NeuRizer NeuRizer Urea Project A Project of National Significance

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July 2022

ASX:NRZ

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TOWARDS A CARBON NEUTRAL WORLD

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Gas Resources Compliance Statement

The PRMS resources estimates stated herein are based on, and fairly represent, information and supporting documentation prepared by Timothy Hower of MHA Petroleum Consulting, Denver USA. MHA Petroleum Consultants LLC is now part of Sproule International Limited. Mr. Hower is a member of the Society of Petroleum Engineers and has consented to the use of the Resource estimates and supporting information contained herein in the form and context in which it appears. All estimates are based on the deterministic method for estimation of petroleum resources.

NeuRizer is not aware of any new information or data that materially affects this information and all the material assumptions and technical parameters underpinning the estimates continue to apply and have not materially changed

#### Mineral Resource Compliance Statement

Estimates of Mineral Resources reported in this announcement are based on the latest information and data available. The recently updated Geological Model and JORC Resource Estimation report, prepared by Warwick Smyth and Lynne Banwell of GeoConsult Pty Ltd during March 2019 was used in this latest PRMS estimation. A copy of the GeoConsult report on the updated Geological Model and JORC Resource Estimation is available to view at <u>www.nrz.com.au</u>.

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#### **NeuRizer Ltd Overview** NeuRizer Carbon Neutral project from 2022 and embedded ESG credentials ASX listed company developing its NeuRizer Urea Project (NRUP), 550km north of Adelaide, South Australia Developing low-cost, carbon neutral, nitrogen-based fertiliser for local and export agriculture markets Million tonnes The NRUP will initially produce 1Mtpa (potential to increase to **Current Annual Urea Demand** 2Mtpa) of urea from a dedicated facility at a cash cost of A\$109/t The NRUP is expected to be the only fully vertically integrated urea **Benefits** production facility in the world, with all major inputs located on-site **Carbon Neutral** Vertical integration eliminates commodity and supply risks of domestic urea demand is associated with buying gas and power imported<sup>1</sup> Domestic production Australian produced urea will avoid the risks and costs associated Competitive price with transport, commodity prices, import logistics and exchange rates Australian jobs 4 <sup>1.</sup> Source: Fertiliser Australia <u>https://www.fertilizer.org.au/Fertilizer-Industry/Australian-Fertilizer-Market</u>

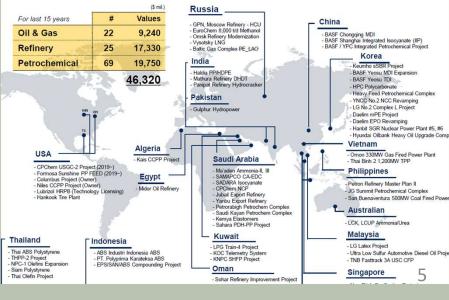
# Daelim – Global Partner

Lumpsum, turnkey EPCC contractor – FEED, BFS, EPCC
 Daelim facilitated A\$1.5 Bn of funding\* (70% of urea capex)
 Offtake agreement for 50% of production signed - \$1.5B
 Daelim a strategic investor in NRZ – 9% stake
 Carbon capture co-operation agreement signed









\* Letter of Support subject to FID and to be agreed commercial terms

Key Milestones met November Petroleum Production Licence granted Upstream - Stage 1-**Environmental Approvals** process started in Nov 2020 and expected approval in Q1 2022 Successful PCD 2P PRMS **EIR/SEO** granted (Environment Impact Assessment & Statement of Environmental Objective) October PFS by thyssenkrupp

2019

#### Stage 2 Construction Q4 commences, Stage 1 - HoA offtake with Daelim urea plant **Construction 5MW** - Downstream Development power plant ammonia plant Approval to commence Production of 1mtpa 100MW power gasifiers - Licensor selection carbon neutral urea and - Gas field development-Offtake Contract distribution to Australian seismic, drilling signed with farmers and for export - NexantECA appointed to **Daelim Trading** FID conduct BFS - S 23 Heritage Approval June - Appointed DL E&C for Infrastructure EPCC - BFS, FEED, FID Licensed (Stage 1) DL E&C 9% - Mobilisation of the full Placement engineering team and employment of initial KBR and Australian Engineers Stamicarbon appointed BFS - 70% project funding (Stage 2) Letter of Support\* from major South Korean Bank IBFS

2022

COMPLETE

2021

2020

\* Letter of Support subject to FID and to be agreed commercial terms

2023

2025

NeuRizer

#### **Key Developments** NeuRizer Regulatory Petroleum commercial production licence and heritage approvals obtained Technical capability proven - successful operation of the Pre-Commercial Demonstration plant and faultless post Technology operation environmental monitoring KBR providing the ammonia expertise and Stamicarbon the urea - both best in class/top tier global partners Stage 1 - Small scale, up to 5MW, power plant being acquired and installed – internal power use Construction Stage 2 - Urea plant construction under fixed price, turnkey EPCC - DL E&C Ltd (Daelim) Strong, growing and sustainable demand for urea - domestic and international Underpinned by five year, take or pay offtake with Daelim Trading for 50% of production Market Future proofed through carbon neutral certification Preliminary feasibility study completed - 30% IRR Letter of Support from a major South Korean bank issued for up to 70% debt finance for urea project costs Financing facilitated by Daelim Combination of project debt, equity and/or strategic partner expected Discussions commenced with potential investors for pre-FID funding (up to AUD100m) and balance of funding 0-0 NRZ key project personnel, top-tier partners all have strong track record in delivering large projects. Execution Strong risk based approach gives comfort on delivery

\* Letter of Support subject to FID and to be agreed commercial terms

Major risks addressed and mitigated



#### The Global Urea Market



# Urea Crisis

#### NeuRizer



April 29, 2022

#### Growers urged to prepare for higher input prices: Rabo

Bloomberg May 1, 2022

#### Can the World Feed Itself? Historic Fertilizer Crunch Threatens Food Security

A run-up in prices and shortage of man-made nutrients are forcing the agriculture industry to adapt, and the impact could be severe.



March 22, 2022

Fertilizer prices are at record highs. Here's what that means for the global economy

#### yahoo/finance

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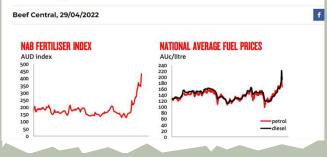
March 22, 2022

Fertilizer prices just hit a record high sparking fears of global starvation and the worst food insecurity level since World War



April 29, 2022

Fuel and fertiliser costs among agriculture's key challenges



#### **MINEWS**

March 23, 2022

#### RURAL NEWS

Fertiliser prices soar, leaving farmers struggling with cost of production

#### **WEEKLY** TIMES

March 22, 2022

Agribusiness > AgJournal

Fertiliser prices mean new ways of production and selling are being considered

Fertiliser prices have always bounced around, but after the last few years Aussie production is at a crossroads.

# What is Urea?

#### NeuRizer

- Growing agricultural crops requires nitrogen, phosphorus and potassium (NPK) in large amounts to support both crop yield and quality – nitrogen fertilisers are key
- Urea (NH<sub>2</sub>)<sub>2</sub>CO) is a nitrogen containing fertiliser formed from ammonia and carbon dioxide
- 46% nitrogen the highest nitrogen content of all solid fertilisers
- Non-hazardous
- Handles well
- Stable
- Safe

- Easy to transport
- Fully soluble in water
- ldeal for low-cost distribution



# The Global Outlook for Urea

#### Population

- The world's population is expected to increase by 2 billion people in the next 30 years, from 7.7 billion to 9.7 billion.
- The extra 2 billion people require living space, reducing the land available for farming
- The world population is becoming typically wealthier thereby increasing the demand for food
- Farmers need to produce more from less fertiliser demand
- Global fertiliser demand is driven by population growth and GDP growth

#### Gas

- All urea is made from gas
- Conventional gas supply is diminishing leading to rising cost and prices

#### **ESG**

- The world attempts to reduce carbon emissions has led to a rapid increase in ESG investing
- Smaller pool of funds for fossil fuels means lack of supply leading to inevitably higher

   prices and short supply of gas

   Megatrend Growing population requires more food from less resources

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# World Population Projected world population until 2100 1990 5.3 2015 7.3 2015 7.3 2030 8.5 2050 9.7 </t

NeuRizer

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#### The NeuRizer Urea Project





# **NRUP Site Overview**

- 1 million tonnes per annum of granular urea
  - Bottom of the global cost curve
- Favourable logistics with on-site rail loop and dedicated track to Port Augusta
- Vertically integrated with gas, power, water,  $CO_2$  on site
- Infrastructure licenced, sole user, to NRZ

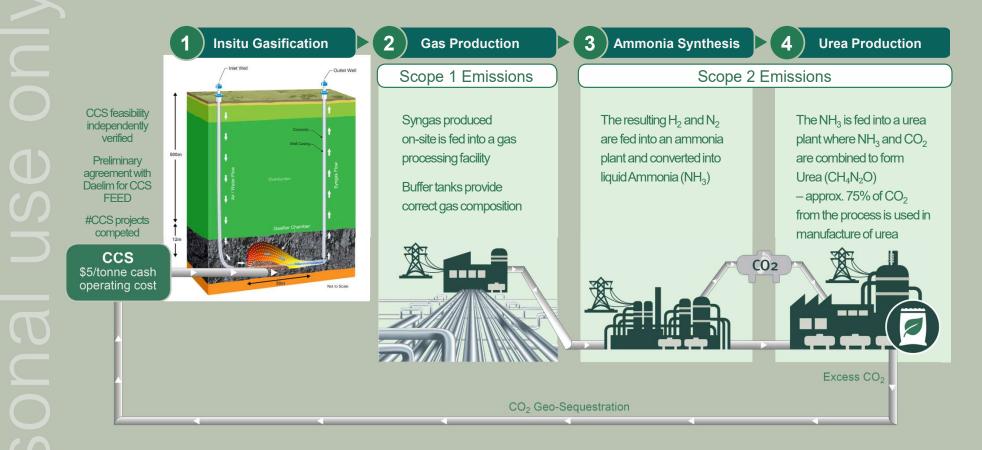


#### NeuRizer



# NRUP – Urea Manufacturing Process

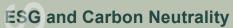
NeuRizer

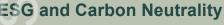


CCS – Carbon Capture and Storage

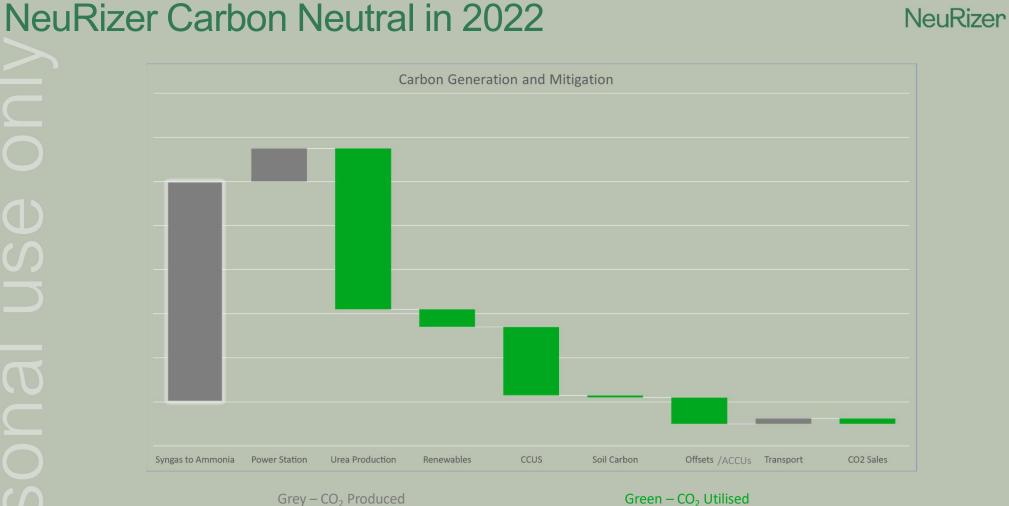
World average: 3 tonnes of carbon dioxide per tonne of urea 15











**NRUP Carbon Neutral – by Design** 17

# NeuRizer Carbon Neutral in 2022

- This is not 'greenwashing'
- Carbon neutral programme started in 2018 we are not new to this, it has been a long-term commitment
- Intention to make carbon neutral urea now becoming a reality
- NRZ is a certified carbon neutral organisation awarded Climate Active (Australian government) 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 carbon neutral operations from first operations in 2025
- All sustainability results are real, transparent and verifiable

Results to be audited and reported publicly in mid 2022 under international standards – TCFD









#### Milestones



**Top Tier Partners** E&C Stamicarbon provider **MERICHEM NexantECA** 

#### NeuRizer

Engineering, Procurement, Construction and Commissioning Partner

Ammonia Technology Licensor

Urea Technology Licensor

Sulphur removal technology

Feasibility Studies

EATING OPPORTUNITIES

pwc

Environmental and Development Approval

Strategic Debt Advisor

Commodity Market Analysis

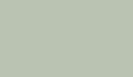
> Emissions Reduction Advisor

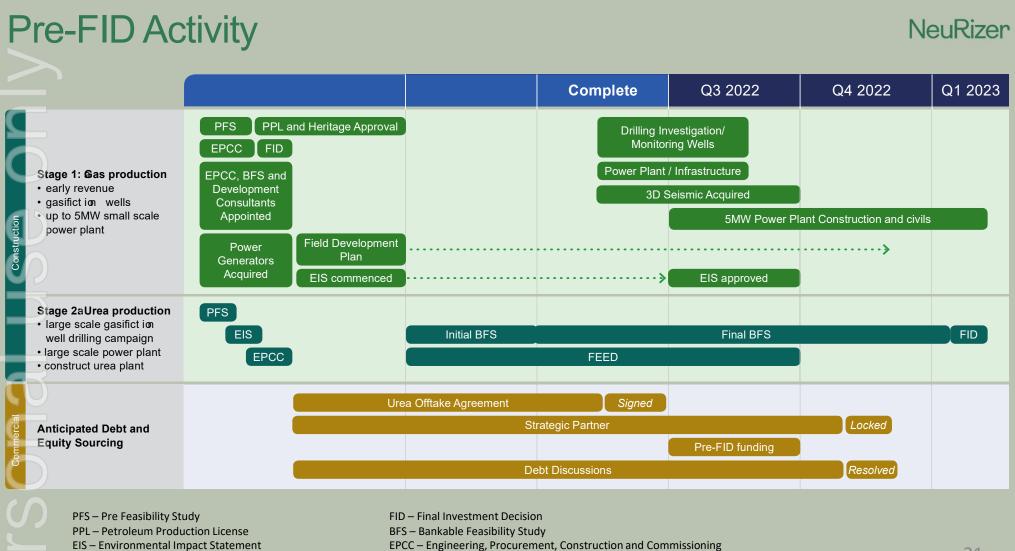
PiperAlderman Legal Advisor





Energy Link





SEO – Statement of Environmental Objectives

FEED – Front End Engineering and Design

#### **NeuRizer Markets**

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# NeuRizer's Target Markets

#### Export

- Worldwide governments are restricting trade in urea to ensure local supplies Global fertiliser and agricultural markets and supply chains now highly exposed
- to geopolitical conflicts, lessening supply and increasing demand
- NRUP will initially produce 1 Mtpa, with approximately 50% being exported
- Offtake agreement
- Train from site to shipping ports

#### Domestic

- Domestic urea fertiliser demand is ~2Mtpa, 95% of which is currently imported
- Excellent logistics domestic distribution via on-site train line
- Australian government policy to strengthen and improve sovereign manufacturing capability for key agricultural inputs
- Cheaper, faster and less risky for distributors to buy NRZ urea for sale to Australian farmers than to ship it from the Middle East or Asia
- Customers and demand are price elastic NRZ has the competitive advantage of being a low-cost producer

#### NeuRizer



- Globally the most applied nitrogen fertiliser
  - Global demand 200<sup>+</sup> million tonnes
  - Asia Pacific demand 110<sup>+</sup> million tonnes
  - Market expected to grow at 1.5% (CAGR)
  - NeuRizer well placed in Asia Pacific market

#### Strong market dynamics 23

# **Export Offtake Agreement**

- Binding contract with Daelim Trading
- Minimum 500,000 tonnes per annum from 2025
- Take or Pay
- Index linked pricing
  - 5-year contract with mutual extensions
  - ho Contract value at forecast prices (US\$424/t) A\$1.5Bn<sup>1</sup> over 5 years
  - At today's prices the contract value would be A\$2.8Bn<sup>2</sup> over 5 years
- Gives optionality on domestic volumes
- This is the only offtake agreement required to progress stage 2 financing

 CRU is an independent forecast team which publishes the urea commodity price on a quarterly basis covering production, demand and trade as well as global capacity and includes key benchmarks over a 5-year period and long-term forecast that includes a 25-year forecast.
 Index Mundi Urea Monthly Price. IndexMundi is a comprehensive data portal gathering data from multiple sources such as Fertilizer Week, Fertilizer International, and the world bank and is based on Indexmundi April/May datasets



#### NeuRizer

DL E&C Offtake -	- Impac	:t			NeuRizer
	A\$m				
Offtake sufficient to cover	800				
all operating costs plus safety margin	700				
No requirement for     further offtake	600				
agreements	500				
Offtakes remain available     for potential strategic	400				
partners	300				
Allows potential for accessing higher spot prices for domestic sales	200				
	100				
	0				
		Offtake	Domestic 2026	Total	
		Fixed cost Va	riable cost   ■ Freight   ■ Finance (P8	kl) 🔳 Free cash	25

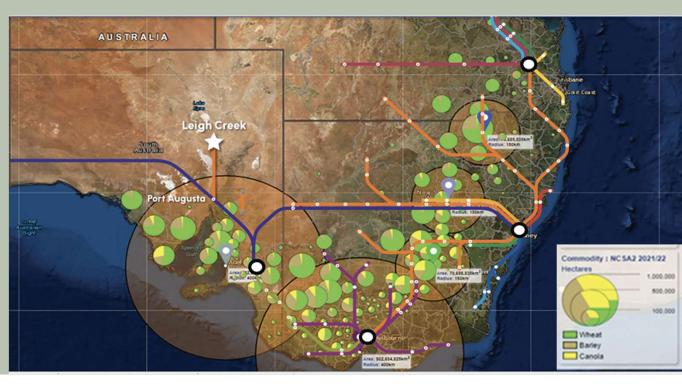
# **Domestic Sales**



- Australian granular urea sales reached 2.7 million tonnes in 2021
- Addressable market covers 91% of crops in Victoria, New South Wales and South Australia
- NeuRizer will have a strong location and distribution advantage in its target markets South Australia, Victoria and New South Wales 1.7 million tonnes urea
- Direct to market, low-cost distribution
- Strong in-market presence
- Focussed on large scale cropping
  - Wheat, barley and canola

<u>O</u>ersona

Large users of granular urea



Southeastern Australia major cereal growing regions and national railway network

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#### **Capital requirements and Funding**



# **Feasibility Studies**

#### **PFS Project Assumptions**

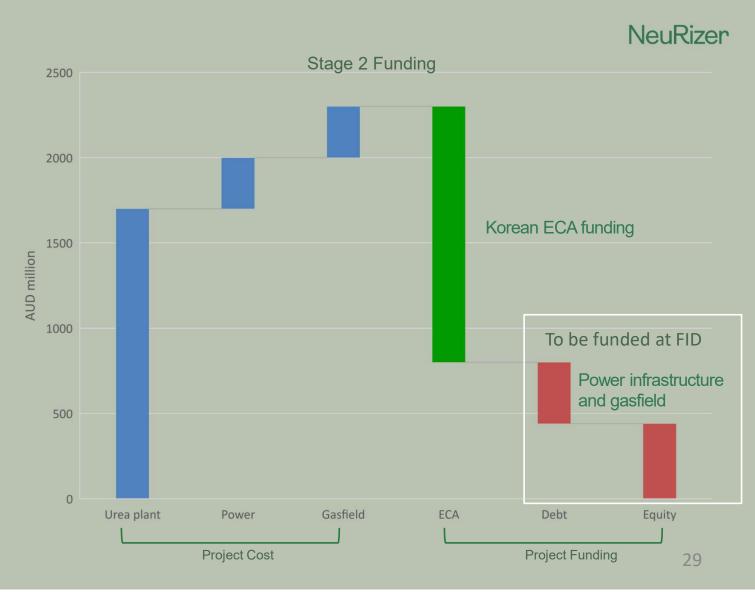
Syngas produced per year	PJ	35
Debt:Equity ratio	%	70:30
Interest Rate	%	6.0
Inflation	%	2.5
Repayment Period	Years	20
Discount Rate	%	9%
Corporate tax rate	%	30
PFS Financial Metrics		
Capex	A\$B	2.6
Net Revenue/tonne <sup>1, 2</sup>	A\$/tonne	410
Pre-Tax Opex/tonne <sup>3, 4</sup>	A\$/tonne	109
EBITDA/annum <sup>6</sup>	A\$m	420
EBIT/annum <sup>6</sup>	A\$m	337
LOM average EBITDA/annum <sup>5</sup>	A\$m	678
LOM average EBIT/Annum <sup>5</sup>	A\$m	599
Leveraged Pre-Tax NPV	A\$B	3.3
Leveraged Pre Tax IRR	%	30%
Leveraged Pre Tax Payback Period	Years	4.0

- 1. Source: CRU MEGU FOB 2. CRU 2024 forecast pricing
- Operating costs represent cost of production to the factory gate
- Average life of project, nominal figures
   Average nominal LOM EBIT/DA
- Average nominal LOM EBIT/D
   Average of the first 5 years of
  - production

- NeuRizer
- Interim BFS (not released) completed March 2022 confirmed robust economics per the PFS of November 2020
- Conservative assumptions retained: historically low pricing of US\$280/t (A\$410/t) as against current pricing of US\$908 (www.Indexmundi.com)
- Annual urea plant capacity of 1.0 million tonnes per annum
- Commercial life of over 30 years
- Production cost is in the lowest cost quartile of the global urea cost curve
- Total capital cost includes island mode capex
- Final BFS due for completion Q1 CY2023

# Financing

- Aim to conclude financing at same time as BFS completed – or shortly thereafter
- PWC engaged to advise on debt package(s)
- Debt underpinned by long term offtake with Tier 1 company
- Additional debt 50% of gasfield, 70% of power infrastructure
- Additional equity from a sell down of the project to a strategic partner or cornerstone and the market.
  - Option open for remaining 50% of offtake, currently planned for domestic market







Conclusio	n
	<ul> <li>Nationally significant project – reduce reliance on exports, strengthen sovereign supply chains for critical agricultural input (urea)</li> <li>NRUP will help Australia become self-sufficient in urea providing local farmers with quality, cost competitive fertiliser.</li> </ul>
	<ul> <li>NRZ Carbon Neutral since 2021</li> <li>NRUP designed for carbon neutral fertliser</li> </ul>
SD	<ul> <li>Manageable technical risk, large resource base and globally low cost of production.</li> <li>World class/top tier partners – DL E&amp;C, KBR, Stamicarbon, Merichem, PwC</li> </ul>
ر الع الع	<ul> <li>NRUP has strong project economics – 30% IRR</li> <li>Letter of support from a major South Korean bank has been issued to provide debt finance for up to 70% of the stage 2 project costs*</li> <li>Offtake agreement with Daelim Trading</li> </ul>
	Strong structural demand for, and domestic manufacture of, fertiliser provides positive tailwinds for the project.
* Subject to FID and to	o be agreed commercial terms



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AUSTRALIAN CARBON NEUTRAL FERTILISER