





# **Investor Presentation**

**ASX Small and Mid-Cap Conference** 

Revenue stage high performance materials-Unlocking global battery anode market



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# **Anteo**Tech

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CREATING VALUE BY THE
ACCELERATED DEVELOPMENT
AND COMMERCIALISATION OF
SOCIETALLY BENEFICIAL
SOLUTIONS THROUGH OUR
EMPOWERED AND PASSIONATE TEAM





## **ANTEOTECH OVERVIEW**

ASX listed binder materials company leveraging proprietary, high performance, nano polymer technology



Revenue stage materials & chemistry company ~\$70m market cap - funded into 2024 with \$7.2m pro forma cash + est. \$3m R&D rebate



Market leading, patent protected technology - solving key technical issues for the next generation of clean energy and life sciences products



Anteo X<sup>™</sup> performance enhancing additive independently validated to provide significant improvements in battery cycle life and anode performance



MOUs with major battery materials supplier – Trinseo (ex Dow Chemicals) and medtech battery manufacturer - Wyon – validate the technology and target first revenues in 2023



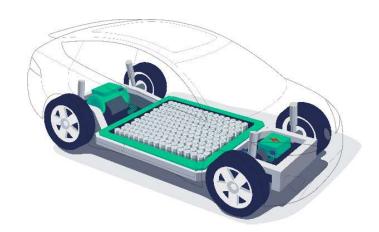
AnteoBind™ molecular binder being sold and evaluated by diagnostic and vaccine manufacturers - outsourced research offering





# **UNLOCKING A \$21B OPPORTUNITY IN CLEAN ENERGY**

AnteoTech's technology portfolio is the key enabler of higher silicon content anodes
- unlocking the next generation of battery performance for high demand areas such as Electric Vehicles



Electric Vehicles are driving demand and innovation in the energy storage market



Graphite has reached the limit of its energy storage capabilities and is becoming increasingly scarce and expensive



Increasing silicon content in a battery anode is key to the next generation of battery performance and storage capabilities

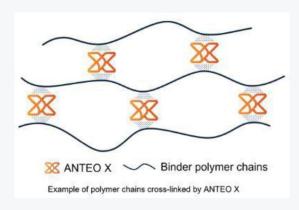


# THE KEY TO NEXT GEN CLEAN ENERGY & LIFE SCIENCE PRODUCTS

Proven chemical enabling technology for the rapidly growing battery anode market and life sciences

# Anteo X<sup>TM</sup> - Clean Energy

Anteo X<sup>™</sup> is a powerful cross-linker additive that reinforces battery binders in silicon containing anodes and improves their performance in next-gen lithium-ion batteries



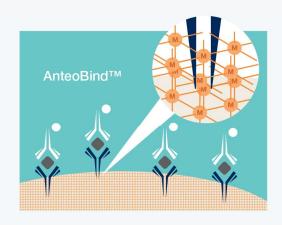
# High Silicon Anode - Clean Energy

AnteoTech's High Silicon Anode utilises
AnteoTech's products, formulations and processes
to develop a proprietary Anode which the
Company will licence to future partners



# AnteoBind™ - Lifesciences

AnteoBind™ is a unique binder platform that provides a powerful solution connecting biological and synthetic surfaces - making difficult applications possible



# **NEW COMMERCIALLY FOCUSED LEADERSHIP TEAM**





#### **David Radford - Managing Director**

- Highly experienced senior executive with a track record of successfully commercialising technology
- Former CEO of Nanosonics (ASX:NAN), General Manager Asia of GE Clinical Systems Services



**Ewen Crouch AM - Non Exec Chairman** 

- Extensive business, legal and board experience
- Director of BlueScope Steel (ASX:BSL), Chairman of Corporate Travel Management (ASX:CTD)
- Former Chairman of Partners at Allens and former Director at Westpac Banking Corporation (ASX:WBC)
- · Chairman of RSL LifeCare Ltd



#### Katrina Byrne - Chief Operating Officer

- Extensive domestic and international experience in operations, projects and supply chain management across multiple industries
- Proven track record in Senior Executive positions leading rapid commercialisation of R&D breakthroughs, Boeing and Rio Tinto



#### Friederike Graser - Director Strategic Growth Initiatives

- 10+ years' experience in emerging renewable technologies and energy sector
- Experience in merger and acquisitions, due diligence reviews and capital raising programs.



#### Tsui Min Lian - Chief Marketing Officer

- Experience building and managing healthcare businesses to grow and/or change to become profitable, efficient market leaders
- 17+ years' driving change and transformation with growth and positive outcomes, including GE, ResMed and Toll Holdings



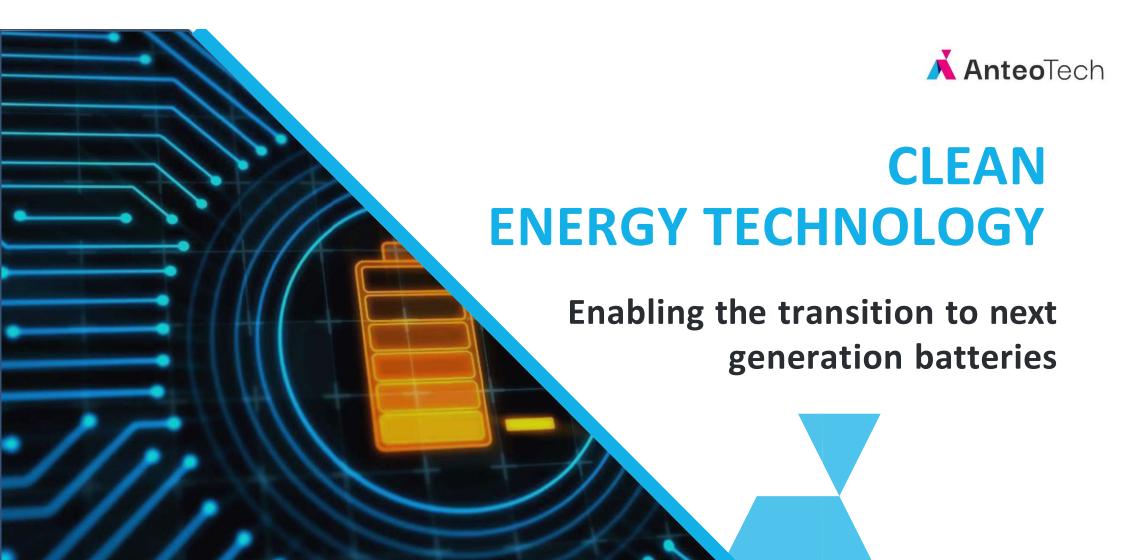
#### Ian Steinhardt - Head of Markets

- 30+ years experience in senior leadership roles across the diagnostics, biotechnology and medical devices sector
- Former Senior Executive at Abbott Laboratories



#### Manuel Wieser - Head of Clean Energy Technology

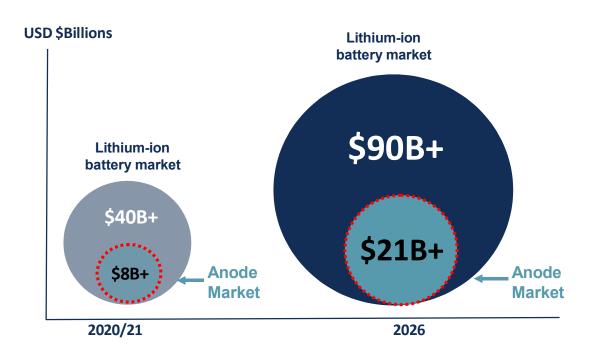
- 11+ years' experience in lithium-ion battery product development and technology commercialisation
- Track record in delivering global commercial partnerships and taking technology from lab-scale to pilot production





# LITHIUM-ION BATTERY MARKET OPPORTUNITY

As energy storage demands increase and technology advances, demand for high silicon content lithium-ion batteries will grow significantly - AnteoTech has key technology that can unlock this value



Source: Statista, MarketsandMarkets, July 2021

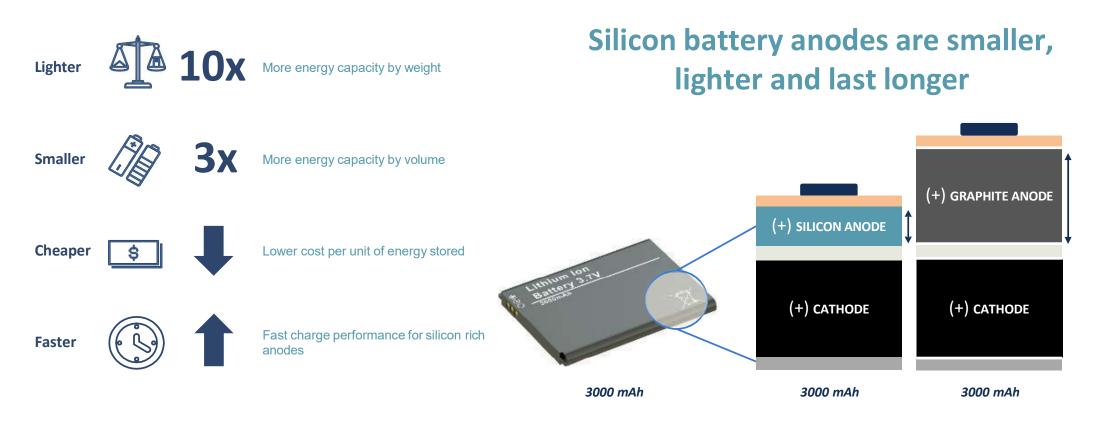
# US\$21B addressable market in battery anodes

- Net zero emissions targets driving growth across the EV market
- Shift to Electric Vehicles driving major investment in battery technology, manufacturing, and energy storage
- Lithium-ion (Li-ion) batteries dominate energy storage market
- Innovation in Li-ion anode needed to meet industry requirements of EV and other markets



# SILICON PROVIDES A STEP-CHANGE IMPROVEMENT FOR BATTERIES

Increasing the silicon content in a battery's anode provides for a range of performance benefits



Source: Sustainable Energy & Fuels Volume 4 Number 11 November 2020 Fig 12. p.5402, AnteoTech - Battery representations are for illustration purposes only



# ANTEO X<sup>™</sup> – PROVIDING MAJOR BENEFITS TO OUR CUSTOMERS

Performance enhancing additive included with current battery binders – enables much higher silicon content in the battery anode - without the typical issues of swelling, cycle loss and shorter life

# **Major Benefits to our Customers**



#### **Capacity** - Increase density capacity of silicon

Enables increased capacity charge and lifetime
 - 35% improvement in EV range\*



#### Faster - Faster charging & extended cycle life

- Reduction in time spent charging batteries
- Convenience & consumer satisfaction



# **Cheaper** - Cost improvements for anode (\$/kWh)

- Lower cost than complex binder synthesis
- Manufacturer can minimise inactive materials in the anode



#### **Ease** – Simple to incorporate into existing manufacturing

- Easily incorporated into current processes no chemical synthesis
- Easily transported and stored

# Anteo X<sup>™</sup> - powerful cross-linker additive reinforcing battery binders in silicon containing anodes



<sup>\*</sup>Estimate based on internal models and results

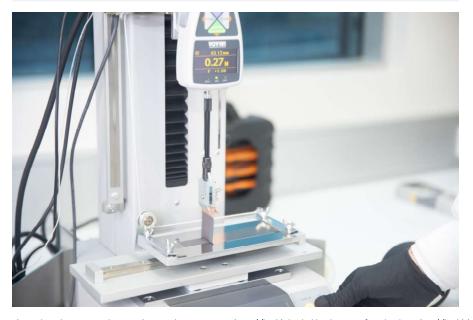


# **NEXT GENERATION BATTERY TECHNOLOGY**

Leveraging our internal know how and complementary technologies to provide a step change in battery performance and efficiency

# **AnteoTech's High Silicon Anode**

**Ground-breaking approach to high silicon anode** in late-stage development - enables **up to 90% silicon content** as the anode's active material



# **Major Benefits to our Customers**



# 500+ charge / discharge cycles

demonstrated whilst retaining 90% of the initial capacity in high silicon anode



# Low grade, unrefined silicon

competitors use super refined silicon - expensive, limited and carbon intensive



**8.5x cheaper** active material\*



**35% improvement** in battery charge and life



**3x thinner** and also lighter

<sup>\*</sup>Based on the estimated cost a silicon carbon composite (10.1 \$/kWh) divided by the cost of crude silicon (1.2 \$/kWh) (Tesla 2020 Battery Day Presentation).



# TRIALLED BY BATTERY INDUSTRY LEADERS

Evaluations underway with commercial supply agreements and first sales expected in 2023



Trinseo (ex Dow Chemicals) ~\$1b Nasdaq listed company, is a global specialty materials solutions provider and leading anode binder technology supplier to the battery manufacturing sector - \$1.5b in annual binder sales

The partnership will see the **combination of Anteo X<sup>™</sup> with Trinseo's VOLTABOND<sup>™</sup>** binder technology to create **an enhanced product for global battery manufacturers** 

- February 2023: Signed MOU
- Mid 2023: Viability demonstration complete
- End 2023: Commercial agreement targeted

Value Proposition – Anteo X<sup>™</sup> with VOLTABOND<sup>™</sup> requires no change to manufacturing processes and enables customers higher silicon content and up to 45% improvement in cycle life



Wyon, a leader in the development and production of customised, rechargeable miniature and micro batteries utilised in **cochlear hearing implants**, insulin pumps and pacemakers

The partnership will deliver **improvement in the performance of Wyon's battery cells** and enable the commercialisation of the
proprietary AnteoTech silicon anode in the MedTech sector

- March 2023: Signed MOU
- Mid 2023: Technical evaluations
- End 2023: Entry into commercial agreement

Value Proposition – Anteo's silicon anode technology is intended to enable Wyon to achieve smaller, high-performance miniature and micro batteries for their customers



## **INITIAL PRODUCTION FACILITY - SCALABLE**

Anteo X<sup>™</sup> initial 20,000L capacity production facility will be commissioned in December 2023 Quarter

# Supplying Anteo X<sup>™</sup> for up to 30m Phones or 6,500 Tesla Model Y cars

#### **First Production Facility - Brisbane**

- Brisbane based 20,000L production facility is under construction with commissioning in Dec 2023 Quarter
- Initial cost of \$0.7m nominal incremental cost to move to 40,000L and then 80,000L annual capacity

#### Anteo X<sup>™</sup> Production – Controlling initial product and Quality

- Simple chemical production process with minimal labour requirement
- Supports planned sales as well as samples for new customers Targeting material gross margins







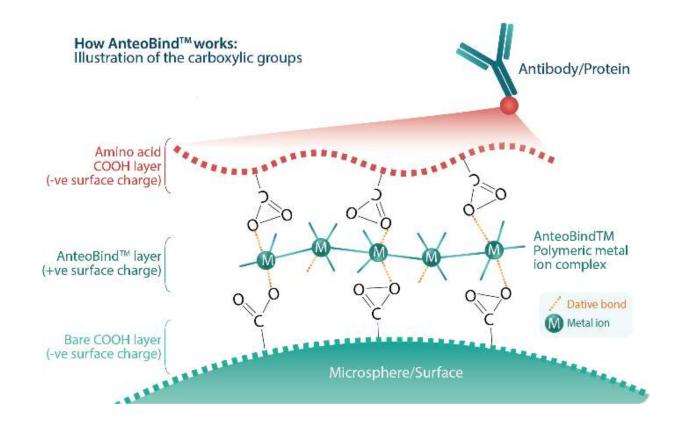
# UNIQUE NANOGLUE PLATFORM - ANTEOBIND™

Increased awareness of Point of Care testing is opening new markets in veterinary, food, agricultural and environmental testing-lower regulatory hurdles and faster path to market

#### **HOW ANTEOBIND™ WORKS**

- Metal ion polymers are positively charged
- Stable activated surfaces are ready to use & stable in solution >1 year
- Active binding is effective and reproducible

Imaging of an antibody conjugated, AnteoBind™ activated europium particle



Source: AnteoTech



# LIFE SCIENCES COMMERCIALISATION PATHWAY

Leveraging AnteoBind<sup>™</sup> and paid development services to create multiple paths to market









#### ANTEOTECH – COMMERCIAL MILESTONES & NEWS FLOW

#### 2023

- Capital Raise fund growth + new institutions

• Trinseo Anteo X<sup>™</sup> product validation



- Construction commences on Anteo X<sup>™</sup> production facility
- Commercial agreements for AnteoBind™
- Development agreement/s with EV company
- Commercial agreement Trinseo
- Commercial agreement Wyon
- Anteo X<sup>™</sup> production facility commissioned
- Anteo X<sup>™</sup> first commercial revenues

# **2024 & Beyond**

#### 2024

- Additional Clean Energy partnerships
- Anteo X<sup>™</sup> production facility scale up
- Development agreements EV companies
- Development of commercially ready High Silicon Anode
- Initial evaluation and proof of concept of complementary technologies

#### 2025

• First commercial revenues - High Silicon Anode

<sup>\*</sup>All milestones are estimates and actual timing and these events may vary





# **INVESTMENT HIGHLIGHTS**



#### **Next Generation Battery Technology**

Patent protected, market leading, platform technology which unlocks the path to high silicon content battery anodes



#### Lighter, Smaller, Cheaper, Faster

Anteo X<sup>™</sup> delivers significant battery performance benefits



### **Partnering with Industry Leaders**

Anteo X<sup>™</sup> being trialled by major battery companies

- first sales 2023



# **Unlocking a \$21bn Market Opportunity**

Early-stage commercialisation of high silicon anode – targeting next generation battery technology for the EV market



# **Purpose Built Production Facility**

Capability to supply Anteo X<sup>™</sup> for 6,500 Tesla Model Y Cars



**APPENDICES** 



# **FY2023 HIGHLIGHTS**

Charting an ambitious course to achieve short and mid-term revenues in the Clean Energy and Life Sciences divisions

#### **New Leadership**

Appointed David Radford as Chief Executive Officer to lead a new phase of strategic growth and commercialisation



#### **Realigned resources**

Transformed the business, reduced costs, and restructured for a market-led, sales-driven culture



#### **Trinseo - Binder Partnership**

Signed MOU with global specialty materials solutions provider Trinseo Europe to provide for a clear path to a commercial agreement for AnteoX™



#### **Expanded Capabilities**

Strengthened the executive team with the appointment of Katrina Byrne as Chief Operating Officer and Tsui Min Lian as Chief Marketing Officer



#### **Balance Sheet + New Institutions**

\$4m Placement in July 2023 - new institutional investors. Pro forma cash of \$7.2m plus est. \$3m R&D by Dec 2023



#### Wyon - Battery Partnership

Signed MOU with Wyon AG to utilise AnteoTech's silicon anode technology to improve their rechargeable miniature and micro batteries in MedTech



#### **Facility Development**

Principal Contractor appointed for the design and construction of the AnteoX<sup>™</sup> production facility, and procurement of long lead time items



#### **Award Winning**

Anteo X<sup>™</sup> industry awards: the Renewable Energy category at the Australian Climate Technology Awards and the Manufacturing Innovation Award at the Australian Technologies Competition



#### **Growing Pipeline**

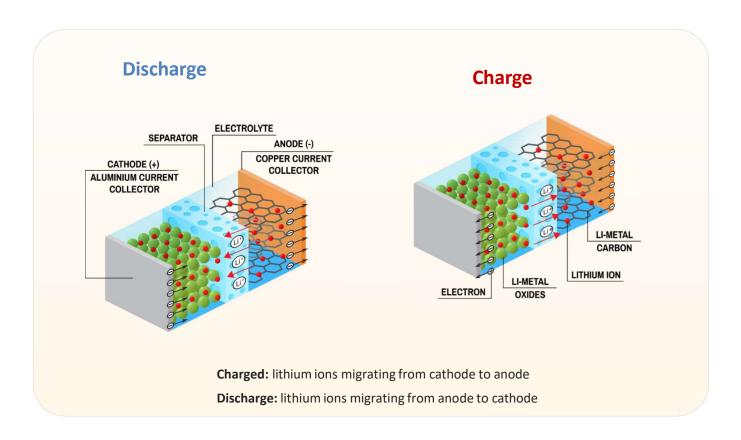
Showcased AnteoX<sup>™</sup> at The Battery Show Europe 2023 in Stuttgart, which generated more than 100 sales leads





# **HOW LITHIUM-ION BATTERIES WORK**

Current industry standard batteries use lithium-ion composition for energy storage with a cathode and anode for charging

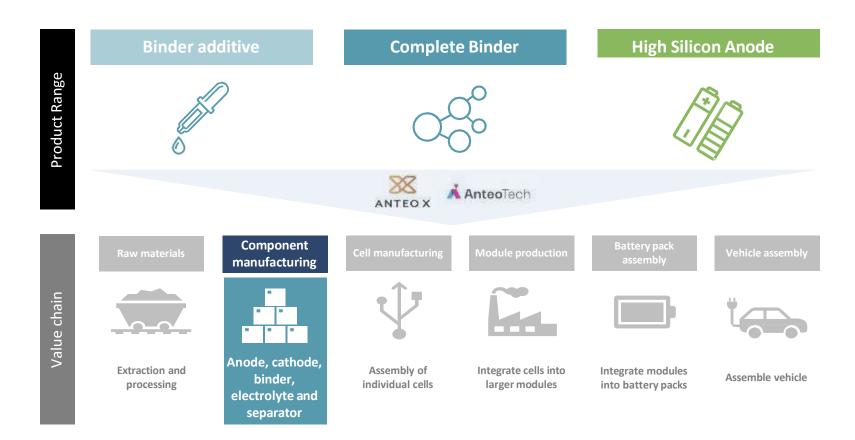


Source: Image from Shutterstock



# ANTEOTECH FOCUS IN THE LITHIUM-ION BATTERY VALUE CHAIN

AnteoTech will initially target battery component manufacturers as our performance enhancing binder additive enables increased silicon content





# ANTEO X™ TECHNOLOGY CAN ADD BATTERY LIFE & RANGE FOR EVS

The industry standard graphite anodes have reached their technical limitations

AnteoTech's technology solutions can drive enhanced battery energy storage as a result of enhanced silicon integration 300km Graphite EV prismatic cell **CURRENT** Driving range with energy **TECHNOLOGIES** capacity of 450Wh

(43kWh pack) **NCM 111** 

**ANTEO TODAY** 

Up to 25% more energy capacity (563Wh) for same battery size1

375km Driving range (54kWh pack)



**ANTEO-FUTURE** 

Up to 75% more energy capacity (788Wh) for same battery size1

525km **Driving range** (75kWh pack)



Increasing silicon can provide

**10x** more capacity by weight

**3x** more capacity by volume

