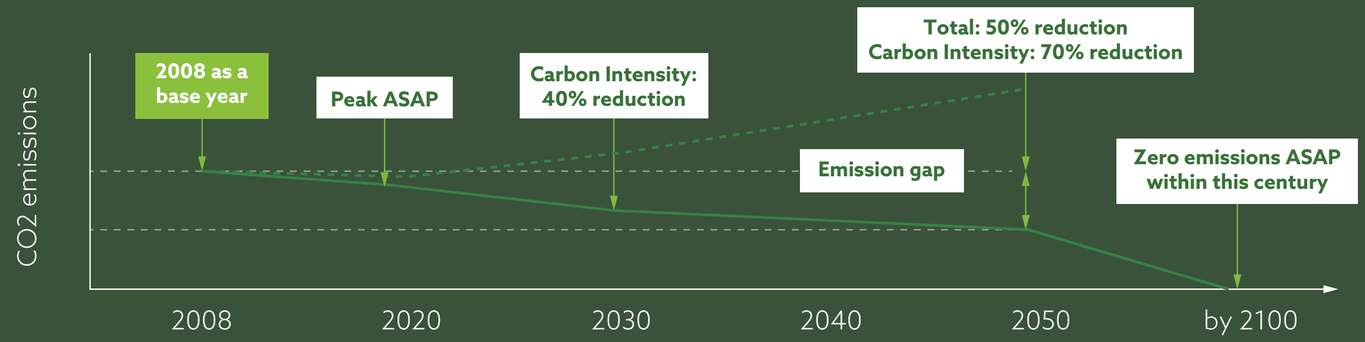
Methanol:
Tomorrow's marine fuel, today

Shipping's challenge today

In the wake of International Maritime Organisation (IMO) regulations which seek to reduce the carbon intensity of the shipping sector by 40% in 2030 and 70% by 2050, the shipping industry must rise to the challenge of decarbonisation.

Methanol, as a cleaner-burning fuel which is increasingly produced from sustainable sources, provides a clear pathway to reducing greenhouse gas emissions across the shipping sector.

Initial IMO strategy on reduction of Greenhouse Gas (GHG) emissions: Vision and ambitions



Short-term 2018-2023

- Tighter Energy Efficiency Design Index and Ship Energy Efficiency Management Plan
- Energy-efficiency indicators
- Speed reduction
- National action plan

Mid-term 2023-2030

- Energy-efficiency measures for new and existing ships, using new indicators
- Carbon Pricing/Market-Based Measures
- Plan for low-carbon fuels

Long-term 2030

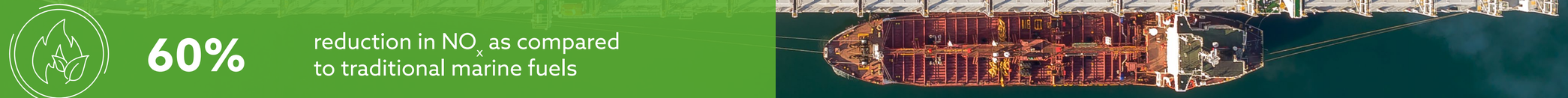
- Development of zero-carbon fuels
- New/innovation emission -reduction mechanisms

Methanol: a ‘future proof’ marine fuel

As a marine fuel, methanol is safe to handle, cost-competitive and widely available.

Methanol produced from natural gas produces no sulphur dioxide or particulate matter, and reduces quantities of nitrogen oxide by 60%. Methanol represents a 10-15% reduction in carbon dioxide emissions compared to traditional marine fuels, and is also readily biodegradable in water, making it far less damaging for the environment compared to conventional oil-based marine fuels.

Methanol is widely available at ports worldwide, as part of established infrastructure, and requires minimal adjustment to existing engine technologies when used as a fuel.



60% reduction in NO_x as compared to traditional marine fuels

~0 methanol virtually eliminates particulate matter

100% methanol eliminates sulphur dioxide

The methanol pathway

Methanol is a highly effective pathway fuel - bridging the gap from fossil-based to renewable energy – which provides significant reductions in emissions even when produced from natural gas.

Production of ‘green’ methanol from sustainable sources such as waste, bio-mass or renewable energy is growing and highly scalable. When used as a marine fuel green methanol delivers further environmental benefits, reducing CO_2 emissions by over 90% - making methanol one of the best alternative marine fuels both for now and the future.

Proman has investments in a number of projects to increase the global supply of renewable methanol, helping to ensure its availability for use as marine fuel.

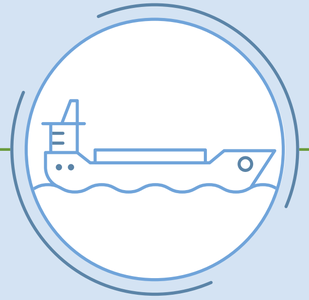
10-15% CO_2 savings with grey methanol

>90% CO_2 savings with green methanol

Grey Methanol

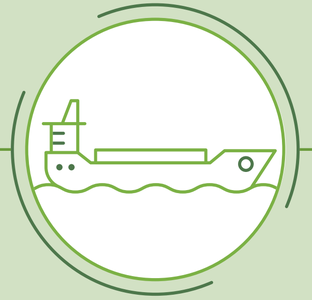
Widely available today

Blue Methanol



Growing availability through low-carbon production and blending

Green Methanol



Growing investment year-on-year

Methanol is safe and readily available

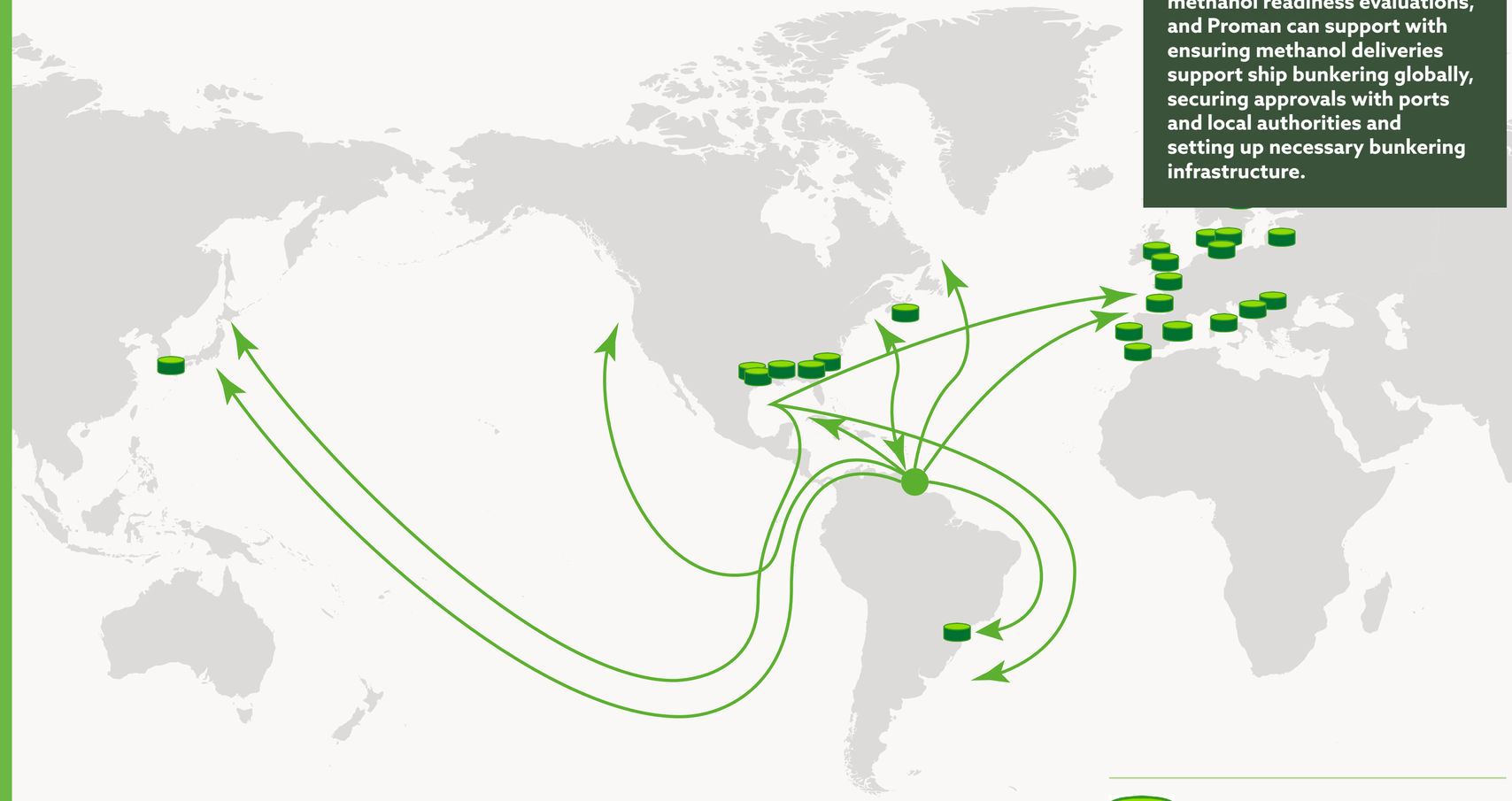
Unlike other alternative fuels, methanol is liquid at ambient temperatures, meaning that minimal alterations to bunkering and storage infrastructure are required for methanol to be used as a marine fuel.

Dual-fuel engines, such as those used in the state-of-the-art Proman-Stena IMOIIMeMAX vessels, allow shipowners to make modest incremental investments to upgrade fleets, and make the switch between fuels cost-effectively whilst remaining compliant with environmental regulations.

~ 30 new methanol fuelled vessels on order from Original Equipment Manufacturers (OEMs)

>100 ports have existing facilities to store methanol worldwide

Methanol is already available over 100 ports worldwide, including all major bunkering hubs. Major ports are conducting methanol readiness evaluations, and Proman can support with ensuring methanol deliveries support ship bunkering globally, securing approvals with ports and local authorities and setting up necessary bunkering infrastructure.



Distribution & Storage Hub

Current Shipping Routes

Proman: Adding value throughout the shipping and fuel supply chain

As the second largest global producer of methanol, active in the transportation of methanol to all major bunkering ports and with significant investment in green methanol production, Proman is ideally positioned as your partner throughout the clean shipping fuel value chain.

Production

Proman is investing in green and blue methanol supply, and can provide certification and attestation of its environmental attributes, leading to a portfolio of reliable global supply locations

Logistics and Physical Supply

Proman's fleet transports methanol fuel supply to global bunkering locations, utilising its established global logistics capabilities

Price hedging and environmental attribute management

Proman offers short and long-term pricing options based on various structures and can optimise the realisation of environmental attributes through physical supply, book and claim, and/or physical swaps

Bunkering

Proman is investing in global bunkering facilities, and can create partnerships with operators and customers for bespoke bunkering operations

Ship Owner

Proman, along with its partners, can further invest in new ships and help provide structuring, financing, and ship operations

Proman's methanol dual-fuelled vessels

Proman is committed to developing a greener shipping future. We are building six state of the art methanol dual-fuel vessels, three of which are part of our joint venture with Stena Bulk. Fully re-engineered for low resistance and efficient propulsion, these IMOIIMeMAX vessels will be amongst the most energy efficient and eco-friendly medium-range tankers in the world.

Our third vessel, the Prosperous, will be utilised by Stena Bulk within their traded pool of ships for an initial 2-3 years, while the Provident and Progressive will be traded by Proman in the open market from 2024. These will be the first methanol dual-fuel vessels traded on the chemicals and Clean Petroleum Products (CPP) market, enabling third party shipping companies to experience first-hand the benefits of our 100% renewable-ready methanol-powered tankers.

Engine:
Methanol Dual Fuel (MAN B&W 6G50ME-C9.6 MW Tier III)

IMO II –:
18 Cargo Tanks

Methanol consumption:
~40-46 MT/Day

Size (DWT):
49,900 MT

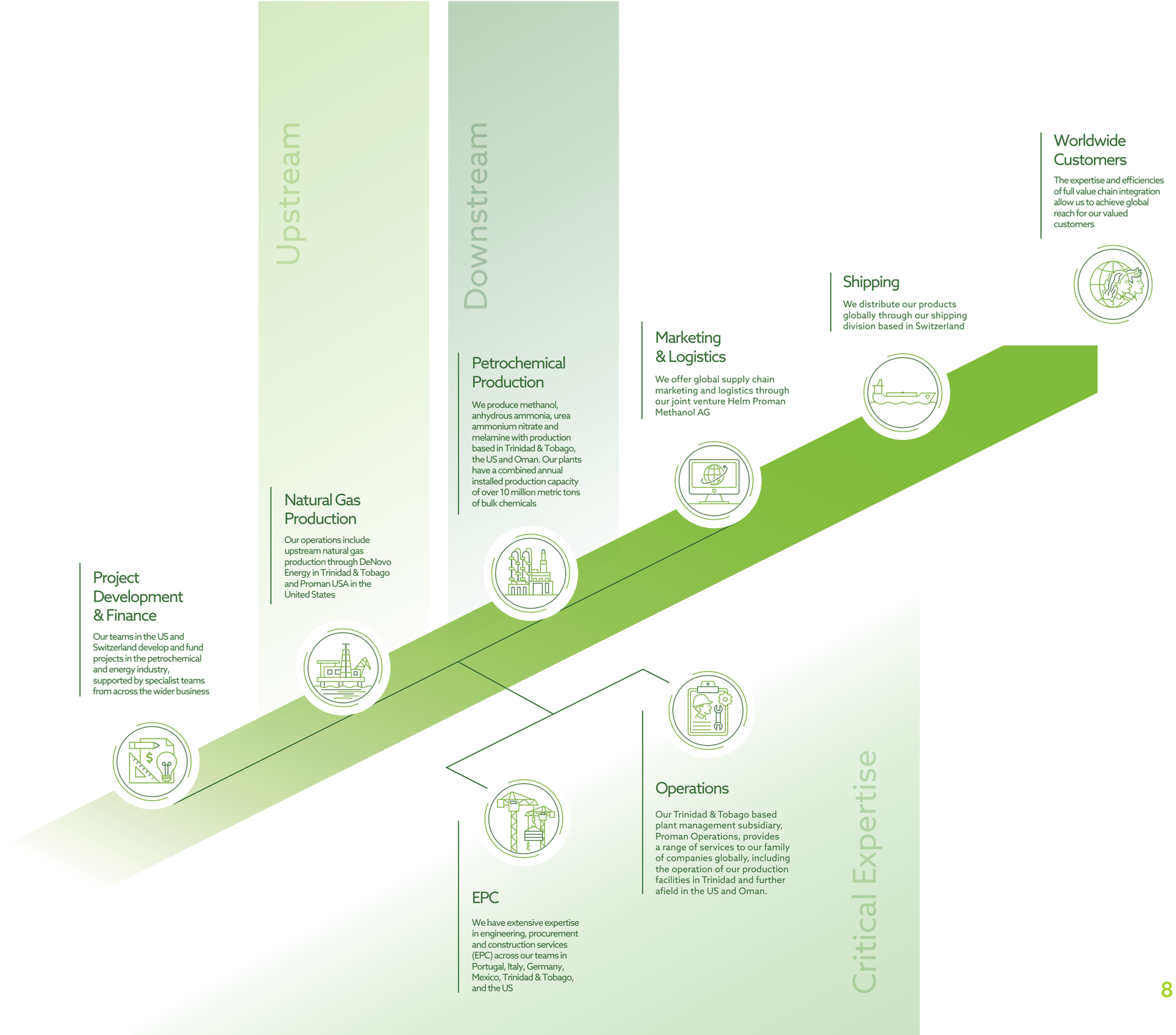
Fleet Size No.:
6

Delivery:
2022 and 2023

Who we are

Proman is an integrated energy company and global leader in methanol and ammonia and other fertilizers. Using our unique, fully-integrated approach, we deliver value across the entire supply chain from project development and production to marketing and logistics.

Proman operates its own fleet of vessels, as well as a global network of methanol storage facilities in all major markets, and from 2022, four methanol-duel fuelled vessels, three of which are part of our joint venture partnership with Stena Bulk. Proman is further investing in methanol's potential with sustainable projects including Varennes Carbon Recycling in Québec, Canada. These projects will help increase the availability of renewable methanol for use as a marine fuel as well as a range of other applications.



Contact us

For more information about Proman and Methanol as a Marine Fuel, please visit:

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