NX CPO™

Our solution to decarbonize hard-to-abate sectors

NEXTCHEM
MAIRE Sustainable Technology Solutions

About NEXTCHEM

NEXTCHEM is MAIRE's company dedicated to Sustainable Technology Solutions. Leveraging our deep 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.

An urgent challenge awaiting immediate action

Reducing carbon footprint could be a significant challenge in some specific industries, and the demand for efficient and competitive decarbonization solutions is paramount. Our NX CPO™ (Catalytic Partial Oxidation) solution represents a premier choice in this arena, offering a best-in-class solution to produce syngas.

Syngas is leveraged in hard to abate sector for different applications as the building block for chemicals production, as well as Hydrogen. Produced hot syngas has also potential utilization in steel industry, reducing the carbon footprint of blast furnaces. Current Landscape of NX CPO™ Technology includes bench- and pilot-scale facilities, in addition to a growing portfolio of innovative patents.

Our solution to reduce the carbon footprint

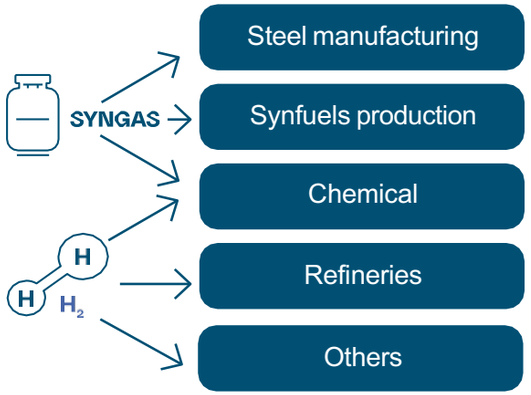
This technology is uniquely positioned to address the specific needs of hard-to-abate sectors, providing an innovative pathway to lower emissions while maintaining operational efficiency.

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

NX CPO™

Leading the way in decarbonizing hard-to-abate sectors

Applications



Your benefits

1. Production adaptability (Feedstock and capacity flexibility)
2. Drastic reduction of on-site activities (Modularity + Small reactor size)
3. Environmental efficiency (NX CPO™ is less carbon intensive than BAT SMR allowing for capturing 99% of total carbon emissions in blue hydrogen production)

Technical overview

a

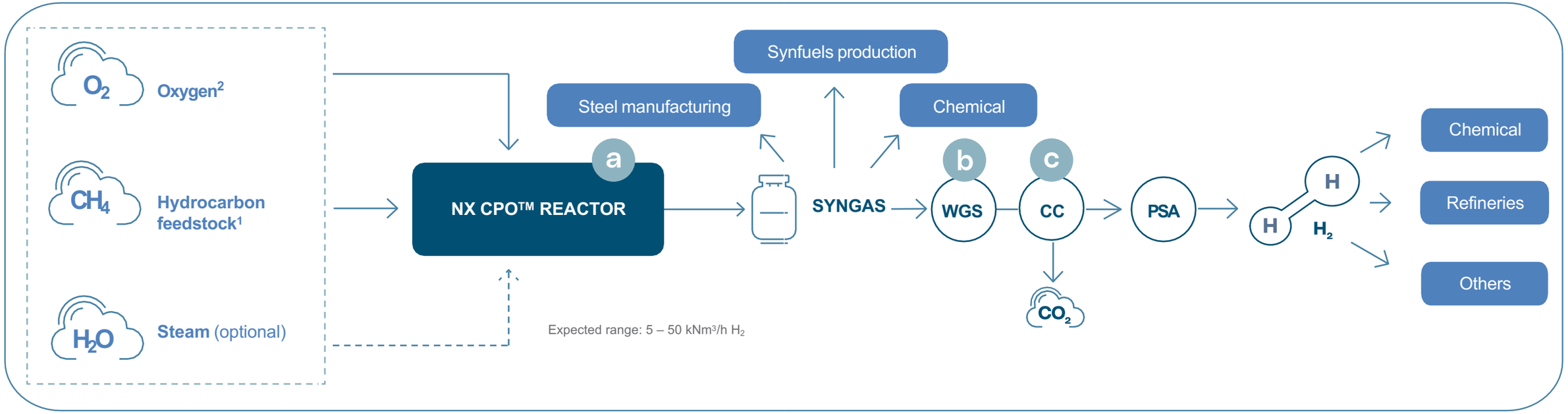
The feedstock undergoes a controlled partial oxidation of hydrocarbon feedstocks: very fast conversion into syngas at milder process conditions, due to the presence of a proprietary catalyst.

b

For pure H_2 production, the syngas undergoes a Water Gas Shift step and purification via PSA[3].

c

A Pre-Combustion Carbon Capture Unit is foreseen to separate the process CO_2 from the syngas stream in blue-hydrogen production.



1. Feedstock can vary according to project configuration: natural gas, industrial process off-gases, associated gases and gases with a bio-mass origin
2. Oxidants can vary according to project configurations: oxygen, air or enriched air
3. Pressure Swing Adsorption (PSA)

NEXTCHEM proprietary technology