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Issue No. 38 | September 18, 2023

By Charles Marleau CIM® and William Mitchell CIM®

NanoXplore: Executing on the 5-Year Plan

Last November, Montreal-based graphene producer NanoXplore (GRA:TSX) revealed its 5-year strategic plan. Included in the plan was an announcement to increase graphene production capacity to 20,000 tons per year (tpa) by 2027 (from 4,000 tpa), expansion of the Sheet Molding Compound (SMC) facility located in Newton, South Carolina, and a pledge to participate in energy transition and sustainability megatrends. The includes NanoXplore's foray into the EV (electric vehicle) battery business via its wholly owned subsidiary VoltaXplore. NanoXplore is the largest manufacturer and marketer of low-cost graphene-based powders and pellets. Graphene, which is a derivative of graphite, has unique properties for use in a growing number of industrial applications including plastic moldings, geotextiles, auto parts, concrete, medical devices, and Li-ion battery cells for electric vehicles (EVs). The SMC business integrates graphene into the plastic sheet molding process which produces superior automotive body parts for OEMs. SMC body parts offer significant benefits in paintability, lightweighting and production consistency.

The company released its Q4/2023 (year-end) financial results last Tuesday. Total revenue increased 18% compared to the last quarter of 2022 (\$33 million vs. \$28 million). For the full fiscal year revenue reached a record high of \$123 million (33% higher year-over-year). Gross margins in Q4 improved to 21% from 17% in Q4/2022. The company's balance sheet remained strong with \$36.2 million of cash in hand and \$10.3 million of available credit; total debt equals \$9.4 million.

On the earnings call with investors, Founder and CEO Soroush Nazarpour offered updates on recent business developments related to the 5-year plan. Anode active battery material products have been fully tested, a battery anode facility is operating and plans are in place to produce 8,000 tpa of active material with an eventual plan to 16,000 tpa production following completion of the full facility. Engineering for the expansion is underway as are discussions with suppliers and contractors for equipment. Financing for the facility will be supported by both federal and provincial financing and tax credits. The potential market for EV batteries is massive and several new projects in Canada have recently been announced. "We're very excited to enter the battery material market" according to Mr. Nazarpour.

Another initiative of the 5-year plan is focused on lightweighting and transportation. The company was recently awarded a contract with a large commercial vehicle OEM, and this has stirred strong interest from

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passenger vehicle OEMs. Composite sheet molding plastics (enhanced with graphene) are lighter, stronger, and offer superior production line and painting attributes compared with metal stamped products. This is garnering attention from potential customers as lightweighting and batteries are important considerations for EV manufacturers.

Another application that's garnering attention is graphene-enhanced drilling fluids for oil and gas exploration. Graphene powder enhances the lubricity of drilling fluids by reducing friction. The resulting benefits are increased drilling speeds, longer drill bit life cycles, greater efficiency (reduced downtime), and deeper drilling capability for advanced drilling techniques. In response to a question on the earnings call, Mr. Nazarpour commented that "a few tons" of graphene is consumed by each well drilled and considering that "30 to 40 thousand" wells are being drilled every year, this clearly represents a massive opportunity. Nazarpour confirmed that a validation process with a "large oil and gas company" is nearing its conclusion.

In addition, applications in agricultural (geotextiles), industrial (recyclable plastics) and the construction industry (graphene-enhanced foam insulation) are witnessing growth "right now". But the elephant in the room remains the battery business, namely VoltaXplore (100% owned by NanoXplore). On August 31, we received confirmation that VoltaXplore has agreed to terms on a 10-year supply agreement for lithium-ion batteries with a well-known commercial vehicle OEM. The deal will send 1-GWh (50%) of the production capacity that's expected from the 2-GWh production facility (projected for completion by 2026). The company also announced the appointment of Nicolas Veilleux, formerly of Tesla, as director of automation and construction. These announcements significantly de-risk the project. An announcement on the funding and possibly a strategic partner is expected soon.

With the recent earnings release, management confirmed that current customers continue to increase the size of their orders, new applications are continually being discovered and the number of successful "validations" suggest a growing number of prospective customers. Plans for expanded production capacity are well underway and this is important to consider given that customers must be assured of an ample supply before committing to using graphene in their products. A financing announcement on VoltaXplore is imminent and its first battery customer has been confirmed. We also know that NanoXplore will not be participating in the funding mix and this is good news for shareholders. The prospects of success are getting brighter by the day, and we get the sense that the graphene story is still in its early stages and we have a high level of conviction in our investment. The Palos Income Fund, The Palos Equity Income Fund, The Palos WP Growth Fund and The Palos-Mitchell Alpha Fund are long-term investors in NanoXplore.

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Chart 1: Palos Domestic Funds versus Benchmarks (Total Returns) ¹	FundServ	NAVPS	YTD Returns
Palos Income Fund L.P.	PAL100	\$8.52	8.38%
Palos Equity Income Fund - RRSP	PAL101	\$6.91	6.93%
Palos WP Growth Fund - RRSP	PAL213	\$10.99	-11.66%
Palos-Mitchell Alpha Fund ³	PAL300	\$10.53	33.09%
S&P TSX Composite (Total Return with dividends reinvested)			8.93%
S&P 500 (Total Return with dividends reinvested)			17.29%
S&P TSX Venture (Total Return with dividends reinvested)			3.75%
Chart 2: Market Data ¹			Value
US Government 10-Year			4.33%
Canadian Government 10-Year			3.74%
Crude Oil Spot			US \$90.77
Gold Spot			US \$1,927.90
US Gov't10-Year/Moody BAA Corp. Spread			180 bps
USD/CAD Exchange Rate Spot			US \$0.7394

 $^{\rm 1}\,$ Period ending September 15rh, 2023. Data extracted from Bloomberg

² Fund is priced annually

³ Fund is priced weekly on Tuesdays

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