

# NOVONIX

► Set for Growth

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# TOC

- NOVONIX Introduction
- Summary of Recent Notable Announcements
- Phillips 66's Strategic Investment in NOVONIX
- Battery Materials Market and North American EV/ESS Industry Momentum
- NOVONIX Anode Materials
  - Growth Plans
  - Performance
- NOVONIX Cathode Materials & Million Mile Battery Technology
- Conclusions

# Who We Are

NOVONIX is a battery materials and technology development company. We develop and supply what we believe to be the most accurate battery testing technology in the world. We are a leading US-based supplier with plans to scale significant domestic volumes of battery-grade synthetic graphite anode material.



Most Accurate Battery Testing  
Technology



Leading Supplier with Plans to  
Scale Significant Domestic  
Volumes of Synthetic Graphite  
Anode Material



Developing New Applications  
and Partnerships



# Our Leadership and Board of Directors

## Leadership Team



**Dr. Chris Burns**  
Chief Executive Officer



**Nick A. Liveris**  
Chief Financial Officer



**Rashda Buttar**  
Chief Legal and  
Administrative Officer



**Suzanne Yeates**  
Financial Controller and  
Co Secretary



**Danny Deas**  
President | NAM



**Darcy Macdougald**  
President | BTS

## Scientific & Technical Advisors



**Dr. Jeff Dahn**  
Chief Scientific Advisor



**Dr. Mark Obrovac**  
Sponsored Researcher

## Board of Directors



**Admiral Robert J. Natter**  
Chairman & Non-Executive Director



**Tony Bellas**  
Deputy Chairman & Non-Executive Director



**Andrew N. Liveris AO**  
Non-Executive Director



**Zhanna Golodryga**  
Non-Executive Director



**Robert Cooper**  
Non-Executive Director

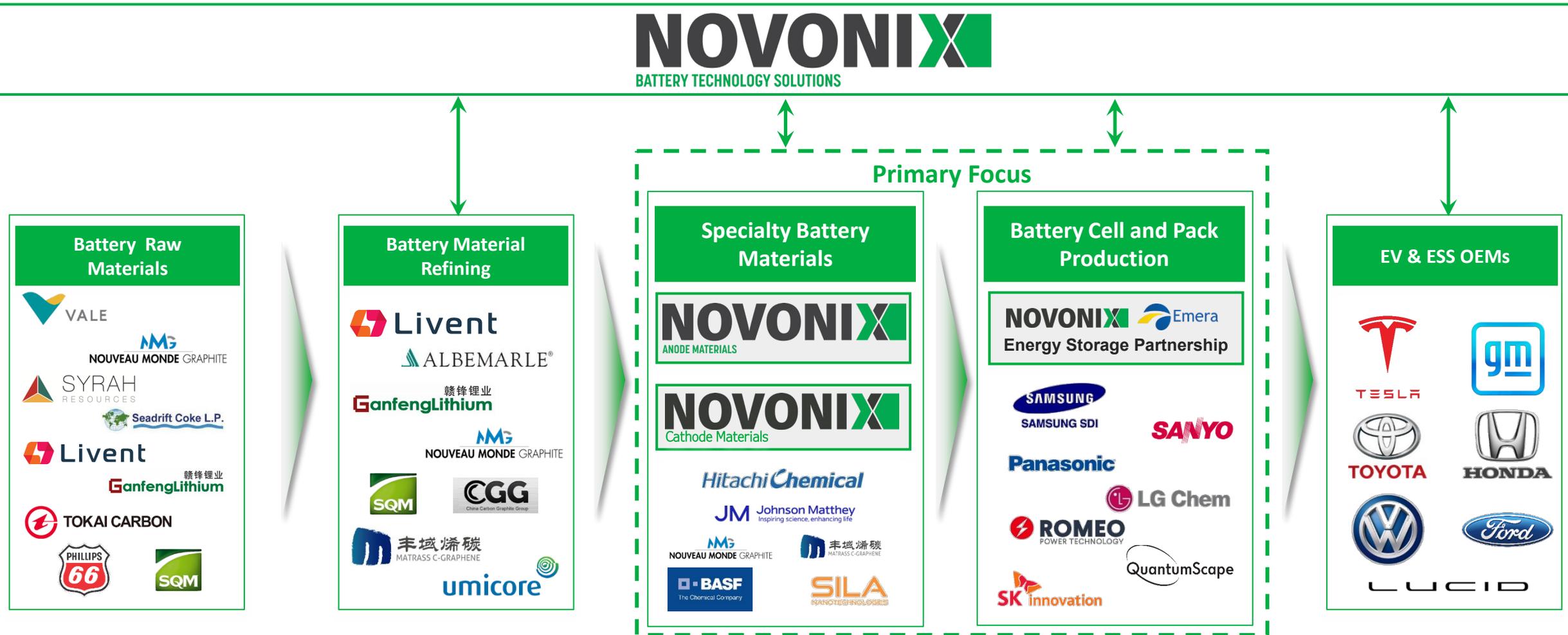


**Jean Oelwang**  
Non-Executive Director

Key leadership and technical experience:

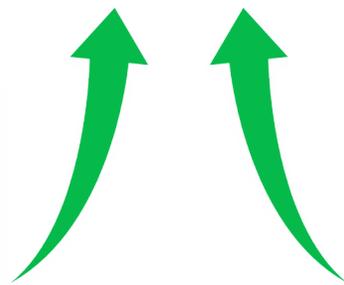


# We Play a Critical Role in the Lithium-Ion Battery Value Chain



Note: Companies presented above are for indicative purposes only and not a representation of customer relationships.

# NOVONIX Battery Development and Material Technology



**NOVONIX**  
ANODE MATERIALS

**SAMSUNG**  
SAMSUNG SDI  
Conditional Sales Agreement

**KOREPOWER**  
Supply Agreement

**SANYO**  
Non-binding MOU

**Only supplier of US-made high-capacity long-life synthetic graphite anode material with plans to scale significant volumes**

Developing New Applications and Partnerships

**NOVONIX**  
Cathode Materials

**NOVONIX**  
Emera  
Energy storage partnership in North America<sup>1</sup>  
(Exclusive in battery technology)

**Battery Technology Solutions serves as the pillar for innovation across the NOVONIX ecosystem, creating a positive feedback loop to drive technological advancement and deliver best-in-class products and services for customers**

(1) We are currently collaborating with Emera to design a battery pack including innovative designs, custom manufacturing and control systems to support Emera Technologies' BlockEnergy microgrid.

# NOVONIX Notable Milestones



**19 Jan 2021:** Leading researcher, Dr. Jeff Dahn appointed as Chief Scientific Advisor, effective July 2021



**12 Feb 2021:** NOVONIX entered a new five-year research sponsorship agreement with Mark Obrovac's Research Group of Dalhousie University



**26 Feb 2021:** Completion of ASX equity raise of A\$115m to support growth of NOVONIX Anode Materials with an additional ~A\$16m from directors



**23 Nov 2021:** Ceremonial opening of NOVONIX's new Riverside facility attended by US Secretary of Energy, Jennifer Granholm



**31 Jan 2022:** Executed supply and investment agreements for ~12,000 tonnes with US-based KORE Power to advance and strengthen the domestic lithium-ion battery supply chain



**29 Jun 2022:** Announced final results of a Life Cycle Assessment (LCA) conducted by Minviro, demonstrating NOVONIX's GX-23 synthetic anode graphite provides an approximate 60% decrease in global warming potential relative to conventional anode grades

January 2021

Today



**21 Jan 2021:** NOVONIX Anode Materials selected to receive US \$5.57mm grant from the US Department of Energy for development of high efficiency continuous graphitization furnace technology with Harper Intl.



**19 Feb 2021:** Emera and NOVONIX partner on innovative residential energy storage technology



**09 Aug 2021:** Phillips 66 announced US\$150m strategic investment in NOVONIX, advancing NOVONIX's production of synthetic graphite for high-performance lithium-ion batteries



**19 Jan 2022:** Phillips 66 and NOVONIX sign Technology Development Agreement to advance the production and commercialization of anode materials for lithium-ion batteries



**01 Feb 2022:** American Depository Receipts commenced trading on the Nasdaq and celebrated the milestone by ringing the Closing Bell

# Phillips 66 Announces Strategic Investment in NOVONIX

## Phillips 66

- Phillips 66 is a diversified energy manufacturing and logistics company.
- Phillips 66, with a portfolio of Midstream, Chemicals, Refining, and Marketing and Specialties businesses, the company processes, transports, stores and markets fuels and products globally
- Phillips 66 is a global producer of petroleum needle coke, the key precursor material for synthetic graphite
- Headquartered in Houston, the company has 14,000 employees committed to safety and operating excellence
- Phillips 66 had \$57 billion of assets as of June 30, 2021
- Phillips 66 produces the precursor for synthetic graphite at advanced facilities located in Lake Charles, LA and Humber, UK

## Announcement

### Phillips 66 Announces Strategic Investment in NOVONIX

*Investment will expand Phillips 66's presence in the battery supply chain and advance NOVONIX's production of synthetic graphite for high-performance lithium-ion batteries*



August 09, 2021 10:00 AM Eastern Daylight Time

HOUSTON & BRISBANE, Australia--(BUSINESS WIRE)--Phillips 66 (NYSE: PSX) today announced it has entered into an agreement to acquire a 16% stake in NOVONIX Limited (ASX: NVX, OTC: NVNXF), a Brisbane, Australia-based company that develops and supplies in-demand materials for lithium-ion batteries.

"This strategic investment enables Phillips 66 to directly support the development of the U.S. battery supply chain," said Greg Garland, Chairman and CEO of Phillips 66. "It advances our commitment to pursue lower-carbon solutions while leveraging our leadership position and expertise in the specialty coke market and supporting NOVONIX's emerging position in U.S.-based anode production."

Phillips 66 is a leading global manufacturer of specialty coke, a key precursor in the production of batteries that power electric vehicles, personal electronics, medical devices and energy storage units. NOVONIX, a leading producer of synthetic graphite, processes specialty coke to make high-performance anode material for these batteries. The investment supports the development of a fully domestic supply chain for sales into the U.S. electric vehicle and energy storage system markets.

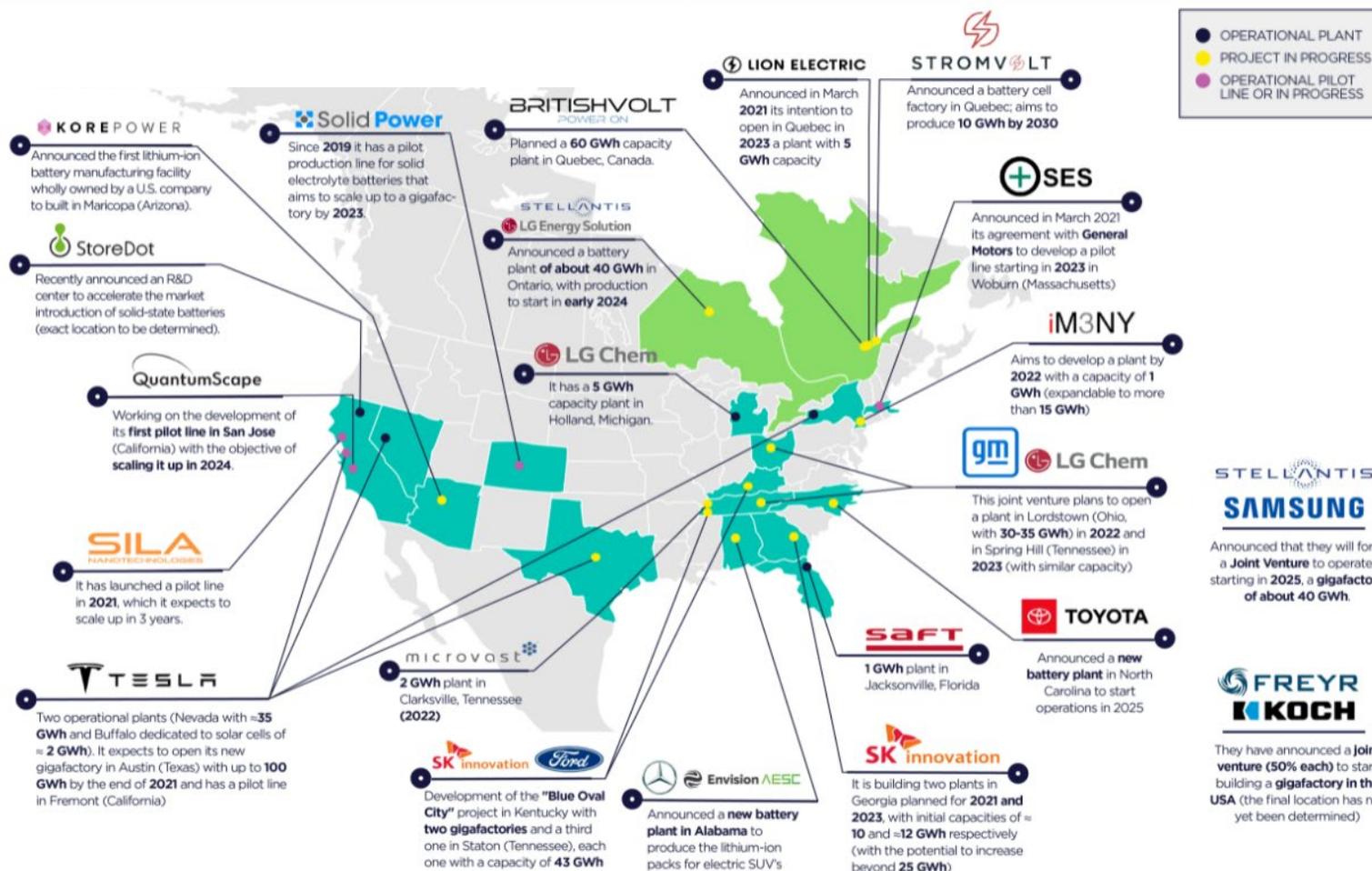
"We're excited by Phillips 66's vision for a sustainable future and confidence in our business plan and management team," said NOVONIX CEO and co-founder Chris Burns, Ph.D. "Phillips 66's investment will provide us with the capital needed to support growth and ongoing R&D as we continue to scale our synthetic graphite production and develop new technologies for higher-performance energy storage applications. We look forward to continuing to build our relationship with Phillips 66 as both a strategic partner and investor."

## Deal Highlights

- Phillips 66 subscribed for 77,962,578 ordinary shares of NOVONIX for a total purchase price of US\$150 million
- Phillips 66 nominated Zhanna Golodryga to NOVONIX's Board of Directors
- This investment is driven by Phillips 66's Emerging Energy organization, which is tasked with building a lower-carbon business platform and shares a similar long-term vision and focus on sustainability as NOVONIX
- The investment by Phillips 66 will help support capacity towards 40,000 mt/year, which is expected to be completed by 2025
- The transaction closed September 30, 2021
- No financial advisors, brokers or other intermediaries were used by NOVONIX in this strategic investment

# Battery Manufacturers and Auto OEMs Have Announced New Gigafactories to Support North American EV and ESS Growth

## North American Battery Initiatives



## Key Observations

- Over 500 GWh planned by the major OEMs alone in North America
  - Current capacity ~50 GWh
- Over 1,500 GWh planned in North America and Europe
- Announcements for new plants with clusters in the Midwest, Southeast and Ontario
- Graphic doesn't include potential CATL \$5 billion 80 GWh plant in North America

Source: CIC energiGune – March 2022

# NOVONIX Enables the Only Fully Domestic US Supply Chain of EV Battery Anode Material (BAM)

## Chinese Synthetic Graphite Supply Chain

- 1 Needle coke ships to Qingdao from Humber, UK (12,500 miles)
- 2 Road transport of precursor to grinding site near Shanghai (450 miles)
- 3 Road transport of ground needle coke to Inner Mongolia (1,050 miles)
- 4 Graphitization in Inner Mongolia powered by brown coal with no environmental standards or emissions controls
- 5 Road transport of graphite to southern China (1,500 miles)
- 6 Processing of graphite into BAM
- 7 Land transport of BAM to China port (50 miles)
- 8 BAM ships to US port in CA (7,300 miles)
- 9 Land transport of BAM to end-user in TN (1,800 miles)



**24,650 Total Miles**

## NOVONIX Supply Chain



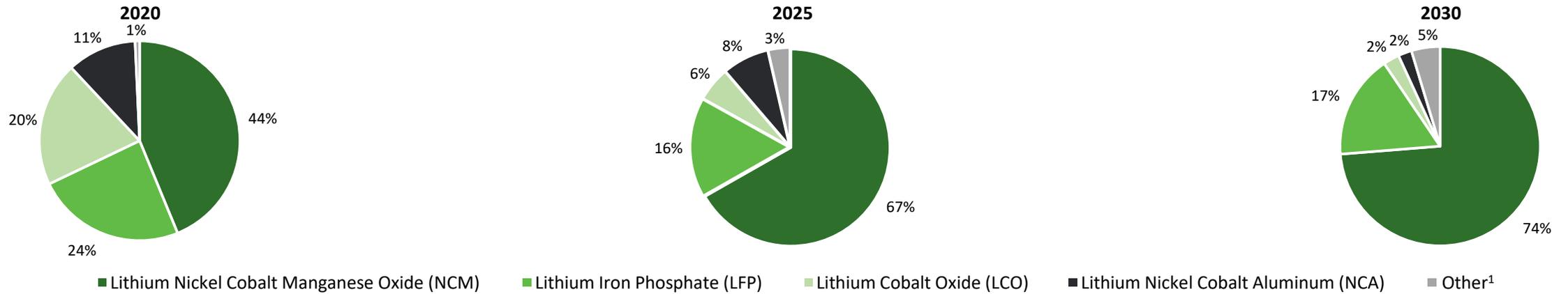
- 1 Needle coke transported from Lake Charles, LA to Chattanooga, TN (670 miles)
- 2 All processing of precursor to BAM in Chattanooga under strict environmental standards
- 3 Delivery of BAM to end-user in Chattanooga, TN (34 miles) *VW, for illustrative purposes*

**704 Total Miles**

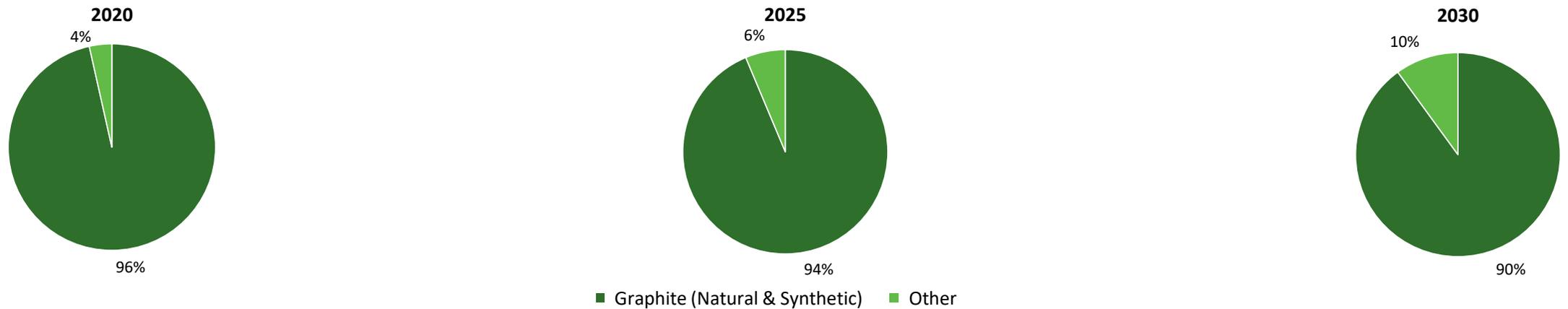
NOVONIX facilitates a cleaner, more secure, supply chain of high-quality synthetic anode material to the North American market vs. Chinese competitors

# NCM is Expected to be the Leading Cathode Chemistry with Graphite Remaining the Dominate Anode Technology

## Cathode Market Share by Chemistry



## Anode Market Share by Material Type



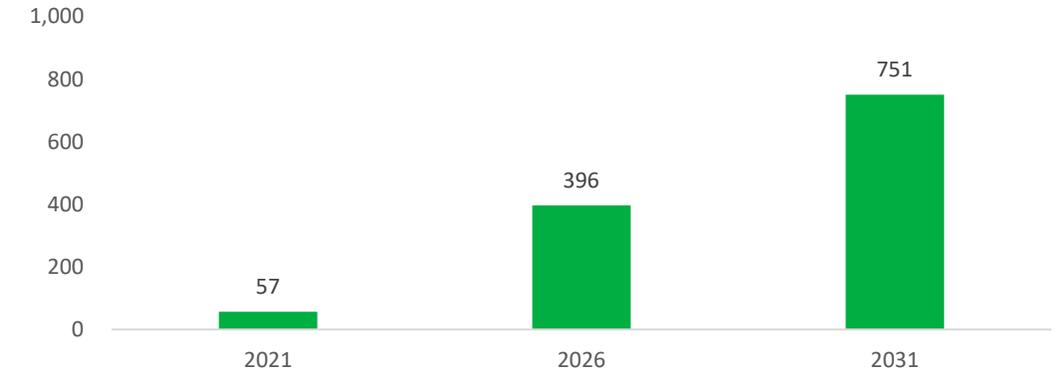
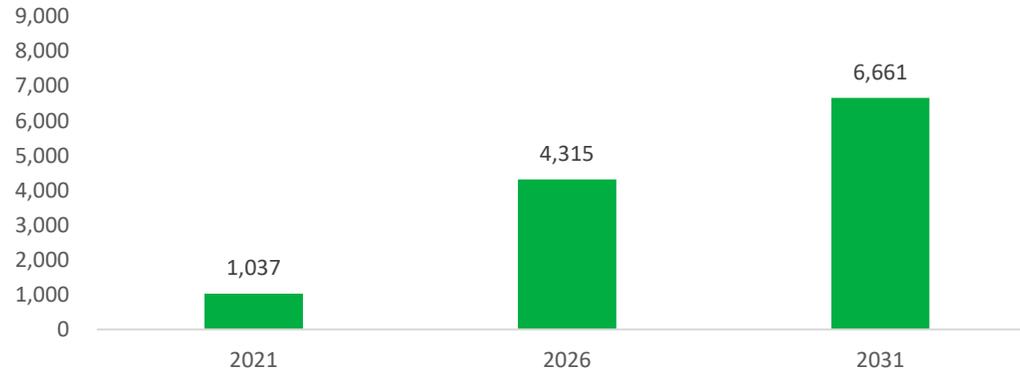
Source: Benchmark Mineral Intelligence Q1 2021 Report  
 (1) Other Includes lithium manganese nickel oxide (LMNO) and lithium-ion manganese oxide (LMO) batteries

# Global and Local Battery Growth is Driving Demand for Domestic Graphite Production

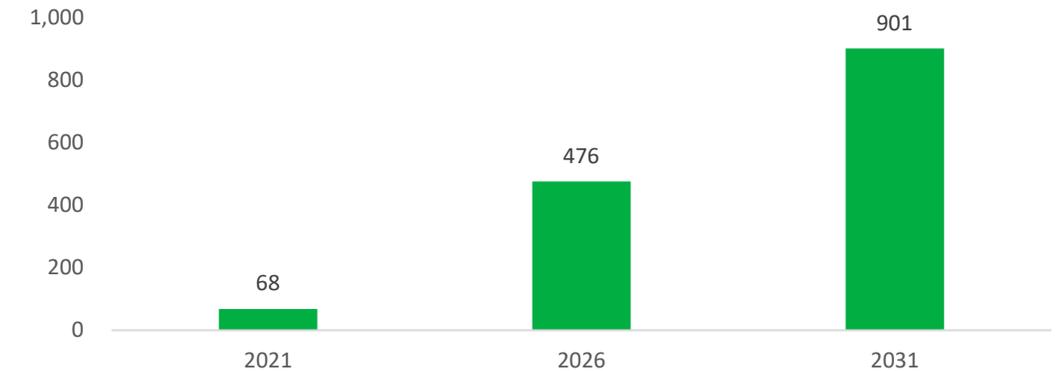
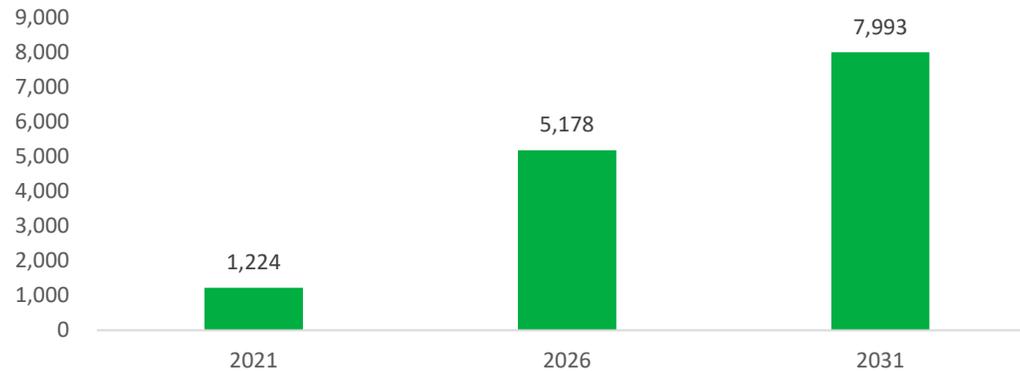
## Global

## North America

Battery Capacity (GWh)<sup>1</sup>



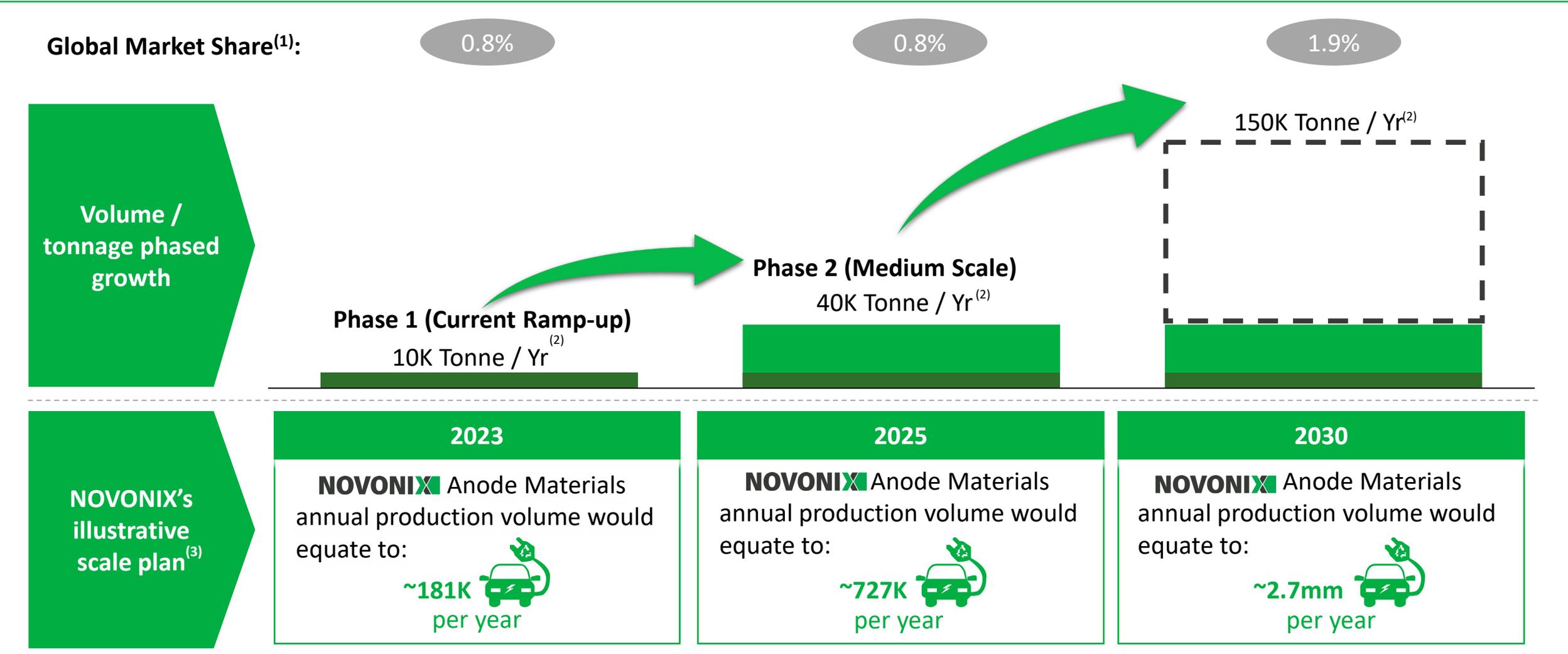
Implied Graphite Anode Demand (Kt)<sup>2</sup>



(1) Source: Benchmark Mineral Intelligence Gigafactory Assessment – June 2022. Based on announced capacity.

(2) Assumes full utilization

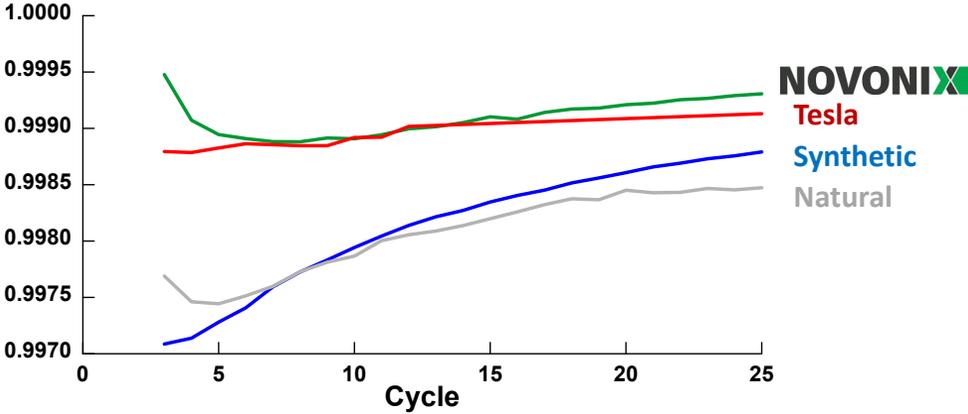
# Phased Growth Plan for NOVONIX Anode Materials



(1) Market share based off implied global graphite demand in 2021, 2026, and 2031. Source: Benchmark Mineral Intelligence Gigafactory Assessment – June 2022. Based on announced capacity. Assumes full utilization.  
 (2) Company expectations, which may or may not materialize.  
 (3) Assumes 55kg of graphite per EV.

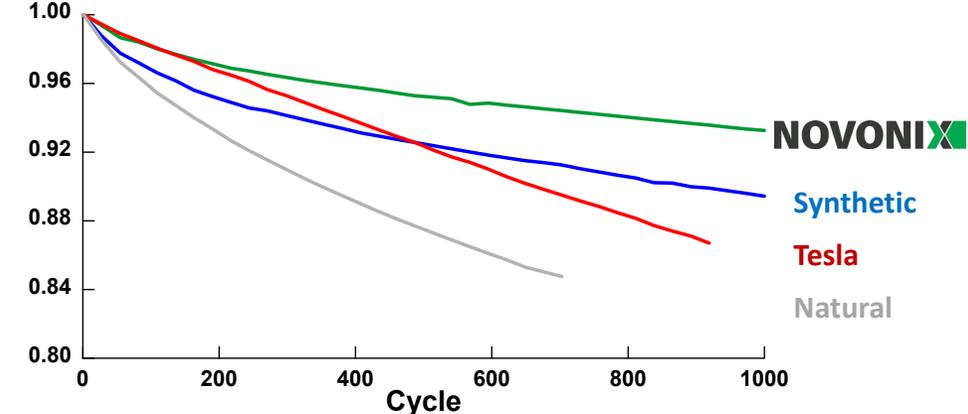
# NOVONIX Anode Material Outperforms In Head-to-Head Testing

Improved Coulombic Efficiency (CE)<sup>(1)</sup>



- NOVONIX offers improved Coulombic Efficiency (CE) compared to industry leading materials (including a Tesla Model S cell used as a reference benchmark)
- CE measures the electrochemical stability of the materials in the battery
- The higher the CE, the longer the battery life

Improved Capacity Retention<sup>(1)</sup>



- NOVONIX offers improved capacity retention compared to industry leading materials (including a Tesla Model S cell used as a reference benchmark) as expected from higher coulombic efficiency
- Better capacity retention means less range loss over time for an electric vehicle

1. Data based on internal measurements taken as part of verification process.

# V2G is Expected to Further Drive Demand for High Battery Cycle Life

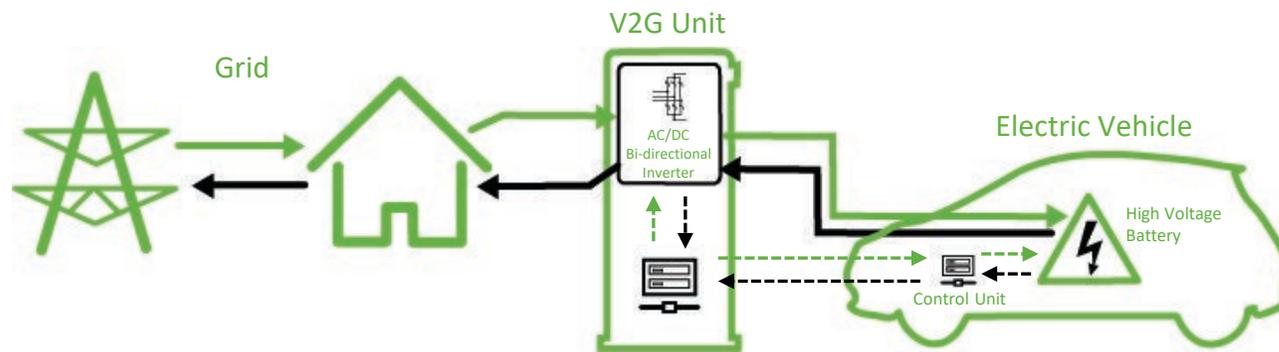
## Vehicle to Grid Provides Two Key Advantages



Enables fleets and individuals to reduce cost of ownership by charging at non-peak times and discharging to buildings or selling to grid at peak times



Ability to provide power to buildings or national grids during peak hours provides stability to grids



## Several Key EV OEMs Have Announced V2G Plans



- All VW MEB-based electric cars will be V2G capable beginning in 2022, includes cars from Audi, Skoda, and Seat-Cupra
- Currently testing DC-Wallbox with bi-directional DC charging stations in Germany



- Integrating vehicle-to-grid technology in electrical architecture of Model 3
- Tesla's system could power up to 22kW at any one moment – more than enough to power the dryer, heater or A/C.



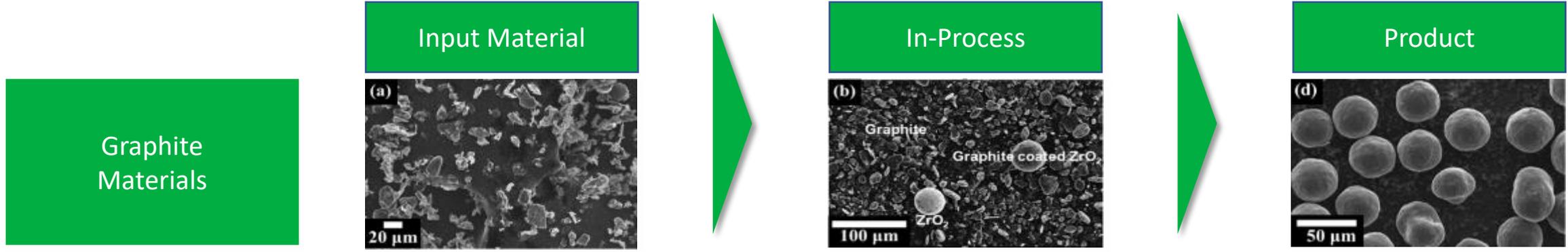
- Currently conducting V2G project "i-rEzEPT", utilizing Nissan LEAF and temporary storage systems to power homes
- Produces the Nissan Leaf, the only mass production EV on the market with bi-directional capability



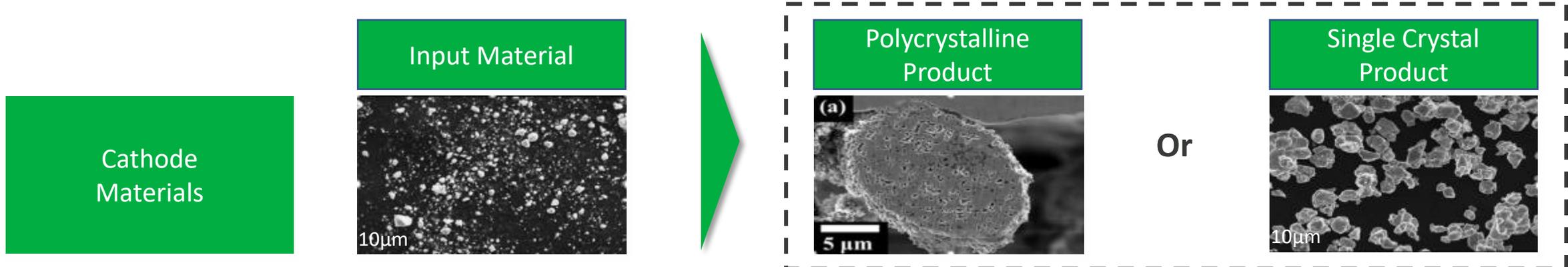
- 2022 F-150 Lightning will be one of the first EV's to take advantage of bi-directional charging in the U.S. market
- The Lightning will offer a solar option that will provide more energy independence and grid contribution

# DPMG: New Manufacturing Method for Anode and Cathode

With multiple patent applications filed, NOVONIX's Dry Particle Microgranulation (DPMG) technology delivers higher yields at lower costs



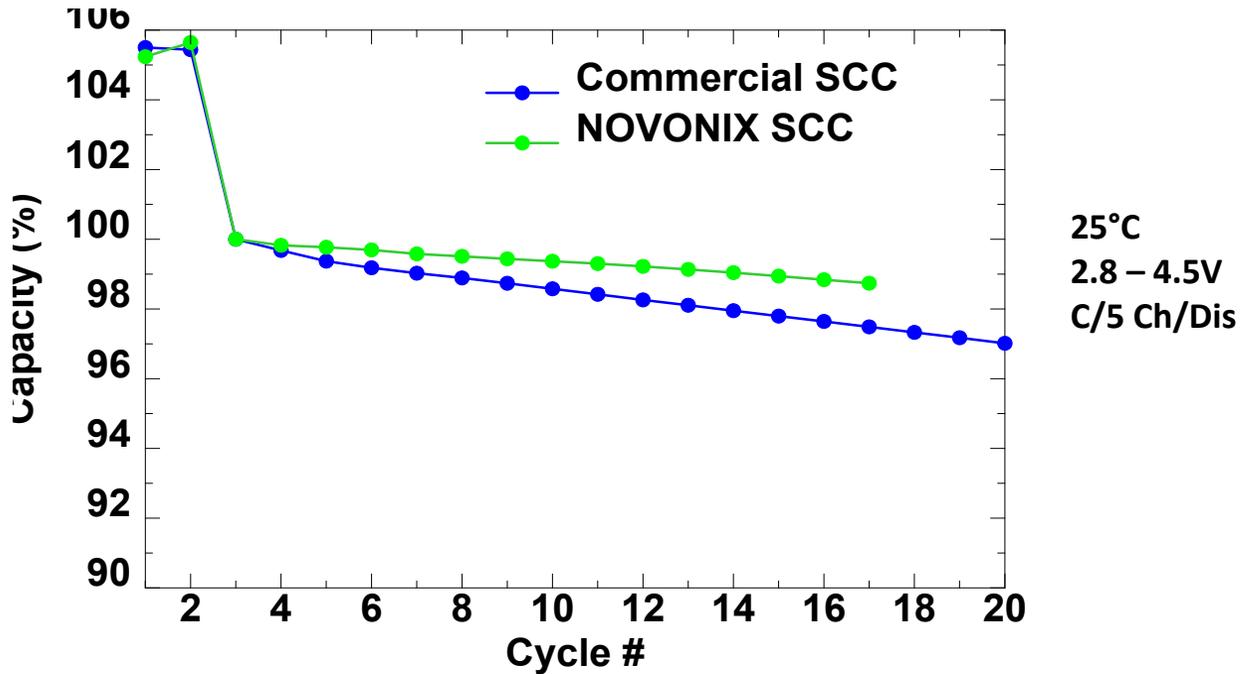
100% Yield (recovery of waste fines to high value product) | Relatively lower cost | Flexible precursor inputs



100% Yield (recovery of waste fines to high value product) | No water waste | Relatively lower cost | High Nickel cathode materials

# Early Cathode Synthesis Technology Results Demonstrate Results Better or Comparable with Long Life Commercial Single Crystal Cathode (SCC)

## Normalized Electrochemical Results (Coin Cell)



Product:	Commercial SCC	NOVONIX SCC
Reversible Capacity:	100%	104%
First Cycle Efficiency:	100%	101%

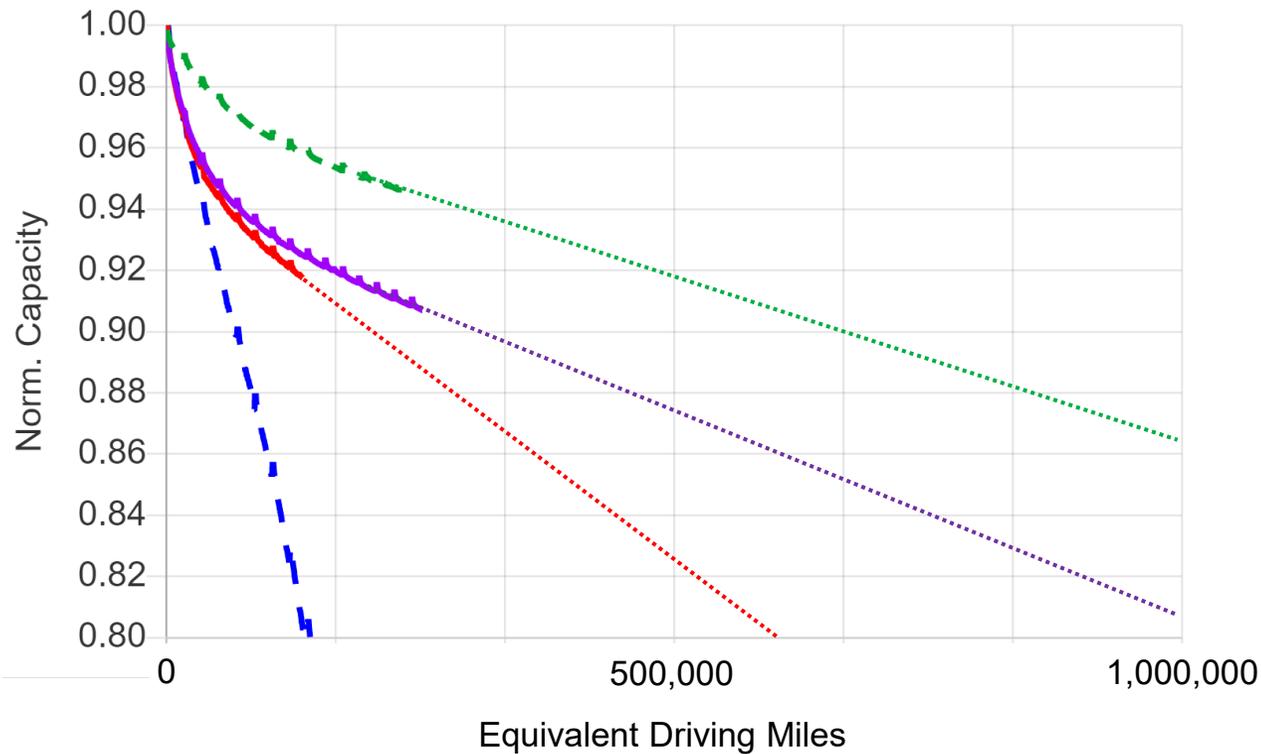
## Key Observations

- Normalized electrochemical results in coin cell tests show NOVONIX outperforming in reversible capacity, first cycle efficiency, and cycling performance
- NOVONIX continues to optimize material through processing as well as through the use of coatings and dopants to further improve performance
- Polycrystalline cathode comparative performance test work also ongoing, with polycrystalline cathodes having some advantages over SCC

# NOVONIX's Complete Battery Cell Technology is Leading the way for Next Generation EV Batteries

Demonstrated and Projected Performance Predicted to Exceed 1 Million Miles<sup>(1)</sup>

- SC NCM622 shown here is the same Commercial SCC reference material shown in previous slide
- Next step to build full cells for performance testing to include in this data set and demonstrate NOVONIX anode, cathode and electrolyte technologies in a single cell



- SC NCM622 / NOVONIX Anode Material + Adv. Electrolyte
- SC NCM622 / Gr + Adv. Electrolyte
- SC NCM622 / Gr
- NCM622 / Gr (Commercially Available Reference Materials)

- 40°C full depth of discharge cycling
- Assumed 330 mile range
- Projection lines shown for guidance

1. Data based on internal measurements taken as part of verification process.

# Our Goals for the Future of NOVONIX



# Contact Information

## NOVONIX Anode Materials

1029 West 19th Street, Chattanooga, TN, 37408, USA



353 Corporate Place, Chattanooga, TN, 37419, USA



## NOVONIX Battery Technology Solutions

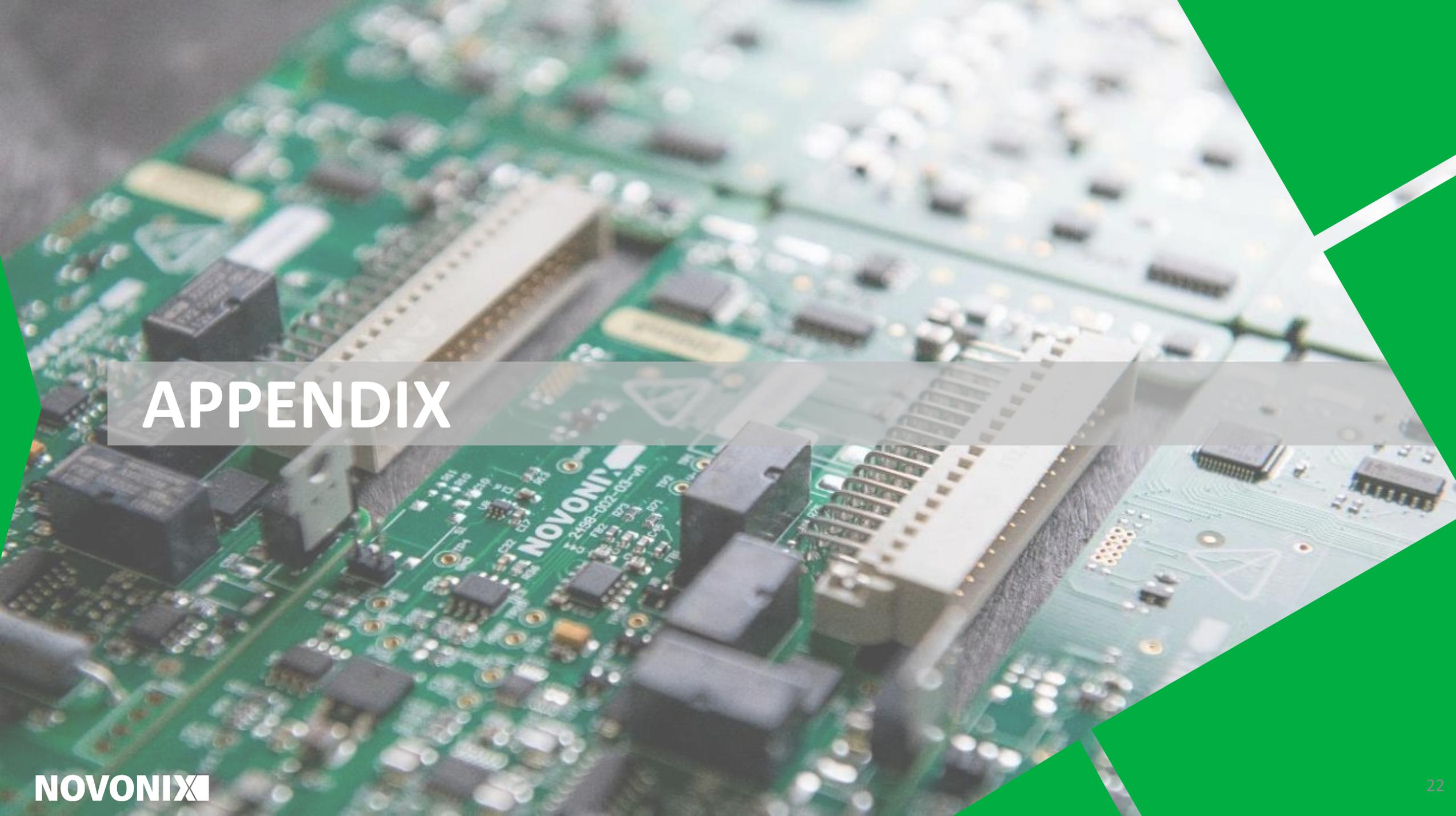
177 Bluewater Road, Bedford, NS B4B 1H1, Canada



110 Simmonds Drive, Dartmouth, NS B3B 1N9, Canada



Send all investor queries to: [ir@novonixgroup.com](mailto:ir@novonixgroup.com)



# APPENDIX

# DOE Awarded NOVONIX US \$5.57M for New Furnace Technology Development

## DOE Project Team Goals



**World Leader in Petroleum Coke Production**

- Houston, TX
- Multiple US and Global Production Sites



**World-wide Leader in High Temperature Furnaces**

- Buffalo, NY
- Expertise in High Temperature Furnace Technology
- Strategic Alliance Between NOVONIX and Harper



**State of the Art Anode Materials Processing**

- Chattanooga, TN
- First Qualified US Supplier of Synthetic Graphite to Tier 1 Cell Manufacturer



**First-in-the-world production scale graphitization furnace technology**

- Developing valuable IP
- Highly scalable manufacturing process
- USA-made premium synthetic graphite for lithium-ion batteries

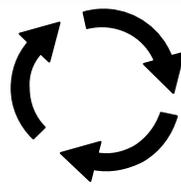
**NOVONIX** will contribute US\$5.92M over the project duration  
First "Generation 3" furnace system was installed at NOVONIX in 2021

# NOVONIX's Proprietary Graphitization Process is Leading the Clean Energy Transformation



## Inputs

- Clean Power Sources<sup>1</sup>
  - Energy input 57% carbon-free (15% renewable) with target to be net-zero by 2050
- Highest Purity Input Materials
  - Minimizes emissions and contaminants
- Sourcing Input Materials to use in Electric Vehicles and Energy Storage System Applications that would Otherwise be Used in Higher Emission Sectors



## Process

- Proprietary Furnace Technology
  - Increased energy efficiency
  - No chemical purification



## Outputs

- NOVONIX's Anode Materials Support Higher Performance Lithium-Ion Batteries Resulting in the Need for Less Future Input Materials
- Negligible Facility Emissions

**The Life Cycle Assessment (LCA) conducted by Minviro Ltd. demonstrated a ~60% decrease in global warming potential (GWP) relative to conventional anode grade synthetic graphite produced in Inner Mongolia, China and a ~30% decrease in GWP when compared to the anode grade natural graphite in Heilongjiang Province, China**

1. May FY2021 figures from Tennessee Valley Authority.

# Secretary of Energy, Jennifer M. Granholm Celebrates NOVONIX's New Riverside Facility



## Key Observations

- Purchased on July 28<sup>th</sup>, 2021, this 400,000+ square-foot plant will allow for 10,000 tonnes per year of synthetic graphite anode material production by 2023
- On November 22<sup>nd</sup>, 2021, NOVONIX celebrated Riverside Recharged to inaugurate the new Riverside facility with keynote speaker Secretary of Energy Jennifer M. Granholm
- Other speakers included:
  - Director Andrew Liveris AO
  - Director Zhanna Golodryga
  - CEO Chris Burns
  - U.S. Rep. Chuck Fleishmann
  - TN ECD Commissioner Bob Rolfe
  - Hamilton County Mayor Jim Coppinger
  - City of Chattanooga Mayor Tim Kelly
  - Former U.S. Senator Bob Corker
- “The local support for this means not just something for Chattanooga, and it's not just for Tennessee, but it really is for the country. The fact that we're at a facility that once employed about 230 people and that now is going to employ 300 people, making the future of our transportation energy system secure, is such a great day for America.” - Secretary of Energy Jennifer M. Granholm

# Strategic Relationship with KORE Power

## Highlights of Agreements



General Division of the Arizona Commerce Authority. KOREPLEX Manufacturing Plant in Buckeye, AZ. Photo Courtesy: KORE Power CO. © Lindsey Scott. Licensed under KORE's Investment in Buckeye.

Kore Power to invest \$1B in Buckeye

[www.westvalleyview.com](http://www.westvalleyview.com)

- KORE Power is a leading US based developer of battery cell technology for clean energy industries
- NOVONIX and KORE Power have worked together since 2019 through NOVONIX's BTS division to improve and validate KORE's battery technology
- KORE announced on 29 July 2021 the intention to build KOREPlex, a one million square foot manufacturing that will support up to 12 GWh of battery cell production in Buckeye, AZ
- KOREPlex scheduled to begin production in early 2024
- Through the signed Supply Agreement, NOVONIX will be the exclusive supplier of graphite anode material to KOREPlex which when in full production will be close to 12,000 tonnes per year of material
- NOVONIX invested \$25M USD to acquire a roughly 5% stake in KORE Power