

JM

Ammonia cracking

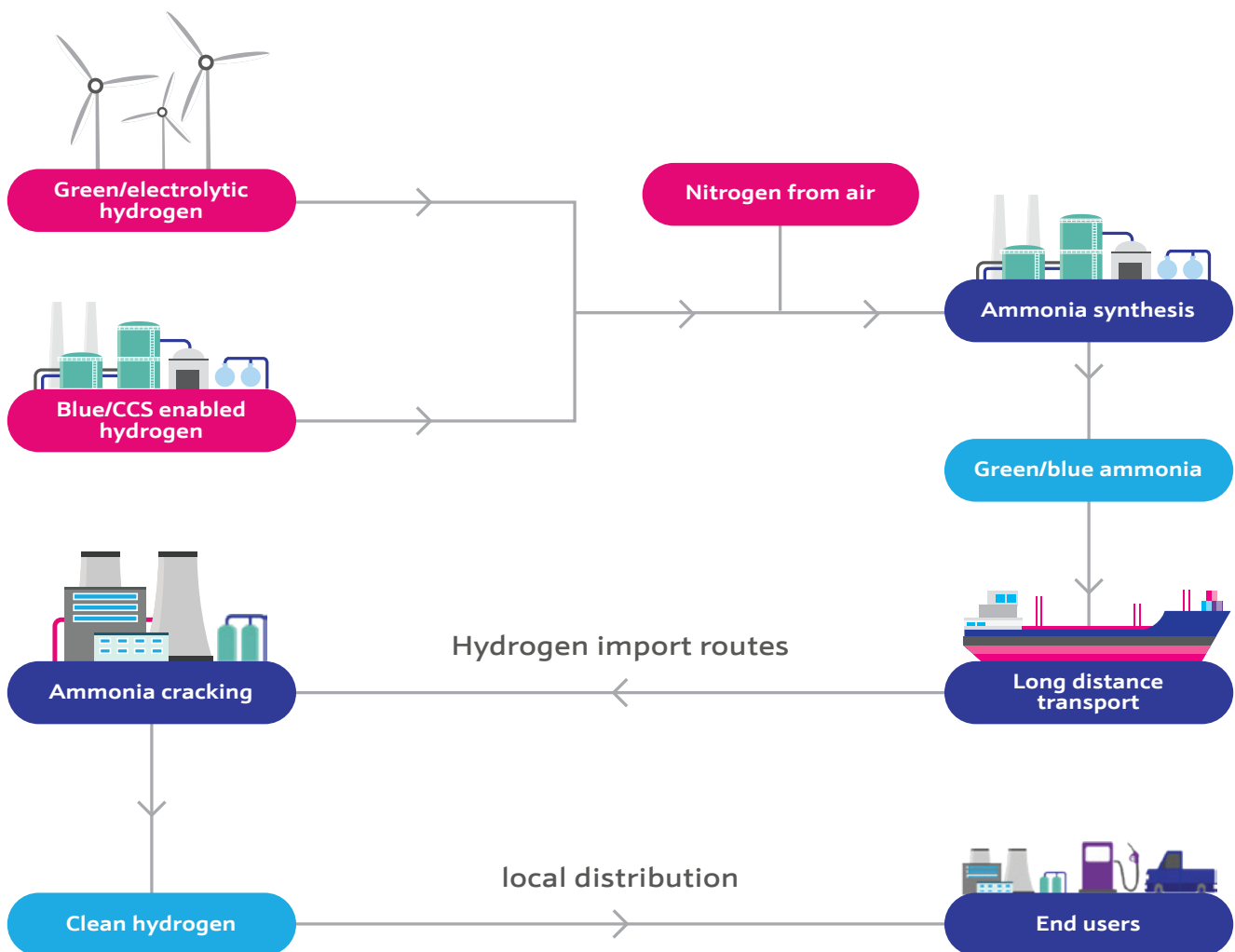
Enabling access to renewable hydrogen



Johnson Matthey
Inspiring science, enhancing life

Sustainably produced hydrogen is a key vector for decarbonising many hard-to-abate industries such as transportation, power and chemical manufacture.

The regions expected to be prominent producers of decarbonised hydrogen are not necessarily where the demand resides. Ammonia is a potential hydrogen carrier which offers advantages in containing no carbon molecules and it is a globally traded commodity today. Ammonia cracking allows the conversion of ammonia back into hydrogen to facilitate the transportation of large quantities of clean hydrogen over long distances.



● Feedstock ● Process ● Product

Credible licensor and catalyst provider for ammonia cracking technology

Johnson Matthey (JM) is a global leader in sustainable technologies with nearly 100 years of ammonia cracking heritage. Leveraging our core competencies in syngas production, we can empower you to thrive in the emerging sustainable landscape.

JM's solution offers carbon-free fuelling of the cracker with direct ammonia firing to minimise emissions and reduce CAPEX compared with alternative decarbonised fuels.

Direct ammonia firing

- JM's solution uses ammonia as a key fuel component to provide the endothermic heat needed for cracking.
- Ammonia contains no carbon molecules offering advantages compared to fossil fuel alternatives.
- Alternative decarbonised fuel options include using product (hydrogen firing). However, this requires a larger cracker (increased CAPEX) for a given target hydrogen production.

Expertise in catalysis

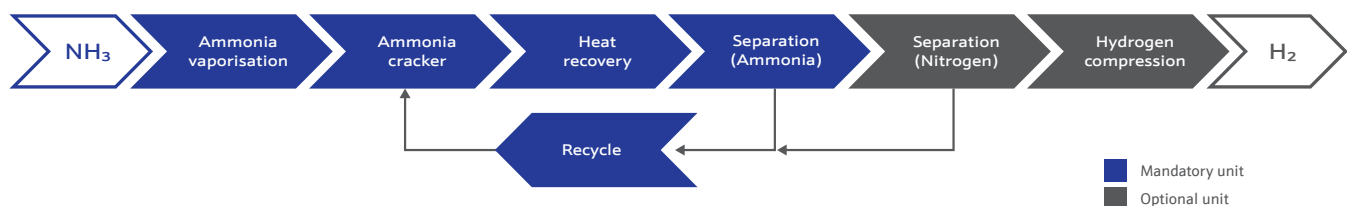
- Established KATALCO™ 27 series offers high activity, enhanced heat transfer and long lifetimes.
- Range of abatement solutions to meet local requirements.
- Proven supply chain and continual investment in R&D are set to deliver greater performance benefits.



Ready for world scale deployment

- JM's ammonia cracking technology is ready for world scale deployment.
- Top-fired furnace offering the most thermally efficient design, requiring smaller footprint than alternative designs.
- Unrivalled syngas and reforming experience has been leveraged to accelerate scale-up in ammonia cracking.

Block flow diagram of JM's ammonia cracking process





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