

IMO Symposium

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# Methanol:

## A Clean, Cost-Effective Marine Fuel Solution

Paul Hexter

President, Waterfront Shipping



Shipping Company Limited  
A Responsible Care® Company

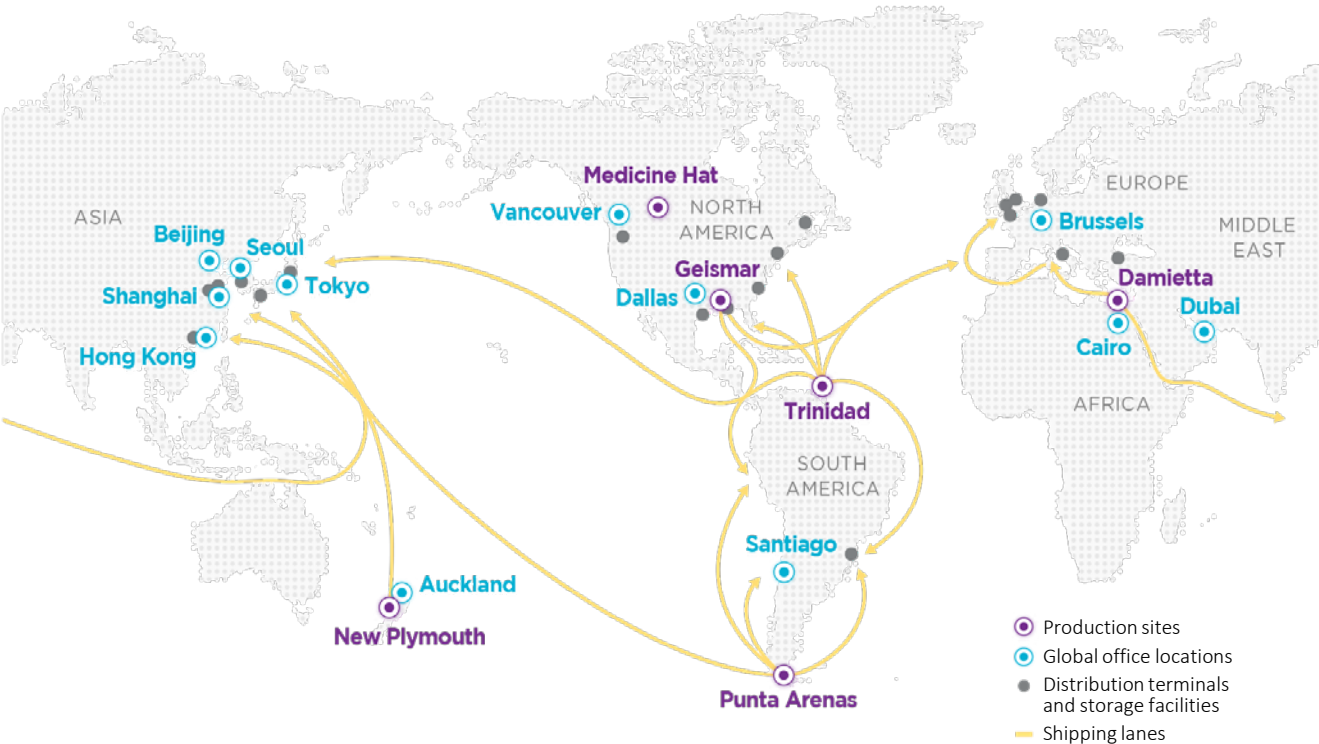


# Methanex and Waterfront Shipping



# Methanex

The world's largest producer and supplier of methanol to major international markets



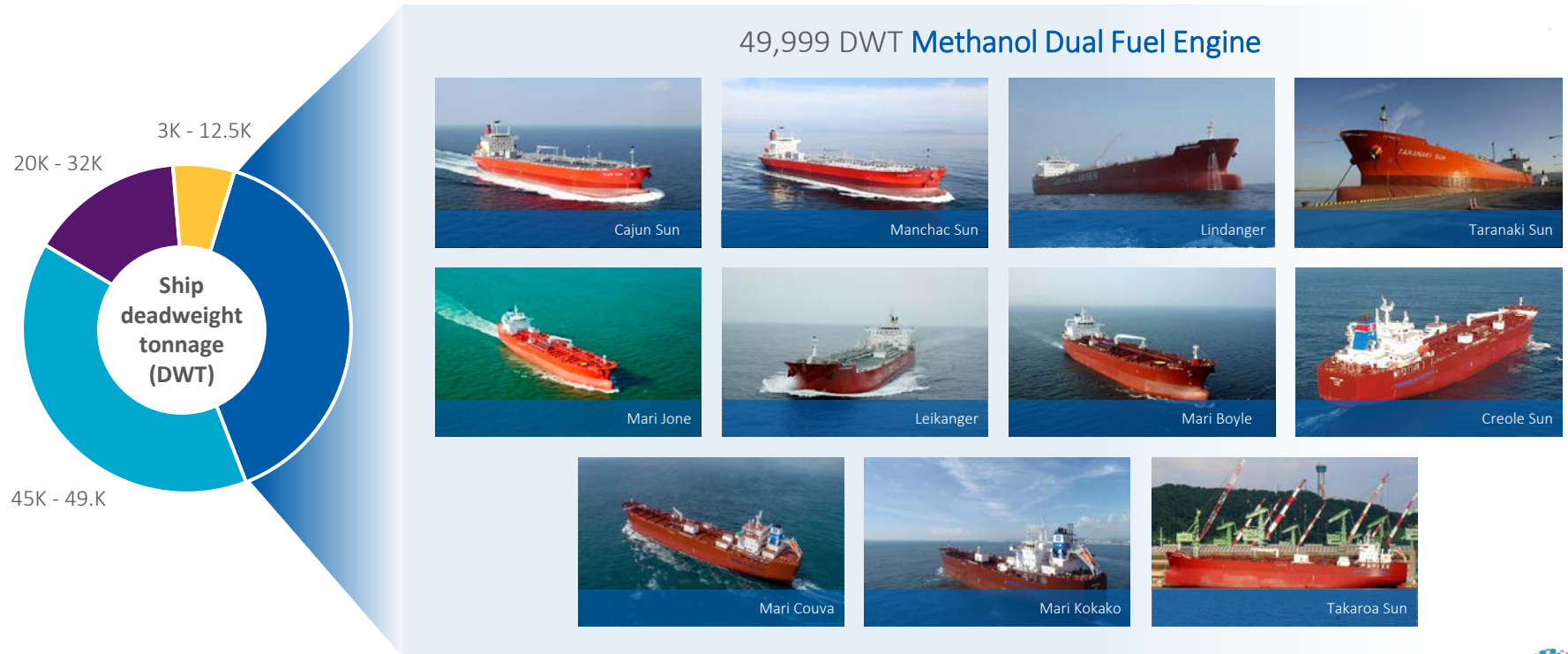
Headquartered in Vancouver, Canada, Methanex operates production sites in Canada, Chile, Egypt, New Zealand, the United States and Trinidad and Tobago.

## Our global operations are supported by:

- an extensive global supply chain of terminals
- storage facilities and
- the world's largest dedicated fleet of methanol ocean tankers.

# Waterfront Shipping fleet

Approximately 60% of our long-term fleet will be methanol capable by 2023





# About Methanol

# Methanol

*An essential ingredient of modern life*

## Traditional Chemical Market

Essential ingredient used in countless industrial and consumer products

*Slightly over 50% of global demand*



## Clean and Economic Alternative Fuel

Represents a growing demand segment for methanol

*Just under 50% of global demand*

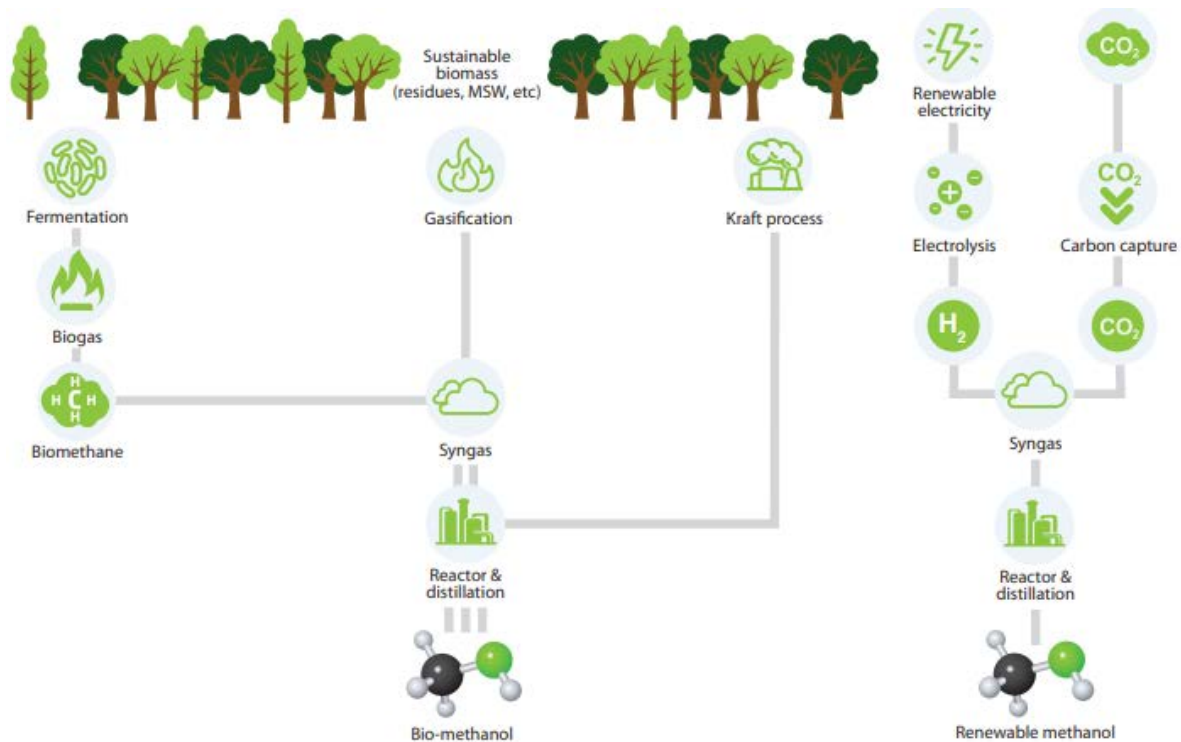
### Fuel applications



### Methanol-to-olefins (MTO)



# Decarbonization pathway to meet IMO 2025 goals



An aerial photograph of a large industrial offshore platform, likely a liquefied natural gas (LNG) carrier, docked at a pier. The platform is a complex of white metal structures with numerous pipes, ladders, and walkways. A prominent yellow crane is visible on the deck. The platform is situated in a body of water, with a pier and other industrial structures in the background under a cloudy sky. A semi-transparent blue rectangular overlay is positioned on the left side of the image, containing the text 'Waterfront Shipping Experience'.

# Waterfront Shipping Experience



# Key learnings



- First-of-its-kind construction
- Relatively short R&D phase prior to construction
- Not a diesel fuel
- Uncovering right mix for sensors, injectors, valves, etc.
- Low viscosity & lubricity
- Low flashpoint



## Lower emissions:

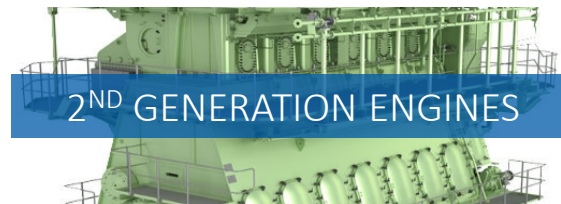
- SO<sub>x</sub>
- NO<sub>x</sub>
- PM
- CO<sub>2</sub>

## Improved fuel efficiency

- 2-3% at full load

## Run time

- Over 100,000 hours & almost 5 years of operations



- Methanol block is simplified with standard components
- FBIV is simplified in design
- Cooling oil is omitted and sealing system is simplified
- Tier III NO<sub>x</sub> compliance with water blending

# Methanol Adoption



# Methanol as a marine fuel

*Methanol is safe, clean and cost-effective*

## Environmental

- Low emissions
- Safe, environmentally friendly
- Bio-degrades rapidly in water

## Available

- Available globally
- Long history of safe handling
- Straightforward bunkering with existing infrastructure

## Affordable

- Low incremental investment
- Competitive fuel costs
- Liquid fuel flexibility

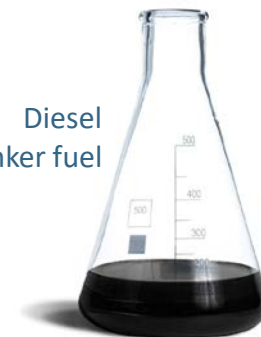
## Proven

- Successfully in use today
- Commercialization activity expanding

Methanol



Diesel  
bunker fuel



# Summary



# Key takeaways

*Positive outlook for methanol marine fuels*



Meets current and future emission regulations

Dual fuel engine technology is proven at a commercial scale

Practical and cost competitive alternative marine fuel

Provides a pathway to 2050 decarbonization goals



# Growing investment and interest in methanol vessel technology





# Thank you for attending!

Contact:  
[publicaffairs@methanex.com](mailto:publicaffairs@methanex.com)



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[wfs-cl.com](http://wfs-cl.com)



[methanex.com](http://methanex.com)