renewable natural gas supply is increasing
- LNG as a carrier for Hydrogen (CH_4)
- New processes can split LNG into hydrogen and solid carbon

LNG



*Demonstration plants in
Australia*

A hybrid power plant



Gold Fields' Agnew gold mine in Western Australia. The 56-megawatt (MW) Agnew hybrid renewable microgrid system

Our Reference list



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