TRACTEBEL ENGIE OVERDICK

H_2 Hydrogen Offshore Energy

Large-Scale Offshore Hydrogen Production

The new generation of the Tractebel designed large-scale offshore hydrogen production platform offers significant improvements. Further optimizations of the system configuration and platform layout lead to an overall cost reduction and competitive levelized cost of hydrogen.

The updated concept design bases on a full concept updated of the previously presented 400 MW hydrogen production platform. The engineering team of Tractebel optimized the equipment arrangement in conjunction with the system definition. The overall topside volume has been reduced by more than 25%.

Scale-up Target

A further focus of the update and the optimization has been the implementation of a concept which allows an effortless upscaling of the platform regarding the overall capacity. Hence, now the platform is offering a good basis for large-scale offshore hydrogen production in the range of 100 MW to 800 MW. This covers the identified market demands and reflects the needs of our clients.

Versatile by Add-On Modules

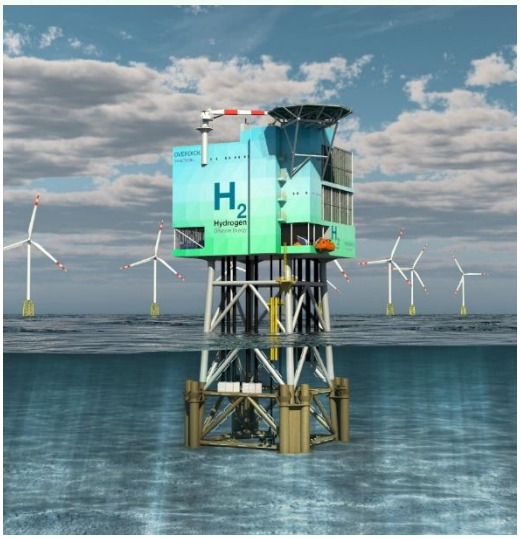
As the global market demands a variety of different operating cases, the hydrogen platform can now be extended by specific modules which are increasing the flexibility and the overall performance. The add-on modules comprise a high-voltage export module, allowing to export electricity in parallel to hydrogen, an interconnection module to operate the hydrogen platform in a cluster of offshore high voltage substations and an offshore hydrogen bunkering module, allowing the direct supply of hydrogen to the assets operating in the field.

Key Characteristics:

- Optimized concept of 400 MW offshore hydrogen production platform (80,000 m^3/h H_2 production)
- Scalable concept for ranges from 100 MW to 1.2 GW offshore H_2 production
- Significant reduction (min. 10%) on LCoH compared to previous platform concept
- Add-on modules for flexible integration of hydrogen platform into offshore infrastructure

Ready for Future Markets

The new type of platform model will enable the enormous potential of large-scale offshore wind farms, e.g. in the German North Sea, to be used at an industrial scale (up to 800 MW). It accommodates all the technical components required for the production of “green” hydrogen. This includes the electrolysis units and transformers for the transformation of the electricity supplied by the offshore wind turbines, along with desalination modules for producing the high-purity water required for electrolysis.



Production of green hydrogen from 400 MW is enough for

- More than 229,000 cars
- More than 8,000 buses
- More than 2,600 trucks
- More than 520 trains
- 300 million kg CO_2 reduction

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