



## General Corporate Presentation

November 29<sup>th</sup>, 2022

Toronto Stock Exchange (TSX:EFL) & (OTCQB:EFLVF)

# Disclaimer

*This presentation contains forward-looking statements, including statements that relate to, among other things, the effect of the ongoing global COVID-19 public health emergency on the Company's operations, its employees and other stakeholders, including on customer demand, supply chain, and delivery schedule, the size of the Company's sales pipeline and the ability to satisfy orders thereunder, the Company's ability to satisfy its ongoing debt obligations, anticipated increased collaboration with OEMs and OEM channels constituting a source of sales growth for the Company, anticipated continued increase in sales momentum in fiscal 2022 and 2023 through OEMs and directly to large global companies, including Fortune 500 companies, the future direction of the Company's business and products, including E-bus applications and additional intellectual property protection, the Company's ability to source supply to satisfy demand for its products and satisfy current order volume, technology development progress, all trademark logos and trademarks are owned by the respective Company's, the Company's application for a listing on NASDAQ and its ability to be listed thereon, pre-launch plans, plans for product development, plans for shipment using the Company's technology, production plans, the Company's markets, objectives, goals, strategies, intentions, beliefs, expectations and estimates, and can generally be identified by the use of words such as "may", "will", "could", "should", "would", "likely", "possible", "expect", "intend", "estimate", "anticipate", "believe", "plan", "objective" and "continue" (or the negative thereof) and words and expressions of similar import. Although the Company believes that the expectations reflected in such forward-looking statements are reasonable, such statements involve risks and uncertainties, and undue reliance should not be placed on such statements. Certain material factors or assumptions are applied in making forward-looking statements, and actual results may differ materially from those expressed or implied in such statements. Important factors that could cause actual results to differ materially from expectations include but are not limited to: the COVID-19 outbreak will not have significant further effects on the Company's supply chain or operations; that current customers will continue to make and increase orders for the Company's products, and in accordance with communicated intentions, that the Company's alternate supply chain will be adequate to replace material supply and manufacturing, that the Company's interpretation of the effect of any comfort given to Litarion's auditors of the Company's financial support for Litarion's operations is correct, that Litarion's insolvency process will proceed in an orderly fashion that will satisfy Litarion's debt without a significant negative effect on the Company or its assets, actions taken by creditors and remedies granted by German courts in the Litarion insolvency proceedings and their effect on the Company's business and assets, negative reactions of the Company's existing customers to Litarion's insolvency process, general business and economic conditions (including but not limited to currency rates and creditworthiness of customers), Company liquidity and capital resources, including the availability of additional capital resources to fund its activities, level of competition, changes in laws and regulations, legal and regulatory proceedings, the ability to adapt products and services to the changing market, the ability to attract and retain key executives, the granting of additional intellectual property protection, and the ability to execute strategic plans. Additional information about material factors that could cause actual results to differ materially from expectations and about material factors or assumptions applied in making forward-looking statements may be found in the Company's Annual Information Form for the year ended September 30, 2021 under "Risk Factors", and in the Company's most recent annual Management's Discussion and Analysis under "Qualitative And Quantitative Disclosures about Risk and Uncertainties" as well as in other public disclosure documents filed with Canadian securities regulatory authorities. The Company does not undertake any obligation to update publicly or to revise any of the forward-looking statements contained in this document, whether as a result of new information, future events or otherwise, except as required by law.*



# **Our Mission**

**To accelerate the energy transition with safer and better batteries through technology advancement**

# Electrovaya at a Glance

Focused Lithium Ion Solutions based on proprietary competitive advantages

## Success Based on Innovation



### Industry Leader

1st to provide the safest multi-million-mile batteries\*



### Top-tier Customer Base

Fortune 100 customers and leading OEMs



### Unparalleled Experience

25+ years of experience



### Advanced Technology

100+ Patents including electrode processing, separator technology and solid state battery technologies



### High Revenue Growth

>4x since 2019 with projected 100% growth in both FY2023 and FY2024

## Electrovaya Key Achievements in 2022



Record Purchase Order Volume



Production Ramp Up Successful in FYQ4 with a US\$9.7 million run rate



Announced promising performance results for its proprietary solid state hybrid battery to meet passenger automotive applications

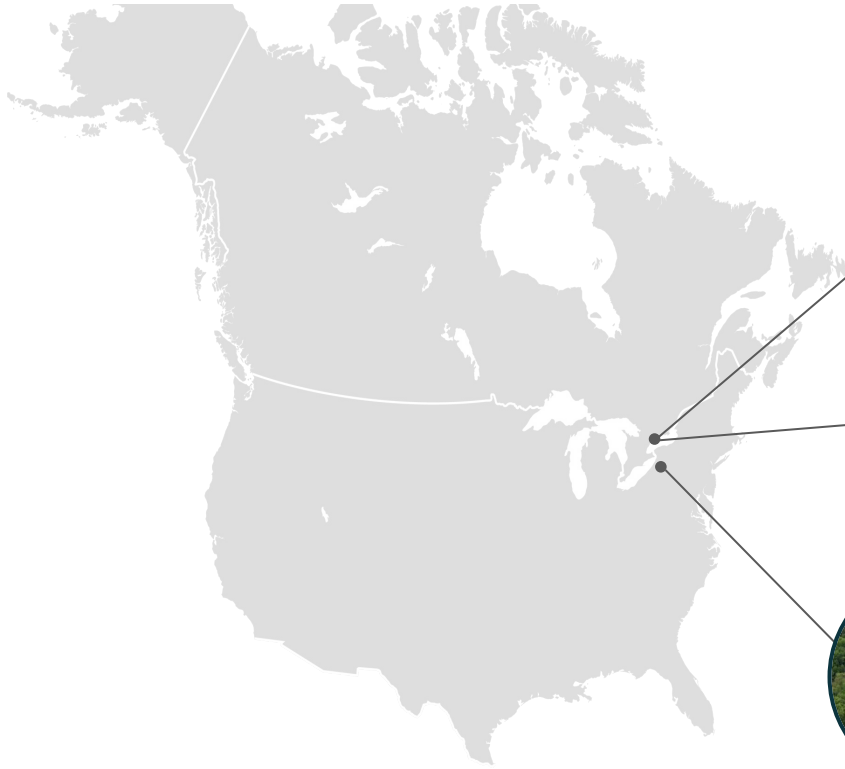


Announced it had selected New York State as the location for its first US gigafactory, for the production of cells and batteries.



Completed a C\$14.8 Million private placement in November 2022

# Our Locations



- Canadian Headquarters: 63,000 Sq feet Facility in Mississauga, ON
- Pack assembly & engineering development
- Capacity is approx 150 MWh (300 MWh by 2023)



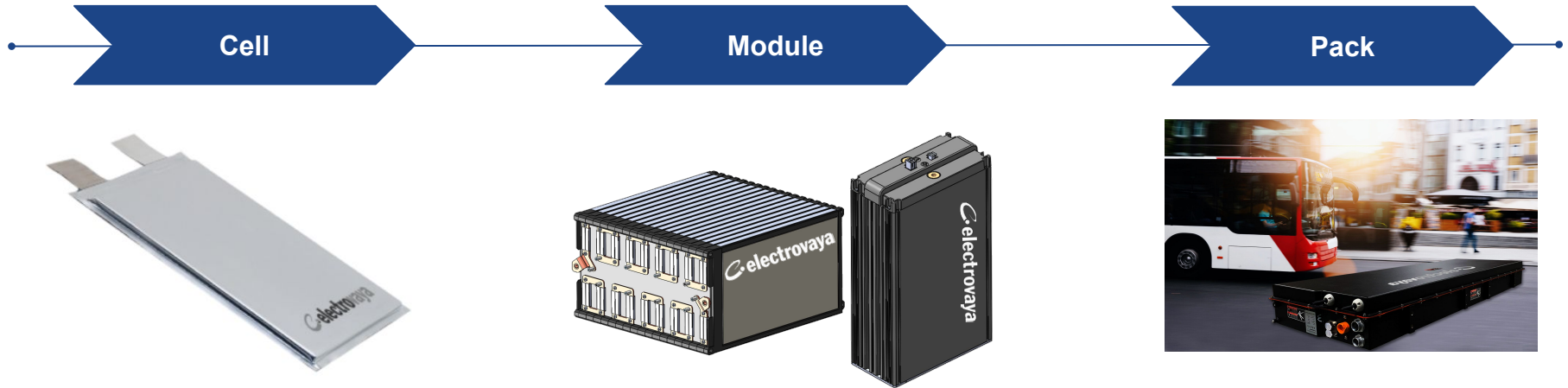
- Electrovaya Labs: 25,000 Sq feet facility in Mississauga, ON
- Cell technology development & scale up



- US Operations: 130,000 sq feet and 52 acres facility in Jamestown, NY
- Cell & module assembly
- Planned overall capacity >1 GWh/yr
- Powered by low cost hydro energy (~\$0.05/kWh)

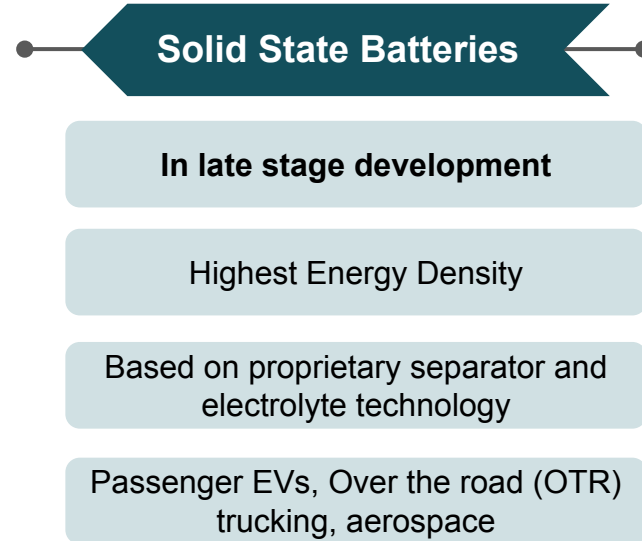
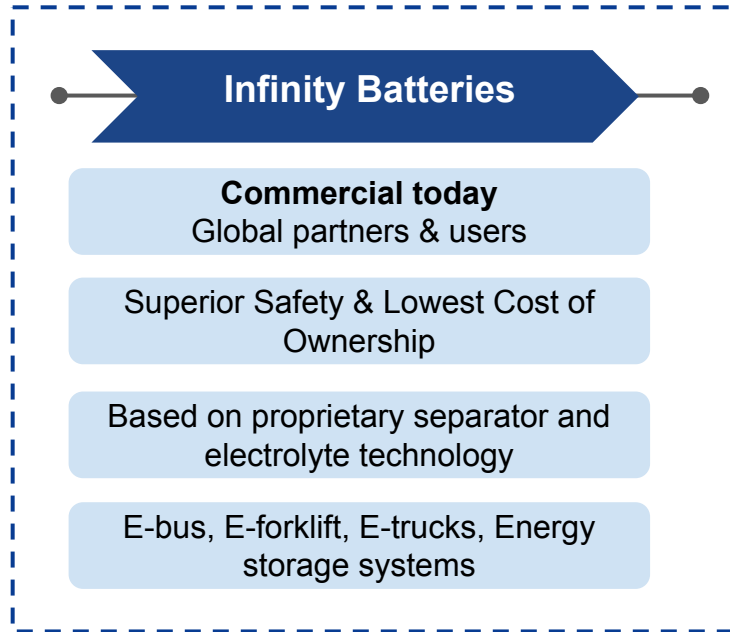
# Electrovaya Capabilities

Electrovaya expertise and capabilities includes designing and manufacturing lithium ion batteries cells / Modules / Packs / Battery systems and other battery-related products (BMS)



# Technology Solutions

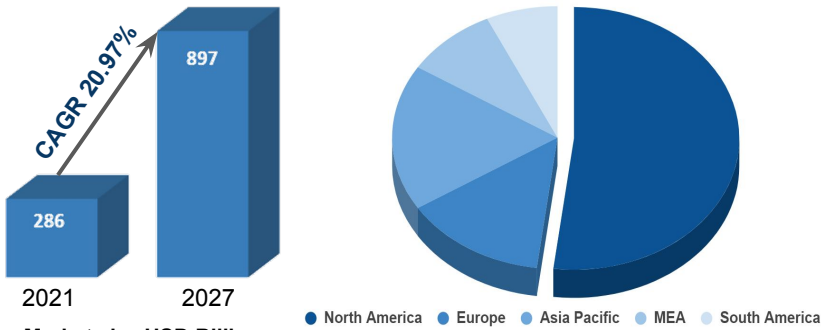
Electrovaya complementary technologies targeting the various EV applications.  
Infinity batteries provides industry leading longevity and SSBs provides industry leading energy density



# Market Opportunity Summary: Infinity Platform

## Market Opportunity

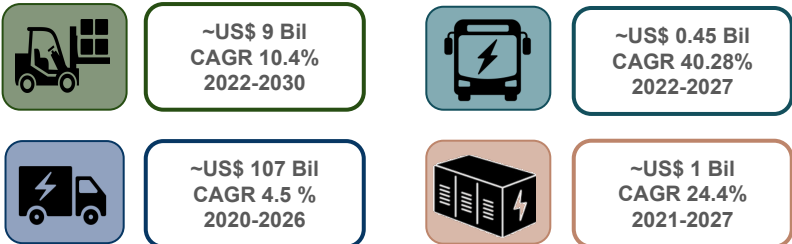
Electrovaya's Target Market Opportunity (Infinity Platform)



Market size USD Billion

Source: Maximize Market Research 2021

### North American Market share



Source: Grand View Research

## North American Market Challenges



Supply chain issues



Technology challenges: Safety & lifetime



Expensive battery technology

## FY2022 Quarterly Revenue



\* Unaudited Revenue figure.



# Commercial Ecosystem: Material Handling & AGVs

OEM Customers



RAYMOND

JABIL

End Users Examples (not a complete list)

Retail & eCommerce

FORTUNE 100 \*Confidential User



Walmart

THE HOME DEPOT

Ashley HOMESTORE

LOWE'S

Food distribution



MARS incorporated

Unilever

MAPLE LEAF

Mondelez International

Manufacturing



P&G

PVH

PHILLIPS-VAN HEUSEN CORPORATION

Logistics

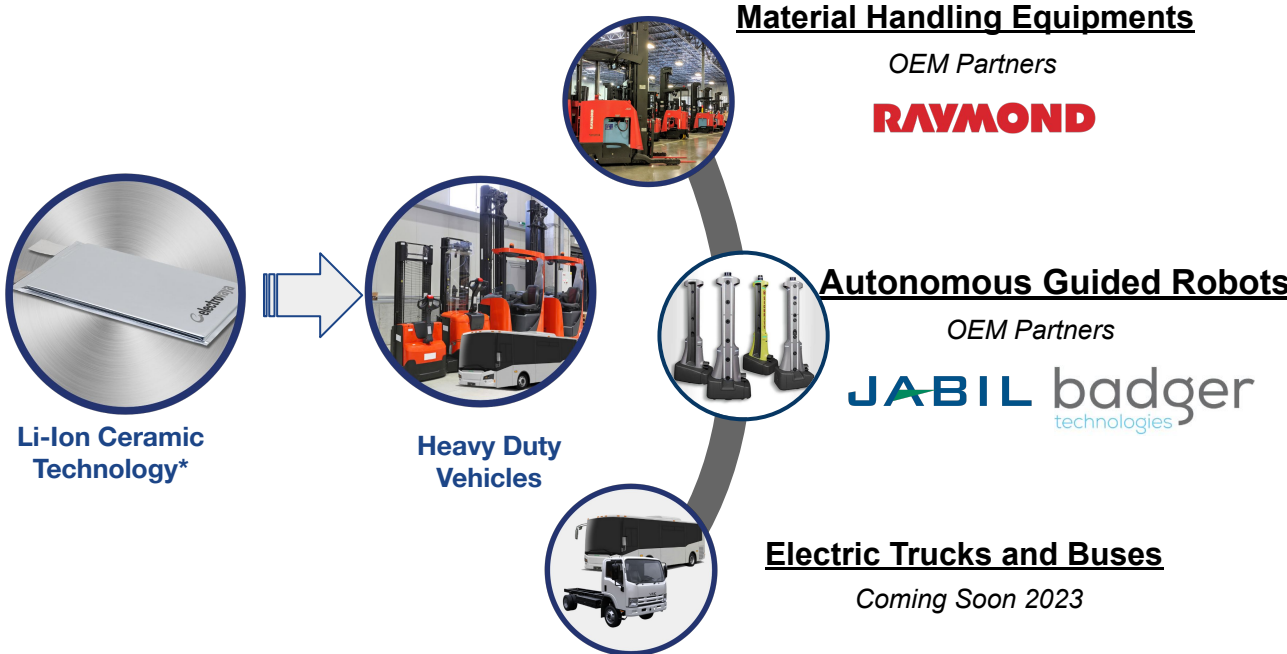


CEVA LOGISTICS

interstate warehousing  
a Tippmann Group Company

# Infinity Batteries: Proven technology

Lithium-ion ceramic cells with highest cycle life and safety setting the industry standards.



- High Cycle Life  
Lowest Cost of Ownership
- Safety  
Zero Fire Incidents
- High Reliability  
Performance in 24/7 applications

\*An earlier iteration of our lithium-ion ceramic technology has also been used in ~20,000 Daimler Smart cars (no active cooling).  
\*The vehicle is unique as it was of few electric vehicles that have no known battery safety incidents.



# Competitive Advantage

Electrovaya prides itself by providing leading edge Lithium ion battery cells and systems



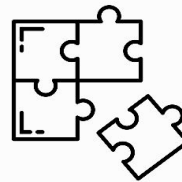
## Longevity

Unique Cycle life  
EOL 9000 cycles @100% SOC  
~25 years for 1 cycle/day usage



## Superior Safety

Proprietary fire propagation  
prevention technology  
**UL2580** listed  
(including fire propagation)



## Modular Approach

Performance Oriented System design  
Modular battery systems tailored for  
unique applications requirements



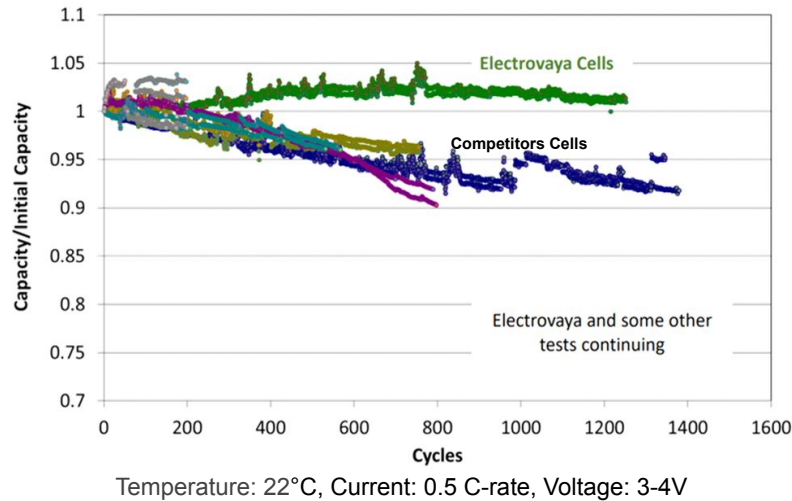
## Lowest cost of ownership

Best Cycle Life + superior safety  
No battery replacement required  
(Up to **12 years warranty**)

# Multi-Million-Mile Batteries

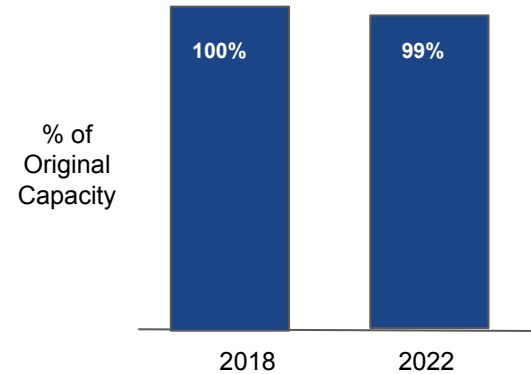
Electrovaya Patented Technology provides the longest Cycle life in Industry: Electrovaya batteries can operate for >25 years with 1 cycle/day

Third party testing:  
Electrovaya batteries lifetime VS competitors



E-forklift battery performance from Fortune 100 customer:

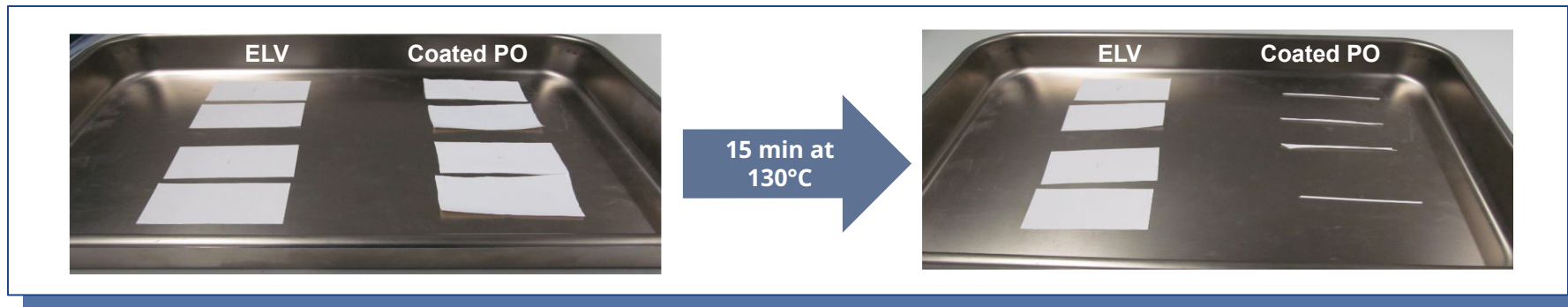
Electrovaya's forklift battery capacity after 4 years of continuous operation (equivalent to 192,000 miles of driving)



# Superior Safety

## Multi-level cell and system safety technology with end result being a non-propagating battery design

### Electrovaya Ceramic vs Coated PO Separator



### Third Party fire propagation test

An Electrovaya 24V battery AFTER fire propagation testing for UL

- ❖ Individual cell in fully charged battery pack was heated to +200°C
- ❖ Fire was contained within the sub-module
- ❖ No flames escaped the battery enclosure

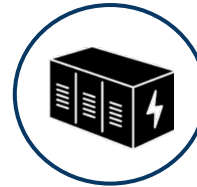
*Test conducted by UL in early 2020, UL comment about the fire propagation test results: "best results seen in lithium ion battery regardless of the chemistry"*



# Superior Performance: Monetization Strategy



Heavy Duty Vehicles (HDV) Operate at ~2 cycles per day → **Battery replacement** needed every 6 years



Energy Storage Systems (ESS) require a **Battery Augmentation** to compensate for the performance degradation

## How do we monetize Electrovaya's technology benefits?



### Higher List Prices

Charge a premium price for batteries due to longer cycle life



### Rentals/ Subscription

Own the asset. Currently trialing \$0.5M worth of battery assets in a rental program with a Fortune 100 customer.



### Extended Warranty Revenue

Superior performance supports longer revenue gaining warranties



### Demand Response Revenue

Trialing a deployment of demand response capable systems at a Fortune 100 customer



### OEM Leasing

OEM partner leasing with strong residual values will further drive demand



### Future Revenue

Behind the Meter Energy Storage Revenue on Electrovaya owned assets

# Energy Storage Applications - Approach

## Electrovaya Business plans targeting Energy Storage Applications

### Standard ESS Batteries

Utilize current standard lithium ion batteries that were optimized for electric vehicles

#### Challenge:

- ❖ Cost (\$/kWh) is the #1 driving factor in decision making for energy storage developers, as these projects are usually determined through competitive bid processes.
- ❖ Limited attention to cycle life and cell safety to date (cell level)

### Electrovaya's Approach

Bespoke energy storage cells designed to meet the specific needs of the application (Short & Long duration)

#### Advantage:

- ❖ Electrovaya Versatile Technology: patented technologies for Electrode coating, Separator & Electrolyte technologies, and Cell assembly expertise.
- ❖ Superior Safety: decision factor in both long and short duration energy storage applications
- ❖ Exceptional Life Cycle: cost of ownership should dominate

# Bespoke ESS Cells: Use of Electrovaya Tech

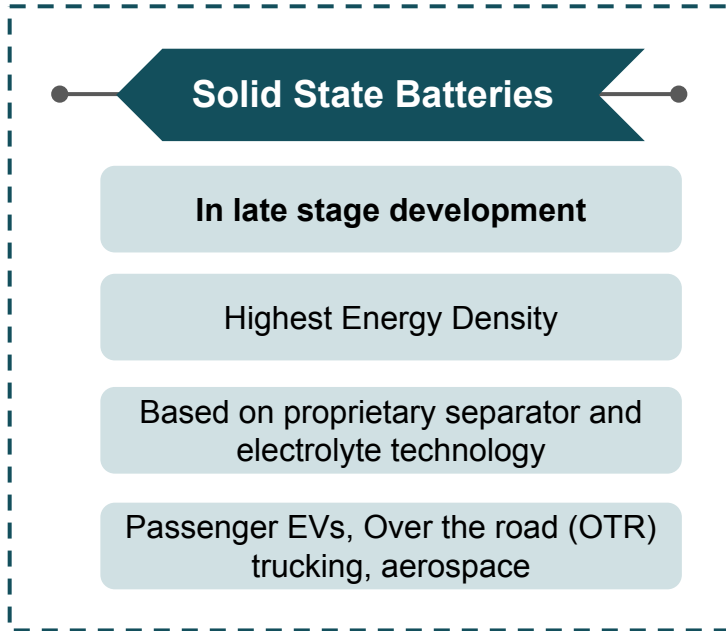
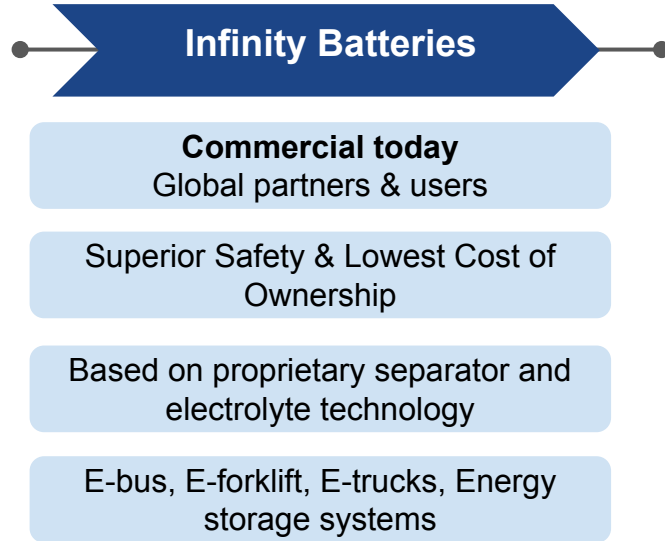
Bespoke energy storage cells designed for specific applications

APPLICATION	Proprietary Technology	Benefit	End Result
Short Duration Energy storage	+ Ceramic Separator + Electrolyte technology + <i>Potential</i> : solid state technology	+ High Temperature operations capabilities + Lower Capital costs related to cooling + Superior Safety and cycle life	Optimized Product & Lowest cost of ownership
Long Duration Energy storage	+ Electrode Coating technology + Ceramic Separator + Electrolyte technology	+ Specialized Thick electrodes for long lasting performance + Cost-effective technology for reduced Capital costs + Superior Safety and cycle life	



# Technology Solutions

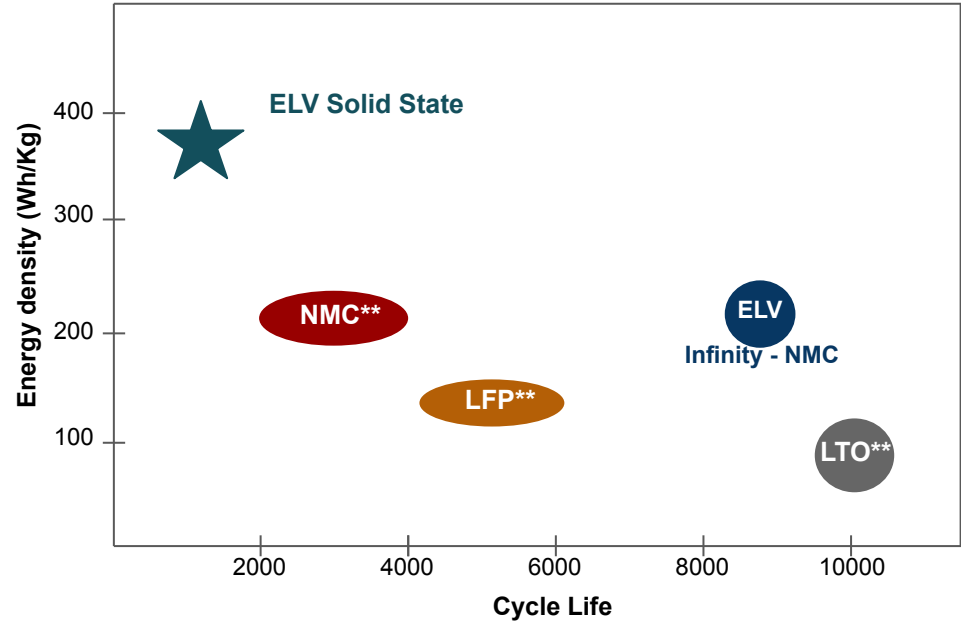
Electrovaya complementary technologies targeting the various EV applications.  
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# Next Gen-Solid State batteries

Electrovaya's Labs division is focused on the technology development and scale up of high energy density solid state batteries on track to reach automotive targets

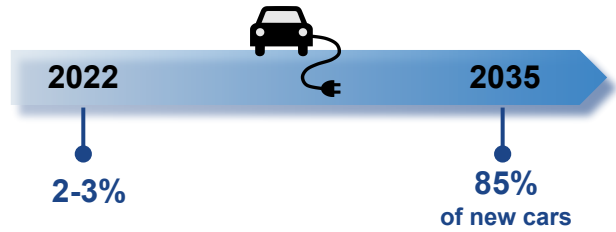
*Prototype pouch cells expected availability in 2023*



\*Based on Electrovaya's estimates for scaled large format cells. \*\* Competitor data sheets/estimates. \*\*\*Based on long term test data

# Next Gen-Solid State batteries: Value proposition

## EV penetration in the global vehicle market



### Battery Requirements for E-cars adoption

- Energy Density > 350 Wh/Kg (>750 Wh/L)
- >10 years lifetime
- Superior Safety
- Cost < 100 \$/Kwh for cells

### Energy dense electrodes

Enables the use of Lithium metal anodes with 10x higher specific capacity than conventional graphite  
⇒ ~40% increased energy density

### Solid Electrolyte

High decomposition voltage (larger operating voltage window)  
Use of liquid electrolytes minimized or eliminated

### Low Cycle Life

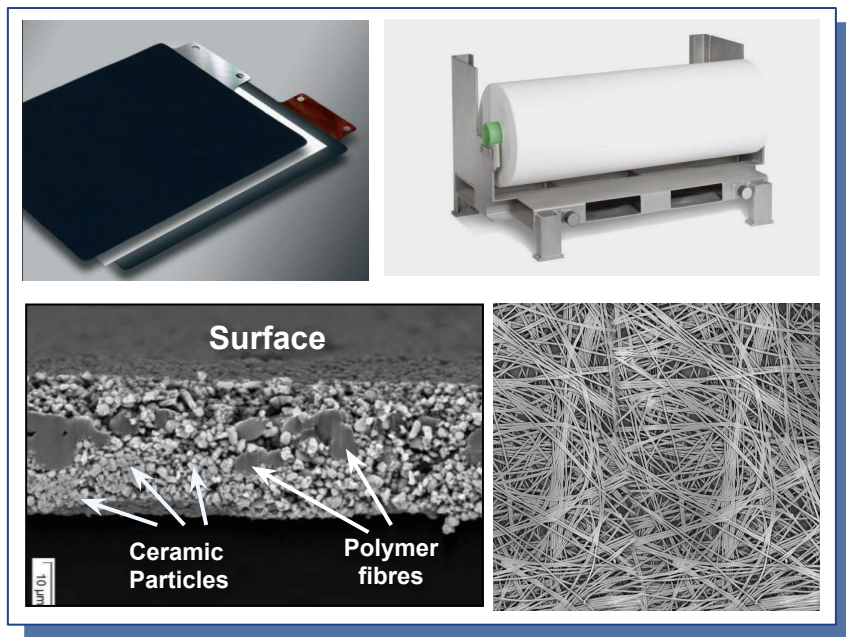
Formation of lithium dendrites during repeated charge/discharge  
Poor electrode-electrolyte interfacial contact

### Complex Scaled Manufacturing

Production of high-quality lithium metal batteries at scale remains unachieved in the global battery market

# Ceramic Separators: Unparalleled Experience

The transition to Lithium Metal based batteries is almost certainly going to require the use of ionic conducting ceramic based electrolyte materials



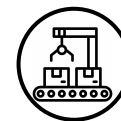
## Electrovaya Strength



Patented unique ceramic separator offers unparalleled safety. (36 patents)



Substantial experience and know-how in the manufacturing of ceramic separators.

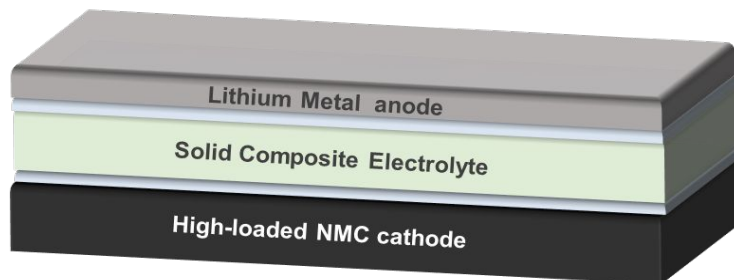


The only company who has commercialized the use of ceramic separator for LIB (Z-fold assembly)

# Solid-State Batteries: Electrovaya's Approach

Solid State battery platform with versatile proprietary technology

*Four Solid State Battery Related Patents Filed*



**Hybrid Lithium Metal SSB**

Thin Lithium Metal anode

**Lithium Metal SSB**

Thin Lithium Metal anode

**"Anode-Free" SSB**

No Standalone Lithium Electrode

Cathode: Agnostic. Testing with NMC (622/811), proprietary solvent-free thick cathode coating

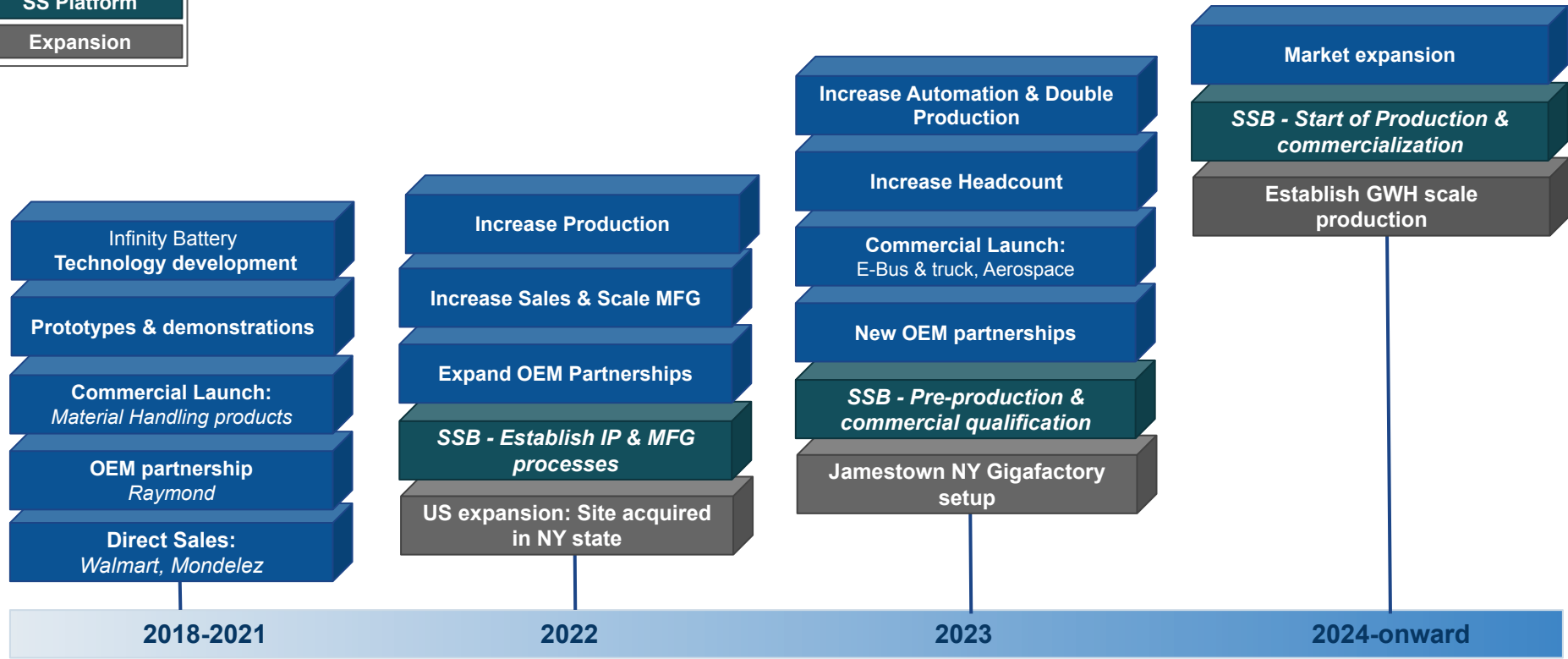
Proprietary Composite Ceramic Separator

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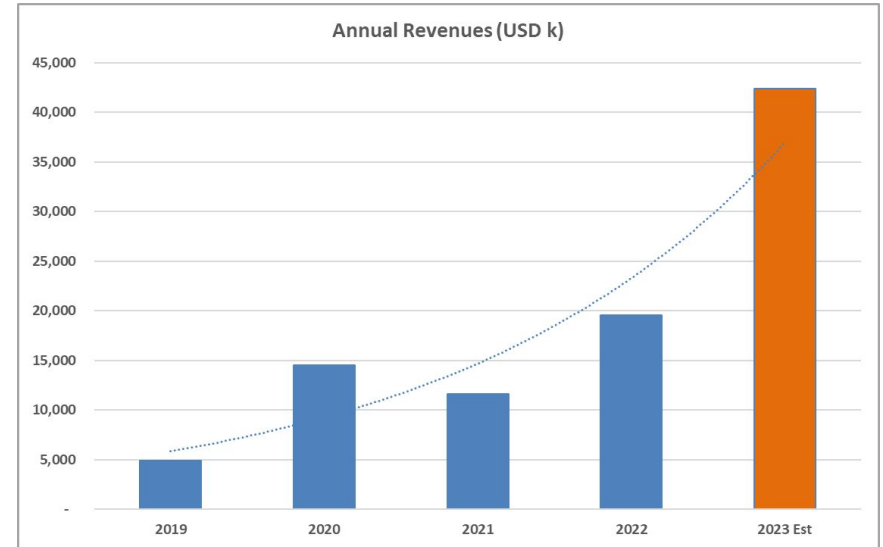
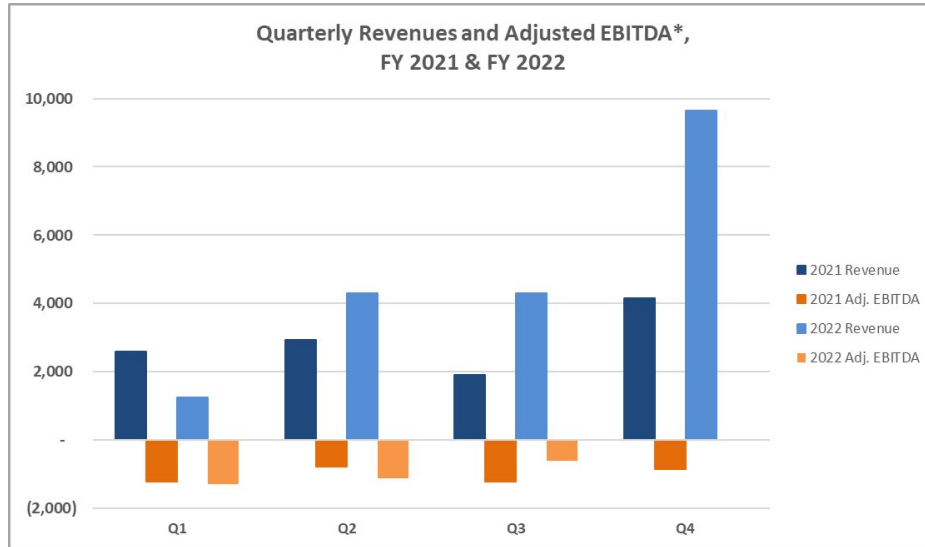
# Roadmap

Infinity Platform
SS Platform
Expansion



# Financials

FY2023 revenue target ~\$42 million (~C\$56 million)\*\*



\* Non-IFRS Measure: Adjusted EBITDA does not have a standardized meaning under IFRS. Therefore it is unlikely to be comparable to similar measures presented by other issuers. We believe that certain investors and analysts use Adjusted EBITDA to measure the performance of the business. Adjusted EBITDA is defined as loss from operations, plus finance costs, stock-based compensation and depreciation costs.

\*\* Estimated value with noting a risk that supply chain disruptions could impact the timing of revenue. The Company has faced some production delays throughout the 2022 fiscal year due to specific component shortages or delays. Electrovaya has taken steps to mitigate supply chain issues and will continue to closely monitor the situation.

# Financial Summary

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- ▼ Q4 revenue of estimated \$9.7m is a record for the company and in excess of the previous three quarters combined.
- ▼ Successful equity raise of \$11m in November that has been used to reduce debt by almost \$5m, resulting in interest savings of \$650k per year
- ▼ Significant order backlog leading into FY23 and visibility of significant frontlog
- ▼ FY23 revenue projection of \$42m, targeting EBITDA positive and becoming cash flow positive as revenue grows.
- ▼ Planned NASDAQ Listing in 2023



# Capital share structure



**Ticker:** TSX:EFL  
**Shares Outstanding\* :** 164,730,626  
**Share Price\* :** CAD \$1.14  
**Market Cap\* :** CAD \$187,792,499  
**Insider Ownership:** ~ 38%



\* Stock price, shares, and market cap are current as of 5:00 PM EST, November 28, 2022



**Ticker:** OTCQB:EFLVF  
**Shares Outstanding\* :** 164,730,626  
**Share Price\* :** USD \$0.85  
**Market Cap\* :** USD \$140,020,723  
**Insider Ownership:** ~ 38%



\* Stock price, shares, and market cap are current as of 5:00 PM EST, November 28, 2022

# Electrovaya Summary



## Pure Play Battery Tech/Manufacturing

Electrovaya is a Pure Play North American Lithium ion Battery Technology and Manufacturing company on track for Rapid Growth



## Leading Partners

Electrovaya has strong OEM relationships with some of the leading industrial vehicle manufacturers and numerous Fortune 100 and Blue Chip customers.



## Premium Performance

Infinity Technology Products offer significant competitive advantages which allow Electrovaya to sell products at higher gross margins than competitors



## Next Gen Technology

Electrovaya Solid State Battery Technology developments will be a game-changing technology



## North American Footprint

Plans to Reshore Production into the USA improves capacity, security and gross margins



## Growth and Route Profitability

70% increase in revenue from FY21, 115% increase forecast for FY23. EBITDA and Cash Flow positive for FY23 and beyond

# Management team



**Dr. Raj S. Das Gupta,**  
CEO, Director



**John Gibson,**  
CFO



**Dr. Sankar Das Gupta,**  
Executive Chairman



**Dr. Jeremy Dang,**  
VP, Business & Project Development



**Dr. Elmira Memarzadeh**  
Director, Engineering Programs



**Jason Roy,**  
Director, Corporate Development and Investor Relations



# Board of Directors



Prof Carolyn  
Hansson,  
Director



Dr. James  
Jacobs,  
Director



Dr. Bejoy Das  
Gupta,  
Director



Kartick Kumar,  
Director



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