



Nano PLORE

Performance Through Carbon Chemistry

Industrial
Volume

Proprietary
Technology

Low-Cost

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NanoXplore is a graphene company. A manufacturer and supplier of high-volume graphene powder for use in industrial markets as well as a producer of graphene-enhanced plastics and composite products



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What is Graphene?

Discovered at Manchester University in 2004. Nobel Prize awarded in 2010



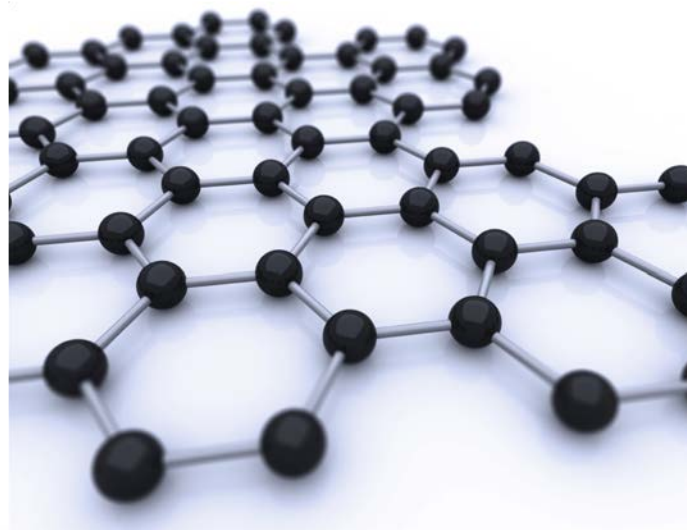
GRAPHITE

EXFOLIATION



GRAPHENE

An allotrope of carbon consisting of a single layer of carbon atoms arranged in a Honeycomb lattice



It is the lightest, strongest, thinnest, best heat- and electricity- conducting material discovered to date

200x stronger than steel

Elastic like rubber stretching beyond 20% of its original length

Higher thermal/electrical conductivities compared to that of Silver and Copper

Extremely impermeable

Almost completely transparent: transmits ~98% of light

Unique electromagnetic properties

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Graphene Applications

- **Transportation** (Strength and weight reduction)
- **Energy Storage** (Enhanced capacity and faster charging)
- **Electronics** (Smaller and stronger processors)
- **Tires and rubbers** (Enhanced rolling resistance and durability)
- **Paints and Coatings** (Faster curing and enhanced anti-corrosion properties)
- **Pipes and Tubes** (Enhanced weatherability, durability and strength)
- **Electronic packaging** (Enhanced cooling and shielding)
- **Chemical packaging** (Improved impermeability)
- **Sport equipment** (Weight reduction and enhanced durability)
- **Smart textiles** (Electrically conductive yarns and functional fabrics)
- **Water treatment** (Faster and lower energy desalination)



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*The major challenge for the graphene industry is **scalability**:
The capability of producing large volume at low cost*

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The Industry Drawback...

Cost



- Graphene is generally expensive to make
- Current market pricing for graphene powder can cost between \$60-200/kg depending on the application
- Comparable performance enhancing additives (ie. carbon fiber and carbon black) are priced at \$5-20/kg

Production Volume



- Technically complicated material to produce in volume
- Certain production methodologies are simply not scalable
- Lack of standardization of graphene production quality

Technical Ability



- Few industry experts
- Education gap exists within the industry

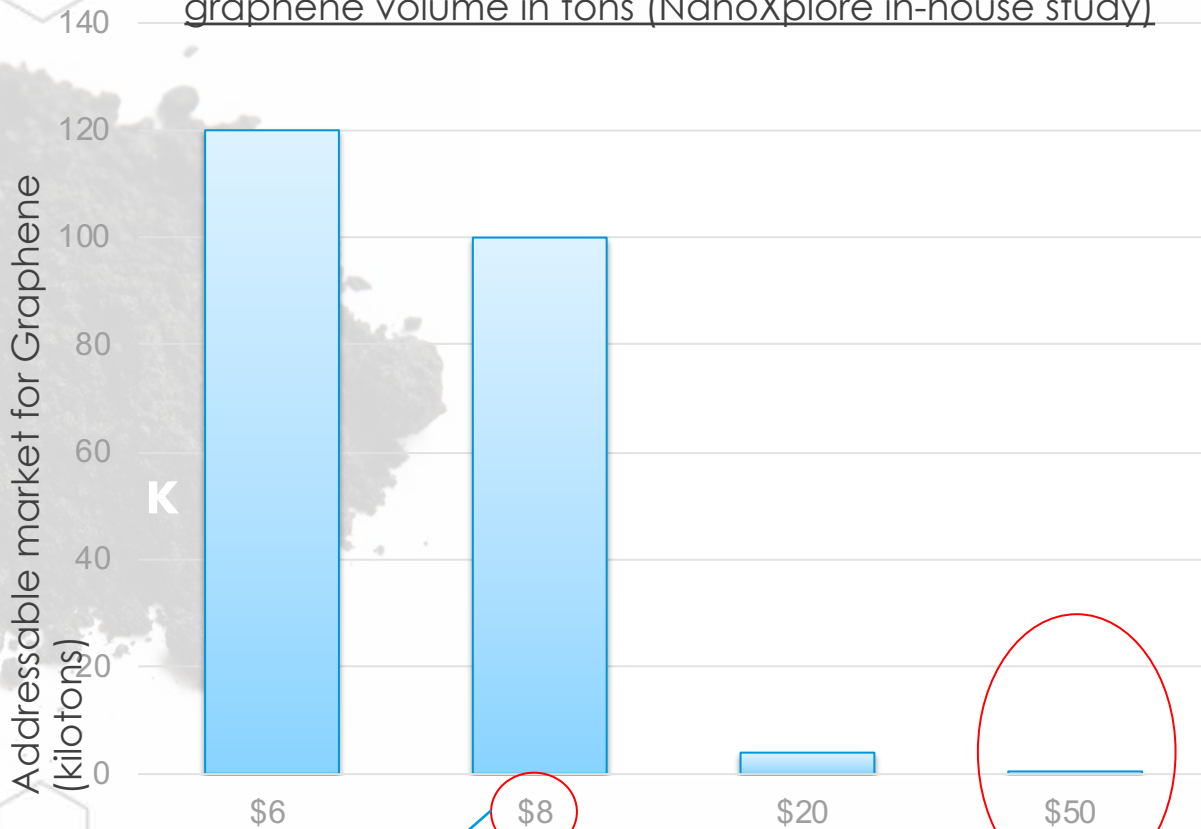
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The Graphene Market

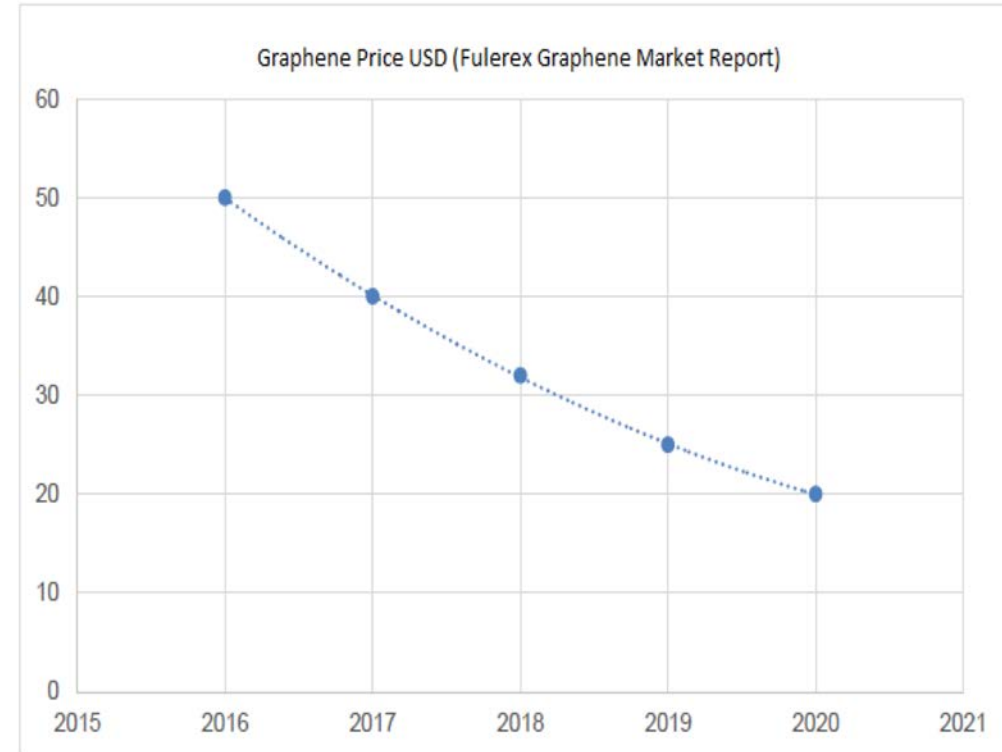
Graphene selling price (USD/kg) versus potential annual graphene volume in tons (NanoXplore in-house study)



Where NanoXplore is Taking the Market

Where the Market is Now


2016 annual consumed volume of graphene was 200 tonnes



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NanoXplore has a patented process in graphene production that provides a cost-effective solution for high-volume applications



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Moving the Market: Our New Production Facility

Production Schedule

- Q1-2020: Phase 1 Commissioning:
Production capacity of 4,000 T/yr
- Q1-2021: Phase 2 Commissioning:
Production capacity additional 6,000 T/yr
(Total: 10,000 T/yr)

All Permits Received for Current Facility

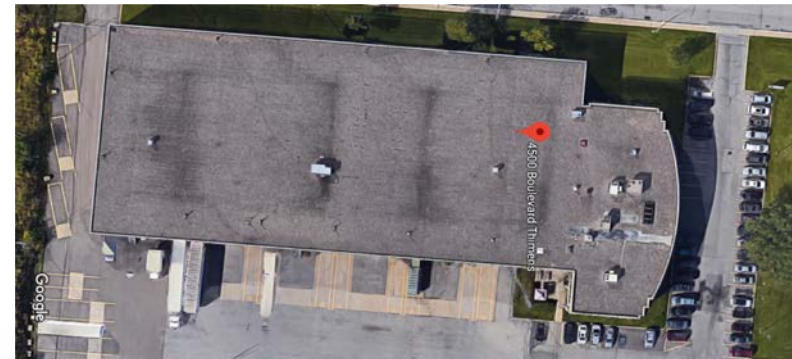
MDDELCC

Ville de Saint-Laurent

Ville de Montreal



Location: 4500 Thimens Blvd,
Ville St- Laurent, Montreal, QC



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Moving the Market: Our New Production Facility

70,000 sq/ft - 10,000 Metric Ton/Year Graphene Production Plant
Based on Feasibility Report Filed on SEDAR Aug 27th 2018

ALL \$ CAD	Feasibility (Aug 2018)	Pre-feasibility (Sep 2017)	Change
Total CAPEX	\$40.1M	\$81.2M	50% less dilution for shareholders
Average selling price	\$10,000 per metric ton	\$10,000 per metric ton	No change
Average operating Cost	\$4,042 per metric ton	\$4,500 per metric ton	10% lower cost to produce graphene
Average gross margin	59.6%	55%	Faster payback

At 10,000 tons/yr of production, NanoXplore's operating cost will be CAD \$4/kg vs \$30/kg today

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Where We See the Demand

1 Graphene Powder Production

Natural flake graphite



GrapheneBlack™ Powder

Additive In



Tires



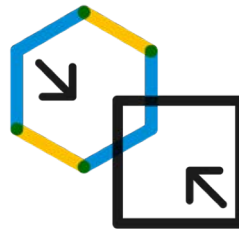
Paints



Batteries

2 Compounding

Art of mixing graphene with plastics

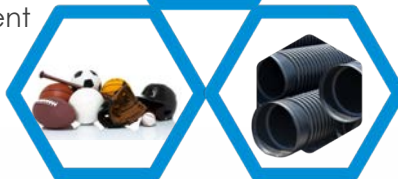


GrapheneBlack™ Masterbatch Pellets



Industrial

Sport Equipment



Plastic Pipes

3 Plastic Forming

Acquisitions (OEM Access)



Graphene Enhanced Plastic/Composite Products
Improved Performance at Lower Cost



Automotive

Industrial



Packaging



1) GrapheneBlack™ Powder Production

Disrupting Carbon Black's \$14B⁽¹⁾, 8m T/yr Market

GrapheneBlack™ allows for:

- Superior performance and lower cost
- Significant processability advantages
- An environmentally friendly alternative
- Price and supply stability
- Safe shipping and handling

(1) MarketsandMarkets, 2015 Carbon Black market report



GRAPHENEBLACK™
A Product of nanoXplore



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GrapheneBlack™ as a Carbon Black Replacement

- Global carbon black market was US\$14.6B in 2017 by revenue
- 2023 Revenue forecast of US\$ 20.2B, a CAGR of 6%⁽¹⁾ (2018 - 2023)

Carbon black is priced at USD \$1.5-2.5/kg and typically accounts for 3-25% weight loading in products

- Specialty varieties can cost up to \$50/kg
- High conductivity versions cost around \$25/kg

For the same benefit, graphene typically accounts for 0.5-3% weight loading => **up to 6x less**

GrapheneBlack™ pricing of USD \$8/kg would be very attractive even as a base carbon black replacement as it will bring significant cost savings and performance enhancement for carbon black users

70% of carbon black market by volume is used in rubbers and tires:

- Vital role in increasing tire's tread wear and rolling resistance

20% of carbon black market by volume is used for resins and plastics:

- Absorbs UV light and converts it to heat, thereon making plastics more resistant to UV radiation
- Provides conductivity and antistatic properties to plastics ranging from highly conductive to insulating materials

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(1) MarketsandMarkets, 2018 Carbon Black Market Report

GrapheneBlack™ as a Carbon Black Replacement

Cost reduction is the key for commercial success

Case 1:

Graphene price of CAD \$31.25/Kg would make it competitive as a tire additive on a cost neutral basis vs. carbon black

Pricing simulation for tire reinforcement
(carbon black¹ vs. graphene)

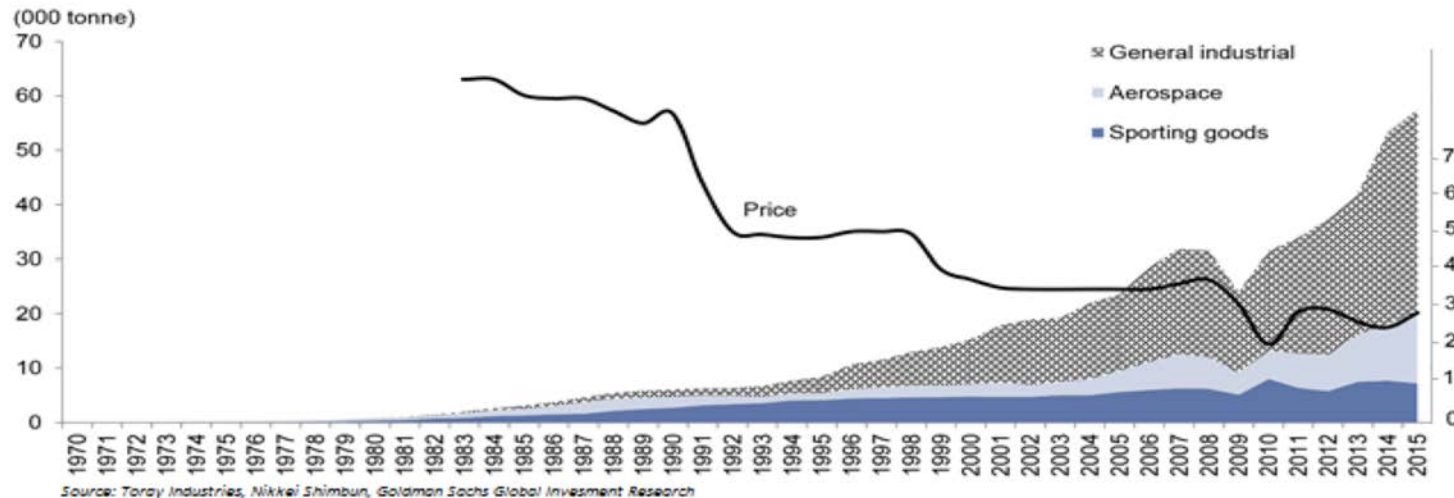


Tire weight: 10 kg	Carbon black	Graphene
% of tire weight	25	1.5
Total weight needed (kg)	2.5	0.15
Unit price (CAD/kg)	\$1.88	\$31.25
Total cost as tire reinforcement	\$4.68	\$4.68

Source: METI, Goldman Sachs Global Research
(1) Carbon black is a powder produced by incomplete combustion of petroleum products.

Case 2:

Global demand for carbon fiber took off as a result of lower prices



Source: Toray Industries, Nikkei Shimbun, Goldman Sachs Global Investment Research

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2) Compounding with GrapheneBlack™



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Transportation

GrapheneBlack™ Enhanced Plastic Automotive Parts

- TPU-Graphene for dashboards soft skins
- PP-Graphene for bumpers
- PE-Graphene for fuel systems
- Nylon-Graphene for under the hood parts
- Rubber-Graphene for tires
- Epoxy-graphene conductive gel coats for class A paints



Industrial

GrapheneBlack™ Enhanced Polyethylene (PE) Pipes

- Storm Drainage
- Oil and gas Conduits
- Irrigation
- Industrial processing
- Corrugated pipes
- Structural OEMs
- Geothermal pipes



3) Manufacturing of Composite Products

Cebo Injections SA Nov 2017



- Headquartered in Vallorbe, Switzerland, Cebo is a key player within the fields of precision plastic injection for the automotive, electromechanical, medical, watch making, and cosmetic markets
- Knowledgeable in various material injecting techniques including PEEK, PSU, PEI, and LCP

RMC (Sigma Industries) Sept 2018



- Headquateded in Saint-Éphrem-de-Beauce, Quebec, RMC is a manufacturing company with 275 employees specializing in the forming of large composite products
- Products include components for trucks, urban and long distance busses, construction, and recreational vehicles
- Provide solutions in a wide range of technologies: HRTM, RIM, VARTM, SMC

Faroex (Sigma Industries) Sept 2018



- Headquartered in Gimli, Manitoba, Faroex is a manufacturing company specializing in the forming of large composite products
- Products vary from interior roofs of commercial busses – to blades for windmills – to hog flooring solutions for the farming industry
- Provide solutions in a wide range of technologies that include: large scale pultrusion, RIM, and VARTM

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NanoXplore's family of acquisitions provide direct access to global OEMs shortening the product procurement timeline on new graphene-enhanced applications

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Putting It All Together: A Path for Success

REQUIREMENTS FOR SUCCESSFUL COMMERCIALIZATION OF GRAPHENE



High-Quality Graphene Production

- Scalable, green-technology
- Large volume at low cost
- Batch to batch consistency
- Security and quality of supply
- IP protection
- Smart inventory management
- Local production

High Quality Mixing

- Partnering with customers and mixing companies for product development
- Effective transfer of graphene properties to product matrix at low cost
- IP protection
- Customer education and expectation management
- Smart supply chain management

Enhanced Product Development

- Strong performance/cost ratio
- Certifications and standards
- Product trials and proof of concepts
- IP transfer and supply contract
- Low cost shipping solutions
- Smart relationship management

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NanoXplore's Leadership Team

BOARD OF DIRECTORS

Soroush Nazarpour, Ph.D.

Founder & Chief Executive Officer

Soroush is a serial entrepreneur and the founder of NanoXplore and has been President & CEO since 2011. He is an acknowledged expert in the field of graphene, and co-author of "Graphene Technology From Laboratory to Fabrication" published by Wiley & Co in 2016. Soroush holds a Ph.D in Nanotechnology from the University of Barcelona, Spain.

Rob Wildeboer

MBA, LL.M.
Chairman

Current Chairman and Co-founder of Martinrea International Inc.

Current Vice-Chairman of the Auto Parts Manufacturers Association (APMA)

Director of the Canadian Automotive Partnership Council (CAPC)

Benoit Gascon

CPA, CA
Vice Chairman

President and CEO of Mason Graphite

Former SVP Sales and Bus Dev at Imerys carbon and graphite

Former Senior Manager at PwC

Cameron Harris

Ph.D.

President of CAENG Ltd,

Former SVP and GM at SNC-Lavalin

Former Industry lead, Chemicals at Accenture

Former VP process Technology at WorleyParsons

Denis Labrecque

B.Eng.

President and founder of NorCap Canada Ltd

President and founder of Groupe Gestion GDL

Arinder Mahal

B.Eng.

CEO at Synoptim Technologies

Former Managing Director at Dundee Securities

Former Senior Manager at Deloitte

EXECUTIVE TEAM

Luc Veilleux CPA, CA

Chief Financial Officer

Luc has over 20 years of executive management, financial and operational experience in manufacturing and mining industries including CFO at Mason Graphite, President at Maxi Canada, and CFO at Imerys Graphite and Carbon.

Rocco Marinaccio

Chief Operating Officer

Rocco has more than 20 years of experience within operations. Prior to joining NanoXplore, Rocco has been with Martinrea International Inc. since its inception. During his time with the company he held multiple senior positions including Material Production and Logistics Manager, General Manager, Director of Modules, and most recently Vice President of Flexible Manufacturing Group for all locations. He was also responsible for over-seeing the construction of key facilities in Martinrea, located in Ramos Arizpe, Mexico and Riverside, Missouri, as well as the relocation of two facilities in Canada.

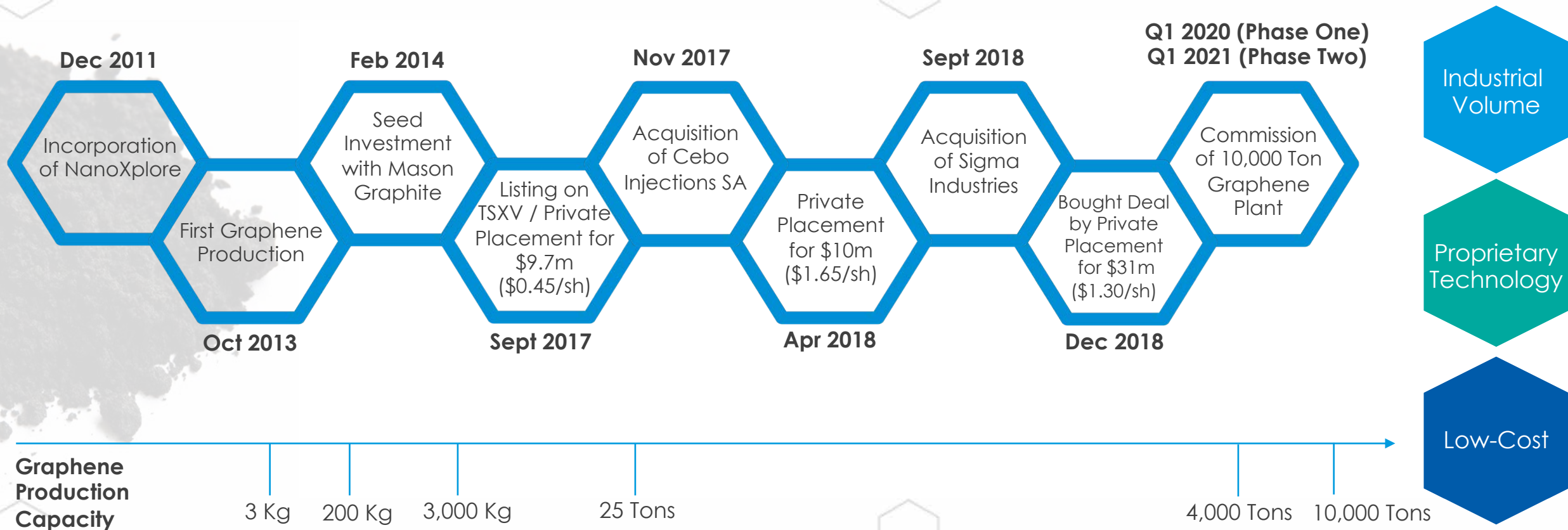
Liam Farrell CFA

Chief Commercial Officer

Liam has worked in the investment industry for over 10 years. During his tenure, he has held senior positions at multiple independent investment brokers within Institutional Equities. Liam has extensive knowledge within US and Canadian capital markets and strong relationships with institutional funds. In his previous role, he was apart of the initial financing for NanoXplore and helped take the company public. Liam holds a Bachelor of Commerce from Queens University and is a CFA Charter Holder.



Company Timeline



In Summary...

NanoXplore's growth-through-acquisition model has allowed the company to leverage its profitable secondary processing subsidiaries in plastic composite manufacturing to create the demand for its primary processing of large-scale graphene powder production

Head-quartered in Montreal, a global leader in the graphene market and largest Canadian producer of graphene, being traded on the TSX Venture Exchange under symbol "GRA" (Market Cap ~155M¹)

Currently employ ~400 people with 8 composite production plants in Canada and Switzerland with 2 plants under construction in Canada and the US

Strong strategic shareholder: Martinrea (MRE:TSX, Market Cap - \$900m¹), one of the largest auto parts supplier in North America with \$4B annual sales, 44 plants around the world and 15,000 employees. MRE is actively developing graphene-enhanced products with NanoXplore

Significant financial growth YOY, unaudited 12-months forecasted revenue of ~\$70M

Vertically integrated business model from graphene production to final parts for OEMs

Strong presence in transportation, clean energy and industrial markets with a versatile product offering

Strong IP portfolio with several patents on graphene production and applications in composites and energy storage

First mover advantage with significant market opportunity with graphene and graphene related products

Lowest cost and largest graphene production facility in the world with a planned 10,000 metric tonnes/year graphene production plant¹

Innovation driven with strong in-house R&D and engineering capabilities

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(1) As of October 3rd 2019

Capital Structure

Trading Symbol

GRA: TSXV (Listed Since Sep 11, 2017)

NNXPF: OTCQX (Listed Since Mar 26, 2019)

Analyst Coverage ⁽¹⁾



PARADIGM
CAPITAL

Marvin Wolff



Securities
Griffiths McBurney

Ben Jekic



Amr Ezzat



Ahmad Shaath



NATIONAL
BANK
FINANCIAL MARKETS

Rupert Merer

(1) As of October 3rd 2019

Capital Structure⁽¹⁾

Basic Shares:	120,995,810
Convert Debs:	5,434,783
Warrants:	3,272,778
Options:	3,767,133
Fully Diluted:	133,470,504

Recent Financings

Bought Deal by Private Placement: \$31M

- Jan 2019: \$1.30/Share + Convertible Debt @ 8%
- \$15m commitment from Martinrea + \$6m common shares + \$10m convertible unsecured debenture (Business Development Bank of Canada)
- Lead Underwriter: National Bank

Private Placement: \$10M

- March 2018: \$1.65/Share + 0.5 warrant at \$2.30
- Lead Underwriters: GMP and Paradigm Capital

Private Placement: 9.7M

- Sep 2017: \$0.45/Share + 0.5 warrant at \$0.70
- Lead Underwriter: Paradigm Capital

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Thank You

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