

# Australian Potash Limited

## Lake Wells Sulphate of Potash Project



**Annual General Meeting Presentation | 18 November 2019**

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## Competent Person's Statement

The information in the announcement that relates to Mineral Resources and Reserves is based on information that was compiled by Mr. Duncan Gareth Storey. Mr. Storey is a Director and Consulting Hydrogeologist with AQ2, a firm that provides consulting services to the Company. Neither Mr. Storey nor AQ2 own either directly or indirectly any securities in the issued capital of the Company. Mr. Storey has 30 years of international experience. He is a Chartered Geologist with, and Fellow of, the Geological Society of London (a Recognised Professional Organisation under the JORC Code 2012). Mr. Storey has experience in the assessment and development of palaeochannel aquifers, including the development of hypersaline brines in Western Australia. His experience and expertise are such that he qualifies as a Competent Person as defined in the 2012 edition of the "Australian Code for Reporting of Exploration Results, Mineral Resources and Ore reserves". Mr. Storey consents to the inclusion in this report of the matters based on this information in the form and context as it appears.

The information in this report that relates to Exploration Results is based on information compiled by Christopher Shaw who is a member of the Australian Institute of Geoscientists (AIG). Mr. Shaw is an employee of Australian Potash Ltd. Mr. Shaw has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity currently being undertaken to qualify as a Competent Person as defined in the 2012 edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr. Shaw consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

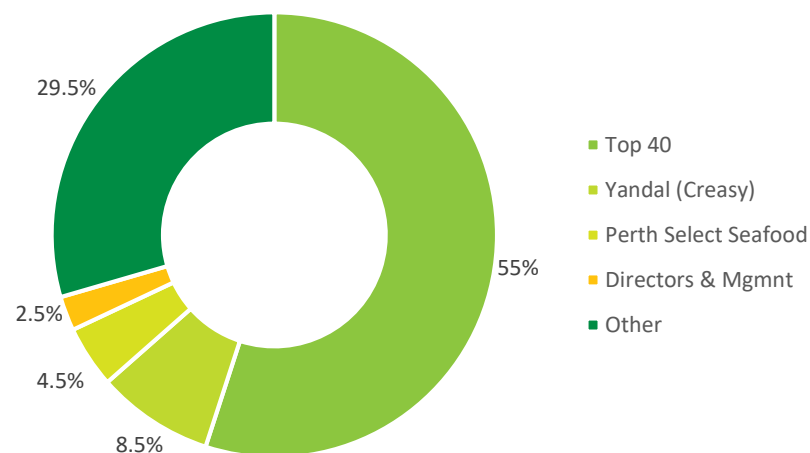
The information in this report that relates to mineral processing is based on information compiled by Mr Antoine Lefavre, a Competent Person who is a Member of the *Ordre des Ingénieurs du Québec* (Order of Engineers of Quebec). Mr Lefavre is employed by Novopro Projects Inc. and has sufficient experience that is relevant to the style of minerals processing and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Lefavre consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

## Forward Looking Statements Disclaimer

This announcement contains forward-looking statements that involve a number of risks and uncertainties. These forward-looking statements are expressed in good faith and believed to have a reasonable basis. These statements reflect current expectations, intentions or strategies regarding the future and assumptions based on currently available information. Should one or more of the risks or uncertainties materialise, or should underlying assumptions prove incorrect, actual results may vary from the expectations, intentions and strategies described in this announcement. No obligation is assumed to update forward looking statements if these beliefs, opinions and estimates should change or to reflect other future developments.

# CORPORATE SNAPSHOT

Capital Structure	Amount
Shares on Issue	357,573,073
Share Price Range (12 Months)	\$0.135-\$0.065
Listed Options	
(ASX: APCOA, 20¢, 10/2019)	37,594,906
(ASX: APCOB, 12¢, 08/2021)	47,850,135
Unlisted Options	
(10c - 22.5¢, various dates)	26,350,023
Market Capitalisation	~\$31m
Cash (30/09/19 incl. R&D Tax Incentive)	\$2.1m
Enterprise Value	~\$28.9m



## Board

Jim Walker	Non-Executive Chairman
Rhett Brans	Non-Executive Director
Brett Lambert	Non-Executive Director
Matt Shackleton	Managing Director & CEO
Sophie Raven	Company Secretary

## Management

Scott Nicholas	Chief Financial Officer
Jay Hussey	Chief Commercial Officer
Stewart McCallion	Project Manager
Chris Shaw	Exploration Manager



# LAKE WELLS PROJECT FINANCIALS

Technically robust with attractive financial outcomes based on conservative assumptions

## DFS Results

Outcome	Units	Mine Plan
Life of Mine	Years	30
SOP Production	Mt	4.5

## Key Assumptions

Assumption	Units	Weighted Average
Average realised SOP Price	US\$/t	614
Exchange Rate	AUD/USD	0.67

## Major Operational Expenditure Items

Life of Mine Opex <sup>1</sup>	US\$/t SOP
Salt harvesting	16
Power supply	40
Reagents & Consumables	116
Labour	30
Transport and Logistics	36
Maintenance	4
Indirects	20
<b>Total Cash Cost</b>	<b>262</b>

## Financial Outcomes

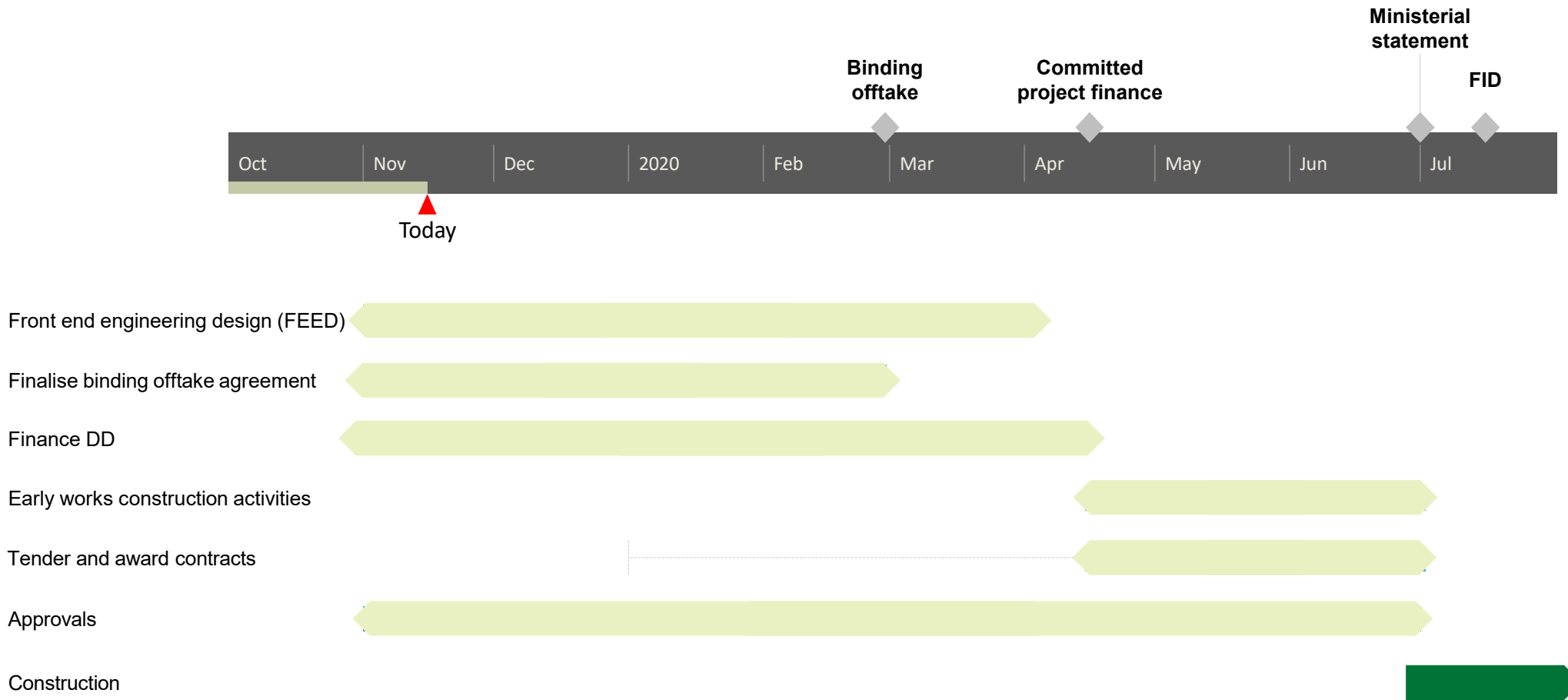
	Units	Pre-Tax	Post-Tax
NPV <sub>8</sub> (nominal)	A\$m	665	441
IRR	%	25	21
Operational Payback	years	4.0	4.75
Annual average free cash flow	A\$m p.a.	100	70

## Major Capital Expenditure Items

Capex Item	AUD M
Project indirects	37
Bore-field	48
Evaporation ponds	26
Processing plant	58
Non-process infrastructure	19
Contingency	20
<b>Total Capex</b>	<b>208</b>
<i>Capital Intensity</i>	<i>1,387</i>

# LAKE WELLS PROJECT SCHEDULE

## Key project activities to first construction



# INVESTMENT CASE SUMMARY

- 1 Flagship SOP asset: Lake Wells Potash Project - JORC2012 Measured Resource of 18.1Mt SOP and 3.6Mt SOP Reserve
- 2 150ktpa SOP production yields pre-tax NPV<sub>8</sub> of \$665m and IRR of 25% on total capex of \$208m
- 3 Multi-generational mine life potential: 30 year Life of Mine run-rate uses only 21% of Total Measured Resource
- 4 Strong board and management team with extensive project financing, development, management and SOP marketing experience
- 5 Capital intensity of A\$1,387/t SOP leads peer space and is complemented by first quartile operating costs
- 6 Global and domestic SOP markets heavily supply constrained – global demand forecast to expand from +6Mt to nearly 9Mt by 2040
- 7 Existing infrastructure in place with multiple export port and distribution options via road and rail
- 8 Rapid pathway to development with FEED to commence immediately; financing and off-take selection process underway

# ASSET OVERVIEW AND LOCATIONS

## KEY INFORMATION

<b>Ownership:</b>	<ul style="list-style-type: none"> <li>Australian Potash Limited (100%)</li> </ul>
<b>Commodity:</b>	<ul style="list-style-type: none"> <li>Sulphate of Potash suite of products</li> </ul>
<b>Operation Type:</b>	<ul style="list-style-type: none"> <li>Bore-field (78 bore network) abstraction, solar salt evaporation and processing</li> </ul>
<b>Deposit:</b>	<ul style="list-style-type: none"> <li>Brine contained within paleochannel</li> </ul>
<b>JORC Reserves &amp; Resources:</b>	<ul style="list-style-type: none"> <li>Reserves: 3.6Mt of SOP</li> <li>Resources: 18.1MT of SOP</li> </ul>
<b>Tenement Area:</b>	<ul style="list-style-type: none"> <li>3 mining leases</li> <li>17 exploration licenses</li> <li>Tenements cover an area of 2,100km<sup>2</sup></li> </ul>
<b>Status:</b>	<ul style="list-style-type: none"> <li>Environmental approvals in place</li> </ul>

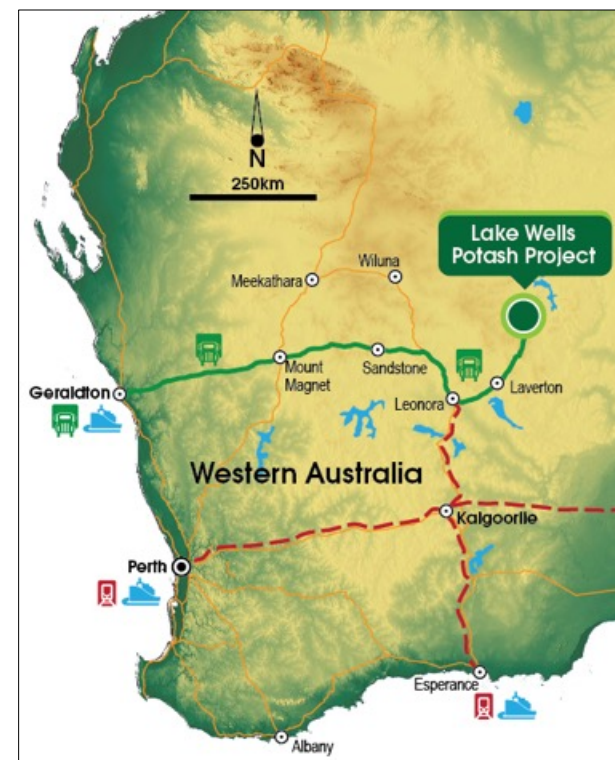
## PROBABLE ORE RESERVES<sup>1</sup>

Brine Volume Recovered (Mm <sup>3</sup> )	Average Produced K Concentration (mg/L)	K Mass (MT)	SOP Mass (MT)	Proportion of Measured Resource	Proportion of LOM Production
490	3,325	1.6	3.6	21%	96%

## RECOVERED BRINE AND MASS FOR FIRST 10 YEARS OF OPERATIONS AND LOM

Brine Volume Recovered (Mm <sup>3</sup> )	Mining Period	Average Pumping Rate (L/s)	K Concentration (mg/L)			Mass Potassium Recovered (MT)	Mass SOP Recovered (MT)	Proportion of Measured Resource
			Start	End	Average			
170	0-10 yrs	540	3,570	3,390	3,450	0.6	1.3	7%
511	0-30 yrs	540	3,570	3,250	3,350	1.7	3.8	21%

## Asset Locations



## Highly Experienced Board Specialising in Project Execution

<p><b>Jim Walker</b> <b>Non-Executive Chairman</b></p>	<ul style="list-style-type: none"> <li>45 years' experience in the resources industry, at both senior management and board level.</li> <li>Has previously held the position of Managing Director and Chief Executive Officer of WesTrac Pty Ltd, during which time that company enjoyed significant expansion across Australia and into north-east China.</li> <li>Currently the Chairman of Austin Engineering Ltd (ASX: ANG), Wesley College and the State Training Board, and is also Deputy Chairman of RACWA Holdings Pty Ltd and the WA Motor Museum.</li> </ul>
<p><b>Matt Shackleton</b> <b>Managing Director &amp; CEO</b> <i>B.Comm. (Economics &amp; Accounting), MBA, FICAA, CA</i></p>	<ul style="list-style-type: none"> <li>Chartered Accountant with 20+ years experience in senior management and board roles, Joined as Executive Chairman in July 2014.</li> <li>Previously Managing Director of Western Australian gold developer Mount Magnet South NL (ASX: MUM), and founding director of West African gold and bauxite explorer Canyon Resources Limited (ASX: CAY).</li> <li>Has also held senior roles with Bannerman Resources Limited (ASX: BMN), Skywest Airlines, iiNet Limited (ASX: IIN) and London investment bank DRCM Global Investors.</li> </ul>
<p><b>Rhett Brans</b> <b>Non-Executive Director</b> <i>Dip.Engineering (Civil), MIEAUST CPENG</i></p>	<ul style="list-style-type: none"> <li>Experienced director and civil engineer with 45+ years experience in project developments.</li> <li>Currently a Non-executive Director with Carnavale Resources Ltd (ASX: CAV) and AVZ Minerals Ltd (ASX: AVZ).</li> <li>Previously Non-executive Director of Syrah Resources (ASX: SYR), founding director of Perseus Mining Limited (ASX: PRU) and served on the boards of Tiger Resources Limited (ASX: TGS) and Monument Mining Limited.</li> </ul>
<p><b>Brett Lambert</b> <b>Non-Executive Director</b> <i>B.App.Sc. (Mining Engineering), MAUSIMM</i></p>	<ul style="list-style-type: none"> <li>Mining engineer and company director with 35 years experience in the Australian and international mineral resources industry.</li> <li>Previously held senior management roles with Western Mining Corporation, Herald Resources, Western Metals, Padaeng Industry, Intrepid Mines (ASX: IAU), Thundelarra Exploration (ASX: THX) and Bullabulling Gold.</li> <li>Has successfully managed a number of green-fields resource projects through feasibility study and development and has been involved in numerous facets of financing resource project development.</li> <li>Currently a Non-executive Chairman of Mincor Resources NL.</li> </ul>



# LEADING INDUSTRY PARTNERS



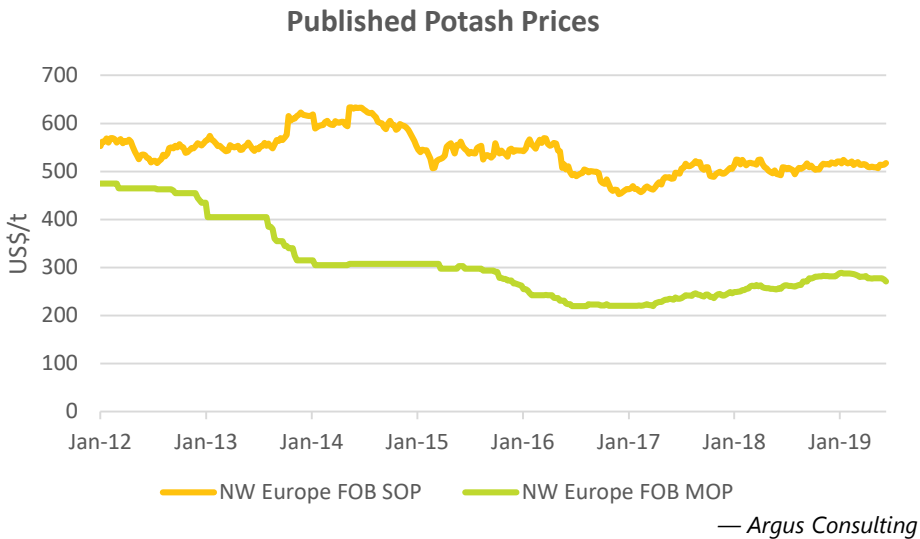
Partner	Contribution
<b>AQ2</b> - Independent water resources consultancy with expertise in hydrogeology and hydrology	Exploration, resource and reserve, borefield design, process water supply
<b>Knight Piésold Consulting</b> - Experts in engineering, environmental services, and geosciences	Evaporation and harvest pond design, capital and sustaining capital costs, and operating costs
<b>NovoPro Projects Inc.</b> - Specialises in developing and engineering projects applied to the metallurgical, mining, mineral processing and chemical industries	Process plant design including test work, trial concentration ponds, and process engineering. Product modelling of potassium flow from palaeochannel to final SOP product
<b>Lycopodium</b> - Engineering and project management group providing a complete range of services for the evaluation, development, implementation and optimisation of projects	Process plant capital and sustaining cost, operational costs, and maintenance
<b>MBS Environmental</b> - Provides environmental consulting expertise with a team of geochemists, environmental engineers and geoscientists	Environmental and approvals strategy and implementation
<b>Origin Capital Group</b> - Leading independent corporate advisory group	Financial modelling, WACC, and FX assumptions
<b>Argus Consulting</b> - Leading independent provider of potash price, market data, and business intelligence	Sulphate of potash and muriate of Potash supply and demand fundamentals including price forecasts

# SOP MARKET- DEMAND AND PRICING

## Global population growth driving demand

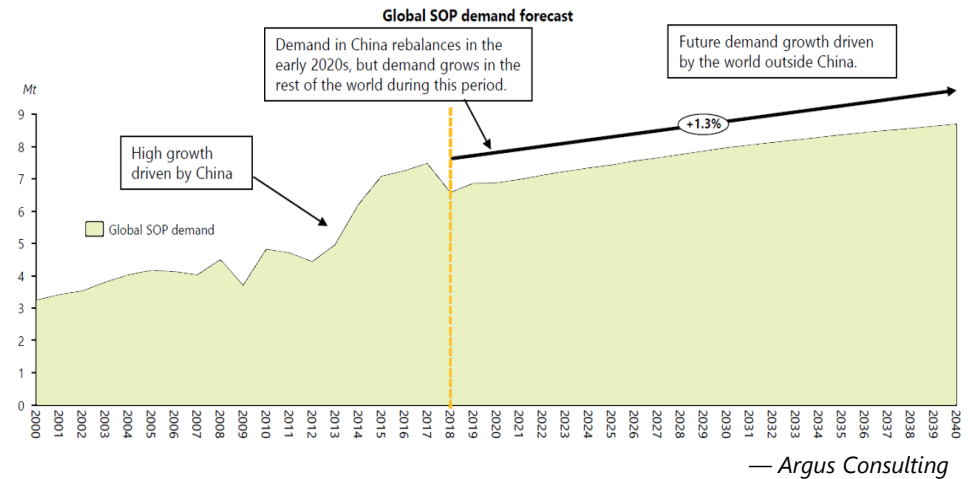
### HISTORICAL PRICING

- SOP premium over MOP averages US\$269/t last five years
- SOP Europe price last 5 years stable in the range of US\$500-US\$600/t
- Premium c.US\$100/t over MOP price considered floor premium - Mannheim conversion cost for MOP



### MARKET DEMAND

- Global SOP demand CAGR 1.3% CAGR 2018 to 2040 reaching 8.7mt in 2040
- Global SOP demand ex-China 2.3% CAGR (much higher)
- Demand growth driven by increasing SOP application rates (developing)/Europe



## Primary Macronutrient Fertiliser Market

### 3 Primary Macronutrients

Nutrient	Detail
<b>Phosphorous (P)</b>	<ul style="list-style-type: none"> <li>Helps transfer energy from sunlight to plants, stimulates early root and plant growth, and hastens maturity.</li> <li>Few Australian soils have enough Phosphorous for sustained crop production</li> </ul>
<b>Nitrogen (N)</b>	<ul style="list-style-type: none"> <li>Found in all plant cells, plant proteins and hormones, and in chlorophyll.</li> <li>Absorbed by plants from the atmosphere</li> </ul>
<b>Potassium (K)</b>	<ul style="list-style-type: none"> <li>Potassium increases vigour and disease resistance of plants, helps form and move starches, sugars and oils in plants, and can improve fruit quality.</li> <li>Potassium is low or deficient in many Australian soils</li> </ul>

### 2 Main Potash Types

	MOP (KCl)	SOP (K <sub>2</sub> SO <sub>4</sub> )
<b>Annual Production</b>	~70Mt	~7Mt
<b>Current Price</b>	<US\$300/t	>US\$500/t
<b>Demand</b>	elastic (substitutable)	inelastic (difficult to substitute)
<b>Supply</b>	Market well supplied by global potash majors	Global supply shortage of primary resources



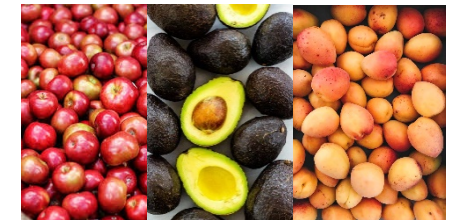
Crops needing chloride



Chloride tolerant crops



Part chloride tolerant crops



Chloride sensitive crops

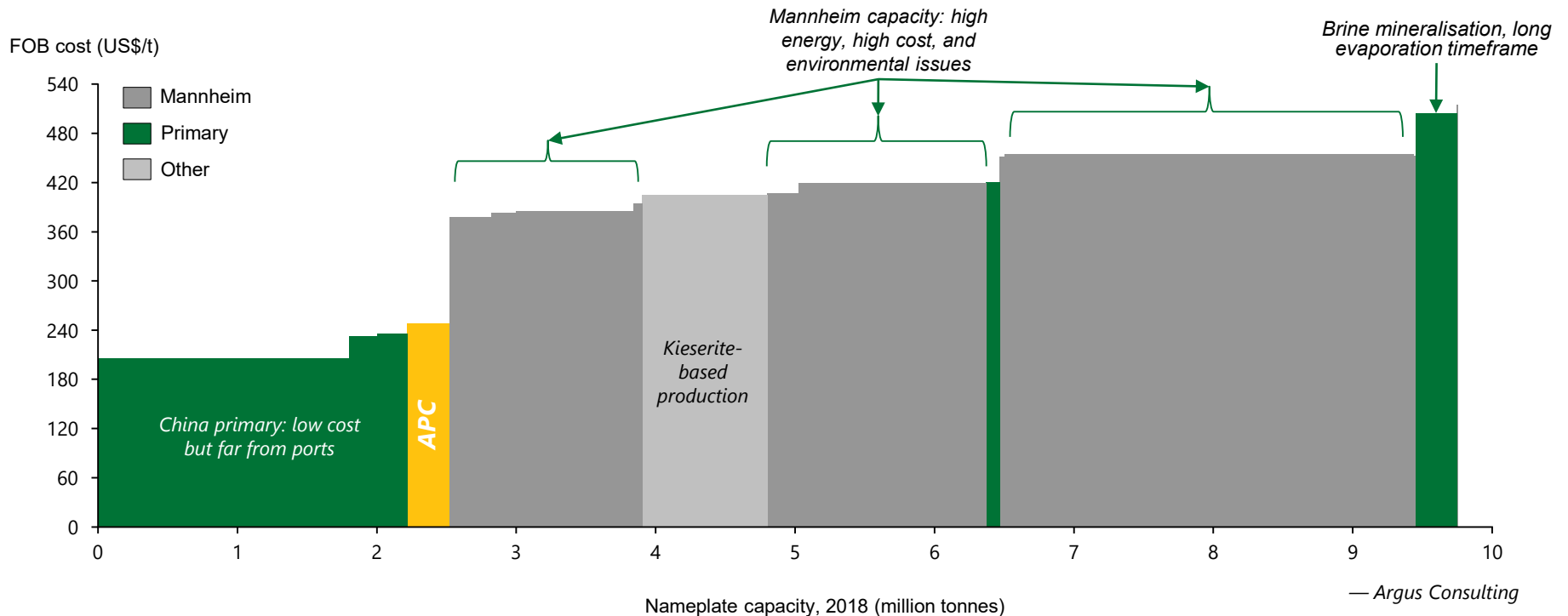
MOP Preferable

SOP Preferable

# SOP MARKET- DEMAND AND SUPPLY DYNAMICS

## Current SOP production is dominated by high-cost Mannheim capacity

GLOBAL FOB SOP COST CURVE, 2018



# TARGET MARKETS & OFFTAKES

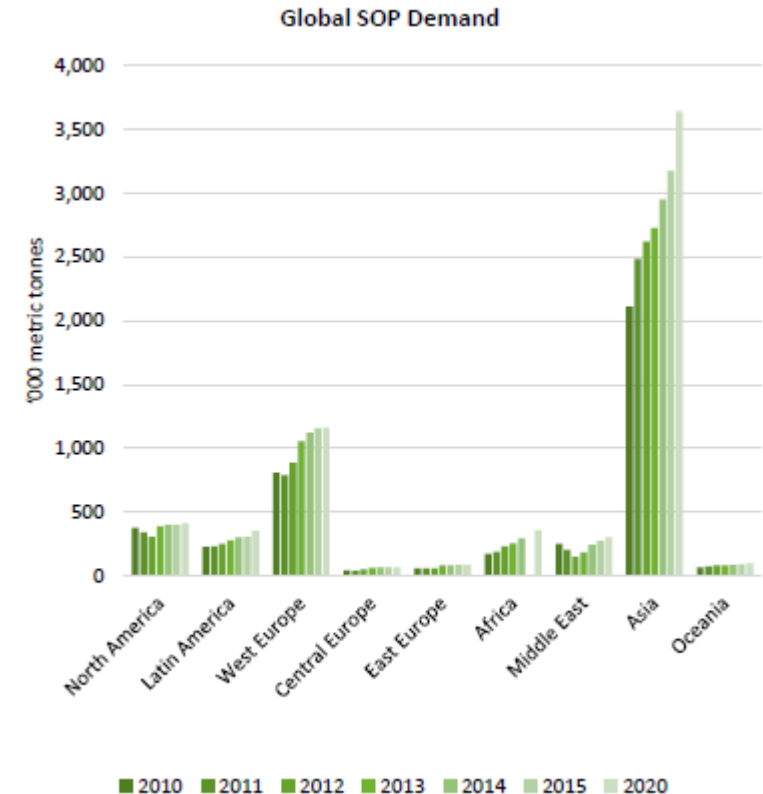
**LSOP will produce high grade, premium suite of SOP products (53% K<sub>2</sub>O, <1% Cl, 17% S)\***

## TARGET MARKETS

- Target markets include:
  - Australia: 360ktpa of potash with opportunity to expand SOP
  - China: c.4Mt SOP
  - South East Asia and west coast USA (superior price premium)
- Binding offtake discussions rapidly advancing with shortlist of strategic partners

## OFFTAKE MOU's (up to 100,000tpa)

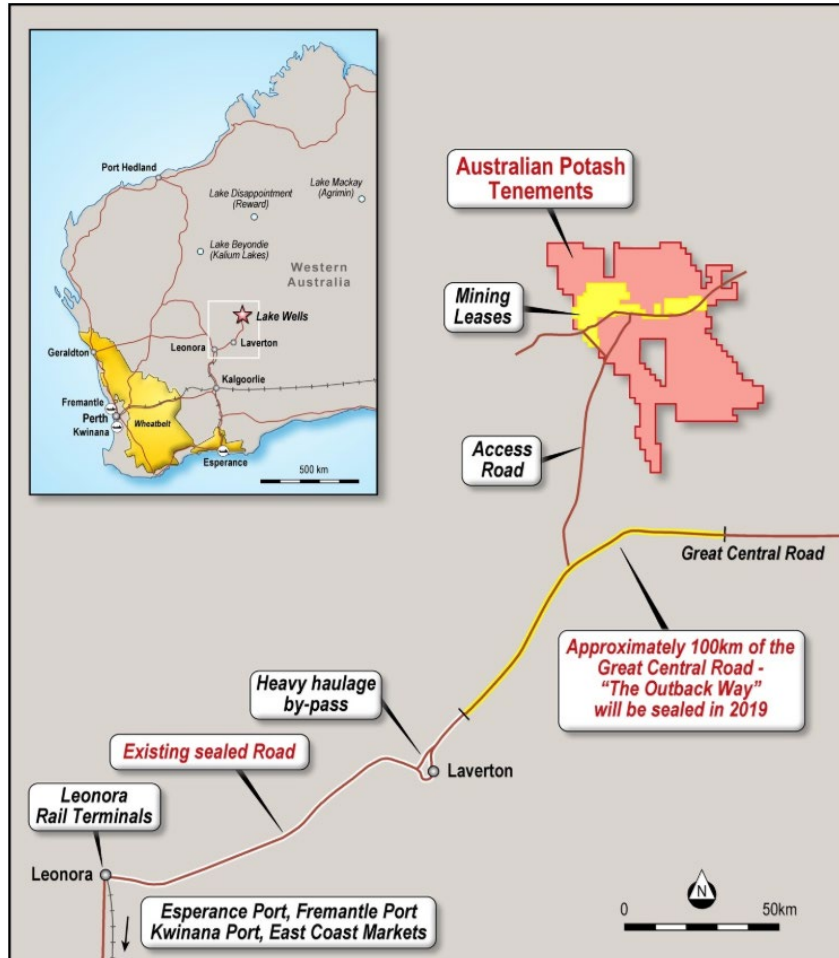
<b>Sino-Agri</b>	<ul style="list-style-type: none"> <li>■ China's largest agricultural company</li> <li>■ 18,000 retail outlets, produces SOP using Mannheim</li> </ul>
<b>Hubei-Agri</b>	<ul style="list-style-type: none"> <li>■ China's 11<sup>th</sup> largest agricultural company</li> <li>■ Hubei is one of China's highest consuming horticultural provinces</li> </ul>





# LAKE WELLS PROJECT OVERVIEW

## Desirable mining jurisdiction with simple shipping logistics

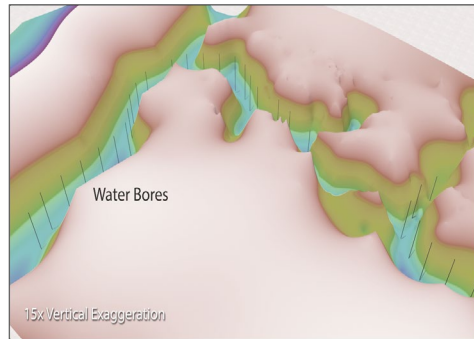


## LAKE WELLS LOGISTICS & INFRASTRUCTURE

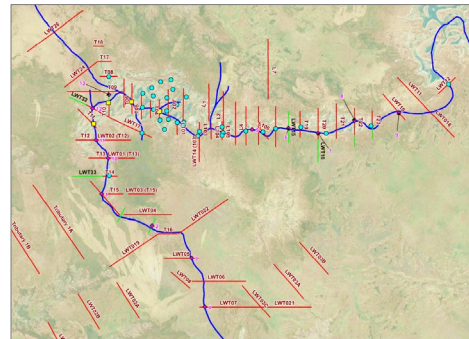
<b>Location</b>	<ul style="list-style-type: none"> <li>160km from Laverton</li> </ul>
<b>Power Station &amp; Reticulation</b>	<ul style="list-style-type: none"> <li>Build, Own, Operate (BOO) Gas fired power station with total capacity of 12 MW</li> <li>Trucked LNG, power reticulated to bore-field</li> </ul>
<b>Site Access Road</b>	<ul style="list-style-type: none"> <li>Minor re-alignment for site access road from the Great Central Rd</li> <li>CAPEX includes minor upgrade to existing access road to handle quad truck movements</li> </ul>
<b>Trucking</b>	<ul style="list-style-type: none"> <li>Bulk haulage using super-quad trucks to Geraldton Port, backloaded MOP</li> </ul>
<b>Rail Access</b>	<ul style="list-style-type: none"> <li>280km from Leonora rail terminals which connect to 3 WA ports and East Coast rail-lines</li> </ul>
<b>Accommodation Camp</b>	<ul style="list-style-type: none"> <li>100-person permanent camp constructed, 52 person operating levels</li> <li>Includes medical, laundries, gymnasium, swimming pool, wet mess</li> </ul>
<b>Site Communications</b>	<ul style="list-style-type: none"> <li>Long haul microwave network between Laverton and the LSOP comprising of 6 towers between 30-50m high, high-speed LAN &amp; WAN</li> </ul>

# LAKE WELLS PROJECT OVERVIEW

## Proven process flow – 150,000tpa of SOP across Life of Mine



**Resource**  
JORC2012 measured resource of 18.1 Mt and 3.6 Mt reserve LOM



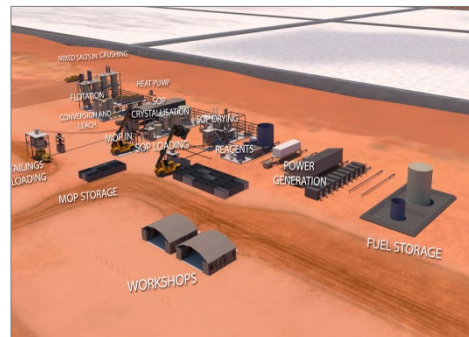
**Abstraction**  
17.5 GL/yr of naturally salty water (1.14 g/cm<sup>3</sup>) is abstracted by a bore network



**Concentration**  
Evaporation of 14.1 GL/yr concentrates salt in solution to 17% of the original volume



**Distribution**  
150 kt of high purity SOP produced for domestic and export markets



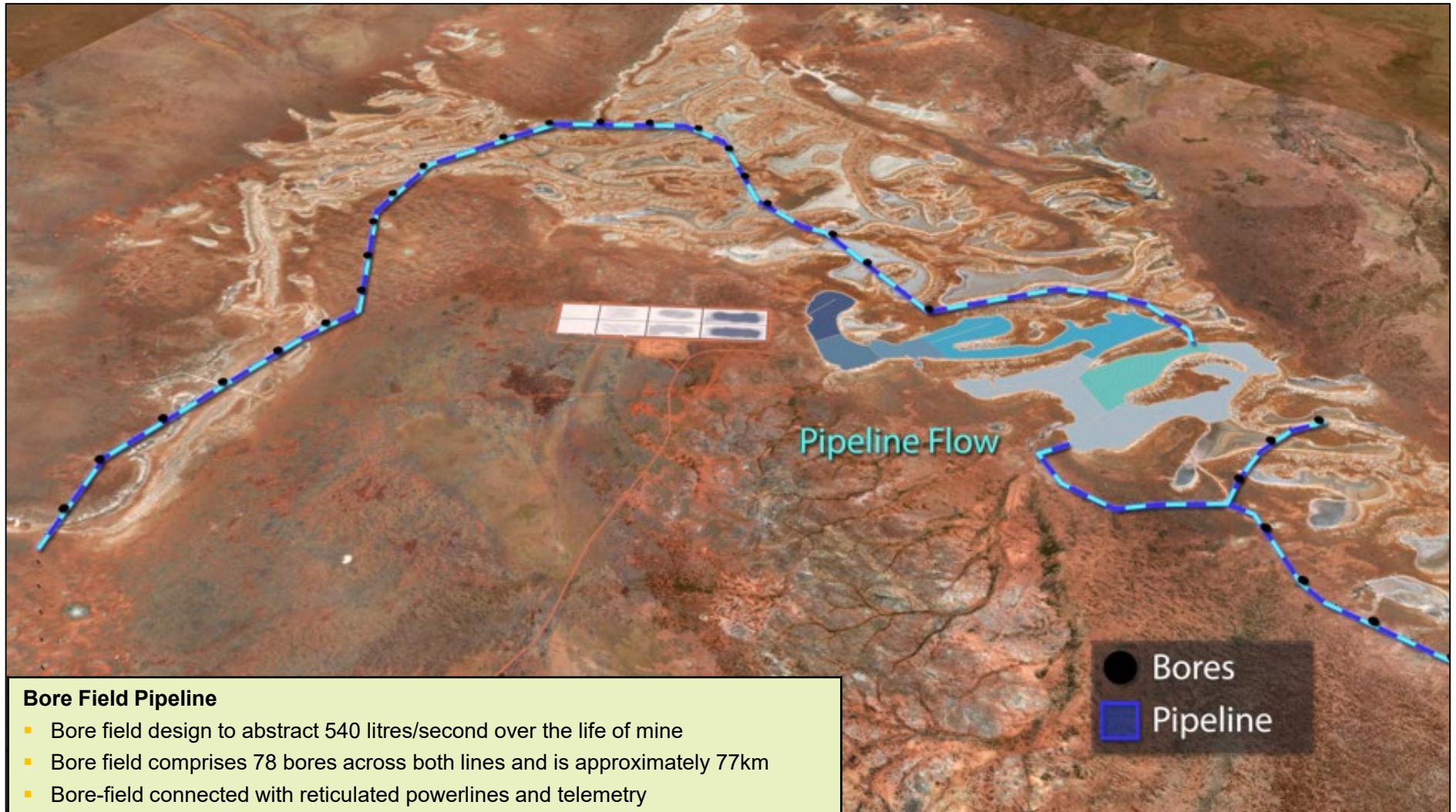
**Processing**  
~1.1 Mt of harvest salts [Na, Mg & K bearing minerals] and reagents enter the SOP plant



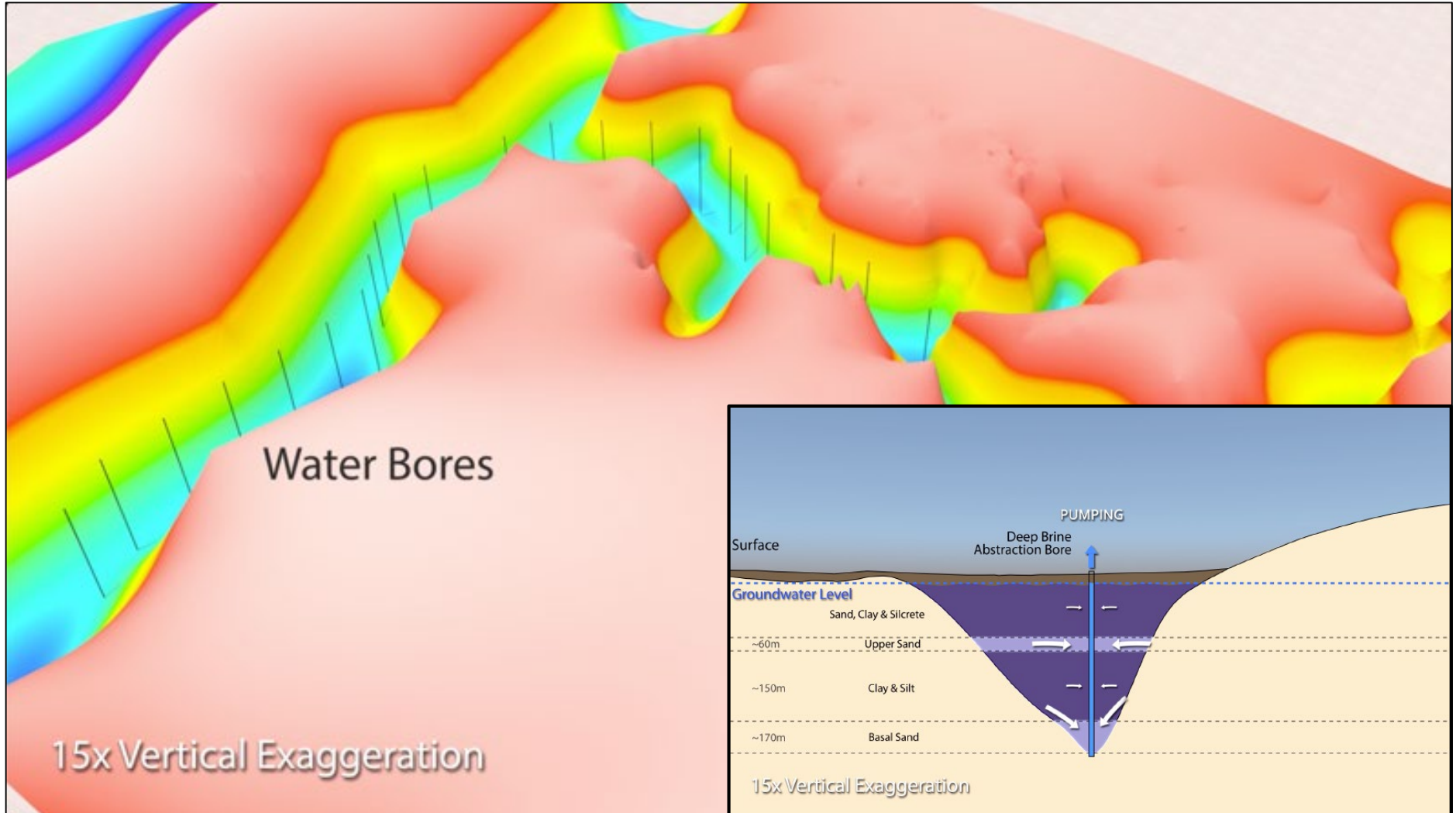
**Harvest**  
Salts precipitate as 2.2 GL/yr is evaporated from the harvest ponds, leaving 4% of original volume



# BORE FIELD

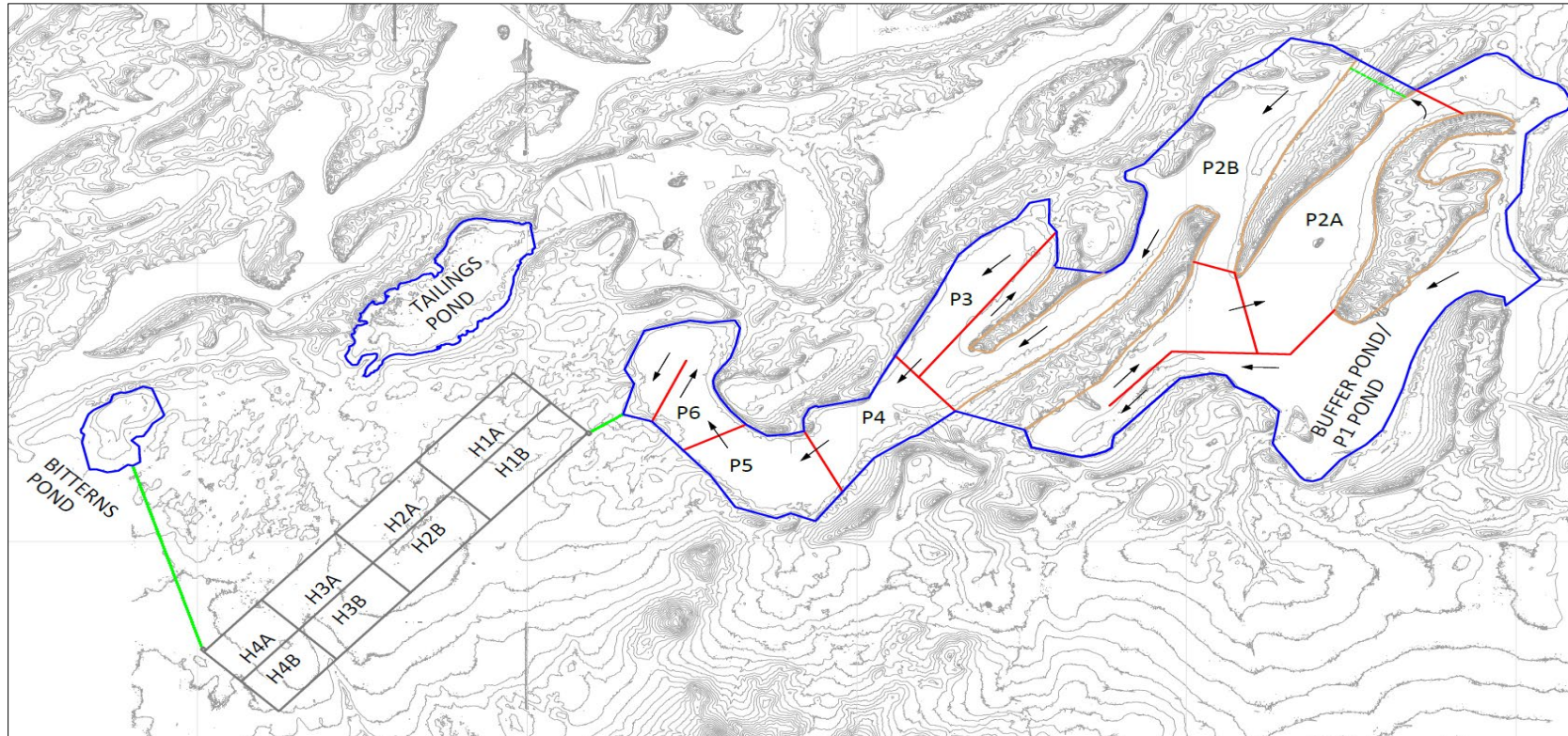


# BORE FIELD





# EVAPORATION PONDS



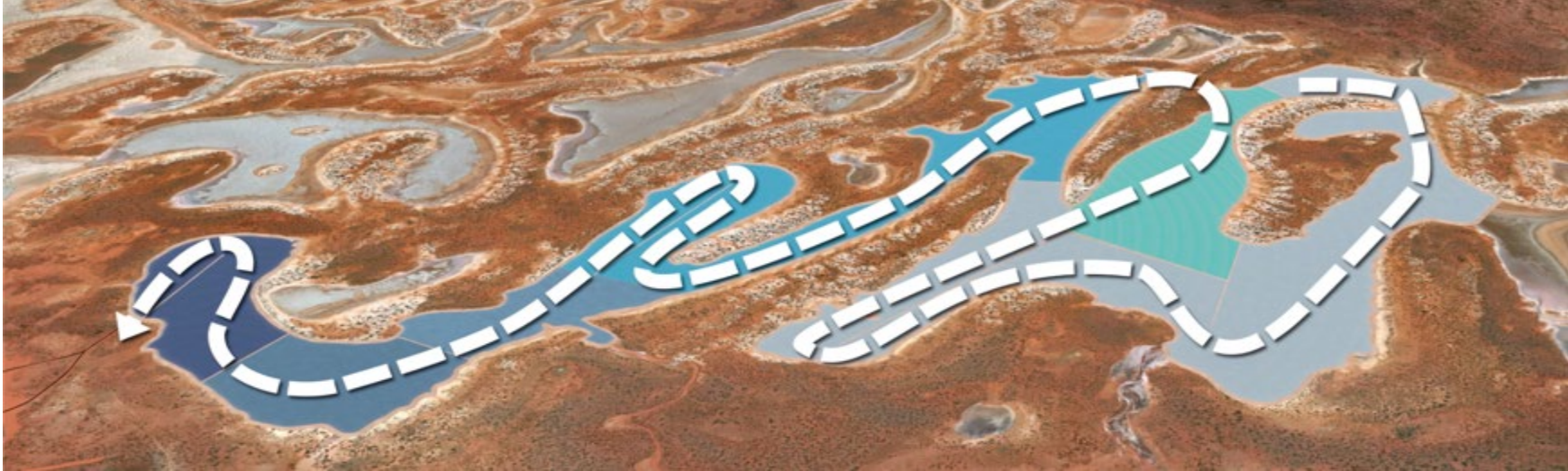
## Evaporation Pond Features

- Evaporation ponds design based on grade and climate modelling completed by Novopro
- There are three ponds in the evaporation sequence:
  - 10.03 km<sup>2</sup> required for the Buffer and Pre-concentration Ponds
  - 2.67 km<sup>2</sup> required for Harvest Pond
- Buffer Pond (where brine is stored and released to buffer reasonable variations in evaporation)
- Pre-concentration Ponds (where the brine is concentrated on-playa up to the sodium chloride saturation point)
- Harvest Ponds (where the potassium bearing salts are deposited in off-playa, lined ponds for harvesting and transporting to the processing plant)

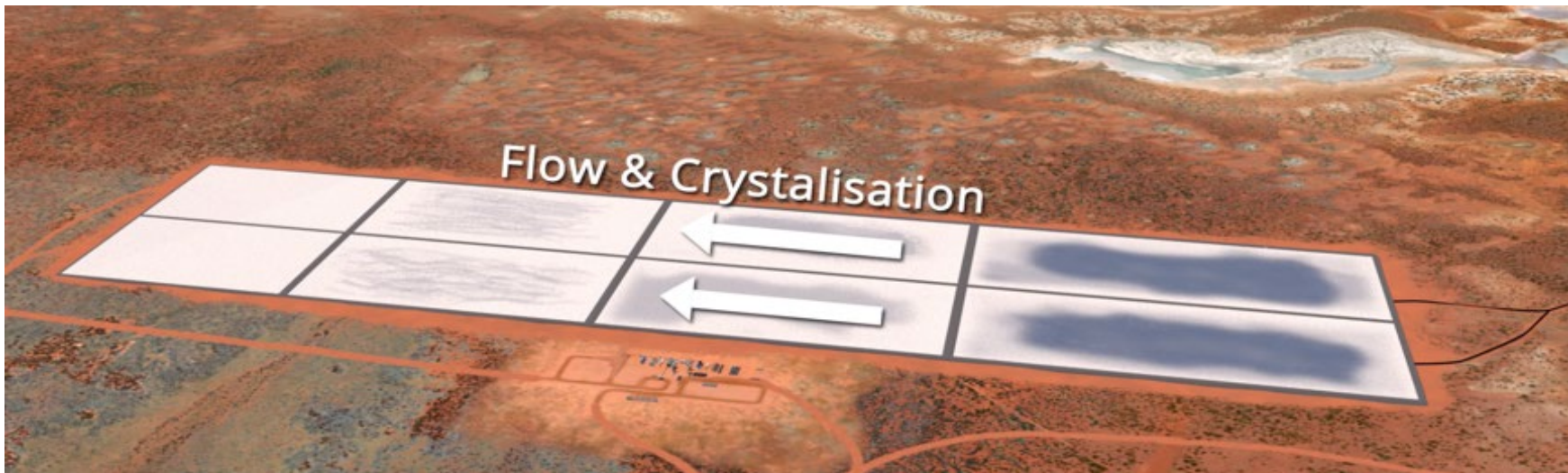


# EVAPORATION PONDS

## PRE-CONCENTRATION PONDS ON PLAYA



## HARVEST PONDS OFF PLAYA



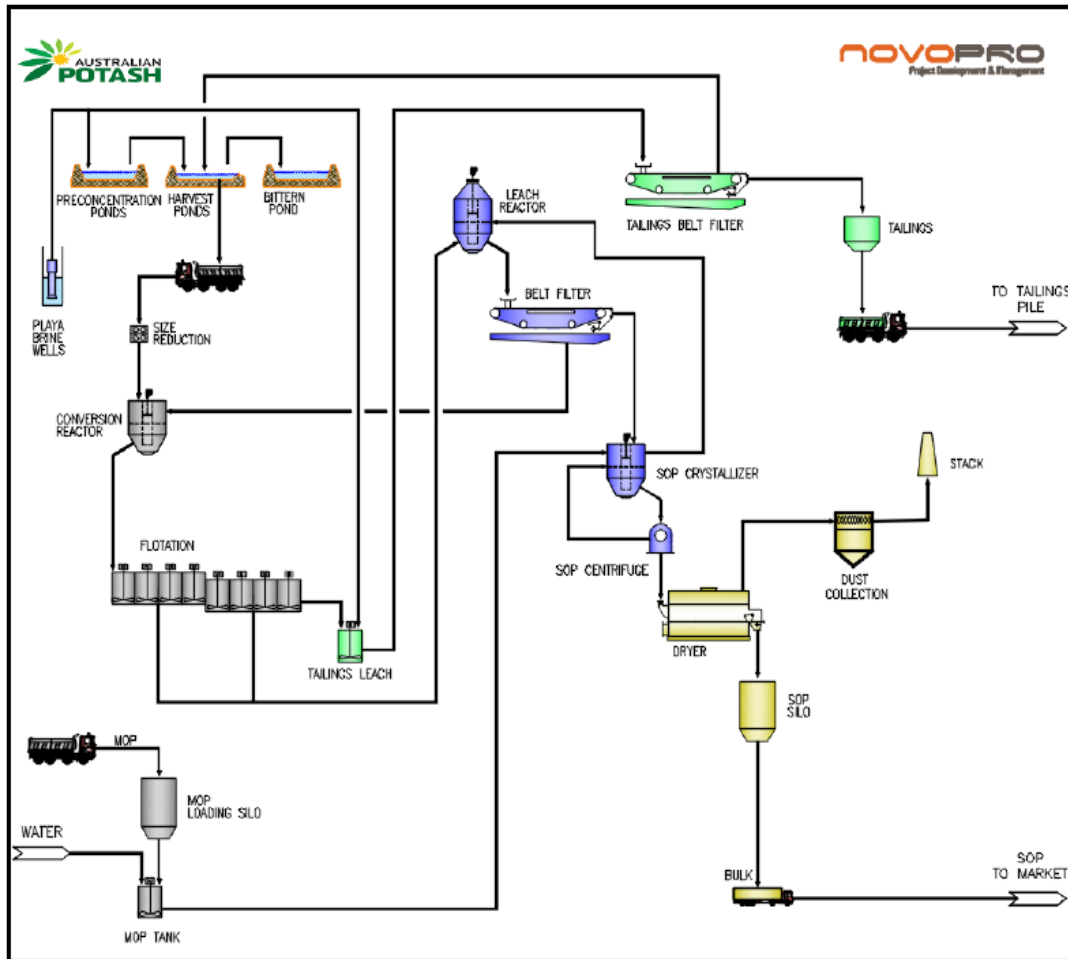
# PROCESS PLANT





# PROCESS PLANT

Processing facility designed to produce 150,000tpa of SOP from salts recovered from the harvest ponds and from MOP addition

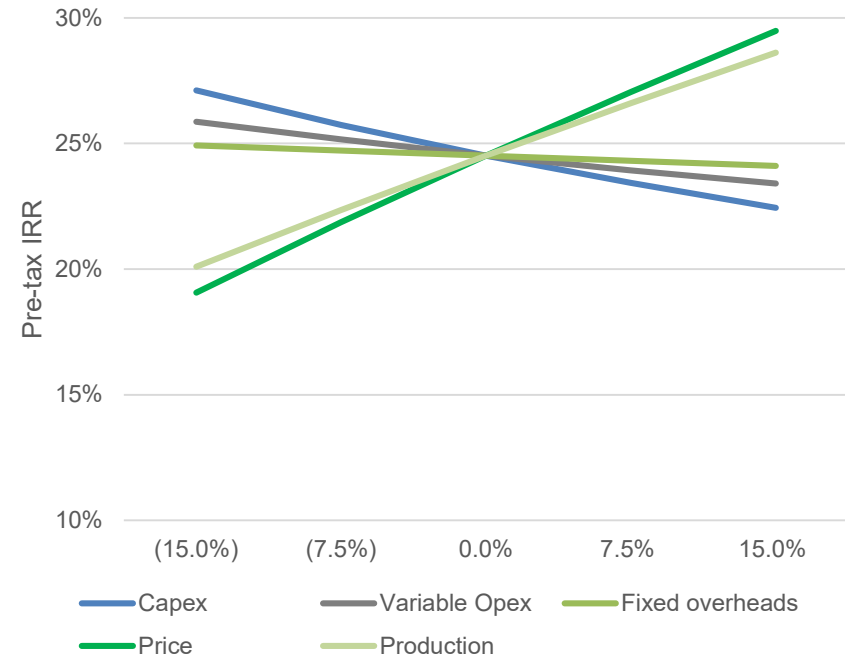
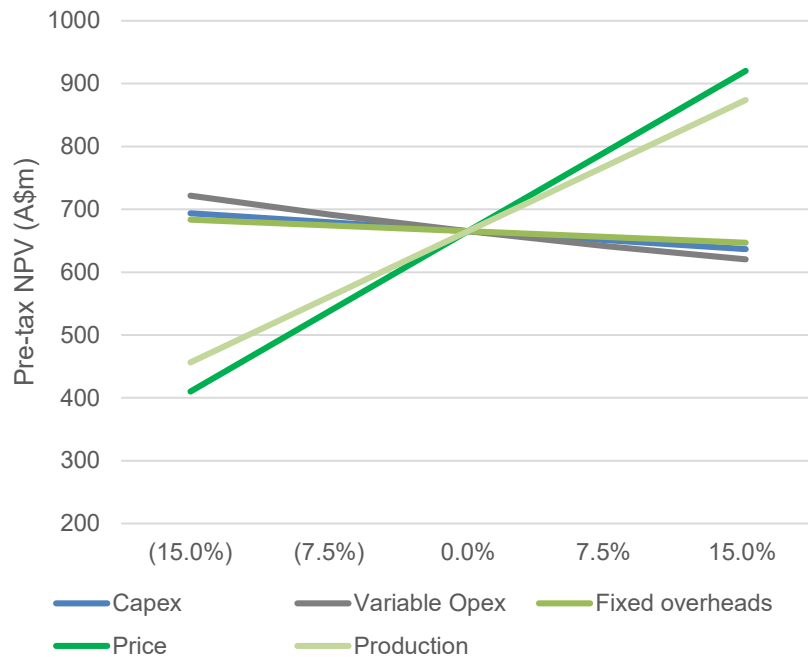


## KEY PROCESS STAGES

- **Harvest salts** – loaded onto trucks and transported to processing plant
- **Crushing** – ensures all potassium bearing salts are sufficiently liberated
- **Conversion reactor** – salts converted to potassium bearing schoenite in an exothermic reaction
- **Flotation** – schoenite separated from the gangue material: high purity schoenite
- **Leaching** – precipitates additional schoenite from addition of SOP mother liquor, removes remaining halite
- **MOP addition** – MOP is dissolved then mixed with the high purity schoenite then fed into the SOP crystalliser
- **SOP crystalliser** – converts high purity schoenite into SOP crystals at 50°C

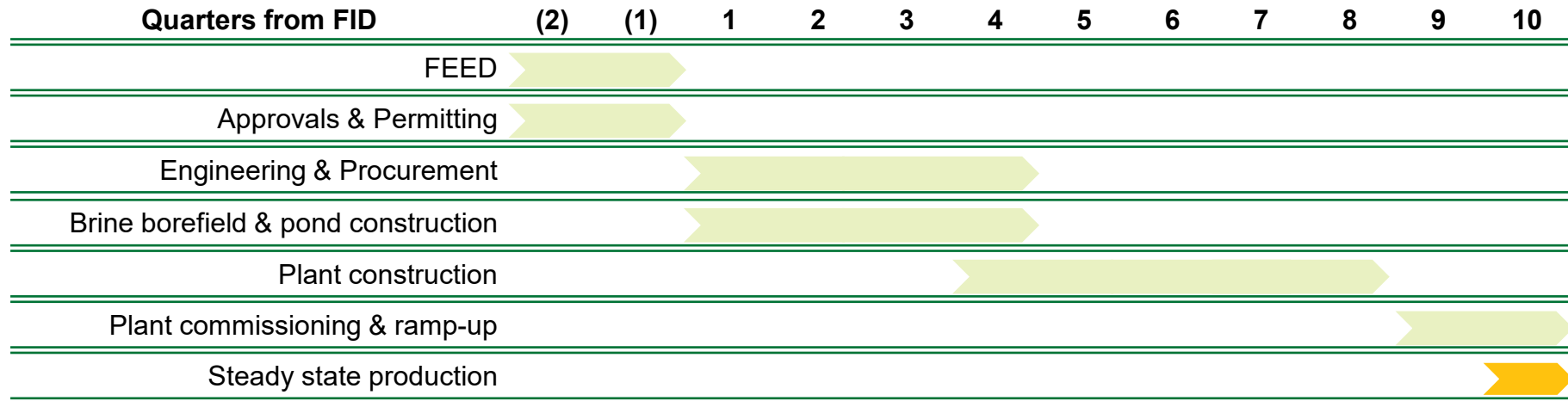
# SENSITIVITY ANALYSIS

Scenarios on key sensitivities of the Project still deliver attractive financial returns



# IMPLEMENTATION & APPROVALS

## EPCM project execution model with oversight from the Company's team



## LICENCES & APPROVALS

### Environmental & Social:

- Environmental Scoping Study (ESD) approved September 2018
- Environmental Review Document (ERD) lodged in November 2019

### Approvals:

- Receipt of all approvals planned for Project development commencing Q2 2020
- Ministerial Statement is estimated to be received Q2 2020
- Works Approval and Mining Proposal estimated to be granted Q2 2020

### Granted Mining Leases:

- No 'Right to Negotiate' exists across development area
- Currently negotiating with local traditional owners around social license to operate



## Outstanding outcomes over 30 year mine life

<b>Compelling economics:</b>	<ul style="list-style-type: none"> <li>▪ Pre-tax NPV<sub>g</sub> of A\$665M</li> <li>▪ Annual pre-tax free cash flows of A\$100M and Life of Mine (LOM) pre-tax free cash flows of A\$3.1Billion</li> <li>▪ Pre-tax Internal Rate of Return (IRR) of 25% on robust operational and capital efficiencies</li> <li>▪ 150,000 tonnes per annum (tpa) SOP production rate</li> </ul>
<b>Long life Project with lowest quartile production costs:</b>	<ul style="list-style-type: none"> <li>▪ 30 year mine life with LOM production of 4.5Mt of premium high-grade SOP</li> <li>▪ LOM cash cost of US\$262/t places the Project in the first quartile of the SOP cost curve</li> </ul>
<b>Sector leading CAPEX:</b>	<ul style="list-style-type: none"> <li>▪ Development CAPEX of A\$208M</li> <li>▪ Capital intensity of A\$1,387/t SOP</li> </ul>
<b>Resources and Reserves:</b>	<ul style="list-style-type: none"> <li>▪ LOM production is met using maiden 3.6Mt Probable Reserve and draws on the Measured Resource Estimate of 18.1Mt drainable SOP</li> </ul>
<b>Clear pathway to production:</b>	<ul style="list-style-type: none"> <li>▪ Defined Project delivery schedule of 24 months post Final Investment Decision (FID)</li> <li>▪ Financing and off-take discussions rapidly advancing</li> <li>▪ FEED program commencing immediately</li> </ul>

# Australian Potash Limited



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