DOCKETED					
Docket Number:	23-TRAN-03				
Project Title:	PowerForward: ZEV Battery Manufacturing Block Grant				
TN #:	252142				
Document Title:	Starz Energies LLC Comments - See attached pitch deck				
Description:	N/A				
Filer:	System				
Organization:	Starz Energies LLC				
Submitter Role:	Applicant				
Submission Date:	9/6/2023 2:10:07 AM				
Docketed Date:	9/6/2023				

Comment Received From: Starz Energies LLC Submitted On: 9/6/2023 Docket Number: 23-TRAN-03

#### See attached pitch deck

Additional submitted attachment is included below.



# Lithium Ion Battery Investment Project

# Batteries for a sustainable

# energy



#### AUG 2023



#### **ALI BELAKHOUA**

#### FOUNDER / CEO

- St. Louis-born, US citizen
- Electrical Engineering Degree from The University of Missouri at Rolla
- Worked as an application and design engineer for Emerson Electric, US Electrical Motors, and Black & Decker
- Worked as a sales engineer and sales manager for ABB, Siemens, Special Electric, and PACE
- Started Starz Electronics in 2001, based in Tunisia, specializing in electronic assemblies and cable harness
- Acquired excellent hands-on managerial skills through 35 years of experience



- Starz is now a profitable 250-employee-strong company
- Has seen big growth through the rough years of COVID-19 • The current customer list includes companies such as , in BOSCH RELCO = TE C.SCOPE SIEMENS COMMSCOPE • Built a very strong research and development team in electrical, electronic, and mechanical engineering • Fully integrated electronic design, programming, and prototyping • Established a fully integrated Lithium-ion battery lab and pilot line • Started a metal shop that builds machine parts and provides support for maintenance and new machine

- assemblies
- Put together a complete plastic injection shop



# **Our vision**

# Starz Energies is working to maintain its position as the first and largest Lithium battery manufacturer in North Africa. **Starz Energies R&D efforts** aim to make energy storage more efficient, greener, and more affordable.





# About us



#### Established In 2001.

A Tunisian-American Company specializing in electrical and electronic manufacturing.



# About us

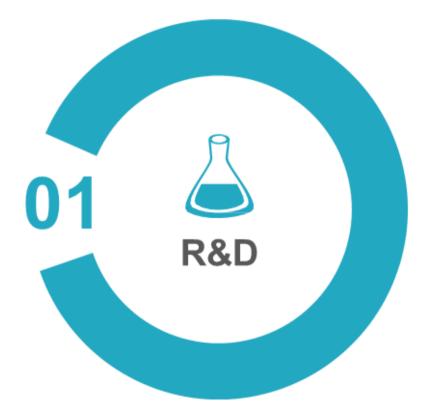
In 2017, Starz Electronics started investing in the Lithium-ion battery research and production. With a portfolio of diversification strategy in mind, we strated our work.

Starz Energies came to life becoming the first lithium ion battery company in Tunisia and in the North African region.





## **Current Strategy**





Refining and improving our chemical synthesis capabilities comparing with the current product offering A pilot line production was established to produce all needed quantities of 18650 and Prismatic cells





#### Marketing place a vital role in promoting our business and mission,

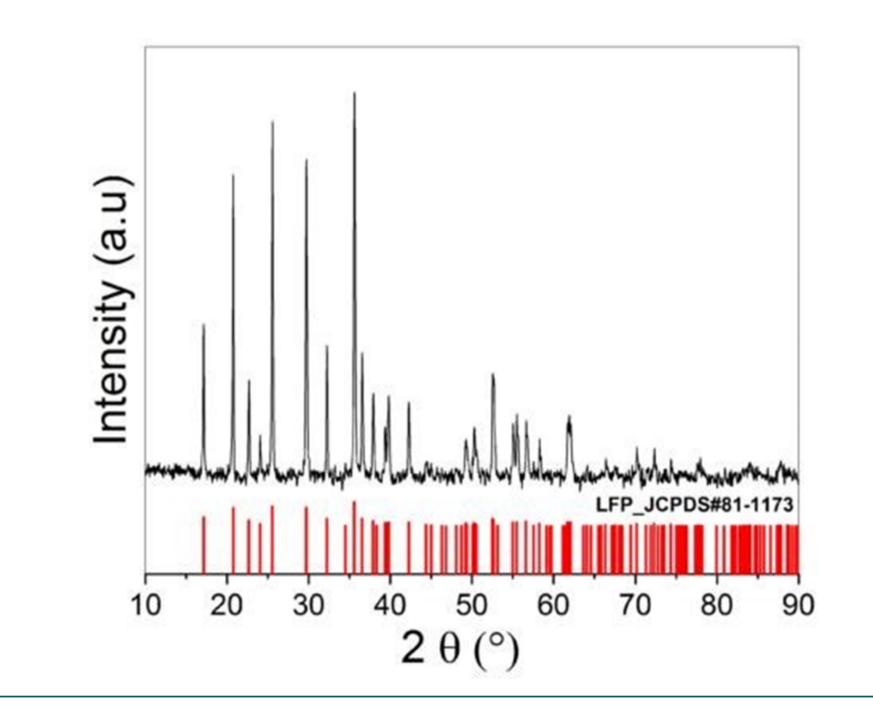


# **R&D MISSION**

## LFP Solution

In our laboratory we have applied the solid state, sol gel and co-precipitation synthesis methods to fabricate LFP/C, LCO, LMO, and NMC cathodes materials for Lithium-ion batteries (LIBs).

This Figure shows the X-ray diffraction (XRD) pattern of LiFePO4/C prepared in Starz Energies lab. The experimental data can be indexed to single olivine phase with a Pnma space group, without signs and traces of impurities (JCPDS81-1173).

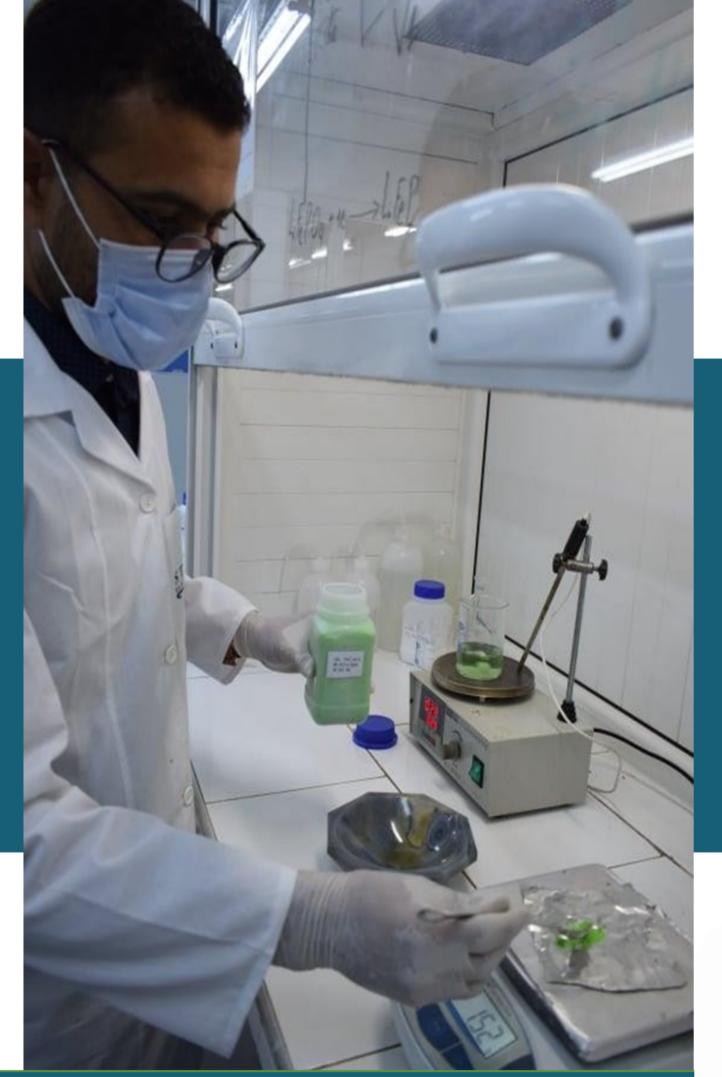




**R&D MISSION** 

We are pursuing higher energy density, enhanced life cycle and calendar life, and better safety characteristics with cost optimization in mind.

Our R&D efforts also include the production of anodes and cathodes as core activity.

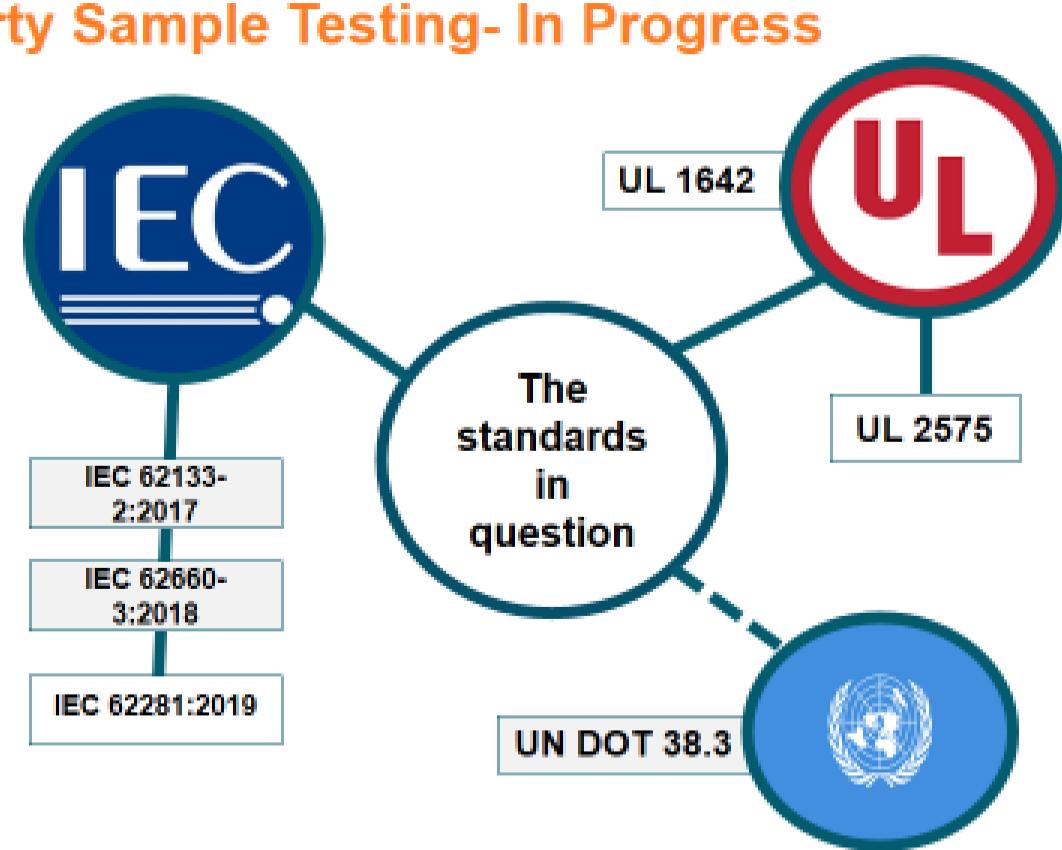




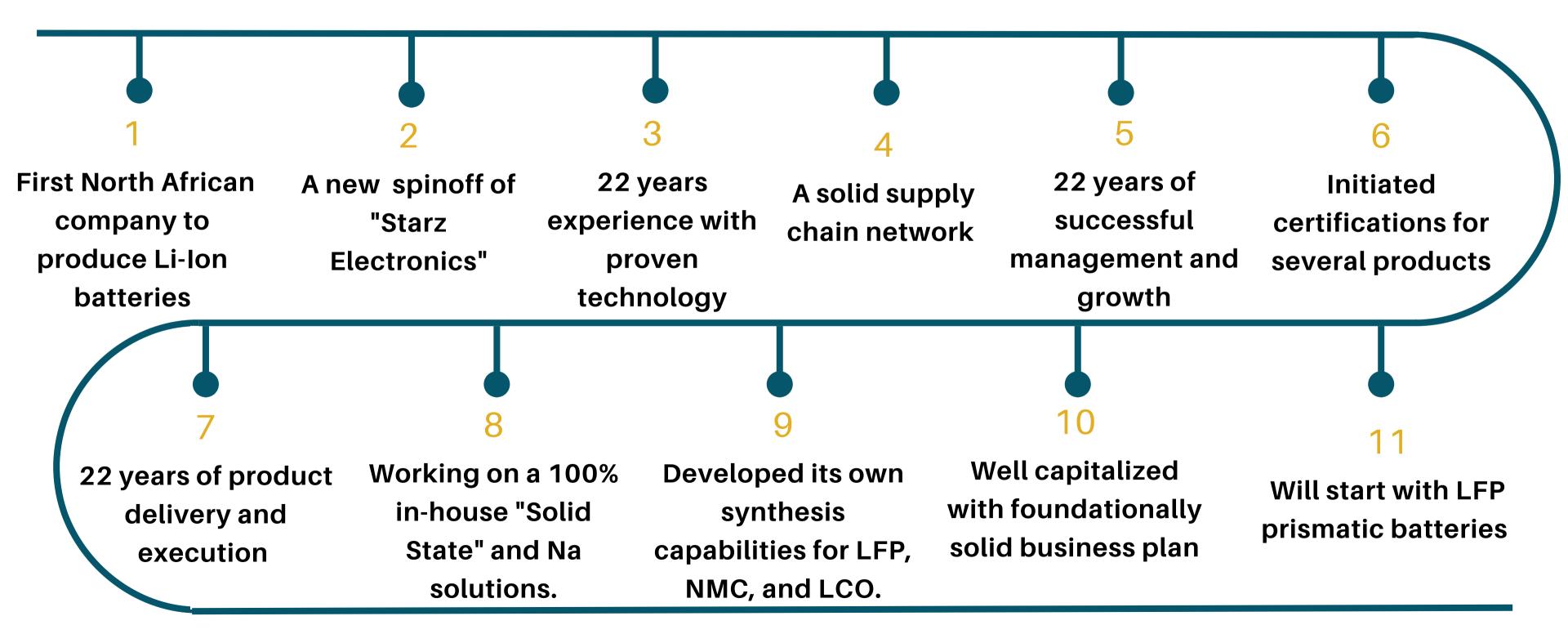
~7~

# **R&D MISSION**

## 2. Third Party Sample Testing- In Progress

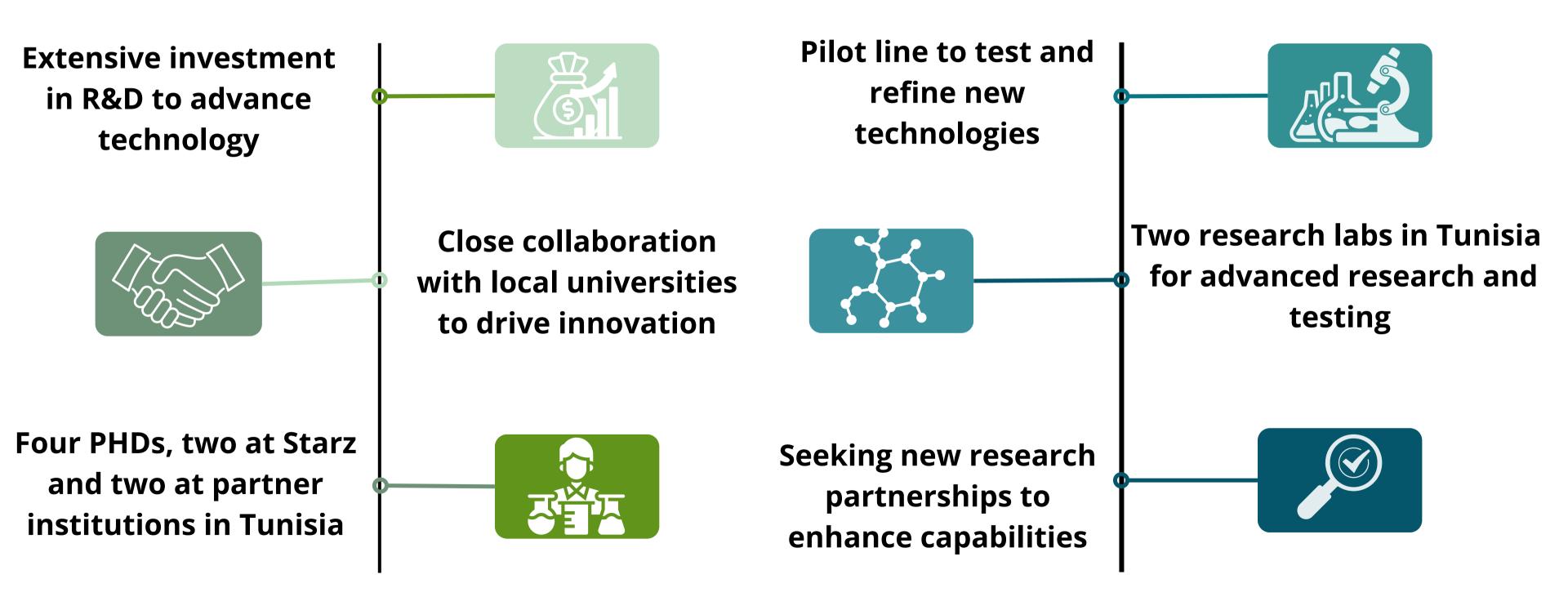


# **Executive summary Company Highlights**





# **Technology and R&D**







# Market overview and opportunity



- Very strong world demand to build a local infrastructure of Lithium-Ion battery manufacturing capacity
- Global Li-ion battery market growth due to increasing demand for Electric Vehicles, renewable energy storage systems, and portable electronics.
- Factors driving growth include government incentives for Electric Vehicles, declining cost of Li-ion batteries, and increasing investment in renewable energy.
- Current market is dominated by Asian manufacturers, including China, Japan, and South Korea.
- Key players in the market include Contemporary Amperex Technology (CATL), LG Chem, Samsung SDI, and Panasonic.





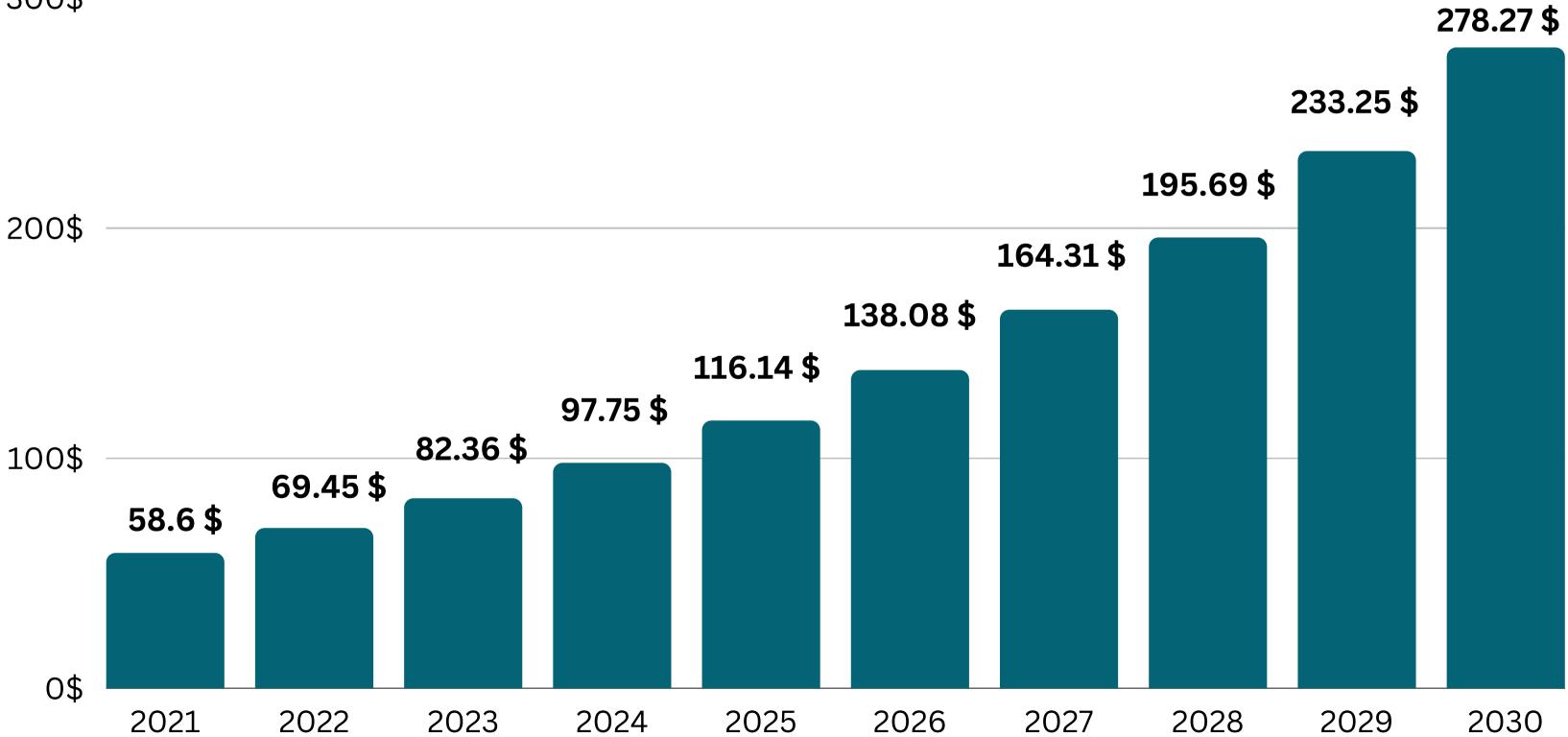


# Very Rapidly Growing Market

The market size for lithium-ion batteries has been growing rapidly in recent years

Lithium-ion Battery World Market Size, 2021 to 2030 (USD Billion)

300\$







~12~

# Endless potential for growth driven by these rapidly expanding sectors

# **NOW DOMINATED BY EASTERN ASIAN SUPPLIERS**





**EV production** 

**IoT (Internet of Things) gadgets** 

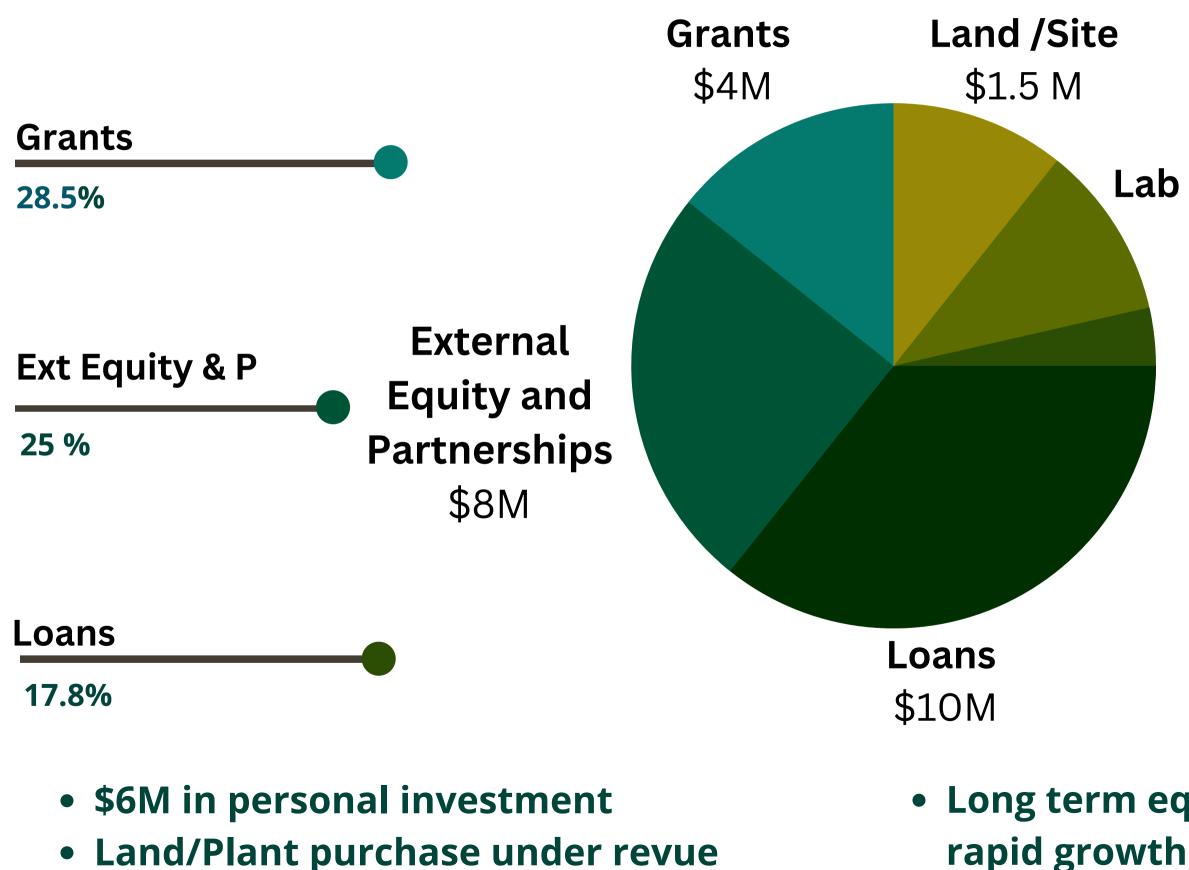
Home, commercial, and industrial reliance on renewable energy storage

**Mobile devices** 

**5G and telecommunications infrastructures** 

**Use of eBikes** 

# First year Sources of Investment US \$ 28M





#### Purchase of site

#### Lab & pilot line \$4 M

**Cash** \$.5 M

Battery R&D lab and pilot line

14.2 %

10.7 %

Cash 3.5 %

 Long term equity program that keeps up with rapid growth

### **Investment By Year** IN \$US

Type of Investment	Year 1	Year 2	Year 3	Year 4	Year 5
<b>Building renovation</b>	\$ 2,500,000	\$ 2,500,000	\$ 1,500,000	\$ 1,500,000	\$ 1,500,000
Production machinery & equipment	\$ 12,000,000	\$ 15,000,000	\$ 20,000,000	\$ 25,000,000	\$ 28,000,000
Furniture, fixtures & equipment	\$ 1,500,000	\$ 500,000	\$ 500,000	\$ 500,000	\$ 500,000
Total Projected Capital Investments	\$ 16,000,000	\$ 18,000,000	\$ 22,000,000	\$ 27,000,000	\$ 30,000,000

**5 year total capital investment** 





#### US \$113,000,000

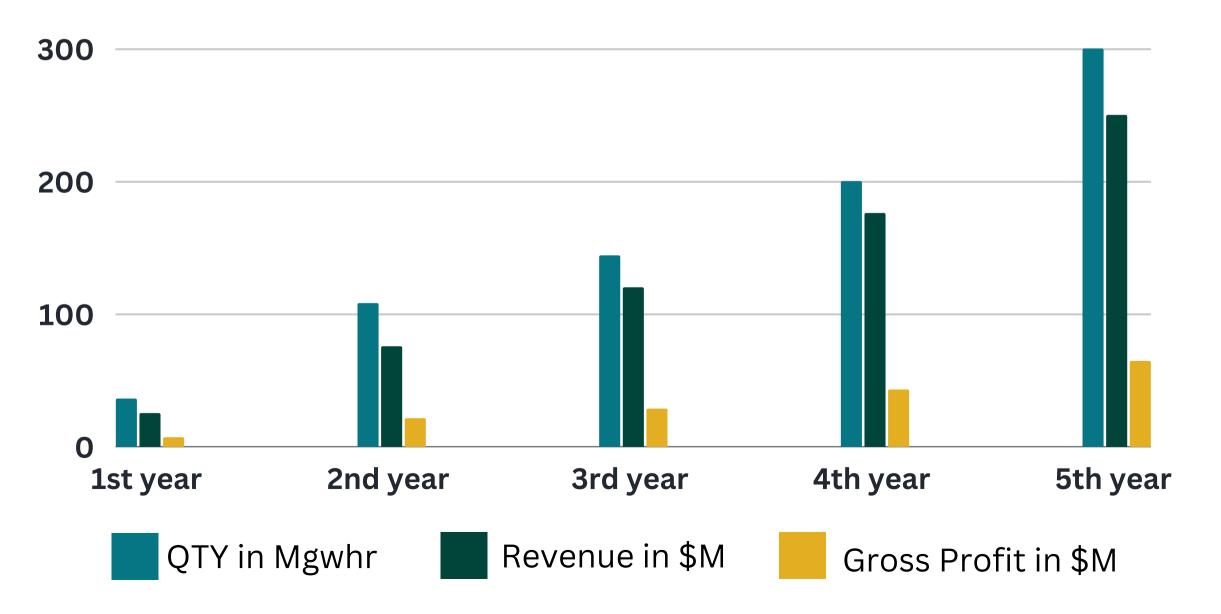
# **Revenue and growth projections**

### **Revenue and growth projections**

Steady revenue growth is projected over the next 5 years, with an

estimated revenue of US \$250 Million/yr by year 5.

30% Average gross profit increase/yr.







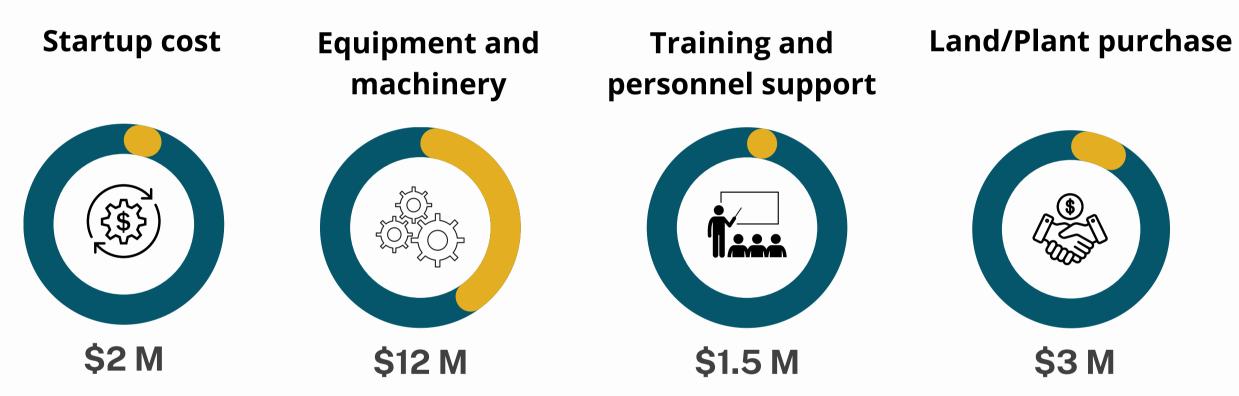
#### **Growth strategy**

• Main growth coming from Eastern Asia supply

replacement.

- Use of automated production lines.
- Continue to invest in new state-of-the-art equipment and expand manufacturing capacity.
- Increased marketing efforts.
- Establish partnerships with key customers and distributors.
- Explore opportunities to enter new markets and industries.
- Focus on R&D and new technologies. ~16~

## **First Year Use of Funds** In US \$ Total 1st year projected investment of about \$28M





Average cost per hour Varies widely with positions From \$5 to over \$40



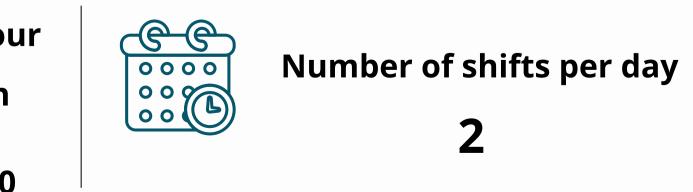


**Operating cost** & 1st year salaries



**Professional expenses** and startegic planning





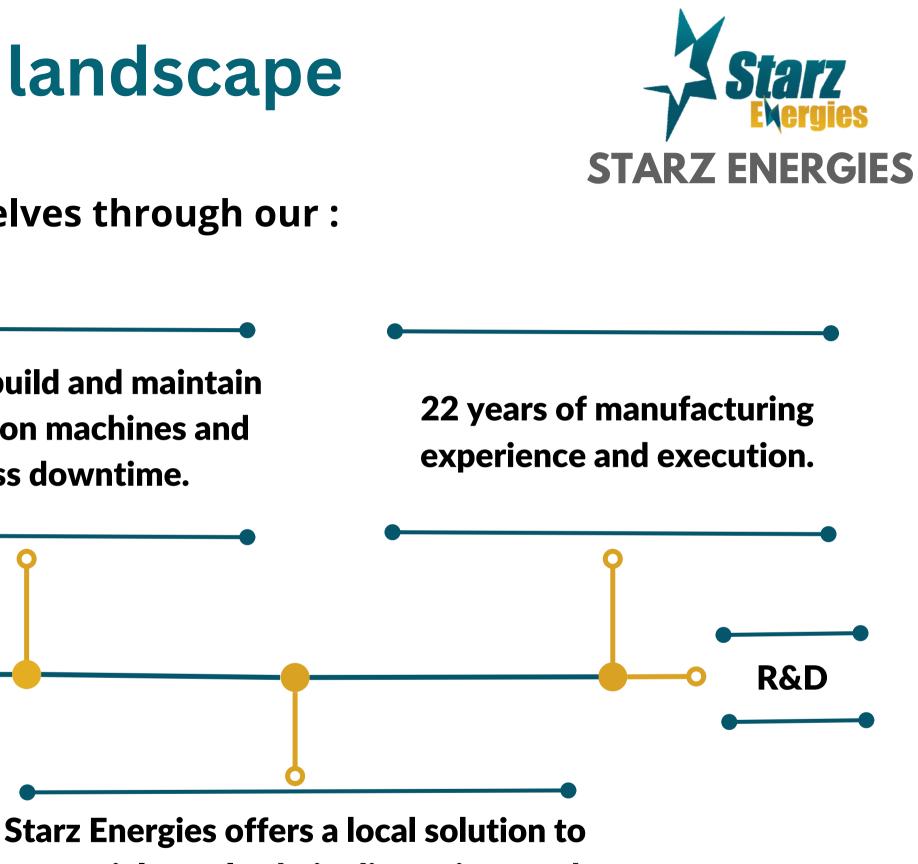
# **Competitive landscape**

We differentiate ourselves through our :

**Vertically integrated production** process with in-house chemical synthesis, assembly, injection molding, final assembly, testing, and packaging.

**Capability to build and maintain** own production machines and molds, less downtime.

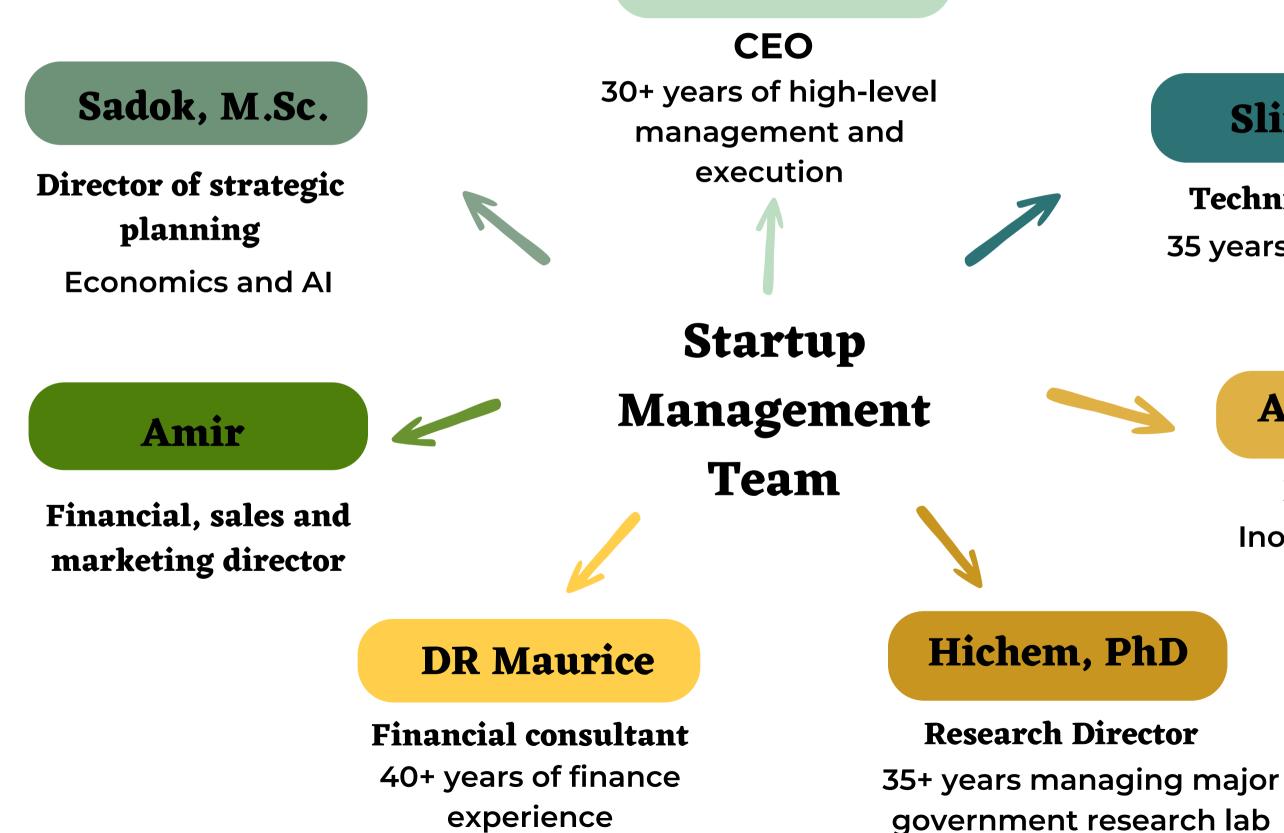




potential supply chain disruptions and price increases caused by Lithium Ion battery transport restrictions.

# **Highly professional Management Team**









#### **Technical director**

35 years of experience metals



#### Adnene, PhD

#### Lead scientist Inorganic chemistry

# **Community commitment**

Partner with local schools for internships, apprenticeships, and co-op programs.

Host job fairs and partner with employment agencies to connect with potential employees.

2

3

**Provide training and education programs for job** positions available at the plant.

**Establish an inclusive workplace culture valuing** all employees' perspectives and experiences.





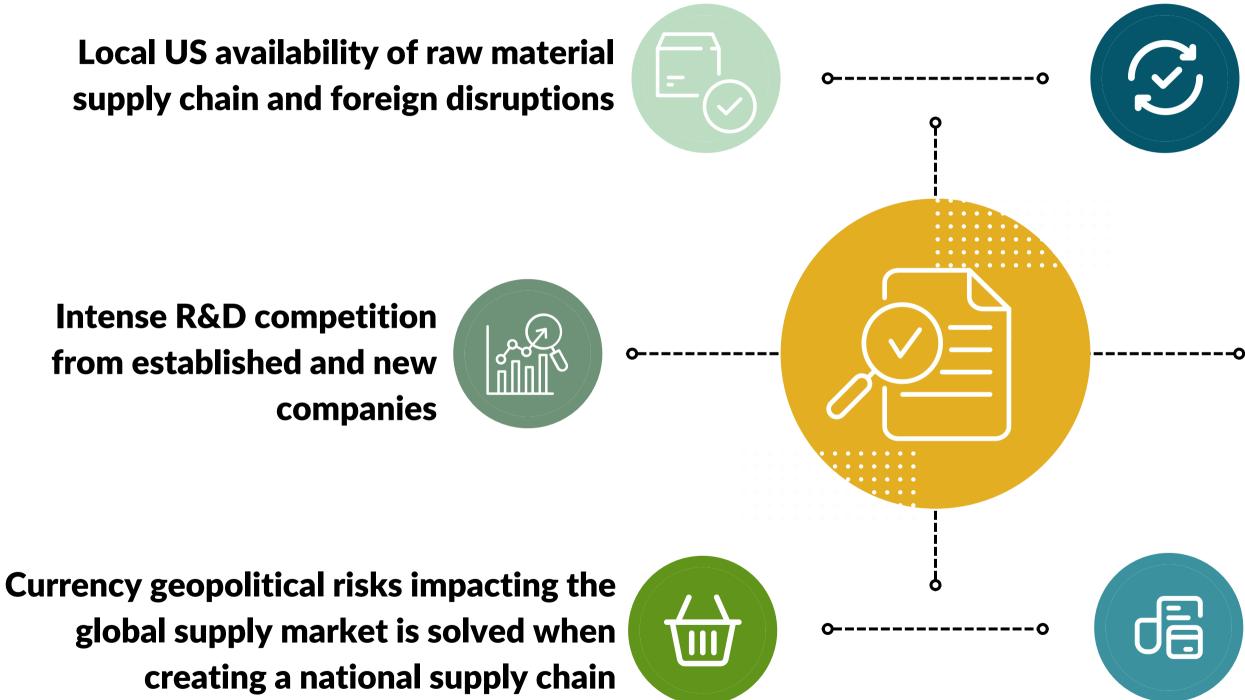


#### **Collaborate with local organizations to** support community development.

**Competitive wages, benefits, and** advancement opportunities.

Implement sustainable and environmentally friendly practices.

# **Risks challenges and solutions**



Experienced management leadership overcomes dependence on key personnel and talent retention in this the ever-expanding business



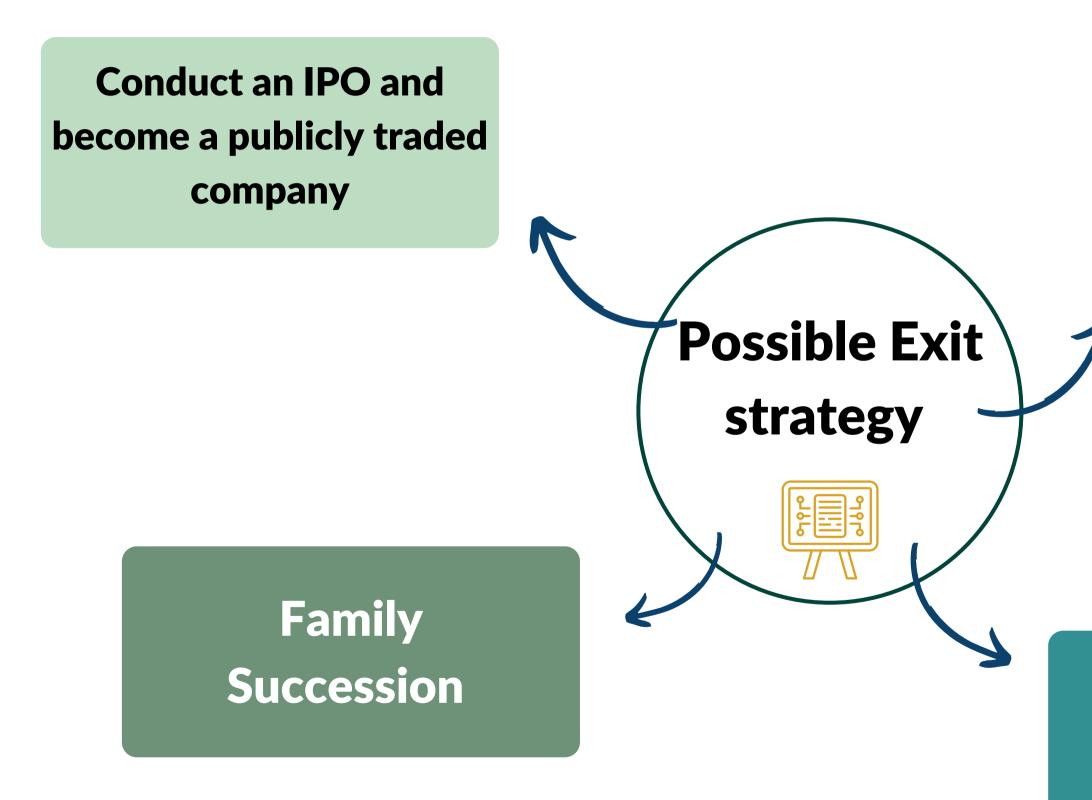
Rapid technological advancements and the need to stay up-to-date



Proven capability to navigate high groth rates

The general industry battery safety and environmental concerns have been addressed and studied

# **Exit strategy and return opportunities on** investment





Merge with another company in the same or related industry

Sell the company to a larger corporation or competitor in the industry

# **Opportunities and conclusion**

#### **Reliance on state-of-the-art** manufacturing technology

**Creation of a solid plan for** rapid growth and scalability. 3 2 4 **Innovative and sustainable** A conservative investment plan technology that will leave its mark to accelerate production and on the energy storage market. expand market reach.

Be a part of a groundbreaking startup that is poised for success. Invest in our company today and reap the rewards of our growth and profitability.





#### **Key risks and challenges have** been identified and addressed

5

#### 0000

# **Starz** Exergies Thank You

### **Contact Us**

#### <u>Tunisia</u>

03 Rue Hedi Chaker, 7000 Bizerte, Tunisia

#### <u>US</u>

564 1st Ave, 20Q New York, NY, 10016



+1 872 302 7403 + 216 53 309 000



contact@starzelectronics.com

000



www.starzelectronics.com www.starzenergies.com