

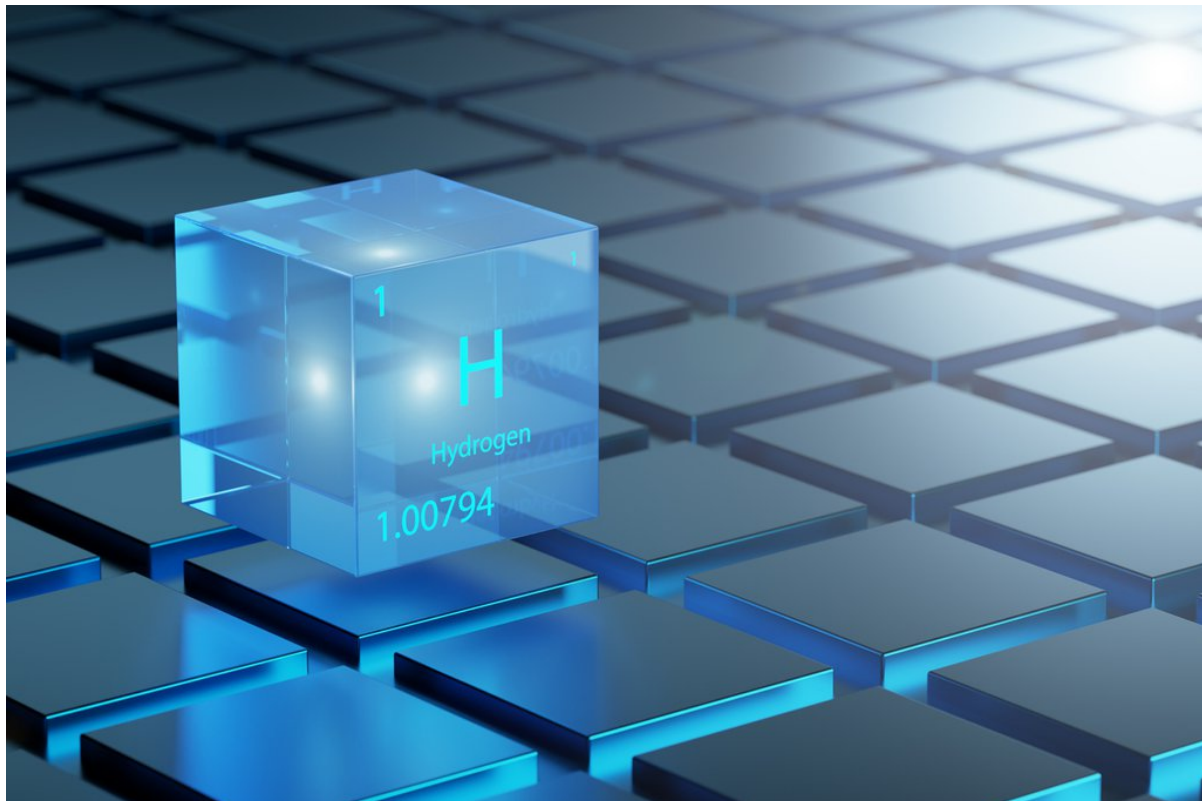
Company Eyes Korean Ammonia Export Opportunity With Strathcona Plant

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Hydrogen Canada Corp. (HCC) is looking to build a world-scale hydrogen/ammonia facility in Alberta to help serve energy needs in South Korea.

The Calgary-headquartered company is now in the pre-FEED phase of its plant, for a site in Alberta's Industrial Heartland.

HCC looks to have its basic design complete by the end of March 2024 and targets final investment decision and site-clearing in 2025. This would lead to building the facility in 2026 and the start of operation in late 2028 or early 2029.

As **Brendan O'Connell**, vice-president, business development, Hydrogen Canada, describes, "it will take natural gas, reform/crack it and take the hydrogen and mix it with nitrogen to make ammonia. It will remove the carbon in the reforming process and generate CO₂."

When complete, the plant will produce roughly one million tonnes of blue ammonia per year.

"CN is talking about building a terminal. [HCC] will run it through CN's terminal, off to Prince Rupert, and then on a ship bound for Korea," he added.

In 2021, **Mitsubishi Corporation** and **Shell Canada Products** signed a memorandum of understanding relating to the production of low-carbon hydrogen through the use of carbon capture and storage (CCS) near Edmonton. The hydrogen would be produced via a natural gas feedstock and largely exported to the Japanese market.

Since this was announced, there has been a lot of attention brought to the Japanese market, "but the Korean market is just as big or bigger," O'Connell told the *DOB*.

Both Japan and South Korea are looking to use hydrogen/ammonia to help reduce their overall CO₂ emissions, he added.

"What they are looking at is what they called co-firing in a coal fired plant. They will burn the ammonia with the coal."

For example, the blend could be 20 per cent ammonia and 80 per cent coal, creating an immediate 20 per cent reduction of emissions.

O'Connell highlighted Korea having "one of the most advanced hydrogen economies in the world." This includes roughly 300 hydrogen refuelling stations.

Ammonia can be cracked back to hydrogen and used to support the country's hydrogen vehicle transportation.

Hydrogen Canada was founded by its president **Bryan Moon**, who is originally from Korea. He has a PhD in engineering and two master's degrees, including one from **Texas A&M University**.

Since founding the company three years ago, Moon has been to Korea multiple times a year.

"We are slowly developing this opportunity — but right now, it is moving so fast in Korea," Moon said.

The company plans to participate in several auctions for ammonia supply in Korea in 2024.

"[Moon] saw the opportunity with low-cost gas and the demand in Korea," said O'Connell, adding his "relationships with a lot of people in Korea [has] allowed us to move fairly aggressively."

HCC now has letters of intent with "major buyers" in Korea, he added. The company has also secured a letter of commitment on an offtake agreement with **E1 Corporation**, a Korean LPG trading company.

E1 invested \$10 million in the company's FEED study.

Hydrogen Canada's facility will sequester its CO₂ in one of six hubs announced for Alberta's Industrial Heartland.

"We have already talked to three of them," said O'Connell, a professional engineer. "We haven't made our selection yet.

"It will be driven by economics. But we have got lots of options."

The company bought 480 acres of land in Strathcona County. On selecting the location of the plant, O'Connell called it the heart of petrochemicals in Western Canada.

All of the company's project needs are built in.

"It is where the storage is, where the engineers are, the operators, and the fabrication shops and all that," he said. "The engineers are there, the skilled labour is there. There is a big pool. To us, it is the most obvious."

Another consideration, O'Connell added, was proximity to the aforementioned CN terminal. This allows for cost-effective shipping to Prince Rupert.

Government support

O'Connell and Moon met with Alberta Premier **Danielle Smith** about the project in late 2023. Her response, said the vice-president, was "very supportive."

"We think Danielle Smith is interested in selling Alberta gas everywhere," he added. "Right now, we are waiting on federal policy in support for the rail infrastructure. We are hoping that gets confirmed soon. [HCC] hopes the provincial government comes in at the periphery to support the infrastructure we need to export this."

"But to date, they have been very positive. They have a hydrogen strategy and are looking to build it out. This is one of the key pillars. They are very interested in our progress."

These exports help increase trade between friendly G8 nations, noted the executive.

"Given what has gone in the world the last couple of years, we kind of need to stick together," O'Connell continued.

“This is one of the few industries that is kind of at the confluence of federal policy and provincial policy. The federal government wants to reduce carbon — aid the transition, help other countries. And Alberta wants to sell its energy globally, so this works for both.”

Hydrogen Canada looks to make use of some of the federal government’s proposed investment tax credits (ITC).

“We’ll take advantage of their CCS tax credits, there are hydrogen tax credits and ammonia tax credits,” said O’Connell. “They actually provide quite a bit of support for this project. It is material to the economics of the project, those tax credits. We were happy to see them.”

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