



Mardie Salt

An Emerging Australian Project

Roskill International Salt Conference – London UK

Alwyn Vorster – Managing Director

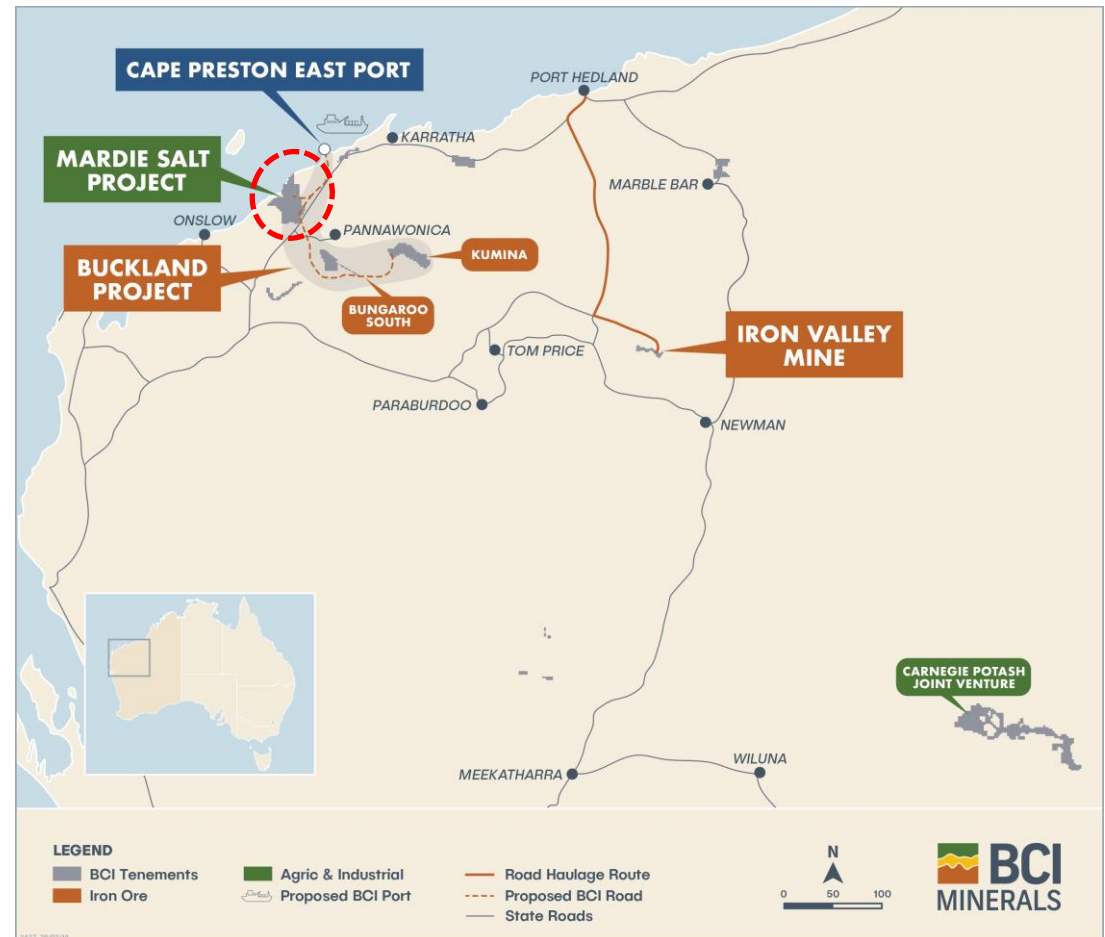
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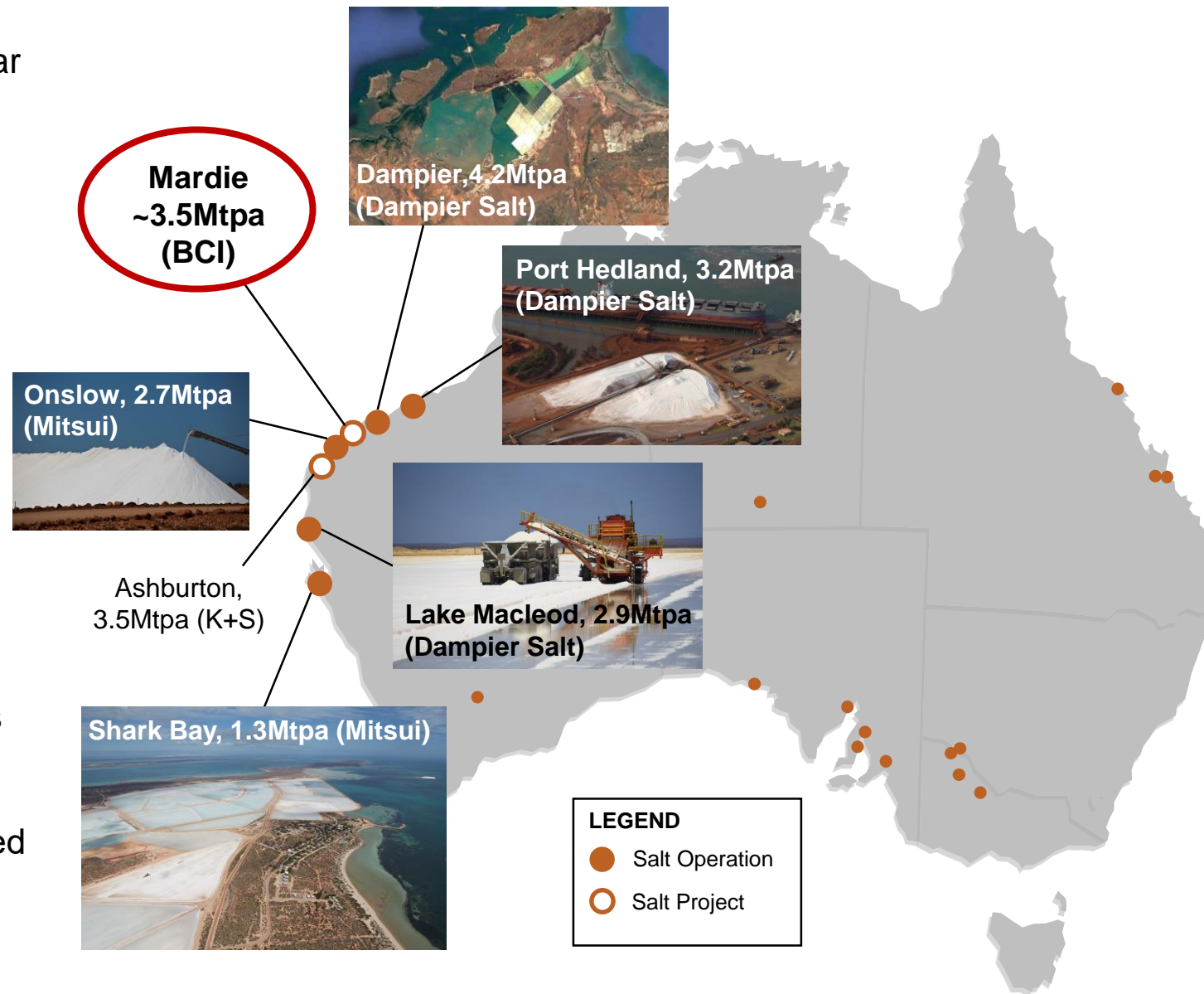
About BCI Minerals

- ASX-listed resources company based in Perth, Australia (ASX: BCI)
- Market capitalisation of ~A\$70M
- A\$19M cash, zero debt and royalty earnings from the Iron Valley mine (~A\$18M EBITDA in FY17)
- BCI aims to become a mining company with multiple earnings streams from iron ore and industrial minerals projects
- **Salt and potash have been identified as commodities with an attractive long term demand outlook**



Australian Salt Projects

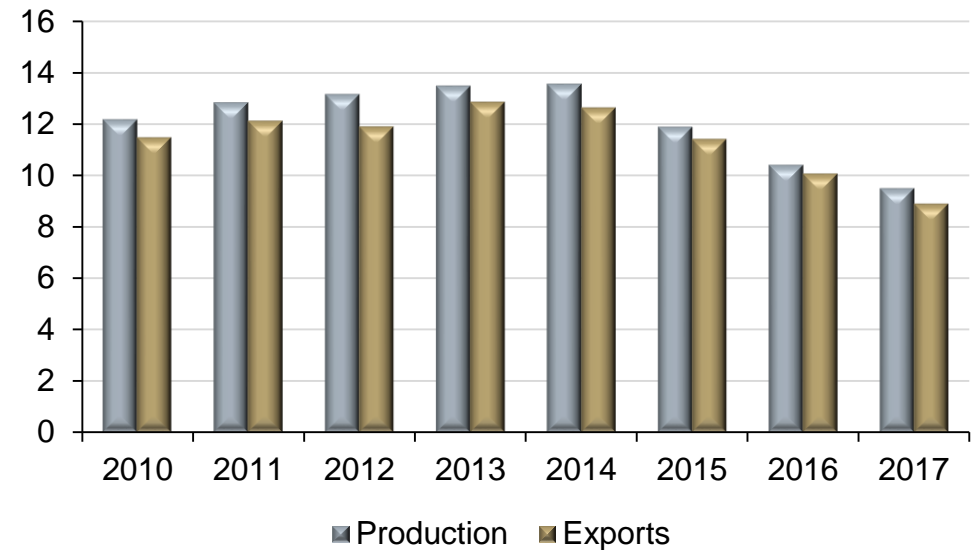
- Ideal climatic conditions for solar evaporation salt production
- Currently ~16Mtpa production capacity – 95% solar salt
- Key production region is the Pilbara/Mid-West coastline
 - Five major operations with a capacity of ~14Mtpa
 - Key players are Dampier Salt (Rio Tinto, Marubeni & Sojitz) and Shark Bay Salt (Mitsui)
- Numerous <1Mtpa producers including Cheetham Salt, Tellus and WA Salt
- BCI's Mardie Salt Project located in the centre of this region



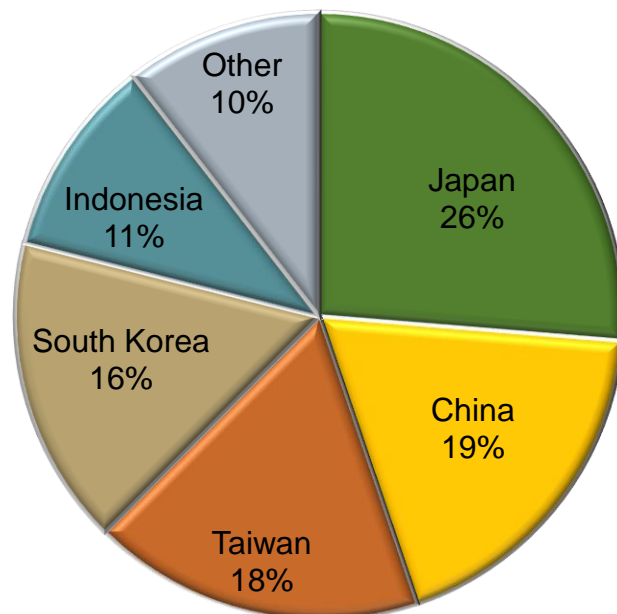
Australian Production and Exports

- Production has trended down in recent years from ~14Mtpa to ~10Mtpa due to:
 - Lower quality salt from other countries aggressively priced into Asia
 - Above average weather impacted on Pilbara operations

Production and Exports (Mtpa)



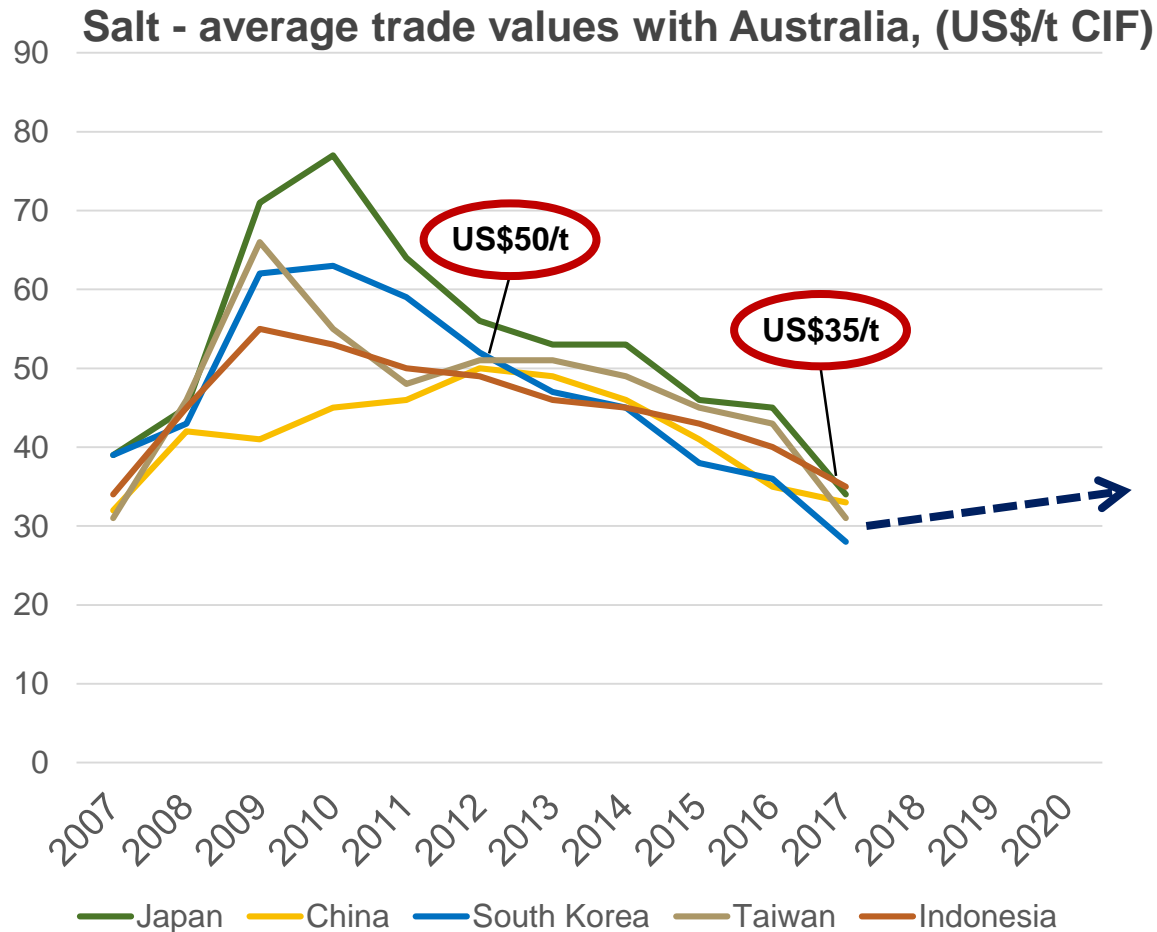
2017 Australian Export Destinations – 10Mtpa



- ~95% of Pilbara production is exported – primarily to Asian chemical industry
- China demand is forecast to increase stronger than other countries – likely to become a major market for Australia
- Potential parallels to iron ore market dynamics in 2000-2010 period

Australian Export Prices

Positive price outlook for Asian salt market



Challenging market during last 7-years

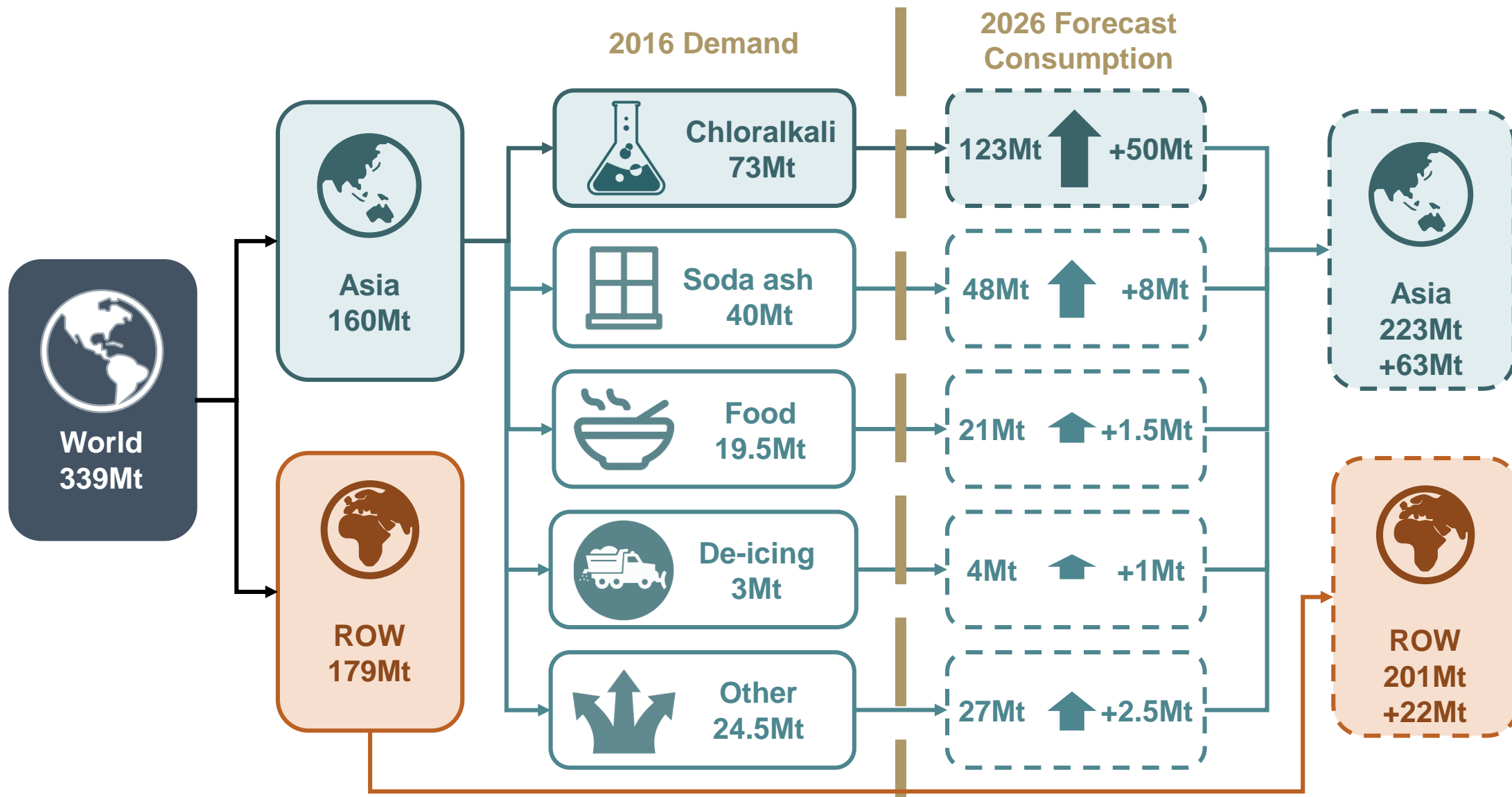
- Prices have been on a downward trend
- Volatile shipping freight rates had a material impact on delivered prices

However

- Maturing Chinese market resulting in competitive prices with rest of Asia
- Limited new supply potential developed during the last few years
- Strong demand forecast in Asia points to more positive price environment

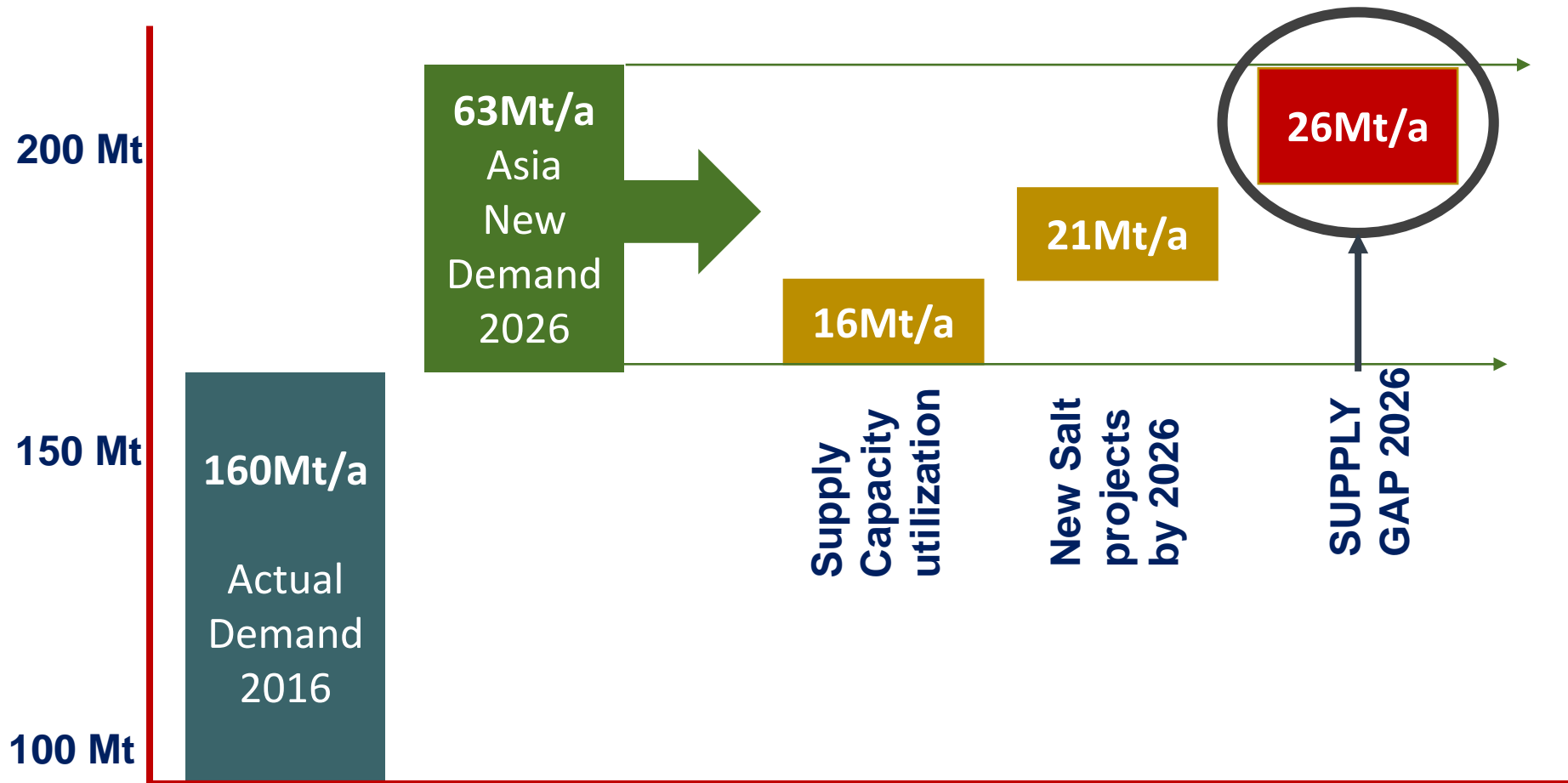
Global Salt Demand Outlook

Roskill¹ forecast strong Asian salt demand growth



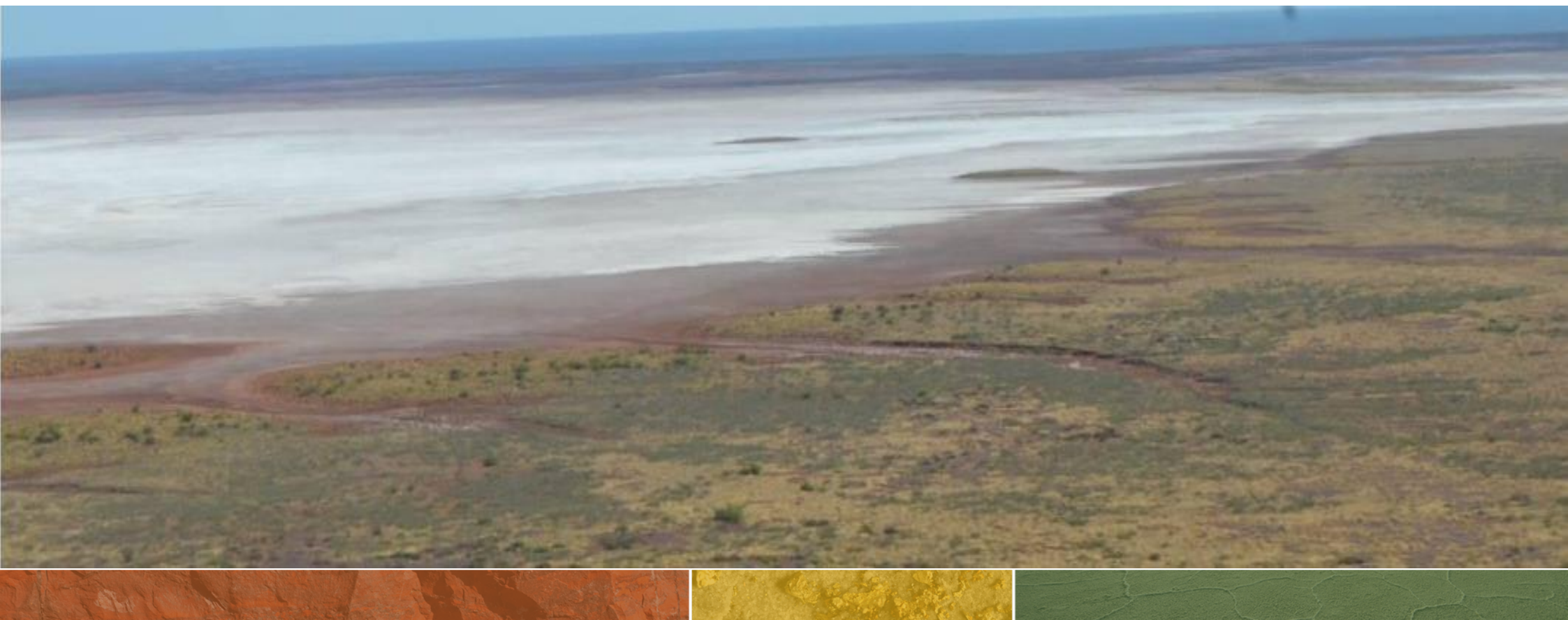
Asian Salt Demand & Supply Outlook

Supply gap likely to develop over next decade



~26 Mt/a supply gap possible by 2026 – equal to 7 Mardie sized projects

Mardie - Salt & Potash Project



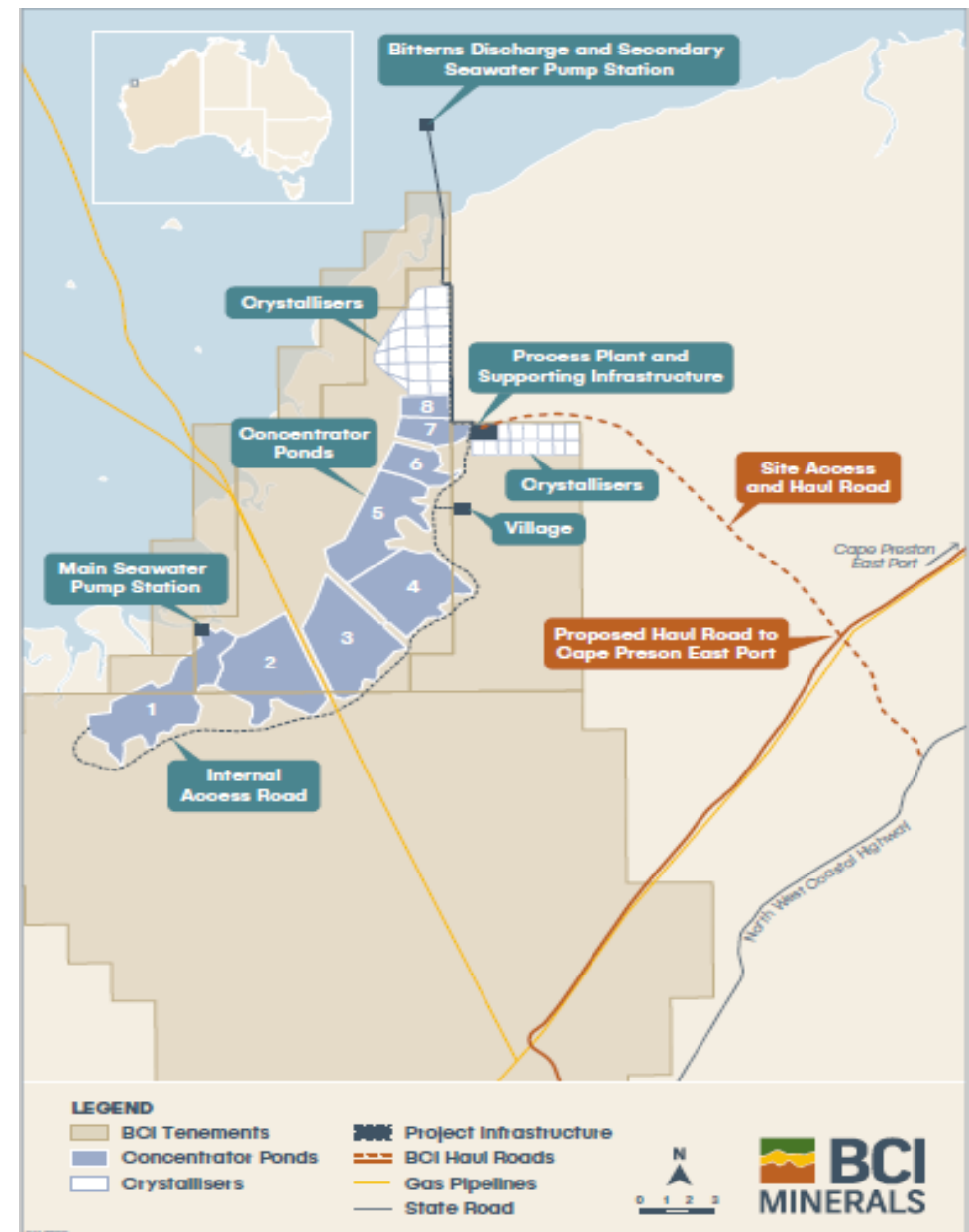
Mardie Project Overview

- Project 100% owned by BCI
- ~300km² tenements located on Pilbara coast in ideal proximity to Asian growth markets
- Site conditions highly favourable for solar salt production
 - Long dry season with <300 mm rainfall p.a.
 - High net evaporation rates of >2,900mm p.a.
 - Large low-permeability mudflats for location of evaporation ponds
 - Access to sea water via 30km of coastline with natural inflow channels
- Positive Scoping Study completed in Jul-17¹
- Pre-Feasibility Study to be completed in Jun-18

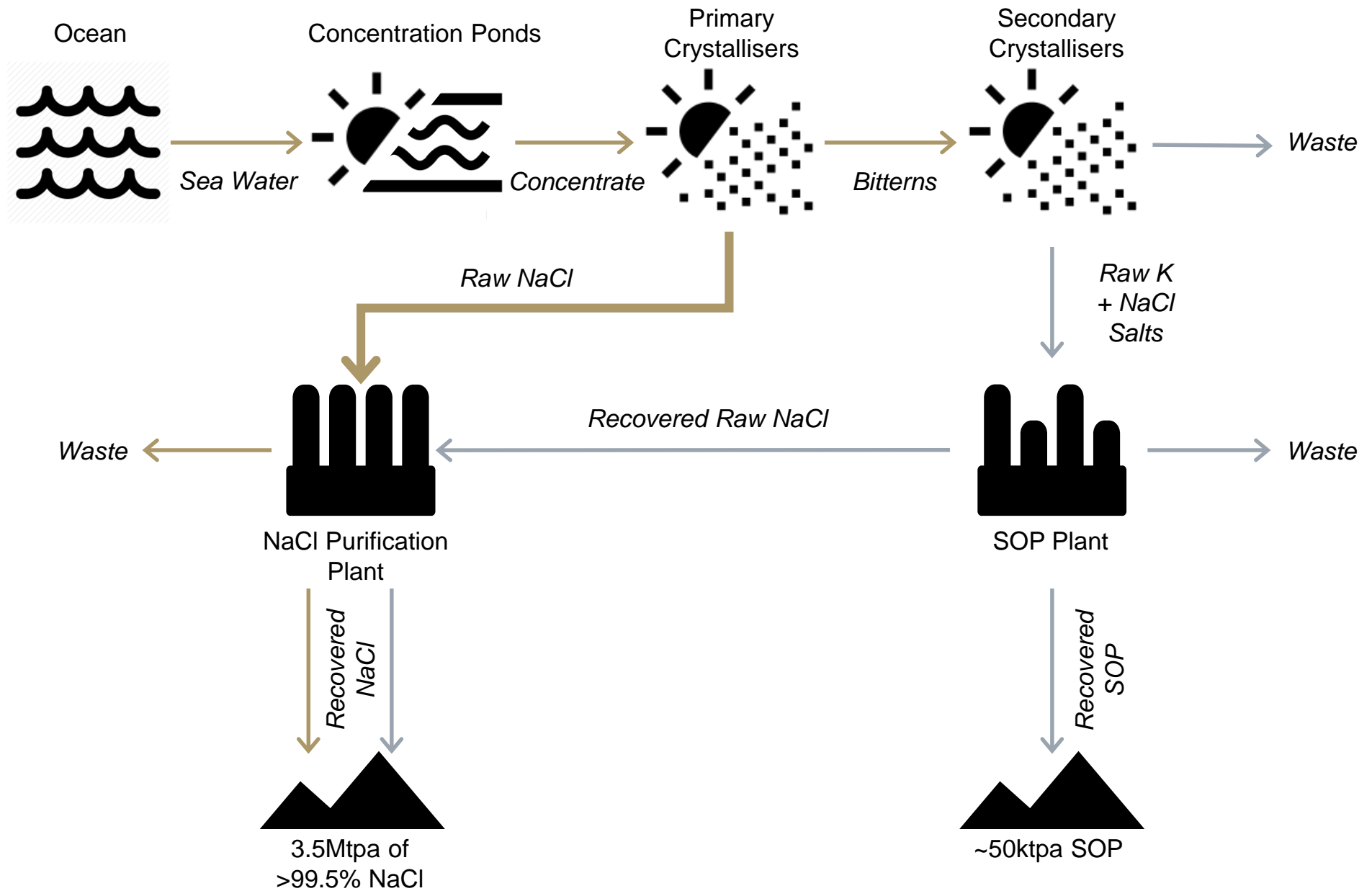


Design and Site Layout

- Eight concentrator ponds – continuous flow methodology
- 12 primary NaCl salt crystallisers
- Up to 24 secondary K+NaCl salt crystallisers
- Pond design avoids most of sensitive coastal vegetation and allows natural two-way water flow
- ~3.5Mtpa high purity salt production via 700t/hr salt purification plant being designed by Salt Partners
- ~50ktpa sulphate of potash (SOP) production via SOP circuit being designed by K-UTEC

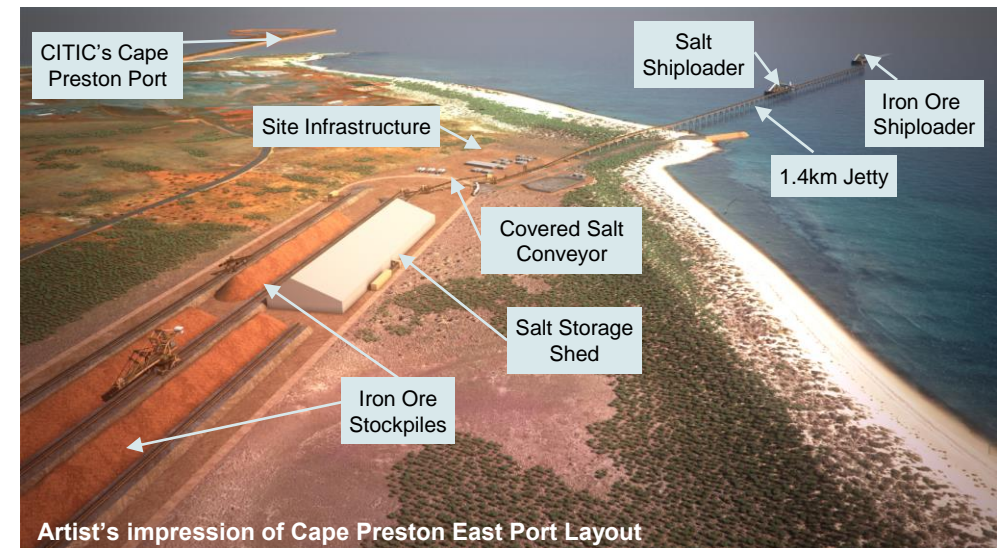


Simplified Process Flow – 3.5Mtpa NaCl



Export Logistics

- 50km sealed road linking Mardie site with BCI's proposed Cape Preston East Port
- Heavy haul road trains (~220t) used for efficient and low cost transport
- Port designed to service BCI's Buckland Iron Ore (15Mtpa) and Mardie Salt (3.5Mtpa) projects
- Dedicated salt infrastructure including 200kt storage shed, covered conveyors and shiploader
- Modern self-unloading & self-propelled transshipment vessels transport to ships (up to Capesize) 14km offshore
- All environmental and heritage approvals secured
- Alternate design case for a small independent port at the Mardie site (avoids road transport opex)
- SOP export planned via existing container port (e.g. Dampier)



Mardie Minerals – Marketing Approach



PRODUCT

- NaCl: >99.5% (dry), Ca <0.06%, Mg <0.03%
- SOP: >50% K₂O, <1% Cl

PLACEMENT

- NaCl: 70% Chloralkali; 15% Food; 15% Soda ash [Asia focussed]
- SOP: Agricultural [Australia, Asia]

PRICE

- NaCl: LT price >US\$35/t CIF Asia
- SOP: LT price >US\$450/t FOB WA

PROMOTION

- Testwork with potential offtake partners
- Offtake partners as potential joint venture partners
- Strategic investors (construction; current suppliers etc) as potential partners

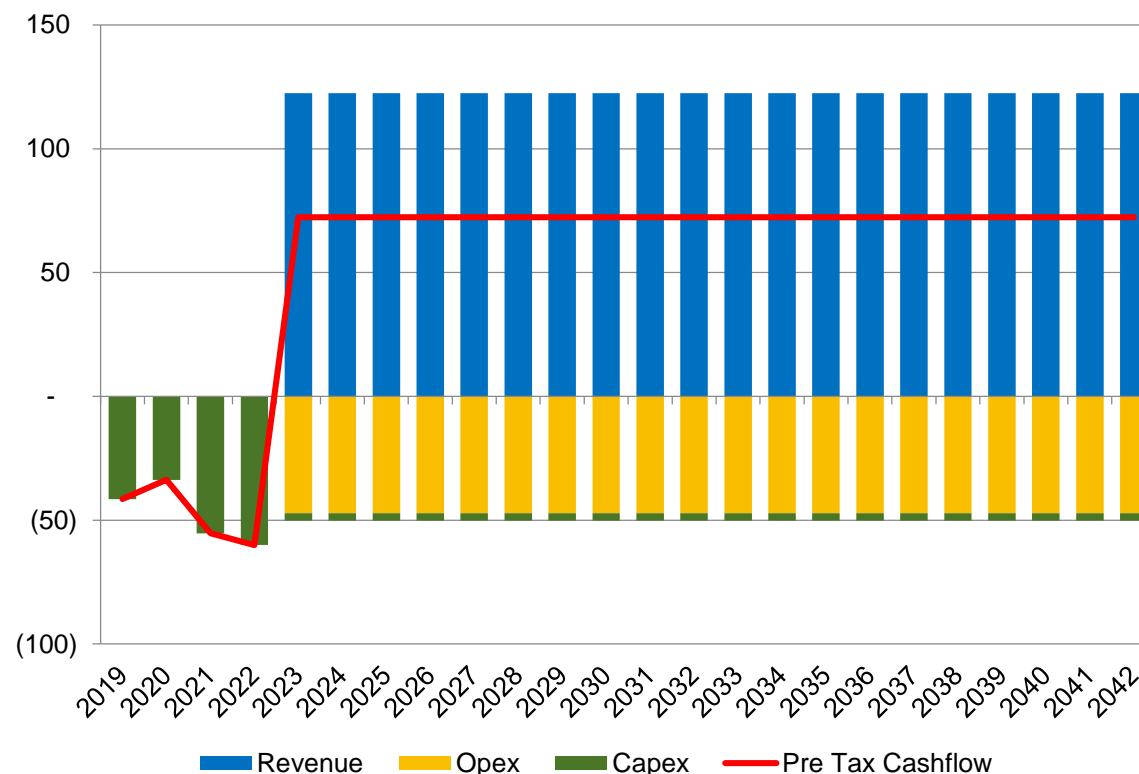
Attractive Scoping Study¹ Economics



Key Metrics (Salt only – SOP excluded)

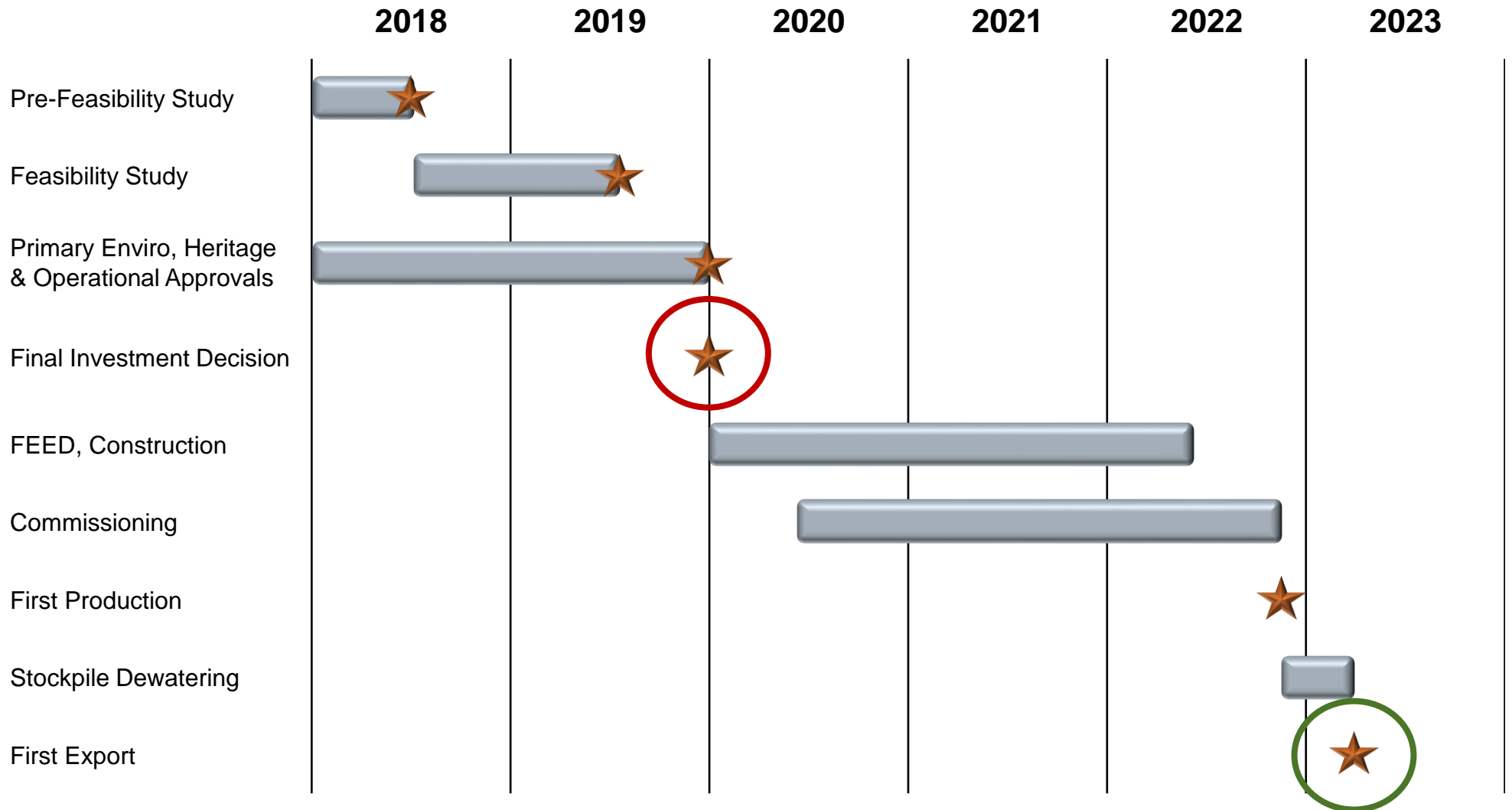
NaCl Production	3.5Mtpa
Operating Life	20 years
Capex	US\$190M
Opex (FOB)	US\$14/t
EBITDA	US\$70M p.a.
Pre-tax NPV ₁₀	US\$285M
Pre-tax IRR	27%
Payback Period	5 years

Projected Project Cashflows (US\$M)



Upside value potential from including SOP production

Project Timeline



Mardie PFS: BCI's Supporting Teams



Engineering



Salt purification plant design



SOP production circuit design

**K F Wellisch &
Associates**

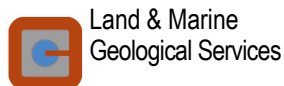
Evaporation consultant

**AMBERLEY
MANAGEMENT**

Civil design and engineering



Port design and general engineering



Geotechnical assessment

Dalesford

Cost estimation review

Environment



Flora and fauna studies (Marine), ocean studies



Fauna studies (Turtles)



Flora and fauna studies (Terrestrial)



Flora and fauna studies (Algal Mat)



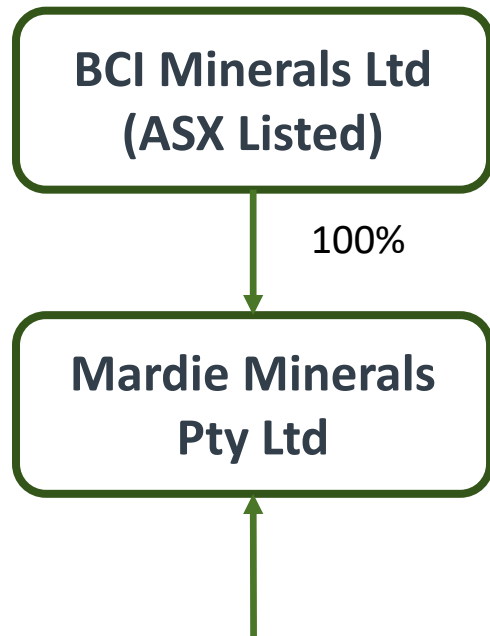
Hydrology studies (surface water, storm surge and inundation)

Economics



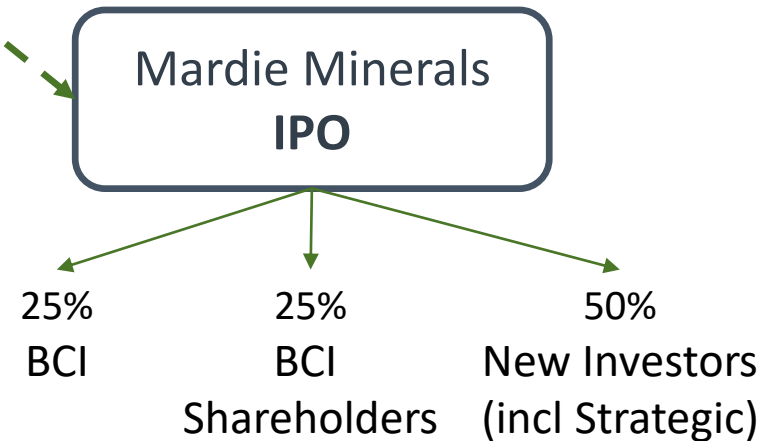
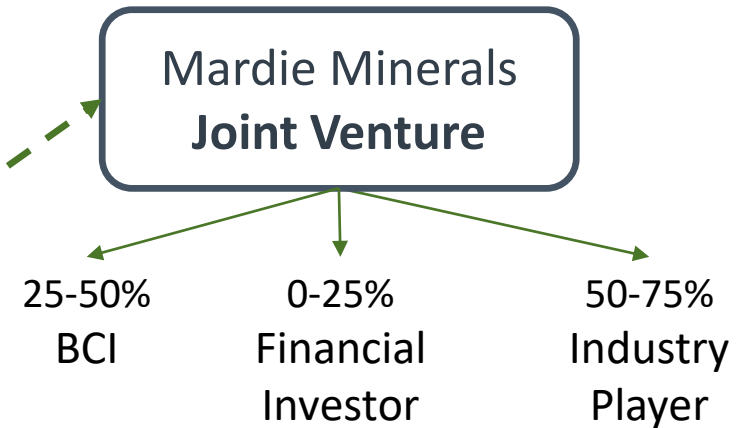
Salt market and pricing intelligence

Ownership Structures



Potential Future Structures

1
OR
2



Mardie Minerals Board



Brian O'Donnell
Chairman
30 yrs in finance & investment



Alwyn Vorster
Managing Director
30 yrs in mining including various CEO roles



Michael Le Page
Non-exec Director
30 yrs in industrial minerals including **Rio Tinto Salt**



Simon Hodge
CFO, Director
25 yrs in finance & investment banking

Mardie Salt – Attractive Development Project



- ✓ Project in stable investment country close to Asian growth markets
- ✓ Ideal project location and site conditions for a solar evaporation project
- ✓ Potential¹ for >US\$250M NPV and >US\$70M p.a. EBITDA from Salt
- ✓ Upside value potential from production of Sulphate of Potash by-product
- ✓ BCI seeking funding and development partners to progress development

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Mardie Salt Project - Key Facts



**LONG LIFE ASSET;
3.5 MTPA FOR
>50 YEARS**



**STABLE COUNTRY
CLOSE TO ASIAN
GROWTH MARKETS**



**CAPEX: ~US\$190M
OPEX: ~US\$14/t
NPV₁₀: ~US\$285M**



**HIGH PURITY
SALT & POTASH**



**CLEAR
APPROVALS
PATHWAY**

