Greenhouse Gas emissions, its impacts and measures

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Mr Sharad Sinha is a DMET graduate and began his sea career in 1988. He served in Great Eastern shipping company and Chowgule Steam ships before moving on to Denholm Ship Management, Glasgow, where he served as Chief Engineer till 2001. He joined Reliance Ports and Terminals in 2001 before moving to Wartsila India in 2004. Mr Sinha headed Wartsilä' India Ship Power division until 2014, responsible for Wartsila's business in India, Bangladesh and Sri Lanka. He then moved on briefly to the shipyard segment and served with modest Infrastructure ltd as COO for one and half year. He then joined back Wartsila in Dubai where he currently works as Segment sales General Manager, Merchant and Gas Carriers, responsible for segment's business for Middle East and South East Asia.

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Abstract

Exhaust emissions have climate related impacts, local air quality and health impacts. Legislation and effective measures have helped to reduce SO2 emissions in the USA and Europe. Life expectancy has increased across much of Western Europe and North America but decreased elsewhere. There are many different sources of anthropogenic greenhouse gases. Emission of greenhouse gases cause a warming and changing of climate. However, not all greenhouse gases have an equal influence on climate change

GHG emissions has to be considered in the whole value chain. Well-To-Tank, Tank-To-Propeller and Well-To-Wake emissions are clearly related to the emissions and to marine industry. Fuel production also causes GHG emissions. Fuels containing less carbon emit less GHG during the tank-to-wake phase. Biofuels can have negative well-to-tank emissions as they absorb CO2 from the atmosphere during "production" or growth. Many options exist to reduce GHG emissions. Fuel de-carbonization, utilizing fuels with a lower carbon content, lowering non-CO2 emissions are some such options. Prime example is CH4 emitted from gas engines. Wartsila is committed to further reduce GHG emissions and reducing the environmental impact of its engines to a minimum. We will reduce greenhouse gas emissions from gas engines by 15% from 2015 to 2020. We continuously develop new technologies and upgrade existing ones in order to limit harmful emissions into the atmosphere. This is achieved through, for example: the development of gas and dual-fuel engine technologies and industry leading developments in hybrid /electric propulsion for ships GHG emissions from Wartsila engines have been decreasing for decades. Wärtsillä gas engines now outperform Wärtsilä diesel engines by 12-30%. Diesel and gas engines produce greenhouse gases but gas engines compare favorably to diesel engines. Higher engine efficiency and lower emissions is the key to achieving the results. During 2017, Wärtsilä identified and determined the technology packages for the reduction of greenhouse gas emissions. Product specific implementation schedules were also decided. Greenhouse gas emissions from gas engines were already 7% below the baseline year. Let us remember that power generation and transport also have a huge positive impact. Power generation and transport has lifted billions of people out of poverty and continues to do so. Transportation has contributed in many ways to improve human life and well-being. From humanitarian assistance to rapid sharing, food and pharmaceutical transportation does benefit mankind in ways that are not always appreciated.

Power is great, as long as it is produced with great care. Let's build a sustainable society together.