

NX eBlue™

Our solution to produce
low-carbon hydrogen

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.

Decarbonizing industry for a greener future

Hard-to-abate sectors started to demand strong competitive decarbonization solutions to make the industry more sustainable. This is why we have developed the NX e-Blue™ innovative solution to decarbonize the production of hydrogen.

Our solution to reduce natural gas usage and CO₂ emissions in hydrogen production

Blue Hydrogen production perfectly fits industrial applications and the utility sector with a high potential to produce low-carbon hydrogen.

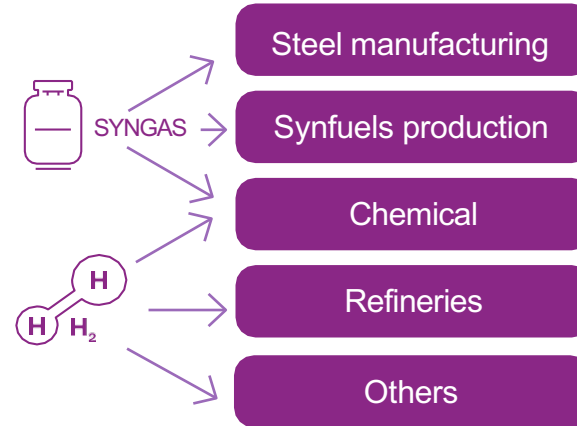
NX eBlue™ technology exploits electrically powered steam reforming of natural gas for hydrogen production, requiring only 55% of the natural gas needed in conventional SMR. The CO₂ to be captured is 45% lower than conventional SMR, at pressure and with a CO₂ recovery efficiency higher than 98%, leading to lower costs of CO₂ capture.

NEXTCHEM offers license, process design package (PDP), proprietary equipment (PEQ), digital and post-PDP services.

NX eBlue™

Reducing natural gas usage and CO₂ emissions in hydrogen production

Applications



Your benefits

- 1** Production adaptability (feedstock and capacity flexibility)
- 2** Operational efficiency (small reactor size and footprint compared with the standard SMR)
- 3** Environmental efficiency (energy-efficient reforming technology with low CO₂ emissions (45% less than standard SMR w/o CC))
- 4** Financial efficiency (lower CAPEX and OPEX requirements over ELZ)

Technical overview

The process is equivalent to the standard Steam Methane Reformer (SMR) process. The geometry of the reactor has been changed with the use of annular-shaped half-cylinder electrical heating elements surrounding

the catalytic tubes in order to supply the process gas with the thermal duty necessary to sustain the endothermicity of the steam reforming reaction.

NEXTCHEM proprietary technology

