

Decarbonisation Solutions

Competitive Edge

Ability to play a key role in green hydrogen and green ammonia production, given Sembcorp's growing renewables presence in India and China, Asia's top renewable energy markets

As one of the largest importers and retailers of natural gas in Singapore, Sembcorp is well-positioned to act as a hydrogen off-taker for power generation or as a supplier to industries

GoNetZero™ provides a one-stop digital platform for corporates to procure and manage environmental attributes to support the clean energy transition

Well-positioned to Drive Decarbonisation and Energy Transition

Energy alternatives for a cleaner future

While Singapore has limited renewable energy resources, the country is able to access low-carbon electricity that is abundant in the region by connecting to regional power grids. This also promotes the development of renewable energy in the region and paves the way in realising the ASEAN Power Grid vision.

In October 2023, Sembcorp was granted conditional approval to import 1.2GW of low-carbon electricity from Vietnam to Singapore by the Energy Market Authority (EMA). This is the largest conditional award for importation from EMA. Together with Petrovietnam Technical Services Corporation, a member of Vietnam Oil and Gas Group (Petrovietnam), Sembcorp will develop offshore wind farms over a sea area of approximately 200,000ha off the shores of South Vietnam, subject to the receipt of relevant approvals. Sembcorp is also in exclusive discussions to import 1GW of low-carbon electricity from Sarawak. These imports will enable our customers to have greater access to green energy, and also contribute towards Singapore's target to import up to 4GW of low-carbon electricity by 2035.

Exploration of green fuels and carbon capture solutions

Clean and green fuels such as green hydrogen and ammonia, as well as carbon capture and storage solutions, will help to decarbonise existing gas plants. We are exploring these solutions and

Key Developments

Received conditional approval to import 1.2GW of low-carbon energy from Vietnam to Singapore – largest conditional award for importation from Energy Market Authority (EMA)

Joint development agreement with Sojitz Corporation and Kyushu Electric Power Co to pursue potential opportunities for green ammonia production

GoNetZero™ increased its international presence, serving more than 40 multinational customers' operations across 14 countries: Achieved 2.6 million tonnes of carbon credit sales, and 1.8 million Renewables Energy Certificates (RECs) sales during the year

have signed agreements with strategic partners to pursue these opportunities. They include:

- Joint development agreement with Sojitz Corporation and Kyushu Electric Power Co to pursue potential opportunities for green ammonia production in India for export to Japan. Japan aims to import 3 million tonnes of ammonia for fuel by 2030, with anticipated demand reaching 30 million tonnes by 2050
- Joint development study agreement with PT PLN (Persero) to assess the feasibility of green hydrogen production in Indonesia for export to Singapore
- Memorandum of Understanding with Gentari to explore the development of hydrogen production facilities and transportation of hydrogen from Malaysia to Singapore

In October 2023, Sembcorp was shortlisted by EMA and the Maritime and Port Authority of Singapore to participate in the request for proposal to provide a low- or zero-carbon ammonia solution for power generation and bunkering on Jurong Island in Singapore. The project entails the generation of 55MW to 65MW of electricity from imported low- or zero-carbon ammonia via direct combustion in a gas turbine or combined cycle gas turbine; and facilitating ammonia bunkering at a capacity of at least 0.1 million tonnes per annum. A lead developer will be chosen to jointly develop the proposed end-to-end ammonia solution.

As one of the largest importers and retailers of natural gas into Singapore, we can offer decarbonisation solutions to our customers through low-carbon feedstock, either as an alternative



Sembcorp solar assets in Yunnan, China

fuel to, or blend with natural gas. We will continue to leverage our energy and renewables expertise to participate in opportunities across the green hydrogen and ammonia value chain.

Leverage technology to abate emissions

GoNetZero™ is a decarbonisation solution provider helping its clients to achieve their carbon neutrality goals through the provision of verified environmental attributes (such as RECs and carbon credits) and digital platform solutions. GoNetZero™'s suite of digital services includes GoNetZeroConnect, which provides emission estimation and tracking in a single dashboard, a platform for buying and selling of credible RECs and carbon credits, as well as NetZeroOS, for management and optimisation of energy assets across solar and wind.

During the year, GoNetZero™ sold 2.6 million tonnes of carbon credits.

It also sold 1.8 million RECs, a nine-fold increase from the previous year. Since its launch in 2022, GoNetZero™ has secured over 40 multinational customers, including OCBC, Razer as well as UBS. GoNetZero™ is supporting these companies to meet their decarbonisation goals across operations in 14 countries. To support international markets expansion, GoNetZero™ has set up office presence in three key markets: Singapore, the UK and Vietnam. GoNetZero™ further announced the launch of Renewable Energy Navigator Explorer (René), a natural language, conversational Artificial Intelligence that provides users with simplified energy insights, at the 28th United Nations Climate Change Conference. René is built to provide real-time and global accessibility that allows business leaders and owners to gain a holistic overview of their energy assets across operations; deliver readily digestible information, enhancing comprehension and decision-making in the management of renewable energy assets.

Outlook

The pursuit of decarbonisation solutions for power generation remains important to achieve net zero. Building upon its leading position in Singapore, Sembcorp is strategically positioned to capitalise on decarbonisation trends across the region. Sembcorp is able to play a key role in green hydrogen production, given our growing renewables presence in China and India, Asia's top renewable energy markets. Our focus on low-carbon electricity for Singapore, as well as securing and sourcing low-cost green feedstock positions us well to participate in the development of a regional clean and green energy exchange and distribution network in ASEAN.

We will continue to focus on developing our capabilities and invest circumspectly in the Decarbonisation Solutions segment. We expect the segment to generate positive earnings by 2028 and position the company for growth beyond 2028.