

# ARCTIC MARINE NATURAL GAS SUPPLY CHAIN STUDY



Perspectives Gathering Workshop  
Day Two | January 26, 2022

**Bruce Winchester**

Executive Director

Canadian Natural Gas Vehicle Alliance | Alliance  
canadienne pour les véhicules au gaz naturel

# Project Objective

Investigate the feasibility of Liquefied Natural Gas (LNG) as a marine fuel in Canada's Arctic Region

- Technology readiness
- Economics and business case
- Environmental risks and benefits
- Infrastructure requirements
- Human resources requirements
- Regulatory aspects
- Implementation scenarios
- Potential benefits to Canada and to the Arctic Region



# Why are we considering LNG?

## Drivers

- HFO ban
- Black carbon (BC) emissions reduction
- Sulphur Dioxide (SO<sub>x</sub>) emissions reduction
- GHG reduction
- Air pollution impact (PM, NO<sub>x</sub>) on human health and environment
- Fuel spill risk reduction

## Opportunities

- Clean burning
- GHG reductions of 20 to 30% achievable
- Abundant global supply = lower fuel costs
- Ship technology commercially available now
- Biofuel and synthetic fuel net-zero options

## Risks

- Methane emissions
- Fossil fuel supply chain

# Project Timeline

		2021												2022					
No	Task	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun
1	Technological Readiness	█																	
2	Economics							█											
3	Environmental							█											
4	Infrastructure								█										
5	Human Resources											█							
6	Regulations											█							
7	Implementation														█				
8	Benefits to Canada														█				
	Milestones			?							?				?			?	?
	Sharing Perspectives: Workshop													◇					

# Status of the Work

- Task 1 – Technology Readiness Review – Completed March 2021
- Task 2 – Economic Aspects and Benefits – Completed October 2021
- Task 3 – Environmental Risks and Benefits – Completed October 2021
- Task 4 – Infrastructure Options – started – to be completed March 2022
- Task 5 – Human Resources – started – to be completed March 2022
- Task 6 – Regulatory – started – to be completed March 2022
- Perspective Sharing Workshop – January 25<sup>th</sup> and 26<sup>th</sup> – Arctic; Indigenous; and Environmental perspectives
- Those interested in joining the project can contact Bruce Winchester – Executive Director of CNGVA
- Project Completion – anticipated July 2022



# Who is participating?

- Original Equipment Manufacturers – marine engines and fuel systems
- Marine consultants
- Natural gas and LNG consultants
- Ship operators
- Gaseous fuels providers
- Federal Departments and Agencies
- Provincial and Territorial governments
- Arctic Communities and Economic interests
- Indigenous organizations
- Environmental non-governmental organizations



# Thank You!

Contact: **Bruce Winchester**

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