

Hydrogen-Powered Vessels for Offshore Wind Service

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For the offshore wind industry producing green energy, there is increased sensitivity for the support infrastructure to be part of the decarbonization effort as well. Are there future opportunities to use Hydrogen as fuel for offshore vessels supporting the offshore wind industry? This high-level use case explores the integration of hydrogen fuel cells on newbuild maritime assets with currently available technology in the marketplace.

There are many drivers for decarbonization in the maritime sector. However, the challenges in quickly adopting these new technologies are great. Critically, there are two major factors influencing this. First, the financial investment for large vessel adaptation of fuel cells as the primary source of energy adds a substantial premium compared to conventional vessel design. Second, there are still many practical engineering challenges to overcome; significantly, how to store hydrogen as fuel on board a vessel.

While this use case explores a singular application of hydrogen in the offshore industry, it is noted that future drop in hydrogen prices may make this a viable option. In the interim case, there are some options to consider; waste heat recovery from fuel cells, hybrid alternatives (combination of diesel fuel, battery & fuel cell), and ammonia or methanol as the energy vector.

