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North Sea Wind Power Hub Programme

Lessons learned from the European Offshore Wind to Hydrogen project

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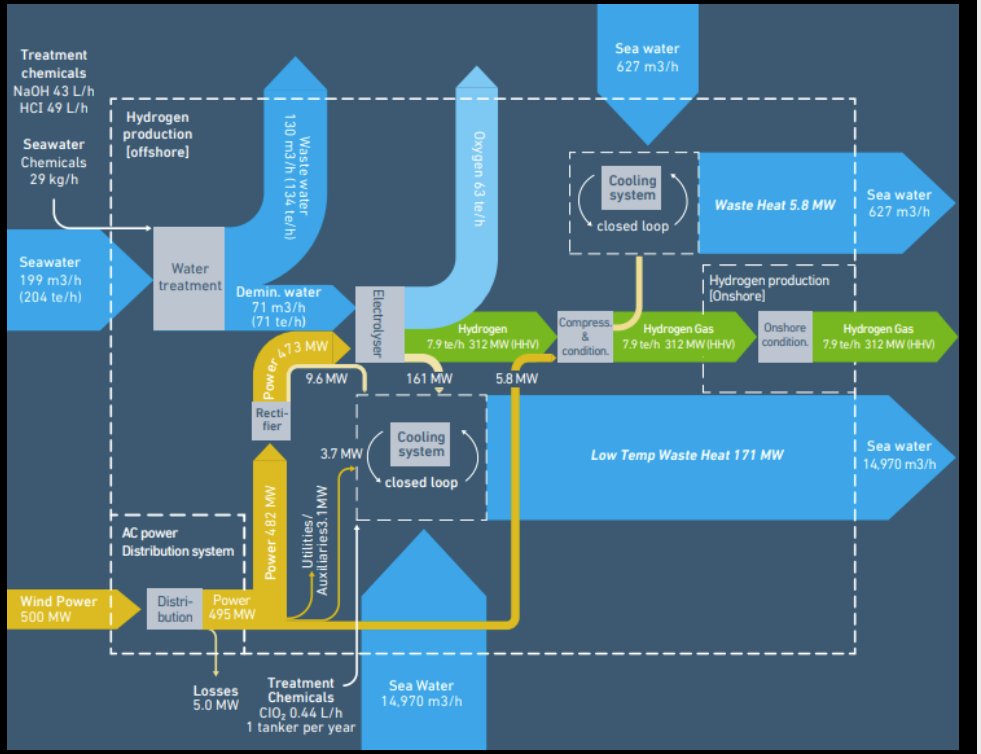
Introduction

Driven by European Union's 2050 decarbonization targets, **hydrogen production from offshore wind resources** is advancing and offering useful insights for the American market.

OFFSHORE WINDPOWER



Acknowledgements

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Mott MacDonald was the lead Engineering Consultant, advising on the feasibility assessments to the North Sea Wind Power Hub Programme.

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Download the feasibility studies and other resources

Water resources

- Water resources are needed for multiple purposes, including hydrogen production and cooling.
- Seawater resources will require additional water treatment processing to prepare the water for electrolyzers.

Power curve assessment

- Power demand curves of the offshore wind generators must be performed to optimize the efficient production of hydrogen gas production.

Conceptual design

- There are many electrolyzer designs to consider, including onshore generation, hub structure, artificial island, and hydrogen wind turbines.
- The delivery of the fuel and whether it is injected into an existing pipeline, storage, or dedicated pipeline will inform the design of the system.

Strategic planning

- Feasibility studies are necessary to identify opportunities, socialize concepts, and avoid costly pitfalls.
- Cost reductions can be supported through modular and scalable construction.

Delivery cost

- It's more cost-effective to transport hydrogen gas to shore via pipeline than it is to transfer electricity via HVDC system.