NeuRizer

TOWARDS A CARBON NEUTRAL WORLD

ASX Announcement (ASX: NRZ)

1 June 2023

NRZ to produce Hydrogen in China

- NRZ has signed a binding contract with Meijin Energy Investments (MEI), part of the Meijin Group (Meijin), the largest integrated hydrogen company in China
- NRZ will initially provide services to Meijin through detailed assessments of 2 sites owned by Meijin
- Following the site assessments NRZ will provide intellectual property and be the operator at ISG sites under a licencing agreement
- MEI will pay NRZ US$25 million per site as the licence fee
- NRZ and MEI will become joint venture (JV) partners at those sites in China
- Contract provides NRZ with the opportunity to participate in the rapidly developing hydrogen market in China

Chairman's Comments

NRZ Chairman Justyn Peters said: "The execution of this contract is an exciting development for ISG between NRZ and our Chinese partners. The newly formed trading platform will provide NRZ with access to the Chinese hydrogen market, and with a trusted partner with access to a significant revenue stream. Project evaluation has already commenced and with travel restrictions lifted and the progression of the hydrogen economy in China we are well placed to take advantage of the rapidly growing market in China. This development is complementary to our Leigh Creek urea project with our Chinese team working on the China project and our Australian team working on the NRUP.

NeuRizer Ltd (NRZ or the Company) has signed an agreement with Meijin Energy Investment (Hainan) Co., Ltd. (MEI) to produce hydrogen in China through in situ gasification (ISG). MEI is a subsidiary of the Meijin Group who is the largest integrated hydrogen company in China and who already constructs hydrogen vehicles, hydrogen fuel cells and is the owner of hydrogen charging stations. This provides NRZ with a major advantage in meeting the needs of a developing hydrogen fuel market in China.

China is the largest producer of hydrogen today, at about 25 million tons (Mt), or roughly a quarter of the global total. Most of the volume is produced from fossil fuels (60 percent from coal, and 25 percent from natural gas) as feedstocks in refineries or chemical.(1)

NRZ successfully produced significant quantities of hydrogen at Leigh Creek during the pre-commercial demonstration phase. The NRZ project at Leigh Creek demonstrated that NRZ has the ability to produce over 200,000,000 Kg of low-cost hydrogen per year. In terms of the quantity and cost of hydrogen, these numbers were confirmed for production of up to 200,000,000 kg per annum at Leigh Creek with less than $1 per kilogram.(2) It is expected to replicate these volumes and prices in China. In China hydrogen production cost is between AUD $3-$5 per kg (3) and retail for hydrogen varies between $7 -$10 per kilogram, providing NRZ with a huge cost advantage.

China targets to bring 50,000 hydrogen fuel-cell vehicles on the road by 2025 and to build a number of hydrogen refuelling stations. The plan targets hydrogen production using renewable feedstock resources to reach 100,000-200,000 tonnes per year by 2025.(4)

Key Terms

The key terms of the agreement are:

- Initial term of 2 years;
- NRZ is to assess the 2 proposed sites owned by Meijin and following the confirmation of site suitability intend to complete further agreements as detailed below;
- MEI and NRZ propose to enter into a JV to develop ISG at the first 2 chosen sites. The percentage of ownership and participation in that joint venture will be finalised following the completion of services in relation to site suitability;
- MEI and NRZ propose to enter into a license agreement where MEI will pay NRZ a fee of USD25m per site (initially 2 sites) to access NRZ know how, intellectual property and patents;
- MEI and NRZ propose to enter into an operations agreement to appoint NRZ as the operator for ISG;
- Following site suitability assessments, MEI will fund stage 1 (demonstration facility) and both JV partners will fund any commercial project on a pro rata basis in accordance with their shareholding and share profits on a pro rata basis.

Background

As previously announced in December 2020 NRZ entered into an agreement with China New Energy (CNE), part of the Meijin Group for In-Situ Gasification operations in China.

Meijin has commercial interests in large underground coal resources in Shanxi. Meijin also has commercial interests in steel mills producing over 2 million tonnes of steel per annum, a fertiliser plant, three gas fired power stations, four coking coal and PCI mines, and thermal coal leases.

COVID restrictions in China restricted both international and domestic travel that made it extremely difficult to progress the work in China that was initially considered under the joint venture. The lifting of those restrictions has meant that progress on projects in China can now move forward. Shanxi Meijin is a company listed on the Shenzhen Stock Exchange. Shanxi Meijin is already well placed in the Chinese hydrogen economy. Notably, Shanxi Meijin already constructs hydrogen vehicles, hydrogen fuel cells and hydrogen charging stations. This provides NRZ with a major advantage in meeting the needs of a developing hydrogen fuel market in China.

About the Meijin Group

The Meijin Group is the parent company of several subsidiaries, of which Shanxi Meijin (listed), CNE, MEI and Feichi Automobile Feichi Technology are all part of. This agreement is with one of the Meijin Group's subsidiaries (MEI).

Hydrogen Vehicle Manufacturing - Feichi Technology & Qingdao Meijin

Meijin Energy Holdings Feichi Automobile Feichi Technology was founded in 1971, and its production base is located in Foshan (Yunfu) Industrial Transfer Industrial Park, Yunfu City. The Industrial Park has a total construction area of 230,000 square meters, and a total investment of 2 billion yuan, and an annual output of 5,000 new energy buses. It is the largest production base of new energy buses and hydrogen fuel cell buses in South China.

At present, Feichi Technology and Qingdao Meijin have more than 20 different types and models of bus and are one of the few domestic hydrogen energy vehicle manufacturing companies with actual mass production capacity and experience in operation and commissioning. It has maintained close cooperative relations with many hydrogen fuel cell technology enterprises and research institutions at home and abroad.

Feichi Technology is the pioneer of fuel cell vehicles, and has many firsts in the field of hydrogen energy vehicles

- The first hydrogen fuel commercial vehicle enterprise in China to achieve carbon emission reduction certification and trading.
- The first batch of hydrogen energy battery commercial vehicle qualification in China.
- The first commercial hydrogen fuel cell bus demonstration line in China.
- The first complete vehicle enterprise in China to export hydrogen fuel vehicles overseas.
- The first hydrogen fuel commercial vehicle manufacturer in China to obtain EU certification.
- Hydrogen fuel cell buses rank first in the national market.
- The safety mileage of hydrogen fuel cell vehicles in China ranks first in the industry.
- R&D and launch of the first solid hydrogen storage fuel cell refrigerated truck.
- The first large-scale commercial operation of hydrogen fuel cell heavy truck in China.
- Owns Hydrogen charging stations.

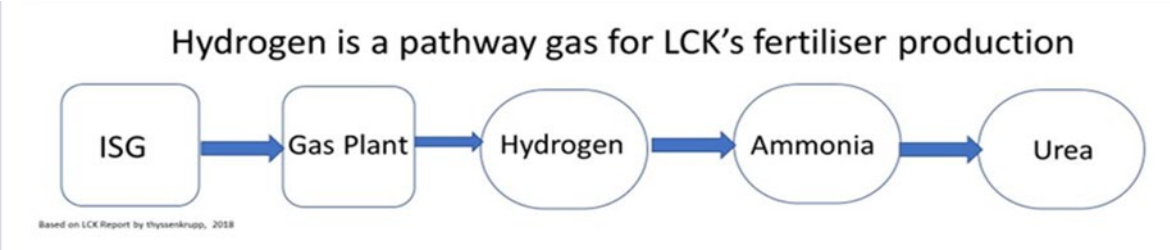
Hydrogen trading platform in China

Recent developments in China in establishing a hydrogen energy trading platform has opened the door for deployment of NRZ/ISG production of hydrogen. As was announced in China [(5)] on the 24th of April 2023 Shanxi Meijin Energy Co, joined with two other companies to establish China's first hydrogen energy trading platform, which was launched in East China's Shanghai. The platform is jointly established by Shanxi Meijin Energy Co in Shanxi, Hundsun Technologies Inc based in Hangzhou, and Qingshan Technology Co based in Beijing.

It will serve as a platform for the national hydrogen energy trading market, support one-stop trading in hydrogen energy products, create a closed loop of online business in the hydrogen industrial chain, and promote the inclusion of clean hydrogen energy into the voluntary emission reduction market.

It is set to accelerate the construction of a market-oriented trading mechanism that transforms hydrogen energy transactions into the carbon emission reduction transactions. The platform now focuses on the development of hydrogen product trading, while also giving accurate hydrogen pricing information, and providing information on the whole hydrogen energy process. Additionally, the platform facilitates hydrogen production, sales, transportation logistics, and digital tracking services, while providing online trading and settlement services for the whole country.

NRZ synergy with Meijin for hydrogen production



The hydrogen market is growing at an exponential rate in China and it is our intention to produce low cost hydrogen to meet the growing hydrogen needs in China. The production of hydrogen from ISG is the lowest CAPEX model for NRZ because hydrogen simply needs to be removed from the syngas and stored. After separation of hydrogen NRZ still has the capacity to produce other products from the remaining gas consisting of CH4, nitrogen and CO2.

Next steps to commercialising ISG in China

- NRZ will be able to replicate the design and engineering of the Leigh Creek Demonstration Facility in China, saving considerable time and money.
- Site assessment is to be completed.
- The feasibility of dismantling and shipping the Leigh Creek Demonstration facility to China is currently being costed but is not a condition to the completion of the future agreements.
- At the commercial stage of the project both NRZ and Meijin will be required to go through standard regulatory approvals. NRZ notes that the National Energy Administration (a state administration under the National Development and Reform Commission) has clearly stated that ISG projects should be promoted and explored.[6]
- JV agreement is to be formalised following site assessments. NRZ will commence the site assessments immediately starting with geological assessment of the sites. It is anticipated the site assessments will take approximately 8 months.
- The production of hydrogen from ISG is a low capex model requiring the stripping and storage of hydrogen from the syngas. As such both NRZ and MEI believe that commercial production of hydrogen can be achieved in 2024.

References

(1) Centre for Strategic International Studies, Published February 3, 2022.

(2) Refer ASX Announcement 3 June 2020. This figure is based the quantity of syngas produced to operate a 2mtpa urea plant. NRZ notes that the actual number will differ depending on plant capacity.

(3) Economic analysis of hydrogen production from China, Clean Energy Volume 7 February 2023.

(4) Hydrogen Industry Development Plan (2021-2035) 13 January 2023 IEA Hydrogen Report.

(5) China Daily April 23 2023.

(6) National Energy Administration – Notification on the issuance of The plan for clean and efficient use of coal.

The NRZ Board has authorised this announcement for release to the ASX.

Further Information

Investor Relations

Tony Lawry
T +61 412 467 160
E tony.lawry@neurizer.com.au

About NeuRizer Ltd

NeuRizer (NRZ) is the company responsible for progressing the NeuRizer Urea Project (NRUP). NRUP is a nationally significant project that will deliver low-cost, high-quality nitrogen-based fertiliser ensuring a secure supply for local and export agriculture markets. Located in South Australia, 550 kilometres north of Adelaide, the NRUP will initially produce 1Mtpa of urea fertiliser with potential to increase to 2Mtpa.

NRZ is a certified carbon neutral organisation having been awarded Climate Active certification in March 2022 and is a signatory to the United Nations Global Compact. The NRUP is carbon neutral by design, and the decarbonisation pathway for the NRUP is embedded in the Front-End Engineering and Design (FEED) process to ensure that the NRUP achieves zero carbon operations from first operations in 2025.

The NRUP will significantly increase Australia's sovereign manufacturing capability for fertiliser supporting Australian agricultural food production. The NRUP will strengthen supply chain resilience that will benefit Australian farmers and, to a lesser extent, the industrial sector where urea is used as a supply input (eg. diesel additive (AdBlue), industrial resins, etc.) by reducing the nation's reliance on imports.

The NRUP will be one of the biggest infrastructure projects of its type in Australia, providing long term economic development and employment opportunities (2,000+ construction jobs plus 2,450+ ongoing positions) for the communities of the Upper Spencer Gulf region, northern Flinders Ranges and South Australia.

The NRUP will be the only fully integrated urea production facility in Australia, with all inputs (gas, power and CO2) for low carbon urea production on-site, meaning NRZ will control both supply and price of these major cost inputs, regardless of prevailing market conditions and supply chain dynamics.

Forward looking statements

This announcement contains forward-looking statements based on conservative estimations with regards to gas and fertiliser production costs that are subject to risk factors associated with the gas and energy industry. The expectations reflected in these statements are currently considered reasonably based as they are based on studies and reports previously announced. They may be affected by a range of variables that could cause actual results or trends to differ materially, including but not limited to: price and currency fluctuations, the ability to locate markets for Fertiliser, project site latent conditions, approvals and cost estimates, obtaining funding for the commercial project, development progress, operating results, legislative, fiscal and regulatory developments, economic and financial markets conditions.

Level 11, 19 Grenfell St
Adelaide SA 5000

neurizer.com.au