

Nano Plore

Performance Through Carbon Chemistry

The Power to Transform

Enabling Energy Transition & Sustainability

TSX: GRA
OTCQX: NNXPF

Investor Presentation

April 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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Although we believe that the expectations reflected in the forward-looking statements are reasonable, we cannot guarantee that the events and circumstances reflected in the forward-looking statements will be achieved or occur and the timing of events and circumstances and actual results could differ materially from those projected in the forward-looking statements. Accordingly, you should not place undue reliance on these forward-looking statements. All such statements speak only as of the date made, and we undertake no obligation to update or revise publicly any forward-looking statements, whether as a result of new information, future events or otherwise.

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NANOXPLORE AT A GLANCE

Ticker

TSX: GRA

Market Cap

\$550 million
March 31

Cash

\$39 million

Total Debt

\$10 million

Total Liquidity

\$49 million

TTM* Revenue

\$116 million

Headquarters

Montreal

**Advanced material
company founded in**



2011

ESG vision



X
VoltaXplore

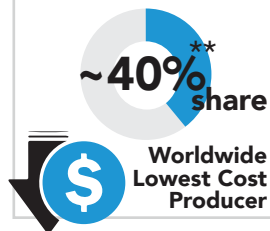


**Graphene-enhanced
Li-ion batteries
manufacturer**

"Blue chip customers"

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

**Largest Graphene
Producer**



10 production plants



~500 employees



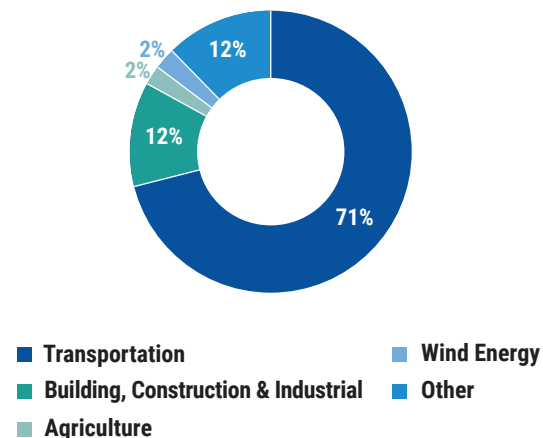
**We pride ourselves on
the quality &
consistency of our
branded powder**



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

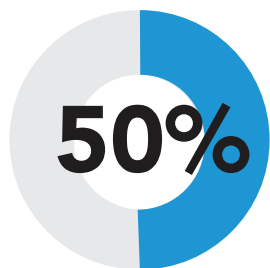


END MARKET SECTORS



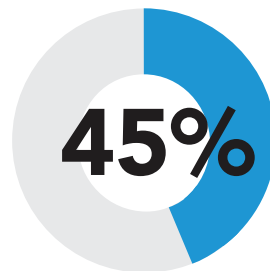
DIVERSITY, EQUITY & INCLUSION

Board of Directors

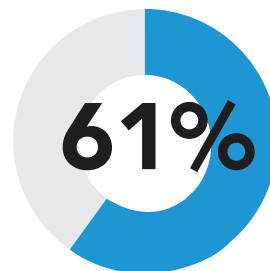


**Multi-Cultural
& Women**

Corporate Workforce

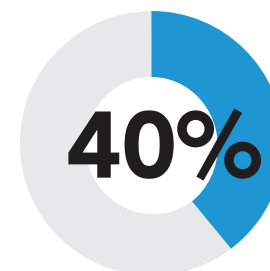


Women



**Multi-Cultural
Background**

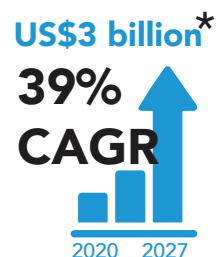
Management Team



**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

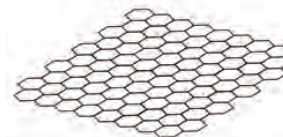


Graphite

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

EXFOLIATION

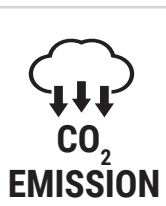
via a mechanical-liquid
proprietary process



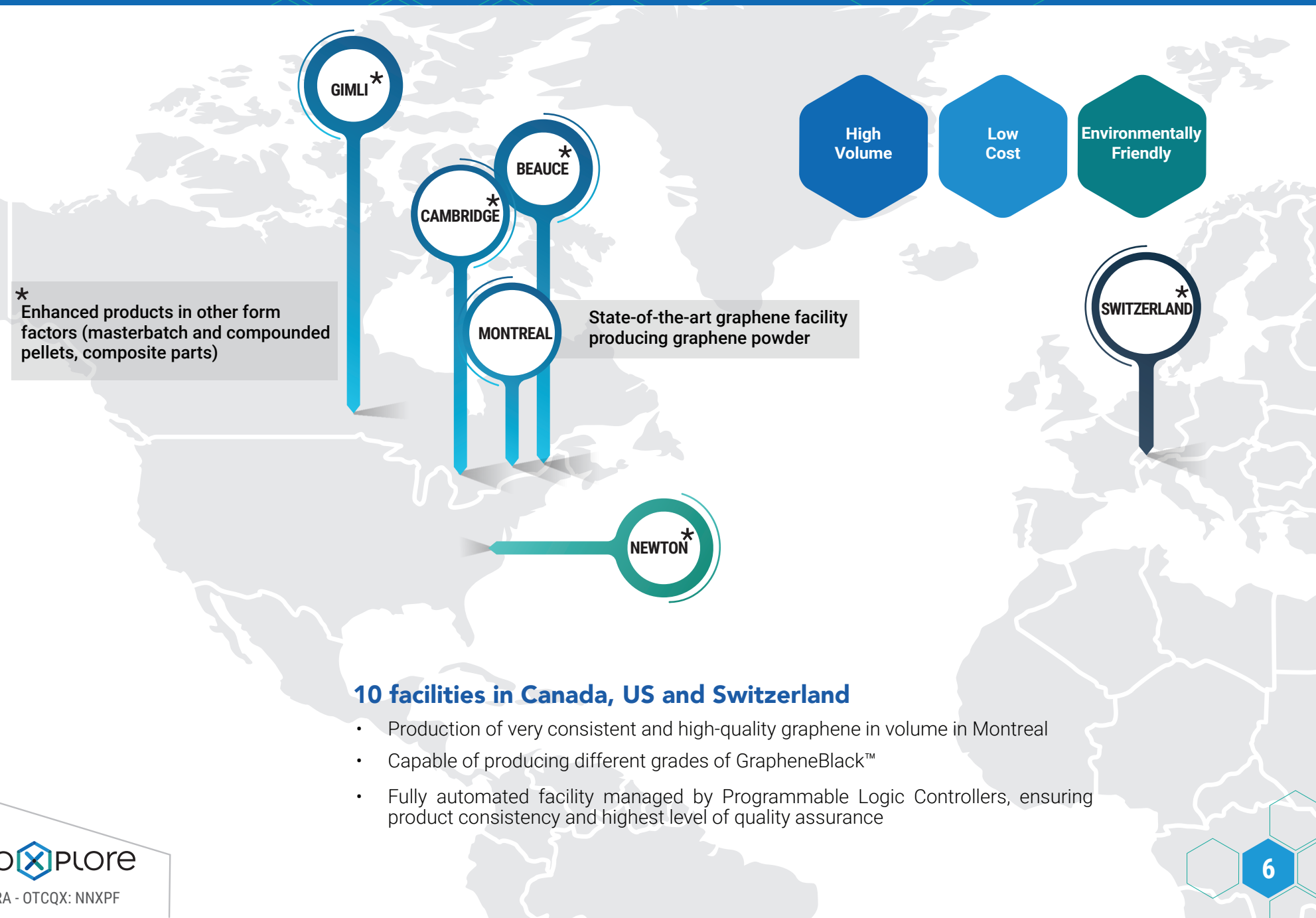
Graphene

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

CLEAN TECHNOLOGY



MANUFACTURING FOOTPRINT & PROCESS



10 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

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

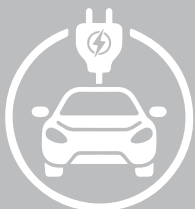


nanoXPlore

TSX: GRA - OTCQX: NNXPF

LONG-TERM DRIVERS

**EV
Adoption**



Sustainability



**Capacity
Expansion**



**High Return
on R&D spend**



**Market Share
Growth**



FQ2 2023 CORPORATE HIGHLIGHTS

Quarterly Key Developments



Transportation

- Large commercial OEM approved graphene in all existing and potential future programs
- Large passenger OEM approved graphene enhanced plastic for exterior applications



Drilling Fluid

Large specialized drilling fluid company received strong results, in late-stage trial, which speeds up drilling process by mitigating fluid loss



Insulation Foam

Large global chemical company, in late-stage trial, shows strong performance and, with a combination of cost, make graphene attractive



Concrete

Major concrete manufacturer saw 20% improvement in compressive strength



Recycled Plastics

Began commercialization with sustainable packaging company in Latin America

TOTAL REVENUES

\$31.7M up 69%

DRIVERS:

- Positive product mix including graphene-enhanced products
- Higher volume
- Canuck acquisition in December 2021
- Positive FX impact
- Price increases

Partially offset by lower tooling revenues

ADJUSTED EBITDA

\$0.1M up \$3.3M

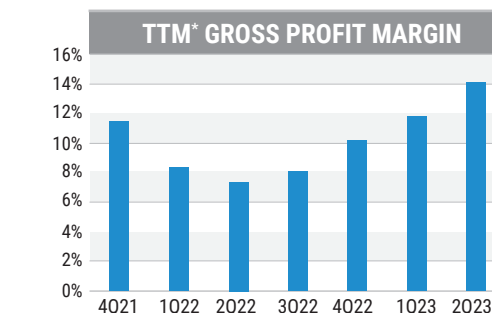
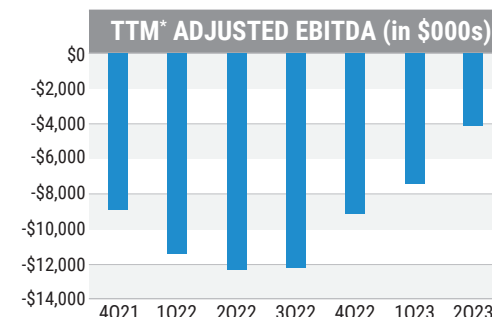
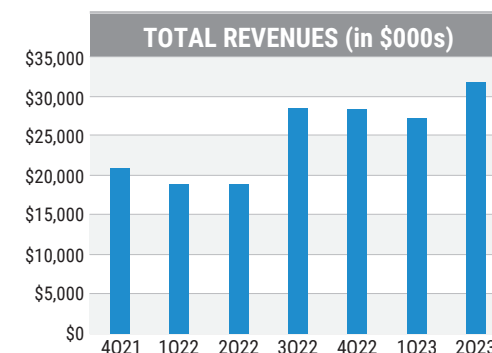
2nd Positive Adjusted EBITDA in 3 quarters

DRIVERS:

- Gross margin expansion driven by:
 - Higher revenues
 - Higher margins product mix
 - Improved productivity
 - Cost control
- Partially offset by higher administrative expenses

2023 REVENUE GUIDANCE RAISED

\$115-120M up 22-27% from \$110M previously



HIGHLIGHTS OF RECENT DEVELOPMENTS

Foundation
2011



2017
CEBO Acquisition



Martinrea Strategic
Investment 2018-2020



2018
Sigma - RMC
Acquisition



Newton Plant
Acquisition
2020



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

2021 DECEMBER Canuck Acquisition



MAY Solmax and NanoXplore announce blanket purchase order



MAY NanoXplore & Molding Products announce long-term supply agreement

2022



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

EXAMPLES OF COMMERCIAL SUCCESS

✓ **LARGE GLOBAL OEM**
Graphene-enhanced plastics

✓ **LARGE COMMERCIAL OEM**
Graphene-enhanced composite parts

✓ **MID-SIZED LATIN AMERICAN PACKAGING COMPANY**
Graphene-enhanced plastics

✓ **MULTIPLE GLOBAL AGRICULTURAL FLOORING USERS**
Graphene-enhanced plastics

✓ **MID-SIZED NORTH AMERICAN AGRICULTURAL COMPANY**
Graphene-enhanced composite parts

✓ **MID-SIZED NORTH AMERICAN CONSTRUCTION COMPANY**
Graphene-enhanced composite parts

✓ **LARGE ASIAN ELECTRONIC COMPANY**
Graphene powder

✓ **MID-SIZED NORTH AMERICAN PIPE COMPANY**
Graphene-enhanced plastics

✓ **MID-SIZED NORTH AMERICAN HOUSING COMPANY**
Graphene-enhanced plastics

✓ **MID-SIZED NORTH AMERICAN CONSTRUCTION COMPANY**
Graphene-enhanced plastics

✓ **MID-SIZED NORTH AMERICAN PACKAGING COMPANY**
Graphene-enhanced plastics

THE POTENTIAL EVOLUTION AS A LEADING GRAPHENE PRODUCER



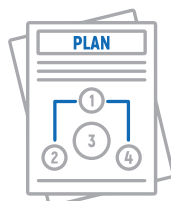
THE SET-UP PHASE 1

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 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



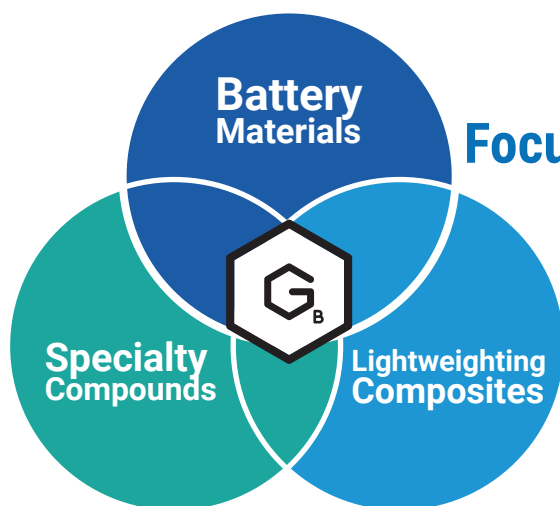
OUR VISION PHASE 3

2026+

GROWTH & POSITIVE YIELDING RESULTS

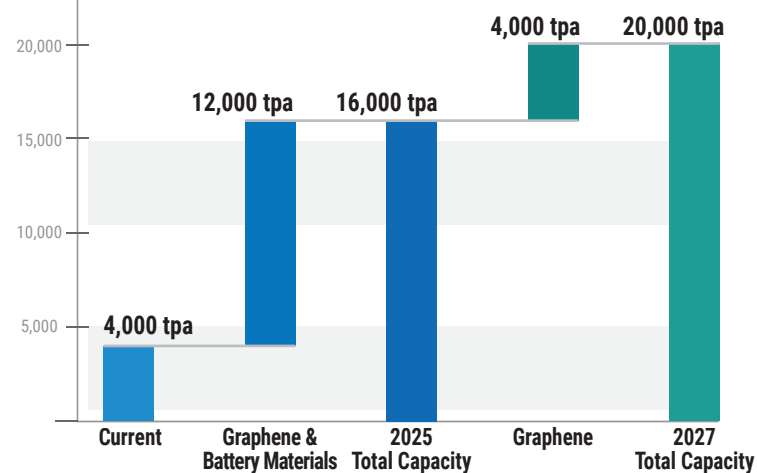


- Benefit from our investments
- Focusing on sustainability and energy transition
- Bring new applications to graphene
- Extending our battery materials initiatives



Focus Markets

2022-2027 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

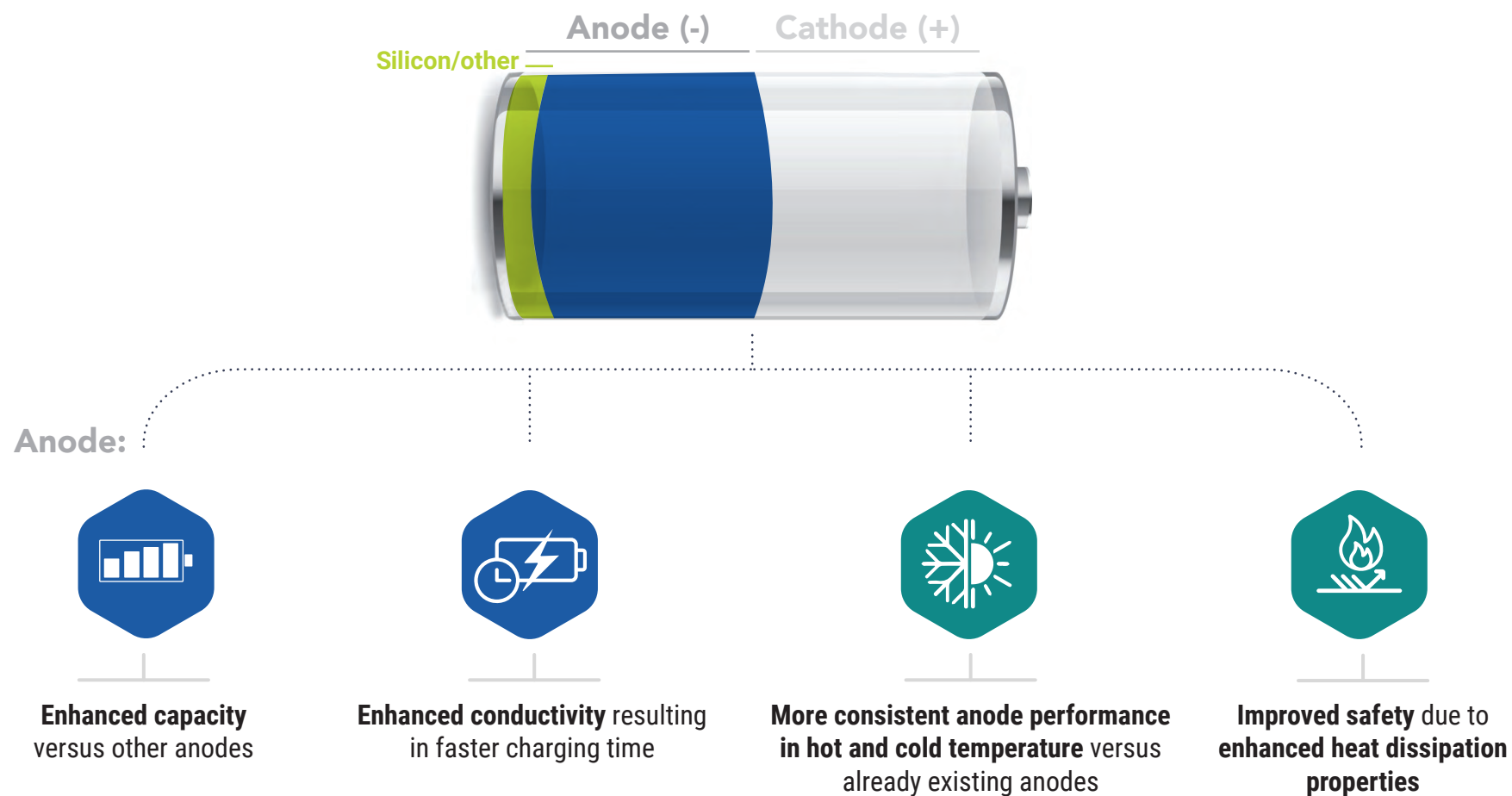
Capacity needed
of anode active material

1,000ktpa

MARKET SIZE

NORTH AMERICA
RAMPING UP CAPACITY

BATTERY MATERIALS - NANOXPLORE VALUE PROPOSITION



BATTERY MATERIALS - CAPEX & RETURNS

ASSETS:

- **12,000 tpa** graphene and battery materials facility
- **100-200 tpa** graphene-silicon line
- R&D Facility

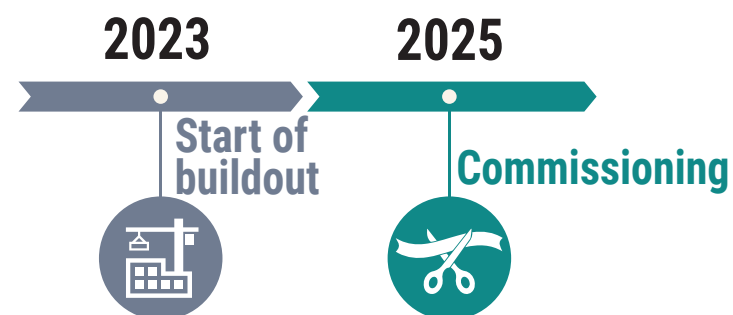
CAPEX: \$100 million

POTENTIAL ANNUAL REVENUE: \$100 million

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

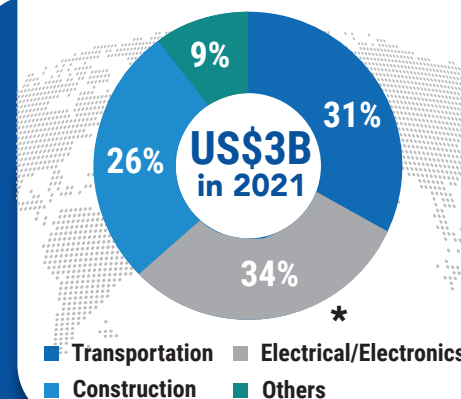


Transportation
External parts of vehicles
Battery enclosures



Construction
Commercial and
Residential Applications

TARGETED VERTICALS



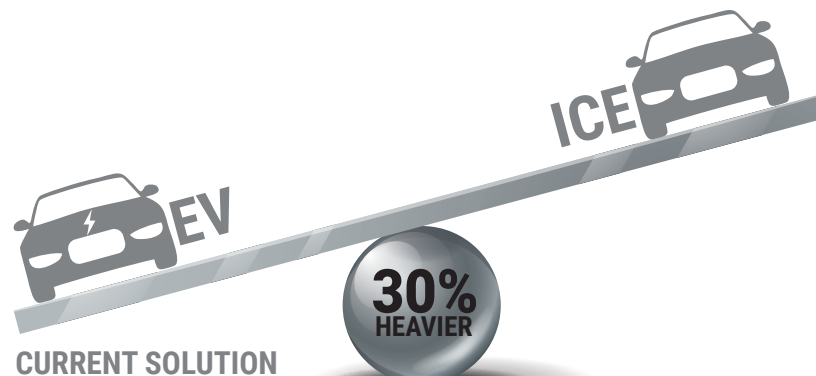
SHEET MOLDING COMPOUND GLOBAL MARKET SIZE

LIGHTWEIGHTING COMPOSITES - NANOXPLORE VALUE PROPOSITION

Stronger, Lighter, Higher Quality Parts Using



GRAPHENEBLACK SMC™
A NanoXPlore Product



**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

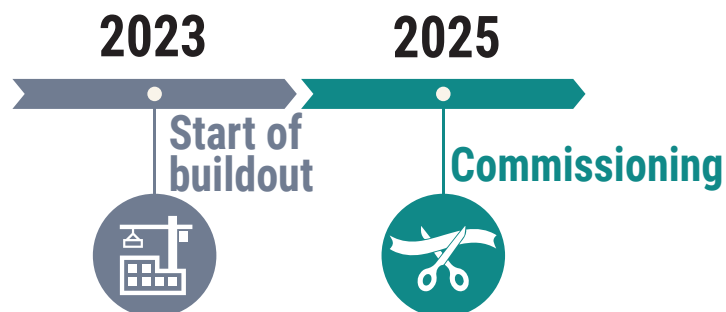
CAPEX: \$50 million

POTENTIAL ANNUAL REVENUE: \$80 million

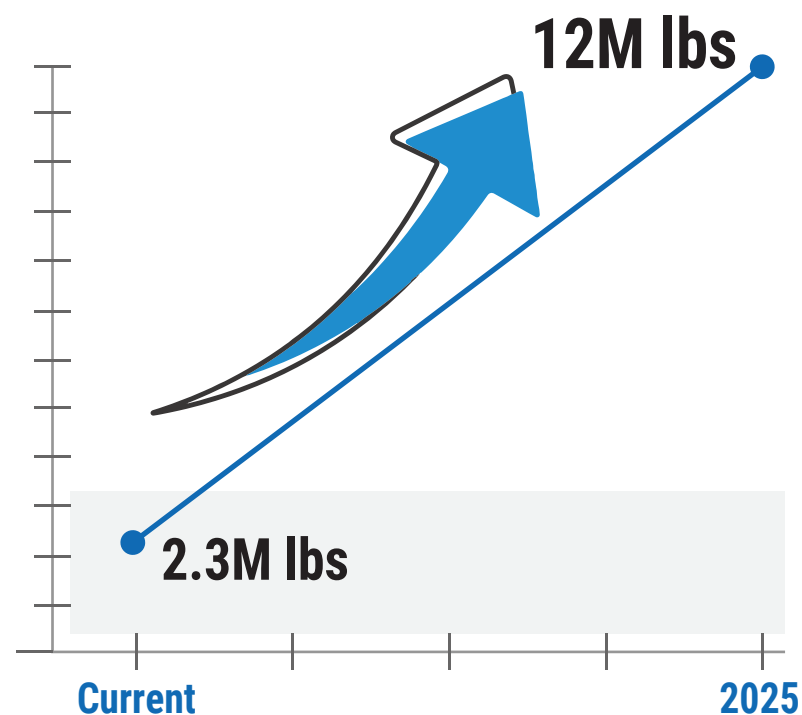
IRR: 25%+

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



SPECIALTY COMPOUNDS - EXECUTIVE SUMMARY



- Sustainability
- Market Penetration
- Low-Cost Alternative

GRAPHENE KEY DRIVERS



- Concrete
- Polyurethane (PU) Foam
- Drilling Fluids
- Polyethylene (PE)/
Polypropylene (PP)
Compound

TARGETED VERTICALS

SPECIALTY COMPOUNDS - NANOXPLORE VALUE PROPOSITION

VALUE PROPOSITION

GRAPHENE
ADDRESSABLE MARKET SIZE

Concrete



CO2 EMISSION



COST SAVINGS



PERFORMANCE & DURABILITY

6,000 ktpa¹

Drilling Fluids



FASTER DRILLING SPEED



EXTENDED TOOL LIFE



REDUCED FLUID LOSS

256 ktpa²

PU Foam



BETTER THERMAL INSULATION



FLAME RETARDANCY



SUSTAINABILITY

170 ktpa³

PE/PP Compound



MORE RECYCLABLE PLASTIC



MECHANICAL PERFORMANCE



COST REDUCTIONS

90 ktpa⁴

1- The Graphene Council & NanoXplore

2- Fortune Business Insights & NanoXplore

3- MarketsandMarkets & NanoXplore

4- MarketsandMarkets, PPI, Straits Research & NanoXplore

SPECIALTY COMPOUNDS - CAPEX & RETURNS

ASSET: 4,000 tpa GrapheneBlack™ module (in addition to existing 4,000 tpa)

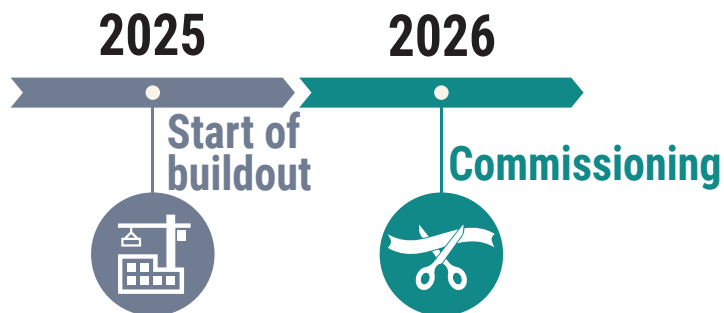
CAPEX: \$20 million

POTENTIAL ANNUAL REVENUE: \$40 million

IRR: 40%+

REASONS TO INVEST/STRATEGY:

- Narrowing the scope to focus on highest probability of success applications
- Focus on applications with large graphene powder consumption
- Increase return on R&D



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



VoltaXplore benefits from NanoXplore's proprietary graphene anode technology



VoltaXplore commissioned a 1 MWh demonstration battery facility in March 2022



Technology has been validated










Customer discussions are progressing well



Proposed 2 GWh 21700 battery plant

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;

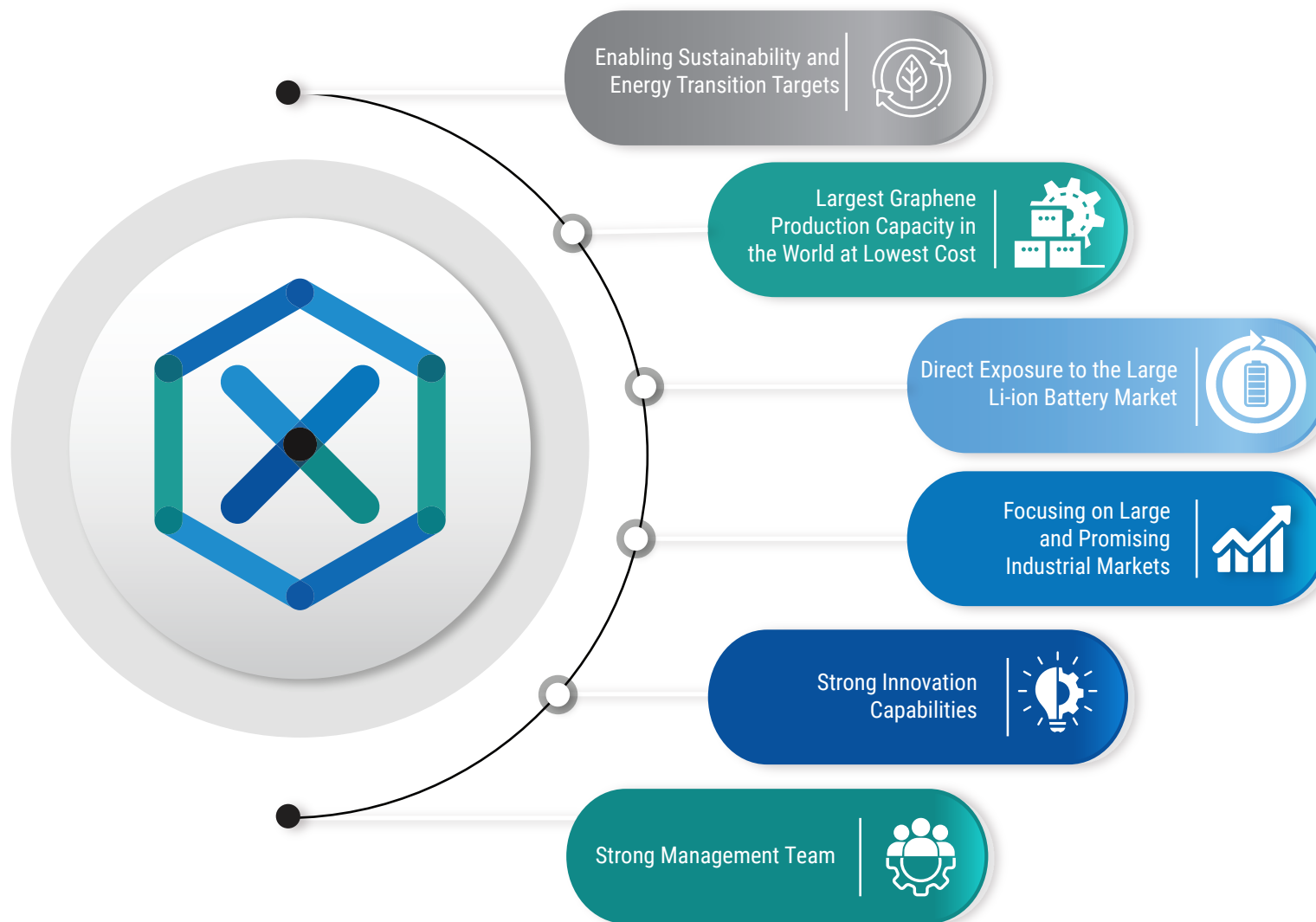
Former Executive Director at Martinrea;

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





APPENDIX

ANALYST COVERAGE



Rupert Merer



Amr Ezzat



MacMurray Whale



Ahmad Shaath



Marvin Wolff



Michael Glen



Ben Jekic

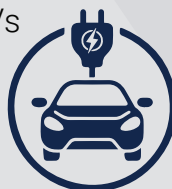
ACQUISITION OF MARTINREA'S STAKE IN VOLTAXPLORE

VoltaXplore
founded in



End Markets

EVs



Energy storage



**Purchase price
\$10 million**



Equity consideration only
Issuance of 3.4 million shares to Martinrea

Deal Rationale



- Simplifies the capital structure
- Access to additional financing opportunities

Capacity

2GWh

or up to

**130 million
cells/year**



XG SCIENCES - ASSET PURCHASE



Specialized in the production of graphene nanoplatelets

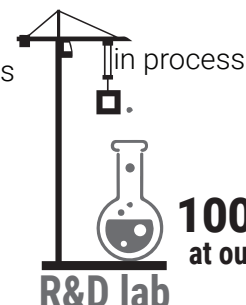
US\$3 million
Majority of Assets



Acquisition - August 2022



Founded in **2006**



100-200 tpa line
at our Graphene & Battery
material facility

END MARKETS

Partnered with market leading companies in key end markets such as:



DEAL RATIONALE



Strong patent portfolio in attractive end markets, especially in battery anode material & PU foam



Support our next generation solid state battery solutions with their silicon-graphene patents



Strong relationships with market leading companies

Patent Name

Applications

Patent number

Si-Gn for electrochemical applications	Battery	10,079,389
Si-Gn composite anode material & manufacturing	Battery	US 2022-0115646 A1
LiF embedded Si-Gn powder for lithium-ion battery	Battery	10,644,309
Electrodes for capacitors from mixed carbon compositions	Energy Storage	9,472,354
2-dimensional thermal conductive materials	Thermal Interface Materials	10,568,544
Graphene-modified Polymeric foam	Foams	WO2021167881 A1

CANUCK COMPOUNDERS ACQUISITION

\$9 million



Acquisition - December 2021



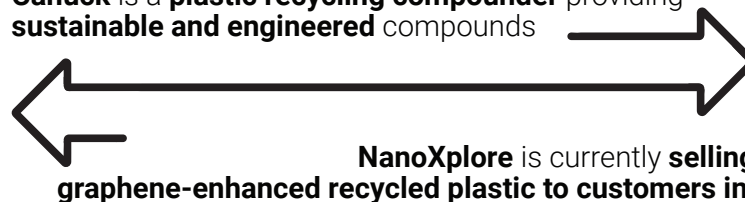
Founded **35 years ago**



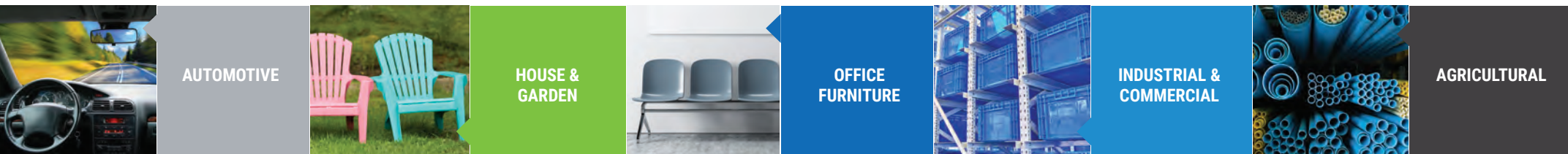
40M lbs annually



Canuck is a **plastic recycling compounder** providing **sustainable and engineered** compounds



END MARKETS



DEAL RATIONALE



Increasing graphene compounding capabilities, especially with recycled plastics



Bringing more sustainable solutions by using recycled plastics



Forming strategic partnerships with end customers especially in transportation



Performance Through Carbon Chemistry

4500 Thimens Blvd, Montreal, QC H4R 2P2

www.nanoxplore.ca

TSX: GRA | OTCQX: NNXP

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