

Decarbonisation and Digitalisation – Navigating the Rapid Transition Together

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The lower carbon shipping transformation is happening rapidly as the world strives to reduce greenhouse gas emissions. Over the last 10 years progress has been made with the introduction of lower carbon fuels, such as Liquefied Natural Gas (LNG). Now the global maritime industry aims to be carbon neutral; deeper and faster reductions require new technologies, new fuels and significantly efficiency improvements achieved through digitisation.

Shipping transports 80-90% of the world's trade and produces 2-3% of the world's emissions consuming ~230 MTPA of fuel oil across 32,500 ships (GTR > 5000 tonnes).

Although IMO targets a 50% reduction in shipping emissions by 2050, this is not seen as enough. Some customers like Ikea, Amazon and Unilever have made a pledge to achieve zero carbon shipping by 2040. At COP26 in Glasgow, signatory countries involved in the 'Clydebank Declaration' agreed to support the establishment of at least six green corridors by 2025, which will require developing supplies of zero emissions fuels, the infrastructure required for decarbonisation and regulatory frameworks.

Designing new ships, producing zero carbon fuels and building out the global infrastructure to enable the rapid and radical transformation requires close collaboration across multiple industries. Woodside Energy are focused on producing and delivering low and zero carbon fuels to enable our customers' decarbonisation efforts - Woodside supplies countries with net zero commitments and we will make the products they need to achieve those goals, including marine.

We envisage a marine business that is more fuel efficient and more systems-integrated between designers, shipbuilders, ports, fuel suppliers and customers, creating an ecosystem and a carbon neutral brand value that can pass to the final customer.

Digitalisation will enable lower rates of fuel consumption, in the form of route planning, ship designs with less aero and hydrodynamic resistance, and full autonomy. Hybrid electrification will be supported by batteries, and some blue water ships will self-generate power from wind and solar, and all ships will connect to green power while in port.

Carbon neutral manufactured fuels are available now, and for long distance marine and aviation they are the only feasible choice. Lower carbon ammonia is not perfect but it's available now and if it's shortcomings can be overcome, the cost, availability and scale aspects suggest that it will be widely adopted - it is the most efficient way to transport and store hydrogen.

Speaker's Short Biography:

Neil is the Chief Scientist at Woodside Energy Ltd., Australia's leading natural gas producer, pioneer of Australia's liquified natural gas (LNG) industry. Neil promotes this pioneering spirit to solve future global energy challenges.

An engineer with a 36-year international oil and gas career, Neil has worked in production, engineering, exploration and new technology roles in North Sea, Netherlands, Brunei, Oman and Australia. Neil has a passion for solving important problems with step change innovation by building self-motivated communities who want to make a difference.

Neil is from Leeds, UK, and graduated from University Of Manchester with degrees (B.Eng, B.Sc (Hons)) in Engineering and Management in 1986. He is an Adjunct Professor with the Centre for Offshore Foundation Systems at University of Western Australia and a Director of the Society of Petroleum Engineers. Neil is a member of the Federal Government Higher Education Research Commercialisation IP Framework working group. Neil is married to Annie, has four children, and in his spare time runs a small farm.