

Pumps for carbon-free hydrogen production

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Sulzer wins contracts to supply 50 pumps for one of world's largest green hydrogen project

The continuing drive to reduce carbon emissions from the transport sector has led to the development of an innovative process to improve the availability of carbon-free hydrogen. The NEOM Green Hydrogen Project, located in Saudi Arabia, is a multi-billion dollar venture to solve some of the many challenges facing the world and help to deliver a more sustainable future. Sulzer has been awarded contracts to supply 50 pumps that will support the production of green ammonia, which is the most easily transported product that can be converted to hydrogen at import destination to supply local refueling stations.

Green ammonia offers a number of opportunities for improved sustainability in the transportation sector. It is created using hydrogen that is produced by electrolyzing water and combining it with nitrogen captured from the atmosphere using an air separation unit. All the energy for these processes comes from wind and solar resources, avoiding any need for fossil fuels.

As a raw product, green ammonia can be used as an agricultural fertilizer, but it can also be easily transported in a liquid state to fueling stations where it can be converted to carbon-free hydrogen gas. This technology is being developed on an

industrial scale by the NEOM Green Hydrogen Project, which is building a production plant with a capacity of around 220'000 tonnes per year of carbon-free hydrogen, in the form of green ammonia, that will be used around the world.

As part of the equipment procurement program, Sulzer was invited to participate in the tender process as an approved supplier. There were several criteria that were examined including technical qualifications and cost-effectiveness. In addition to excelling in both of these areas, the fact that Sulzer could offer a number of different designs from a single source was also an influencing factor.

Sulzer is also well-positioned in Saudi Arabia with both a manufacturing site and a service center in the country. The fact that the company could offer in-country support for their products was a factor that influenced the final decision for awarding the project.

Initially, Sulzer secured the contract to deliver two boiler feed water pumps, which is one of the company's specialist products. Following this, the process pump designs were discussed at length due to the more complex specifications in terms of the nozzle forces and moments that were expected in operation and some of these could not be met by the competition.

The final outcome was Sulzer also being awarded the project to deliver 41 process pumps for various utility services such as demineralized water, service water and nano filtration permeate pumps. A further contract has since been awarded for 6 vertical pumps for ammonia loading service. The combination of horizontal split casing pumps, overhung pumps and vertical turbine type pump designs were recommended with specific design highlights to ensure optimum performance in each application.

Rajesh Chakravarty, Head of Sales, Middle East Energy BU – Power Generation for Sulzer, concludes: “We are very proud to be contributing to this innovative and forward-looking project that will help to drive improvements in sustainable fuel production. Our global presence and flexible approach will ensure these pumps deliver many years of reliable service.”

Image captions:

Image 1: The NEOM Green Hydrogen Project is building a production plant with a capacity of around 220'000 tonnes per year of carbon-free hydrogen, in the form of green ammonia, that will be used around the world. (Image Source: shutterstock_2236248967)

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Sulzer is a global leader in fluid engineering. We specialize in pumping, agitation, mixing, separation and purification technologies for fluids of all types. Our customers benefit from our commitment to innovation, performance and quality and from our responsive network of 180 world-class production facilities and service centers across the globe. Sulzer has been headquartered in Winterthur, Switzerland, since 1834. In 2021, our 13'800 employees delivered revenues of CHF 3.2 billion. Our shares are traded on the SIX Swiss Exchange (SIX: SUN).

For more information, visit www.sulzer.com

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