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The 61st Annual Joint Business Conference
New Beginnings Australia-Japan Partnership
on the Global Stage

Energy Transition - Collaboration Towards Net Zero

25 October, 2024

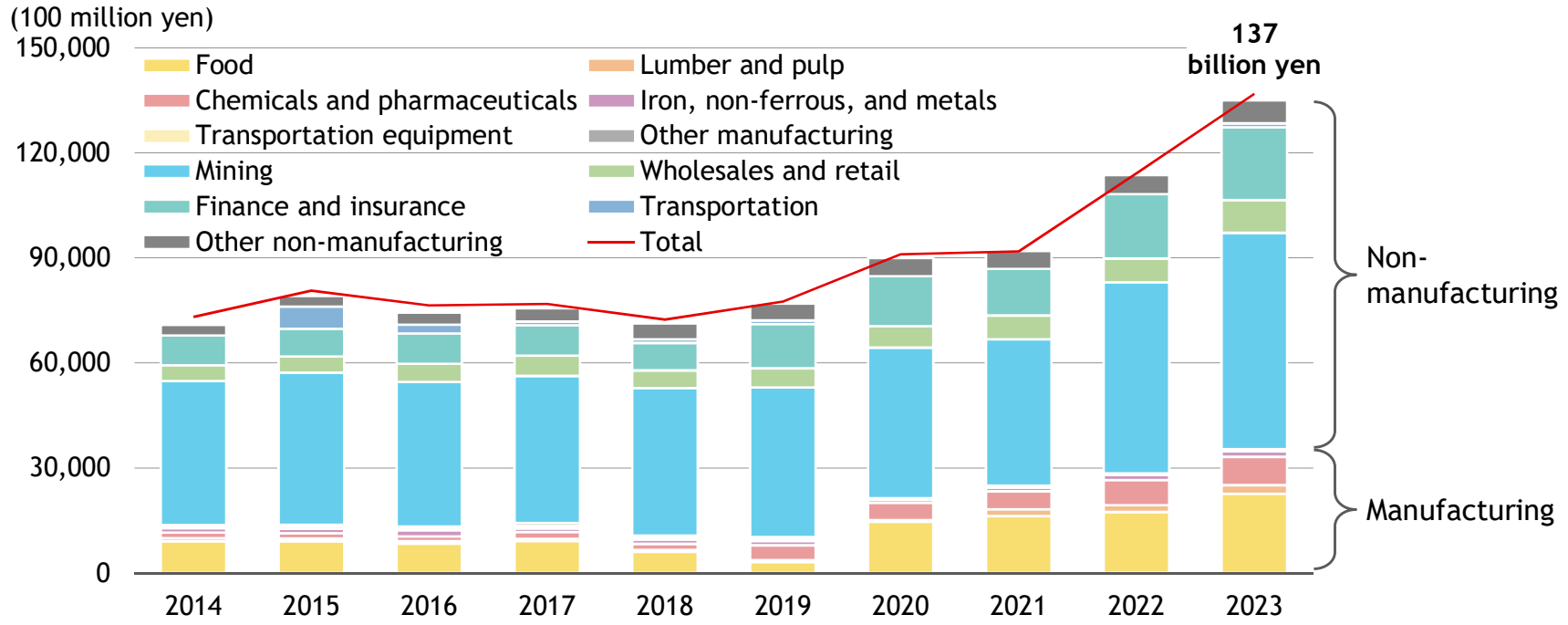
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A member of MUFG, a global financial group

Investment from Japan to Australia

Direct Investment by Industry from Japan to Australia

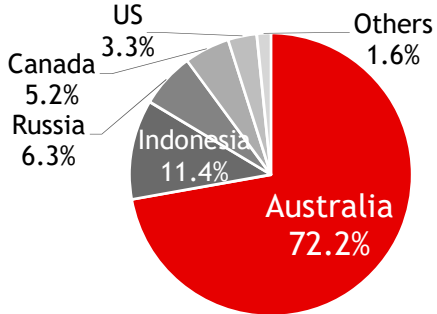


(Source) JETRO / Balance of Payments Related Statistics by Bank of Japan (2024)

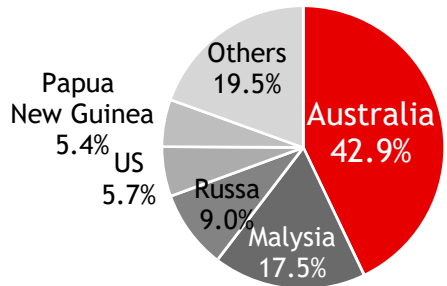


Australia: An Important Partner for Japan from an Energy Policy Perspective

The Source of Japan's Thermal Coal Import (2022)

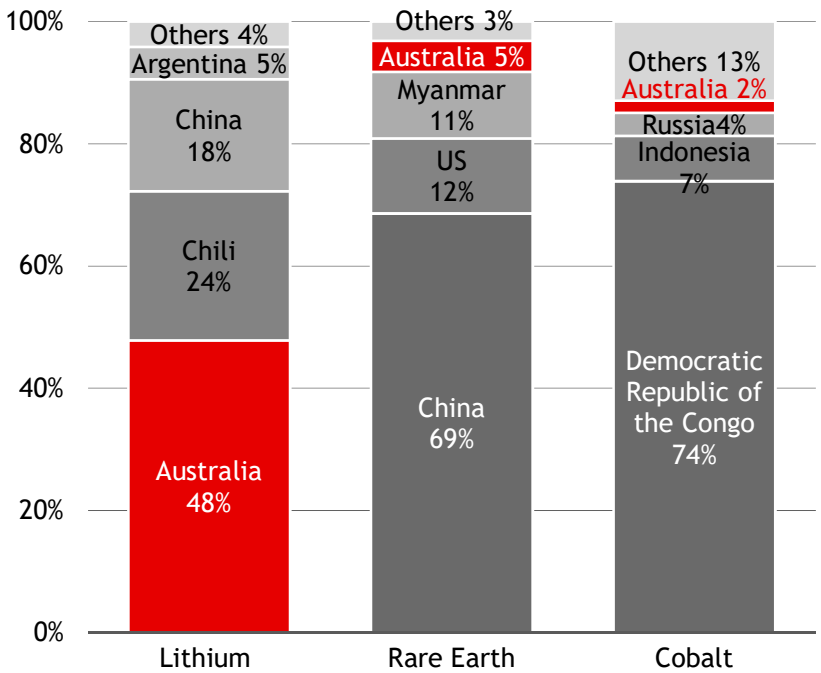


The Source of Japan's LNG Import (2022)



(Source) METI (2024) White Paper (Annual Report on Energy)

The TOP Countries in Battery Mineral Production (2023)



(Source) United States Department of the Interior (2024) Mineral Commodity Summaries 2024

Energy-related Investment Trends between Japan and Australia

1 Gas Field / LNG



Photo by Woodside Energy: Scarborough gas field

- Investment in gas fields in Australia for a stable supply of LNG to Japan
- Recent deals including Barossa/ Cالدita gas field and Scarborough gas field
- 10 major LNG projects under operation with Japanese off-takers

2 Hydrogen, Ammonia with/without CCS



Image: Stanwell

- Over 100 projects in pipeline related to H₂ and its derivatives in Australia
- Most of projects planned to start its operation 2025-2030 onward
- Japanese companies involved in over 30 projects of H₂/Ammonia with CCS

3 BESS (Battery Energy Storage System)



Image: Eku Energy, Hirohara Batter Energy Storage System project render

- Australia rapidly developing BESS projects with over 20 large sites today
- Expanding its business opportunities to other countries including Japan
- In Apr.2024, a first battery project announced in Miyazaki Japan by an Australian company with a 20-year offtake agreement

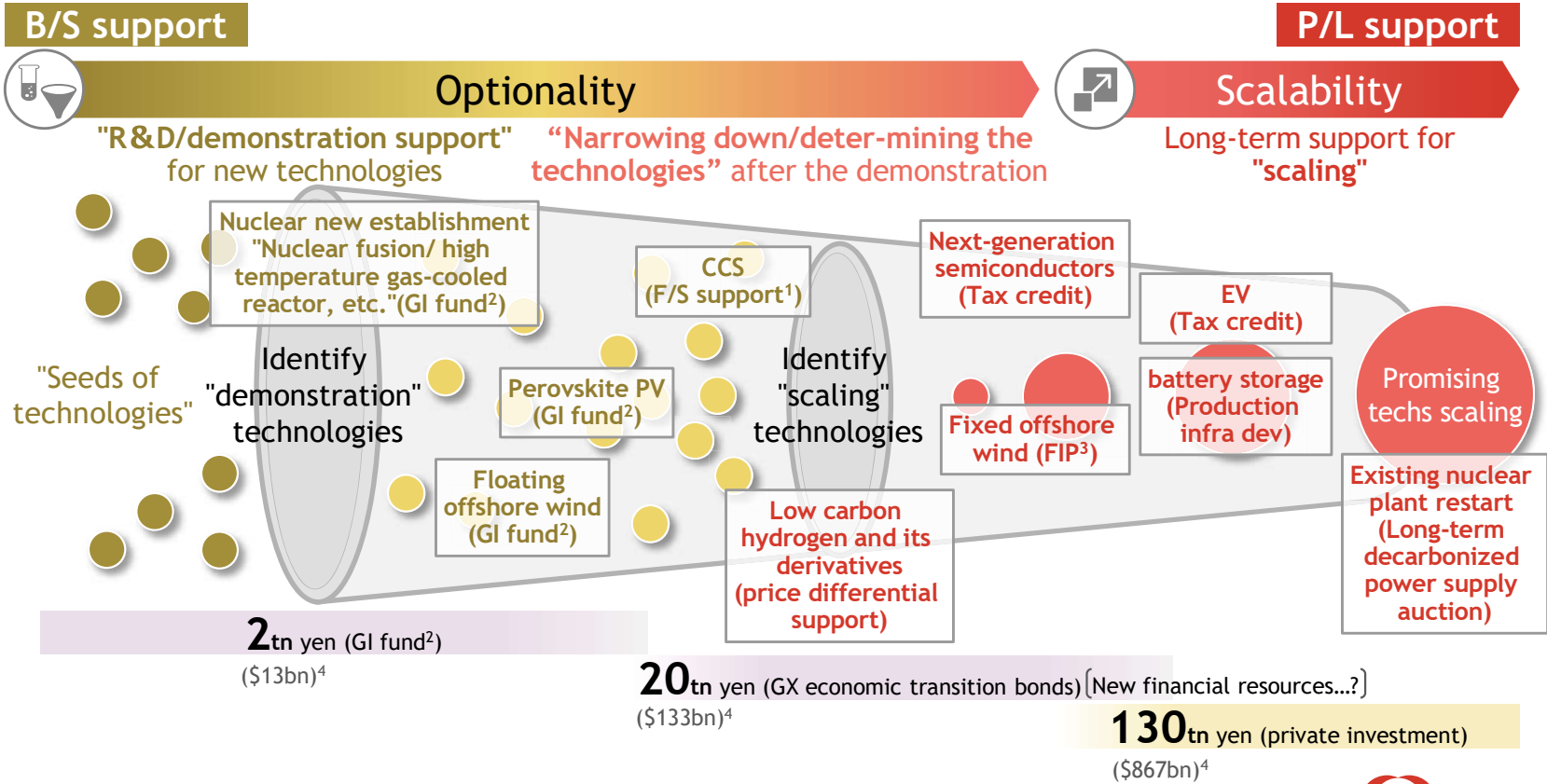
4 New Technologies (Investment in Startups)



- Recent strong growth in clean tech industries in Australia attracting Japanese companies
- In Feb.2024, MUFG entered into a MoU with Artesian Venture Partners, a global alternative fund in Australia, to accelerate investment in startups



Type of Policy Support for Technology Implementation



5 (Note) 1. Support for Feasibility Study; 2. Green Innovation fund (NEDO's program to support research, development, and demonstration projects); 3. Feed In Premium (Renewable energy feed-in tariff premium subsidy system); 4. Converted at 1USD = 150yen



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Collaboration between Australia-Japan: What Do We Need?



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Chalice Mining's Gonneville PGE-Ni-Cu-Co Project

A new long-life, low-cost, low-carbon *critical minerals* project in Western Australia

Strategic MOU in July 2024 with Mitsubishi Corporation

Tier 1 development partner, intention to formalise a potential binding partnership post Pre-Feasibility¹



Tier 1 scale sulphide Resource

17Moz of Pd-Pt-Au (3E), 960kt Ni, 540kt Cu, 96kt Co contained²

Unique critical minerals asset

Revenue split of **~50% Pd, ~25% Ni, ~15% Cu, ~10% Au/Pt/Co**³

Competitive PGE cost profile

Predicted to become **lowest cost PGE producer in western world** (2nd Quartile)

Low-risk development location

Mine infrastructure on **~22km² of Chalice-owned farmland**

Shallow open-pit mining

Resource starts at surface, **high-grade feed in early years**

Sulphide mineralogy

Ability to produce **separate Cu-PGE, Ni-Co-PGE concentrates** and leach Pd from flotation tails



1. Non-binding MOU executed on 3 July 2024 – refer to ASX Announcement for full details
2. For tonnes and grade by confidence category and metal equivalent assumptions, refer to the Mineral Resources Statement in Appendix.
3. Based on the August 2023 Scoping Study 15Mtpa case adjusted for current consensus metal prices

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Santos

AJBCC: 61st Annual Joint Business Conference

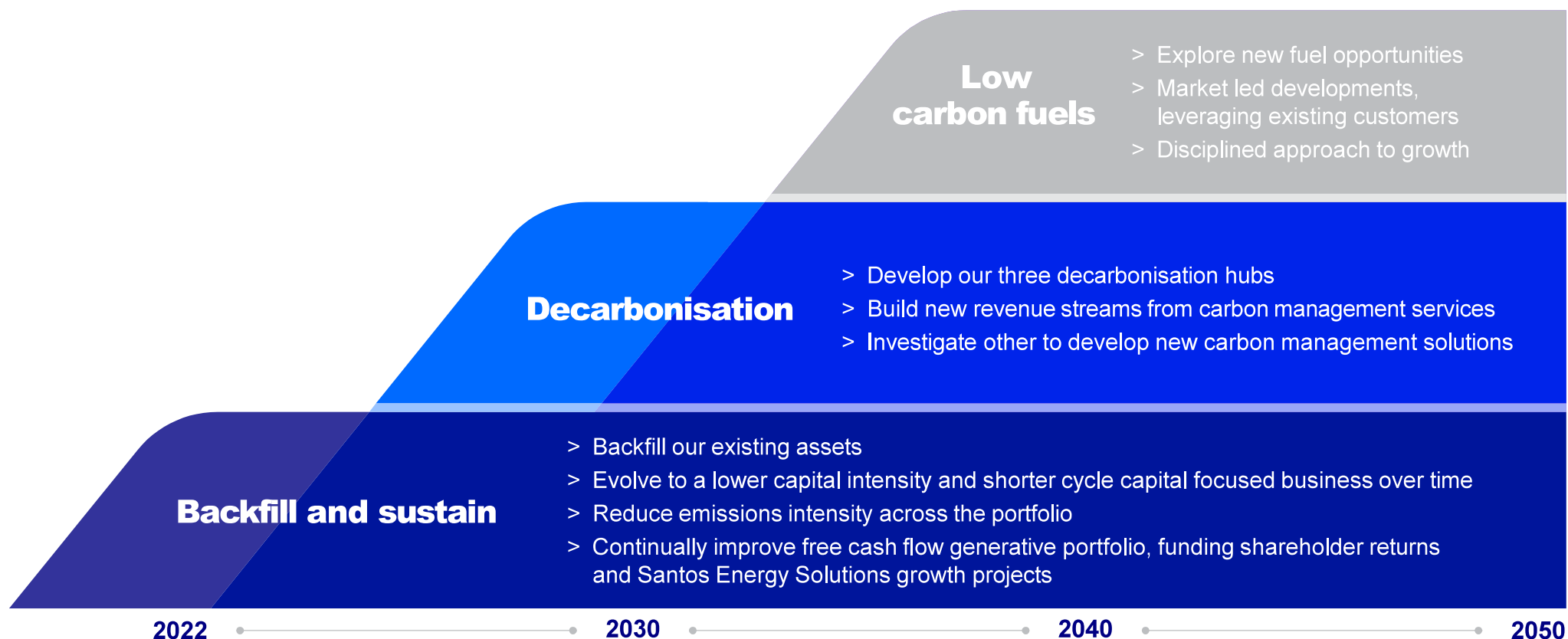
Sean Pitt

24th October 2024



Santos' strategy

Our purpose is to provide reliable and affordable energy to help create a better world for everyone.



Decarbonisation services for customers

Santos

Santos can deliver global scale CCS services to third party customers, leveraging its low-cost CCS projects and existing infrastructure position.

Portfolio of large scale and globally cost competitive CCS projects

Extensive infrastructure position across three CCS hubs

Experience injecting and storing reservoir fluids since the 1980s

A disciplined, low-cost and safe operator

Reviewing storage acreage proximal to existing infrastructure & emitters for future CCS expansions



WA CCS

- ~5mtpa capacity
- Domestic customer-led project
- Import opportunities
- Targeting online 2028



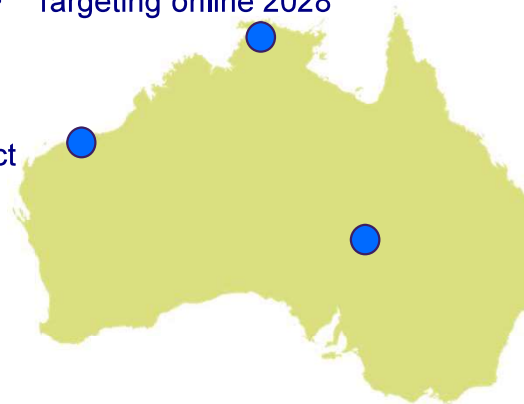
Bayu CCS

- ~10mtpa capacity
- Foundation customer Barossa Gas Development
- Import opportunities
- Targeting online 2028



Moomba CCS

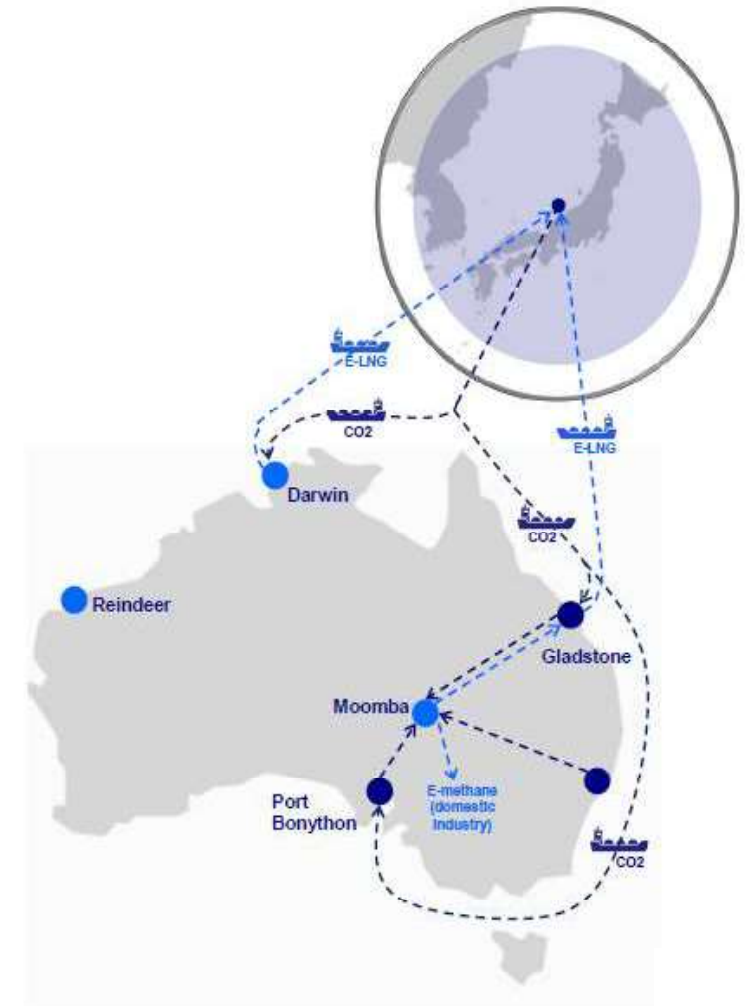
- Phase 1: 1.7mtpa capacity due online in 2024
- ~US\$24/tonne lifecycle cost
- ~20mtpa capacity in basin
- Import opportunities



Santos' Future Vision for the Cooper Basin

Transition to low carbon fuels for domestic and international markets enabled by CCS

Objective	Scope	Current activity	Comments
Capture Santos own emissions (Scope 1)	Moomba CCS Phase 1	Construction	Online mid 2024
Carbon reduction services to third parties	CO2 import pipelines for Moomba CCS Phase 2	APA CO2 pipeline MoU & Joint Studies	Current focus
	Domestic volumes	GFG MoU & Joint Studies & other eastern seaboard collaborations	Discussions underway
	International imports	ENEOS/JX Nippon MoU & Joint Studies	Port Bonython or Gladstone, 2030 online (Japan Govt mandate)
Low Carbon Fuels	E-methane	Joint studies Osaka Gas – Gladstone Osaka Gas, Tokyo Gas, Toho Gas – Cooper Basin	2030 online (Japan Govt mandate)



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Moomba CCS Phase 1

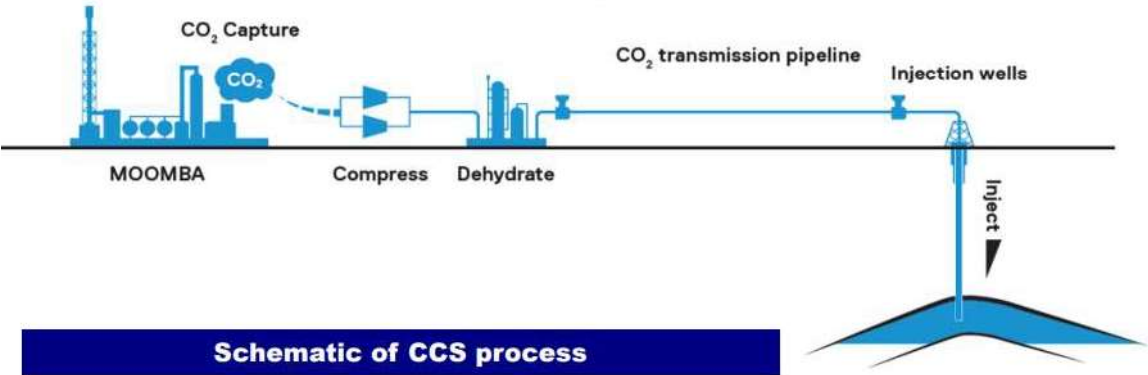
Online for Operations announced 17th Oct 2024 at full rate (annual avg 1.7 mtpa)



Wet Weather at Moomba CCS phase 1 site in Q1 2024



Compressor shelter and heat exchangers



Schematic of CCS process

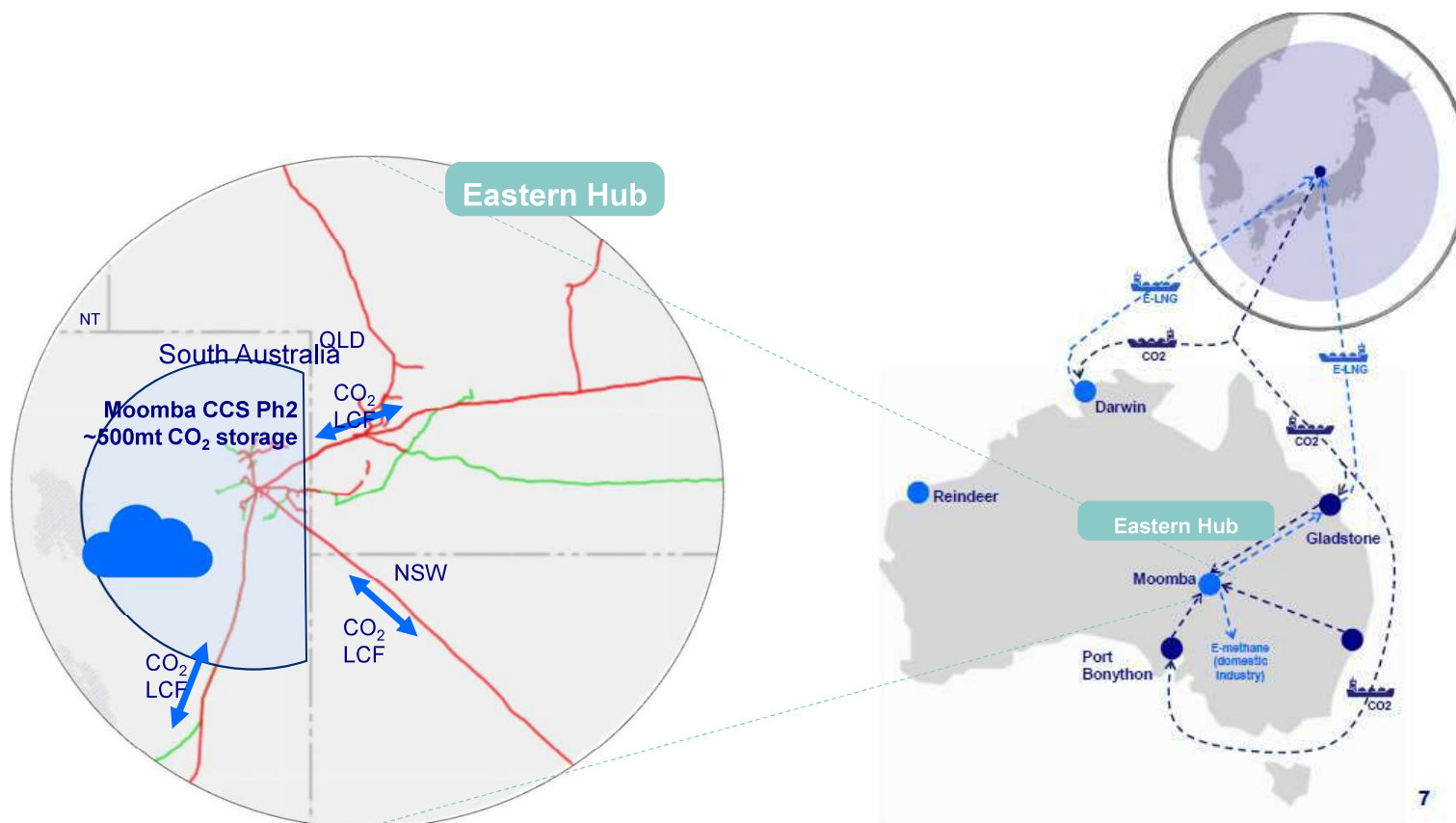


Primary stack positioned for fit up and weld out

Moomba CCS Phase 2

Santos

A globally significant Carbon Storage hub leveraging ~500 mt low-cost CO₂ storage. Santos is collaborating with domestic & international counterparties to unlock the potential of Moomba CCS.



Publicly announced collaboration partners

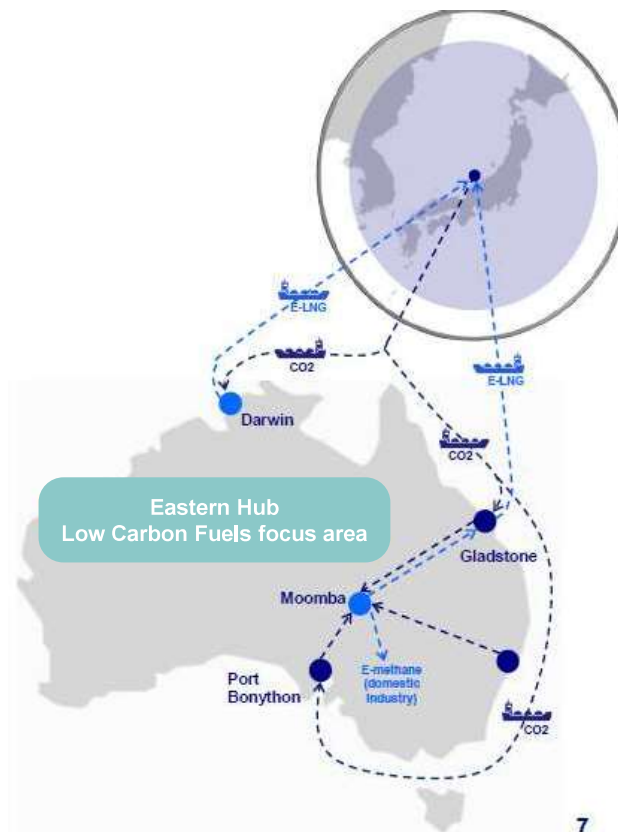
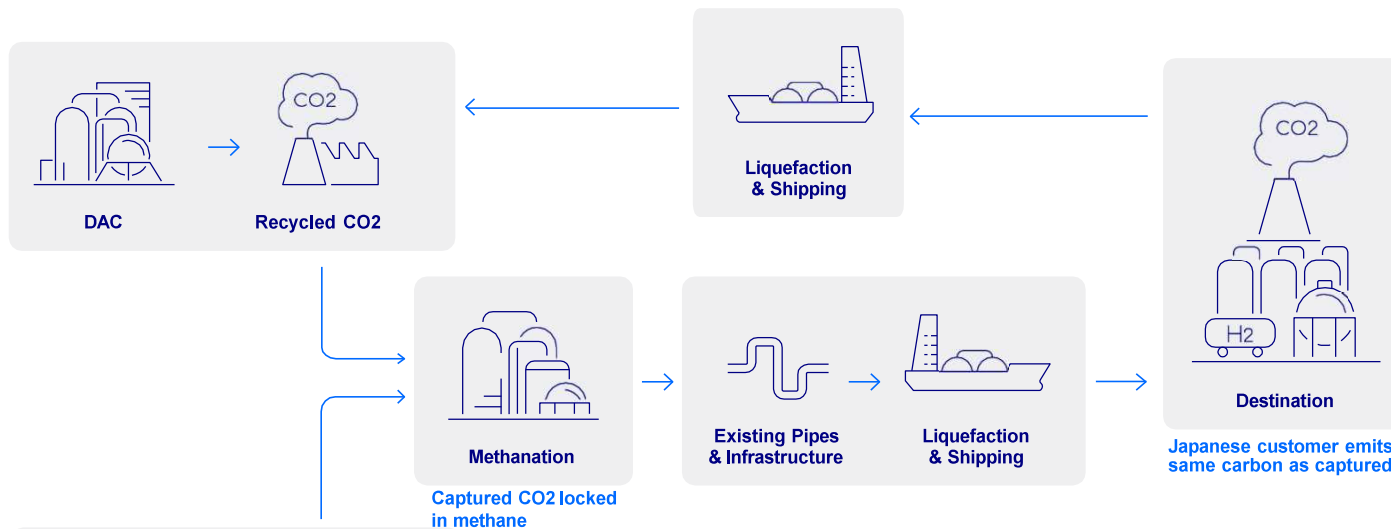


JX Nippon Oil & Gas Exploration



Low Carbon Fuels supported by CCS

Demand from existing and new customers is forecast to increase materially by 2030 and beyond



- E-methane pre-FEED studies underway with Osaka Gas, Tokyo Gas and Toho Gas to supply into Japanese market
- Initial 1% e-methane in Japan's city gas supply by 2030 targeted to grow to 90% by 2050

Cooper Basin carbon hub is ideally located for long term expansion of green hydrogen production and export as e-methane via existing infrastructure

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Santos

Gonneville is positioned to become a **strategic asset** for Australia and the western world, given its rare palladium-nickel-cobalt content

Gonneville is the **first major PGE discovery in Australia** and one of the few recent large-scale magmatic Ni-Cu-PGE discoveries in the western world

Pd, Pt, Ni, Cu and Co are classified as **'critical minerals'** by most western governments

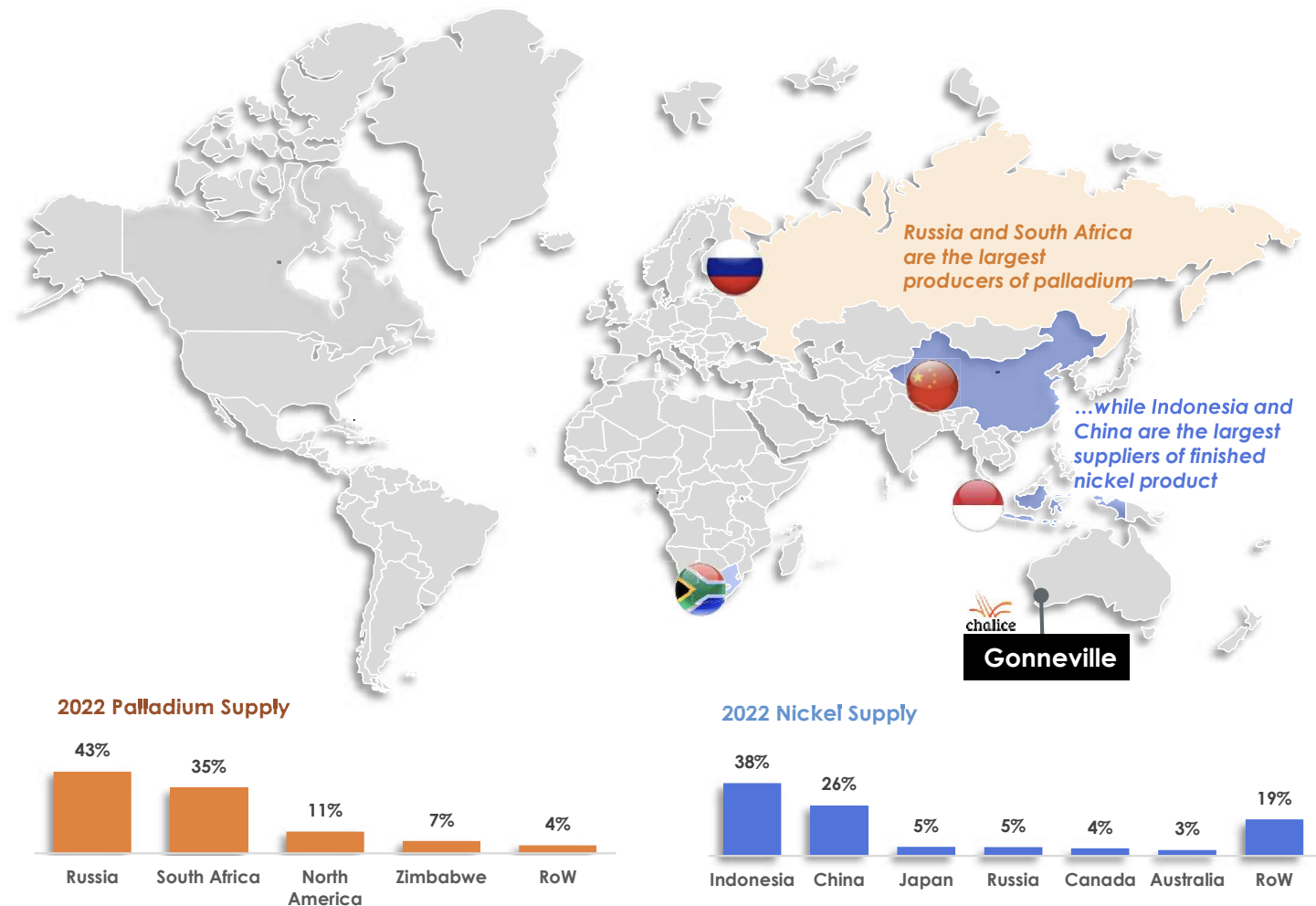
The western world is **extremely reliant** on **Russian Palladium supply** (~43% of global supply)

Gonneville is located in one of the **world's most stable and friendly mining jurisdictions** with a commitment to sustainable development

The Australian Government has committed \$6 billion¹ to **accelerate strategically significant projects** and **strengthen** internal critical mineral **security and supply chains**

The **US Inflation Reduction Act (IRA)** includes a **US\$370 billion stimulus package** to accelerate critical minerals production in western countries

Global **Palladium** and **Nickel** Primary Supply Market Share (2022)³



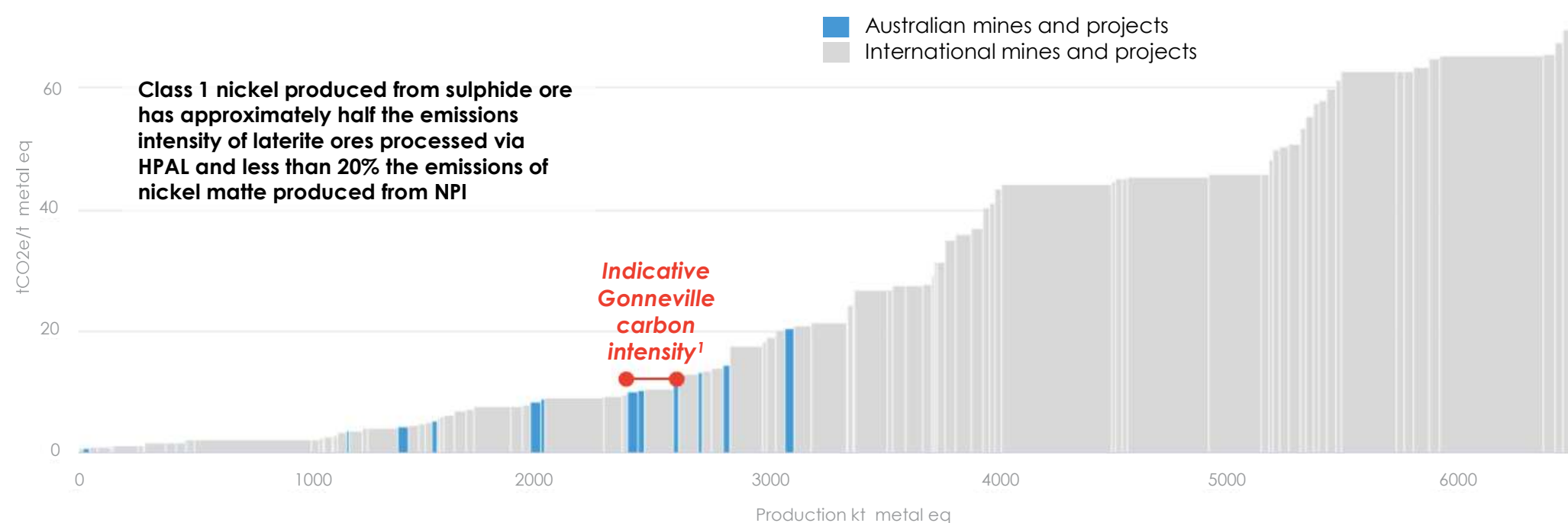
Source: 1. '2023-2030 Critical Minerals Strategy' Department of Industry, Science, Energy and Resources, Australian Government, June 2023, '\$2 billion critical minerals boost crucial to energy transition', Australian Government, October 2023. 2. Discussions with potential partners are preliminary in nature, a formal partnering process is underway. 3. AME as at 10 May 2023, Market research.

Gonneville is positioned to be one of the **lowest carbon intensity nickel projects globally**, due to its location, scale and sulphide mineralogy



- Gonneville MHP carbon intensity estimated to be **10-12 tCO₂Eq / tNiEq**
- WA Govt is targeting a significant reduction in the emissions intensity of the WA electricity grid by 2030
- Opportunities including low-emissions mining fleet and tailings carbon capture

2030 forecast Scope 1 & 2 site emissions (tCO₂Eq / tNiEq), cumulative NiEq production (x-axis, kt)



2030 Nickel carbon intensity curve by CRU Nickel Emissions Analysis Tool (as forecasted in 2023).

2030 Gonneville carbon intensity indication by Perspektiv (as forecasted in 2023).

¹Does not indicate Gonneville's expected nickel production.

Gonneville's scope 1 & 2 emission categories

Mining



Beneficiation



Conc. Enrichment



Transport



Refinement

