

thyssenkrupp Uhde selected by ADNOC for exploration of commercial-scale ammonia cracking plant

- **uhde® reformer technology as basis for large-scale ammonia cracking process**
- **Ammonia cracking enables setup of global value chains for green hydrogen**

thyssenkrupp Uhde and ADNOC have signed a memorandum of understanding (MoU) to explore a long-term partnership to create new markets for hydrogen and promote global clean energy value chains. The MoU was signed on January 16, 2023, at Abu Dhabi Sustainability Week (ADSW), and the agreement will focus on a joint project development of large-scale ammonia cracking, which is used to extract hydrogen from ammonia after transportation. The ammonia cracking process is based on globally proven uhde® reformer technology, which is applied in over 130 large-scale chemical plants across the world.

Under the agreement, the companies will work together to develop projects for large-scale ammonia cracking plants with thyssenkrupp technology. The agreement will also lead to the exploration of opportunities in the clean energy value chain for the supply and shipment of clean ammonia from the UAE to large-scale ammonia cracking facilities globally.

Musabbeh Al Kaabi, Executive Director, Low Carbon Solutions and International Growth Directorate, ADNOC: “ADNOC’s fast-growing hydrogen business is enabled by the UAE’s abundant and competitive energy reserves. We are committed to strengthening our position as a reliable supplier of lower carbon-intensive energy, creating new revenue streams and growing the global market for hydrogen. In doing so, we will work with like-minded partners, such as thyssenkrupp to deliver tangible solutions that contribute to the decarbonization of the energy sector.”

Martina Merz, CEO thyssenkrupp AG: “At thyssenkrupp we actively contribute to all dimensions of the green transformation. Together with ADNOC, we will take an important step towards large-scale ammonia cracking, thus enabling the global supply chain for green hydrogen. The competencies of thyssenkrupp Uhde therefore are an important cornerstone. A perfect example how partnerships can accelerate the transition, and a perfect example for thyssenkrupp technology at the heart of the green transformation.”

Dr. Cord Landsmann, CEO thyssenkrupp Uhde: “Countries in Europe, along with many others, depend on green hydrogen imports to decarbonize industry and society. Clean ammonia is the best way to transport hydrogen by ship, and together with ADNOC, we will deliver the last piece of the puzzle for global green hydrogen trade at large scale.”

Stefan Wenzel, State Secretary at the German Federal Ministry for Economic Affairs and Climate Action highlighted: “We very much support the agreement between ADNOC and thyssenkrupp Uhde in the framework of the Emirati-German Energy Partnership. The development of large scale ammonia crackers is an important milestone for the run-up of the global hydrogen economy and we are very pleased that thyssenkrupp Uhde’s contributes with German cutting-edge technology.”

Ammonia is key for global clean energy chains

Hydrogen is a critical part of the energy transition as it can provide energy for hard-to-electrify sectors such as long-haul transport, chemicals, iron and steel, refining, marine fuel and power generation, trucking, and power generation. The Hydrogen Council estimates that hydrogen could meet 18% of global energy demand by 2050. Ammonia is an ideal carrier of hydrogen as it is much easier to compress and transport. When shipped, after arriving at its destination, the ammonia needs to be decomposed, or “cracked,” into hydrogen, before use in the energy value chain.

Energy produced from hydrogen creates only water as a byproduct with zero emissions of carbon dioxide. As the industry scales up globally, with strong demand from Germany and other countries in Europe, ammonia cracking is becoming essential for the industry's growth.

Leading technologies for emission reduction all along the value chain

Besides offering ammonia cracking solutions, thyssenkrupp Uhde is also completing the value chain by offering clean ammonia technologies and ammonia storage being relevant for the transition towards clean energy. thyssenkrupp Uhde has over 100 years of experience in engineering and building of chemical plants, more than 2,500 in total. Among the 130 ammonia plants built are some of the largest plants worldwide, frequently setting new industry standards such as the uhde® dual pressure technology.

About ADNOC:

ADNOC is a leading diversified energy and petrochemicals group wholly owned by the Emirate of Abu Dhabi. ADNOC's objective is to maximize the value of the Emirate's vast hydrocarbon reserves through responsible and sustainable exploration and production to support the United Arab Emirates' economic growth and diversification. To find out more, visit: www.adnoc.ae

About thyssenkrupp Uhde:

thyssenkrupp Uhde combines unique technological expertise and decades of global experience in the engineering, procurement, construction and service of chemical plants. We develop innovative processes and products for a more sustainable future and thus contribute to the long-term success of our customers in almost all areas of the chemical industry. Our portfolio includes leading technologies for the production of basic chemicals, fertilizers and polymers as well as complete value-chains for green hydrogen and sustainable chemicals. www.thyssenkrupp-uhde.com

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