STAMI Green Ammonia™

Futureproof carbon-free ammonia production

About NEXTCHEM

NEXTCHEM is MAIRE's company dedicated to Sustainable Technology Solutions. Leveraging our profound expertise in nitrogen, hydrogen, carbon capture, fuels, chemicals, and polymers, we deliver groundbreaking solutions and processes that fully enable the energy transition.

Building on the rich legacy of our group for over 70 years, we are dedicated to developing and offering technology solutions, processes, basic engineering designs, as well as proprietary equipment and catalysts, to drive global decarbonization efforts forward.

Toward a sustainable ammonia production

We are committed to embracing the global decarbonization challenge and aligned with the ambitious net-zero emissions target set by the Paris Agreement for 2050. At the heart of our commitment to reducing greenhouse gas emissions is Green Ammonia, a key component in our efforts.

Our solution to hit zero-emission targets

Our STAMI Green Ammonia™ sets a new standard for the Green Ammonia technology. This comprehensive package includes licenses and engineering specifications for small and medium scale plants. Using renewable energy, we produce carbon-free ammonia, moving away from traditional fossil fuel-based processes. In addition to cutting- edge technology, we provide support for financing, project development, and feasibility studies, ensuring a holistic approach to sustainable ammonia production.

STAMI Green Ammonia™

The fast track to a more sustainable future

Applications

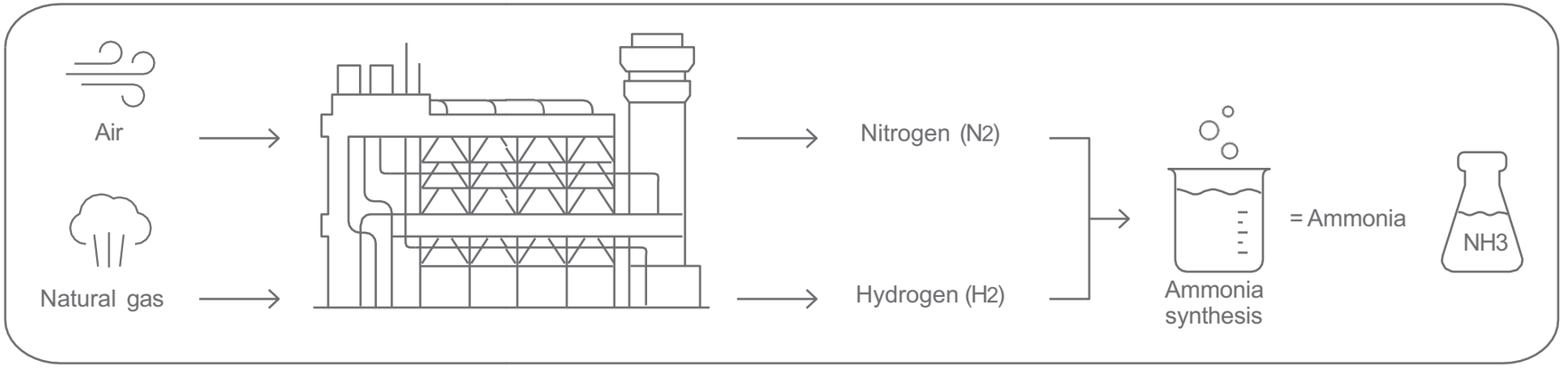
- Fertilizer
- Shipping fuel
- Sustainable feedstock

Your benefits

1. Most competitive technology in terms of CAPEX (when compared to other technologies)
2. Strongest reference base with four plants in operation (more than any other licensor in the <500 MTPD capacity range)
3. Complete modularization (customized solutions according to requirements)
4. Improved reliability (only one compressor is required for all services)
5. Proven design in operation (based on reciprocating compressor, while other technologies are not)
6. Availability of digital solutions, such as a dedicated operator training simulator and process monitoring tool

Traditional (‘grey’) ammonia production

Ammonia is made from hydrogen and nitrogen. A traditional ammonia plant converts fossil fuel (such as natural gas) into gaseous hydrogen. Hydrogen is produced from hydrocarbons in a method known as steam reforming.
Nitrogen is derived from process air. Ammonia is then synthesized from the hydrogen and nitrogen in a catalytic reaction at high pressure and high temperature in the Haber-Bosch method.



Green ammonia production

Ammonia can now also be produced in a much more environmentally friendly way without recourse to fossil fuels.
Here, hydrogen is synthesized by water electrolysis, while nitrogen is extracted from the air. The temperature and pressure needed for the hydrogen-nitrogen reaction during the ammonia synthesis loop are powered by sustainable energy, such as wind or solar. The output is carbon-free ammonia, also known as Green Ammonia.