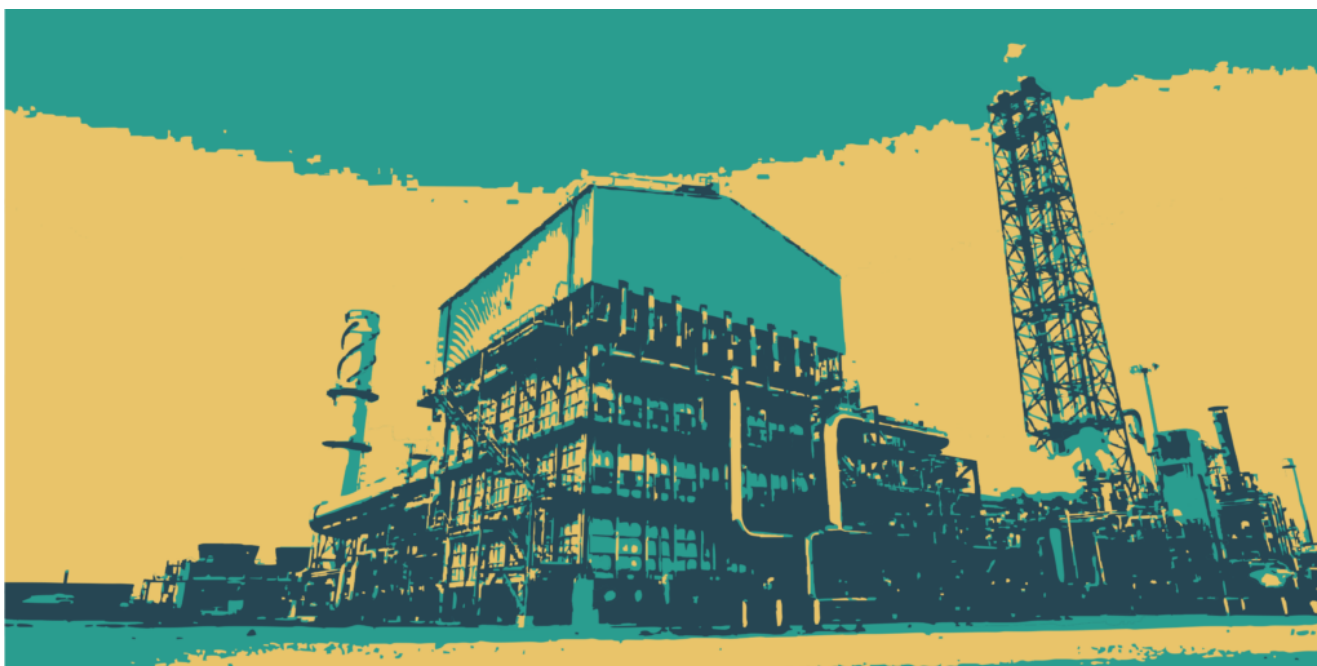


Green Ammonia Cooperation Between India and South Korea: Opportunity or Increasing Dependence?

April 15, 2026



On March 16, 2026, Reliance Industries Limited (RIL) and Samsung C&T Corporation entered into a long-term, binding Supply and Purchase Agreement (SPA) for the supply of green ammonia over a 15-year period.

The SPA, valued at more than USD 3 billion, is [expected](#) to commence in the second half of FY2029. Under the SPA, India will export green ammonia to South Korea, in alliance with India's National Green Hydrogen Mission (NGHM).

Unlike conventional ammonia (made using natural gas), green ammonia is produced using hydrogen from water electrolysis (splitting water into hydrogen and oxygen with electricity) and nitrogen separated from the air. It is used as fertilizer, an industrial chemical, or fuel for power generation and shipping. It is easier and cheaper to store at modest

pressures, and can be [converted](#) to hydrogen gas whenever required.

Significance of the Deal

In 2023, the Indian government launched the NGHM to establish a green hydrogen ecosystem and position India as a global leader in clean hydrogen. By 2030, the mission [aims](#) to produce 5 MMT of green hydrogen annually, create more than 6 lakh jobs, reduce fossil fuel imports by more than INR 1 lakh crore, and avoid around 50 MMT of greenhouse gas emissions per year. The mission also aims to create export opportunities for green hydrogen and its derivatives, such as green ammonia.

There are promising narratives, such as India's green hydrogen mission, which would decarbonize industries (steel, cement, aviation, shipping, etc.), where reducing greenhouse gas emissions is challenging. Several states have developed [policies](#) to build a green hydrogen ecosystem. For instance, Uttar Pradesh is providing capital subsidies to green hydrogen projects. Whereas, Gujarat supports lowering investment costs by waiving transmission and wheeling charges, exempting electricity duty, and allowing renewable power banking. Some experts also [argue](#) that the NGHM will enable India to tap into the green hydrogen market in Europe and East Asia.

However, despite fanfare around the NHMG, there are major challenges. India's

Green hydrogen supply enthusiasm does not match the demand-side momentum. India can produce green hydrogen, but [there aren't enough buyers](#) within India yet. There is a lack of domestic demand because industries still use grey hydrogen (cheaper than green hydrogen), are not strongly mandated to switch to green hydrogen, and are reluctant to pay higher costs. Green hydrogen [costs](#) about USD 4 – 5 per kg, whereas grey hydrogen costs around USD 2.3-2.5 per kg.

Even if it is produced domestically, there are infrastructure gaps, such as a lack of hydrogen pipelines, storage systems, and distribution networks, due to which Indian companies producing green hydrogen are now targeting foreign buyers.

In this context, India's green ammonia sector is [becoming](#) dependent on global demand, which is expected to absorb its supply. For example, the Kakinada project in Andhra Pradesh has become a milestone in positioning India as a global exporter of green ammonia. Under this project, AM Green India signed a long-term offtake agreement with Uniper (Germany) for up to 500,000 tonnes per year of green ammonia [exports](#) to Europe. Also, its collaboration with the Port of Rotterdam [aims](#) to establish a dedicated India-Europe green fuel corridor capable of handling up to 1 million tonnes annually, valued at around USD 1 billion.

However, emerging evidence suggests that even global demand is uncertain. A senior official from India's renewable energy ministry acknowledged that delays in European decision-making on renewable energy targets created uncertainty over future demand for green hydrogen exports. As a result, India's production targets have been revised downward from 5 MMTPA by 2030 to 3 MMTPA, with the original target now [pushed](#) to 2032.

Moreover, the stalling of the US's Inflation Reduction Act, which provided subsidies, tax credits, and incentives to companies in the clean energy sector, is [assumed](#) to affect India's green ammonia export-oriented projects.

Against this backdrop, attention to exports has increasingly shifted toward East Asian markets, given their need to decarbonize and find new buyers.

India-South Korea Ties

The green ammonia agreement between Reliance and Samsung is considered one of the largest export deals signed by an Indian company, following a similar agreement between AM Green and

Uniper in January. Apart from fulfilling India's ambitions, the deal is also expected to upgrade India-South Korea ties.

Despite maintaining a Special Strategic Partnership (2015), India-South Korea relations continue to face significant challenges. Key obstacles include a stagnant USD 20-25 billion trade volume, a substantial trade deficit for India, and the stalling of the Comprehensive Economic Partnership Agreement (CEPA). As of 2025, India has a USD 11 billion trade [deficit](#) with South Korea, as India imports high-value electronics, machinery, and steel while exporting primarily raw materials. Also, the CEPA has not undergone a formal upgrade, despite active review talks that began around 2016.

Against this backdrop, analysts argue that the green ammonia deal could potentially open a new venue for high-value clean energy trade between India and South Korea. India's export of green ammonia may help partially offset the trade imbalance. Driven by its 2050 carbon neutrality goals, South Korea is also seeking low-carbon fuels such as hydrogen and ammonia to cut emissions from industry and power generation. In 2025, South Korea [imported](#) USD 518 million of ammonia from Indonesia, Saudi Arabia, China, Australia, and Malaysia. This complements India's export-driven goals.

Nonetheless, the deal may not fundamentally alter the underlying asymmetry in their bilateral economic ties. Even if India exports green ammonia, much of the value addition is [likely](#) to occur in South Korea, where it would be utilized in downstream sectors such as steel and shipping, with some possibly re-exported to India. The extent to which this arrangement can correct the trade asymmetry will depend on whether South Korea scales up its industrial output or if India is able to set higher prices and move up the value chain.

This is already visible in the steel sector. In February 2025, South Korea already [surpassed](#) China as the leading supplier of

finished steel to India, with imports from Seoul rising by 11.7% while inflows from Beijing remained around 3.4%. South Korea [supplied](#) 2.8 million tonnes of steel to India in 2024-25, accounting for 29% of total finished steel imports. This reinforces India's dependence on imported finished, higher-value steel products.

Furthermore, South Korea has recently announced a prioritization of domestically produced hydrogen in its clean power generation bidding processes, [citing](#) energy security concerns and global supply chain disruptions.

Path Ahead

The Reliance-Samsung green ammonia deal places India as a key player in emerging global hydrogen value chains. However, its success depends on how effectively both domestic and international demand constraints are addressed.

Currently, India's green ammonia ambitions rely on exports, as the domestic market is still struggling to absorb production at scale. One of the major challenges is the [lack of firm offtake agreements](#), with demand for green hydrogen and its derivatives yet to materialize beyond early-stage discussions. It pushes producers to look outward for markets, which also exposes them to global policy shifts amid uncertainty.

Moreover, India's electrolyzer industry (machines for producing green hydrogen) [remains](#) assembly-driven, with critical components such as electrodes and membranes heavily dependent on imports. This exposes the industry to supply chain vulnerabilities.

To achieve the NGHM's goals, India needs to complement its export ambitions with stronger [domestic demand creation](#). New Delhi would require blending mandates in refining, fertilizers, and gas networks, as well as the substitution of grey hydrogen in sectors such as chemicals and ceramics.

While the India-South Korea ammonia agreement has been widely praised, its success will rely on India's ability to move beyond an export-dependent model and build a more resilient ecosystem driven by domestic demand.