

Australia-Korea trade
and investment
relationship

Decarbonisation
and
Geopolitics

James Choi

Honorary Ambassador for
Foreign Investment

Korean Ministry of Trade,
Industry and Energy

Managing Director

J2 Advisory



Australia's Exports to Korea: 2022

DFAT: Korea Country Fact Sheet	
Exports	Destination Ranking: 3
Item	A\$b
1. Coal	17.3
2. Natural gas	13.0
3. Iron ores & concentrates	7.0
Confidential items of trade	3.6
Beef, f.c.f.	1.8
Copper ores & concentrates	1.3
Aluminium	1.3
Total	53.9

But the world is
changing

Will change the
shape of
Australia –
Korea trade and
investment

Decarbonisation

De-risking from China

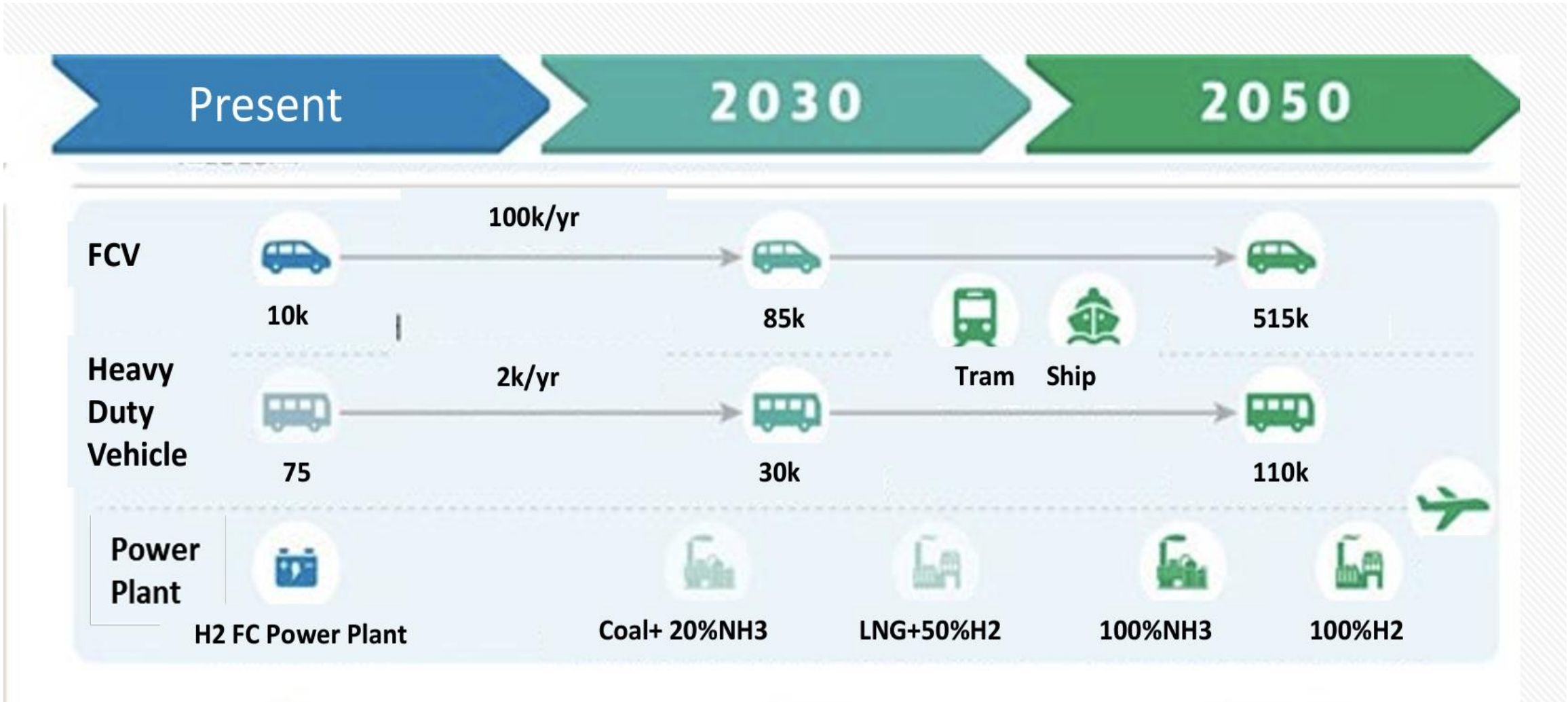
Industry policy / Protectionism

Korea is
changing
course

Net zero by 2050 - 40% emissions reduction by 2030

	2030	2036
Coal	19.7%	14.4%
LNG	22.9%	9.3%
Renewables	21.6%	30.6%
Hydrogen / Ammonia	2.1%	7.1%
Nuclear	32.1%	34.6%

Korea's Hydrogen Strategy



South Korea picks first five winners of hydrogen power plant auction, but no requirement to run on clean H2

Around 715GWh of so-called generating capacity running on 'general' hydrogen has been selected from 73 bids

11 August 2023 14:35 GMT *UPDATED 11 August 2023 14:35 GMT*

Korean hydrogen consumption (tonnes)



Source: DFAT, ABS, Korean Government

Infinite Green Energy and Samsung C&T partner on Western Australia green hydrogen plant

By [Charlie Currie](#) on May 17, 2023 | [Translate](#) ▼

[NEWS](#) | [POWER](#)



MoU For 3 GW Green Hydrogen Project In Australia

Korean Businesses & Ark Energy Form Consortium To Export Over 1 Million Ton Green Ammonia Annually To Korea

Wednesday, 21 Sep 2022

Australian green hydrogen company Ark Energy along with its parent company Korea Zinc and 2 other Korean business conglomerates Hanwha Impact and SK Gas form consortium for a 3 GW green energy hub in Queensland, to export over 1 million ton of green ammonia annually to Korea by 2032.

Western Green Energy Hub and KEPCO: renewable mega-ammonia in Western Australia

By [Geofrey Njovu](#) on July 21, 2023

The POSCO logo is displayed in a white rectangular box on a dark blue background. The word "posco" is written in a lowercase, blue, sans-serif font.

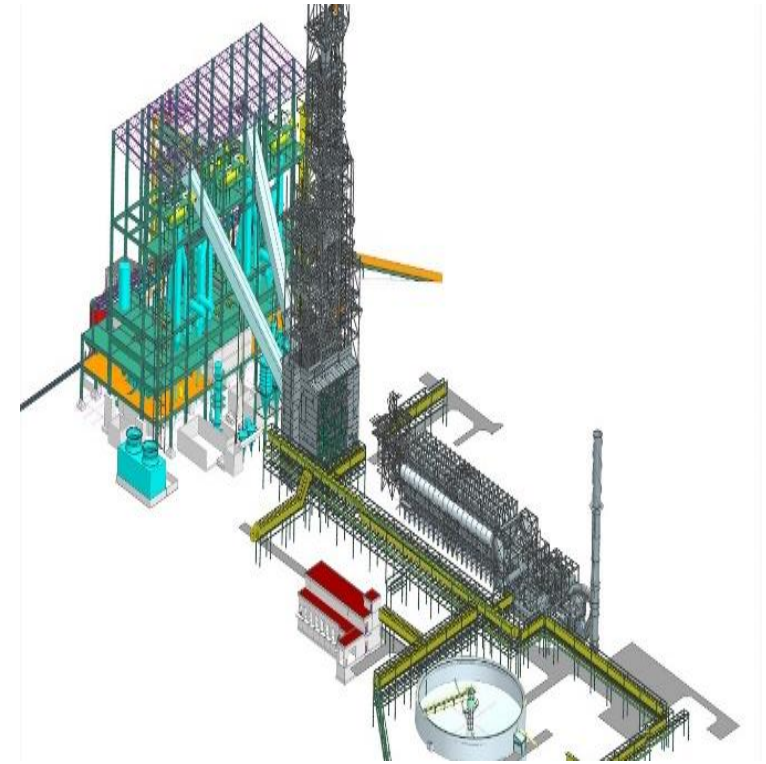
Hot Briquetted Iron (HBI) Port Hedland

HBI made by using hydrogen to process iron ore

Could change the nature of our bilateral trade relationship

Example of how hard to abate industries are seeking to move closer to sources of renewable energy

Opportunity for Australia to become part of the “green-steel” supply chain



But Australia's
hydrogen
industry is facing
challenges

Return of
Industry Policy

US Inflation Reduction Act (IRA) – game changer
US \$3 / kg tax credit - US \$7bn for hydrogen hubs

Middle East competition – Oman, Saudi Arabia,
UAE

Australia's \$2bn Hydrogen Headstart program is a
good start

Australia's Review of Hydrogen Strategy

Need more government support, international collaboration and innovative technologies

Australian industry seems to be split on whether domestic use or exports are the best place to focus



Critical Minerals
supply chain

Increasing in
complexity

Decarbonisation

Geostrategic competition

Industry policy / protectionism

China's battery / lithium processing dominance

- China makes 75% of lithium-ion batteries
- China controls 56% of the world's lithium processing facilities
- China is home to four of the world's five biggest lithium processing companies
- China makes > 50% of the world's EVs



UNITED STATES'S NEW AGENDA CRITICAL MINERALS AND NATIONAL SECURITY

“Today, the United States produces only:

4 percent of the lithium,

13 percent of the cobalt,

0 percent of the nickel

and 0 percent of the graphite,

required to meet current demand for electric vehicles.

Meanwhile, more than 80 percent of critical minerals are processed by one country, China.”

Jake Sullivan
US National Security Adviser
Brookings Institute speech
27 April 2023

US IRA – Non-China supply chain

Local content rules – FTA partners



Foreign Entities of Concern



Washington is yet to spell out what level of Chinese interests / content will be permitted for products destined for the US market

Korea's China Dilemma

South Korea imports
80% of battery
precursor materials
from China

Chinese – Korea joint
ventures may not be
able to access US
market

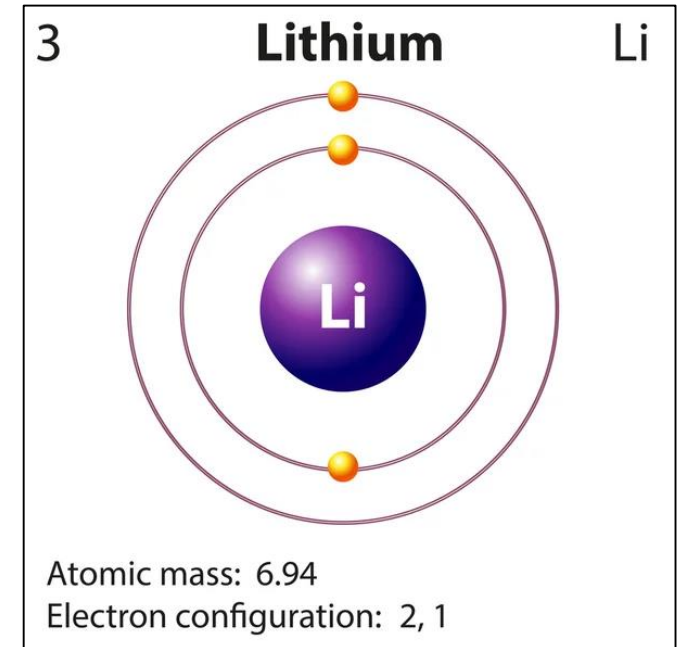


Australia's China Dilemma

Australia mines 53%
of the world's lithium.

But 96% of Australian
lithium is sent to
China

Australia is starting to
increase mid-stream
production



Australia and Korea can be doing more – especially in midstream

Energy

Pilbara Minerals finalises deal with POSCO for S.Korea lithium facility

Reuters

October 26, 2021 12:08 PM GMT+11 · Updated 2 years ago



News

SK On Inks Lithium Supply Deal with Australia's Lake Resources

October 12, 2022

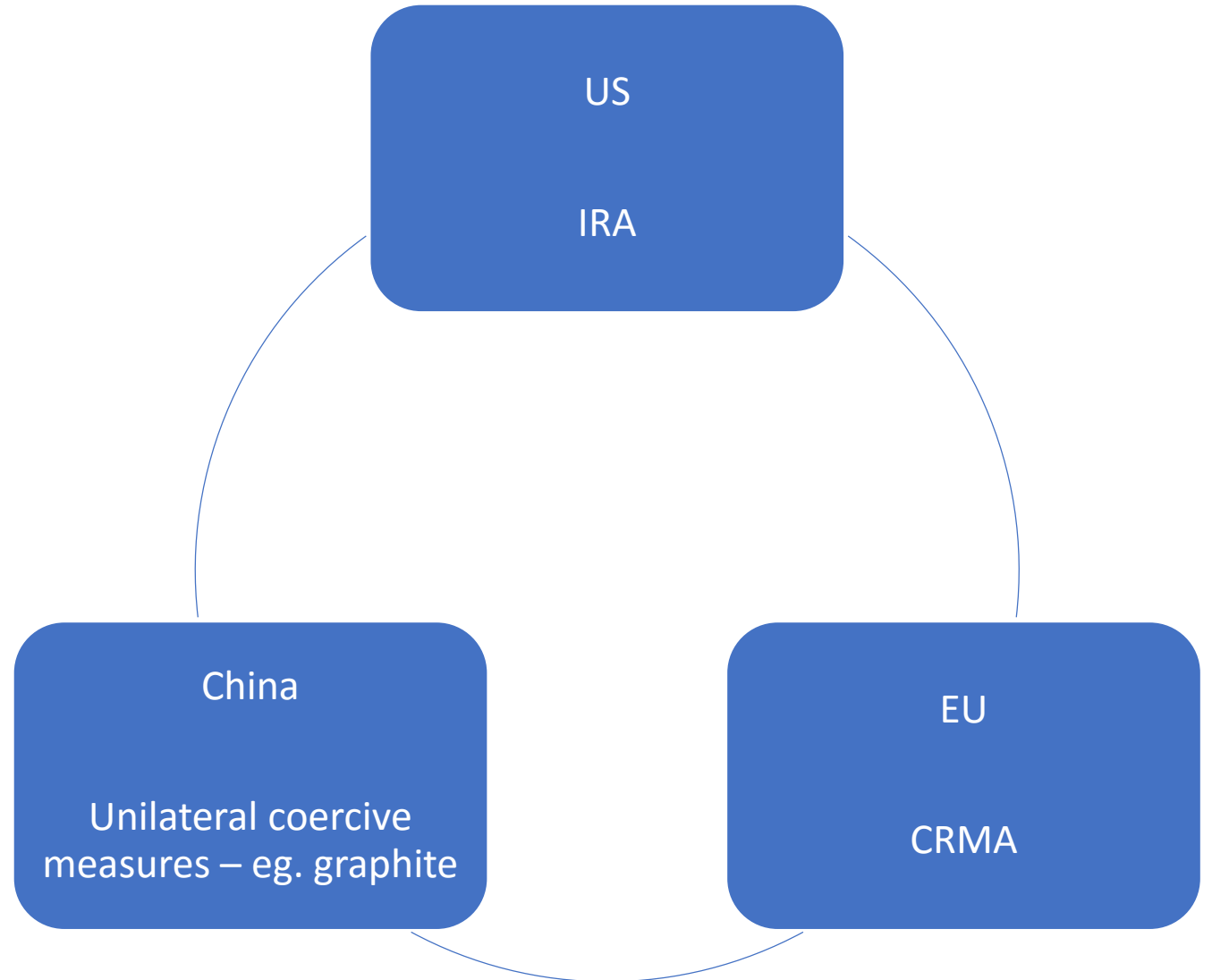
Maximus Collaborates with KOMIR and LG Energy Solution to Propel Lefroy Lithium Project

 18-Oct-2023 5:29 PM Journalist: Motoki Sasaki

Critical minerals

New domain of competition - unilateral rule setting – protectionist policy making

Need to understand how these new rules and industrial policies will shape the supply chain and where we fit in



Rare earths – strategic competition

Rare earths supply chains will receive particular attention due to their growing importance for defence systems, and other high-tech applications, as well as their vulnerability to supply shocks



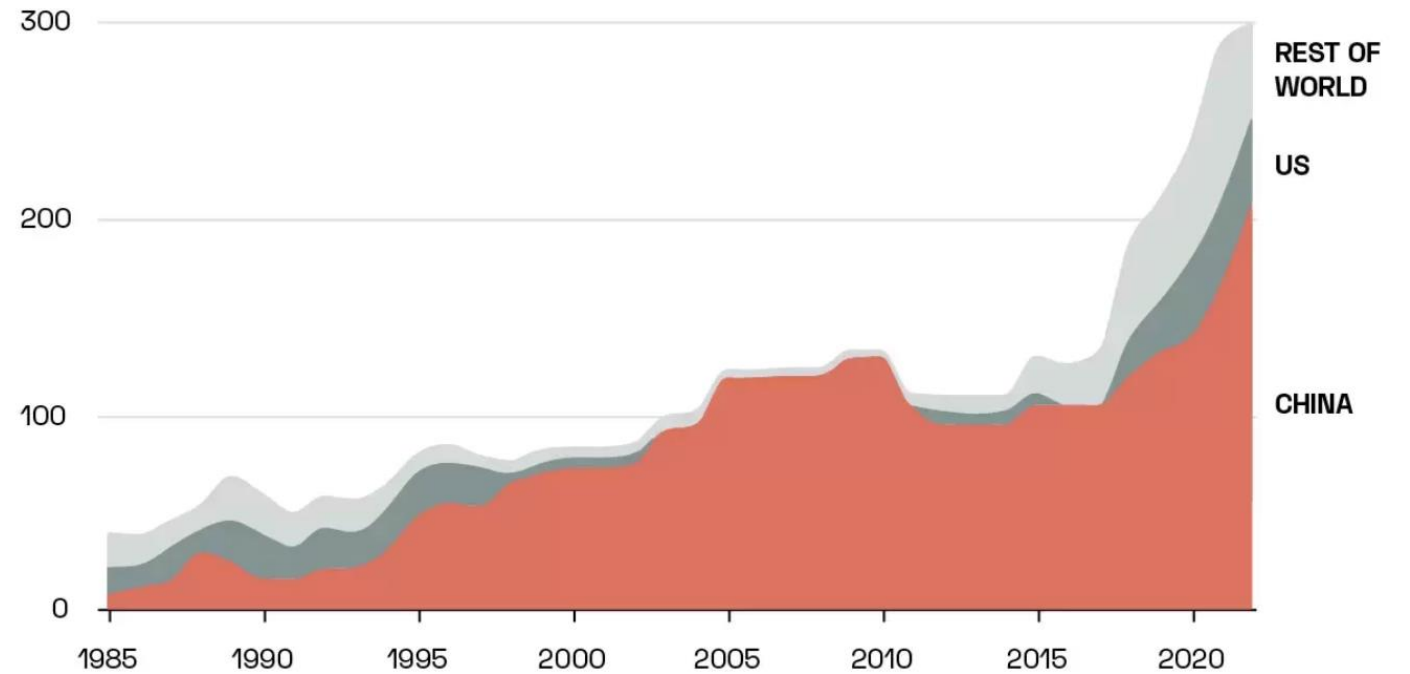
Rare earths

Why are they important?

Virginia-class submarine	4,200 kg
Aegis destroyer	2,400 kg
F-35 Lightning II	420 kg

Rare Earth Elements in National Defense: Background, Oversight Issues, and Options for Congress Valerie Bailey Grasso Specialist in Defense Acquisition December 23, 2013, Congressional Research Service.

China's rare earths processing monopoly



2022 = estimate
Source: USGS

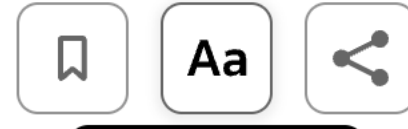
Australia and Korea can do more of the heavy lifting on rare earths

Charged

Australia's Arafura inks rare-earth supply deal with Hyundai and Kia

Reuters

November 7, 2022 10:21 AM GMT+11 · Updated a year ago



Australian Strategic Materials signs joint statement for Korean cooperation on critical metals

Published: 09:06 15 Dec 2021

A Joint Statement of Cooperation has been signed with the Korean Mine Rehabilitation and Resource Corporation (KOMIR).

Australia's
exports to
Korea in 2050
- a net zero
world

Are we
prepared?

1. Hydrogen / Ammonia

2. Hot briquetted iron

3. Precursor battery materials /
processed metal ores and minerals