



Media Release

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City Energy and Sydrogen to Study Development of Off-Grid Fuel Cell Solutions with Hydrogen Extracted from Town Gas

City Energy Pte Ltd. (as Trustee of City Energy Trust) (“City Energy”) and Sydrogen Energy Pte. Ltd. (“Sydrogen”) (hereinafter, the “Parties”) have signed a Memorandum of Understanding (MOU) to study the Proof of Concept (“PoC”) of generating an end-to-end hydrogen fuel cell solution for off-grid power supply, utilising high-purity hydrogen extracted from the town gas produced by City Energy. The study is expected to commence in early 2023 and will continue until mid-2024, at which point the parties will further explore town gas-powered hydrogen fuel cells for broader off-grid applications.

Hydrogen has gained global recognition as an important potential energy source in the world’s journey towards decarbonisation, with more than 50 countries having committed to hydrogen road maps and announced associated projects. This is the first time that a hydrogen fuel cell study will be conducted using town gas as fuel source in Singapore.

Hydrogen has emerged as a key component of Singapore’s decarbonisation strategy, with the announcement of the “4 Switches” in 2019, and Energy Market Authority (EMA)’s Energy 2050 Committee Report. Distributed Energy Resources (“DER”) from clean energy like low-carbon hydrogen, coupled with smart technologies like Artificial Intelligence (AI), enable Singapore’s energy grid to flexibly optimise the system at a local level, leading to reduced overall grid capacity and costs. Advancement of smart technologies also accelerate aggregation and management of DERs acting as a virtual power plant, which contributes to a more reliable and stable system.

Singapore has stepped up efforts to electrify its transport sector with supporting infrastructure. This includes establishing up to 60,000 Electric Vehicle (EV) charging points island wide by 2030. Such rapid electrification will add significant demand to the power grid, thereby necessitating grid upgrades where current electrical infrastructure is insufficient to meet demand.

In view of these developments, City Energy is collaborating with Sydrogen on a proof of concept to establish the viability of distributed power generation using fuel cells and the town gas network. The parties seek to demonstrate that hydrogen fuel cells can be used as an off-grid decentralised means to augment grid infrastructure upgrades that support large-scale EV charging in the future.

For City Energy, which is the sole producer and retailer of town gas in Singapore, successful completion of the PoC would enable the repurposing of the extensive town gas network for the distribution of hydrogen via hydrogen-enriched (up to 65%) town gas to fuel a network of hydrogen fuel cells around the island and form a network of DERs to serve residential and commercial users with on-site basic utilities and EV charging.

Perry Ong, Chief Executive Officer of City Energy, said: “As the nation’s sole piped town gas provider for more than 880,000 homes and businesses, we look forward to the possibility of using the town gas network to support the hydrogen economy development, and accelerate deployment of green hydrogen in Singapore. It is our pleasure to collaborate with Sydrogen on this innovative PoC to accelerate Singapore’s hydrogen adoption, electrification goals and path to net zero emissions.”

David DeVries, Chief Technology Officer of Sydrogen, said: “Decentralised power generation plays an important role in diversifying our energy use. The proof of concept combines Sydrogen’s Deep Tech capabilities with a key ecosystem player to develop home-grown solutions for to future-proof Singapore’s energy supply future. We are glad to work with forward-looking partners such as City Energy in this endeavour”

While Sydrogen, a JV between Nanofilm Technologies International and a subsidiary of Temasek, was only formed in 2021, Sydrogen has already begun shipping of metallic bipolar plates to a key automotive customer in China and also the provision of coating services to other players in the market. This PoC will provide additional opportunity to showcase Sydrogen’s capabilities in stationary and distributed power systems connected to gas networks.

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About City Energy

After 160 years of being Singapore's sole provider of piped town gas, City Gas has transformed into City Energy to provide innovative green energy solutions that meet the needs of a growing city and changing planet, now and into the future. City Energy continues producing and distributing piped town gas safely and reliably to more than 880,000 residents, commercial and industrial customers islandwide, while offering low-carbon home solutions and electric vehicle charging services through its sub-brands, *Life* by City Energy and *Go* by City Energy respectively. *Life* by City Energy provides low-carbon solutions that are a part of everyday living. From gas water heaters to gas clothes dryers and gas hobs – our solutions are long-lasting, smart and environmentally friendly. These are available at the retail store at Plaza Singapura. *Go* by City Energy is an electric vehicle charging service that powers earth-friendly rides, in line with Singapore's vision to have all vehicles running on cleaner energy sources by 2040. As its tagline "Good Energy for our City" promises, City Energy is also exploring green hydrogen as part of town gas production to lower carbon emissions. City Energy Pte. Ltd. (as Trustee of City Energy Trust) is a wholly owned subsidiary of Keppel Infrastructure Trust.

About Sydrogen

Sydrogen Energy Pte. Ltd. is a Joint Venture between Nanofilm Technologies International and a wholly-owned subsidiary of Temasek. Sydrogen will develop and manufacture fuel cell components and systems of fuel cells which are critical in overcoming existing limitations in enabling the use of hydrogen as an energy source. Sydrogen will leverage the coating technologies and manufacturing capabilities of Nanofilm. Building off a strong foundation of both JV partners, Sydrogen will bring to market new innovative green energy systems that places Sydrogen in good stead to support the energy transition.

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