Falcon Announces Positive Results of Preliminary Economic Assessment for Morocco Anode Plant

After-Tax NPV8% of US$1,149 Million and IRR of 82% over 25 years

Initial Capital Costs of US$73 Million for Annual Anode Material Production of 26,000 tonnes per annum

Attractive Cash Costs of US$3,193 per tonne of Anode Material

PRESS RELEASE **FOR IMMEDIATE RELEASE**

Abu Dhabi, United Arab Emirates, November 12, 2024 – Falcon Energy Materials plc (TSX-V: FLCN) ("**Falcon**" or the "**Company**") today welcomes the positive results of the Preliminary Economic Assessment ("**PEA**") for the natural graphite spheroidization, purification and coating plant (the "**Anode Plant**", view the video **HERE**) in the Kingdom of Morocco ("**Morocco**"). The PEA, prepared by Dorfner Anzaplan UK Limited ("**Anzaplan**"), showcases the strong financial and operational potential of Falcon's vision to produce coated, spheroidized and purified graphite ("**CSPG**") anode material in Morocco at industry leading operating costs.

Highlights of the Preliminary Economic Assessment include:

- After-tax net present value ("**NPV**") at a real 8% discount rate of US$1,149 million;
- After-tax internal rate of return ("**IRR**") of 82%;
- Pre-production initial capital costs, including contingency, estimated at US$73 million;
- Average operating costs of US$3,193 per tonne of CSPG; and
- Average CSPG production of 26,000 tonnes per annum ("**tpa**") and 18,000tpa fines

Matthieu Bos, Chief Executive Officer of Falcon, commented "The robust PEA results affirm Falcon's strategic vision and dedication to closing critical gaps in the battery materials supply chain.

We're poised to advance as a key CSPG supplier to Western markets, ensuring a reliable source of high-quality, sustainable battery materials.''

Leveraging Advanced Technology and Procurement with Hensen Partnership

The Anode Plant in Morocco will feature Falcon's integrated mine-to-market strategy, backed by a strategic partnership with Hensen Graphite & Carbon Corporation ("**Hensen**"). Hensen, a leading CSPG producer, brings years of operational expertise from its successful synthetic and natural graphite anode plants in China. Hensen is currently building a large-scale anode plant in Weihai, China (the "**Weihai Plant**"), expected to be commissioned in Q4 2024. Hensen and Falcon have leveraged the proven design, procurement and existing supply chain practices from Hensen's recently completed Weihai Plant to establish a highly competitive, cutting-edge facility in Morocco. The partnership allows Falcon to implement advanced technology and process efficiency to deliver high quality anode materials at scale and with competitive costs to the rapidly growing European and North American markets.

"With the Hensen partnership and redomiciliation to Abu Dhabi, we have created a unique platform, headquartered in the UAE with a listing on the TSX Venture Exchange, while maintaining an open mind to additional partnerships with industry leaders in China," Mr. Bos continued. "Falcon's strategy and structure are truly unique and cannot be replicated by anyone in the short to medium term. The very complicated nature of the CSPG supply chain, which is almost entirely dominated by China, makes partnerships with long-standing anode material producers a critical pathway to success."

Figure 1: Illustration of Falcon's Morocco Anode Plant

Note: 1. Spheroidization plant; 2. Purification plant; 3. Coating plant; 4. Finishing plant ; 5. Acid storage; 6. Water purification.

Flow Sheet

Falcon's Anode Plant envisages the construction of three distinct production lines, using established and proven Hensen technology and design, focusing on the key steps to produce CSPG:

- **Spheroidization Plant:** Employing the latest, innovative processes to shape the graphite flakes into spheres, increasing the surface area density and energy density, to produce spherical graphite ("**SG**");
- **Purification Plant**: Employing hydrofluoric acid alongside hydrochloric and nitric acid to remove impurities, producing >99.95% spherical purified graphite ("**SPG**"); and
- **Coating Plant**: Applying an amorphous carbon (pitch tar) coating on the SPG surface to enhance energy density and increase battery safety and longevity, producing coated SPG ("**CSPG**").

Location and Infrastructure

The Anode Plant, which requires approximately 8 hectares of land, is strategically located in Morocco on the African continent, benefiting from access to critical port and energy infrastructure and free trade agreements with both the United States and the European Union. Falcon anticipates securing graphite feedstock for the Anode Plant from its 100%-owned Lola graphite project as well as third party concentrates.

Spheroidization Plant

The 45,000tpa spheroidization plant consists of three separate process steps: micronization, spheroidization of the micronized graphite to produce coarse primary SG, and secondary spheroidization to produce a fine secondary SG product. The overall yield of the spheroidization plant is 60% resulting in 27,000tpa of SG. The micronization and spheroidization process is designed to produce spherical particles of a size of 20 microns (categorized as **"SG20"**) and 10 microns (categorized as **"SG10"**). SG20, representing 86.7% of the feed, is collected into a main collector and sent to the purification plant by pneumatic transportation. SG10 is collected and sent to secondary spheroidization circuit, which contains additional spheroidizers. SG10, representing 13.3% of the feed, is collected into a main collector and sent to a separate circuit in the purification plant by pneumatic transportation, while the remaining fines by-product particles are sent directly to the bagging station and sold separately.

Purification Plant

The 27,000tpa purification plant consists of a chemical treatment to increase the purity of the SG from 94.6% to 99.95% and SPG. The purification plant consists of four separate process steps: a thermally induced chemical reaction, pressure filtration, washing, and drying. The SG is washed with a mixture of hydrofluoric acid, hydrochloric acid, nitric acid (the "**Key Acids**") and steam to remove the main impurities (e.g., SiO_2, Al_2O_3, MgO, Fe_2O_3, and CaO). Following the purification step the Key Acids are recovered in a filter press and reused. Finally, the SPG is washed to remove water-soluble impurities generated during the reaction and dried to reduce the moisture content below 1%.

Figure 2: Illustration of Falcon's Coating Plant

Coating Plant

The coating process is the final step of the CSPG production process. The objective of this step is to coat particles with a thin film of carbon precursor (3-25 nanometres thick), which is then crystallized. This involves milling pitch tar (10% wt.), mixing the milled pitch tar with SPG, and thermally treating the mixture in a coating furnace. The coating furnace lines are dedicated to coat primary SP20 and SP10, separately. The cooled CSPG is deagglomerated, demagnetized, sieved and bagged to ensure the final product meets stringent end-user specifications. The coating line is initially built with a 5ktpa capacity and expanded to 26ktpa following end-user qualification of the CSPG.

Gas and Water Treatment

The Anode Plant contains gas and water treatment systems. The gas scrubber cleans the off-gasses from the purification and coating plant. A hydrated lime solution is fed into the scrubber to capture residual gas, and the purge is sent to the lime scrubber buffer tank. The clean gas is sent to a stack and released in the atmosphere. The water purification plant, which predominantly treats the effluents of the purification plant, has a capacity for 1,200 m^3 / day. All waste water will be tested before discharge to the local sewage system and will meet Moroccan discharge limits.

The Anode Plant footprint and buildings are designed such that an production can be doubled by adding additional spheroidization, purification and coating lines without erecting new buildings.

Capital and Operating Costs

The projected capital and operating costs for the project are presented below in Table 2 and 3. The capital and operational costs are estimated based on the actual costs of the Hensen Weihai Plant, adjusted for transport to and construction in Morocco. Estimations were performed in accordance with the Association for the Advancement of Cost Engineering ("**AACE**") Class 5, Recommended Practice 47R-11, with typical variation in low and high accuracy ranges of -20% to -50% and +30% to +100%, respectively.

Table 1: Capital Costs

Capital Costs	
Spheroidization Plant	**$19M**
Purification Plant	**$13M**
Coating Plant	**$18M**
Land Acquisition	**$5M**
Contingency	**$18M**
Total Pre-Development Capital Costs	**$73M**
Coating Plant Expansion	**$24M**
Contingency	**$9M**
Total Expansion Capital Costs	**$33M**

Table 2: Operating Costs (US$ per tonne CSPG)

Operating Costs in US$ per tonne CSPG	
Spheroidization Plant	**$314**
Purification Plant	**$829**
Coating Plant	**$503**
Waste Disposal	**$5**
General & Administration	**$54**
Sales & Marketing	**$36**
Contingency	**$165**
Direct Operating Costs	**$1,907**
Concentrate Purchase Costs	**$1,286**
All-In Operating Costs	**$3,193**

Economic Analysis

With global demand for CSPG expected to surge, the Morocco Anode Plant is projected to yield annual revenues of approximately US$246 million and an operating cash flow of US$152 million at consensus CSPG pricing. Additionally, the plant includes advanced gas and water treatment systems, ensuring compliance with local environmental standards. Tanger Med Engineering SA ("**TME**") is currently completing a preliminary environment impact analysis of the Anode Plant.

Table 3: Preliminary Economic Assessment Results

Post-Tax Results	
Pre-development Capital	**$73M**
Expansion Capital [(1)]	**$33M**
Direct Operating Costs	**$1,907 / t CSPG**
All-in Operating Costs [(2)]	**$3,193 / t CSPG**
NPV8% (US$M) [(3)]	**$1,149M**
IRR (%)	**82%**
Payback (Years)	**1.0**

1. Incurred in year 2 of production to expand the coating line from 5ktpa to 25ktpa
2. Includes graphite concentrate purchase costs (US$754 per tonne CIF Tanger)
3. Assuming long-term average US$9,000 per tonne CSPG pricing

The Company expects a 9-month detail engineering and design period followed by a 15-month construction and commissioning period.

Next Steps

Falcon and Hensen commenced work on a NI 43-101 compliant feasibility study (the "**Feasibility Study**"), which is expected to be completed in the first half of 2025. The Feasibility Study will also form the basis for the environment impact analysis and is required to complete the permitting process in Morocco.

Quality Assurance and Control

For readers to fully understand the information in this press release, they should read the Technical Report in its entirety when it is available on SEDAR, including all qualifications, assumptions, and exclusions that relate to the information to be set out in the Technical Report, which qualifies the technical information contained in the Technical Report. The Technical Report is intended to be read as a whole, and sections should not be read or relied upon out of context.

The technical information contained in this news release has been reviewed and approved by Derick R. de Wit, B-Tech. (Chem Eng), FSAIMM, FAusIMM, Pr Tech Eng, a qualified person ("**QP**", as defined by NI 43-101) from Anzaplan.

The PEA was prepared in compliance with Canadian National Instrument 43-101 – Standards of Disclosure for Mineral Projects (NI 43-101). The complete NI 43-101 Technical Report pertaining to the PEA will be filed within 45 days and will be available on Falcon's website and on ww.sedar.com.

About Anzaplan

Anzaplan specializes in process design and engineering services for graphite beneficiation projects. The Company offers advanced graphite evaluation services for high value applications including strongly growing markets such as anode materials in lithium-ion batteries. Starting with the initial characterization of the graphite ore through development of a beneficiation process to obtain a high-quality flake graphite concentrate, shaping and purification into battery grade spherical graphite, characterization of electrochemical performance and testing of lithium-ion cells.

About Falcon

Falcon is focused on developing the Lola Graphite Project located in the Republic of Guinea, West Africa. The Lola Graphite Project has Proven and Probable Reserves of 42Mt at a grade of 4.2% Cg. Falcon aims to develop a fully integrated source of battery anode material to supply the European lithium-ion and fuel cell markets. With attractive operating costs, proximity to European end-markets and strong ESG credentials, the Company is poised to become a reliable supplier while promoting sustainability and supply chain transparency. Falcon is committed to generating sustainable, long-term benefits that are shared with the host countries and communities where it operates.

For additional information, please visit Falcon's website at www.falconem.net.

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FORWARD-LOOKING STATEMENTS

This press release 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. Generally, such forward-looking information can be identified by the use of forward-looking terminology such as "potential", "vision", "affirm", "advance", "ensure", "expect", "deliver", "anticipate", or variations of such words and phrases or state that certain actions, events or results "may", "could", "will", "would" or "might". 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 the Company to be materially different from those expressed or implied by such forward-looking information, including but not limited to: (i) volatile stock price; (ii) the general global markets and economic conditions; (iii) the possibility of write-downs and impairments;

(iv) the risk associated with exploration, development and operations of mineral deposits and mine plans for the Company's mining operations; (v) the risk associated with establishing title to mineral properties and assets including permitting, development, operations and production from the Company's operations being consistent with expectations and projections; (vi) fluctuations in commodity prices, finding offtake takers and potential clients or enforcing such agreements against same, (vii) prices for diesel, process reagents, fuel oil, electricity and other key supplies being approximately consistent with current levels; (viii) production and cost of sales forecasts meeting expectations; (ix) the accuracy of the mineral reserve and mineral resource estimates of the Company; (x) labour and materials costs increasing on a basis consistent with the Company's current expectations; (xi) there being no significant disruptions affecting the operations of the Company whether due to COVID-19 restrictions, the war in Ukraine, artisanal miners, access to water, extreme weather events and other or related natural disasters, labour disruptions, supply disruptions, power disruptions, damage to equipment or otherwise; (xi) asset impairment (or reversal) potential, being consistent with the Company's current expectations, and (xii) risks associated to the accuracy of projections provided in a preliminary economic study which are preliminary in nature and which include significant of uncertainties,. and other risks and factors described or referred to in the section entitled "Risk Factors" in the MD&A of the Company and which is available at www.sedar.com, all of which should be reviewed in conjunction with the information found in this news release.

Although the Company 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, including notably the capacity of Falcon execute its vision to produce CSPG anode material in Morocco at industry leading operating costs, Falcon's capacity to execute the projections provided for in the PEA and the Company's capacity to become a key CSPG supplier to Western markets or to ensure a reliable source of high-quality, sustainable battery materials. Such forward-looking information has been provided for the purpose of assisting investors in understanding the Company's business, operations and exploration plans and may not be appropriate for other purposes. Accordingly, readers should not place undue reliance on forward-looking information. Forward-looking information is given as of the date of this press release, and the Company does not undertake to update such forward-looking information except in accordance with applicable securities laws.