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Northern Graphite Charts Path to Carbon Neutral Project at Bissett Creek

February 14, 2022: Northern Graphite Corporation (**NGC:TSX-V, NGPHF:OTC-Pink, FRA:ONG, XSTU:ONG**) (the “Company” or “Northern”) is pleased to announce that Minviro Ltd. (“Minviro”) has completed an ISO-compliant Life Cycle Assessment (“LCA”) on the production of graphite concentrate and lithium-ion battery anode material (“BAM”) from the Company’s Bissett Creek deposit in order to guide the Company in developing a carbon neutral project. Additionally, Minviro benchmarked the potential carbon footprint of Bissett Creek against the production of Chinese natural and synthetic graphite and their upgrade into battery anode material.

Minviro estimated that by powering the mining fleet with natural gas rather than diesel, and replacing the planned natural gas fired generating plant with hydroelectric power, the Global Warming Potential (“GWP”) of the Bissett Creek project could be reduced by more than half, from 2.2 kilograms (“kg”) of CO₂ eq. per kg of graphite produced to 1.0 kg of CO₂ eq. Minviro is undertaking an additional study to quantify the benefits of an electric mining fleet to further reduce the project’s carbon footprint.

Minviro estimated that Li-ion battery anode material, also known as coated spherical purified graphite (“CSPG”), manufactured from Bissett Creek mine concentrates under the optimized scenario would have a carbon footprint of 7.3 kg of CO₂ eq. per kg of product. In comparison, the carbon footprint of Chinese CSPG produced from natural graphite is estimated at 16.8 kg of CO₂ eq. and 17 kg of CO₂ eq. if produced from synthetic graphite.

Gregory Bowes, CEO commented that “the Minviro report indicates that the carbon footprint of the Bissett Creek project can be reduced to levels that create a clear and economic path to carbon neutrality by investing in the creation of credits or purchasing carbon offsets. Very few mining projects can achieve this status.” He added that “the report also highlights the substantially higher carbon footprint of Chinese production, particularly of synthetic graphite.”

Minviro’s estimate for the carbon footprint of synthetic Chinese CSPG production is based on a plant in Fujian Province where the regional power grid mix has a lower environmental impact than Inner Mongolia where many plants are located and where the grid is largely coal based. Accordingly, synthetic graphite produced in Inner Mongolia has an even higher GWP due to the large volumes of electricity required. ESG concerns as well as shutdowns due to high emissions or power shortages/rationing all create significant supply concerns with respect to Chinese synthetic BAM production.

The EV and battery industries need to be transparent about the environmental impacts of producing both natural and synthetic graphite and manufacturing battery anode material therefrom as graphite is the largest single component of a lithium-ion battery. The evolution from internal combustion engines to EVs will require multiples of current graphite production and the environmental implications need to be well understood. As part of Northern’s policy of transparency and full disclosure, and to foster further discussion on this important issue, Minviro’s report will be made publicly available [here](#) in the coming weeks after the effect of electrifying the mining fleet has been estimated.

Life Cycle Analysis is a cradle-to-gate study meaning that the product life cycle impact is assessed from the point of resource extraction to the end-gate, which in this case, is the production of graphite concentrate and CSPG from the Bissett Creek Project. The study follows the Greenhouse Gas (“GHG”) Protocol which identifies three types of GHG emissions. Scope 1 are all direct GHG emissions, Scope 2 are indirect GHG emissions from the consumption of purchased electricity, heat or steam and Scope 3 are embodied emissions, such as the extraction, production and transport of purchased materials and fuels, outsourced activities, waste disposal, etc. The study has been conducted according to the requirements of the ISO-14040:2006 and ISO-14044:2006, including a third-party review from LCA experts to ensure that it is scientifically robust. A number of parameters were calculated using high level assumptions and further testing, data collection and analysis will be conducted.

The goal of Northern’s LCA was to identify the major parameters contributing to the global warming impact of producing graphite concentrate, quantify them in different impact categories, and then estimate the impact of various alternatives for reducing the carbon footprint of the Bissett Creek Project. In addition to global warming potential, four other impact categories were evaluated. These categories and the implications of the study results are as follows:

1. Acidification potential (“AP”) relates to the release of SO₂ and NO₂ into the atmosphere which causes acid rain and ecosystem impairment. The total freshwater and terrestrial AP of the project is calculated to be 1.4E-2 mol H⁺ eq. per kg of graphite concentrate produced. Approximately 70% relates to the consumption of diesel fuel in mining operations and 20% to natural gas used for power generation. These numbers will be substantially reduced if natural gas or electricity is used to power the mining fleet and hydroelectric power is used to run the processing plant.
2. Disease incidence (“DI”) measures the effect on human health from the release of particulate matter and was calculated to be 3.2E-7 DI per kg of graphite concentrate. Over 80% relates to the consumption of fuel on site, which can be mitigated through the use of natural gas and/or electricity. Dust emissions from vehicles on unpaved roads are minimal due to the low surface silt content and high rainfall.
3. The total water use for the project is 60.6 kg water eq. per kg of graphite concentrate. The potential for water deprivation to humans or ecosystems is not considered significant as the project is located in an area with a low water scarcity index.
4. Land use transformation calculates the project’s effect on biotic production, erosion potential, groundwater regeneration, infiltration reduction and physicochemical filtration. The tailings dams and waste rock piles will initially create a loss in biotic production and reduce the rate of water infiltration into the soil as well as its physicochemical filtration capacity. These effects will moderate and recover as the areas are revegetated and reclaimed. Tailings dams and waste rock piles contribute to a net reduction in erosion potential but they also reduce the amount of ground water infiltration into aquifers, an effect which is partially offset by increased infiltration in the open pit.

About the Bissett Creek Project

An independent study has rated Bissett Creek the highest margin graphite project in the world including existing producing mines. This is due to its very high percentage of valuable large flake graphite, simple metallurgy and favorable location which provides ready access to equipment, supplies, labor, natural gas and markets.

The Bissett Creek deposit is located in the southern part of Canada between the cities of North Bay and Ottawa and approximately 15 kms from the Trans Canada Highway. A full Feasibility Study has been completed for the construction of a graphite mine producing 20-25,000 tonnes per year of concentrate. However, measured and indicated resources are large enough to support a much higher production rate and the Company is currently re-evaluating its development plans in light of the substantial growth in EV/battery markets. The results of this process are expected to be announced in the coming months.

About Northern Graphite

Northern Graphite is a Canadian company, listed on the TSX Venture Exchange (“TSXV”), focussed on becoming a world leading producer of natural graphite and upgraded, high value products critical to the green energy revolution including

anode material for lithium-ion batteries/EVs, fuel cells and graphene, as well as advanced industrial technologies.

On December 2, 2021 Northern announced that it had entered into binding purchase agreements to acquire the producing Lac des Iles graphite mine in Quebec and the Okanjande graphite deposit/Okorusu processing plant in Namibia from subsidiaries of Imerys SA (the “Transaction”). Closing of the Transaction is subject to a number of conditions including approval of the TSX-V and completion of \$55 million in related financings. Completion of the Transaction will enable Northern to become the only North American and the world’s third largest non-Chinese graphite producing company. In addition, Northern will have two large scale development projects that have high quality flake graphite and are located close to infrastructure in politically stable jurisdictions. These projects will enable the Company to significantly expand production to meet rapidly growing demand from the EV/battery markets.

About Minviro

Minviro was formed to support the global community by ensuring that raw materials used for the low-carbon economy are sourced at minimal environmental cost. Minviro helps mining, mineral processing and refining companies understand, quantify and reduce their environmental impacts through a life cycle assessment (“LCA”) which drives sustainability. Since Minviro’s formation, a number of mining and metal projects have been able to quantify the environmental impact of the products leaving their project and have been provided with expert insights into how they might minimise these impacts.

For additional information

Please visit the Company’s website at <http://www.northerngraphite.com/investors/presentation/>, the Company’s profile on www.sedar.com, our **Social Channels** listed below or contact the Company at (613) 241-9959.



This news release contains certain “forward-looking statements” within the meaning of applicable Canadian securities laws. Forward- looking statements and information are frequently characterized by words such as “plan”, “expect”, “project”, “intend”, “believe”, “anticipate”, “estimate”, “potential”, “possible” and other similar words, or statements that certain events or conditions “may”, “will”, “could”, or “should” occur. Forward-looking statements in this release include statements regarding, among others; the Company’s intentions to complete the Transaction and related financings and the Company’s market position post-Transaction. All such forward-looking statements are based on assumptions and analyses made by management based on their experience and perception of historical trends, current conditions and expected future developments, as well as other factors they believe are appropriate in the circumstances. However, these statements are subject to a variety of risks and uncertainties and other factors that could cause actual events or results to differ materially from those projected including, but not limited to unexpected changes in laws, rules or regulations, or their enforcement by applicable authorities; the failure of other parties to perform as agreed; social or labour unrest; changes in commodity prices; unexpected failure or inadequacy of infrastructure and the failure of ongoing and contemplated studies to deliver anticipated results or results that would justify and support continued studies, development or operations. Readers are cautioned not to place undue reliance on forward-looking information or statements.

Although the forward-looking statements contained in this news release are based on what management believes are reasonable assumptions, the Company cannot assure investors that actual results will be consistent with them. These forward-looking statements are made as of the date of this news release and are expressly qualified in their entirety by this cautionary statement. Subject to applicable securities laws, the Company does not assume any obligation to update or revise the forward-looking statements contained herein to reflect events or circumstances occurring after the date of this news release.

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