

Graphite's 'lukewarm performance' in November signals buying opportunity for investors



Graphite Market Month-in-Review – Graphite & Graphene shares fell 8.61% overall during the month of November even as there was no shortage of favorable resource updates, but commodity investors have been trading very carefully in the current market environment. The performance of the Chinese economy in November fell below expectations, generating lower demand but the fundamentals of graphite demand have not changed and none of the companies followed by InvestorIntel published any significant news to warrant a shift in market performance, whether up or down. Indeed, the lukewarm performance of the sector is best attributed to falling industrial metal prices at the London Metal Exchange, reflecting weaker economic signals from China for the past month. Meanwhile, more jobs were created in the US, which strengthened the US Dollar, hurting commodities. It should be noted that some of the companies that suffered the most over the past month were Australian; their performance were far more a reflection of an especially sluggish commodities sector on the ASX exchange than any specific graphite market issues. Indeed, in the medium term the current lower oil prices could actually help to boost consumer spending, generating long-term positive effects for metals and minerals such as graphite, which is not only one of the drivers of future technology, it is needed for many current industrial applications. The higher the purity, the higher the value; and very few producers are able to deliver flake graphite at purity levels of 90% or more. Chinese mineral graphite has, until recently, been of

sufficient purity to meet basic industrial applications but insufficient in addressing the demand for advanced materials to make the lighter and more powerful Li-ion batteries used increasingly in electric vehicles and beyond.

Graphite One Resources Inc. ('Graphite One', TSXV: GPH | OTCQX: GPH0F) gained +21.74% in Toronto trading and +20% at the OTC; it is one of the emerging North American graphite plays that enjoyed a strong November, concluding the month with an announcement that it has published the results of the first ten holes of the recently completed twenty-hole diamond drill program at its Graphite Creek Project located near Nome, Alaska. Of the highlights published in Graphite One's November 10 release, the highlights to consider are that "all 10 holes intercept significant widths of high grade, near surface graphite mineralization" and that the "geology and assays confirm excellent vertical and lateral continuity of the mineralization." Graphite One is on schedule to deliver a revised NI 43-101 compliant mineral resource during the first quarter of 2015 ahead of the preliminary economic assessment (PEA), which President and CEO Anthony Huston says will "demonstrate to end buyers and shareholders the economic viability of this project."

Northern Graphite Corporation ('Northern', TSXV: NGC | OTCBB: NGPHF) was one of the few market movers for November, gaining +7.89% in Toronto and +4.65% at the OTC. Northern has managed to produce a spherical graphite product, which is used to make the anodes for lithium-ion batteries. The company is pleased with the quality its graphite and has released its knowledge and expertise to the industry in general because it sees batteries as one of the main market drivers. Northern itself retains the advantage in the battery market thanks to its newly opened battery testing and research facility, proprietary purification and coating technologies.

Mason Graphite ('Mason', TSXV: LLG | OTCQX: MGPHF) gained +32.08% in Toronto and +30% on the OTC. Mason is still feeling

the effects of its signed Memorandum of Cooperation with the Council of the Innu of Pessamit signed last September, which generated optimism about the prospects for the Lake Gueret mine moving to the next the next steps including the completion of all pre-feasibility studies, feasibility and environmental permits.

Energizer Resources ('Energizer', TSXV: EGZ | OTCQX: ENZR), saw some gains and losses during the month, ending last Friday's trading session at the same price as the beginning of the month Toronto and losing slightly. Nevertheless, Energizer had an interesting November as its joint venture partner, Malagasy Minerals (ASX: MGY) formally opened its Maniry Graphite Project in Madagascar, where Energizer discovered a large region containing excellent graphite deposits. The early data suggests the graphite ore is of very high grade and that it has not been excessively contaminated by other minerals, which will other rocks which will facilitate its refinement into pure flake graphite.

Alabama Graphite (TSXV: ALP | OTCQX: ABGPF) was also very active in November, ending the month down despite having announced the start of exploration at five new targets over the next few months based on identified 'anomalies' that hold significant promise for large flake graphite. Alabama Graphite has been very active during the past weeks advancing programs at its 42,000 acres of property in central Alabama, located along a historic graphite belt. So far, Alabama Graphite has engaged in trenching some 10,000 out of a total 18,000 feet and its Coosa and Bama properties have shown two important characteristics that make them ideal: the flakes are coarse and large and most of the graphite is at surface level, promising to yield even better grades than the already high grade surface material.

Great Lakes Graphite (TSXV: GLK), which enjoyed good result last week, lost -7.69% for the month despite the fact that investors learned about the Company's new infrared (IR)

graphite concentration test method, allowing it to ensure higher quality standards in view of a resource estimate to be issued in the next few months. Great Lakes announced an update on flotation concentration tests based on a composite sample from the Lochaber property. Great Lakes has gone to great lengths in ensuring as accurate a methodology as possible to ensure the highest possible quality. The results were very encouraging given a 57.64% concentration rate for Large, Jumbo and Super Jumbo flakes.

Kibaran Resources ('Kibaran', ASX: KNL) published favorable results from its Mahenge Graphite Project. Kibaran has been working on the feasibility study for the 'Epanko deposit', which has an inferred resource of 14.9 million tonnes grading 10.5% total carbon graphite and 1.56 million tonnes of contained graphite – and this based only 20% of the project area. Kibaran is banking on developing a large flake deposit featuring material of the highest quality. Kibaran also announced the signing of a Memorandum of Understanding for an offtake agreement with the German industrial conglomerate Thyssen-Krupp for an initial 20,000 tonnes of graphite per year. The fact that Kibaran lost 39.22% of its share value in November, in spite of otherwise favorable results, testifies to the difficulty of the current market, driven by waves of bearish speculation in the resource sector.



Northern Graphite and

Graphite One lead the graphite sector in the first week of November

✘ **Graphite Market Review** – Northern Graphite Corporation (TSXV: NGC | OTCQX: NGPHF) was one of the few market movers for the week ending on November 7, 2014, gaining 11.84% in Toronto and 9.45% at the OTCQX. The gains contrast with the combined average performance for Graphite companies (members of InvestorIntel) of -2.19%. Graphite One (TSXV: GPH | OTCQX: GPH0F) rose 4.35% in Toronto and 16% at the OTC; Great Lakes Graphite (TSXV: GLK) gained rose 7.69%, Focus Graphite rose 5.88% in Toronto and 5.26% at the OTC while Deveron Resources gained 8.82%. Overall, the fundamentals of graphite demand have not changed and none of the cited companies published any significant news to warrant a shift in market performance, whether up or down. Indeed, the lukewarm performance had far more to do with falling industrial metal prices at the London Metal Exchange, reflecting weaker economic signals from China. Meanwhile, more jobs were created in the US, which strengthened the US Dollar, hurting commodities.

The October economic indicators from China were lower compared to September, suggesting that the People's Republic continues to struggle – relatively speaking of course – to meet economic growth targets. Analysts are betting that the government will ultimately take further measures to support the economy, as GDP predictions growth are at risk. Meanwhile, the economy in the Eurozone has remained under tremendous pressure. The EU Commission has lowered its growth forecasts for this year and the current year, the euro against the US dollar continued again under pressure. The US dollar index rose again significantly, making commodities more expensive for holders of other currencies, which in turn affects demand – lowering

it. Even zinc, for which a demand bottleneck is expected in the coming years, suffered in the markets because of a demand problem in China – reflected by sharply lower sales of zinc intensive e-bikes.

Graphite is one of those raw materials that, even if needed in small amounts, are expensive because of the special property requirements. Graphite is still expected to experience strong demand growth in the coming years. Similar to rare earths, China is the market leader in the market for graphite, which is there but mainly used in steel production. Graphite is also needed to make graphene. Such graphite requires a purity of more than 99% and a handful of producers can deliver it. Apart from graphene, graphite is generating considerable interest and demand because of its use in Lithium-ion batteries, better known as Li-ion batteries. Northern Minerals was, as noted above, one of the few market gainers last week. At the end of October, Northern launched a lithium ion battery (“LiB”) research and testing facility to develop and test natural graphite based anode materials for LiBs aimed at improving battery performance, reducing costs and reducing the environmental impact of anode manufacturing. The facility will be available on normal commercial terms to any company, including Northern’s competitors – so long as results are shared with the public.

One of those competitors is **Focus Graphite**, which last week signed a Pre-Development Agreement with the Uashat Mak Mani-Utenam First Nation with respect to the graphite Lac Knife project. This is very important because failing to secure such agreements can affect deeply affect a project, delaying or preventing governments from granting the relevant permits. Alabama Graphite, meanwhile, announced the conclusion of a warrants purchase in the amount of USD\$ 2.1 million.

Alabama Graphite now has a zero balance debt and it plans to use the remaining proceeds from the voluntary exercise of the Warrants for further exploration and development of the Coosa

and Bama Mine Projects in Alabama (USA), initiating a preliminary economic assessment of the Coosa project to generate working capital.

Great Lakes announced the use of a more accurate “modified infrared (IR) graphite concentration test method to achieve a high level of accuracy. Great Lakes is moving aggressively and it has set some important targets for the next few months with the resource estimate being the immediate priority. The Company wants to move fast enough to overtake its peers to become the first producer of graphite in North America.

Graphite One completed another drill campaign at its Graphite Creek deposit, which is claimed to be the largest flake graphite deposit in North America; certainly, it is one of the most significant large flake deposits in the United States. Having completed the drilling campaign, Graphite One can now proceed toward completing the preliminary economic assessment.

Australia’s **Discovery Africa**, focused on developing graphite at its Nachingwea graphite project in Tanzania, announced the receipt of a mining license covering an additional 103 km² of exploration territory. The samples from this area are very promising, having revealed 7.22% and 5.55% of total carbon-graphite, as announced on October 30. The Company also has significant graphite assets in Uganda. Finally, **Deveron Resources** announced it would agree to option as much as a 100% stake in Greencastle Resources’ Rockstone property in northwest Ontario, which is also said to contain zinc. Northern Ontario has surprisingly good grades and varieties of graphite to offer at its Albany deposit. There is good reason to believe that Deveron may find its own world-class deposit featuring the kind of grades and varieties that lend themselves well to battery and graphene production.



Graphite Market Review is a special weekly feature on

Potential Tesla battery supplier Graphite One begins drilling at Graphite Creek

✘ Graphite One Resources Inc. ('Graphite One', TSXV: GPH | OTCQX: GPHOF) has just announced that it will start drilling at its Graphite Creek Project, which the Company claims to be the only advanced stage large-scale, large flake graphite deposit in the United States. The Graphite Creek Property includes 129 claims covering a 6,799 hectares area in Alaska's Seward Peninsula, just 65 kilometers north the Nome deep sea port. Graphite Creek presents a highly desirable mineralization, marked by coarse crystalline (big flakes) graphite (greater than 0.18 mm). On January 20, 2014, Graphite One issued technical report noting that the Company was sitting on an 43-101 inferred resource of some 284.7 million tons of 4.5% carbon graphite (Cg), including 37.68 million tons at 9.2% and 8.63 million tons at 12.8% graphite content. Graphite One intends to embark in a comprehensive Summer/Fall 2014 Drill in order to determine the extent of continuous mineralization in order to prepare the forthcoming Preliminary Economic Assessment (PEA). The work will also feature the collection of mini-bulk samples from both surface and existing drill core to continue to develop and implement bench scale metallurgical testing. Graphite One has already shown that it is capable of delivering a high purity of 99.99% (Cg) graphite from a rough concentrate through leaching.

Graphite One has the ability to produce and deliver the kind of graphite that is used to make anodes in lithium-ion batteries. Given that Graphite One's graphite has demonstrated that it contains the kind of graphite able to challenge the synthetic variety of graphite. According to the Company, the Graphite Creek Property "hosts the largest known, high-grade, large flake Graphite Deposit in the United States." This is the kind of graphite needed by Tesla Motors, which intends to build and run a new and huge factory solely devoted to making lithium ion batteries. The project, known as 'Gigafactory', could by itself raise the demand for natural graphite rise by up to 37% by 2020. Tesla intends to open the Gigafactory in 2017 such that it will deliver the equivalent of some 35 Gigawatt-hours (GWh) per year, which represents more than twice the value of the current market. Tesla believes that could become the market leader for Li-ion batteries in the United States.

Tesla's new factory is expected to be built in the Southwestern US and it could consume up to 28,000 tons of spherical graphite per year at full capacity, requiring the equivalent of 93,000 tons of flake graphite to process using today's methods more than twice as much as is used worldwide today. Despite some research, there is little to suggest that there is any end in sight to the dominance of graphite in the manufacturing of anodes. Graphite is simply the material of choice for manufacturers of lithium ion batteries. Of course, there is the chance that Tesla may choose to use synthetic graphite; however, this is not a strong chance given the latter material's far more insidious environmental concerns and Tesla's image as a socially and environmentally responsible company. Quite simply, the expansion of the battery market for electric vehicles will be such that it will generate a great opportunity for graphite producers.

As of 2012, the battery sector accounted for around 8% of the global demand for natural graphite. Thus, thanks to Tesla in

particular (but not exclusively – because others will step in to meet demand for electric vehicles should Tesla abandon the Gigafactory project) the production of flake graphite in the coming years will have to increase considerably. Graphite mining in North America, and elsewhere, will have to increase to meet the rapidly changing demands of the market and to compensate for China's potential cuts to production and ongoing mining sector rationalization and cleanup. Therefore, companies like Graphite One may well have a chance to play an important role in global graphite supply rather than exclusively North America. Given, the probable increase in the graphite market, several new graphite mines will have to come online to address demand. In addition, Graphite One benefits from having its project in Alaska, which has helped mining companies considering technology minerals to be essential components of the State's economic future.