

Nano Plore

Performance Through Carbon Chemistry

The Power to Transform

Enabling Energy Transition & Sustainability

TSX: GRA
OTCQX: NNXPF

Investor Presentation

November 2023

FORWARD-LOOKING STATEMENTS

This presentation contains express or implied forward-looking statements, which are based on current expectations of management. These statements relate to, among other things, our expectations regarding management's plans, objectives, and strategies. All statements other than statements of historical fact could be considered forward-looking, including, but not limited to, any projections of financial information; any statements about historical results that may suggest trends in our business and results of operations; any statements of the plans, strategies and objectives of management for future operations, including the timing, funding and construction of planned manufacturing facilities and sales offices; any statements of expectation or belief regarding future events, potential markets or applications, the sizes of addressable markets, expected technology developments, strategic partnerships and collaborations, or enforceability of our intellectual property rights; any statements about the projected or expected economic or other benefits of our products compared to petroleum-derived equivalents, future sales and any statements of assumptions underlying any of the foregoing.

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NANOXPLORE AT A GLANCE

Ticker

TSX: GRA

Market Cap

\$388 million
Nov. 07

Cash

\$29 million

Total Debt

\$7 million

Total Liquidity

\$40 million

TTM* Revenue

\$126 million

Headquarters

Montreal

**Advanced material
company founded in**

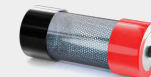


2011

ESG vision



X
VoltaXplore

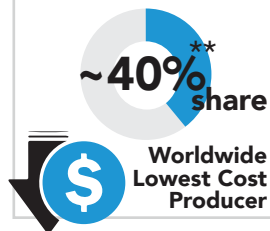


**Graphene-enhanced
Li-ion batteries
manufacturer**

"Blue chip customers"

- Paccar
- Volvo
- Ford
- Daimler
- Morgan Olson
- Caterpillar
- GE
- Solmax
- Itron
- Gerdau

**Largest Graphene
Producer**



10 production plants



~500 employees



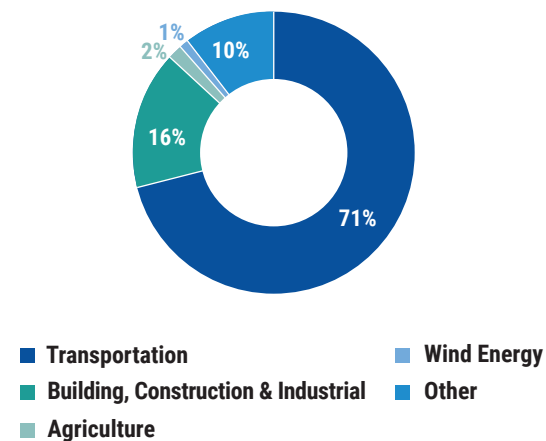
**We pride ourselves on
the quality &
consistency of our
branded powder**



**Strong IP portfolio
& Know-how through
years of
R&D development**

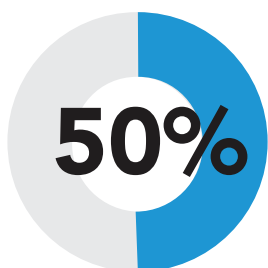


END MARKET SECTORS



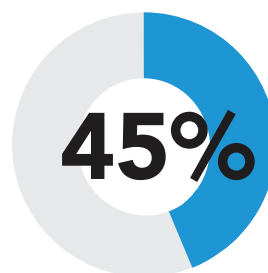
DIVERSITY, EQUITY & INCLUSION

Board of Directors

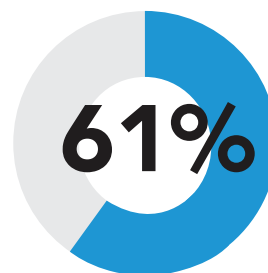


**Multi-Cultural
& Women**

Corporate Workforce

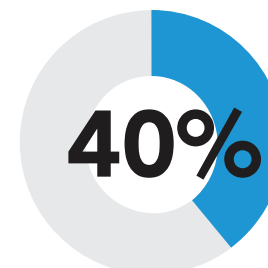


Women



**Multi-Cultural
Background**

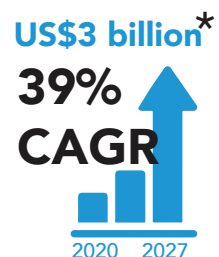
Management Team



**Multi-Cultural
& Women**



THE POWER OF GRAPHENE



Graphene
Nobel Prize

Since its recent discovery in 2004, graphene continues to amaze scientists and researchers of the superlative properties the material exhibits.

Hailed as a “**wonder material**”, graphene is lauded for its durability, sustainability and potential applications that will be part of in the future.



HIGH THERMAL CONDUCTIVITY

Conducts heat & electricity better than copper



HIGH ELECTRICAL CONDUCTIVITY



THIN & LIGHTWEIGHT

Million times thinner
than a piece of paper
& lighter than feather



200X STRONGER THAN STEEL

Due to the strong
carbon-carbon bonds

OUR SOLUTION

We leverage our **patented technology**



GRAPHENEBLACK™
A Product of NanoXplore

to provide **sustainable** alternative

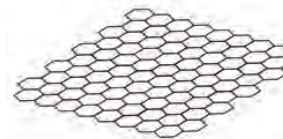


Graphite

Natural flake graphite
(>100,000 layers of carbon)

EXFOLIATION

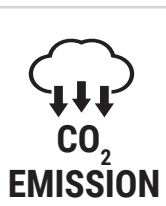
via a mechanical-liquid
proprietary process



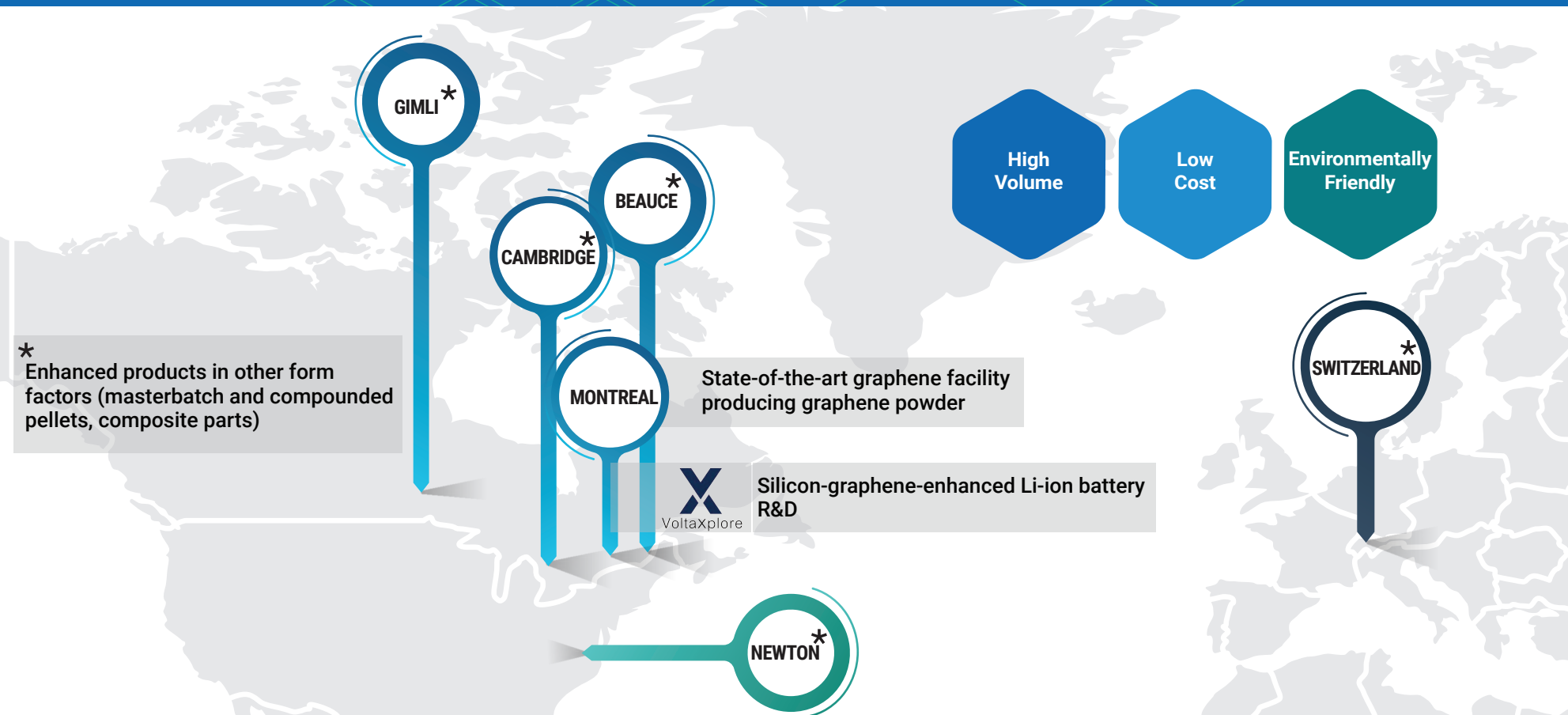
Graphene

6-10 atomic layers
in thickness with 96-98% purity

CLEAN TECHNOLOGY



MANUFACTURING FOOTPRINT & PROCESS



11 facilities in Canada, US and Switzerland

- Production of very consistent and high-quality graphene in volume in Montreal
- Capable of producing different grades of GrapheneBlack™
- Fully automated facility managed by Programmable Logic Controllers, ensuring product consistency and highest level of quality assurance
- Production of silicon-graphene additives and high-performance cylindrical lithium-ion batteries

POWERING 2 KEY GLOBAL MEGATRENDS

Our vision is to create a better tomorrow by providing innovative, sustainable products and solutions across multiple industries and applications



ENERGY TRANSITION



GRAPHENEBLACK™
A Product of NanoXPlore



↓~80%

**Carbon footprint
vs. OTHER SOLUTIONS**

SUSTAINABILITY

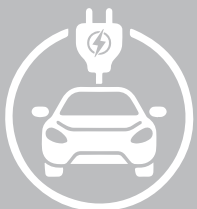


nanoXPlore

TSX: GRA - OTCQX: NNXPF

LONG-TERM DRIVERS

**EV
Adoption**



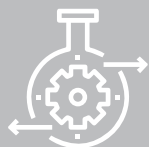
Sustainability



**Capacity
Expansion**



**High Return
on R&D spend**



**Market Share
Growth**



FQ1 2024 CORPORATE HIGHLIGHTS

Quarterly Key Developments



Transportation

The Corporation has been awarded 3 programs from 2 existing clients



Drilling Fluid

Large global drilling fluid company saw enhanced lubricity which helps lower the coefficient of friction leading to an increase in drilling speed and lower down time



Foams

Actively working on several foam chemistries mainly to improve insulating property and to achieve better flame retardancy performance



VoltaXplore

VoltaXplore has agreed on commercial terms for the supply of silicon-graphene-enhanced Li-ion batteries (1GWh)

TOTAL REVENUES

\$29M up 6%

DRIVERS:

- Positive product mix including graphene-enhanced products
- Higher volume
- Positive FX impact
- Price increases

Partially offset by lower tooling revenues

ADJUSTED EBITDA*

\$0.2M up \$1.8M

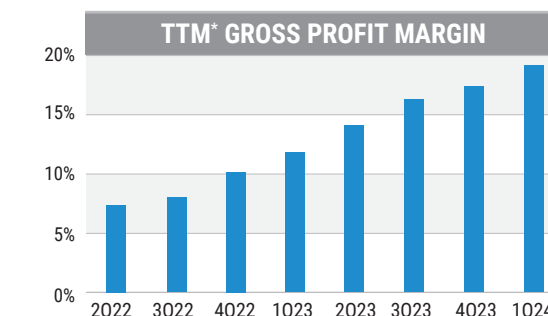
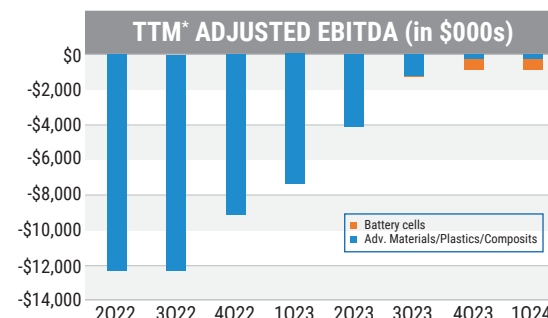
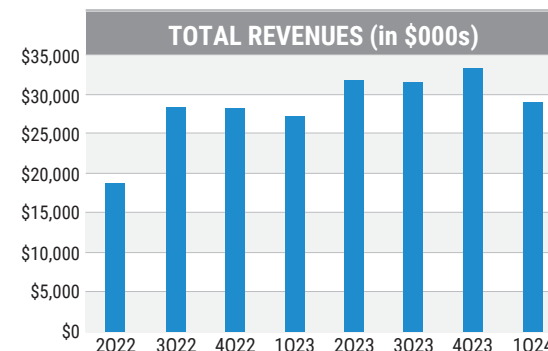
DRIVERS:

Gross margin expansion driven by:

- Higher revenues
- Higher margins product mix
- Improved productivity
- Cost control
- Advanced materials, plastics & composites segment

2024 REVENUE GUIDANCE

\$130M up \$6M



HIGHLIGHTS OF RECENT DEVELOPMENTS

Foundation
2011



2017
CEBO Acquisition



Martinrea Strategic
Investment 2018-2020



2018
Sigma - RMC
Acquisition



Newton Plant
Acquisition
2020



2021 DECEMBER Canuck Acquisition



JUNE Agreement with Techmer PM (U.S.) to supply GrapheneBlack™

JUNE Multi-year supply and distribution agreement with GerdaU

JULY Graduation to the Toronto Stock Exchange

AUGUST EPA Approval

APRIL Established VoltaXplore 50/50 joint venture with Martinrea



MAY Solmax and NanoXplore announce blanket purchase order



MAY NanoXplore & Molding Products announce long-term supply agreement

2022



XGSciences™
AUGUST NanoXplore acquires assets of XG Sciences



2023



MARCH NanoXplore provides update for its battery material initiative and VoltaXplore's 2GWh battery gigafactory

MARCH NanoXplore unveils strong performance for its newly patented SiG™ anode additive solution

MARCH NanoXplore purchase of Martinrea's stake in VoltaXplore and extend graphene commercial agreement with Martinrea

THE POTENTIAL EVOLUTION AS A LEADING GRAPHENE PRODUCER



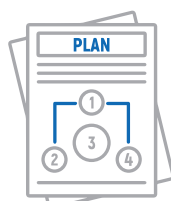
THE SET-UP PHASE 1

2017-2022

DE-RISKED & POSITIONED FOR SUCCESS



- ✓ Strengthened our balance sheet
- ✓ Positioned our company as a leading industrial scale graphene producer
- ✓ Successful at lowering our cost per unit to improve adoption



OUR PLAN PHASE 2

2023-2026

CAPEX EXECUTION



- \$120M graphene, battery and battery materials plant
- \$50M GrapheneBlack SMC™ (Sheet Molding Compound) plant
- Total investments of \$170M financed with cash on hand, grants, debt and equity (only if needed)
 - The company will focus to minimize or eliminate equity financing



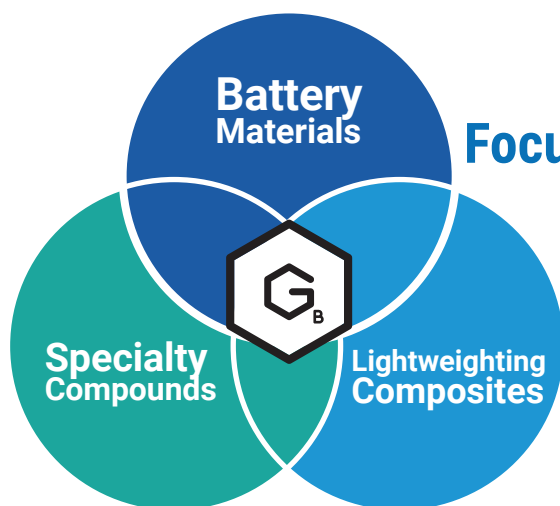
OUR VISION PHASE 3

2026+

GROWTH & POSITIVE YIELDING RESULTS

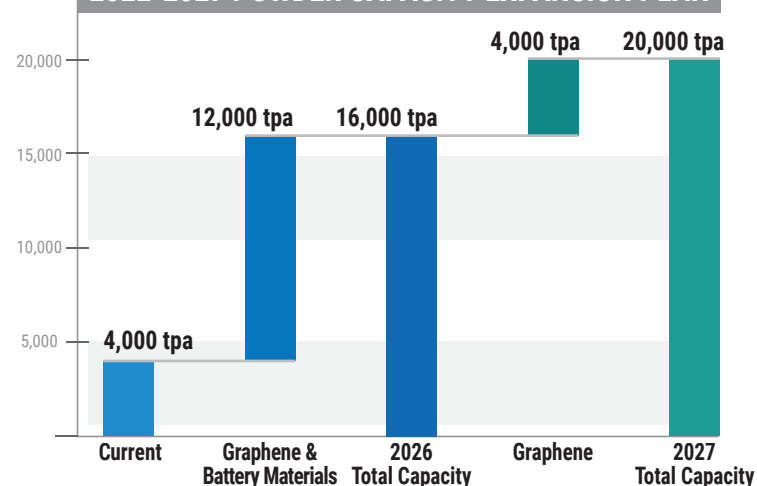


- Benefit from our investments
- Focusing on sustainability and energy transition
- Bring new applications to graphene
- Extending our battery materials initiatives



Focus Markets

2022-2027 POWDER CAPACITY EXPANSION PLAN



BATTERY MATERIALS - EXECUTIVE SUMMARY



- EV Adoption
- Energy Transition/Sustainability
- Inflation Reduction Act
- IoT Adoption/Electronic Devices

KEY DRIVERS



- Anode Active Material
- Anode Performance Additive (Gn + Si)
- Cathode Conductive Additive

TARGETED PRODUCTS



1,000^{*}GWh
by 2031

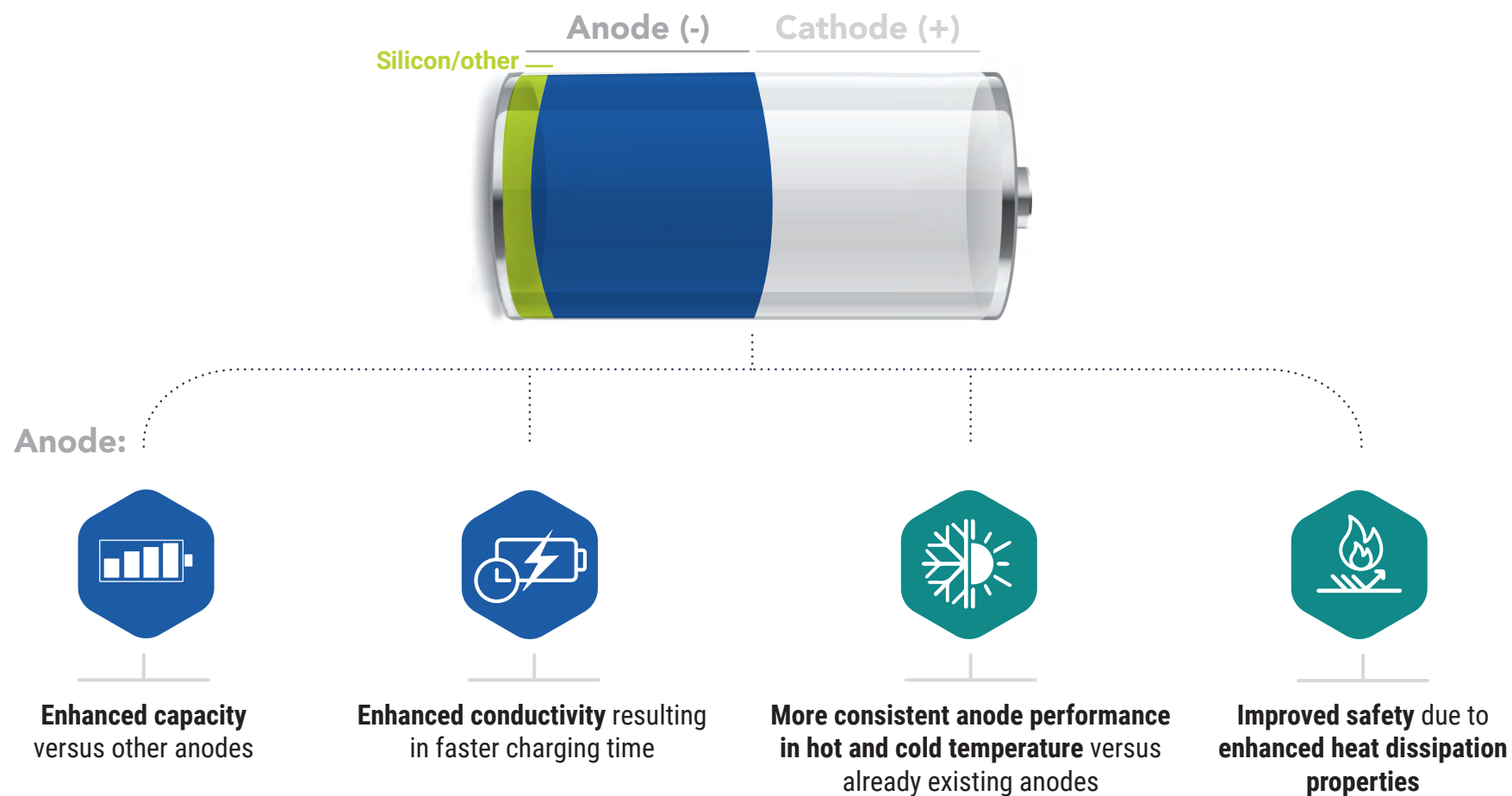
Capacity needed
of anode active material

1,000ktpa

MARKET SIZE

NORTH AMERICA
RAMPING UP CAPACITY

BATTERY MATERIALS - NANOXPLORE AND VOLTAXPLORE VALUE PROPOSITION



SiG™ ANODE ADDITIVE SOLUTION

- Patent-approved Silicon/Graphene anode additive solution under the trademark SiG™
- Our versatile SiG™ solution covers a range of different chemistries and extend to all cylindrical cell form factors
- GrapheneBlack™ acts as a coating agent around Silicon alleviating swelling and dislodgment of particles making the cell safer and more reliable



Driving range

Increase vehicle range by

8-10%

or

40 kilometers

for a typical Electric Vehicle



Charging Time

Reduce charging speed to

10 - 13 min

due to high electrical conductivity
without compromising
battery life



Safety

10% cooler

than typical Li-ion batteries
reducing risk of thermal runaway

These incredible features can facilitate the acceleration of EV mass adoption and help improve vehicle performance and safety



STRONG PERFORMANCE
OF THE **NEWLY PATENTED**
SiG™ ANODE ADDITIVE SOLUTION
IN BATTERY CELLS

BATTERY AND BATTERY MATERIALS - CAPEX & RETURNS

ASSETS:

- **16,000 tpa** graphene, battery and battery materials facility

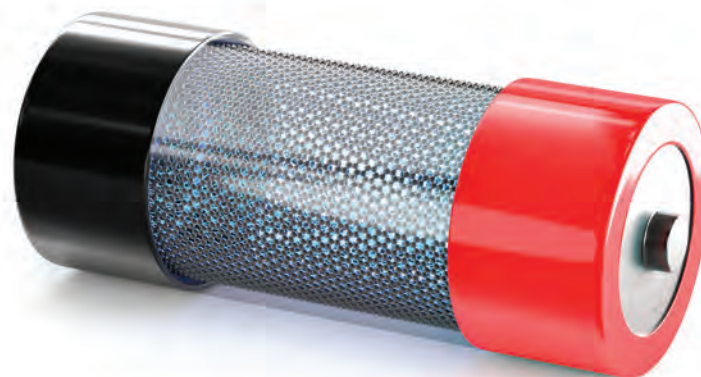
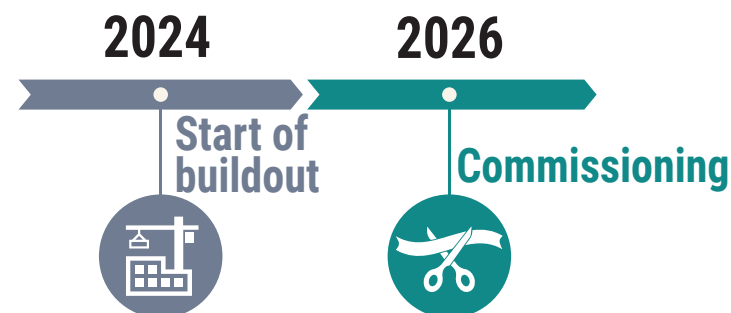
CAPEX: \$120 million

POTENTIAL ANNUAL REVENUE: \$140 million
(excluding VoltaXplore)

IRR: 25%+

REASONS TO INVEST/STRATEGY:

- Large and growing addressable market
- Strong fundamentals with undersupplied market
- Attractive returns
- Flexible manufacturing process



LIGHTWEIGHTING COMPOSITES - EXECUTIVE SUMMARY



- **EV Adoption**
- **Sustainability**
- **Transportation industry CO₂ Reduction Regulations**

SMC KEY DRIVERS

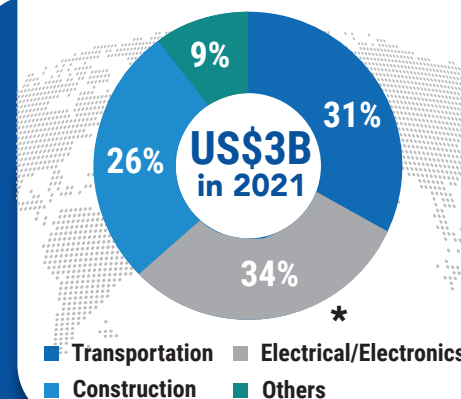


Transportation
External parts of vehicles
Battery enclosures



Construction
Commercial and
Residential Applications

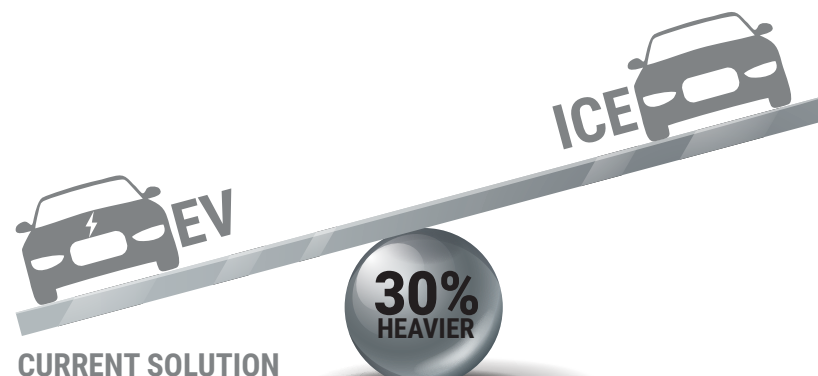
TARGETED VERTICALS



SHEET MOLDING COMPOUND GLOBAL MARKET SIZE

LIGHTWEIGHTING COMPOSITES - NANOXPLORE VALUE PROPOSITION

Stronger, Lighter, Higher Quality Parts Using



LIGHTWEIGHTING IS A
PRIORITY FOR OEMs

up to
25%



Lightweighting
Potential



Sustainability &
Reduced
Emissions

Lower
Painting Cost



LIGHTWEIGHTING COMPOSITES - CAPEX & RETURNS

ASSET: 10M lbs SMC facility

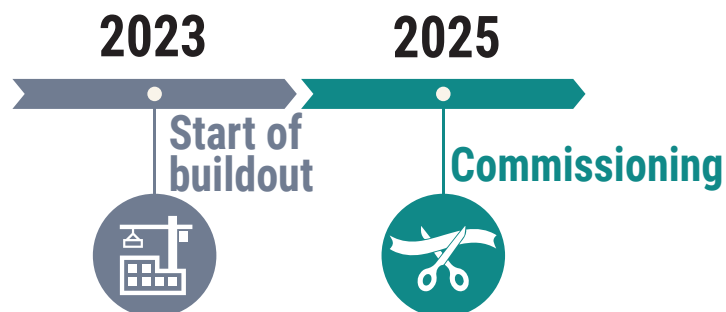
CAPEX: \$50 million

POTENTIAL ANNUAL REVENUE: \$80 million

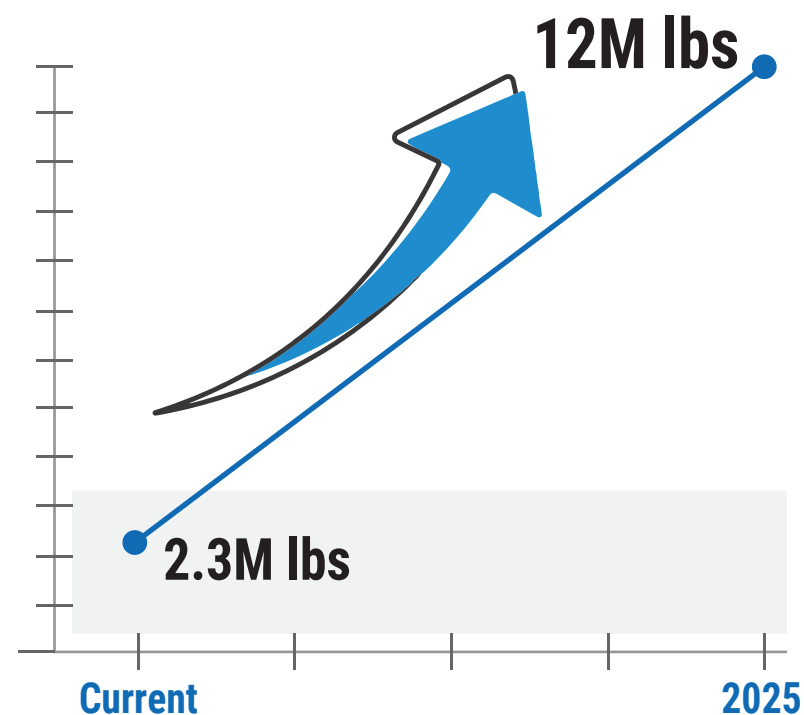
IRR: 25%+

REASONS TO INVEST/STRATEGY:

- Large and growing addressable market
- Attractive EV adoption market
- Undersupplied market
- Further capacity expansion potential (organic and/or inorganic)



SMC Nameplate Capacity



VOLTAXPLORE AT A GLANCE

nanoXplore
TSX: GRA

100%

X
VoltaXplore

VoltaXplore, a wholly-owned subsidiary of NanoXplore, is a **Canadian manufacturer of proprietary designed and graphene-enhanced cylindrical lithium-ion batteries** supporting the energy transition across several industries

2024



Start of
buildout

2026



Commissioning



Technology has
been validated



VoltaXplore
commissioned a 1 MWh
demonstration battery
facility in March 2022



Customer discussions
are progressing well



Proposed 2 GWh
21700 battery plant










VoltaXplore benefits
from NanoXplore's
proprietary graphene
anode technology

nanoXplore

TSX: GRA - OTCQX: NNXPF

ADVANTAGES OF GRAPHENE-ENHANCED BATTERY CELLS

18650 Battery Cell KPIs*		Regular Anode with NMC Cathode	Graphene Enhanced Anode with NMC Cathode
	Energy Density Increase	X	Up to 10% Improved range performance for the EV market
	Cycle Life at Normal Charge Rate (@80% capacity retention)	Up to 1500	Up to 2000 Energy stability and extended life for battery packs even at lower temperatures
	Cycle Life at High Charge Rates (@80% capacity retention)	Up to 300	Up to 450 Improved charging time without compromising battery performance
	Internal Resistance (mΩ)	<30	<28 Fast charging improvement with reduced safety concerns
	Maximum Weight of Battery Cell	48g	45g Lower vehicle weight and improved energy efficiency
	Temperature at High Charge Rate	Under 30°C	Under 26°C Reduced load on BMS and improved cooling properties on pack level
	Anode Electrode Expansion Rate (@100% state of charge)	Up to 60%	Up to 40% Reduced risk of thermal runaway with graphene / silicon technology

BENCHMARKING LITHIUM-ION BATTERIES

KPIs*

COMPETITOR 1

COMPETITOR 2



KPIs*	COMPETITOR 1	COMPETITOR 2	VoltaXplore
Capacity (mAh)	2500-2600	2500-2600	2500-2600
Energy Density (Wh/Kg)	204	196	214
Cycle Life (@80%)	300 (@ 4A Charge Rate)	250 (@ 4A Charge Rate)	450 (@ 4A Charge Rate)
Internal Resistance (mΩ)	<30	<20	27.5
Mass (g)	45.8	47.8	43.7
Temperature (°C)	Under 30° (@ 4A Charge Rate)	Under 30° (@ 4A Charge Rate)	Under 26° (@ 4A Charge Rate)
VoltaXplore's Graphene-Enhanced Batteries Offer Clear Performance Advantages in Terms of Energy Density, Temperature and Cycle Life Under a Lower Weight			

LEADERSHIP TEAM



Dr. Soroush Nazarpour, Ph.D.
Founder &
Chief Executive Officer

Ph.D in Nanotechnology from the University of Barcelona;

Serial entrepreneur and the founder of NanoXplore President & CEO since 2011 and serves as a director on the board of directors;

Acknowledged expert in the field of graphene and co-author of "Graphene Technology From Laboratory to Fabrication" published by Wiley & Co in 2016;

CEO of VoltaXplore, an electric vehicle battery manufacturing company.



Rocco Marinaccio
Chief Operating Officer

More than 20 years of experience within operations;

Vice President of Flexible Manufacturing Group at Martinrea;

Occupied multiple senior positions at Martinrea International Inc. including Material Production and Logistics Manager, General Manager and Director of Modules;

Formerly responsible for over-seeing the construction of key Martinrea facilities located in Ramos Arizpe, Mexico and Riverside, Missouri as well as the relocation of two facilities in Canada.



Pedro Azevedo
Chief Financial Officer

Extensive experience in manufacturing and operations, as well as M&A;

Former CFO of Tarkett Sports, a division of publicly traded global manufacturing company Tarkett S.A.;

Occupied a variety of positions starting from a cost accountant to different corporate controller functions.



Nima Moghimi
Global Director of R&D

Ph.D. in Mechanical Engineering from the University of Victoria;

Master's in Nanotechnology from the University of Barcelona;

Materials and battery scientist; +8 yrs of product development leadership experience in graphene and battery materials;

Extensive materials regulation experience: TSCA, REACH, CEPA, FDA;

Government grants: Managed several program IRAP, SDTC, TechnoClimat;

Inventor of 6 Patents in graphene and batteries;

Author of >30 peer reviewed scientific articles.



Vincent Livoti
Global VP Sales & Marketing

Over 20 years of experience in sales and marketing for specialty chemicals & advanced materials;

Former Vice President of Sales and Business Development at Daikin America (Chemical Division);

Former Head of Specialty Ingredients / Microbial Control at Lonza Inc.;

Former Director of Business Development at BASF;

Occupied multiple senior positions at Ciba Specialty Chemicals including Director of Business Development, Global Marketing Manager, and Sr. Global Account Manager.



Darrin Hotts
VP Sales & Business Development Composites

30 years of experience in the automotive industry with wide expertise in manufacturing;

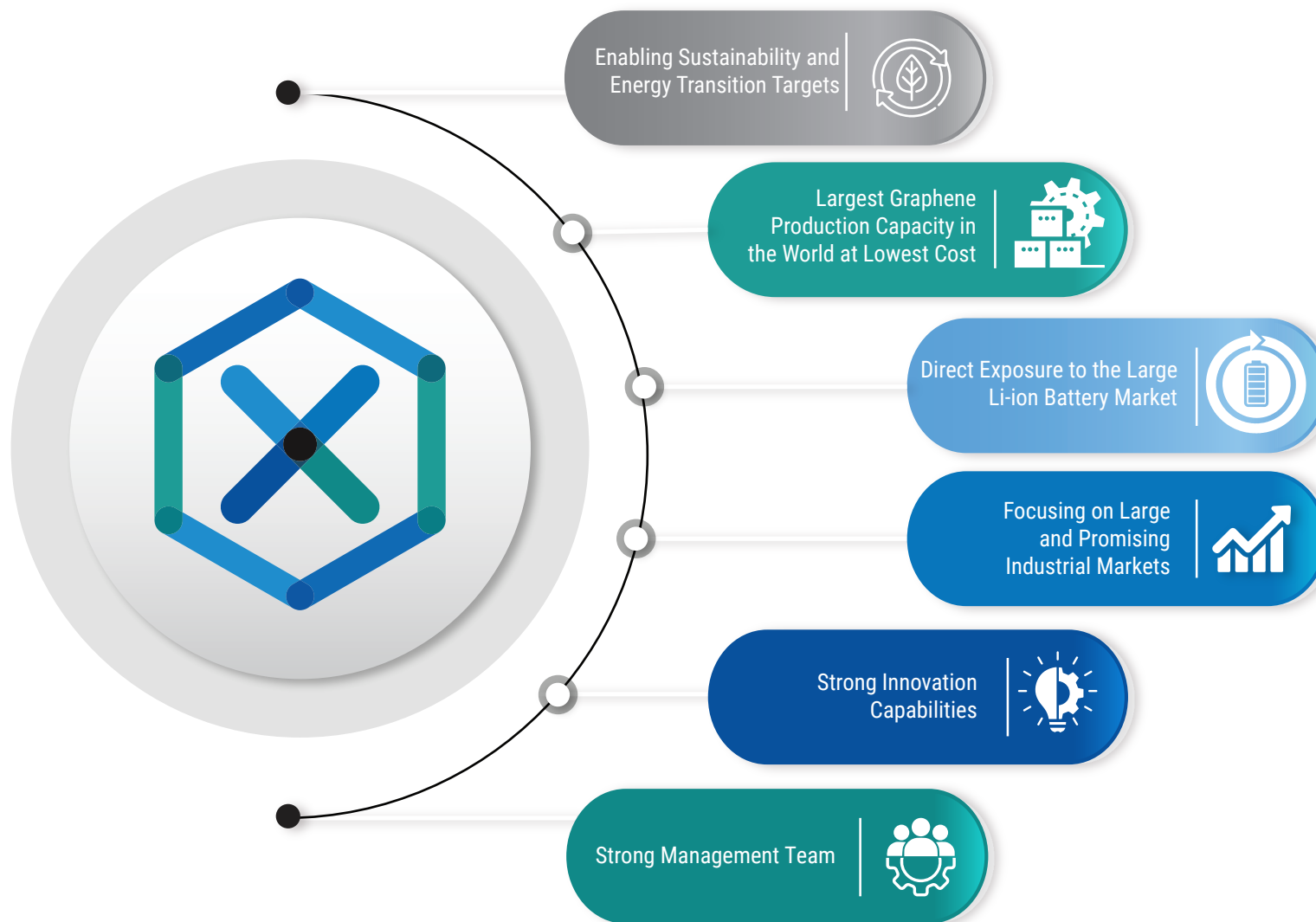
Former Executive Director at Martinrea;

Former Senior Account Manager at Nachi Robotic Systems Inc. responsible for the tier 1's and Ford Motor Company;

Former Senior Account Manager at Mitchell Plastics responsible for commercial with Chrysler/Fiat;

Former Business Development Manager at Benteler working with Chrysler & Nissan to develop lightweight opportunities.

KEY TAKEAWAYS





Performance Through Carbon Chemistry

4500 Thimens Blvd, Montreal, QC H4R 2P2

www.nanoxplore.ca

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