



FEASIBILITY REPORT

This report amends the report filed on July 17, 2018. All future oriented financial information beyond two years have been removed.

August 2018



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Cautionary Statements Regarding Forward Looking Information

This Feasibility Report ("FR") contains "forward-looking information" within the meaning of Canadian securities legislation. All information contained herein that is not clearly historical in nature may constitute forward-looking information. Forward-looking information includes, without limitation, statements regarding the results of the FR including statements about the projected IRR, NPV, payback period and future capital and operating costs, the projected revenues from sales, the market and future price of graphene and the ability to finance the project. Generally, such forward-looking information can be identified by the use of forward-looking terminology such as "plans", "expects" or "does not expect", "is expected", "budget", "scheduled", "estimates", "forecasts", "intends", "anticipates" or "does not anticipate", or "believes", or variations of such words and phrases or state that certain actions, events or results "may", "could", "would", "might" or "will be taken", "occur" or "be achieved". Forward-looking information is based on assumptions management believes to be reasonable at the time such statements are made, including but not limited to, continued business activities, graphene and other materials prices, the estimation of initial and sustaining capital requirements, the estimation of labor and operating costs, the assumption with respect to currency fluctuations, the timing and amount of future development and construction expenditures, receipt of required regulatory approvals, the availability of necessary financing for the project, permitting and such other assumptions and factors as set out herein. Forward-looking information is subject to known and unknown risks, uncertainties and other factors that may cause the actual results, level of activity, performance or achievements of NanoXplore to be materially different from those expressed or implied by such forward-looking information, including but not limited to: volatile stock price; risks related to changes in natural flake graphite and graphene prices; sources and cost of power facilities; the estimation of initial and sustaining capital requirements; the estimation of labor and operating costs; the general global markets and economic conditions; the risk associated with development and operations; the risks associated with uninsurable risks arising during the course of development and production; risks associated with currency fluctuations; environmental risks; competition faced in securing experienced personnel; access to adequate infrastructure to support processing, development and business activities; risks related to regulatory and permitting delays; risks related to potential conflicts of interest; the reliance on key personnel; financing, capitalization and liquidity risks including the risk that the financing necessary to fund development and construction of the Project may not be available on satisfactory terms, or at all; the risk of potential dilution through the issue of common shares; the risk of litigation. Although NanoXplore has attempted to identify important factors that could cause actual results to differ materially from those contained in the forward-looking information, there may be other factors that cause results not to be as

anticipated, estimated or intended. There can be no assurance that such forward-looking information will prove to be accurate, as actual results and future events could differ materially from those anticipated in such forward-looking information. Accordingly, readers should not place undue reliance on forward-looking information. Forward-looking information is made as of the date of this FR, and NanoXplore does not undertake to update such forward-looking information except in accordance with applicable securities laws.



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1. GRAPHENE MARKET

Our business model is based on bringing innovative solutions to market using our high-quality graphene powders. Such advanced material provides a substantial value add to final products. We produce graphene powders, compound/mix it with plastics and resins, and manufacture products that benefits from it through acquired companies. This is divided as follow:

- ✓ **Level 1: Graphene powder**
- ✓ **Level 2: Compounding/mixing**
- ✓ **Level 3: Graphene enabled plastic products**

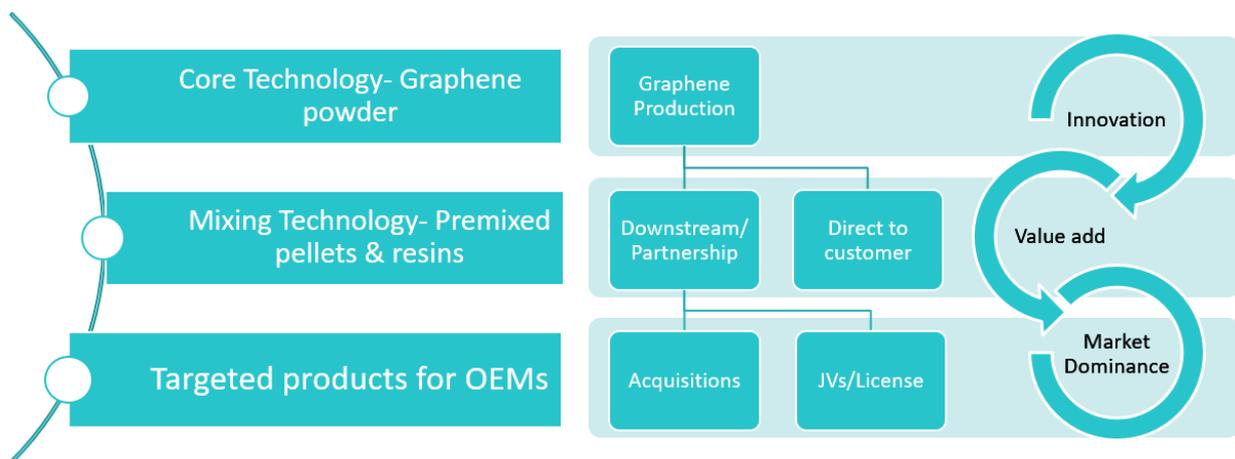


Fig 1: Technology product offering

1.1. Level 1: Graphene powder

Graphene Market Analysis

Although the nascent commercial market for graphene-based products currently is very small, between 2015 and 2025 the market should achieve unprecedented growth rates through technological advancements. Increasing patent activity suggests technology trends are under way, ripening the market for explosive future growth. A commercially significant market for graphene products is expected to develop between 2015 and 2020, when the market is projected to be valued at more than \$310.4 million (BCC Research, 2015). We anticipate the first segment that benefits significantly from graphene to be plastics. The graphene market should continue to grow rapidly after 2020, approaching \$2 billion by 2025. Based on type, the global graphene market is segmented into few-layer graphene and graphene nanoplatelets.

Few-layer graphene is a graphene powder with less than 10 atomic layers (flake thickness is less than 5 nanometers), and graphene nanoplatelet is a graphene powder with 10-100 atomic layers (flake thickness is between 5 and 50 nanometers). Few-layer graphene is a higher quality powder than graphene nanoplatelets and is more expensive. In 2015, graphene nanoplatelets (GNP) segment accounted for about two-thirds of the overall market revenue. The demand for GNP is primarily attributed to its low price and wide application areas. Few-layer graphene contributed about one third of the market share in 2015, and is expected to grow at the highest compound annual growth rate (CAGR) during the forecast period. (Allied Market Research, 2014).

“Research and Market” through its Global Graphene Market report 2016-2020 named NanoXplore, XG Sciences, Haydale, and Graphenea as key vendors of graphene market.

Below table summarizes important players in Graphene market and their product offering.

Table 1: Main graphene manufacturers (Global Graphene Market Report 2016-2020, Research and Market, and Companys’ websites)

Competitors	Product offering	Type	Focused market	Location
NanoXplore	Graphene Manufacturer	Few-layer graphene, Graphene nanoplatelets	Plastics, Composites and Batteries	North America and Europe
XG Sciences	Graphene Manufacturer	Graphene nanoplatelets	Batteries, Composites and Inks	North America
Angstrom Materials	Graphene Manufacturer	Graphene nanoplatelets	Plastics and Batteries	North America and Asia
Directa Plus	Graphene Manufacturer	Graphene nanoplatelets	Sporting goods	Europe
Haydale	Graphene functionalization	-	Composites and Medical	Europe and Asia
Graphenea	Graphene Manufacturer	CVD graphene and graphene nanoplatelets	Electronics and Research	Europe
Thomas Swan	Graphene Manufacturer	Few-layer Graphene, Graphene Nanoplatelets	Plastics, Composites, and Inks	Europe

Applied Graphene Materials	Graphene Manufacturer	Graphene nanoplatelets	Composites and Coatings	Europe
Graphene 3D Lab	Graphene Manufacturer	Graphene nanoplatelets	3D Printing and Composites	North America

All these suppliers are aggressively building up sales pipelines across many application sectors, and we anticipate that large volume application sales and price falls to accelerate starting from 2019. Moreover, plastic and composite additive market is the battle ground and we anticipate our aggressive acquisition plan keep us ahead of the competition as it provides us with better access to Original Equipment Manufacturers, resulting into quicker qualification and integration of graphene.

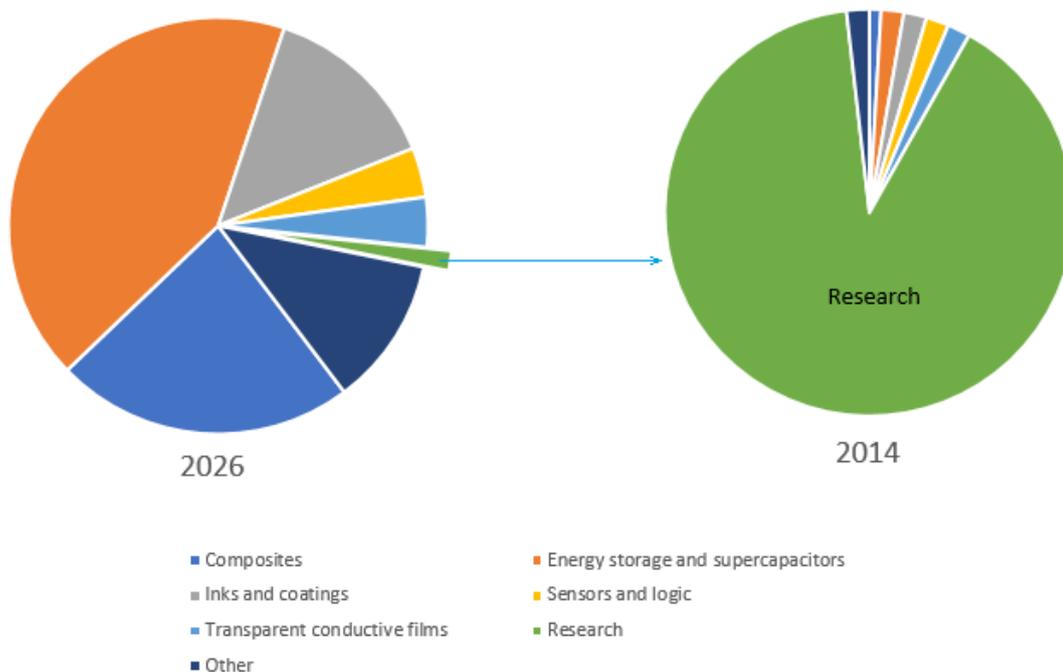


Fig 2: Graphene market growth by segment (Graphene, 2D Materials and Carbon Nanotubes: Markets, Technologies and Opportunities 2018-2028, IDTechEx)

The largest sectors of graphene market are composites, followed by energy storage and functional/conductive coatings, although each one will be split across several sub-sectors. Graphene platelets compete with few-layer graphene for price sensitive applications, particularly in inks and coatings where both GNP and few-layer graphene over-perform.

Top-Down Market Sizing

One of our approach to calculate the potential addressable market is the Top-Down market analysis where we examined the additives that graphene will partially replace, such as Carbon Black. Carbon black market is a very large one with 12M tons of it sold worldwide every year. Main applications of the Carbon black are in rubbers and plastics. In the table below, we examined the target markets of four specialty additives that graphene will replace partially.

Table 2: Graphene market sizing by additive replacement scenario (Global Carbon Black Market 2015-2020, Lucintel, Global Specialty Carbon Black Market Trends Forecast, Lucintel, Graphite Market Report, MarketsandMarkets, Global Carbon Fiber Market 2016-2022, MarketsandMarkets, Global Hexagonal Boron Nitride Market Research Report 2018, QYResearch)

Material	Average USD Price/tonne	Current Market size (mtons)	Current market size (USD)	Potential graphene penetration (%)
Carbon Black	\$1,500	12M	17.5B	70% (8.4M metric tons)
Value added graphite products*	\$8,000	600,000 (rapidly growing)	7.5B	70% (0.42M metric tons)
Carbon fiber	\$15,000	80,000	2.88B	50% (0.04M metric tons)
Boron Nitride	\$125,000	8,000	625M	30% (under 0.01M metric tons)
Total				8.87M metric tons

The total potential addressable market size of graphene based on the replacement scenario is 8.87M metric tons and NanoXplore intends to construct a 10,000 metric tons (0.01M metric tons) graphene production plant. This represents about 0.1% of potential addressable market size.

Bottom-Up selling price analysis

To calculate the maximum selling price of graphene to enter into each sub-market, we used the traditional carbon material price premium of 15% over the base material price. In other words, we assumed that customers in each market are not willing to pay more than 15% premium over the price of base resin for each additive. On average, 5% of graphene is used for most of potential applications to boost the performance. Hence, we calculated 5% loading of graphene in price sensitivity analysis.

Table 3: Graphene selling price sensitivity analysis (Global Commodity Plastic Market Research Report 2018, QYResearch, Global Industrial Rubber Market Analysis, by End User 2016-2026, Persistence Market Research, Global Carbon Black Market 2015-2020, Lucintel, and internal studies)

Material	Annual Production Tonnes	Price (USD/tonne)	Weight of Graphene considering 5% Average loading (tonne)	Maximum selling price (USD/kg) of graphene to enter:
PE, PP, PVC	72,500,000	2000	3,625,000	8
PP	47,500,000	2000	2,375,000	8
Base Oil	35,000,000	1500	1,750,000	6
PVC	27,500,000	2000	1,375,000	8
Rubber	27,000,000	1500	1,350,000	6
PS	18,750,000	2000	937,500	8
PUR	17,500,000	2000	875,000	8
PET	16,250,000	2000	812,500	8
PA	5,000,000	6000	250,000	24
Epoxy	2,500,000	5000	125,000	20
High performance polymers	20,000	100,000	1000	400
Battery Anode	397,000	10,000	19,850	50
CFRP Composites	125,000	5,000	6,250	50
Conductive inks	2,000	200,000	100	500
Total			12,127,200	

As could be seen in the last column, the average price of graphene to enter into these markets is about USD 8 /kg (CAD 10 /kg). This is the basis of pricing in the OPEX calculation. The potential addressable market size of Graphene is calculated at 12M metric tons which is slightly higher than 8.8M metric tons calculated from additive replacement scenario. Nevertheless, it confirms the vast potential market size of graphene.

1.2. Level 2: Compounding/mixing

Plastic additive market

The global market for plastics additives was valued at \$38.3B in 2015. This market is estimated to \$50.8 billion by 2021 with a CAGR of 4.9 % for the period of 2016-2021 (MarketsandMarkets, plastic additive market report, Global trends and forecasts to 2021).

Composite materials are made from two or more different materials that are combined together to create a new material with characteristics different from the individual

components. The goal is to create a superior new material with improved performance in some aspect such as strength, less weight or lower cost. Graphene, with its unprecedented array of material characteristic improvements, is a natural candidate for use in advanced composite materials.

Leading candidates for graphene-based composites include structural and skin components for airplanes, cars, boats and spacecraft. In these applications, graphene can be used to increase thermal conductivity and dimensional stability, increase electrical conductivity, improve barrier properties, reduce component mass while maintaining or improving strength, increase stiffness and toughness (impact strength), improve surface appearance (scratch, stain and mark resistance), and increase flame resistance.

Graphene is an ideal component as an additive to plastics where several improvements are required. Significant cost savings, both in terms of material inputs and processing, can be achieved by replacing several different materials by one, graphene.

NanoXplore's products are especially appropriate in material composites requiring improved:

- mechanical/structural properties;
- thermal and/or electrical conductivity;
- wear resistant and long lasting surface properties;
- anti-corrosion and anti-erosion properties, particularly under dynamic loads; and
- electro-magnetic shielding.

NanoXplore anticipates that a large portion of its products would be sold as an additive to plastic products, particularly in plastic pipe and tubes, sport equipments, and transportation market.

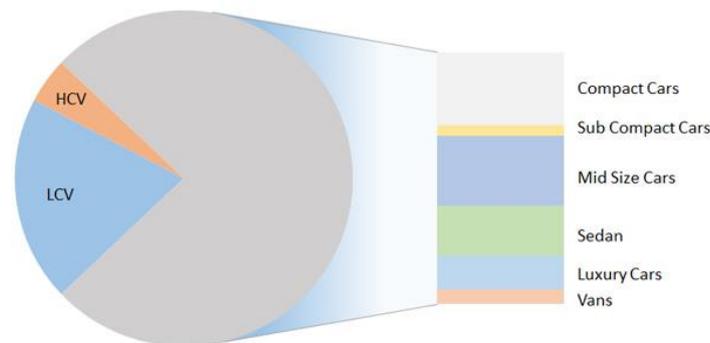
1.3. Level 3: Graphene enabled plastic products

Light & Heavy Commercial Vehicle Interiors

The total market for automotive interiors is expected to hit \$137.06 billion USD by 2023. This market is currently valued at \$111.61 billion USD and the CAGR for 2015-2023 is estimated at 2.7% (Transparency Market Research, 2015).

Global Automotive Interior Material Sales

By Vehicle Type (2015), US\$ Mn



Source: PMR, 2016

Fig 3: Global automotive interior material market by vehicle type

As can be seen above, the vast majority (approximately 75%) of the vehicle interior market is for consumer passenger automobiles. The remaining 25% is split between Heavy Commercial Vehicles (HCV) and Light Commercial Vehicles (LCV). HCV would include large trucks and used in commercial or industrial applications and freight train cars. The HCV market value would be expected to hit approximately \$6.8 billion USD by 2023.

Asia Pacific dominated the market with over 42.7% of the overall automotive interior materials market volume share of in 2015. Europe ranked second with about 25.3% market share in 2015, followed by North America. In addition, Asia-Pacific is anticipated to become the fastest growing region in the global automotive interior materials market (Persistence Market Research, 2016).

On the basis of material type, the global automotive interior materials market is segmented into fabrics, genuine leather, synthetic leather, and thermoplastic polymers. The thermoplastic polymers segment is expected to grow at the fastest CAGR over the forecast period, followed by synthetic leather segment.

Based on the success of product development stage, NanoXplore anticipates that its graphene enhanced products enter into automotive interior market within the next three years.

2. PRODUCTION PROCESS

The output of the production will be a very fine fluffy black powder with particle size ranging from 5 to 35 µm. There will be five lines of production each with a capacity of 2,000 tpy.

Table 4: Plant Capacity

Plant Capacity		
Annual Throughput	t/y	10,000
Average Daily Throughput	t/d	29.75
Process Plant Utilization	%	92.0
Number of lines		5
Annual Throughput (per line)	t/y	2,000
Average Daily Throughput (per line)	t/d	5.95
Average Plant Throughput (per line)	t/h	0.25

Below is a description of each step in the graphene production facility:

Raw material feed:

In order to produce graphene, the process needs to combine different solids and feed them to the mills. The solids' feed is composed of natural flake graphite, salts and active materials. Each of the solids has to be unloaded from their respective bulk bags into storage bins. From the storage bins, the solids then have to be weighed before being introduced into the feed system.

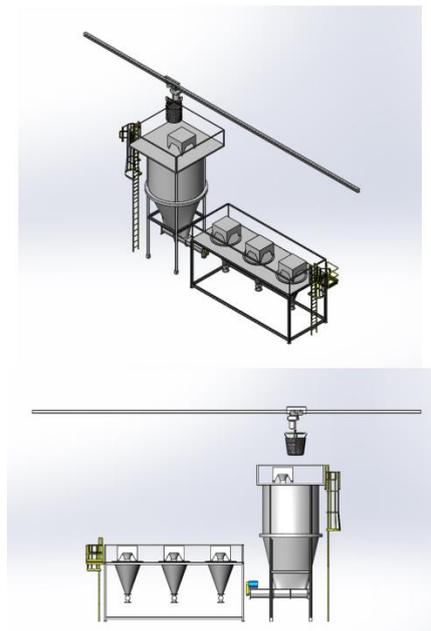


Fig 4: Raw material feeders

Reverse osmosis water

Reverse osmosis water will be fed into each mill directly from the reverse osmosis water treatment unit.

Milling:

After all the raw material is added to each mill, the milling process will begin. Lines 1 and 2 each have 4 mills. Each mill has the capacity of taking 35 tons of grinding media. Lines 3 to 5 each have 2 mills with 70 tons of grinding media capacity.

During milling by using a mechano-electro-chemical exfoliation process, graphite will turn into graphene. The material of the tanks and the grinding media are stainless steel 316L. Below is a short description of lines 1&2:

Table 5: Details of each production line

Milling area line 1&2	
Number of mills per line	4
Operation	Batch
Graphite feed per batch	300 kg
Reverse osmosis water per batch	1900 L
Media charge per mill	30 tons

After the milling process is finished, the slurry inside the mills will be transferred to two agitating tanks using special pumps. The approximate quality of the run will be checked using pH and conductivity measurements. If the run fails the quality check the run will be transfer to the waste treatment area.

Purification:

The slurry from the agitating tanks will be transferred into the purification area. This stage consists of centrifuges and small agitating tanks.

The input slurry has a high pH. First step is to reduce the pH to an acceptable range which is lower than neutral in order to remove all the impurities. Next step is to bring the pH up to neutral in order to have a neutralized product.

Solid liquid separation:

A Vacuum Filter will separate graphene from the liquid using suction generated by a vacuum pump. The graphene will be trapped on the filter cloth of Vacuum Filter and the liquid will be transferred to the liquid-gas separator and from there it will be transferred to the waste treatment area. The output of this stage is a wet graphene paste with around 50wt% moisture.

Drying and de-agglomeration:

Using conveyors, the graphene will be added to a dryer. The goal is to dry the graphene with around 50wt% moisture content to under 10wt%. At the end of the drying process, graphene will form a friable cake. To turn the cake into powder and de-agglomerate it, the cake will enter a secondary mill.

Further drying and classification:

From the secondary mill, the graphene will be dropped into an air-based drying system with the goal to dry the graphene to have as low as 2wt% moisture content and also de-agglomerate any small agglomerated particles. During this process, coarse products with a particle size of around 70 μm will be separated from fine products with a particle size of around 35 μm . The products with a particle size of around 35 μm called GrapheneBlack 3X will be fed directly to the packaging area as a final product.

Ternary milling:

The coarse products with a particle size of around 70 μm called GrapheneBlack 7X will be fed into a ternary milling system to reduce the particle size to around 5 μm . This product is called GrapheneBlack 0X which will be packaged as final product.

Product Handling, storage and packaging:

The products will be packaged inside of the plant in small and big bags in specific areas and from that area will be transported by forklifts to the wrapping and storage area.

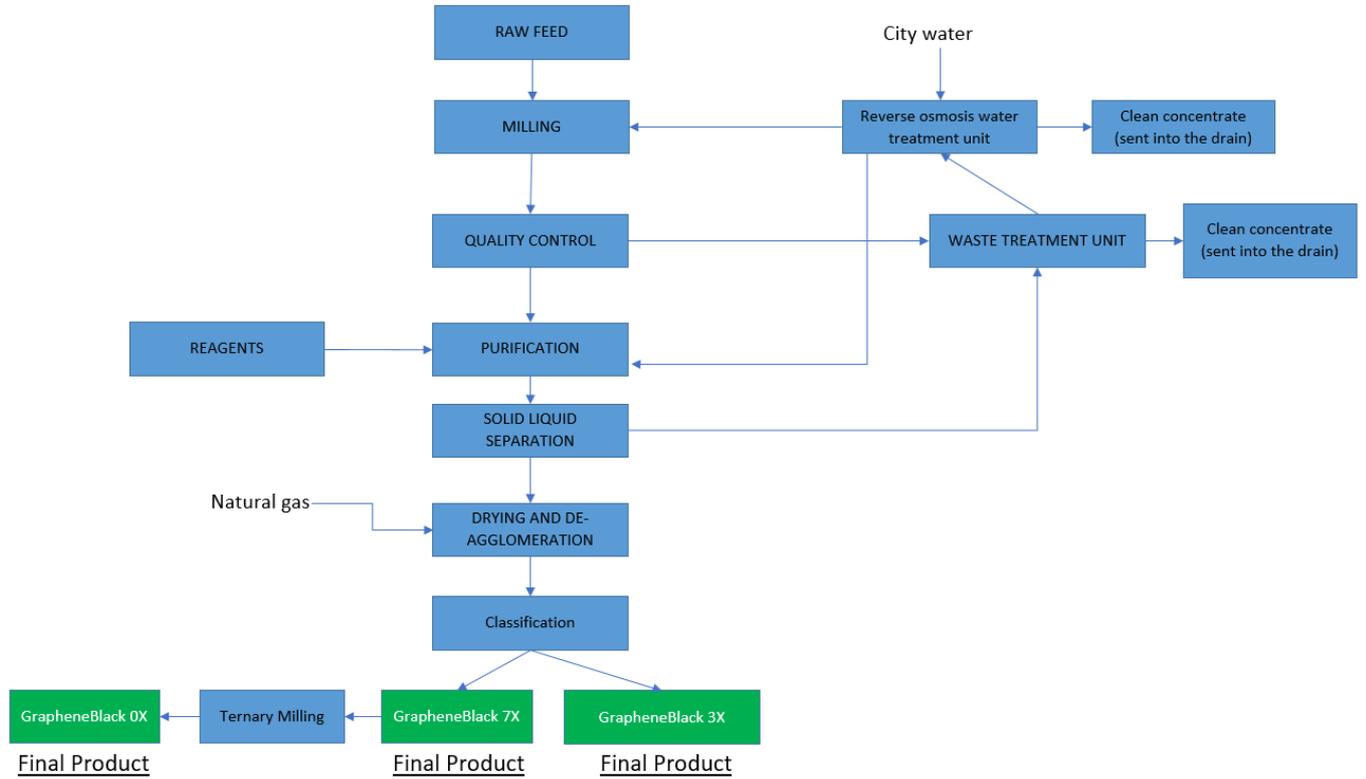
Waste treatment and reverse osmosis unit:

In order to minimize the amount of water consumption in the production process, a waste treatment unit followed by a reverse osmosis unit will be installed. The waste treatment unit consists of:

- A waste water tank that will collect all the waste generated throughout the system.
- A reactor which is a tank where flocculants and other chemicals will be added in order to control the pH and sediment the solid waste.
- A filter unit which consists of multiple filters such as a filter press and ultrafiltration to separate the solid from the liquid.
- A treated waste water tank.

The treated waste water will be transferred from the treated tank to the reversed osmosis system. The reverse osmosis water will be stored in process water tank to be reused in the production.

Fig 5: Block diagram of NanoXplore's graphene production plant



3. CAPEX

Below is the CAPEX calculation considering an EPCM strategy for the execution of the project. As the detailed engineering has not started yet, a 10% of contingency is foreseen. We anticipate to start the detailed engineering as soon as the feasibility study is finished. Buildings, civil works and commissioning will be supervised by NanoXplore directly. All costs, except specify, are in Canadian ("CAD") dollars.

Table 6: CAPEX detail for the 10,000 tpy Graphene production plant

DIRECT COST:

BUILDINGS (NANOXPLORE)-Note 1	\$3,000,000
<i>Foundations and structural, civil and main electrical, water and gas supply</i>	\$3,000,000
MECHANICAL EQUIPMENT SUPPLY	\$18,136,151
<i>Mills</i>	\$5,488,817
<i>Stainless Steel Tanks</i>	\$646,206
<i>Separators</i>	\$1,573,715
<i>Agitators</i>	\$336,500
<i>Pumps</i>	\$1,183,034
<i>Filters</i>	\$690,599
<i>Dryers</i>	\$418,100
<i>Deagglomerating units</i>	\$467,566
<i>Platwork</i>	\$181,246
<i>Classifying System</i>	\$883,971
<i>Ternary mills</i>	\$132,816
<i>Packing Machine</i>	\$750,410
<i>Waste Water Treatment Plant and Reverse Osmosis Plant</i>	\$1,951,877
<i>Reagents System</i>	\$534,000
<i>Raw Feed Handling System</i>	\$700,000
<i>Compressor System (Compressor, receiver, dryer, filter) including Standby</i>	\$208,005
<i>Conveyors</i>	\$141,069
<i>Heat & Ventilation System</i>	\$505,720
<i>Storage Area</i>	\$70,000
<i>Steel Structure supply & fabrication</i>	\$562,500
<i>Refrigeration System</i>	\$420,000
<i>Transport System</i>	\$290,000

E&IC SUPPLY	\$4,652,135
<i>MV Transformers 25 kV/4,16kV</i>	\$308,745
<i>LV Transformers 25 kV/0,6kV</i>	\$96,428
<i>Switchgears</i>	\$948,463
<i>Control System</i>	\$385,000
<i>Instrumentation</i>	\$196,000
<i>Cables</i>	\$503,758
<i>Trays</i>	\$143,741
<i>VFD's, MCC's..</i>	\$2,000,000
<i>Electrical Room HVAC & Fire extinguishers</i>	\$70,000
PIPING & VALVES SUPPLY	\$295,347
TRANSPORT & LOGISTICS	\$439,191
MECHANICAL INSTALLATION	\$1,681,160
E&IC INSTALLATION	\$806,670
COMMISSIONING	Included in installation cost
TOTAL DIRECT COSTS	\$29,010,654

SUSTAINING CAPEX:

SUSTAINING CAPEX (Grinding media, forklift...)	\$4,753,200
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INDIRECT COST:

INDIRECT COSTS	\$6,331,597
<i>Engineering</i>	\$1,500,000
<i>Production & Project Management</i>	\$1,891,392
<i>Contingency (10%)</i>	\$2,940,205
TOTAL INDIRECT COSTS	\$6,331,597

Note 1: Subject to detailed engineering study. Amount allocated here is based on first quotes received by the subcontractor and no detailed value engineering has been done so far. NanoXplore anticipates that this amount would be lower after calculating detailed electrical load of each equipment, detailed foundation requirements etc.

SUMMARY:

TOTAL PROJECT COST-Note 2	\$40,095,451
<i>DIRECT COST</i>	\$29,010,654
<i>SUSTAINING CAPEX COST</i>	\$4,753,200
<i>INDIRECT COST</i>	\$6,331,597

Note 2: No consideration for taxes, Import Duties and Antidumping/Countervailing measurements

4. OPEX

Below is the breakdown for the cost of graphene production in the 10,000 tpy plant:

Table 7: OPEX detail for the 10,000 tpy Graphene production plant

NANOXPLORE GRAPHENE PLANT - OPERATING EXPENDITURE						
	Annual Production			10.000		ton
	Unit Consumption	Unit Price	Annual Cost	Cost	% of Total	
	Units	Quantity	CAD	CAD	CAD/t Graphene	
Direct - Consumables						
Reagents				\$24,518,238	\$2,451.82	60,6%
Other Consumables				\$1,132,563	\$113.26	2,8%
Total Consumable Costs				\$25,650,801	\$2,565.08	63,4%
Direct - Power						
Power	kWh	95,370,000	\$0.05	\$4,868,500	\$486.85	12,0%
Direct - Gas						
Gas	m3	1,314,000	\$0.32	\$420,480	\$42.05	1,0%
Total Power Costs				\$5,288,980	\$528.90	13,1%
Direct - Plant Labour						
Plant Labour				\$2,145,500	\$214.55	5,3%
Total Plant Labour Costs				\$2,145,500	\$214.55	5,3%
Direct - Sampling and Assaying						
Sampling and Assaying	Samples/year	23,333	\$30.00	\$700,000	\$70.00	1,7%
Total Sampling and Assaying Costs				\$700,000	\$70.00	1,7%
Indirect - Leasing						
Building Leasing	month	12	\$41,667	\$500,004	\$50.00	1,2%
Total Leasing				\$500,004	\$50.00	1,2%
Indirect - General and Administration						
General and Administration -Staff	month	12	\$30,000	\$360,000	\$36.00	0,9%

NANOXPLORE GRAPHENE PLANT - OPERATING EXPENDITURE						
	Annual Production			10.000 ton		
	Unit Consumption	Unit Price	Annual Cost	Cost	% of Total	
	Units	Quantity	CAD	CAD	CAD/t Graphene	
General and Administration - Outsource	month	12	\$30,150	\$361,800	\$36.18	0,9%
Total General and Administration Costs				\$721,800	\$72.18	1,8%
Indirect - Various						
Maintenance Parts and Supplies	year	1	\$1,003,138	\$1,003,138	\$100.31	2,5%
Waste Disposal	month	12	\$17,051	\$204,612	\$20.46	0,5%
Consumables Materials (Indirect)	month	12	\$32,453	\$389,437	\$38.95	1,0%
Utilities (Indirect)	month	12	\$0	\$0	\$0.00	0,0%
Insurances, fees and taxes	month	12	\$130,701	\$1,568,407	\$156.84	3,9%
Repair & Maintenance	month	12	\$167,493	\$2,009,912	\$200.99	5,0%
Pre-operational cost	month	12	\$12,500	\$150,000	\$15.00	0,4%
Operational readiness	month	12	\$8,334	\$100,008	\$10.00	0.2%
Total Indirect - Various Costs				\$5,425,514	\$542.55	13,4%
Total Operating Costs				\$40,432,599	\$4,043.26	100%

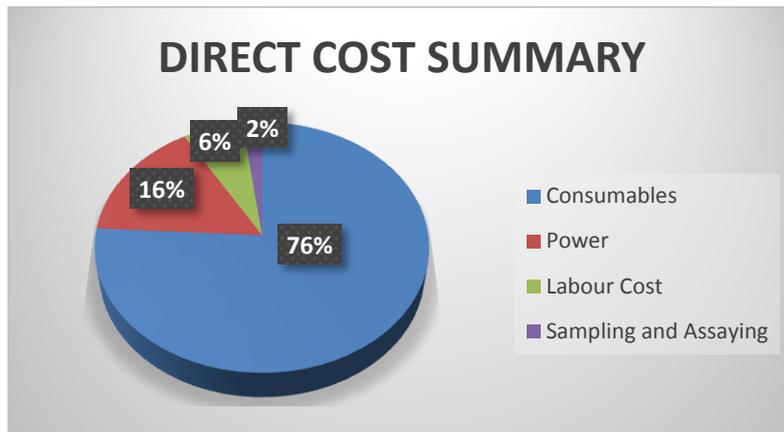


Fig 7: OPEX direct cost distribution for the 10,000 tpy graphene production plant

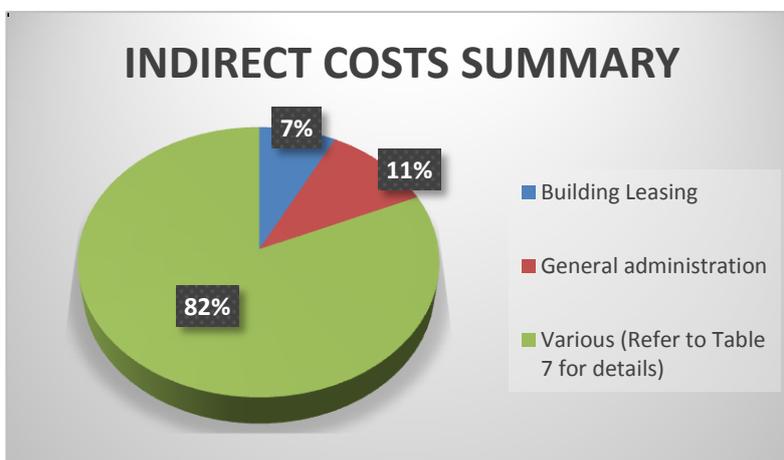


Fig 8: OPEX indirect cost distribution for the 10,000 tpy graphene production plant

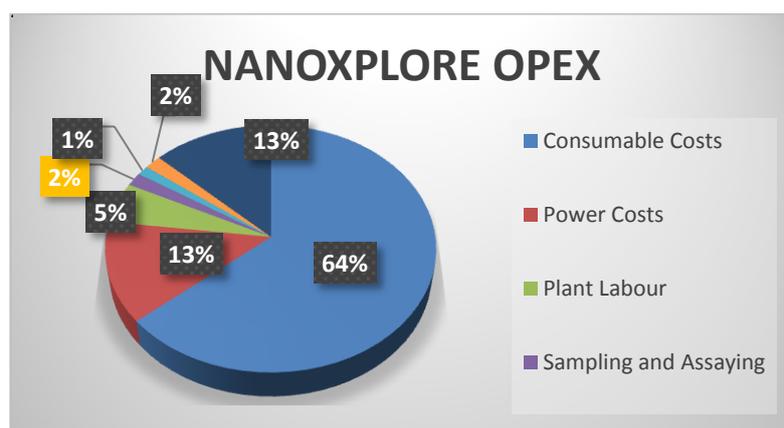


Fig 9: OPEX distribution for the 10,000 tpy graphene production plant

5. SALES PIPELINE (ONLY COVERING NON-CONFIDENTIAL INFORMATION)

Here is NanoXplore’s sales process. We are following a 3-stage sales process as follow:

Table 8: Sales process

<p>Stage 1 (Lead)</p>	<ul style="list-style-type: none"> •Lead generation through attending the related trade shows •Initial contacts with R&D departments of potential leads along with NDAs. •Health and safety confirmations and SDS analysis. •Initial testing and sample validation stage which mostly consumes between 5-10Kg of graphene and takes about 6 to 12 months
<p>Stage 2 (Prospect)</p>	<ul style="list-style-type: none"> •Validation of the lead and promotion to prospect •Discussion about the pricing and business case with the business/product development team of the prospect •Pilot testing and part’s performance validation which mostly consumes between 50kg to 100kg of graphene and takes about 6 to 12 months
<p>Stage 3 (Client)</p>	<ul style="list-style-type: none"> •Validation of the prospect and promotion to client •Issuance of letter of intent followed by supply contracts •Finalizing the certifications (if needed) •Production schedules (normally within 6-24 months)

There are 3 main target markets for NanoXplore:

- Piping
 - o Consumes very large amount of graphene
 - o No complex certification and fast time-to-market (24 months)
 - o Direct graphene powder sales to pipe supplier
 - o Confirmed customer interest
 - o Amount of graphene needed for 10% PE pipe North America market penetration is 3,500 tons/year (equal amount for Europe)
 - o Main target market of NanoXplore
 - o Low product complexity from one supplier to another
- Automotive
 - o Large and diverse market with several potentials for performance elevation by graphene
 - o Lengthy certification to become tier one, quicker to act as tier two, and slow time-to-market (36 months and more depending on the application of the part)
 - o Graphene-plastic pellet sales; main interested segments are fuel systems, interior dashboards, interior door panels, tires, underhood components
Confirmed customer interest
 - o Secondary target market for NanoXplore
 - o High product complexity and strong case dependency
 - o Expensive customer acquisition with high customer loyalty (hard to get a customer and harder to lose one)
- Sport
 - o Consumes small amount of graphene but extremely visible market
 - o No complex certification and very fast time-to-market (18 months)
 - o Graphene-plastic pellet sales
 - o Confirmed customer interest
 - o Third target market for NanoXplore
 - o Low product complexity from one supplier to another

Details of the current products and clients as well as information regarding prospects are deleted from this study because of confidentiality reasons.

6. PERMITS

The 10,000 metric tons per year graphene production facility is not subjected to the environmental impact assessment according to chapter Q-2 of the Environment Quality Act. According to the urban planning department of the Saint-Laurent borough (by-law RCA08-08-001-83), the Site location of the 10,000 metric tons per year facility is located in zone 11-004 where industrial uses are allowed. The location of the said site is shown below:



Fig 10: Zoning of the building and land of NanoXlore’s 10,000 metric tons graphene production plant

The current location of NanoXlore’s 25 metric tons per year production facility is also located in the Saint-Laurent borough at the following address:

25 boul Montpellier
 Ville Saint-Laurent
 QC, H4N 2G3

The current 25 metric tons per year facility is located in the municipal area 18-024 with dominant use of type B. This zoning allows industries including research and development, manufacturing industries and the chemicals sector, namely the activities specifically planned by NanoXplore.

NanoXplore has been granted all necessary permits by the city of Montreal and Ministère du Développement durable, de l'Environnement et de la Lutte to operate the current 25 metric tons per year graphene production facility. The permits are the following:

- Certificate of authorization under section 22 of the environmental quality act
- Clean Air Permit - Regulation of the Montreal Metropolitan Community on Releases to the Atmosphere
- Industrial wastewater discharge and spill prevention permit

The 10,000 metric tons per year graphene production facility will obtain the same permits as indicated above since it is also located in the Saint-Laurent area, plus construction permits in order to perform slight modifications to an existing building and also for construction of a new building adjacent to the existing one. All operations, receiving and storing raw materials and shipping finished products will be inside the building, similar to the current 25 metric tons per year production facility.



Fig 11: 4500 Thimens Blvd at Ville St- Laurent is the location of NanoXplore's 10,000 metric tons per year graphene production plant