

First a Cargo, Now a Fuel – The Business Case for Shipping on Gas Solidifies

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WITH THE ADVENT of LNG (liquefied natural gas) and the capability to ship gas in large quantities from resource-rich regions to consumers,

it was immediately apparent to the ships' engineers that the best use for the modest boil-off gas would be to fuel the engines. Perhaps many thought it would end there – large, ocean-going vessels consuming a tiny fraction of their cargo. New regulations are coming into force in North America and around the world that will dramatically lower the allowable exhaust pollution from ships when operating near coastlines or on inland waterways. The impact of these new emissions restrictions has been a major concern for the shipping industry – meeting them would mean changing to different diesel fuel types AND costly exhaust after-treatment equipment – at a time when diesel prices offer little hope of decreasing.

In comes natural gas – clean, abundant and in many instances, considerably more economical than diesel on an energy equivalency basis. And fortunately, the technology to run these ships is not sitting in a science laboratory – it is well established and in use throughout the world. In Scandinavia natural gas, specifically LNG, has been in use for more than a decade in offshore supply vessels, light cargo vessels, passenger and car ferries and much more.

Recent developments in North America are a strong signal that the industry is fast catching on:

- In August 2011, the Staten Island Ferry received \$2,340,000 in



federal funding for a program to convert one a famous ferry from diesel fuel to liquefied natural gas, significantly reducing pollution but also greenhouse gas emissions by 25 per cent.

- In October 2011, a contract was awarded to supply liquefied natural gas propulsion equipment for two advanced offshore supply vessels owned by Harvey Gulf International Marine. These supply vessels will be the first ever U.S. flagged platform supply vessels (PSV) to be powered by clean, safe and efficient LNG.
- In November 2011, the Government of Quebec announced two new ferries, to be built in Quebec, will be powered by LNG. Delivery of these new ships is planned for the fall of 2013 and spring of 2014. The ferry fuel will be supplied by Gaz Metro Solutions Transport.
- In Washington State, two large Puget Sound-area ship operators are planning to spend \$100 million each to convert their vessels from diesel fuel to liquefied natural gas.

- In British Columbia, BC Ferries Corporation is currently evaluating using LNG in its passenger and vehicle ferry system.

Opportunities for natural gas fuelled shipping are growing by the day. Abundant and lower cost, cleaner, easily adaptable – all reasons why shipping is making the switch to natural gas – today. 💧

Westport Innovations Inc. is a leading global supplier of proprietary solutions that allow engines to operate on clean-burning fuels such as compressed natural gas (CNG), liquefied natural gas (LNG), hydrogen and renewable natural gas (RNG) fuels such as landfill gas and help reduce greenhouse gas emissions (GHG). Westport technology offers advanced LNG fueling systems with direct injection natural gas engine technology for heavy-duty vehicles such as highway trucks and off-road applications such as mining and rail. Cummins Westport, a joint venture with Cummins Inc., designs, engineers and markets spark-ignited natural gas engines for North American transportation applications such as trucks and buses. The Westport LD division is one of the global leaders for natural gas and LPG fuel in passenger cars, light-duty trucks and industrial applications such as forklifts. To learn more about the business, visit www.westport.com.