Australian Energy Storage

AES: Investing in the battery revolution

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green energy

DEVELOP AUSTRALIA'S FIRST LITHIUM CATHODE FACILITY

- **Downstream processing** of WA's critical minerals
- **Suitable for the global electric vehicle market** NMC811
- **Ability to respond to** market for both NCM811 and LFP as markets evolve although NMC811 has distinct WA advantage

RATIONALE

- **Exponential growth** expected in market as shift to cleaner technologies accelerates
- **WA uniquely positioned** for precursor materials (mining, ethical supply, carbon neutral)
- **Strong support** from government, community and business

THE AES ADVANTAGE

- **Exclusive Partnership with P3:** a leading German cell technology company
- **Team with a track record,** having manufactured battery packs in India and access to Indian market
- **Relationship with all** materials providers

RETURNS AND PROFITABILITY

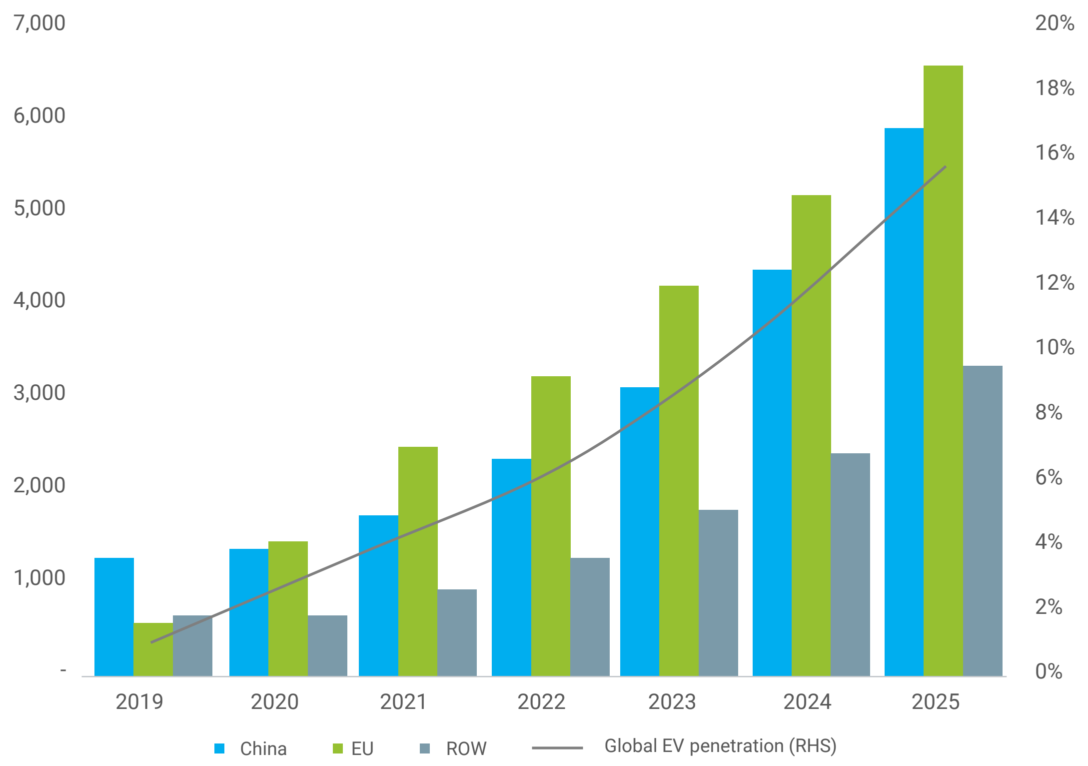
- **Exceptional returns** with preliminary modeling showing 2-3 years pay back
- **Liquidity event** in 12-18 months via planned IPO in Australia

TEAM

- **Very strong execution team** with all round experience and capability and experience in cell and battery manufacturing from operating Indian business
- **WA based team**

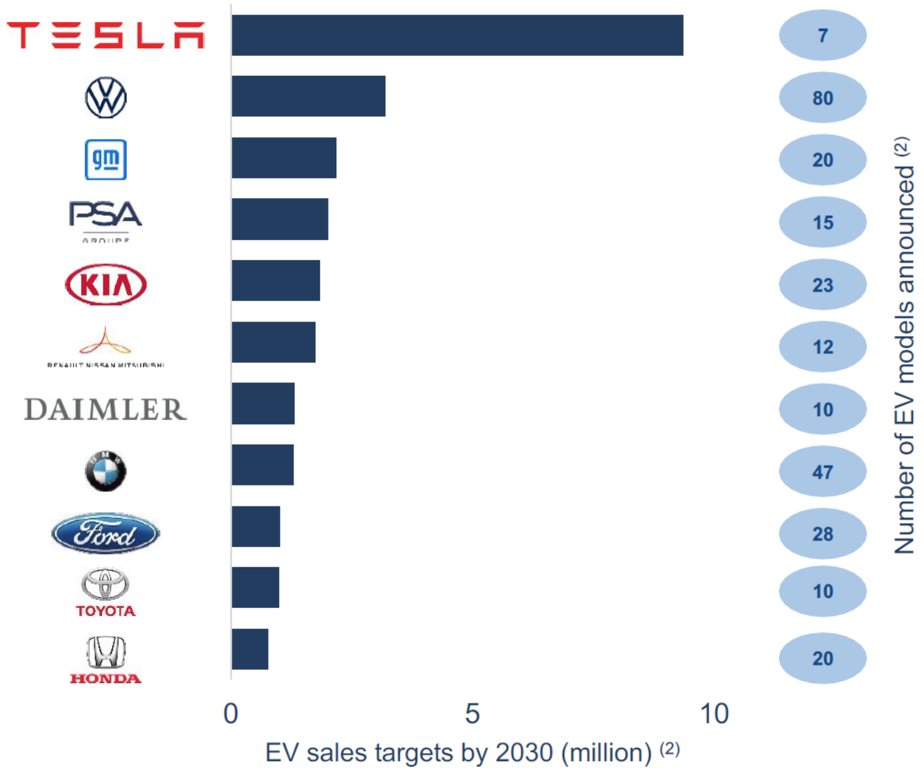
Cathode active material: there is going to be an explosion in EV demand

LONG-TERM EV MEGA TREND IS JUST STARTING



Source: UBSe

LEADING EV MANUFACTURER PLANTS - $300BN COMMITTED



Source: Bloomberg New Energy Finance

EV ADOPTION

Europe set to become the world's largest EV market during 2020, overtaking China.

Europe a market that will be dominated by high-nickel cathode battery application, initially sourced via North Asia given the limited European supply chain available today.

The Proposed Project

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Mercantile traders of **cathode globally**

Introductions via P3

Indian AES subsidiary as distributor

ADVANCED CATHODE MANUFACTURING FACILITY SPV

- **World leading consulting firm** in the electric mobility industry
- **Covers whole** value chain
- **Engaged by the worlds leading EV makers** including Porsche, Mercedes Benz, Audi, Jaguar, Tesla and BMW
- **Developer of similar pilot plants circumventing need for pilot in WA**

Green energy supply

Land/Government facilitation

Lithium Hydroxide

Discussions underway

Shareholder and AES and supplier

Nickel / Cobalt

Supply discussions underway and positive

Chemical Processing

Land use and chemical process management

Commercial rationale for cathode active material

DOWNSTREAM PROCESSING OPPORTUNITY IN WA

Aggregation of precursor materials in WA required (security of raw materials, all in close proximity)

Utilise existing infrastructure and minimise transportation costs (for material aggregation)

Australian labour cost not a driver of value. Value driven by chemical processing and skilled workforce (same rationale as processing of the precursor material in WA)

EXPONENTIAL GROWTH

Expected 25% year on year growth for next two decades

Exceptional returns with sub-3-year payback period

Up to 10x value addition on precursor materials

CARBON NEUTRAL, ETHICAL, GREEN

Secure carbon neutral energy from WA's abundant clean energy secured from ethical means

Security of supply (and supply chain disruption) for buyers from low-risk jurisdiction sourced from an ethical means

Minimal wastage as all rejected precursor material will be recycled

P3 – Technology Partners Circumvent a Pilot

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P3 is a leading technology consultancy and owner of Custom cells.
It's exclusive partnership in Australia with AES with the ability to being production immediately without having to test a pilot facility.

Capabilities in battery technology along the whole value chain…

- Raw material extraction
- Material production
- Electrode manufacturing
- Cell production
- Module & pack assembly
- Product integration
- 2nd life & recycling

- Transportation
- Industrial/ stationary
- Niche markets

across industries…

MARKET INSIGHTS & BENCHMARKING

- Market overview and cross industry market knowledge
- Player benchmarking and market strategies
- Established value chains and business models

TECHNOLOGICAL KNOW HOW (CELL, MODULE & PACK)

- Li-ion and post li-ion technology roadmaps
- Production technologies and benchmarks
- Cell materials and technology roadmap assessment

STRATEGIC CAPABILITIES

- Value pool analysis and business model assessment
- Market entry strategies for newcomers and entrants
- Supplier and partnering strategies (technology, customers)

TEAR-DOWN ANALYTICS

- Tear down off battery systems, modules and cells
- Tear down labs in Stuttgart and @CustomCells
- Manufacturing and cost analysis, material analysis (EDX etc)

TESTING & VALIDATION

- Test cell manufacturing and prototyping @CustomeCells
- Validation planning for cells, modules and packs
- Homologation process experience eg, for China GB

COST ANALYSIS & OPTIMISATION PROGRAMS

- Material and production cost analysis and cost models
- Cost down programs (eg design-to-cost programs)
- Sourcing strategy and supplier recommendations down to active materials and single supply chain options

Australia – Ethical and Green Materials

Ethical sourcing of materials

Australia uniquely represents an opportunity to source all key raw materials including lithium, nickel, cobalt and manganese in an ethical way, with highest safety standards.

Green energy powered

The AES facility will be powered by clean energy, with solar rooftop installation and PPAs for balance of power. It represents an opportunity for buyers of CAM to decarbonize their supply chain.

Full supply chain decarbonization

Major suppliers of precursor materials are decarbonizing their supply chain. It allows for the entire value chain to be decarbonized.

Indicative timeline and funding requirements

$0.8m — PRELIM ENGINEERING

STAGE 1
7 months

- Statutory approvals
- Basic heat and mass balance to arrive at raw material quantities for cathode manufacturing in Australia
- Work with raw material suppliers for offtake agreements

~$3m — MOBILISATION

STAGE 2
+9 months

- Work with Government for grants
- Achieve FID for cathode manufacturing plant
- Detailed FEED

~$20m — DETAILED ENGINEERING

STAGE 3
+9 months

- Award contract for manufacturing plant design

TBA — CONSTRUCTION

STAGE 4
+18 months

- Construction and place order for manufacturing equipment

TBA — COMMISSIONING

STAGE 5
+6 months

- Equipment procurement
- Construction completion
- Commissioning and operation readiness

A team to **deliver**

MIKE NAHAN
Chairman of the Board

Mike served as the Treasurer; Minister for Energy; Citizenship and Multicultural Interests (2014-2017) for the WA Government and Minister for Energy; Finance; Citizenship and Multicultural Interests (2013-2014).

Mike has a strong understanding of the energy sector in WA, strong relationships with the Government at a State and Federal level and strong relationships with key stakeholders for a manufacturing facility in WA.

JUSTIN MILLER
Board Adviser

Justin has developed a thorough knowledge of the global innovation marketplace during his 25 year executive career; having most recently returned to Perth, Australia after 4 years based in San Francisco, USA.

Justin has successfully founded and managed the aggressive and profitable growth of technology, manufacturing and service related companies, including strategic acquisitions, capital raisings, onshore/offshore manufacture, significant staff growth and multi-million dollar sales deals involving both direct & channel sales models.

Justin is currently the CEO of Nuheara which is an ASX listed hearing device manufacturer

SCOTT PERRY
Technical Director

Scott is an experienced professional across a broad range of commodities from geometallurgical interpretation through project design, construction, commissioning, and optimisation.

He has expertise in strategic business planning, business development, investment evaluation and the commercial supply of industrial chemicals that feed in to the mining and agricultural sectors as well as metals marketing and sales of intermediate products.

PEEYUSH MATHUR
Managing Director & Founder

Over 25 years of experience in several leadership roles in resources industry in Asia, UK, Middle East, Australia and New Zealand comprising of Business strategy and execution, capital raise and corporate finance, engineering solutions delivery, management and negotiation of alliances and contracts, project and engineering management of resource projects and expert advice in rotating machinery viz pump, compressors and turbines

Peeyush is currently the Managing Director Access Petrotec, a mining services company focused on the oil and gas and mining sectors.

RAJ AGGARWAL
Acting CEO

Rajan has worked with government utilities and private sector proponents developing renewable energy strategy and financing large scale renewable energy projects for all technologies including solar, wind, biomass and waste to energy. His O&G experience includes complex in-house oil and gas investment/commercial analysis.

His unique background affords a broad range of advisory capabilities, including project finance, public-private partnerships, asset divestments, government advisory, M&A, equity capital markets and principal investments having worked at Macquarie, Woodside, Synergy.

HUGH REYNOLDS
Non-Executive Director

Over thirty years' consulting and management experience in the Oil & Gas industry.

He has an extensive background in concept and feasibility study management. He is Managing Director of BE&R Consulting, an independent consultancy focused on the provision of technical, commercial and strategic studies relating to the Energy Transition and Small-Scale LNG markets.

He is passionate about enabling the energy industry to transition to a low carbon environment.

VINOD GUPTA
Technical Director

Vinod is the co-founder of Australian Energy Storage Solutions (AES) and plays an important role as Director (Technical), focussing on Lithium Battery based product development and innovative solutions for various industrial applications.

Vinod holds a degree in Mechanical Engineering from the Indian Institute of Technology (IIT), BHU India and has over 30 years of professional experience across a wide range of engineering projects in the energy and resource sectors in India, Australia, South Korea and the US.