



Battery Energy Storage System Presentation

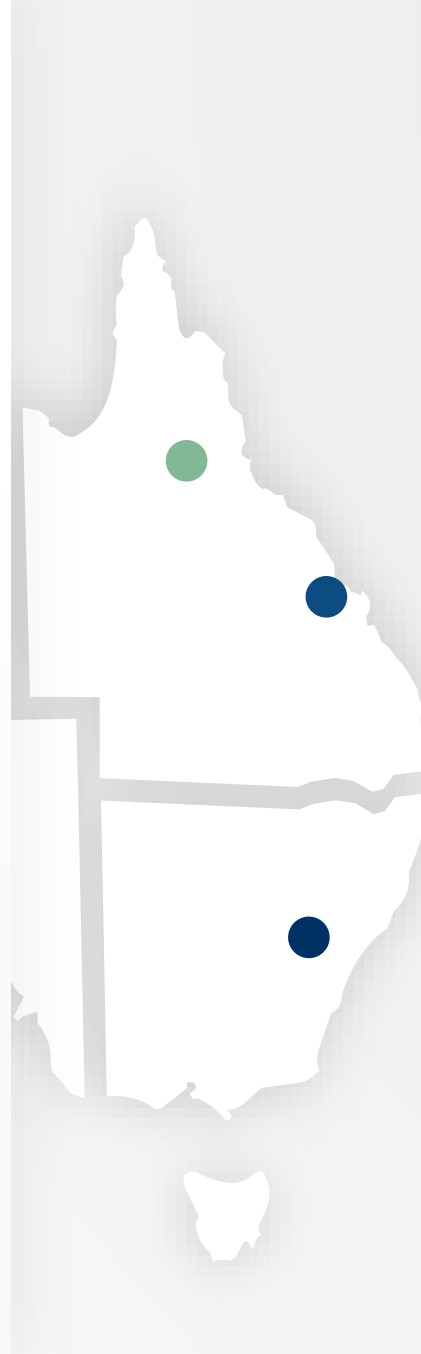
Approved by the Board of Genex Power Limited

Diverse renewable energy base

Portfolio of renewable energy generation and storage projects

Revenue substantially underpinned by long-term contracts

- 100MW of operating assets
- 250MW in construction
- 470MW of pipeline assets



KIDSTON CLEAN ENERGY HUB



50MW Kidston Solar Project (Operating)



250MW Kidston Pumped Storage Hydro Project (Construction)



150MW Kidston Wind Project (Development)



Up to 270MW Kidston Stage Two Solar Project (Feasibility)

BOULDERCOMBE BATTERY PROJECT (BBP)



50MW Large-Scale Battery Energy Storage System (Development)

JEMALONG SOLAR PROJECT (JSP)



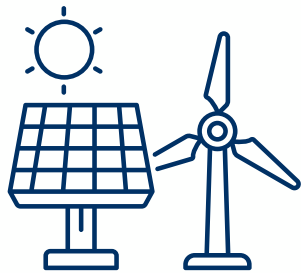
50MW Jemalong Solar Project (Operating)

Delivering a portfolio of renewable energy generation and storage projects

Renewable Energy Generation

Challenges of intermittent renewable energy:

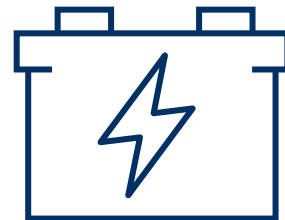
- Oversupply of power in prime generation conditions (irradiation and wind)
- Leading to volatile pricing
- Decreasing system stability
- Solar not available in peak demand times



Energy Storage

The benefits of batteries:

- Stores energy for use in peak time
- Balances out the pricing dynamic
- Quick release of power when required
- Increase system stability



Genex Power

Genex's diverse portfolio of renewable energy generation and storage projects provides:

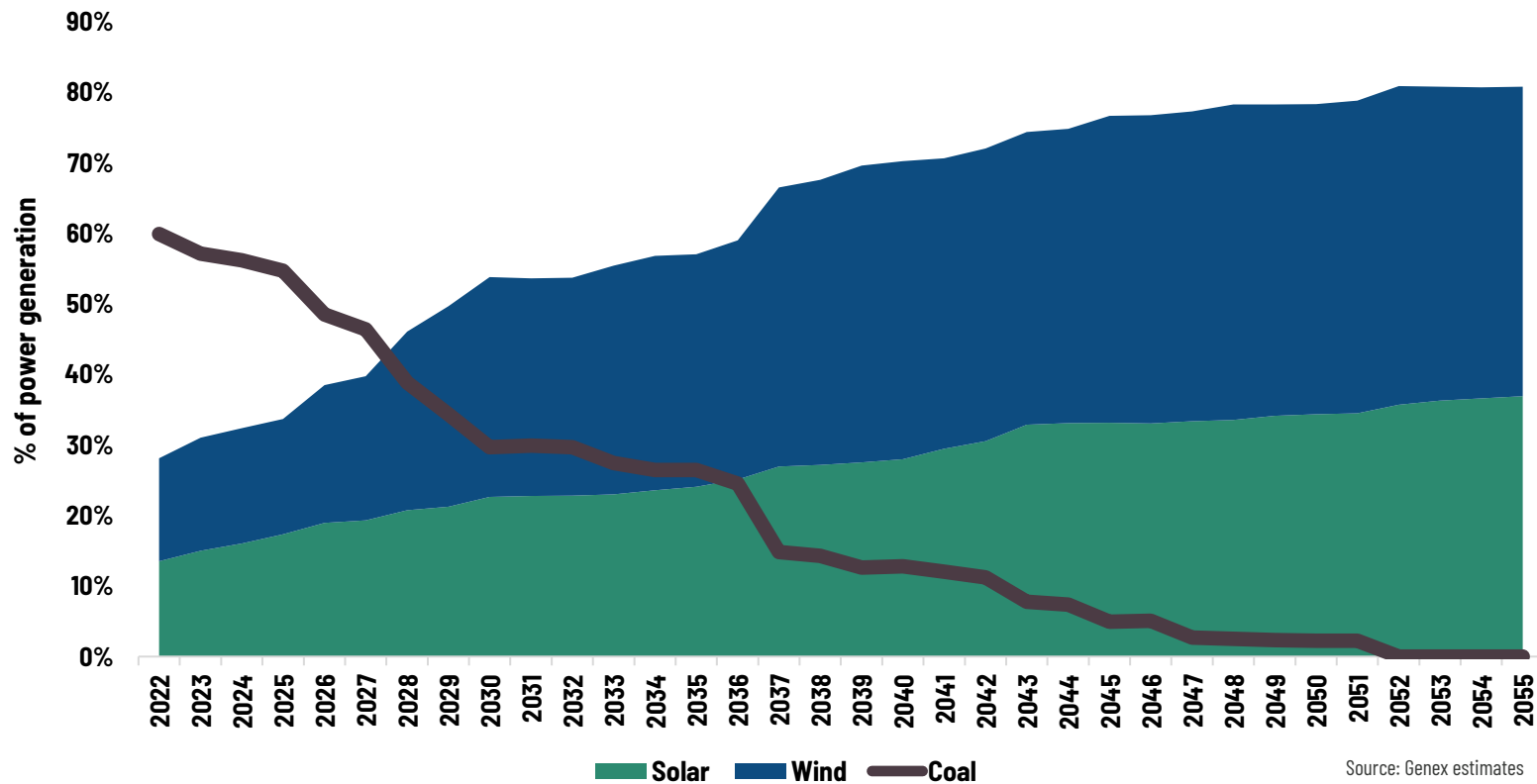
- Increased renewable energy availability to the grid
- The ability to optimise energy sales revenue
- Enables shareholder value accretion as the NEM transitions
- Maximise power prices received from energy sales



Renewable energy growth

The need for storage

Generation capacity forecast for NEM



Renewable energy is expected to increase to 83% of NEM total power supply in 2055

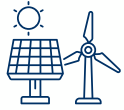


Growing penetration of renewable generation underpins the business case for storage



Large-scale storage will maximise renewable energy availability (particularly solar)

Evolving energy market – the need for storage



Growth of intermittent wind and solar creating volatility in the market



Need for low-cost, large-scale storage to facilitate high penetration of renewables and maintain reliability requirements



5 minute settlement from 1 October likely to increase price volatility



Large-scale batteries can respond to the market in under a second

Genex is addressing the need for energy storage via:



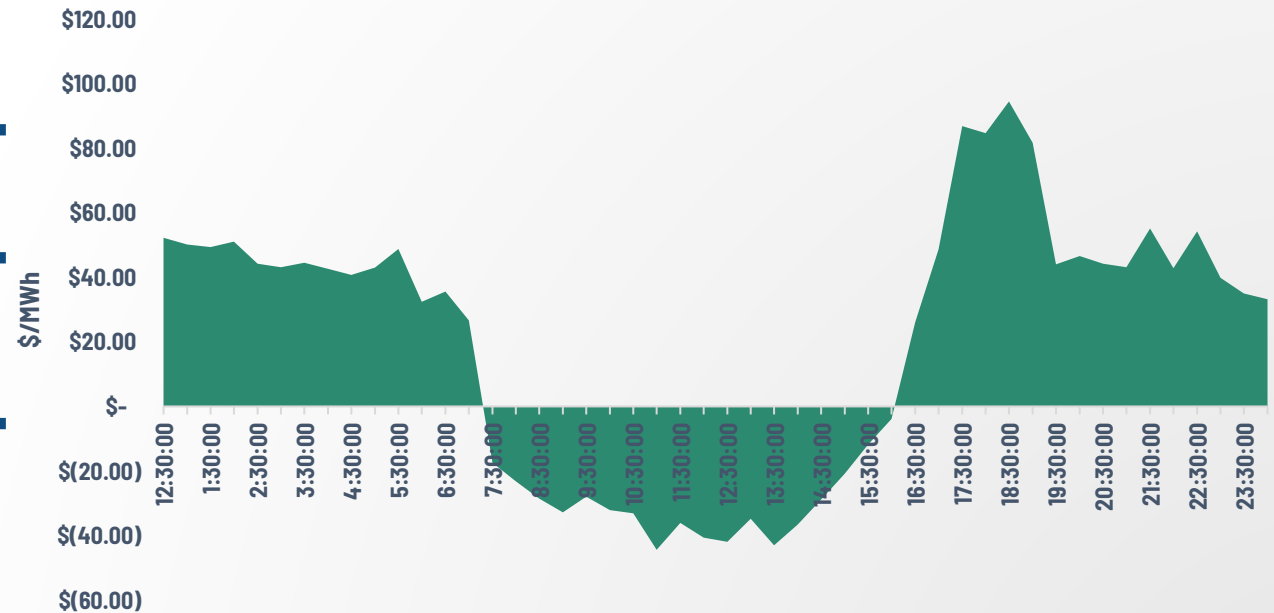
250MW Kidston Pumped Storage Hydro Project; and



50MW Bouldercombe Battery Project.

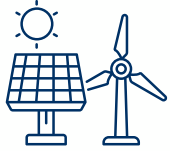
Paid to Charge / Paid to Discharge QLD Retail Electricity Price

Queensland Electricity Prices - 11 September 2021



Source: AEMO

The benefits of large-scale storage



Allows for further deployment of intermittent generation (wind & solar)



Ability to provide much needed system strength services



Batteries can take advantage of low spot prices and excess renewable energy supply when charging



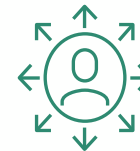
Batteries can store low cost renewable energy to support peak demand events



Rapid construction and deployment flexibility



Significant technology advancement and decreasing capital costs



Batteries can provide premium peaking service to meet high periods of demand



Advanced technology - ability to react to market signals in milliseconds

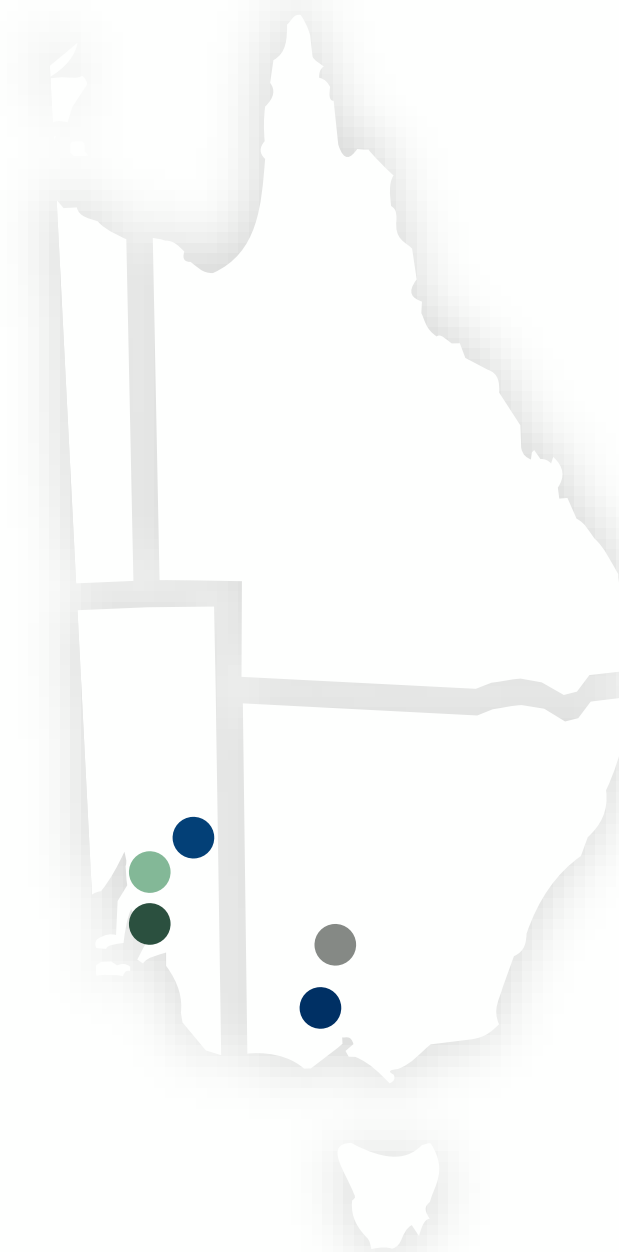
Australian's operational large-scale battery landscape

Batteries have the ability to operate in all 9 markets (energy market + 8 FCAS markets)

Currently no large-scale batteries generating in the Queensland market

Genex set to leverage the strong arbitrage business case due to growing solar generation in the electricity market

BESS have the capability to address system security issues caused by rapid deployment of intermittent generation



Site: Hornsdale (2017)
Supplier: Tesla
Capacity: 100MW/129MWh

Site: Ballarat (2018)
Supplier: Fluence
Capacity: 52MW/25MWh

Site: Lake Bonney (2018)
Supplier: Tesla
Capacity: 52MW/25MWh

Site: Gannawarra (2018)
Supplier: Tesla
Capacity: 30MW/30MWh

Site: Dalrymple (2018)
Supplier: ABB & Samsung
Capacity: 8MW/30MWh

Australia's battery growth

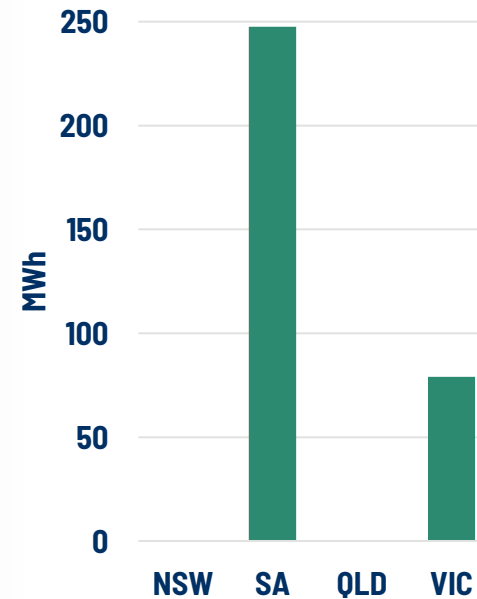
There is a requirement for significant BESS battery roll out along the east coast of Australia

Approximately 123GWh of capacity needed by 2040

The only operating BESS's in Australia are located in SA and VIC

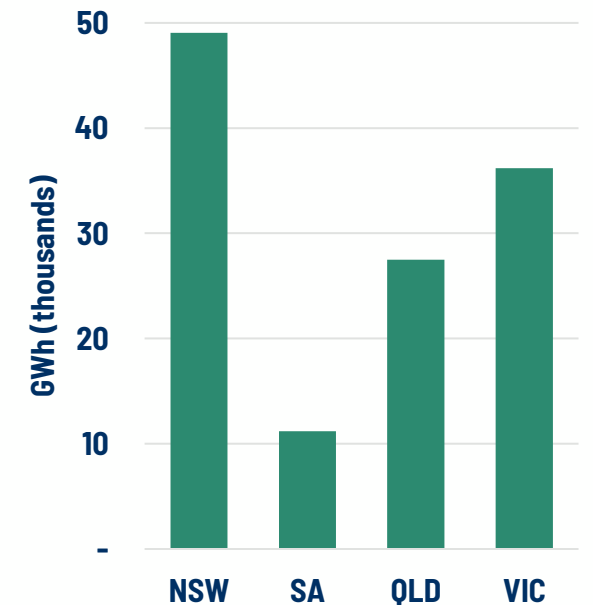
Batteries inserted into renewable energy zones fill the gaps in dispatchable supply allowing renewable generation to be used more effectively

Current Operating BESS



Source: AEMO

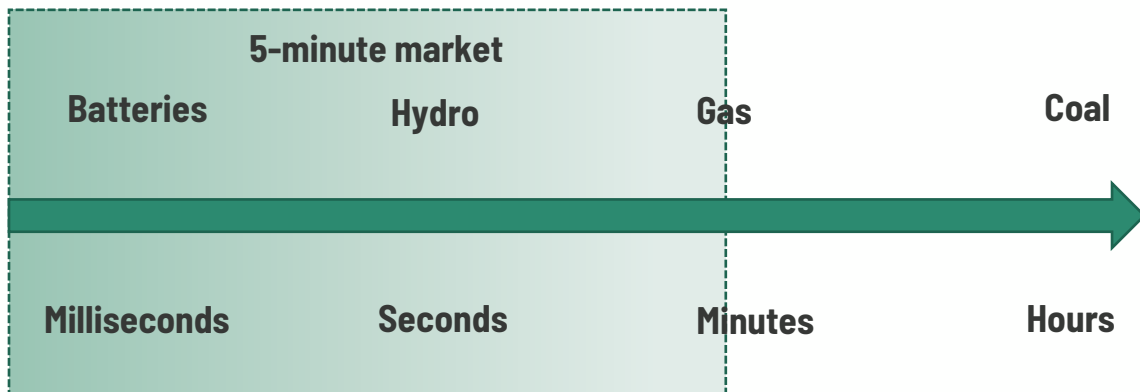
Required BESS by 2040



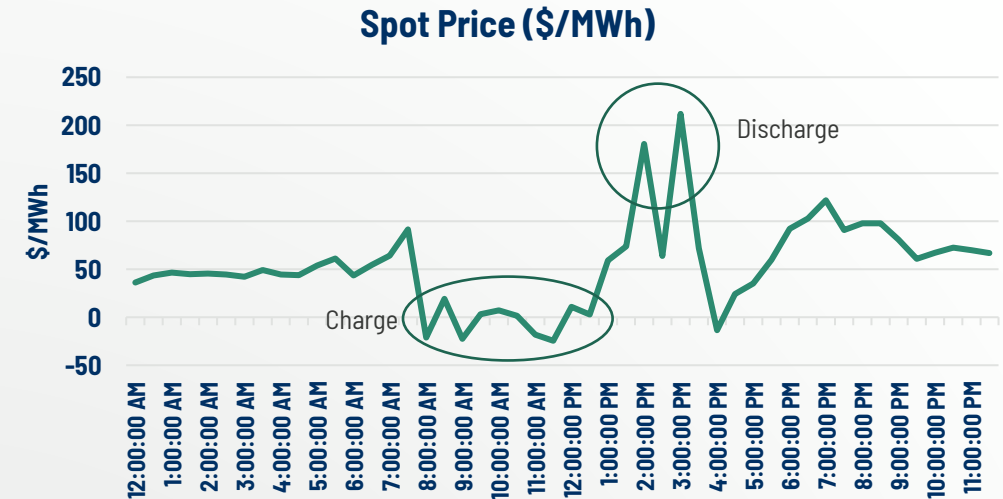
Source: Genex estimates

Large-scale batteries & 5-minute settlement

- ✓ The introduction of the 5 minute pricing market in the NEM rewards the rapid provision of power into the grid
- ✓ Historically pricing was on a 30 minute basis (average of 6 by 5 minute intervals)
- ✓ Recent change has distinct 5 minute pricing blocks
- ✓ The ability to rapidly enter (and withdraw) power will provide the power source with better ability to capture peak discharge prices (and take advantage of trough prices to recharge)
- ✓ Battery technology, with the ability to discharge power in millisecond and pumped hydro (seconds) are well positioned to benefit from the change in market dynamics



QLD Wholesale Electricity Price – September 2021



5 minute settlement impact on pricing (1MW/1MWh)

Time interval	Discharge price (\$/MWh) 1:00pm to 3.00pm	Charge price (\$/MWh) 8:00am to 12.00pm	Total Cycle Price (\$/MWh)
30min	196	-22	218
5min	263	-175	438

Notes to table: stylistic representation of a charge and discharge cycle (energy only market)

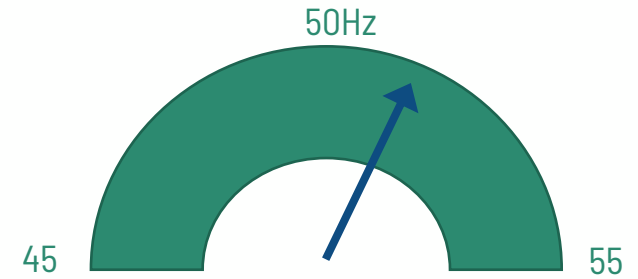
Large-scale batteries & the FCAS market

- ✓ Frequency Control Ancillary Services (FCAS) are a group of services that help maintain the NEM at a stable frequency of 50Hz
- ✓ Short term imbalances between supply and demand can cause frequency instability, which can ultimately lead to system failure and blackouts
- ✓ The intermittent nature of renewables increases potential instability
- ✓ Historically coal fired power stations provided FCAS given their size and considerable inertia
- ✓ Batteries are ideally suited to provide FCAS to the NEM given their ability to charge and discharge in milliseconds
- ✓ The NEM pays operators to provide FCAS services

Coal retirements will reduce the supply of FCAS

Intermittent renewables will increase the demand for FCAS

Supply exceeds demand

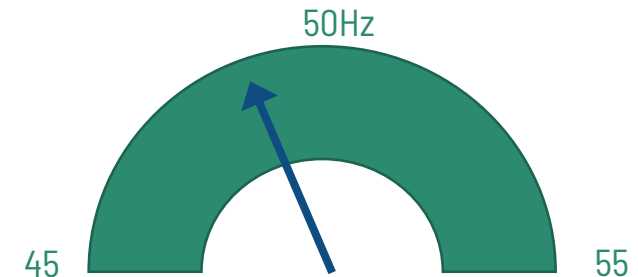


Example: sudden increase in wind velocity

NEM frequency rises >50Hz

Battery rapidly charges to increase demand, frequency falls back to 50Hz

Demand exceeds supply



Example: sudden decrease in solar radiation

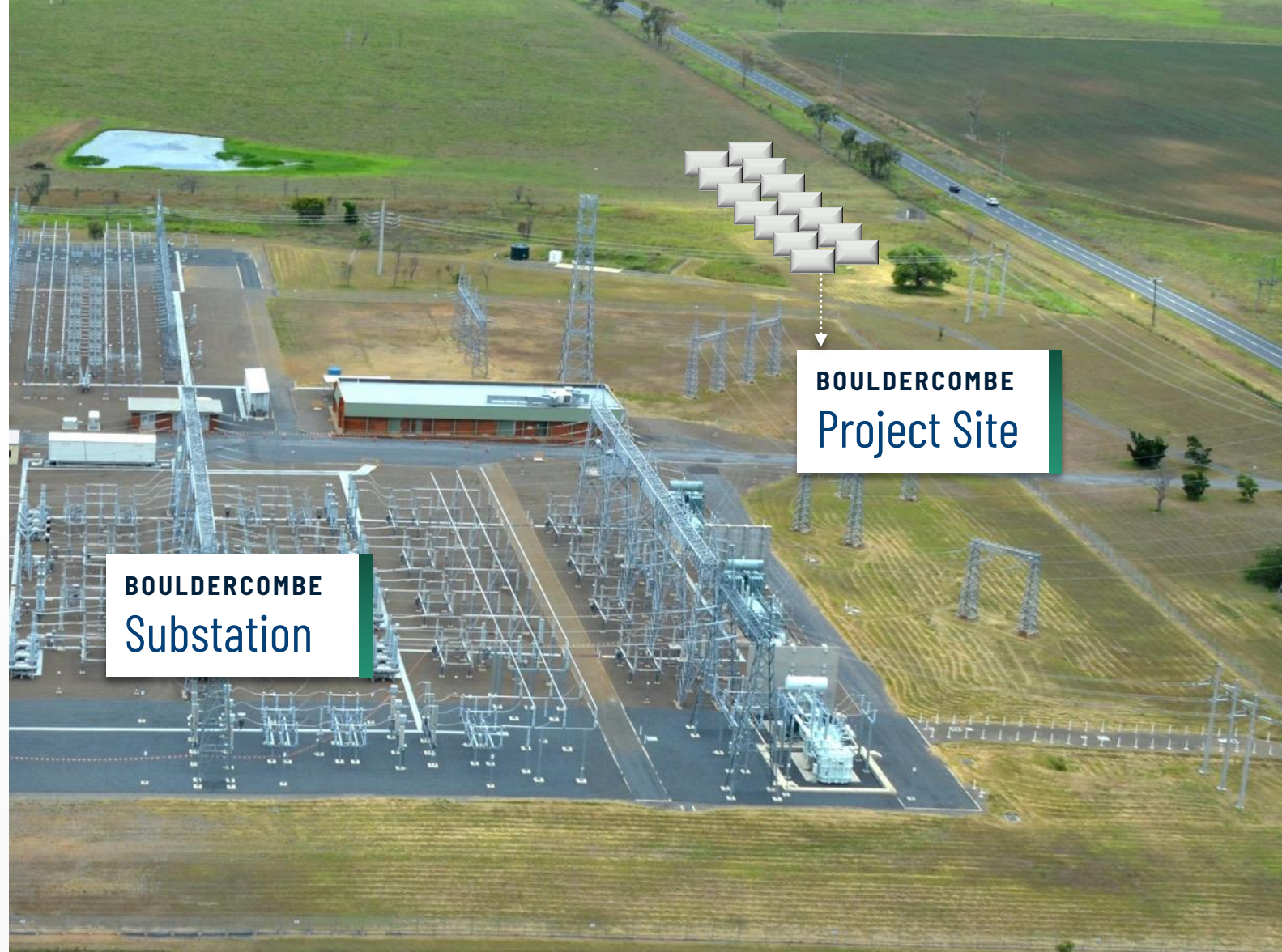
NEM frequency falls <50Hz

Battery rapidly discharges to increase supply, frequency rises back to 50Hz

Bouldercombe Battery Project

50MW BESS located in Bouldercombe, Rockhampton in Queensland - adjacent to the Powerlink substation

- ✓ Genex's first battery project
- ✓ Land to be secured under 30 year leasing arrangement next to Powerlink's Bouldercombe substation
- ✓ Connection and Generator Performance Standard (GPS) process well advanced
- ✓ Funding discussions with potential lenders and strategic investor
- ✓ Tesla selected as the battery supplier and integrator
- ✓ Offtake arrangements well progressed



Tesla technology

Megapack 2.0

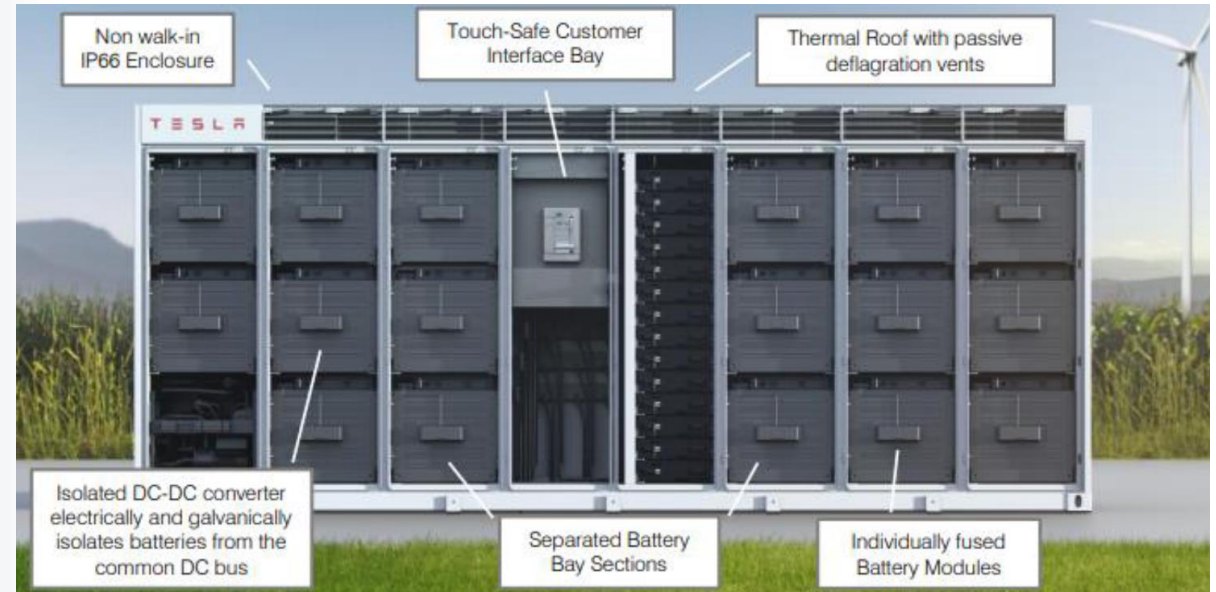
The Megapack is an all-in-one utility-scale energy storage system optimised for cost and performance

- All Megapack components pre-installed and tested within a single enclosure
- Battery architecture consists of battery modules and an integrated liquid cooling and heating system for thermal safety, enhanced performance and increased reliability

Each Megapack is shipped from Tesla's Gigafactory fully-assembled and factory tested.



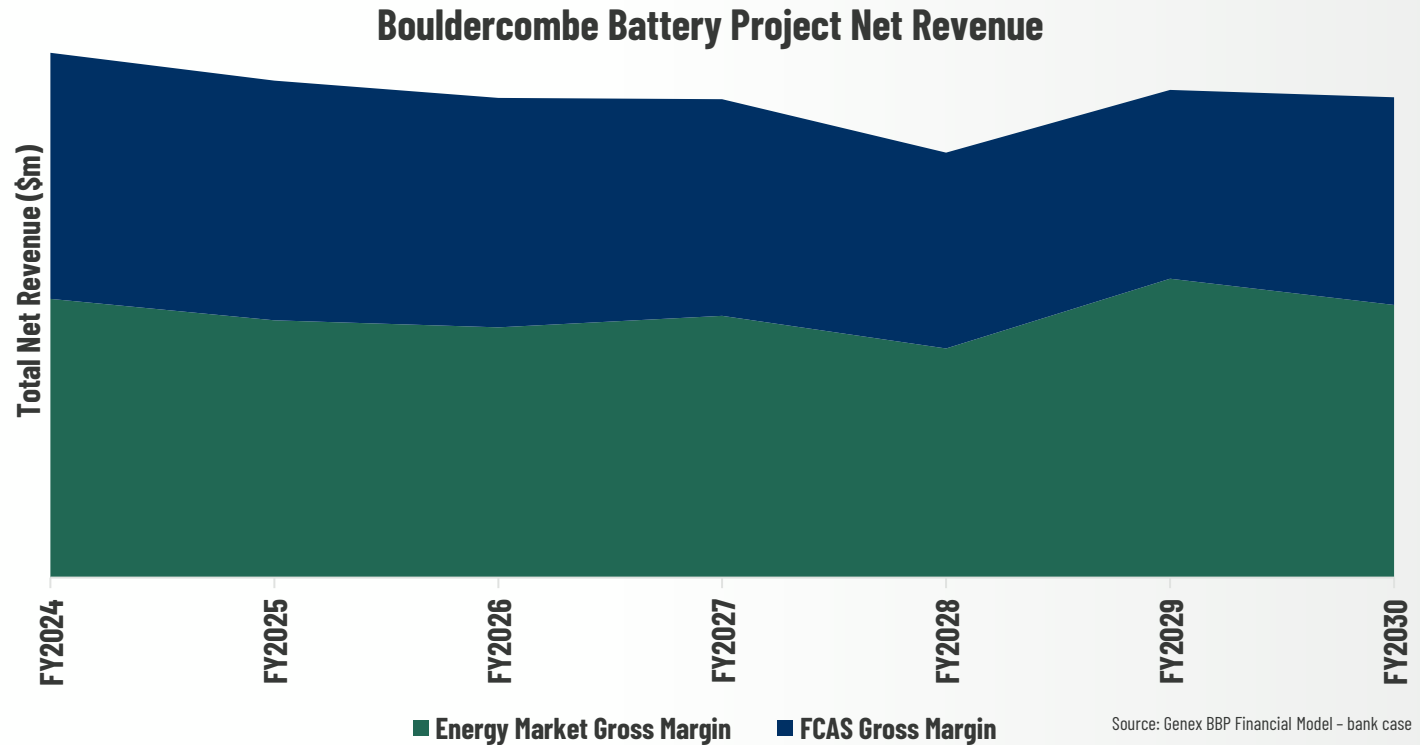
TESLA



Above: inside the BBP Tesla Megapack 2.0

Genex Power's battery financials

Genex's BESS will leverage energy market arbitrage and FCAS markets to deliver strong and predictable revenue streams



Attractive outlook for price arbitrage in certain states with the introduction of 5-minute settlement in October 2021

Initial Capex of **\$55-\$60m¹** to develop the asset



Life of asset revenue to average over **\$10m** per annum



Operating life expected to be greater than the **20 year warranty**



Strong EBITDA margin of **>75%** expected from BBP



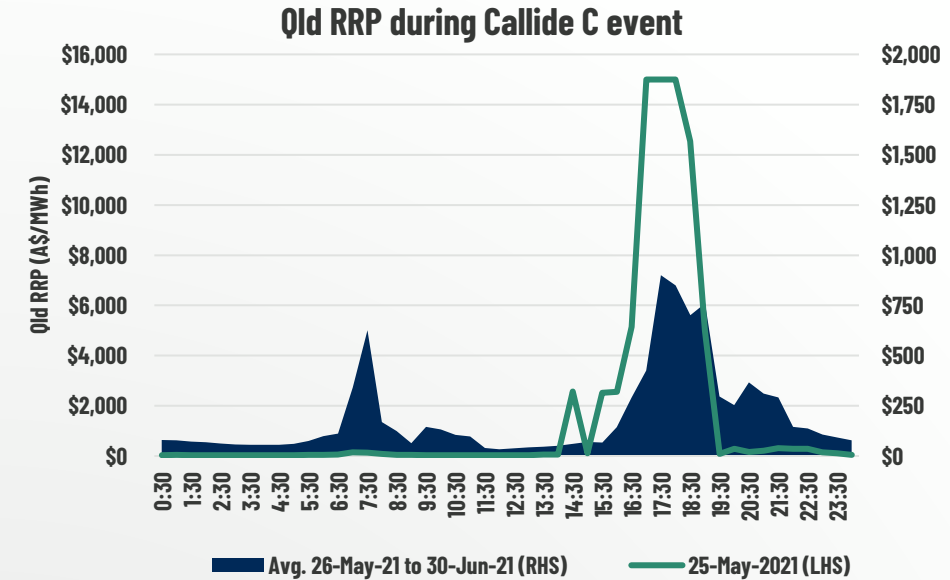
Minimal requirements for **ongoing sustaining capital**



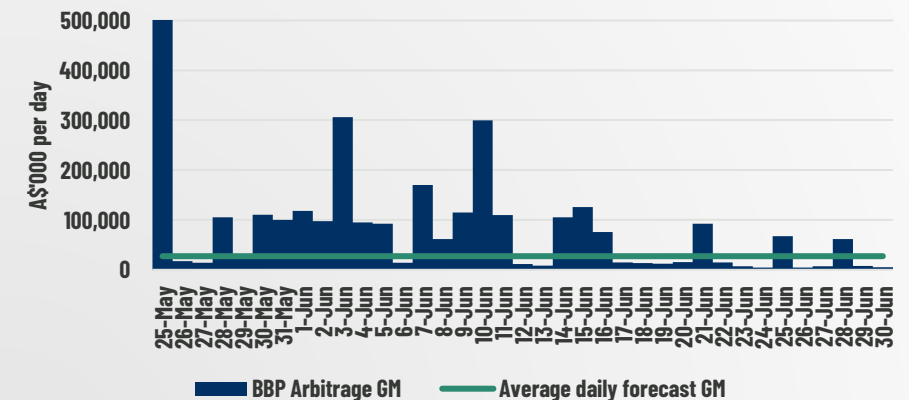
Large-scale batteries & contingency events – Callide C case study

- On 25 May 2021, Unit 4 (405MW) at the Callide C coal-fired power station suffered a turbine fire:
 - The remaining two units at Callide also tripped (the fourth was offline)
 - The transmission lines connecting Callide to the grid opened
 - Capacity at nearby power stations including Gladstone, Stanwell, Yarwun and Mackay was affected
 - The Queensland-NSW interconnector was disrupted
- The outage at Callide resulted in a 3,000MW shortfall
 - Nearly 500,000 homes and businesses in Queensland lost access to power
- Average RRP prices in Queensland **escalated to \$15,000 for nearly 2 hours**
- If **BBP had been operational at the time, it would have made \$700k in gross margin** on 25 May 2021 solely from arbitrage activities
 - Over the period to 30 June, as prices remained volatile, the BBP would have netted a total of \$3.2m from arbitrage gross margin alone, averaging some 255% of forecast daily revenues**
- Extreme contingency events such as Callide C are unpredictable, but likely to increase in frequency as coal plant ages and retires
- Importantly similar events are not factored into Genex’s revenue forecasts for the BBP and therefore represent substantial upside to equity

Significant events can deliver substantial profitability for batteries



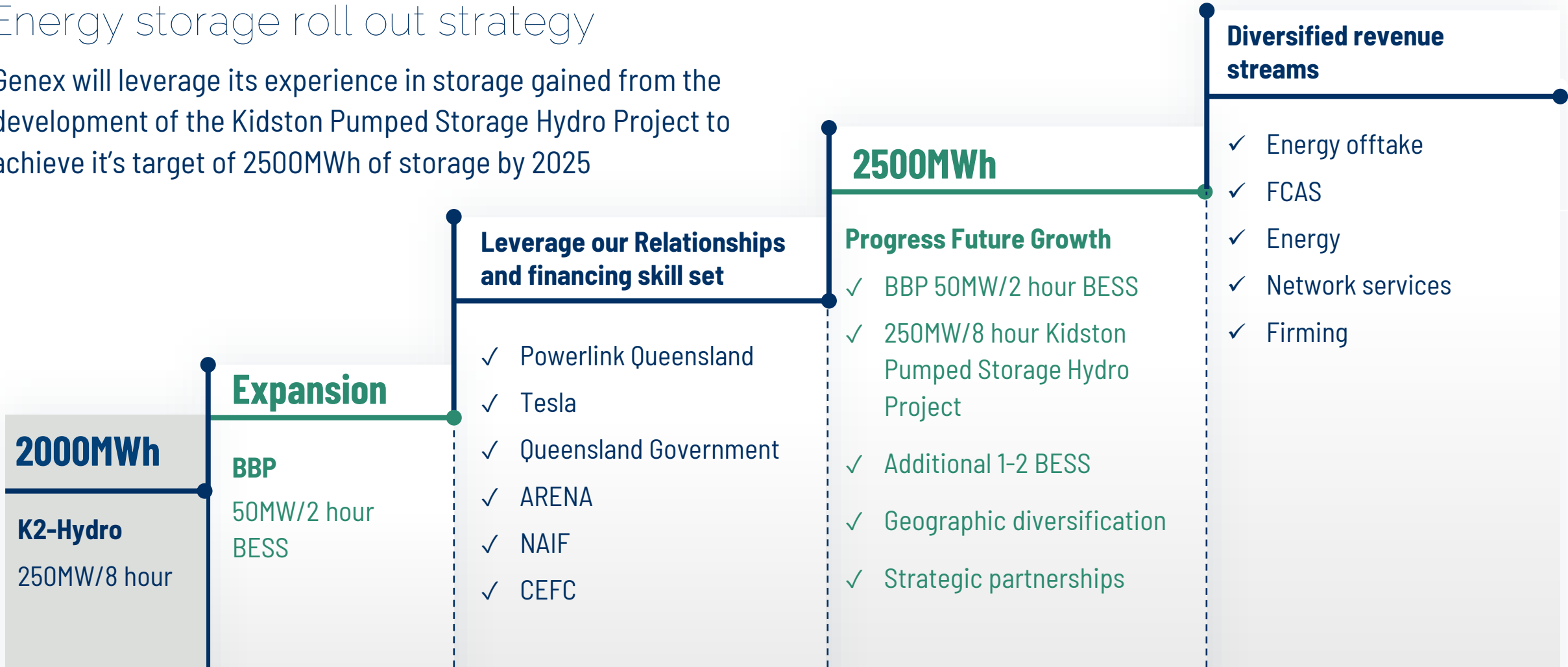
BBP Illustrative Arbitrage GM during Callide C event



Source: AEMO, Genex calculations

Energy storage roll out strategy

Genex will leverage its experience in storage gained from the development of the Kidston Pumped Storage Hydro Project to achieve its target of 2500MWh of storage by 2025



LOW RISK PROFILE



RAPID EXECUTION

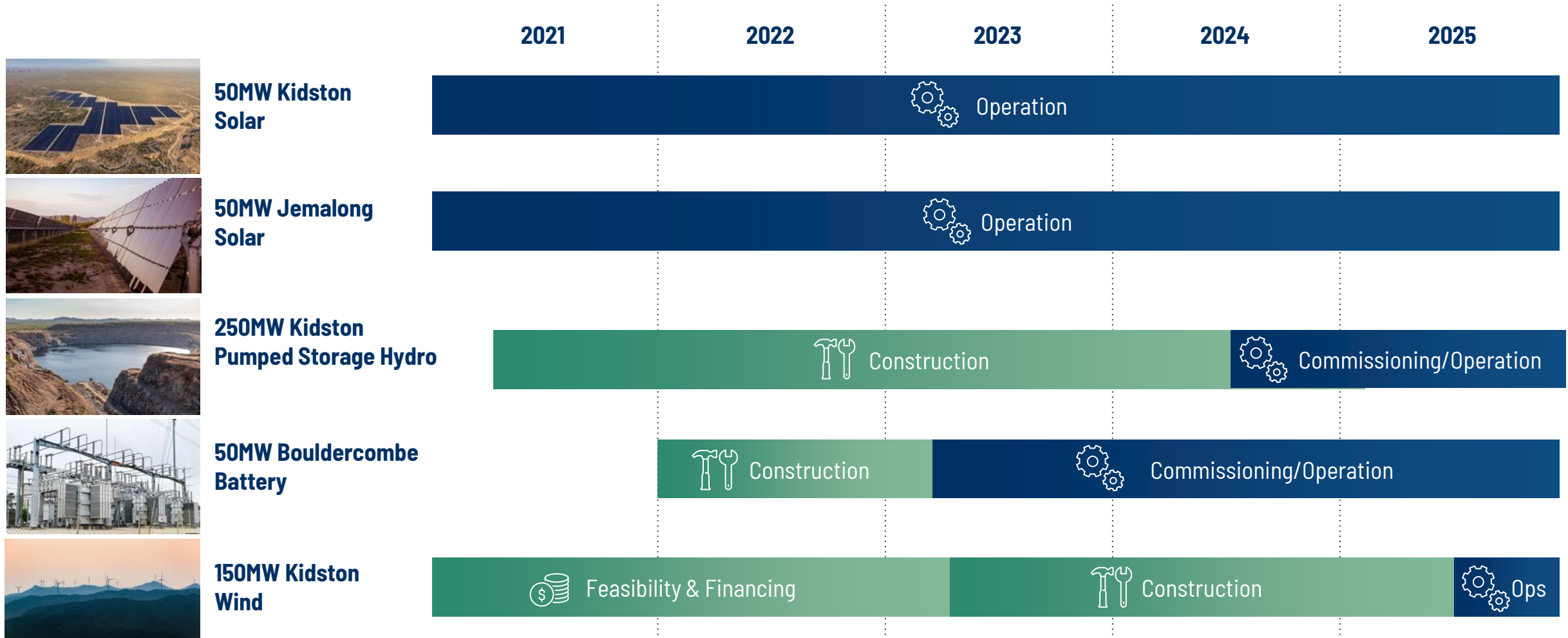


STRONG CASH GENERATION



HIGH RETURNING PROJECTS

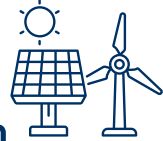
Genex diversified renewable portfolio



Investment highlights

01

Diverse renewable energy and storage portfolio



- ✓ 2 operating 50MW solar projects (KS1 & JSP)
- ✓ K2-Hydro funded and in construction
- ✓ Battery and wind projects in advanced stages

02

Proven track record of project execution



- ✓ Successfully developed >\$200m worth of projects
- ✓ Secured long term energy contracts providing secure cash flows
- ✓ Developed, financed and built KS1 and JSP on time and on budget

03

Strong relationships



- ✓ Tier 1 stakeholders



04

Revenue stream certainty



- ✓ 85% revenue contracted for 30 years
- ✓ >79% EBITDA margin
- ✓ Minimal sustaining capex
- ✓ Average annual revenue \$82.5m until 2055
- ✓ Utility like nature of cashflow and revenue stream

05

350MW of power generation and storage



- ✓ \$1 billion renewable energy & storage portfolio
- ✓ Average interest rate of 2.96% locked in via long term hedge

06

Near term development of pipeline opportunities



- ✓ 200MW of near term development opportunities
 - 50MW Bouldercombe Battery – construction 2022
 - 150MW Kidston Wind – construction 2023

Contact



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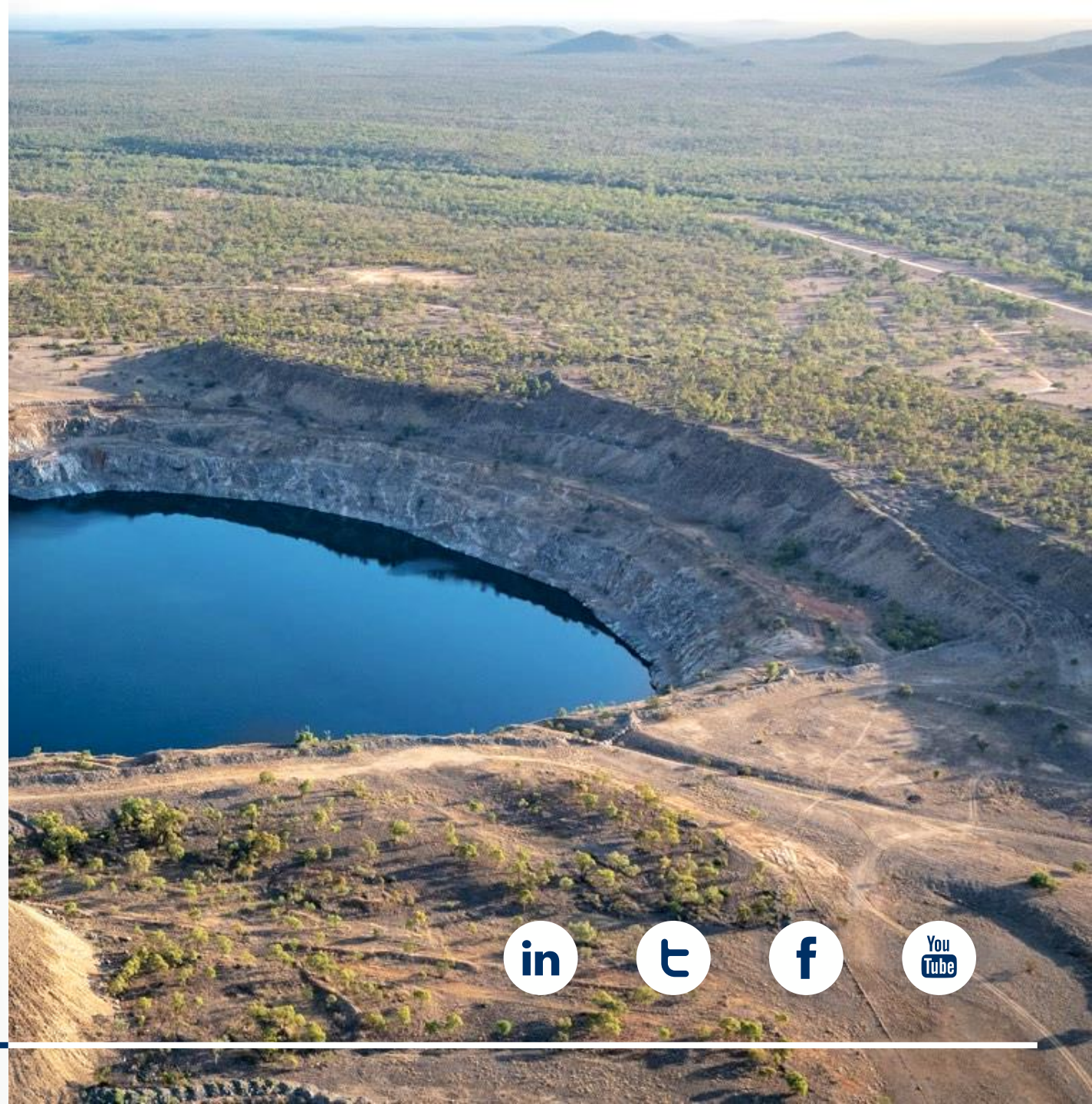
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Chief Executive Officer

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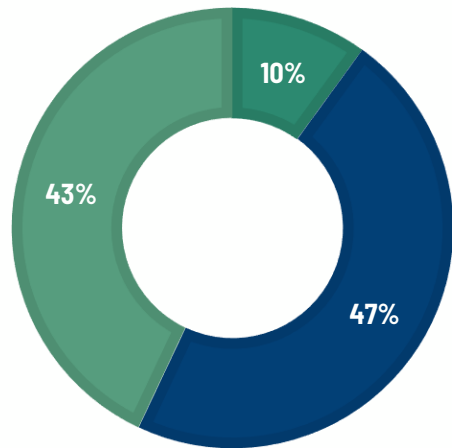


Corporate snapshot

ASX code:	GNX
Shares on issue:	1,069,900K
Market cap (30.09.2021):	\$251M
Cash (30.06.21):	\$45M¹

SHAREHOLDERS

■ J-POWER ■ Institutions ■ Other



Board and Management



Dr. Ralph Craven
Non-Executive Chairman



Michael Addison
Non-Executive Director



Teresa Dyson
Non-Executive Director



Yongqing Yu
Non-Executive Director



Kenichi Seshimo
Non-Executive Director



Ben Guo
Non-Executive Director



Simon Kidston
Executive Director



James Harding
Chief Executive Officer



Craig Francis
Chief Financial Officer



Arran McGhie
Chief Operations Officer

Our people, communities and the environment



People, Health and Safety

- Continuation of COVID-19 protocols to ensure our people and communities remain safe
- Commitment to managing risk and driving safety leadership through our organisation and ensuring our contractors implement best practice
- Strong focus on diversity and indigenous engagement within our workforce



Environment

- Strict focus on minimising disturbance
- Commitment to conserving and protecting the environments we operate in
- K2-Hydro converting disturbed mine site to sustainable energy generation
- 2 million tonnes CO₂ abatement by 2025



Community

- Focus on job creation in our local communities
- At Jemalong, 151 jobs were created, 68% were local, 22% were women and 11% were Indigenous
- Indigenous Engagement Strategy to promote Indigenous employment and procurement for K2-Hydro
- 800 jobs created at Kidston and along the transmission route

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