Technical Report on the Natural Graphite Active Anode Integrated Global Strategy Preliminary Economic Assessment

Final Report

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for

Falcon Energy Materials, PLC

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TECHNICAL REPORT ON THE NATURAL GRAPHITE ACTIVE ANODE INTEGRATED GLOBAL STRATEGY PRELIMINARY ECONOMIC ASSESSMENT

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The Technical Report contains estimates, projections, and conclusions that are forward-looking information. Forward-looking statements are based upon the opinion of the responsible Qualified Person ("QP") at the time they are made. However, in most cases, involve significant risks and uncertainty. Although each responsible QP has attempted to identify factors that could cause actual events or results to differ materially from those described in the Technical Report, there may be other factors that could cause events or results not be as anticipated, estimated or projected. There can be no assurance that forward-looking information in the Technical Report will prove to be accurate, as actual results and future events could differ materially from those anticipated. Accordingly, readers should not place undue reliance on forward-looking information. Forward-looking information is made as of the Effective Date of the Technical Report, and none of the QPs assume any obligation to update or revise it to reflect new events or circumstances, unless otherwise required by applicable laws.

1 Summary

1.1 Introduction

Falcon Energy Materials PLC ("Falcon Energy", the "Company") is advancing a vertically integrated global strategy to produce battery anode material aimed at supporting the growing lithium-ion battery ("LIB") industry. Central to this is Falcon Energy's integrated development plan (the "IDP") comprising the open cast mining operation and associated flotation concentrator plant in the Republic of Guinea ("Guinea"), termed the "Lola Project, and the active anode flake graphite battery material plant ("BMP"), planned to be located in the Kingdom of Morocco ("Morocco"). Natural flake graphite ("NFG") flotation concentrate produced from the Lola Project will be converted at the BMP into high-purity, battery-grade, spherical purified graphite ("SPG") that has been coated with tar to produce coated spherical purified graphite ("CSPG") for the LIB market.

This National Instrument ("NI") 43-101 Technical Report ("the Technical Report") has been prepared for Falcon Energy to present the preliminary economic assessment ("PEA") on the IDP.

Falcon Energy was previously known as SRG Mining Inc ("SRG"). The Company redomiciled to the jurisdiction of the Abu Dhabi Global Market in the United Arab Emirates ("UAE") and subsequently changed its name to Falcon Energy. Redomicile to the UAE occurred since this jurisdiction provides Falcon Energy with expanded strategic optionality as it advances its partnership discussions. Additionally, the UAE has a double taxation treaty and a bilateral investment treaty with Guinea. For consistency, throughout the Technical Report, the Company will be referred to as Falcon Energy regardless whether the engagement at the time was with SRG or Falcon Energy.

In 2023 DRA Global Limited ("DRA") published an updated Feasibility Study on the Lola Project in a Technical Report entitled: "Lola Graphite Project, NI 43-101 Technical Report – Updated Feasibility Study", with a Report Date of April 7, 2023, and an Effective Date of February 27, 2023 (the "2023 DRA Technical Report"). The 2023 DRA Technical Report was filed on Canada's electronic filing system for disclosures by public companies and investment funds (see www.sedarplus.ca) on April 12, 2023.

In the opinion of Falcon Energy, the 2023 DRA Technical Report is still current since following the Effective Date of the 2023 DRA Technical Report (i) no new geological data have been generated in respect of the Lola Project, (ii) there have not been changes in the scientific and technical information of the Lola Project, and (iii) graphite price forecast have not materially changed. As such, and in accordance with Form 43-101F1 Technical Report and Related Consequential Amendments ("Form 43-101F1"), the QPs responsible for the Technical Report have referred to certain information from the 2023 DRA Technical Report, where relevant, and have summarized the information in the Technical Report.

The Technical Report on the IDP for Falcon Energy has been prepared by the wholly owned engineering subsidiary of Dorfner Anzaplan GmbH ("Anzaplan GmbH") in the United Kingdom, Dorfner Anzaplan UK Limited ("Anzaplan UK"), in conjunction with Tanger Med Engineering ("TME") of Tangier, Morocco, and Hensen Graphite and Carbon Corp. ("Hensen") of Qingdao, China.

Hensen is an existing CSPG producer that has broad operational expertise acquired from its synthetic and natural graphite anode plants in China. Hensen is currently building a large-scale anode plant in Weihai, China (the "Weihai Plant"), that is currently being commissioned. The Falcon Energy BMP is based on the design, procurement and existing supply chain practices from Hensen's recently completed Weihai Plant to establish a similar anode plant in Morocco.

On September 9, 2024, Falcon Energy announced in a news release, signing of a technical and strategic partnership with Chinese entity Hensen, to jointly develop an anode plant in Morocco to produce CSPG that meets end-user quality requirements while promoting industry-leading transparency and sustainability standards. Concluding of the partnership agreement should position Falcon Energy favorable to become an integrated producer of battery anode material and to advance the development of the IDP.

PEA cost estimation of the IDP follows the guidelines set out by the Association for the Advancement of Cost Engineering ("AACE") International, as per Recommended Practice ("RP") 47R-11.

1.2 Property Description, Location, and Ownership

The Lola Graphite occurrence is located 3.5 km west of the town of Lola in south-eastern Guinea, 1,000 km from the capital Conakry. The occurrence is 50 km east of the border with Ivory Coast.

The Lola Graphite Deposit is 100 % owned by SRG Guinée SARL, a wholly owned subsidiary of Falcon Energy. The original exploration licenses were granted to Falcon Energy in 2013. On August 10, 2018, the Government of Guinea awarded SRG Guinée, through ministerial order NoA2018/5349/MMG/SGG, the Lola Graphite research permit, for a surface area of 94.38 km^2. This permit was cancelled on November 6, 2019, when a fifteen-year renewable mining permit was issued through presidential order NoD/2019/291/PRG/SGG, for the same surface area.

Following a strategic review, Morocco was selected as the ideal location for the BMP. It is planned to locate the BMP in either the Tanger Automotive City, or within the Mohamed VI Tanger Tech City industrial zones, that are both located in the city of Tangier, northern Morocco. Both industrial zones offer ideal settings for industrial operations, combining innovation, compliance with environmental standards, sufficient infrastructure focused on the needs of the automotive and technology sectors, and offer significant incentives for foreign investment.

From the location in Tangier the BMP will serve key markets in Europe and North America where demand for electric vehicles and energy storage systems is surging. Selecting Morocco as location for the BMP aligns with Falcon Energy's strategic goal of situating the BMP in a country that benefits from free trade agreements with key European and North American markets, and are located in close proximity to Guinea to facilitate the import of NFG from the Lola Project.

1.3 Accessibility, Climate, Local Resources, Infrastructure, and Physiography

1.3.1 Lola Project

Guinea is divided into four main regions: Maritime Guinea, also known as Lower Guinea or the Basse-Côte lowlands; the cooler, mountainous Fouta Djallon that runs roughly North-South through the middle of the country; the Sahelian Upper-Guinea to the Northeast; and the Forested Guinea, a forested jungle regions in the southeast, where the Lola Project is located.

The population of the Forested Guinea, is composed of several ethnic groups. Guinea's economy is largely dependent on agriculture and mineral production. It is the world's second largest producer of bauxite and has rich deposits of high-grade iron, diamonds, and gold.

The Property can be accessed from the town of Lola via a paved road and a network of bush tracks.

The terrain can be described as a gently undulating plain with one isolated topographic high reaching 75 m above the surrounding area. The elevation of the area varies from 485 m to 520 m above sea level.

The Project area falls within the Guineo-Soudanian climatic condition, which is a transition zone between equatorial and tropical climates. The area has distinct rainy and dry seasons and experiences an average of 1,600 mm of rain per annum.

1.3.2 Active Anode BMP

Morocco is located in North Africa. It is an accessible gateway between Europe and Africa, with the Strait of Gibraltar separating it from Spain by 13 kilometers. Morocco's coastal access and ports and its developed industrial zones such as Tanger Med Zone make it an ideal location for industrial projects like Falcon Energy's BMP.

Morocco experiences a diverse climate due to its geographic location and varied topography. In coastal areas, such as Tangier and Casablanca where the BMP will be located, the climate is temperate with mild, wet winters and hot, dry summers.

The country's infrastructure is designed to support its growing industrial sector, particularly in hubs such as Tanger Med Zone, home to one of Africa's largest ports. The Tanger Med Port is a critical gateway for global trade, offering direct maritime connections to over 180 ports worldwide, including those in Europe, the Americas, and Asia. It is currently used as a platform for major European car manufacturers to assemble vehicles and build engines to export to the European Union and African markets. The aim of the Tanger Med Port is to better integrate Morocco into global supply chains by offering logistics zones with free trade port advantages and direct accessibility to global shipping routes.

1.4 Geological Setting and Mineralization

The graphite-rich paragneiss is present at surface over 8.7 km with an average width of 370 m that can reach up to 1,000 m. The first approximate 32 m of the deposit is well weathered (laterite), freeing graphite flakes from the silicate gangue and allowing for easy grinding with an optimal recovery of large and jumbo flakes. The graphite mineralization extends to depth into the non-weathered paragneiss.

Graphite mineralization is well exposed at surface on its entire strike length with visible mineralization ranging from traces to 20% graphitic carbon ("Cg") and often seen in higher concentration agglomerates.

1.5 Deposit Type

Graphite is one of the three familiar, naturally occurring forms of the chemical element carbon. The other two varieties are amorphous carbon (distinct from amorphous graphite) and diamonds. Graphite may be synthetically produced. Graphite is widely distributed throughout the world, occurring in many types of igneous, sedimentary, and metamorphic rocks.

Natural graphite generally occurs in one of three forms:

- Microcrystalline or amorphous;
- Crystalline lump or vein; and
- Crystalline flake.

The Lola Graphite occurrence is a paragneiss-hosted, crystalline, flake-type occurrence.

1.6 Exploration Work and Drilling

1.6.1 Exploration

Since 2012, Falcon Energy has embarked in detailed prospecting programs aimed at delineating and characterizing the graphite occurrence. A grid with cutlines on 200 m spacing was established in the field for a total of 44- line km. A Max-Min electro-magnetic survey completed over the length of the occurrence was successful in outlining the boundaries with the surrounding country rock and identifying sectors with high graphite flakes concentration. Several pits and trenches were excavated to characterize the short-scale variability of the graphite mineralization within the lateritic profile. The data from 10 of these trenches were used in the Mineral Resource Estimate.

A photogrammetric survey was performed over the deposit using a SenseFly's Ebee drone to produce a Digital Terrain Model from which a detailed topographical survey was generated.

Mineralogical and petrological investigations were performed at the University of Franche-Comté, France, and several metallurgical tests were performed during 2014, 2015, and 2016. Several mineralogical and petrological studies were also performed by Actlabs and through a graduate study at the University of Franche-Comté, France.

In 2017, ProGraphite GmbH and Anzaplan GmbH performed detailed metallurgical investigations. A pre-feasibility study was completed and additional testwork on the Saprolite was developed during 2018 and 2019 by SGS Lakefield to build and optimize the metallurgical results.

1.6.2 Drilling

Falcon Energy's first drilling program started in October 2013 with 20 boreholes using their two Jacro man-portable diamond drill rigs. An additional 16 boreholes were drilled in June and July 2014.

Falcon Energy's second drilling program started in April 2017 with a track mounted Coretech, model CSD 1300G, drill rig contracted from Sama Nickel Côte d'Ivoire SARL. Between March and mid-June 2018, drilling contractor Foraco Côte d'Ivoire completed 215 boreholes. Between 2013 and 2018 a total of 22,590 m of core had been drilled in 648 holes. The Mineral Resource Estimate is based on 638 holes for a total of 22,239 m and 16,059 samples, the lengths of which add to 21,584 m (exclusive of the quality control samples).

1.7 Mineral Processing and Metallurgical Testing

1.7.1 Lola Project

During 2018 and 2019, process optimization metallurgical test work was performed on Saprolite samples. Additionally, concept level test work was performed by SGS to investigate Fresh Rock and Saprolite blends.

Incorporating Fresh Rock has many benefits, such as:

- Increasing availability of mineralized material for processing;
- Increased graphite recovery for blends as compared to saprolite only feed;
- No desliming required when processing hard rock and saprolite blends;
- Better settling properties for tailings.

The testwork found that incorporating a semi-autogenous grinding mill into the process flow will provide both scrubbing and size reduction. It will grind the material to pass 0.8 mm on stack sizers. It also indicates that desliming of the rougher feed resulted in small graphite flakes losses. Rougher flotation performance improved substantially, compared to processing Saprolite only material. The test work found that desliming is not required for blend of Saprolite and Fresh Rock.

Flotation of the domain composites displayed a considerable variation in terms of concentrate grades and graphite recovery, therefore the mill feed of the commercial plant should comprise a blend of Saprolite and Fresh Rock.

A combination of intermediate concentrates polishing in a tumbling mill and polishing in the stirred mill is required to achieve the grade targets due to the presence of graphite interlayered with gangue minerals. A higher energy input is required to liberate the graphite from the interlayered gangue, compared to gangue minerals that are attached to the outside of the graphite flakes.

Testing of the Fresh Rock demonstrated that the Mineral Resource can be expanded with this type of rock when processed as purely Fresh Rock as well as mixes with the Saprolite. As expected, the Fresh Rock is substantially harder than the Saprolite, and should preferably be treated as a mixture with Saprolite.

A flotation pilot plant campaign, processing of 200 t of surface sample, generated NFG concentrate sample for marketing purposes as well as generated several samples for the equipment supplier testing.

Equipment (vendor) supplier test work included scrubbing, scrubber discharge, intermediate concentrate screening, and concentrate dewatering (centrifuge). The tests were conducted in laboratories of reputable equipment suppliers and allowed to confirm the applicability of the equipment proposed for the commercial flowsheet and set the preferences for the concentrate dewatering.

1.7.2 Active Anode BMP

Falcon Energy retained Anzaplan GmbH to perform value addition test work on 200 kg of NFG flotation concentrate from the Lola Project. The test work was performed at Anzaplan GmbH's facilities in Hirschau, Germany. Certain specialist test work was performed at designated original equipment manufacturers in Germany due to their well-established graphite experience. The test work was used to develop the optimum process flow for CSPG battery anode material production from NFG concentrate from the Lola Project.

The NFG feed concentrate sample contained, on average, a fixed carbon ("FC") content of 94.6 percent by weight ("wt.- %"). Besides graphite, an X-ray diffraction analysis determined that the sample contained small amounts of muscovite and kaolinite.

The PEA test work included initial micronization (flake size reduction) and mechanical spheroidization of the flakes to spherical particles while simultaneously performing air classification to remove fines.

The spherical graphite ("SG") was purified to produce uncoated SPG. Test work also included coating of the purified SG to produce CSPG.

1.7.2.1Spherical Graphite

The test work to produce SG was performed at the facilities of an original equipment manufacturer in Germany, due to their broad expertise in spheroidization of graphite.

The results of the SG test identification ("ID") number ("No.") 40093, run 19, as presented in Table 1, indicate that the BMP processing NFG concentrate from the Lola Project can achieve a product within the range of typical general market specifications.

Table 1: Uncoated SG results from Lola NFG feed

Description	Unit	Typical market values for SG	Result
Test ID	[No.]		40,093
Run	[No.]		19
Particle size D50	[µm]	14-17	14.0
Tap density	[g/cm^3]	>0.95	1.0
BET	[m^2/g]	<8	10.5

Note: The Brunauer-Emmett-Teller ("BET") surface area of the spheroidized graphite is slightly higher than the typical market specification. To improve the BET surface area, further optimization test work should be performed during the subsequent test work phase.

1.7.2.2 Purification

Leaching test work to prepare high purity (≥99.95 wt.- % FC) battery grade graphite by removal of impurities from the SG, focused on various graphite purification methods.

High-purity graphite was achieved in hydrofluoric acid ("HF") purification test No. SRG-AL1-HF4, which yielded a FC content of 99.97 wt.- %. This test applied a single-stage acid treatment comprising a HF and hydrochloric acid ("HCl") mixture.

The leaching process with HCl and ammonium fluoride acid leaching tests did not achieve battery-grade quality.

Caustic bake test No. SRG-CB8 achieved high-purity graphite (99.98 wt.- % FC) by baking at 450 °C with caustic soda (sodium hydroxide) followed by two sequential caustic and sulfuric acid leaching stages.

Caustic pressure leach test No. SRG-AC6 achieved high-purity graphite at 99.99 wt.- % FC. Purification in this method is performed by primary and secondary caustic and acid leaching. The initial caustic leaching in the primary purification is performed in a pressurized autoclave whereafter all subsequent purification steps are performed at atmospheric pressure.

Considering the strategic partnership agreement between Falcon Energy and Hensen to jointly develop an anode plant in Morocco, a multi-acid purification method (comprising HCl, nitric acid (“HNO_3”), and HF) was selected for the PEA due to Hensen’s broad experience with this established method. The multi-acid approach for removing impurities from the graphite, yielding high-purity SPG, will need to be validated in future test work using SG derived from flake graphite concentrate from the Lola project.

1.7.2.3 Coating

The coating, including high-temperature treatment, is the final step in transforming NFG concentrate into anode material for use in LIBs. During coating, a very thin layer of amorphous carbon is covered on the surface of the SPG to enhance conductivity and hardness and seal the surface.

The following two coating methods were assessed during the PEA: 1) atomic layer deposition (“ALD”) and, 2) dry pitch tar.

Coating by ALD is currently a novel method that was tested due to its cost-saving potential, thickness control, and enhanced film quality. The PEA is based on applying dry pitch tar coating since this method is currently the industry standard.

Test work included an initial pitch tar coating test to indicate CSPG battery anode material production.

Coating tests were performed at a German research institute with experience in research, and development of coating and drying process steps for active anode materials. The initial coating test used both standard process conditions and carbon-coating precursors (pitch-tar) to modify the SPG surface, applying 10 % pitch tar addition for the coating process. The initial coating test, which included basic electrochemical performance tests on the CSPG, was conducted using SPG feed material purified through caustic pressure leaching. This coated material achieved a Brunauer-Emmett-Teller ("BET") surface area for the CSPG that is slightly elevated compared to typical market specifications.

Further coating test work, as well as electrochemical test work, should be conducted to assess the BET and electrochemical performance of the CSPG produced from the Lola Project, having been purified through the proposed multi-acid purification method. Additionally, further studies are necessary to determine the optimum conditions for achieving the required BET surface area and electrochemical performance of the CSPG anode material.

1.8 Mineral Resources and associated activities

The Mineral Resource Estimate of the Lola Graphite deposit is based on 638 boreholes, for a total of 22,240 m and 10 trenches for 1,326 m.

The Mineral Resources Estimate, which was performed by Dr. Marc-Antoine Audet, P. Geo., Ph.D. Geology, has been verified and validated to ensure compliance with NI 43-101. Validation involved independently re-interpreting and re-estimating the Measured and surrounding Indicated Mineral Resources portions of the deposit.

The criteria used for classifying the Mineral Resource Estimate are based on confidence and continuity of geology and grades.

The Mineral Resource Estimate was prepared using a block model constrained with 3D wireframes of the principal mineralized domains. A preliminary open pit optimization algorithm was run on the estimated grade block model to constrain the Mineral Resources and support the Canadian Institute of Mining, Metallurgy, and Petroleum ("CIM") requirement that Mineral Resources have "reasonable prospects for eventual economic extraction." Only mineralization contained within the pit shell has been included in the Mineral Resource Estimate.

The Mineral Resource Estimate is summarized in Table 2 at a cut-off grade ("CoG") of 1.00 % Cg in Saprolite and 1.40 % Cg in Fresh Rock. All estimates are constrained within a Lerchs-Grossman optimized pit shell. The Mineral Resource Estimate is established with data from boreholes drilled and sampled by December 1, 2018.

Table 2: Mineral Resources Estimate (February 27, 2023)

Category	Tonnage [Mt]	Grade [% Cg]	Contained Cg [kt]
Oxide (Saprolite)	7.78	4.04	314.6
Fresh (Hard) Rock	0.47	4.01	19.0
Total Measured	8.26	4.04	333.6
Oxide (Saprolite)	25.40	3.83	972.6
Fresh (Hard) Rock	20.29	4.14	839.3
Total Indicated	45.70	3.97	1,812.0
Total Measured and Indicated	**53.96**	**3.98**	**2,145.6**
Oxide (Saprolite)	10.97	3.52	386.4
Fresh (Hard) Rock	1.33	4.23	56.1
Total Inferred	**12.30**	**3.60**	**442.5**

Notes from 2023 DRA Technical Report:

1. The Mineral Resources are reported in accordance with the CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Resource Definitions and adopted by the CIM Council.
2. Resources are constrained by a Pseudoflow optimized pit shell using HxGn MinePlan software.
3. Pit shell was developed using a 34-degree pit slope in Saprolite and 42-degree pit slope in Fresh Rock, concentrate sales price of USD1,389/t concentrate, mining costs of USD2.75/t Saprolite, USD3.25/t Fresh Rock, processing costs of USD10.25/t Saprolite and USD15.18/t Fresh Rock processed, G&A cost of USD1.52/t processed and transportation costs of USD50/t concentrate, 84.2 % process recovery and 95.4 % concentrate grade and an assumed 100,000 t/a concentrate production.
4. Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability. The Mineral Resources estimate may be materially affected by environmental, permitting, legal, title, taxation, socio-political environment, marketing, or other relevant issues. There is no certainty that Mineral Resources will be converted to Mineral Reserves.
5. The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and cannot be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.
6. Contained graphite without mining loss, dilution, and processing recovery (In-situ).
7. The Effective Date of the estimate is February 27, 2023.
8. The open pit Mineral Resources are estimated using a cut-off grade of 1.0 % Cg Saprolite and 1.4 % Cg Fresh Rock.
9. Totals may not add due to rounding.

1.9 Mining Method

A detailed mine production schedule was developed for the IDP. The IDP mine production schedule is based on the same initial 16-year production schedule outlined in the 2023 DRA Technical Report, adding to this incremental Inferred Mineral Resources of both the Saprolite and Fresh Rock. Thereby, increasing the life of mine ("LoM") to 25-years.

To note is that the PEA is preliminary in nature, it includes Inferred Mineral Resources that are considered too speculative geologically to enable them to be categorized as Mineral Reserves, and there is no certainty that the PEA will be realized.

The mine production schedule for the IDP targets a mill feed of up to 2,565 kt per year, with emphasis on treating higher-grade carbon material. The total NFG concentrate recovered from this will be ~ 88,000 t/a. All of the -100 mesh contained in the NFG concentrate (45,000 t/a) will be processed by the BMP to produce ~26,400 t/a CSPG t/a product.

To optimize plant recovery, the feed schedule is designed to incorporate a blend of 45 % Fresh Rock and 55 % Saprolite. However, during the first year of production, run of mine ("RoM") will exclusively be Saprolite since this material is easier to access, than the Fresh Rock located at depth.

The total mineralized material and waste mined from the Saprolite and Fresh Rock plus the average LoM stripping ratio is presented in Table 3.

Table 3: Total Materials Mined

Name	Units	Total
Saprolite	[kt]	43,626
Saprolite Grade	[Cg %]	3.80 %
Fresh Rock	[kt]	19,751
Fresh Rock Grade	[Cg %]	4.14 %
Saprolite Waste	[kt]	39,452
Fresh Rock Waste	[kt]	16,414
Total material mined	[kt]	119,243
Average grade	[Cg %]	3.91 %
Strip ratio	-	0.881

1.10 Recovery Methods

1.10.1 Lola Project

The process flowsheet includes crushing, grinding, rougher flotation, polishing, and cleaner flotation. The back end of the concentrator includes tailings thickening, concentrate filtration and drying, dry screening and bagging of graphite products, and material handling.

All the tailings from the concentrator will be thickened and pumped to the tailings ponds. Reclaiming water from the tailings ponds has been considered in the process design to minimize freshwater makeup to the concentrator.

The graphite concentrate will be recovered by a conventional flotation process. Saprolite beneficiation has an overall graphite recovery of 73.1%, producing a graphite concentrate grade of 95.4% Cg. The addition of up to 45% of Fresh Rock in the feed blend improves the overall graphite recovery to 84.2%. A suitable process flowsheet able to handle Saprolite as well as a feed blend with Fresh Rock has been developed. The overall LoM recovery is estimated at 83.6 %.

Based on market demand, the process plant will produce graphite concentrate in four standard-size fractions: + 48 mesh, -48 + 80 mesh, - 80 +100 mesh and -100 mesh.

1.10.2 Active Anode BMP

The PEA's focus is to design a BMP that can process 45,000 t/a of -100 mesh (-150 microns ("µm")) NFG concentrate from the Lola Project at a FC content of ≥95.0 wt.- % to produce approximately 26,400 t/a of battery anode CSPG at a FC content of ≥99.95 wt.- %.

The Spheroidization Plant is sized to process 45,000 t/a of NFG concentrate. The process flow includes a newly developed spheroidization process flow, which has improved economics due to higher yield and revenue.

The PEA is based on an assumed optimized combined yield of 60 wt.- %, comprising two size fractions. The micronization and spheroidization process is designed to produce spherical particles of a size of 20 µm (categorized as "SG20") and 10 µm (categorized as "SG10"). In addition to producing SG20 and SG10, 18,000 t/a of SG fines (≤9 µm, ~95 wt.- % FC) will be generated as a by-product that Falcon Energy intends to sell to international markets.

The 60 wt.- % combined yield (NFG to SPG) assumption is based on Hensen's experience of their plants in China and that of the Weihai Plant.

After spheroidization, the SG (coarse and fine) with a FC content of approximately 95.0 wt.- % is fed to the Purification Plant to upgrade the FC to the required battery grade of 99.95 wt.- %.

The Purification Plant is designed to process 27,000 t/a of SG feed with a FC content of ≥95.0 wt.- %, resulting in 23,970 t/a of purified SPG with a FC content of ≥99.95 wt.- %.

The Coating Plant applies pitch tar coating technology at an addition rate of 10 wt.- %, leading to a final CSPG production of approximately 26,400 t/a, that will meet the 99.95 wt.- % FC battery-grade specification.

Figure 1 presents the overall flow of the BMP with scanning electron microscope ("SEM") images of material from the Lola Project.

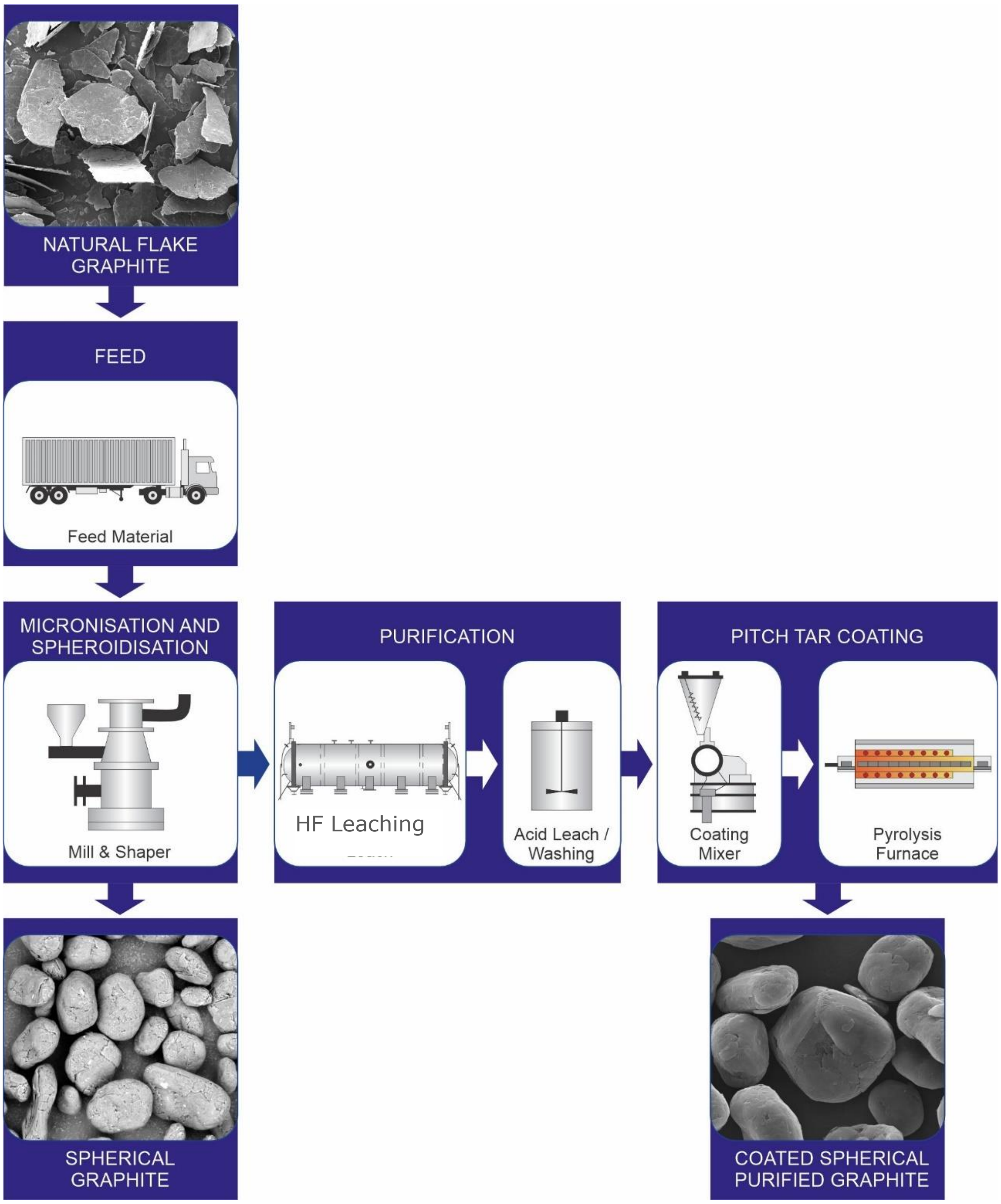

Figure 1: BMP process flow with Lola graphite SEM images

1.11 Project Infrastructure

1.11.1 Lola Project

The Lola Project includes on-site and off-site infrastructure.

On-site infrastructure includes a power plant, main access road and site roads, general site works, site electrical distribution and communication, site fire protection, fresh water, potable water and sewage treatment, auxiliary buildings, fuel storage and distribution, water treatment, and tailings and water management facilities.

At full production, the power demand of the Lola Project will be 10.8 MW. Electrical power will be provided by an on-site power plant supplying power at 11 kV, 3 phases, 50 Hz. Power will be generated using five medium-speed generator sets for a total installed power of 12.5 MW with four units in operation and one unit in stand-by. The gensets will run on heavy fuel oil, and if required, on diesel. In addition, the plant will include two "black-start" gensets of 1500 kVA each, providing additional power in case two of the main gensets, are not operational.

The reticulation network is composed of a medium-voltage 11kV system and a low-voltage 400V system. When possible, electrical lines will be above-ground, either supported on poles or installed in cable trays. When above-ground distribution is not possible, cables will be buried in underground duct banks.

Off-site infrastructure includes improvement of roads and the construction of a frontier post at Bossou to allow shipping on NFG concentrate through the port of Monrovia, in Liberia.

1.11.2 Active Anode BMP

The BMP is a self-contained chemical processing plant. It will be located in an established prime chemical industrial estate with ready-to-go plug-and-play development plots and affordable installation of additional services to custom requirements. The industrial park will be managed by a single operator that provides high-quality management solutions and shared infrastructure, as well as environmental and energy services, to reduce the BMP's initial capital expenditure (“CAPEX”) requirement.

1.12 Market Studies and Contracts

The Market Assessment for Falcon Energy was generated from the "Graphite Lenders Market Report" by BMI, dated November 30, 2022. It includes insights from current supplier costs, price benchmarking, and public information on graphite markets. The focus on fine mesh graphite for the battery industry stems from the need to use fine flake sizes in the spheroidization process, as larger sizes are more costly and inefficient. However, larger flakes may enter the supply chain as battery demand rises. NFG is typically shipped at a 94% to 95 % carbon grade, requiring purification to reach the ≥99.95 % grade required for battery-grade anode material

NFG is essential to LIB production, accounting for 90 % of all LIB anode materials. With robust growth in the battery sector, new projects must come online to meet future demand.

1.12.1 NFG Market Assessment

The NFG Market has experienced high growth due to increased demand for electric vehicles and energy storage. NFG primarily uses fine flakes (- 100 mesh) for battery applications (the Lola Project has 51.6 % fine flakes), while larger flakes are used in niche industries like refractories.

China and Africa dominate global NFG supply, but Africa is emerging as the key growth region due to deposits in Mozambique, Tanzania, and Madagascar. The battery sector accounts for 43 % of NFG demand and is expected to rise to 80 % by 2032.

Despite the rise in battery applications, traditional industries still consume 57 % of NFG, relying on larger flake sizes for high-temperature applications and fire retardants. NFG's competitive advantages include lower production costs, higher energy density, and sustainability, making it a preferred material over synthetic graphite. The growing focus on Environmental, Social, and Governance factors also favors NFG due to its lower carbon footprint. However, supply chain consistency, particularly flake quality, remains a concern.

1.12.2 Sales Pricing

Consensus CSPG sales price forecasts in Table 4 are based on independent market intelligence, including available statistics, supplier cost insights, price benchmarking and interactions with other key graphite role players.

Pricing of the BMP products are based on the average forecast graphite prices in USD over the project life for the most common battery grade anode material and SG fines (≤9 µm, ~95 wt.- % FC) by-product. During the 2- year qualification period, the majority of SPG produced will be sold as uncoated SPG.

The Full Production Basket Price is based on sales after year 2 when all SPG will be coated and sold as CSPG (thus no uncoated SPG sales) plus sale of SG fines.

Table 4: Consensus CSPG graphite price forecast

Description	**Price [USD/t]**
SG (fines) by-product	500
CSPG	9,000
Full Production Basket Price	**5,550**
Uncoated SPG (first 2-years)	5,000

1.12.3 Contracts

1.12.3.1 Lola Project

Falcon Energy has concluded several letters of intent from Chinese companies to purchase the +100 mesh NFG produced from the Lola Project. All -100 mesh NFG concentrate produced will be acquired by the BMP as feed material.

1.12.3.2 Industry Contract Terms for Anode Material

Contractual Terms for battery-grade anode materials involve strict compliance with specifications, with qualification periods of 6 to 18 months. Contracts typically last 3-5 years, but with market tightness, some are extended to ensure long-term supply stability. No agreements have been finalized for the BMP as the project remains in its preliminary stages. This is expected to occur as the project nears construction and operation, reducing the risk of contract finalization delays.

1.12.3.3 BMP Contracts

Given the preliminary assessment stage of the BMP and considering that the location of the BMP has not been finalized, no contracts for development, production, or marketing and commercial sales are currently in place or are under negotiation.

Since the BMP is akin to a chemical processing plant, these contracts have available time for negotiations during subsequent development stages and thus pose low risk.

1.13 Environmental Studies, Permitting, and Social Impact

1.13.1 Lola Project

Regulations applicable to impact assessments in Guinea are set out in the Code for the Protection and Development of the Environment (Ordinance No. 045/PRG/87 of May 28, 1987, as amended by Ordinance No. 022/PRG/89 of March 10, 1989, on the Code of Protection and Enhancement of the Environment), also known as the Environment Code.

The Environment Code establishes fundamental legal principles to ensure the protection of environmental resources and the human environment. Article 82 of Title V of the Environment Code requires proponents of projects likely to have a significant impact on the environment to carry out an environmental impact assessment and submit it to the Minister Delegate for Environment, Water and Forests before beginning the project. This assessment must enable the Minister Delegate to assess the project’s direct and indirect impacts on the ecological balance of Guinea’s environment, on the quality of life of residents and on the protection of the environment.

Presidential Decree D/2014/014/PRG/SGG covers the adoption of a directive to perform an environmental and social impact assessment (“ESIA”) of mining operations. The directive is intended for companies, organizations and individuals who hold or wish to obtain mineral and quarry titles. It informs the proponent of the nature and scope of the environmental impact assessment and defines the principles for conducting ESIAs of mining projects up until the minister responsible for the environment grants the necessary environmental authorization.

This directive, intended to be a reference document for all mining projects, is organized into four main parts: types of mining operations, general criteria for the ESIA of mining projects, and the procedure for and content of ESIA of mining projects.

The integration of sustainable development objectives and the consideration of community concerns, from the outset to the end of the project, are presented as a goal to be achieved for responsible mining.

The two main required licenses for a mining permit in Guinea are: "Certificate of environmental conformity" and the "mining permit".

- Falcon Energy obtained its environmental certificate from the Bureau guinéen d'étude et d'évolution environnementale in March 2019; and,
- Falcon Energy obtained the mining license in 2019 and is currently working with local authorities to complete the mining convention.

1.13.2-Active Anode BMP

The Law n°12-03 of the Kingdom of Morocco on environmental impact assessment ("EIA") describes the content and procedure for carrying out ESIAs. This law requires that all projects that are likely to generate negative impacts need to perform an ESIA.

The BMP is economically viable and expected to generate positive outcomes, particularly regarding local employment. However, efforts are required to manage environmental risks and ensure full compliance with Moroccan law to minimize any negative effects on local communities and ecosystems.

Although some of the BMP’s technical specifications are at the PEA stage only broadly defined, the preliminary ESIA performed by TME during the PEA has identified general environmental impacts based on potential activities associated with similar projects. The preliminary EIA applied a standardized methodology evaluating the intensity, extent, and duration of potential impacts on physical, biological, and socio-economic environments.

The Project is expected to have substantial positive socio-economic impacts, including job creation during both construction and operational phases. The development of local infrastructure, such as roads, electricity, and water, would further benefit the region and its population. The ESIA also acknowledges the potential challenges, such as the need for careful management of emissions, noise, and waste, which could otherwise affect the quality of life of nearby communities.

The key environmental impacts of the BMP as proposed during the preliminary EIA are as follows:

- The need for careful wastewater management, particularly due to the use of acidic substances during purification, will require careful assessment. It is likely that an effluent treatment system may be required to neutralize wastewater before discharge;
- The BMP applies a multi-acid purification method. The purification and associated sections will be appropriately designed and maintained to prevent the release of hazardous substances to the environment. Liquid effluent discharges will be treated in accordance with Moroccan standards for wastewater and industrial discharge limits;
- Filtration residues and sludges will be generated by the purification processes. The ESIA will outline the need for safe handling, disposal, and potential recycling of materials;
- Release of VOCs and other air emissions will be done to ensure the design compliance with Moroccan regulations;

- The BMP will have socio-economic and environmental impacts on the local community. To ensure the community fully benefits from the BMP and to minimize opposition, it will be important to implement effective communication strategies, impact management plans, and social responsibility initiatives. These should be implemented in collaboration with key stakeholders;
- The BMP will implement comprehensive safety protocols that will focus on worker safety and security, and compliance with relevant health and safety regulations;
- To maintain high safety standards, the BMP needs to undergo regular audits, including external inspections, to verify it adheres to the relevant environmental and safety regulations. Training programs will be updated regularly to reflect new safety and regulatory changes.

The next phase will include a full ESIA that will involve detailed site-specific investigations, further refining the potential impacts and mitigations.

1.14 Capital and Operating Costs

The cost estimates include CAPEX and operating expenditure ("OPEX") for (a) the Lola Project including open cast mining, processing plant, and infrastructure and services normally associated with mining in West Africa, and (b) the BMP comprising, Spheroidization Plant, Purification Plant, Coating Plant, and required infrastructure and services.

Cost estimates were performed in accordance with AACE International Class 5, RP 47R-11 (2020). All CAPEX and OPEX are expressed in USD.

The estimation Base Date and currency exchange rates were performed as of the Effective Date.

All costs for the BMP in RMB (currency of the People's Republic of China) were converted to USD at the exchange rate of USD 1.00 = RMB 7.10.

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CAPEX and OPEX cost estimates exclude provision for risk, inflation, and escalation after the Base Date.

1.14.1 Total Pre-Development CAPEX

The total CAPEX for the IDP as outlined in Table 5 includes direct and indirect costs, and contingency provision. Major equipment costs for the BMP were provided by Hensen based on their plants in China and the recently constructed Weihai Plant.

Table 5: Total IPD Pre-Development CAPEX

Description	**CAPEX [USD million]**
Lola Project	
Mining	8
Process Plant	62
Tailings & Water Management	4
Site Infrastructure	11
Power Plant & Distribution	36
Preliminary & General	16
Indirect	25
Owners	6
Contingency	17
Total Lola Project	**185**
Active Anode BMP	
Spheroidization Plant	19
Purification Plant	13
Coating Plant	18
Land Acquisition	5
Contingency	18
Total Lola Project	**73**
Coating Plant Expansion	24
Contingency	9
Total Active Anode BMP	**33**
Combined Total Pre-Development CAPEX	**291**

1.14.2 Total Annual OPEX of IDP

OPEX includes mining, processing, site general and administration ("G&A"), NFG concentrate cost of sales, processing, maintenance, waste disposal, sales, general and administrative, marketing, and a contingency provision.

Table 6 provides a summary breakdown of the total annual OPEX of the IDP. The OPEX of the Lola Project is presented in USD/t NFG concentrate produced (~ 88,000 t/a) and for the BMP in USD/t CSPG (~26,400 t/a).

Table 6: Total Annual OPEX of IDP

Description **Lola Project**	**OPEX** **[USD/t NFG Concentrate]**
Contract Mining	180
Process	341
Site General & Administrative	54
Concentrate Transport to Port	40
Total Direct OPEX (FOB Monrovia)	**616**
Sustaining Capital Costs	64
All-in Sustaining OPEX	**680**
Active Anode BMP	**[USD/t CSPG]**
Spheroidization Plant	314
Purification Plant	829
Coating Plant	503
Waste Disposal	5
General & Administration	54
Sales & Marketing	36
Contingency	165
Total Direct OPEX	**1,907**
Concentrate Purchase Costs	1,286
All-in OPEX	**3,193**

1.15 Economic Analysis

The economic potential of the proposed IDP was assessed by performing an Economic Analysis using a real (constant USD) discounted cashflow ("DCF") model.

The net present value ("NPV") of the IDP is derived from pre-tax and post-tax estimates.

The DCF determines the appropriate economic potential of the proposed IDP and is not a valuation. Due to the various subjective inputs involved in generating a DCF, it is standard for the outcome to be regarded as an opinion, and not as a fact.

At an average saleable production of ~26,400 t/a CSPG and 18,000 t/a fines (-100 mesh) from the BMP alongside 42,000 t/a of +100 mesh NFG concentrate from the Lola Project, the Cash Flow Approach presents an 100 % attributable pre-tax NPV for the IDP of USD1.584 billion, and post-tax NPV of USD1.321 billion, at an 8.0 % real discount rate to the un-escalated cash flows. The discounted payback is 2.6 years after production commence with a post-tax internal rate of return ("IRR") of 43.1 %.

The technical and financial results indicate that the IDP is viable processing NFG from the Lola Project for 25-years.

In the event Falcon Energy initially proceeds with only the BMP, awaiting improved NFG prices, before developing the Lola Project, then the Cash Flow Approach presents an 100% attributable pre-tax NPV for the proposed BMP of USD1.259 billion, and post-tax NPV of USD1.149 billion, at an 8.0 % real discount rate to the un-escalated cash flows. The discounted payback is approximately one year after production commence with a post-tax IRR of 82.0 %.

The financial highlights of the IDP is presented in Table 7.

Table 7: IDP Financial highlights

Description	Units	Value
Project life	[years]	25
Pre-tax NPV @ 8 % Discount Rate	[USDm]	1,584
Post-tax NPV @ 8 % Discount Rate	[USDm]	1,321
Pre-tax IRR	[%]	47.2 %
Post-tax IRR	[%]	43.1 %
Pre-tax payback period (after production commence)	[years]	0.9
After-tax Payback Period (After Production Commences)	[years]	2.6
CAPEX (Including Expanded Coating Plant)	[USDm]	290.7
Steady State Annual OPEX	[USDm/a]	103.9
SPG Price (First 2-years)	[USD]	500
SPG Price	[USD]	5,000
CSPG Price	[USD]	9,000
Full Production Basket Price	[USD/t]	5,550

1.16 Conclusions

Falcon Energy is implementing a fully integrated global development strategy for battery anode materials, focusing on the expanding LIB markets in Europe and North America. This strategy includes a graphite mine and NFG concentrator in Guinea, and a BMP in Morocco, which will process NFG concentrate from the mine into high-purity, battery-grade, CSPG anode material.

The technical expertise from Hensen strengthens Falcon Energy's position, enhancing its ability to develop the IDP and become a fully integrated producer of battery anode material.

The 2023 Mineral Resource Estimate defines a pit-constrained Saprolite (oxide) Mineral Resource in the Measured and Indicated classification of 33.2 Mt grading 3.88 % Cg and Inferred Mineral Resource of 10.97 Mt grading 3.52 % Cg, using a CoG of 1.0 % Cg for Saprolite. The Fresh Rock Mineral Resources include a Measured and Indicated Mineral Resource of 20.76 Mt grading 4.14 % Cg and an Inferred Mineral Resource of 1.33 Mt grading 4.23 % Cg, based on a CoG of 1.4 % Cg.

A detailed mine production schedule with 25-years LoM was developed for the IDP. Over the LoM, 43,626 kt Saprolite at 3.80 % Cg, 19,751 kt Fresh Rock at 4.14 % Cg, and 55,866 kt waste will be mined to yield an average LoM stripping ratio of 0.881.

The mine production schedule for the IDP targets a mill feed of up to 2,565 kt per year, with emphasis on treating higher-grade carbon material. The total NFG concentrate recovered from this will be ~88,000 t/a. All of the -100 mesh contained in the NFG concentrate (45,000 t/a) will be processed by the BMP to produce ~26,400 t/a CSPG t/a product.

The graphite concentrate will be recovered by a conventional flotation process. To optimize plant recovery, the feed schedule is designed to incorporate a blend of 45 % Fresh Rock and 55 % Saprolite. The addition of up to 45% of Fresh Rock improves the overall graphite recovery to 84.2%. A suitable process flowsheet able to handle Saprolite as well as a feed blend with Fresh Rock has been developed. The overall LoM recovery is estimated at 83.6 %.

Falcon Energy engaged Anzaplan GmbH in Germany to conduct spheroidization, purification, and coating tests on NFG concentrate sourced from the Lola Project. Initial spheroidization tests, based on NFG from the Lola Project, confirm that the equipment can effectively micronize and shape NFG concentrate into SG, achieving typical market specifications. The BET surface area of the CSPG was higher than usual, indicating a need for further optimization of coating parameters.

The purification method selected for the PEA applies graphite purification that consists of a mixed acid, which is a combination of HCl, HNO_3, and HF.

The combined total pre-development CAPEX for the IDP is USD291 million. The annual OPEX of the IDP comprise an all-in sustaining OPEX of USD680/t NFG concentrate for the Lola Project and USD3,193/t CSPG for the BMP.

The 100 % attributable pre-tax NPV_8 for the IDP is USD1.584 billion, and the post-tax NPV_8 is USD1.321 billion. The discounted payback is 2.6 years after production commence with a post-tax IRR of 43.1 %.

In the event Falcon Energy initially proceeds with only the BMP, awaiting improved NFG prices, before developing the Lola Project, then the 100% attributable pre-tax NPV_8 will be USD1.259 billion, and the post-tax NPV_8 will be USD1.149 billion. The discounted payback reduces to approximately one year after production commence with a post-tax IRR of 82.0 %.

The PEA independently concludes that the IDP is technically and economically viable.

1.17 Recommendations

Given the positive NPV, the IDP demonstrates reasonable prospects for technical and economic viability. Based on the results of the PEA, Falcon, Anzaplan and Hensen are evaluating the possibility of advancing the IDP to a feasibility level study. If the Company decides to proceed with such a study, it is anticipated that it would be completed during mid-2025. A feasibility study for the IDP would also form the basis for the environment impact analysis and is required to complete the permitting process for the Anode Plant in Morocco

The resultant of the next development stage should be a single development option, applying the Hensen Process Technology, in accordance with the appropriate AACE International Class of work.

The next stage should include the results of the location trade-off study within Morocco and as such may require changes to logistics, layout, bulk supply and infrastructure services, and adherence to local regulatory requirements.

The next development stage will require further definition that will require defined input to logistics, reagent supply and storage, ESIA, soil and hydrology, site plan, as well as energy (electricity and gas) and water requirements. Consequently, it is recommended that the required studies to provide the required definitions be performed during the Feasibility Study to quantify and assess these parameters.

The Economic Analysis should be kept current by regularly updating it with best available technical and economic information thereby ensure the Economic Analysis remains reliable for sound decision-making.

Changes to feed, CAPEX, OPEX, commodity prices, recovery, and risk, are major factors impacting the Economic Analysis. Therefore, the Economic Analysis should be updated when any of these major factors change.

The QPs responsible for the Technica Report recommend performing of the following activities during the proposed next phase Feasibility Study:

1.17.1 Lola Project

1.17.1.1 Geology and Mineral Resources

- The Mineral Resources remain open along strike and dip. Further exploration along the strike may extend the open pit LoM operations;
- Performing of infill drilling to upgrade the Inferred Mineral Resources within the pit shell will extend the LoM; and,
- It is recommended to develop a grade control model prior to mining.

1.17.1.2 Mining

- Perform a pit slope analysis in the Fresh Rock;
- Perform a detailed hydrogeological study to provide an estimate of the quantity of water that is expected to be encountered during the mining operation;

- Complete hydrogeological and geotechnical study to confirm the 1 to 100-year flood lines which impact the LoM; and
- In-pit dumping may be a preferred option both operationally and from a geotechnical perspective. Detailed planning and design should include this option in future development plan.

1.17.1.3 Process

- Locked cycle flotation testing for Fresh Rock and Saprolite mixes is required to produce metallurgical results that closely replicate the commercial plant conditions and evaluate the recoveries, concentrate grade and particle size distribution ("PSD");
- Perform variability testing on samples of the Saprolite and Fresh Rock to develop an understanding of the full extent of metallurgical variation that may be encountered in the Lola deposit. Once the degree of variation is better understood, blending strategies can be developed for the commercial operation; and,
- Some variability comminution testing is recommended for the Fresh Rock to determine a hardness variation within this material to reduce the process risks for the comminution equipment design.

1.17.1.4 Tailings

- Update the water balance of the TSF for the 25-year LoM;
- Re-assess the freeboard of each phase of the TSF development according to the updated water balance;
- Re-assess the phasing of the construction of TSF1 and TSF2 and optimize for fewer phased wall lifts to produce a discontinuous construction period between the phases; and,

- Water management plan must be optimized to reduce the number of sedimentation ponds. Considering the location of the various infrastructures, water with similar characteristics should be sent to the same pond for treatment before discharge. This strategy will limit the cost of ponds construction and pH adjustment installations.

1.17.1.5 Hydrogeology

- Acquire aerial photographs of the project area and conduct a detailed lineament analysis;
- Perform a ground geophysical investigation using electric methods to locate major faults around the pits;
- Drill selected points to assess productivity of deep aquifers and determine their hydrodynamical parameters; and,
- Update the hydrogeological and pits dewatering model and update the hydrogeological report.

1.17.1.6 Geochemical

- Geochemical leaching and acid rock drainage ("ARD") static tests must be performed on larger quantities of waste and mineralized material to obtain details on variability and allow calculation of statistics (average, median, etc.);
- Geochemical kinetic tests carried out on tailings, Fresh Rock, and Saprolite must be continued to clearly predict medium and long terms behavior of these materials;
- A new kinetic test must be carried out on a representative composite tailings sample produced at the pilot plant from Saprolite and Fresh Rock in proportion similar to the mine production schedule;

1.17.2 Active Anode BMP

It is recommended that the metallurgical responses of the NFG be assessed through the following development test work:

- Optimize spheroidization, purification and coating conditions to enhance the quality and yield of the CSPG battery anode material;
- Confirm the assumed optimized combined yield of 60 wt.- % that has been based on Hensen's experience of their plants in China and that of the Weihai Plant;
- Perform a bulk spheroidization, purification and coating pilot plant campaign to generate metallurgical parameters for basic and detail engineering and design, equipment sizing and vendor test work. In addition, produce sufficient quantities of SG material for enhanced and pilot purification and coating test work to supply CSPG material for initial qualification and customer assessment; and,
- The pilot campaign should confirm achieving CSPG battery anode specification (99.95 wt.- % FC).

Assess the market and sales price for the SG fines by-product since future market requirements and sales price forecasts are currently undefined. The Market Study should be kept current since changing commodity prices is a major factor impacting the Economic Analysis.

Falcon Energy should commence with an ESIA on the BMP following the conclusion of the site selection. The ESIA should be performed at an early stage to minimize or avoid adverse environmental and social effects.

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2 Introduction

Falcon Energy Materials PLC ("Falcon Energy", the "Company") is advancing a vertically integrated global strategy to produce battery anode material aimed at supporting the growing lithium-ion battery ("LIB") industry. Central to this is Falcon Energy's integrated development plan (the "IDP") comprising the open cast mining operation and associated flotation concentrator plant in the Republic of Guinea ("Guinea"), termed the "Lola Project, and the active anode flake graphite battery material plant ("BMP"), planned to be located in the Kingdom of Morocco ("Morocco"). Natural flake graphite ("NFG") flotation concentrate produced from the Lola Project will be converted at the BMP into high-purity, battery-grade, spherical purified graphite ("SPG") that has been coated with tar to produce coated spherical purified graphite ("CSPG") for the LIB market

This National Instrument ("NI") 43-101 Technical Report ("the Technical Report") has been prepared for Falcon Energy to present the preliminary economic assessment ("PEA") on the IDP.

In 2023 DRA Global Limited ("DRA") published an updated Feasibility Study on the Lola Project in a Technical Report, entitled: "Lola Graphite Project, NI 43-101 Technical Report – Updated Feasibility Study", with a Report Date of April 7, 2023, and an Effective Date of February 27, 2023 (the "2023 DRA Technical Report"). The 2023 DRA Technical Report was filed on SEDAR (System for Electronic Document Analysis and Retrieval, i.e., Canada's electronic filing system for disclosures by public companies and investment funds), on April 12, 2023, see www.sedarplus.ca.

Form 43-101F1 Technical Report and Related Consequential Amendments ("Form 43-101F1") sets out the requirements for the preparation and content of a technical report. Instructions (5) of Form 43-101F1 state that

"The qualified person preparing the technical report may refer to information in a technical report previously filed by the issuer for the subject property if the information is still current…, the qualified person must still summarize or quote the referenced information in the current technical report and may not disclaim responsibility for the referenced information.".

In the opinion of Falcon Energy, the 2023 DRA Technical Report is still current, since following the Effective Date of the 2023 DRA Technical Report (i) no new geological data have been generated in respect of the Lola Project, (ii) there have not been changes in the scientific and technical information of the Lola Project, and (iii) graphite price forecast have not materially changed. As such, the QPs responsible for the Technical Report have referred to certain information from the 2023 DRA Technical Report, where relevant, and have summarized or quoted the information in the Technical Report, as referenced.

Dorfner Anzaplan UK Limited ("Anzaplan UK"), in conjunction Tanger Med Engineering ("TME") of Tangier, Morocco, and Hensen Graphite and Carbon Corp ("Hensen") of Qingdao, China, has been engaged by Falcon Energy, to perform a PEA on the IDP. Information on the Lola Project is based on the 2023 DRA Technical Report and has been summarized or quoted in the Technical Report as referenced.

Following a strategic review, Morocco was selected as the ideal location for the BMP. Similarly, one of the world's largest producers of anode materials, China's BTR New Material Group Co. Limited, announced in August 2024 their intention to building a 60,000 t/a anode plant in Tangier, Morocco.

It is currently planned to locate the BMP either in the Tanger Automotive City ("Automotive City"), or within the Mohamed VI Tanger Tech City ("Tanger Tech") industrial zones. Both industrial zones form part of the Tanger Med Zone and are located in the city of Tangier in northern Morocco. They both offer significant incentives for foreign investment.

Automotive City, primarily focused on the automotive industry, has modern infrastructure, strict regulatory frameworks, and access to Tanger Med Port, facilitating efficient export operations. Additionally, Automotive City is recognized for its stringent management of industrial discharges and offers attractive tax incentives to foreign companies.

Tanger Tech has a strong presence in new technology and industrial sectors, providing similar foundational infrastructure alongside a commitment to environmental management.

Both industrial zones offer an ideal setting for industrial operations, combining innovation, compliance with environmental standards, and sufficient infrastructure focused on the needs of the automotive and technology sectors.

From the location in Tangier, the BMP will serve key markets in Europe and North America, where demand for electric vehicles and energy storage systems is surging.

Hensen is an existing CSPG producer that has broad operational expertise acquired from its synthetic and natural graphite anode plants in China. Hensen is building a large-scale anode plant in Weihai, China (the "Weihai Plant"), that is currently being commissioned. The Falcon Energy BMP is based on the design, procurement and existing supply chain practices from Hensen's recently completed Weihai Plant to establish a similar anode plant in Morocco.

2.1 Issuer

Falcon Energy was previously known as SRG Mining Inc ("SRG"). The Company redomiciled to the jurisdiction of the Abu Dhabi Global Market in the ("UAE") and subsequently changed its name to Falcon Energy. Redomicile to the UAE occurred since this jurisdiction provides Falcon Energy with expanded strategic optionality as it advances its partnership discussions. Additionally, the UAE has a double taxation treaty and a bilateral investment treaty with Guinea. For consistency, throughout the Technical Report, the Company will be referred to as Falcon Energy regardless whether the engagement at the time was with SRG or Falcon Energy.

Falcon Energy is focused on developing the Lola Project and to establish a BMP in Morocco. The Lola Project is 100 % owned by SRG Guinée SARL, a wholly owned subsidiary of Falcon Energy.

Falcon Energy is a mineral resource development company, headquartered in Abu Dhabi, UAE, and listed on the TSX Venture Exchange (ticker symbol "FLCN").

Falcon Energy has strategically rebranded itself to reflect its role in the critical minerals sector and its goal of becoming a supplier in the global green energy transition.

On September 9, 2024, Falcon Energy announced in a news release, signing of a technical and strategic partnership with Chinese entity Hensen, to jointly develop an anode plant in Morocco to produce CSPG that meets end-user quality requirements while promoting industry-leading transparency and sustainability standards.

The Lola Project's proximity to major markets and Falcon Energy's focus to produce CSPG in Morocco, align with Falcon Energy's vision of creating a vertically integrated supply chain for battery anode material. This integration supports both the LIB and broader renewable energy markets.

2.2 Terms of Reference and Scope

The subject matter of the Technical Report is the PEA on Falcon Energy's proposed Integrated Project comprising the Lola Project in Guinea, and the BMP in Morocco.

The Technical Report has been prepared in accordance with NI 43-101 Form 43-101F1, as well as the Canadian Institute of Mining, Metallurgy, and Petroleum ("CIM") best practice guidelines. The Technical Report applies procedures and methodologies consistent with industry-standard practices established by CIM.

Cost estimation of the IDP has been done in accordance with Class 5 of the Association for the Advancement of Cost Estimation ("AACE") International, recommended practice ("RP") 47R-11. The Lola Project comprises a Feasibility Study and as such consists of cost estimates in accordance with AACE International Class 3. However, since the Technical Report presents the PEA on the Integrated Project, (a) all costs and maturity level of the definition deliverables are at AACE International Class 5, and (b) the Mineral Reserve Estimate presented in the 2023 DRA Technical Report has been excluded from the Technical Report.

2.2.1 Responsibility and background

DRA was engaged to review and compile the exploration and metallurgical test works performed by Falcon Energy on the Lola Project. It follows a similar Technical Report issued in August 2019 by the Company, reflecting a production of 50,000 t of NFG concentrate over a life of mine ("LoM") of 28 years. DRA provided engineering and integration services for all aspects of the Lola Project. However, as referenced, the respective QPs have referred to certain information from the 2023 DRA Technical Report, where relevant, and have summarized or quoted the information and does not disclaim responsibility for the referenced information.

Anzaplan UK's German parent company, Dorfner Anzaplan GmbH ("Anzaplan GmbH"), was retained by Falcon Energy during 2022 to perform metallurgical test work on NFG concentrate from the Lola Project. The test work included NFG spheroidization, purification, and coating of spherical purified graphite ("SPG"). Considering the strategic partnership agreement between Falcon Energy and Hensen to jointly develop an anode plant in Morocco, a multi-acid purification method (comprising hydrochloric acid ("HCl"), nitric acid ("HNO_3"), and hydrofluoric acid ("HF")) was selected for the PEA due to Hensen's broad experience with this established purification method.

The UK subsidiary of Anzaplan GmbH's in the United Kingdom, Anzaplan UK, has been engaged by Falcon Energy as the overall lead consultancy responsible to perform the PEA and NI 43-101 complaint Technical Report on the Integrated Project. The BMP is based on Process Technology and equipment costs supplied by Hensen. The associated bulk infrastructure and services as well as the environmental studies, permitting and community impact, required for the BMP, has been prepared by TME.

The authors of the Technical Report do not disclaim any responsibility for the content and make appropriate qualifications in Chapter 3.

Neither Anzaplan GmbH nor Anzaplan UK (including its directors and employees) have nor hold any rights or vested interests:

- In any concessions held by Falcon Energy;
- To subscribe to any interests in any of the current or future concessions held by Falcon Energy;

- Either in any concessions held by Falcon Energy or any adjacent concessions; and,
- To subscribe to any current or future interests or concessions adjacent to those held by Falcon Energy.

Anzaplan GmbH and Anzaplan UK's financial interest is limited to charging professional fees at normal commercial rates and normal overhead costs for work performed in connection with the engagement, as reported in the Technical Report.

Professional fee payment does not depend on the success or financing of the Integrated Project.

2.3 Qualified Persons

The following individuals are considered qualified persons ("QPs") as defined by the Form 43-101F1.

- Derick, R. de Wit, FAusIMM, FSAIMM, Dorfner Anzaplan UK Limited;
- Johannes Siegert, MIMMM, MAusIMM, Dorfner Anzaplan GmbH;
- Marc-Antoine Audet, Ph.D., P.Geo, Sama Resources Inc; and,
- Patrick Moryoussef, P.Eng., Falcon Energy Materials, PLC.

Table 8 presents the of the Qualified Persons as defined in Section 1.5 of Form 43-101F1 and their respective responsible chapter of the Technical Report.

Table 8: *Qualified Persons and their Respective Responsible Sections*

Qualified Person	Responsible Chapters	Signature	Date
Derick, R. de Wit, MBA, BTech (Chem. Eng.), PMP (PMI ®), FAusIMM, FSAIMM	1.1 - 1.3, 1.7.1, 1.10, 1.11 - 1.16, 1.17.1.3 - 1.17.1.6, 2 - 5, 13.1, 17, 18 - 24, 25.1, 25.2.4 - 25.2.6, 25.3.1, 25.3.3 - 25.3.5, 26.1.3 - 26.1.7, 26.3 - 26.5, & 27	"Original signed"	January 23, 2025
Johannes Siegert, Dipl.-Ing. (FH), EUR ING, MIMMM, MAusIMM	1.7.2, 1.17.2, 13.2, 25.3.2, & 26.2.2	"Original signed"	January 23, 2025
Marc-Antoine Audet, Ph.D., P.Geo.	1.4 - 1.6, 1.8, 1.17.1.1, 6 - 12, 14, 25.2.1, 25.2.2, & 26.1.1	"Original signed"	January 23, 2025
Patrick Moryoussef, P.Eng.	1.9, 1.17.2, 16, 25.2.3, & 26.1.2	"Original signed"	January 23, 2025

The QPs Mr. Marc-Antoine Aude and Mr. Patrick Moryoussef are not independent of the issuer as defined in Section 1.5 of Form 43-101F1.

2.4 Previous Technical Report

The Company filled the following NI 43-101 Technical Reports on subject property relevant to the Lola Graphite Project:

- DRA Global (Effective Date: February 27, 2023, Report Date: April 7, 2023). Lola Graphite Project, NI 43-101 Technical Report – Updated Feasibility Study;
- DRA/Met-Chem (Effective Date: June 18, 2019, Report Date August 16, 2019). Lola Graphite Project, NI 43-101 Technical Report – Updated Feasibility Study;

- DRA/Met-Chem (Effective Date: June 14, 2018, Issue Date: August 2, 2018). Lola Graphite Project, Technical Report – Preliminary Economic Assessment; and,
- DRA/Met-Chem (Effective Date: September 30, 2017, Issue Date: February 5, 2018). NI 43-101 Technical Report – Mineral Resource Estimate for Lola Graphite Project.

2.5 Effective Date

The Effective Date of the Mineral Resource Estimate for the Lola Project is February 27, 2023. The Effective Date of all other scientific, technical and economic information presented in the Technical Report is August 31, 2024.

2.6 Personal inspection (Site visit)

In the context of the Technical Report, the following QPs under the terms of NI 43-101 has visited the Lola Project:

- Mr. Marc-Antoine Audet has visited the Lola Project several times. The last visit was during 2019. The purpose of the visit included: examination of the data collection, and interpretation, core logging and sampling, database construction, QA/QC system and general procedures. Mr. Audet examined some core and inspected drilling collars, several outcrops and drill sites were visited; and,
- Mr. Patrick Moryoussef has visited the Lola Project several times. His last visit to the Lola property was between June 26 and June 28, 2023. During this time, he visited the plant location, the mineralized zone, inspected the core set, drilling collars and inspected roads and collected samples for metallurgical test work. In addition, Mr. Moryoussef has visited the proposed sites for the BMP at Automotive City and Tanger Tech, Morocco, during June 2 to 7, 2024, as part of a site reconnaissance assessment.

2.7 Units of Measure and Abbreviations

All units of measurement used in the Technical Report are metric, unless stated otherwise. Tonnage (denoted as "t") are metric of 1,000 kilograms ("kg") and are all weights on a dry basis, unless stated otherwise. All costs are in United States Dollar (denoted as "USD", symbol: $), unless stated otherwise and all units in the Report are based on the International System of Units, unless stated otherwise.

Table 9 and Table 10 present respectively the units and acronyms, abbreviations and conversions used in the Technical Report.

Table 9: Units of measurement

Abbreviation	Definition
%	percentage
μm	microns i.e. one millionth of a meter
g/cm3	grams per cubic centimetre i.e. unit of density
h/a	hours per annum
kg	kilograms
kt/a	kilotons per annum
kWh/a	kilowatt-hour per annum, i.e. unit of energy
m^2/g	square meter per gram
m^3/a	cubic metres per annum
t	Tonnage
t/a	tons per annum
t/h	tons per hour
t/t	ton per ton
USD/a	United States Dollar per annum
USD/kWh	United States Dollar per kilowatt-hour
USD/m^3	United States Dollar per cubic meter
USD/t	United States Dollar per ton
USDm	million of United States Dollar
wt.- %	percent by weight

Table 10: Acronyms, Abbreviations and Initialisms (conversions)

Abbreviation	**Definition**
AACE	Association for the Advancement of Cost Estimation
ABA	acid base accounting
ARD	acid rock drainage
ALD	atomic layer deposition
Anzaplan GmbH	Dorfner Anzaplan GmbH
Anzaplan UK	Dorfner Anzaplan UK Limited
Automotive City	Tanger Automotive City
BET	Brunauer-Emmett-Teller
BMI	Benchmark Mineral Intelligence
BMP	battery material plant
BUMIFOM	Bureau Minier de la France d'Outre-Mer
CAPEX	capital expenditure
Cg	graphitic carbon
CIM	Canadian Institute of Mining, Metallurgy, and Petroleum
CRM	certified reference materials
CSPG	coated spherical purified graphite
C(t)	total carbon
CoG	cut-off grade
COPC	constituents of potential concern
CTMP	Centre de Technologie Minérale et de Plasturgie
DCF	discounted cash flow
DRA	DRA Global Limited
DTM	digital terrain model
EIA	environmental impact assessment
EMSP	Environmental Monitoring and Surveillance Program
Environmental and Social Management Plan	ESMP
ESIA	environmental and social impact assessment
ESMP	Environmental and Social Management Plan
Falcon Energy, the Company, or the Issuer	Falcon Energy Materials PLC
FC	fixed carbon

Form 43-101F1	Form 43-101F1 Technical Report and Related Consequential Amendments
GPS	global positioning system
G&A	general and administration
GEMS	Geologic Map Schema
Guinea	Republic of Guinea
HCl	hydrochloric acid
Hensen	Hensen Graphite and Carbon Corp.
HF	hydrofluoric acid
HNO_3	nitric acid
ID	identification
IFC	International Finance Corporation
IMVAL	International Mineral Valuation
IRR	Internal Rate of Return
LIB	lithium-ion battery
LoM	life of mine
Lola Project	Lola Graphite Project
Morocco	Kingdom of Morocco
NAG	non-acid generating
NFG	natural flake graphite
NI 43-101	NI 43-101 Standards of Disclosure for Mineral Projects
NI	National Instrument
No.	number
NPV	net present value
OPEX	operating expenditure
PDC	process design criteria
PEA	Preliminary Economic Assessment
Project	BMP in Morocco for value addition transformation of NFG concentrate into high-purity, battery-grade, graphite active anode material
PSD	particle size distribution
QAQC	Quality Assurance and Quality Control
QP	Qualified Person
RP	Recommended Practice
RoM	run off mine
SAG	semi-autogenous grinding

SEM	scanning electron microscope
SG20	spherical particles of a size of 10 µm
SG10	spherical particles of a size of 20 µm
SG	spherical graphite
SPG	spherical purified graphite
SRG	SRG Mining Inc now Falcon Energy
Tanger Tech	Mohamed VI Tanger Tech City
Technical Report	The Graphite Spheroidization, Purification, and Coating Battery Material Plant PEA prepared for Falcon Energy Materials, PLC
TME	Tanger Med Engineering
TSF	tailings storage facility
TSS	total suspended solids
UAE	United Arab Emirates
USD, $	United States Dollar
UTM	Universal Transverse Mercator
VOC	volatile organic compounds
WBS	work breakdown structure
Weihai Plant	large-scale anode plant in Weihai, China
WGS	World Geodetic System
WMO	World Meteorological Organization
XRD	X-ray diffraction

3 Reliance on Other Experts

3.1 Introduction

The QPs are relying upon information provided by Falcon Energy and its legal counsel concerning any legal, or royalty matters, graphite markets, taxation, and environmental and social. In preparing the Technical Report, the authors have fully relied upon certain work, opinions and statements from other experts. The authors consider the reliance on other experts, as described in Chapter 3, as being reasonable based on their knowledge, experience and qualifications

Regarding Item 3 (a) of Form 43-101F1, the QPs include a limited disclaimer of responsibility as outlined in the following Sections. The QPs take responsibility for all other scientific and technical content of the Technical Report and believe it is accurate and complete in all material aspects.

3.2 Graphite Markets

Graphite markets and product sales prices have been prepared from information provided by Benchmark Mineral Intelligence ("BMI"), as well as confidential, independent market studies, available to Falcon Energy, for specific products or sectors. The QP, Derick, R de Wit, have fully relied upon, and disclaim responsibility for, information supplied by experts retained by Falcon Energy for graphite marketing and pricing. This information is presented in Chapter 19 and was used to prepare the economic model presented in Chapter 22.

3.3 Taxation

The QP, Derick, R de Wit, have fully relied upon and disclaim responsibility for information supplied by Falcon Energy and experts retained by Falcon Energy, and information related to taxation as applied to the economic model presented in Chapter 22.

3.4 Environmental and Social

The environmental and social legislation applicable to Morocco, including the Environmental and Social Impact Assessment ("ESIA") procedures, is governed by Law No. 12-03 on Environmental Impact Studies, enacted in 2003. This law sets out the requirements for ESIA to ensure that development projects, like Falcon Energy's BMP, comply with environmental protection standards.

The QP, Derick, R de Wit, have fully relied upon, and disclaim responsibility for, information supplied by experts retained by Falcon Energy to endure the BMP comply with Moroccan environmental regulations as presented in Chapter 20.

4 Property Description and Location

4.1 Lola Project

Section 4.1 has been summarized from the 2023 DRA Technical Report.

4.1.1 Location

The Lola Project is located 3.5 km west of the town of Lola in south-eastern Guinea. It is approximately 1,000 km from the capital city, Conakry, and 50 km east of the border with Ivory Coast (*Figure 2*).

The Property is centered on Universal Transverse Mercator ("UTM") World Geodetic System 1984 ("WGS 84") zone 29N latitude 7° 48′ 00" north (UTM 863,000 north) and longitude 8° 32′ 00′ West (UTM 551,000 East). The area includes the communities of Lola and several small villages.

Figure 2: Location of the Lola Project in Guinea (DRA, 2023)

4.1.2 Exploration Permit, Rights and Obligations

The land in Guinea is under federal jurisdiction and, as such, application to the government, through the Mine and Energy Department in Conakry, is required to obtain an Exploration Permit. The Exploration Permits are granted based on the proposed work program. The Permits are issued for an initial three-year period, with two renewal periods of two years each. Each renewal will occur automatically if the holder has met all the obligations contained in the granting order and in the Mining Code.

If the Owner applies for renewal, a minimum work program adapted to the results of the preceding period and representing a financial outlay at least equal to that set out in the granting order must be proposed. At each renewal, 50 % of the area must be relinquished.

An Exploration Permit confers on its holder the exclusive right to prospect for the type of mineral substance(s) for which the Permit is issued, within the limits of its area and without limitation as to depth. It does not give surface rights or access rights, and these rights must be negotiated with the landowners.

4.1.3 Property Ownership and Agreements

The Lola Graphite Deposit is 100 % owned by SRG Guinée SARL, a wholly owned subsidiary of Falcon Energy. The original exploration licenses were granted to Falcon Energy in 2013. On August 10, 2018, the Government of Guinea awarded SRG Guinée, through ministerial order NoA2018/5349/MMG/SGG, the Lola Graphite research permit, for a surface area of 94.38 km^2. This permit was cancelled on November 6, 2019, when a fifteen-year renewable mining permit was issued through presidential order NoD/2019/291/PRG/SGG, for the same surface area of 94.38 km^2; as depicted in Figure 3.

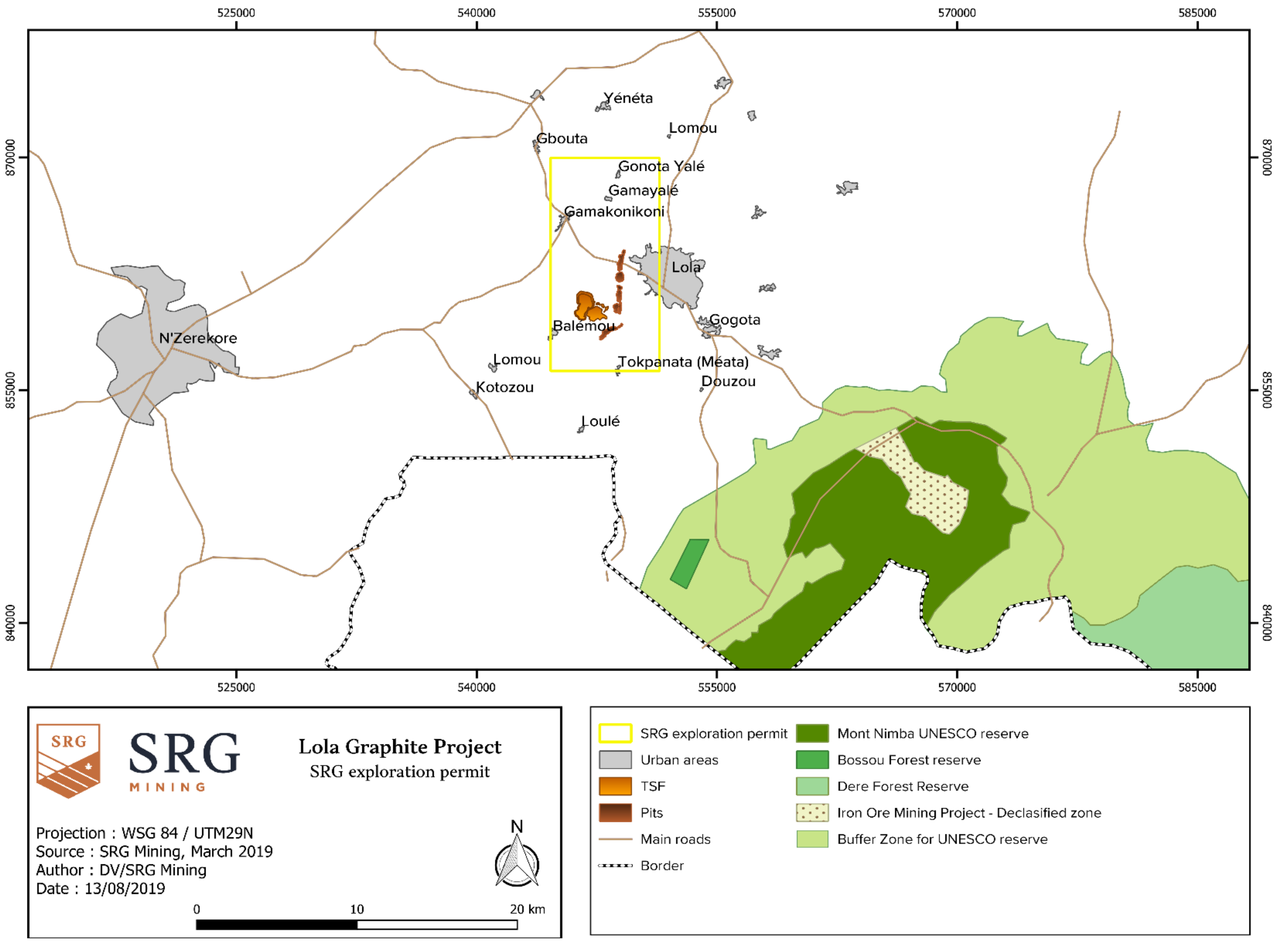

Figure 3: Lola Graphite Location Permis 22709 (DRA, 2023)

The property boundaries have not been surveyed in the field, but they are expressed by latitude and longitude coordinates.

4.1.4 Royalties Obligations

The grant by the State of a Mining Operation Title immediately gives the State a free-carried interest of up to a maximum of 15 % in the capital of the company holding the Title. The State has the right to acquire a supplementary participation, in cash, according to the terms agreed upon with each relevant mining company within the scope of the Mining Agreement. This acquisition option may be scheduled over time, but may be exercised only once. The total participation held by the State may not exceed 35 %.

A Mineral Royalty of 3 % is applied to iron and base metals, but the current Code is silent on royalties applicable to graphite. However, the Code stipulates that royalties for any mineral substance not specified in the Code will be determined by regulation.

4.1.5 Permits, Environmental Liabilities and Risks

To the extent known, there are no environmental liabilities associated with the Exploration Permit, and no surface right agreements are in place or are being negotiated. There are no significant factors or risks that may affect access, title or the right or ability to perform exploration work on the Property.

No additional permits are required to perform exploration work on the Property. Drilling has been carried out on the Property and additional drilling can be completed under the same permits.

4.2 Active Anode BMP

Following a strategic review, Morocco was selected as the ideal location for the BMP, based on its strategic location, competitive industrial infrastructure, advantageous access to European and global markets, and free trade agreements with key European and North American markets. In addition, Morocco is located in close proximity to Guinea thereby reducing international transportation cost and duration for the importation of NFG concentrate from the Lola Project.

Morocco's industrial hubs, particularly in the Tanger Med region, offer significant logistical benefits for exporting CSPG to LIB markets, providing Falcon Energy with a more efficient route to its end customers in Europe and North America. *Figure 4* present Morocco's location in the world.

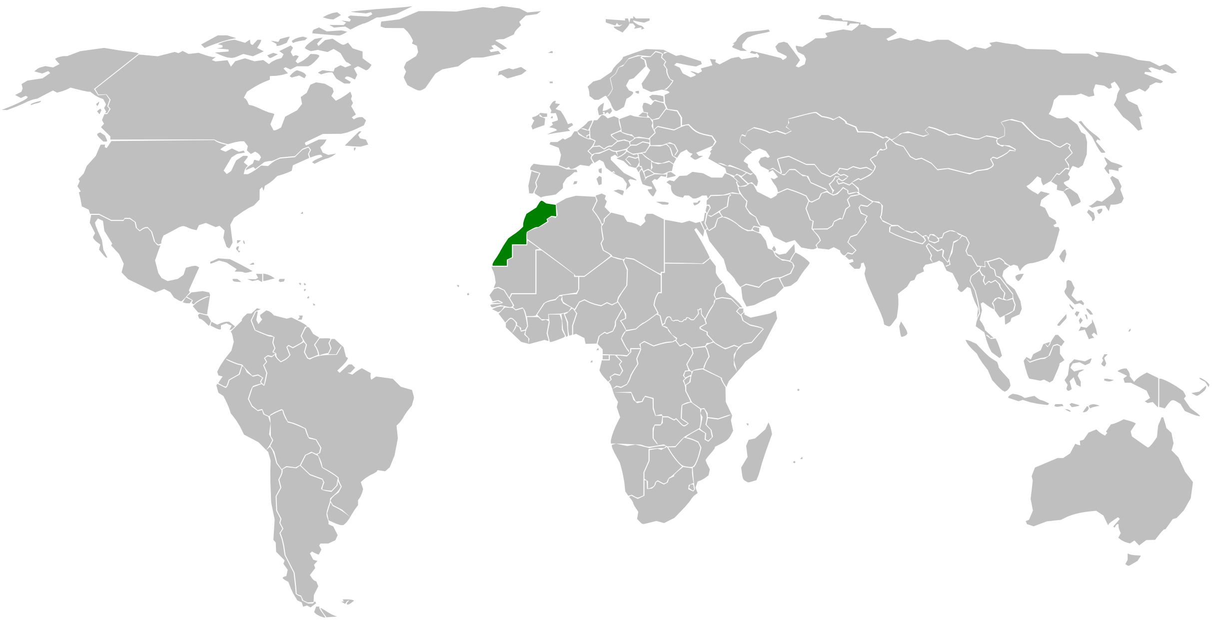

Figure 4: Morocco's relative location to Europe and North America

Morocco's focus on expanding its renewable energy capacity and its government policies to encourage foreign investment in industrial and energy sectors further strengthen the case to locate the BMP here. With competitive labor costs and access to sustainable energy sources, Morocco presents a compelling alternative to Finland. Morocco is rapidly positioning itself as a central hub in the renewable energy and manufacturing sectors, particularly with ongoing investments in green energy and sustainable industrial practices. The country’s access to highly skilled labor, combined with the Moroccan Government’s measures to attract foreign investors, makes it a fitting location for a project of this scale.

5 Accessibility, Climate, Local Resources and Infrastructure

5.1 Lola Project

Section 5.1 has been summarized from the 2023 DRA Technical Report.

5.1.1 Accessibility

The terrain within the license area and in the immediate vicinity of the Lola Project occurrence is gently undulating, providing relatively easy access to any part of the Property. Access is provided via paved highway and on along a network of gravel roads.

5.1.2 Climate, Vegetation

The Project area falls within the Guineo-Soudanian climatic condition, which is a transition zone between equatorial and tropical climates. According to the World Meteorological Organization ("WMO"), the area has distinct rainy and dry seasons and receives an average annual rainfall of 1,600 mm. The rainy season extends from March to October. Temperatures range from a minimum of 10.8° in January to 34.7° in February (WMO data, 1961-1990).

The Project area is located at the transition zone between the tropical forest area and the northern savannah, where grassy woodland and occasional dry scrub are predominant.

The vegetation communities observed in the Project area are of the grassland type, with scattered trees and shrubs and moderate to open canopy.

5.1.3 Local Resources and Infrastructure

Guinea has sizeable capabilities in natural resources, arable land, and energy opportunities. The country's population has been estimated in 2024 to be 14.53 million. Agriculture is the country's largest employer.

Guinea's extensive economic potential is constrained by the deficiencies of a vastly inadequate infrastructure, notably rural roads, irrigation and water supply. A summary of Guinea's key infrastructure area as follows:

- 43,493 km of roads, 30 % paved. In 2014, 54 % of the roads were in poor condition;
- Marginal rail traffic (385 km) with 3 railway lines;
- Congested Conakry Port (90 % of foreign trade done by sea);
- Conakry: 50 % of urban population (20 % of total population);
- Airports. One international, three regional, seven secondary and five private aerodromes (mining companies);
- Electricity. Guinea has an electricity crisis, and the World Bank has supported the country in several ways to address it; and,
- Water supply: Guinea's water supply and irrigation are deficient.

Conakry, the capital and largest city of Guinea, is the hub of Guinea's economy, commerce, education, and culture. Muslims represent 85 % of the population in Guinea but the dominant religion in the Project area is Christianism. Guinea's people belong to 24 ethnic groups using their own vernacular languages. However, French is the official language of Guinea and the main language of communication.

The economy of the study area is largely dependent on agriculture, and much of it is on a subsistence basis. Small family-run plots of land are cultivated on a shifting agriculture basis. A cash economy also exists in the region and is fueled by cash crops, logging, ranching, and roadside vendors servicing vehicular traffic.

Mineral production constitutes a large part of the Guinean economy. Guinea possesses one of the world’s largest resources of bauxite and high-grade iron resources together with significant diamond and gold deposits, and undetermined quantities of uranium.

The Lola municipality is the head of the prefecture of Lola, located in the Nzérékoré region. Despite its importance, with a population of 130,000 inhabitants, the municipality is not electrified.

Falcon Energy opened roads to provide access to the project area, as it is in a remote sector with poor infrastructure.

5.1.4 Physiography

Guinea is divided into four geographic regions: Maritime Guinea (Lower Guinea or the Basse-Côte lowlands), the central Fouta Djallon mountains, the Sahelian Haute-Guinea to the northeast and the Forested Guinea, the jungle region in the southeast where the Lola Project is located.

Guinea's mountains are the source for the Niger, the Gambia, and Senegal Rivers, as well as the numerous rivers flowing to the sea on the west side of the range in Sierra Leone and Ivory Coast.

The terrain within the license area and in the immediate vicinity of the Lola Graphite occurrence, is gently undulating plain with one isolated topographic high reaching 75 m above the surrounding area. The elevation of the area varies from 485 m to 520 m above sea level.

5.1.5 Surface Rights

To the extent known, no surface right agreements are in place or under negotiation. Falcon Energy confirmed that surface rights are independent of Mineral Rights and will be acquired on time when they will be required.

5.2 Active Anode BMP

5.2.1 Country Location

Morocco is located in North Africa. It is an accessible gateway between Europe and Africa, with the Strait of Gibraltar separating it from Spain by 13 kilometers. Morocco's coastal access and ports and its developed industrial zones such as Tanger Med Zone make it an ideal location for industrial projects like Falcon Energy's BMP.

5.2.2 Accessibility and Infrastructure

Morocco's well-established and expanding infrastructure network makes it an ideal location for industrial investment. According to a report by Oxford Business Group, Morocco has invested heavily in infrastructure projects over the past decade, focusing on transport, energy, and industrial zones.

The country's infrastructure is designed to support its growing industrial sector, particularly in hubs such as Tanger Med Zone, home to one of Africa's largest ports. The Tanger Med Port is a critical gateway for global trade, offering direct maritime connections to over 180 ports worldwide, including those in Europe, the Americas, and Asia.

Morocco is also well-connected by road, rail, and air. The Moroccan National Railways operates a rail network that includes high-speed rail services, linking major cities such as Casablanca, Rabat, and Tangier. Road infrastructure is equally developed, with a network of highways aiding the movement of goods throughout the country. Morocco has 19 international airports, including Mohammed V International Airport in Casablanca, a major hub for freight and passenger transport in the region.

Morocco's energy infrastructure is transitioning towards renewable sources, with large-scale solar and wind projects contributing to its industrial zones, ensuring reliable and sustainable energy for operations like the BMP.

5.2.3 Climate

Morocco experiences a diverse climate due to its geographic location and varied topography, ranging from the north Mediterranean coastline to the south Sahara Desert. The climate can generally be classified as Mediterranean along the coast and continental in the interior regions.

In coastal areas, such as Tangier and Casablanca where the BMP will be located, the climate is temperate with mild, wet winters and hot, dry summers. Average summer temperatures range between 22°C to 30°C, while in winter, coastal areas experience temperatures, ranging from 10°C to 17°C. Rainfall in coastal regions typically occurs from November to March, with annual precipitation between 300 to 800 mm.

The inland and desert regions such as Marrakesh experience a more extreme climate. Summers can see temperatures rise above 40 °C, while winters can be significantly cooler, especially in elevated areas like the Atlas Mountains, where snowfall is common. Annual precipitation in these inland areas is generally lower, often below 200 mm, contributing to the semi-arid and desert climates. The country's mountainous regions, such as the Atlas Mountains, experience colder winters and more precipitation than deserts.

While the summer temperatures in Tangier can rise to around 30 °C, this is generally considered manageable and unlikely to pose significant operational challenges. Compared to extreme heat conditions in other regions, 30 °C is moderate, and industrial activities can typically continue without interruptions. Worker safety remains a priority, and standard cooling and ventilation systems with proper hydration and breaks, are usually sufficient to ensure a comfortable working environment.

5.2.4 Local Resources

Morocco has a developing economy, with key sectors including agriculture, manufacturing, mining, and renewable energy. Its workforce is characterized by a growing pool of skilled labor, supported by the government's initiatives to enhance education and vocational training. The country's location, connecting Europe, Africa, and the Middle East, also supports a robust trade environment, with international trade representing a significant portion of its gross domestic product.

Morocco is rich in natural resources, particularly phosphates, with some of the world's largest Mineral Reserves. Other Mineral Resources include lead, zinc, copper, and silver, contributing to its well-developed mining industry.

Additionally, Morocco is actively investing in renewable energy, with a strong focus on solar and wind power as part of its plan to generate over 50 % of its energy from renewables by 2030. Developing energy infrastructure, including large-scale solar projects like the Noor Ouarzazate Solar Complex, ensures a reliable energy supply for industries.

The chemical industry in Morocco has also seen substantial growth, especially in phosphate processing, fertilizers, and other industrial chemicals. The government's push towards decarbonization and investments in green technology positions Morocco as a leading player in sustainable industrial growth.

In Morocco, Tanger Med Port is a major logistic and industrial hub that connects to 186 ports worldwide. It is currently used as a platform for major European car manufacturers to assemble vehicles and build engines to export to the European Union and African markets. The aim of the Tanger Med Port is to better integrate Morocco into global supply chains by offering logistics zones with free trade port advantages and direct accessibility to global shipping routes.

The BMP is a self-contained chemical processing plant. It is planned to be located on a vacant, flat, in an industrial site. The site is connected by paved road. The site is very close to international harbor, urban nodes, rail and air transport infrastructure, and highways for local and international transportation of raw material, reagents and finished products. The site contains major industrial utilities. During the next phase ESIA disposal and processing for treatment of hydrofluoric acid (“HF”) wastewater will be assessed.

6 History

Section 6 has been summarized from the 2023 DRA Technical Report. It relates to the subject property of the Mineral Resource Estimate, i.e. Lola Project, and does not require a discussion on the proposed BMP in Morocco.

6.1 Prior Ownership and Ownership Changes

The Lola Graphite Deposit is 100 % owned by SRG Guinée SARL, a wholly owned subsidiary of Falcon Energy. The original exploration licenses (Arrêté No A2013/4543/MMG/SGG dated September 2, 2013,) were granted to Falcon Energy for a first period of three years, renewable for two additional periods of two years each. The Property was initially formed by four exploration licenses, Permis de Recherche 4543, forming a rectangle of 27.9 km by 13.7 km for a total of about 380 km^2.

The application for renewal of the original Permit for two years was filed with the Department of Mines and Energy on June 20, 2016, and was issued to Falcon Energy on August 29, 2016, by Arrêté A2016/4059/MMG/SGG. According to legislation, the surface area was reduced by approximately 50 % from 380 km^2 to 187 km^2.

Falcon Energy filed the documentation for the second renewal for two years on May 29, 2018, with the Department of Mines. The exploration permit was granted by Arrêté A/2018/5349/MMG/SGG dated August 10, 2018. The surface area was further reduced by 50 % to 94.38 km^2 as presented in Figure 3. This permit was cancelled on November 6, 2019, when a fifteen-year renewable mining permit was issued through presidential order NoD/2019/291/PRG/SGG, for the same surface area of 94.38 km^2.

The property boundaries have not been surveyed in the field, but they are officially expressed by latitude and longitude coordinates.

6.2 Historical Exploration and Development

The Lola Graphite occurrence was discovered by the Bureau Minier de la France d'Outre-Mer ("BUMIFOM") during the construction of the Conakry-Lola Road in 1951. Between 1951 and 1955 BUMIFOM excavated 309 shallow pits and outlined a graphite-rich occurrence 4 km long and between 100 m and 200 m wide. BUMIFOM used 19 of the pits to estimate a historical resource. BUMIFOM abandoned the project that laid dormant until "re-discovered" by Falcon Energy in 2012.

In 1998, an inventory of the mineral resources of Guinea by BGR, a German federal agency, referred to the BUMIFOM note concerning the Lola Graphite occurrence. In 1999, Bureau de Recherches Géologiques et Minières published a set of geological maps at a scale of 1:200,000 that include mention of the Lola Graphite occurrence (Description notice; map 34-33 N'Zérékoré-Tinsou). Following the re-discovery in 2012, Falcon Energy had access at the Department of Mines in Conakry to BUMIFOM's historical documents pertaining to prospecting, deposit description, flotation test on graphitic schists (1951, 1953), and various metallurgical tests performed between 1953 and 1955.

In 2012, Falcon Energy initiated detailed prospecting programs aimed at delineating and characterizing the graphite occurrence.

6.3 Historical Resources and Production

6.3.1 Introduction

An initial Mineral Resource Estimate for the Lola Graphite Deposit was completed in September 2016 by Falcon Energy and was updated as additional data were collected from diamond drilling and performing of further independent validation.

The criteria used for classifying all the historical estimated resources were based on confidence and continuity of geology and grades. All the historical resources were classified following the definitions and guidance established by the CIM Definition Standards for Mineral Resources and Mineral Reserves (May 10, 2014).

The bulk density for all the historical Mineral Resource Estimate was interpolated from measurements taken from core samples using the immersion method.

The Mineral Resource Estimate was prepared using a block model constrained with 3D wireframes of the principal mineralized domains. Values for graphitic carbon ("Cg") were interpolated using the Ordinary Kriging interpolation methodology. A preliminary open pit optimization algorithm was run on the estimated grade block model to constrain the Mineral Resources and support the CIM requirement that Mineral Resources have "reasonable prospects for eventual economic extraction". An optimized pit shell was determined using the Lerchs-Grossman algorithm in the MineSight® software. Only mineralization contained within the pit shell has been included in the Mineral Resource Estimate.

6.3.2 Previous Mineral Resource Estimates

An initial Mineral Resource Estimate for the Lola Graphite Deposit was completed in September 2016 with a subsequent Mineral Resource Estimate in September 2017. The Technical Report is available on SEDAR entitled: "NI 43-101 Technical Report – Mineral Resource Estimate for Lola Graphite Project, Prepared by DRA/Met-Chem for SRG Graphite Inc.; Effective Date: September 30, 2017; Issue Date: February 5, 2018".

The September 2017 Mineral Resource Estimate is based on 172 boreholes for a total of 4,936 m and ten trenches adding up to 1,326 m, for a total of 3,932 samples.

The Mineral Resource Estimate includes the weathered portion of the deposit, the underlying graphite rich paragneiss bedrock remaining essentially untouched. Mineral Resources roughly accounts for 18 % of the 3.22 km^2 surface area of the entire deposit.

The September 2017 Mineral Resource Estimate was performed by Marc-Antoine Audet, P.Geo., Ph.D. Mr. Audet is a QP for Falcon Energy.

A validation of the drill hole database, geological surfaces, and geological solids used to perform the Mineral Resource Estimate was realized by Ghislain Deschênes, P. Geo., QP from DRA, and independent from Falcon Energy. Mr. Deschênes agreed with the method and the results produced by Falcon Energy.

The results from the September 2017 Mineral Resource Estimate at a cut-off grade ("CoG") of 3.0 % Cg per tonne are presented in Table 11.

Table 11: 2017 Mineral Resource Estimate (CoG 3.0 % Cg per Tonne)

Cut-off Grade [Cg %]	Classification	Tonne [`000 t]	Cg [%]	In-situ Cg [t]
3.0 %	Indicated	3,961	5.66	224,100
	Inferred	4,617	6.45	297,800

6.3.3 Historical Resources and Production

A further Mineral Resource Estimate for the Lola graphite deposit was completed in June 2018 and is documented in a Report available on SEDAR entitled: "Lola Graphite Project, Technical Report – Preliminary Economic Assessment; Effective Date: June 14, 2018; Issue Date: August 2, 2018", and prepared by DRA/Met-Chem for Falcon Energy.

The Mineral Resource estimate is based on 395 boreholes, for a total of 12,086 m and 10 trenches for 1,326 m. The area accounted for this Mineral Resource represents roughly 33 % of the 3.22 km^2 surface area of the entire deposit.

The 2018 PEA Mineral Resources Estimate was performed by Dr. Marc-Antoine Audet, P. Geo., Ph.D. Geology. The Mineral Resource Estimate was verified and validated to ensure compliance with NI 43-101 – Standards of Disclosure for Mineral Projects. Validation by independent QP, Mr. Sivanesan (Desmond) Subramani, HBSc., a geologist and graphite expert with Caracle Creek International Consulting (Pty) Ltd. The June 2018 PEA Mineral Resource Estimate is summarized in Table 12.

Table 12: June 2018 Mineral Resource Estimate (CoG 3.0 % Cg)

Cut-off Grade [Cg %]	**Classification**	**Tonne [Mt]**	**Cg [%]**	**In-situ Cg [t]**
3.0 %	Measured	1.40	5.32	74,700
	Indicated	10.79	5.58	602,200
	Total M&I	**12.20**	**5.55**	**676,900**
	Inferred	2.06	6.07	125,200

Notes from 2018 Technical Report:

1. CIM definitions (May 10, 2014) observed for classification of Mineral Resources.
2. Block bulk density interpolated from specific gravity measurements taken from core samples.
3. Resources are constrained by a Lerchs-Grossman optimized pit shell using MineSight software.
4. Mineral Resources are not Mineral Reserves and have no demonstrated economic viability. The estimate of Mineral Resources may be materially affected by mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social, and governmental factors (Modifying Factors).
5. Numbers may not add due to rounding.
6. Effective Date of Resource Estimate is June 14th, 2018.

6.3.4 Mineral Resources Estimate for 2019 PEA

A Mineral Resource Estimate was performed as part of the 2019 PEA. The Effective Date of this Mineral Resource Estimate was June 18, 2019, and was performed by Dr. Marc-Antoine Audet, P. Geo., Ph.D. The 2019 PEA Mineral Resource Estimate is based on a CoG of 1.65 % Cg, and is summarized in Table 13.

Table 13: June 2019 Mineral Resources Estimate (CoG 1.65 % Cg)

CoG [Cg %]	Classification	Volume [M m³]	Tonnes [Mt]	Cg [%]	In-situ Cg [t]
1.65 %	Saprolite				
	Measured	4.22	6.84	4.39	300,300
	Indicated	14.30	23.24	4.04	937,857
	Sub-total Ind & Meas.	18.52	30.08	4.12	1,238,157
	Inferred Saprolite	0.75	1.20	3.81	45,578
	Fresh (Hard) Rock				
	Indicated	8.33	15.96	4.03	643,430
	Sub-total Ind & Meas.	8.33	15.96	4.03	643,430
	Inferred Fresh Rock	1.51	3.05	3.73	113,785
	Total Ind & Meas.	**26.85**	**46.03**	**4.09**	**1,881,587**
	Total Inferred	**2.26**	**4.25**	**3.75**	**159,364**

Notes from 2019 Technical Report:

1. CIM definitions (May 10, 2014) observed for classification of Mineral Resources.
2. Block bulk density interpolated from specific gravity measurements taken from core samples.
3. Resources are constrained by a Lerchs-Grossman optimized pit shell using MineSight software.
4. Mineral Resources are not Mineral Reserves and have no demonstrated economic viability. The estimate of Mineral Resources may be materially affected by mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social, and governmental factors (Modifying Factors).
5. Numbers may not add due to rounding.
6. Effective Date of Resource Estimate is June 18, 2019.

6.3.5 Cautionary Note

Although the historical Mineral Resources Estimates were prepared in accordance with the current CIM guidelines, they have become obsolete. The historical Mineral Resources are superseded by the Mineral Resource Estimate presented in the 2023 DRA Technical Report, and reproduced in the Technical Report, which has been based on additional drill data and further independent validation.

Mineral Resources that are not Mineral Reserves do not have demonstrated economic viability. The estimate of Mineral Resources may be materially affected by mining, processing, metallurgical, infrastructure, economic, marketing, legal, environmental, social, and governmental factors (Modifying Factors). The reader is cautioned that a "qualified person" (as defined in NI 43-101) has not done sufficient work to classify the historical Mineral Resource Estimates as current Mineral Resources or Mineral Reserves, in accordance with NI 43-101.

The historical Mineral Resources are only relevant in that they provide a broad indication of the evolution of estimated tonnes and grade as more information has been gathered on the deposit. The historical Mineral Resources presented in Section 6.3 should not be relied upon, and have not been treated in this or previous Technical Reports as current Mineral Resources or Mineral Reserves.

6.3.6 Production

There has been no historical graphite production from the Lola Project.

7 Geological Setting and Mineralization

Section 7 has been summarized from the 2023 DRA Technical Report. It relates to the subject property of the Mineral Resource Estimate, i.e. Lola Project, and does not require a discussion on the proposed BMP in Morocco.

7.1 Regional Geology

The Project is located in the eastern limit of the West African Craton, in the Kénéma-Man domain of Archean granulitic and migmatitic gneiss with subordinate granitoids and relic supracrustal belts (Figure 5).

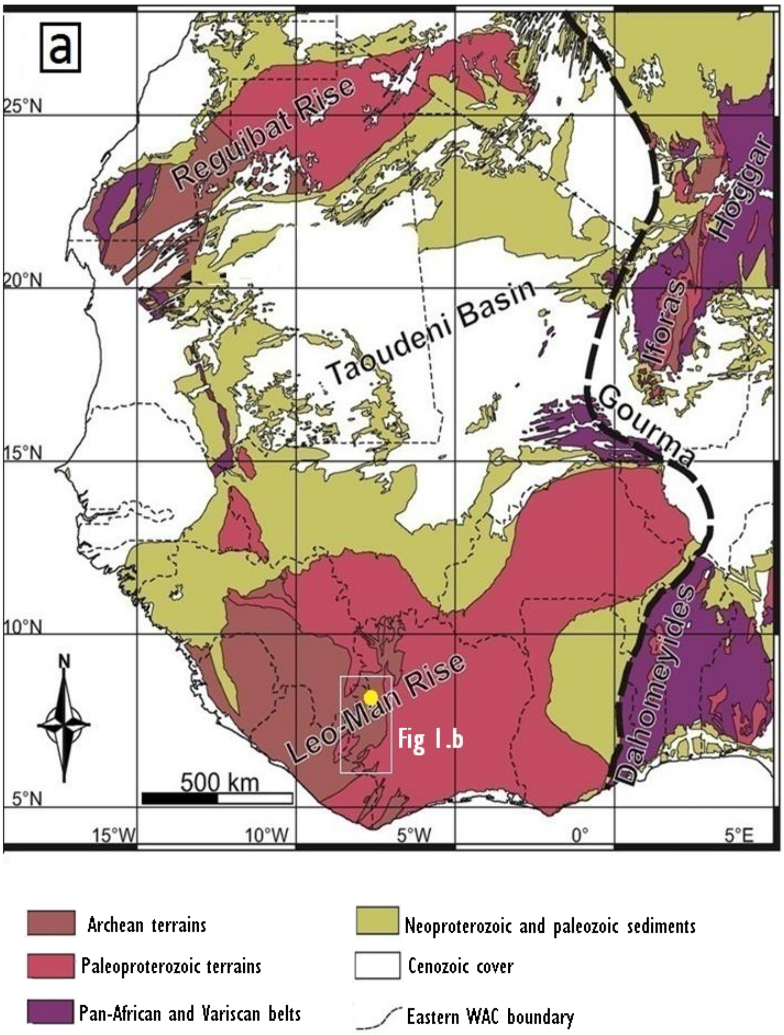

Figure 5: West African Shield – Schematic Geological Map (DRA 2023)

The Archean rocks were affected by the earlier Leonian orogeny (between 3.5 Ga and 2.9 Ga), the Liberian orogeny (between 2.9 Ga and 2.5 Ga) and the Eburnean orogeny (between 2.5 Ga and 1.8 Ga), following which the West African Craton stabilized.

The Archean succession in the Project area was first mapped by Obermüller (1941), revised in 1998 under the BGR compilation (Bering et al., 1998) and re-mapped by the Bureau de Recherches Géologiques et Minières at a scale of 1:200,000 (Thiéblemont et al., 1999).

The N'Zérékoré-Lola area contains the Archean gneissic field of N'Zérékoré, which includes the Simandou ridge and Mont Nimba, and the granitic domain («Pays de Manahan»), toward the east and extending into Ivory Coast.

The Lola region's rock assemblage is of mid-Archean age (between 3.5 Ga and 2.8 Ga). Work by Obermüller (1941), Bering et al., (1998), and Thieblemont et al. (1999, 2001, and 2004) helped to differentiate between various geological sequences:

- Early-Archean (3.55 Ga to 3.50 Ga) gneiss, granitoid and amphibolite centered near the town of Lola (Thieblemont et al, 2001, Figure 6);
- Mid-Archean biotite-sillimanite paragneiss, orthogneiss and amphibolite in the northeast and southwest of Lola (3.2 Ga to 3.0 Ga);
- Archean Tounkarata (2.9 Ga to 2.8 Ga) granitoid and charnockite batholith east of Mount Nimba and extending into Ivory Coast (Thieblemont and al. 1999, 2001; Figure 6);
- Paleo-Proterozoic volcano-sedimentary Mount Nimba Series (2.6 Ga), including conglomerate, quartzite, meta-volcanic rocks, and Banded Iron Formation;

- Paleoproterozoic (Birimian) granitoid and granitic gneiss, NW of Lola; and,
- Dolerite Mesozoic dykes cross cutting the above series.

Younger Paleoprotozoic (Birimian) intrusive bodies, biotite-rich granite and gneiss were observed. Mesozoic gabbro and dolerite dykes crosscut the entire sequence. Detailed studies by Mr. Sow (2014) and Professor Picard (2017) at the University of Franche-Comté, France, further enhance the knowledge of the regional geology.

The Lola Graphite occurrence is located within an early-Archean paragneiss sequence (Figure 6).

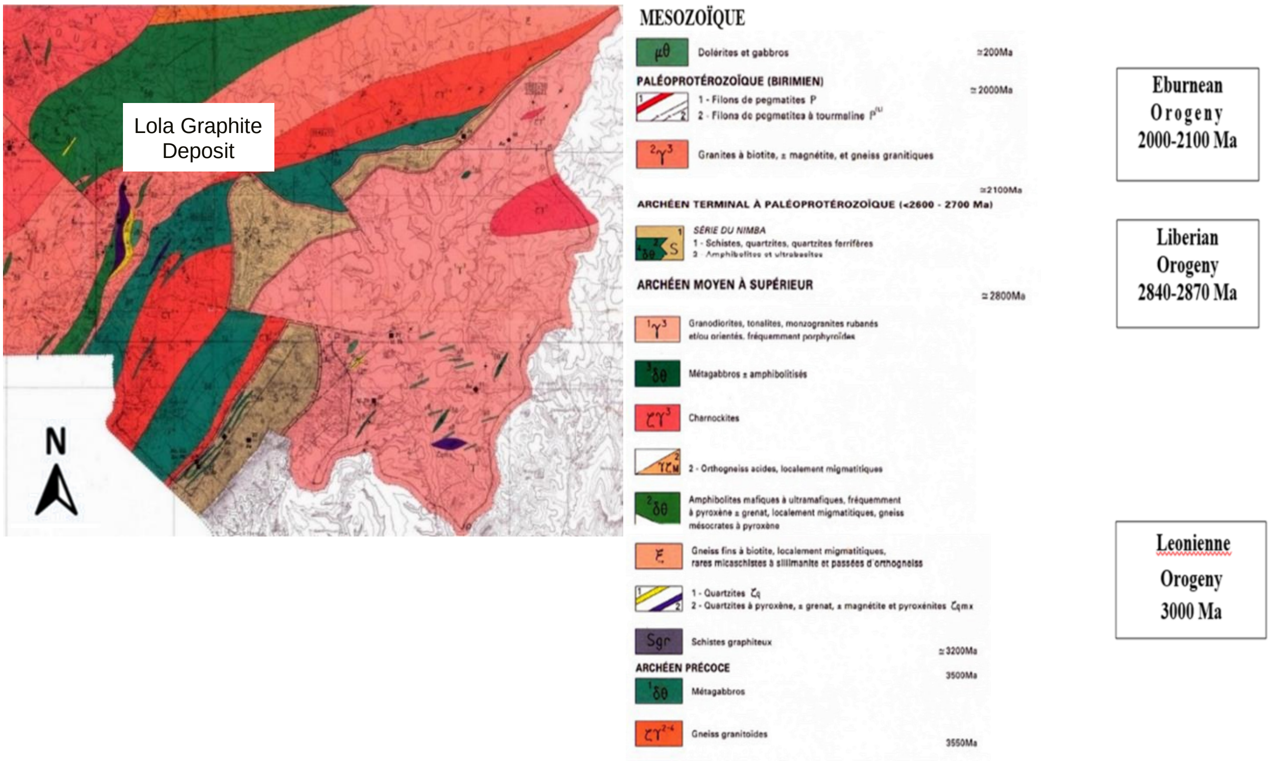

Figure 6: Geological Map of the Area of Interest (DRA 2023)

7.2 Property Geology

The graphite-rich paragneiss is present at surface over 8.7 km with an average width of 370 m locally reaching 1,000 m. The graphite mineralization is hosted in the strongly sheared paragneiss. Graphite mineralization is well-exposed at surface on its entire strike length, with grades ranging from traces to as much as 20 % of large flakes.

The upper 32 m or so of the deposit are well-weathered (laterite), freeing graphite flakes from the silicate gangue and allowing for easy grinding with good recovery of large and jumbo flakes. The graphite mineralization extends to depth into the non-weathered paragneiss.

7.2.1 Academic Studies on the Lola Project

In 2013, Falcon Energy supported Mr. Sékou Oumar Sow, a Guinean geological student at the University of Franche-Comté, France, with his undergraduate study on the mineralogical and petrological characterization of the mineralization and of the host rocks. The study was under the supervision of Professor Christian Picard.

Several investigations have been completed subsequently at the University Grenoble-Alpes, France on the mineralogical characteristics and dating of the graphite mineralization:

- Multiple objective linear programming to characterize the rocks assemblage and the graphite mineralization;
- Scanning electron microscope ("SEM") to establish the morphology and relationships between the graphite flakes and other minerals and the pressure - temperature of crystallization conditions; and,
- Microprobe analysis to establish the chemical composition of various mineral phases and to determine the age of the rocks assemblage (method being tested at the Grenoble ISTerre based on the U-Th-Ce-Y and Pb composition).

A high-resolution morphological study on two NFG concentrates supplied by Falcon Energy was done using a field emission gun scanning emission microscopy at the University of Grenoble in 2017.

7.2.2 Paragneiss Petrography and Graphite Mineralogy

Observations under multiple objective linear programming and SEM show that the main paragneiss is an assemblage dominated by quartz, andesine, orthoclase, and biotite with some sulfides (mainly pyrite ± chalcopyrite - galena - sphalerite). The accessory minerals visible in the Fresh Rock are represented by zircon, apatite, rutile, monazite, and rare garnet crystals. This paragenesis is typical of an aluminous rich metasedimentary rock, suggesting that the protolith for the paragneiss was a pelite, i.e., a fine-grained sedimentary rock.

Graphite flakes are aligned parallel to foliation and are elongated, somewhat stocky, and sometimes flexuous, varying in size between 10 x 100 microns ("µm") and 0.3 x 2.3 mm. Over 70 % of the flakes have a length greater than 300 µm. They are often shoddy at their ends and made up of slats (1 to 5 µm of thickness by 100 to 500 µm). Biotite and graphite intergrowth is often observed. Investigations by Energy Dispersive X-ray Spectroscopy and microprobe show that graphite flakes are made of pure carbon with no trace of other chemical elements.

Electron scans and photomicrographs of thin sections, Energy Dispersive X-ray Spectroscopy (X-Ray spectra) for Cg and microprobe images illustrate the mineral association, as well as the distribution of the chemical elements in the Cg and in the other minerals.

7.3 Structure

The rocks in the area were affected by an S1 foliation with subparallel primary stratification S0 still recognizable. General orientation S0 to S1 is N03° with a subvertical dip. The presence of syn-schistose folds indicates that the rocks were affected by at least two phases of folding isoclinal P1 and P2 folds that deform S0 and S1.

Sigmoid structures observed in quartz and quartzite association suggest that the area was affected by a dextral shear oriented N10°. The metamorphic paragneiss and other rocks appear to be the product of at least three phases of metamorphism and deformation between 3.2 Ga and 2.1 Ga.

7.4 Conclusions

The bulk of the geoscientific information suggests that the Lola paragneiss is the result of the recrystallization of Archean quartz-rich pelites and greywackes of at least 3.2 Ga in age, in a sedimentary basin proximal to volcanic activities. These sediments were deformed and metamorphosed during the Leonian (3.2 Ga), Liberian (2.8 Ga), and Birimian (2.1 Ga) orogenies. The primary crystallization of graphite appears to be contemporaneous with the first phase of metamorphism at 3.2 Ga.

Graphite flakes can be found from one to up to 20 % within the paragneiss. The flakes range from 10 x 100 µm to 0.3 x 2.3 mm. More than 70 % of the flakes are greater than 300 µm and they are often made up of bundles. In many cases, biotite crystals and sulfides (mainly pyrite) are interbedded with the graphite flakes.

8 Deposit Types

Section 8 has been summarized from the 2023 DRA Technical Report. It relates to the subject property of the Mineral Resource Estimate, i.e. Lola Project, and does not require a discussion on the proposed BMP in Morocco.

8.1 Graphite Mineralization Models

Graphite is one of the three naturally occurring forms of the chemical element Carbon. Graphite can be synthetically produced or derived from natural sources. Graphite is widely distributed throughout the world, occurring in many types of igneous, sedimentary, and meta-morphic rocks. Natural graphite generally occurs in one of three forms:

- Microcrystalline or amorphous: finer than 40 µm to 70 µm in diameter; aggregates of fine graphite crystals, with a soft, black, earthy appearance; usually hosted in quartzite, phyllite, metagreywacke and conglomerate;
- Crystalline lump or vein-type: interlocking aggregates of coarse and microcrystalline platy or, less common, acicular graphite; commonly hosted in anorthosite, gneiss, schist, quartzite, and marble;
- Crystalline flake-type: flat, plate-like crystals, with angular, rounded, or irregular edges; flakes are disseminated throughout the paragneiss derived from carbon-rich sediments; flake size can vary considerably; classified in four or five categories for commercial purposes:
    - small: <150 mesh (<0.1 mm);
    - medium: 80 mesh to 150 mesh (0.177 mm to 0.1 mm);
    - large: 48 mesh to 80 mesh (0.30 mm to 0.177 mm);
    - jumbo: >48 mesh or >0.30 mm; and,
    - super-jumbo: > 1mm.

Flake size has a strong impact on the value of an occurrence as the larger flakes are more valuable than the smaller sizes. From an economic viewpoint, the most significant deposit types are the crystalline flake type and the lump or vein type. The Lola Graphite occurrence is a paragneiss-hosted, crystalline, flake-type occurrence.

9 Exploration

Section 9 has been summarized from the 2023 DRA Technical Report. It relates to the subject property of the Mineral Resource Estimate, i.e. Lola Project, and does not require a discussion on the proposed BMP in Morocco.

9.1 Line-Cutting and Mapping

In 2012, Falcon Energy embarked on detailed exploration programs aimed at delineating and characterizing the graphite occurrence. A total of 44 lines for 39 line-km were cut during 2013 and 2014 and maintained over the entire length of the occurrence. The northwest to southeast oriented lines were set at a distance of 200 m with stations on 50 m spacing (Figure 7).

Falcon Energy’s geologists and technicians have mapped the geology of the entire occurrence with the emphasis on defining the contact between the graphite-bearing paragneiss and the surrounding country gneiss (Figure 7).

Mapping was facilitated using the soil color, since the intense weathering affecting the region produced soils with specific colors and textures depending on the original rock (protore). Granitoid and gneiss show a residual soil with beige to light orange color, ultramafic rocks are expressed as a dark red laterite and the graphite-rich paragneiss will develop a dark grey to pitch black oxide material, with graphite flakes concentrated within the Saprolite.

Furthermore, the absence of thick organic layer allows for the observation of the graphite-rich paragneiss at surface as mapped by Falcon Energy.

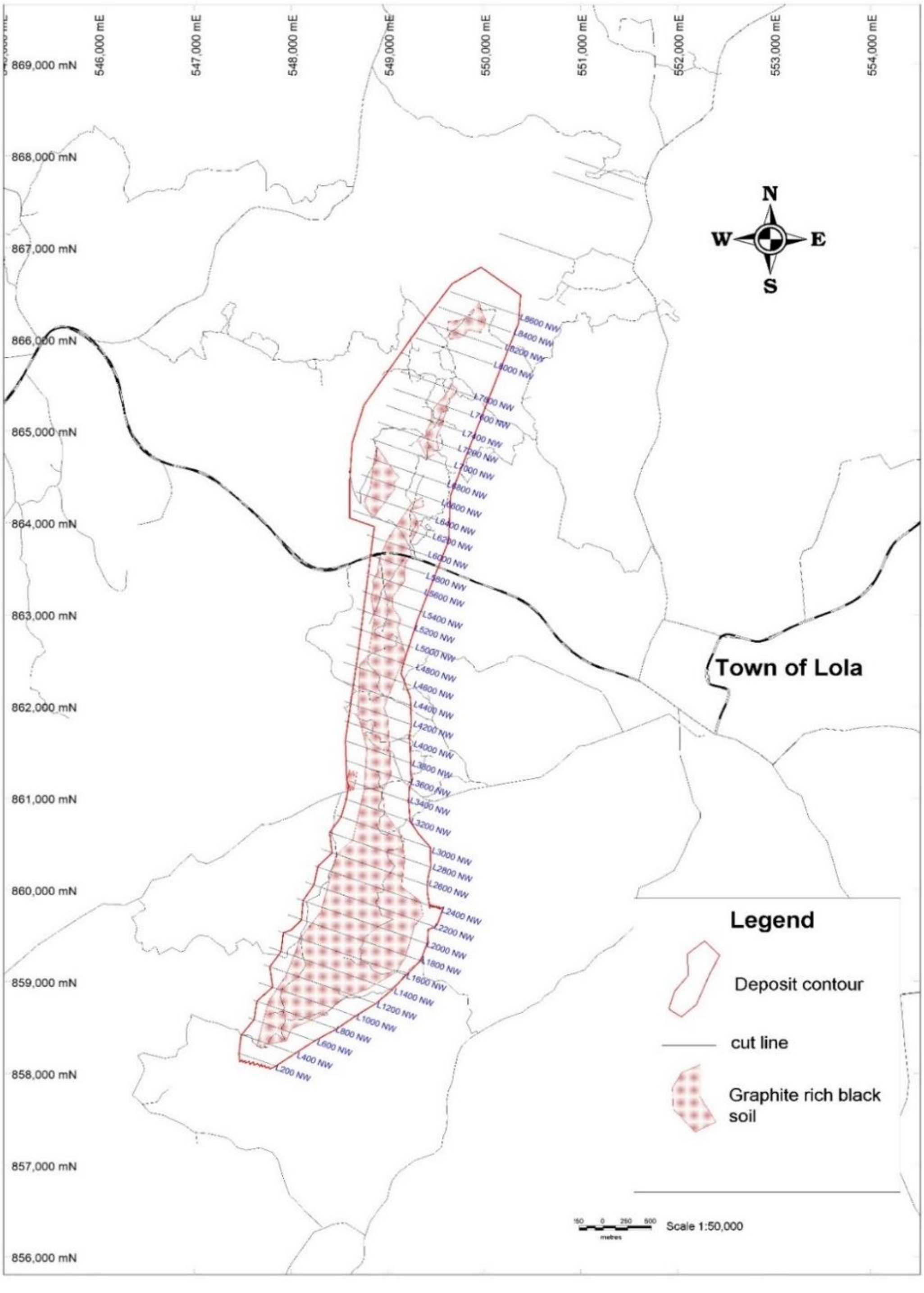

Figure 7: Lola Graphite – Cut Grid (DRA 2023)

9.2 Trenching and Pitting

Between 2012 and 2016, Falcon Energy dug 34 vertical pits, for a total of 396 m in all Sectors, excluding Sector 4, to characterize the short-scale variability of the graphite mineralization within the lateritic profile. Between 2016 and 2017, 11 shallow trenches, for a total length of 1,452 m were excavated in Sectors 4, 6, and 7, to complement near-surface information. The data from 10 of these trenches with a cumulative length of 1,326 m were used in the Mineral Resource Estimate.

9.3 Maximum to Minimum Geophysical Survey

In 2014, a total of 32.5 line-km of frequency domain, maximum to minimum in electro-magnetic survey, was completed by Falcon Energy, totaling 1,300 readings taken every 25 m on 36 cut lines. Mr. Jean Laforest, P.Eng., trained members of Falcon Energy in February 2014 with the use of the electro-magnetic apparatus. The survey was successful in outlining the boundaries with the surrounding country rocks and identifying sectors with high graphite flakes concentration.

Numerous nearly continuous maximum to minimum conductor axes are present over 8.4 km, between Lines 200 and 8600, with a gap between lines 3600 and 4200 that was not surveyed.

9.4 Detailed Aerial Photos and Topographic Survey

In April 2017, a photogrammetric topographical drone survey was performed over the deposit. The survey was performed using a SenseFly Ebee drone with a 10 cm/pixel resolution. The resulting topographical model was filtered to remove vegetation and buildings from the data and produce a digital terrain model ("DTM") representing bare earth elevations.

The model was calibrated using nine surveyed ground control points. The expected horizontal and vertical precisions are sub-metric. A detailed topographic survey completed in May 2018 by Effigis Geo-Solutions Inc. generated maps from satellite data with a 250 cm contour interval.

9.5 Mineralogical and Petrological Studies

Mineralogical and petrological investigations were performed at the University of Franche-Comté, France, and several metallurgical tests were completed during 2014, 2015 and 2016. During this time metallurgical tests were performed by Actlabs on surface Saprolite. The metallurgical tests indicate good recovery of super-jumbo, jumbo, and large flake sizes. Several mineralogical and petrological studies were performed by Actlabs and through a graduate study at the University of Franche-Comté, France, as discussed in Section 7.

ProGraphite GmbH and Anzaplan GmbH both performed metallurgical test work during 2017.Metallurgical test work was also performed at SGS Lakefield that formed the basis of the PEA filled by Falcon Energy during 2018.

Following the 2018 PEA, a test work campaign on the Saprolite was undertaken to further advance and optimize the metallurgical results. The test work campaign was executed at SGS Lakefield during 2018 and 2019. Details of metallurgical tests work is presented in Section 13.

9.6 Results

The exploration work performed by Falcon Energy confirmed the extent and continuity of the graphite-rich paragneiss from near-surface to a vertical depth of about 200 m, in the Pit #2 area, within Zone 5. The drill holes in the Pit #2 area show that the graphite-rich paragneiss is still open down-dip.

10 Drilling

Section 10 has been summarized from the 2023 DRA Technical Report. It relates to the subject property of the Mineral Resource Estimate, i.e. Lola Project, and does not require a discussion on the proposed BMP in Morocco.

10.1 Pionjar Drilling

Falcon Energy used a portable, gas-powered Pionjar jackhammer/drill to collect samples at various depths for graphite investigation. The technique use a set of steel rods equipped with a 15 cm long sampling tube that was used to collect samples at every meter drilled. Although the technique is qualitative, it is suitable for regional target definition. A total of 21 Pionjar holes totaling 176 m were drilled by to depths of 2.0 m to 15.0 m.

10.2 Diamond Drilling

Falcon Energy first diamond drilling program started in October 2013 with 20 vertical boreholes using their own two Jacro diamond drill rigs. An additional 16 boreholes were drilled at -60 degrees during June 2014 and July 2014. Jacro drill rigs are made to be man-portable and are designed to reach a depth of approximately 30 to 40 m in the weathered rock (Table 14).

Falcon Energy’s second drilling program started in April 2017, with the mobilization of a track mounted Coretech, model CSD 1300G, drill rig contracted from Sama Nickel Côte d’Ivoire SARL.

In March 2018, drilling contractor Foraco Côte d’Ivoire mobilized two drill rigs and by June 14, 2018, completed 215 boreholes totaling 8,430 m.

Between 2013 and 2018, a total of 22,590 m of core had been drilled in 648 holes (Table 14).

Table 14: Summary Drilling on the Property

Year	Number Of Drill Holes	Cumulative Length [m]
2013-2014	36	799
2017	231	6,295
2018	381	15,496
Total	**648**	**22,590**

10.2.1 Drilling Methodology

For every hole, the drill rigs were positioned using a hand-held global positioning system ("GPS"), with an accuracy of ± 5 m. In addition to drill pad preparation, unlined sumps were hand-dug to capture and store return water.

The rigs were equipped to retrieve HQ[1] sized core (63.5 mm in diameter) through the entire length of the boreholes. The core was extracted in runs of a maximum of 1.5 m. The depth of weathering typically reached 15 m to 35 m below surface. Upon completion of the holes, all rods and casings were extracted.

Once completed, the drill holes were marked with a polyvinyl chloride casing, presenting the hole number set in a permanent concrete marker. Upon completion of the drilling, the drill site was reclaimed, and all water sumps and the site was leveled and rehabilitated. The site was then inspected by a geologist or technician and the drill foreman. A detailed environmental inspection checklist was filled, and a photo was taken to provide a record of the reclamation of the site.

[1] A letter name specifying the dimensions of bits, core barrels, and drill rods in the H-size and Q-group

The holes are drilled at a spacing of 20 m along lines at distances varying between 50 m, 100 m and occasionally 200 m. Most of the holes are inclined at -50° or -60° toward azimuth 110°. A few holes are vertical or with a plunge toward 290°.

10.2.2 Borehole Naming Convention

The adopted system for naming the drill holes primarily consists of a subdivision of the entire area in blocks of 800 m x 800 m, based on UTM coordinates. The borehole names are formed using a sequence of 10 digits, as follows: LLWW XXXYYY. The first two digits, 'LL', represent the Lola prospect area; 'WW' represents the block number; and 'XXX' and 'YYY' represent the distance going east from the specific block's top left corner and the measure going south from the block's top left corner.

This system links the hole name to its exact position in the field to the closest meter. For instance, Hole LL42 156287 is located in Block 42, 156 m east and 287 m south of the upper left corner (Figure 8).

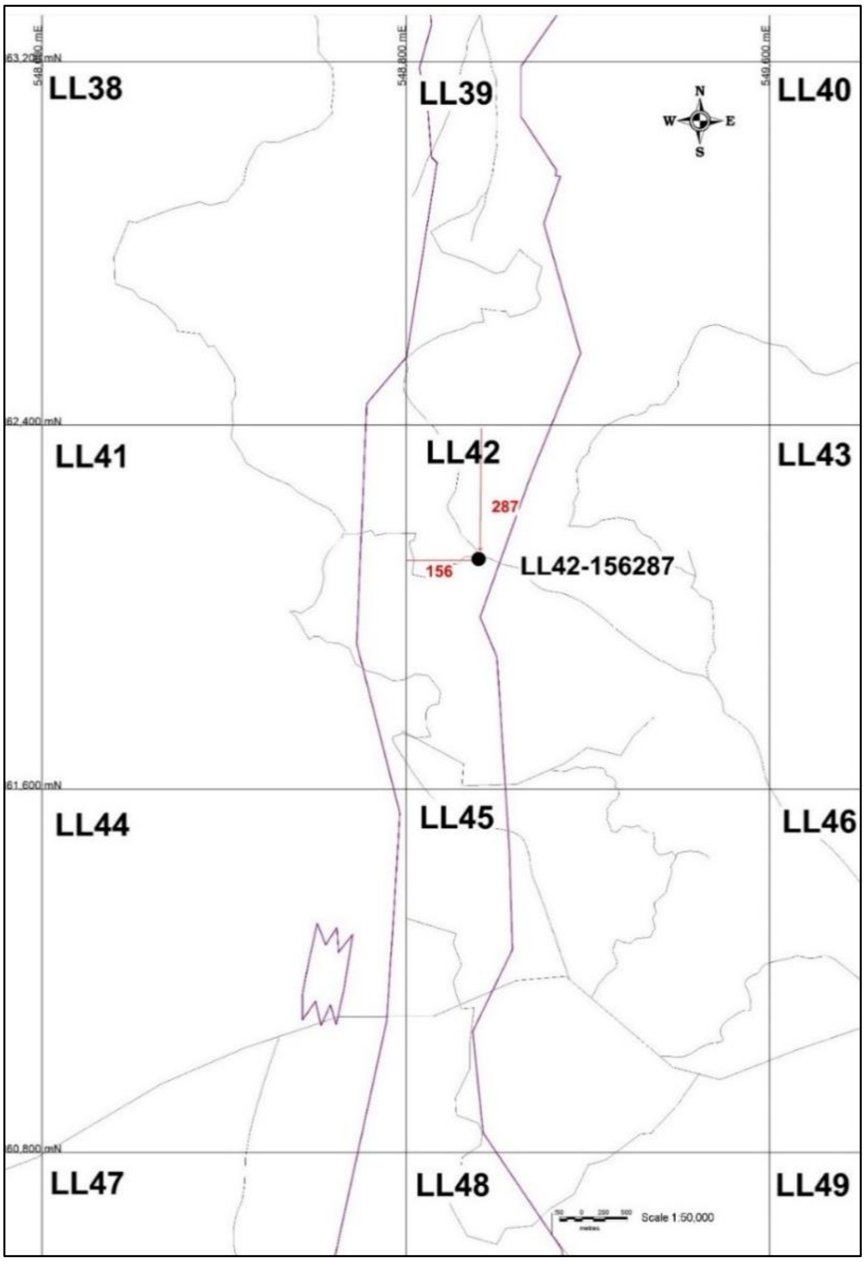

Figure 8: Borehole Naming Convention (DRA 2023)

10.2.3 Collar Survey

On April 5, 2018, 188 drill hole collars and trenches were surveyed by Société Géodésique-Topographie et de Travaux publics of Abidjan, Côte d'Ivoire.

The independent surveyor used a dual-frequencies Leica Geosystems, model 1230, differential GPS, with a precision of 5 mm on the X and Y coordinates and between 1 cm and 5 cm for the elevation (Z coordinates).

Falcon Energy compared the coordinates of the 188 holes with the SenseFly Ebee topographic drone survey, using a "snapping" tool in Geologic Map Schema[2] ("GEMS") to "drape" the points on the topo surface. The average difference equates to ±58 cm between the elevations (Z direction) of the surveyed collars and the DTM surface. The difference is acceptable and is well within the accuracy to be expected for a Mineral Resource Estimate. Consequently, the same adjustment was done on the elevation of the remaining 450 holes drilled during 2017 to 2018. As a check, the same technique was applied to another DTM surface derived from satellite images by Effigis Geosolutions. This test showed that the surveyed collar elevations were on average 50 cm below the DTM from the satellite images.

10.3 Summary

The QP responsible for the Mineral Resource Estimate believes the drilling programs were successful in defining the graphite mineralization in sufficient detail to support the February 27, 2023, Mineral Resource Estimate. The survey of the first 188 hole collars provides accurate location of the holes in the deposits. The elevation of these holes collars fitted well with the elevations obtained from the SenseFly Ebee topographic survey and satellite DTM.

The February 27, 2023, Mineral Resouce Estimate are based on relatively closely spaced holes, essentially 20 m by 50 m or 100 m. Consequently, the possible variations in the X and Y coordinates for the un-surveyed holes cannot reasonably be expected to have a significant impact on the Mineral

[2] GEMS is a standard database schema for the digital publication of geologic maps

Resource grade or tonnage. The hole deviation path was not measured, considering 90 % of the holes are shorter than 50 m.

It is the opinion of the QP responsible for the Mineral Resource Estimate that the previous drilling campaigns were conducted according to current industry best practices. No drilling, sampling, or recovery factors that could materially impact the accuracy and reliability of the results were observed in the drilling programs. The data provided by the drilling and interpretation therefore are adequate for the purposes of the Mineral Resource Estimation as presented.

11 Sample Preparation, Analyses and Security

Section 11 has been summarized from the 2023 DRA Technical Report. It relates to the subject property of the Mineral Resource Estimate, i.e. Lola Project, and does not require a discussion on the proposed BMP in Morocco.

11.1 Sample Procedure and Sample Security

11.1.1 Logging and Sampling Procedure

Preliminary core logging was performed by Falcon Energy's geologists at the drill site and detailed logging and sampling were completed at Falcon Energy's facility at Lola. The observations were recorded manually (on paper) and transferred to Microsoft Excel software. This method is open to possible transcription errors. However, provides an improved logging trail and dual data recording. Core handling and processing involved taking a digital photographic record of the core, measurement of the bulk density, logging, sampling, and storage of the core.

Sampling by Falcon Energy's geologists followed standard, internationally accepted procedures. The sample intervals were of a nominal 1.0 m length. However, ranged from less than 1.0 m to a maximum of 1.5 m, to respect natural contacts. The entire holes were sampled without any gaps. Wider sample intervals were taken in zones with low core recoveries, without straddling contacts.

For the non-weathered material, the geologists marked a reference line on the drill core, prior to sampling. The soft core was split with a knife, while the hard core was split with a diamond blade rock saw. One half of the core was placed into a polyethylene bag with a sample tag to be sent for analysis. The remainder was placed into a core boxes and stored for future reference or use.

Most bulk density samples consisted of 10 cm to 15 cm stubs of whole core. Following completion of the density measurements, the samples were cut in two. One halve was placed in the original position in the core box and the remainder was returned to the corresponding sample bag.

By October 29, 2018, a total of 16,059 samples were collected and sent for preparation and analysis from the diamond drill holes (exclusive of quality control samples). A total of 391 samples were collected from the surface trenches.

11.1.2 Sample Preparation and Analysis

11.1.2.1 Samples from the 2013 to 2014 Drilling Campaign

The 687 samples from boreholes drilled during 2013 and 2014 were prepared at Société de Développement de Gouessosso's sample preparation facility in the village of Gouessosso in Ivory Coast (90 km from Lola), under Falcon Energy's supervision.

11.1.2.2 Samples from the 2017 to 2018 Drilling Campaign

Preparation of the 15,746 samples collected from the drilling performed during 2017 and 2018, was performed at Bureau Veritas in Abidjan, Ivory Coast.

One duplicate sample was produced for every 40 samples, one blank sample was introduced for every 60 samples, and one standard was introduced for every 30 samples. Bureau Veritas produced the duplicate samples from pulverized material taken from alternative bags.

11.1.2.3 Sample Preparation

Sample preparation at Société de Développement de Gouessosso and Bureau Veritas adhered to the same following procedure:

- Drying at 105°C;
- Crushing to 70 % passing 2 mm; verification of the particle size distribution ("PSD");
- Quartering, homogenization, preparation of a representative sub-sample; and,
- Pulverizing to 85 % passing 75 µm; verification of the PSD.

For each core sample, two pulverized pulps (-100 µm) were prepared. One was sent to the laboratory for assaying, and one kept as reference for possible future use as a "check sample" or for metallurgical test work.

The pulps were delivered to Actlabs in Canada for Cg assaying. Actlabs is ISO 17025 accredited (Lab 266) for specific registered tests and operates under a quality management system that complies with the requirements of ISO 9001:2008.

The Cg analysis was determined by infrared method. This method consists of submitting a 0.5 g sub-sample to multistage furnace heating to remove all forms of carbon, except Cg. Carbon can also be present in a sample in other forms of carbonate minerals. Since each carbon form combusts at a specific temperature, staged heating, selectively removes the different forms.

11.1.3 Core and Pulp/Reject Storage

All drill core has been stored in wooden boxes containing up to 4 m of core in four rows. The core boxes were built onsite by Falcon Energy and were soaked in a solution to protect them from wood-eating termites. Each core box can be identified by an embossed aluminum strip that has been stapled to the end plate.

The core boxes have been stored in an enclosed, secured warehouse located at the Lola village. The pulp and reject samples have also been stored at the Falcon Energy warehouse in the village of Lola.

11.1.4 Bulk Density Determination

Bulk density factors were determined by Falcon Energy at their facility at the Lola camp. A total of 1,460 representative core samples from both the Saprolite and the Fresh Rock were collected from boreholes drilled during 2013 and 2014, and during 2017 and 2018, as presented in Table 15.

Table 15: Density Factors

Rock Code	Facies	Nb Sample	Wet Specific Gravity	Dry Specific Gravity	Humidity [%]
50	Soil	23	1.89	1.51	20.21
100	Laterite	11	1.80	1.49	17.33
100	Alterite	154	1.89	1.50	20.68
150	Saprolite	1,019	1.90	1.55	18.12
200	Hard Saprolite	125	1.98	1.74	12.51
600	Gneiss	122	2.18	2.11	3.54
600	Quartzite	6	1.33	1.31	1.68
700	Silicified Zone	(assigned)	1.90	1.80	10.00
Total		**1,460**			

The bulk density was measured using the immersion method from which the free moisture content was calculated. As the core was extracted from the core barrel at the drill rig, it was wrapped in thick plastic sheets to conserve humidity.

11.1.5 Security and Chain of Custody

All core processing, sample and data collection were handled by Falcon Energy's onsite personnel. The core boxes were covered and secured at the drill site, ensuring to eliminate any contamination and security breach during transportation to the core logging facility at Lola. The collected samples were placed into rice bags and kept in a guarded room until sufficient material was accumulated for shipping to the laboratory.

The sample batches were shipped to Société de Développement de Gouessosso's sample preparation facility during the 2013 and 2014 drilling campaign and at Bureau Veritas in Abidjan during the 2017 and 2018 drilling campaign). Once processed from the facility, the pulps were shipped to Actlabs, which is an independent commercial laboratory.

Sample submittal forms were used to confirm dispatch and receipt of the sample batches. Data security was ensured by the immediate transfer of hard copy logs and records to Microsoft Excel at the Lola site.

Upon receipt of the digital files containing the assay results, all data was validated through a Quality Assurance and Quality Control ("QAQC") process and subsequently exported to Gemcom software for further processing. Hard copy logs and sample record sheets have been retained for reference.

11.2 Quality Assurance and Quality Control Procedure

Falcon Energy used thorough QAQC procedures during both 2013 and 2014 drilling campaign, and the 2017 and 2018 drilling campaign. Several control samples were inserted by Falcon Energy as follows:

- Six commercial certified reference materials ("CRMs"), also referred to as "standards" (Table 16);
- One sample of coarse blank material; and,
- Pulp duplicate samples.

Table 16: List of Critical Reference Materials Used

Supplier	CRM ID	Graphitic Carbon [%]	Total Carbon [%]
Geostats	GGC-5	8.60	9.20
Geostats	GGC-10	4.79	5.22
OREAS		3.30	
OREAS	722	2.03	2.06 (*)
OREAS	723	5.87	5.98 (*)
OREAS	724	12.06	12.03 (*)

(*) Uncertified values

The CRMs from Australian entity, Ore Research & Exploration (Australia), are prepared from vein graphite from a mine in Sri-Lanka that are blended with granodiorite from Australia. Certified values for carbon and a suite of elements and oxides are provided. The CRMs prepared by Geostats Pty Ltd, Australia, are made up of flake graphite from Western Australia.

11.2.1 DRILLING CAMPAIGN 2013-2014

During the 2013 and 2014 drilling campaign, a total of 30 control samples were inserted, representing 7 % of the total batch. In addition, Actlabs used a total of 45 internal CRM graphite control samples, 43 internal duplicate assays, and 18 blank materials for internal controls.

11.2.1.1 Blanks

Four prepared blank samples (prepared by Bureau Veritas) were used by Falcon Energy. All the assay results from the blank samples were satisfactory as all returned Cg values below the detection limit of 0.05 %.

11.2.1.2 Duplicate Samples

Eleven duplicate samples were inserted through the flow of samples sent to Actlabs for assaying. The results from each pair of samples were acceptable.

11.2.1.3 Critical Reference Material

Two commercial CRMs (pulps) purchased from Geostats (GGC-05 and GGC-10), Perth, Australia, were inserted for every 30 samples. Both exhibit a systematic high bias. However, were within acceptable limits.

11.2.1.4 Check Samples

A total of 35 samples from the 2013 drilling campaign were sent to Bureau Veritas in Rustenburg, South Africa, including six standards and four blank samples. All samples were acidified and roasted to remove carbonate and organic carbon. The residual carbon was determined using a total combustion analyzer, and Cg % was determined by total combustion analysis.

The assay results for the blank samples were all below the detection limit. Statistical studies on assay results from Bureau Veritas, Rustenburg, versus Actlabs, indicate that Bureau Veritas, Rustenburg, returned higher Cg values for the check samples, compared to Actlabs. Furthermore, Bureau Veritas returned higher Cg values for five of the six standards inserted. However, the assay results on duplicates are within acceptable limits.

11.2.2 Drilling Campaign 2017-2018

A total of 1,287 control samples (565 standards, 285 blanks, and 437 duplicates) were inserted during the 2017 and 2018 drilling campaign, representing 5.0 % of all the samples collected.

A total of 549 check samples, representing 5.0 % of the batch total, were sent to Bureau Veritas in Rustenburg, Bureau Veritas in Vancouver, Canada, and SGS Lakefield in Canada.

11.2.2.1 Blanks

The 285 blanks used by Falcon Energy yielded satisfactory assay results. Four blank samples prepared by Bureau Veritas were used by Falcon Energy. Only four out of the 285 blanks returned values above the Cg detection limit.

11.2.2.2 Duplicate Samples

Four hundred thirty-seven duplicate samples were inserted into samples sent to Actlabs for assaying. The results are acceptable as the variance on most of the pairs falls within 10 %.

11.2.2.3 Critical Reference Material

Six pulp standards were used and inserted for every 30 sample. The percentage variations for all standards are well within 10 %, including for the GC-05 standard that exhibits a systematic low bias.

11.2.2.4 Check Samples

In April 2017, 365 samples were sent to Bureau Veritas, Vancouver. Due to sub-optimal results obtained from Bureau Veritas in 2016 and 2017, all the subsequent check samples were analyzed at SGS Lakefield. Consequently, a total of 155 samples from the 2017 and 2018 drilling campaign were sent to SGS Lakefield.

- Check Samples Bureau Veritas (Canada) April 2017

  The 365 samples sent to Bureau Veritas, Vancouver, in March 2017 included 12 standards and six blanks. All the samples were acidified and roasted. The residual carbon was determined using a total combustion analyzer, and the Cg was determined by total combustion analysis. All the assay results for the blank samples returned values below the detection limit.

  Statistical studies on assay results from Bureau Veritas versus Actlabs indicate that Bureau Veritas, Vancouver, returned lower Cg values for check samples compared to Actlabs. Bureau Veritas failed at returning acceptable Cg results on most of the standards inserted. The assay results on duplicates were acceptable.

- Check Samples SGS Lakefield 2017-2018

  From April 2017 to December 2018, SGS Canada re-analyzed 1,089 pulp samples, including 16 standards, from drill holes completed between 2017 and 2018. An almost perfect match was obtained between the SGS and the Actlabs analyses. The assay results from SGS on the standards show a variation within acceptable limits.

11.3 Conclusions

Actlabs was used during both drilling campaigns. The assays reported on the CRMs for both campaigns show a moderate positive bias on standard materials GGC-10, However, not on the other two standards (GGC-05 and OREAS). The composition of both GGC standards shows the same relative percentage of Cg versus total carbon ("C(t)"). Thus, the discrepancy is not dependent on the presence of other carbon forms. However, the GGC-10 standard contains 4.40 % sulfur while the sulfur content of GGC-05 is 0.05 %.

It is hypothesized that sulfur might have a certain influence on sample combustion during the multistage furnace assay process used by Actlabs. Consequently, standard GGC-10 should not be considered as having a representative matrix for the sulfur-free Saprolite portion of the Lola Graphite mineralization and should be discarded.

During both drilling campaigns, check samples were sent to three different laboratories: Bureau Veritas Rustenburg, South Africa, Bureau Veritas Vancouver, Canada, and SGS Lakefield, Canada. It is evident that both Bureau Veritas laboratories yielded inconsistent and biased results. The South African laboratory reported a strong positive bias on standards, while the opposite occurred for Bureau Veritas, Canada. Assay inconsistencies and data scattering showed sub-standard quality for both Bureau Veritas laboratories. Starting in 2017, check samples were sent to SGS Lakefield. Correlation of assay results with Actlabs is excellent and assay results on standards are acceptable.

It is the opinion of the QP responsible for the Mineral Resource Estimate that the QAQC process demonstrates that Actlabs returned acceptable assay results that are adequate for the purposes of the Mineral Resource Estimation as presented.

12 Data Verification

Section 12 has been summarized from the 2023 DRA Technical Report. It relates to the subject property of the Mineral Resource Estimate, i.e. Lola Project, and does not require a discussion on the proposed BMP in Morocco.

12.1 Data Verification by Mr. Jean Laforest, P.Eng.

Independent and consulting geologist and QP, Mr. Laforest, P. Eng., visited the Lola Graphite Project four times between April 2013 and October 2017. The last visit occurred between October 8 and October 12, 2017. During this visit Mr. Laforest performed an overall review of the graphite occurrence, reviewed core logging and sampling activities, verified the location of the trenches, pits, and drill hole collars, checked the database and the QAQC procedures for conformity with the NI 43 101 standards.

Mr. Laforest concluded that the work performed to date was of high quality and had been conducted according to current industry best practices and adequate for the purpose generating a Technical Report.

12.2 Data Verification by Mr. Yves A. Buro, P.Eng.

12.2.1 Personal Inspection (site visit)

A Personal Inspection of the Lola Graphite Property was performed by QP, Mr. Yves A. Buro, P.Eng. Mr. Buro provides independent geological services to the Geology and Mines Department of DRA.

Mr. Buro examined the core from the drilling campaign performed during 2017 and 2018 and selected independent check samples.

Mr. Buro visited the site of the Lola Graphite Project on April 10, 2018.

The field trip took Mr. Buro through the ridges and low ground areas, and past several trenches, former drill sites and streams crossing the deposit, as well as through the road-cut of paved highway N2. The large outcrops of graphite mineralization in the paragneiss exposed on the access road were examined. The two drill rigs were active at the time and were visited. The core extracted at the two drill rigs and the core being logged and sampled at Falcon Energy's facilities were observed. The facilities dedicated towards density determination and to the core sawing operations were visited.

Mr. Buro did see the graphite mineralization in the long outcrop exposed by the access road near line L3450W, in the road-cut of the N2 highway, in the core at both drill sites, and at the core logging and sampling facility.

12.2.2 Check Samples Selected

Mr. Buro independently selected 24 samples for check analysis. Four blank and two duplicate samples as well as four occurrences of standards (2.03 %Cg and 12.06 %Cg) were included as control samples into the check samples (Table 17).

The samples selected by Mr. Buro originate from the different proposed mine pits and from various depths (3.00 m to 49.85 m) in an attempt to represent a fair geographic distribution in the deposit. In addition, the Cg grades of the selected samples cover the full range of grades in the deposit, although most of them aimed at monitoring the laboratory performance for the grades close to the CoG and the mean of the Mineral Resources.

The analytical results from the control samples exhibit a very good correlation with the original values, whether the "10 % Variance" is used or the "Mean Relative Absolute Difference", as the fail/pass threshold between the difference in tenors of the individual pairs (Figure 9).

Table 17: Chemical Analysis for Cg from GR-14 Borehole

Drillhole ID	Original Samples ID	Duplicate Samples ID	From [m]	To [m]	Interval [m]	Material	Cg_Original [%]	Cg_Duplicates [%]	Variance [%]	Difference [%]
		80951				Blank		-0.05		
LL45-043385	GN2220	80952	19.50	21.00	1.50	Pulps	1.43	1.53	-7.0	6.8
LL45-043385	GN2221	80953	21.00	22.50	1.50	Pulps	3.25	3.30	-1.5	1.5
		80954				Standard 722	2.03	2.20	-8.4	
LL36-269658	GN5875	80955	11.00	12.00	1.00	Pulps	2.98	3.08	-3.4	3.3
LL36-269658	GN5876	80956	12.00	14.50	2.50	Pulps	3.16	3.29	-4.1	4.0
LL45-201031	GN6909	80957	21.00	22.50	1.50	Pulps	5.39	6.08	-12.8	12.0
LL45-201031	GN6910	80958	22.50	24.00	1.50	Pulps	4.34	4.75	-9.4	9.0
LL45-145009	GN6965	80959	9.00	10.50	1.50	Rejects	7.34	6.52	11.2	11.8
		80960				Blank		-0.05		
LL45-145009	GN6966	80961	10.50	12.00	1.50	Rejects	3.04	3.03	0.3	0.3
LL45-145009	Double-GN6966	80962	10.50	12.00	1.50	Duplicate	3.04	2.98	2.0	
		80963				Standard 722	2.03	2.17	-6.9	
LL47-661377	GN8261	80964	3.00	4.50	1.50	Pulps	2.14	2.26	-5.6	5.5
LL47-661377	GN8262	80965	4.50	6.00	1.50	Pulps	1.49	1.63	-9.4	9.0
LL47-740405	GN7848	80966	25.50	27.00	1.50	Pulps	5.31	5.46	-2.8	2.8
LL47-740405	GN7849	80967	27.00	28.50	1.50	Pulps	3.91	4.07	-4.1	4.0
LL55-040560	GN14088	80968	33.55	35.05	1.50	Pulps	4.92	5.12	-4.1	4.0
		80969				Blank		-0.05		
LL55-040560	Double-GN14088	80970	33.55	35.05	1.50	Duplicate	4.92	5.11	-3.9	
LL55-040560	GN14089	80971	35.05	36.55	1.50	Pulps	2.68	2.76	-3.0	2.9
		80972				Standard 722	2.03	2.11	-3.9	
LL55-003547	GN13866	80973	38.10	39.60	1.50	Pulps	3.47	3.51	-1.2	1.1
LL55-003547	GN13867	80974	39.60	41.10	1.50	Pulps	3.01	3.09	-2.7	2.6
LL42-136012	GN15380	80975	46.85	48.35	1.50	Pulps	4.74	4.65	1.9	1.9
LL42-136012	GN15381	80976	48.35	49.85	1.50	Pulps	3.39	3.39	0.0	0.0
LL42-080009	GN15576	80977	20.10	21.60	1.50	Pulps	3.36	3.47	-3.3	3.2
		80978				Blank		-0.05		
LL42-080009	GN15578	80979	21.60	23.10	1.50	Pulps	2.87	2.91	-1.4	1.4
LL45-196439	GN2328	80980	17.50	18.50	1.00	Pulps	13.00	13.00	0.0	0.0
		80981				Standard 724	12.06	12.50	-3.6	
LL45-196439	GN2329	80982	18.50	19.50	1.00	Pulps	3.59	3.61	-0.6	0.6
LL36-196631	GN5802	80983	22.50	25.50	3.00	Pulps	3.29	3.45	-4.9	4.7
LL36-196631	GN5803	80984	25.50	27.00	1.50	Pulps	3.74	3.90	-4.3	4.2
						Mean(*)	3.99	4.08		
						Maximum(*)	13.00	13.00		
						Minimum(*)	1.43	1.53		
						Standard Deviation(*)	23.31	2.27		

(*) Exclusive of duplicates and standards

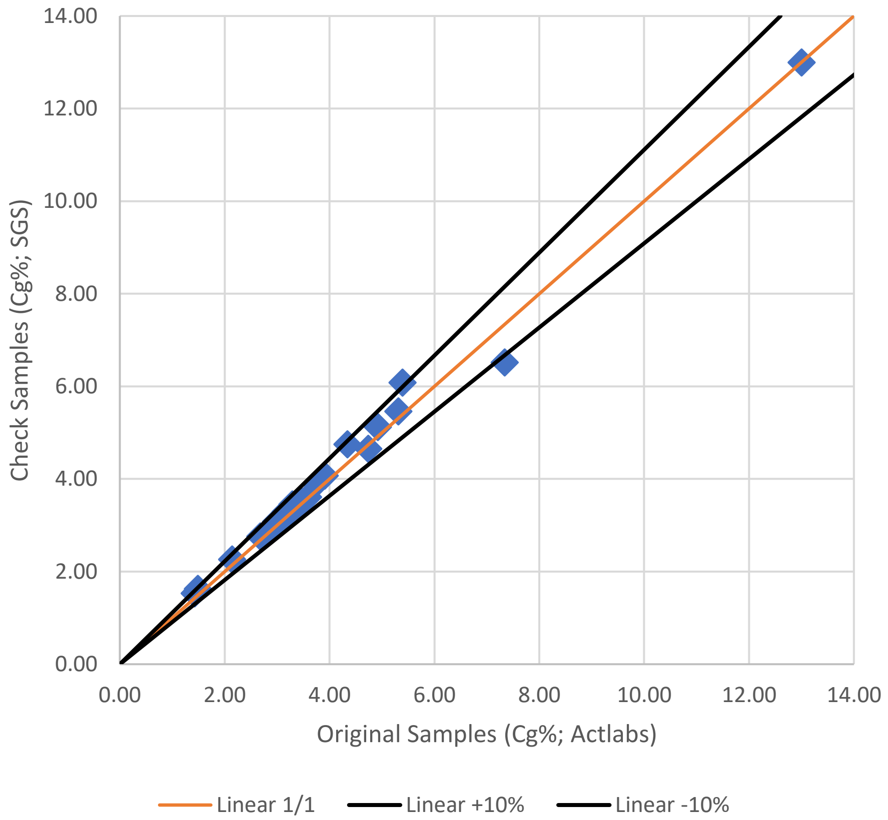

Figure 9: Original versus Check Samples Cg % Analysis (DRA 2023)

Both methods indicate that two samples out of 24 exceed the threshold, that is, in less than 10 % of the cases, which is acceptable. In addition, the difference between the average grade of all the original and all the duplicate analyses is clearly below 5 % (Table 17). However, a systematic positive bias, although low, exists toward the results of the check analyses. The fact that these samples were analyzed by two different laboratories probably contributes to this difference. Considering that the control samples pass the acceptability tests and that the bias in the check analyses is not significant, Mr. Buro, on that basis, concludes that the analytical results are sufficiently reliable to be used for Mineral Resource Estimation.

12.2.3 Verification of Hole Collar Locations

The collar location of 19 holes drilled in 2013, 2014 and 2017 was recorded using a hand-held GPS. Comparisons of these GPS readings with the database entries showed that the differences between the two sets of coordinates for all 19 collars were well within the accuracy of the GPS instrument. In addition, the plunge and direction of the holes noted in the field corresponded with the database data.

12.2.4 Conclusion

The Lola graphite deposit manifests itself by its surface expression, notably in a large outcrop along the access road to the project and in the road-cut of Highway N2. The deposit is defined by holes drilled over a systematic, tight grid.

Mr. Buro is confident that the project data and results are valid, based on the observations made during the site visit, discussions with the technical team on site, and in Canada. Inspection of the work procedures shows that they have adhered to best practices and industry standards required by NI 43-101. The data verification process did not identify any material issues with the assay data and the results from the QC samples used to monitor the laboratories performance were successful in showing that the analytical results are sufficiently reliable to be used in for Mineral Resource Estimation.

M. Buro has taken the necessary steps to verify independently the material work done on the property since his last site visit.

No limitations or failures to conduct data verification were identified.

13 Mineral Processing and Metallurgical Testing

13.1 Lola Project

Section 13.1 has been summarized from the 2023 DRA Technical Report.

13.1.1 Historical Test Work

13.1.1.1 Mineral Characterization

Mineral characterization was completed by the Centre de Technologie Minérale et de Plasturgie ("CTMP") in Thetford-Mines, Quebec, Canada at the end of 2012 and at Actlabs in 2014. The CTMP samples on four representative Saprolite samples, grading from 2.8 % to 16.8 % carbon, showed that 80 % of graphite flakes are sized greater than 0.25 mm and 50 % are greater than 1.0 mm. The Actlabs campaign focused on a sample from the Lola region, where it found by Mineral Liberation Analyzer that the main minerals are quartz, muscovite, and andalusite (Table 18).

Graphite flakes coarser than + 32 mesh (>500 µm) were observed.

Table 18: Modal Mineralogy Analysis

Mineral	**Quantity [wt %]**
Graphite	6.97
Graphite Clay (*)	7.14
Quartz	50.89
Muscovite/Illite	15.80
Kaolinite	2.28
Sillimanite/Andalusite	6.82
Feldspar	0.42
Fe oxyhydroxide	5.09
Rutile/Anatase	3.14
Monazite	0.24
Others	1.22
Total	**100.00**

Notes from DRA 2023 Technical Report:

1. (*) Graphite Clay is a mixture of graphite with muscovite and kaolinite; Others include mixed spectra of minerals; Fe oxyhydroxide includes mixture of Fe oxyhydroxide and clay.
2. Numbers may not add due to rounding.

13.1.1.2 Mineral Processing

During the 2018 PEA, several test work campaigns were conducted by Actlabs, ProGraphite GmbH, Anzaplan GmbH, and SGS Lakefield, Canada. The test work from Actlabs, ProGraphite GmbH, and Anzaplan GmbH generated preliminary concentrates which were tested for quality (e.g., Brunauer-Emett-Teller ("BET") specific surface area analysis, acid, and alkaline purification). The results of these tests indicated that graphite from the Lola deposit is suitable for a wide range of graphite applications in traditional markets (e.g., refractories, crucibles, friction products, carbon brushes, and sealants) and in new technology applications (e.g., energy applications, and spherical graphite for lithium-ion batteries).

The applicability of Lola's graphite to new technology stems from a favorable ash composition, high crystallinity, and high oxidation resistance.

The test work completed by SGS and reported in May 2018 formed the basis of the 2018 PEA, and considered grindability, scrubbing, flotation, and solid/liquid separation test work. The SGS campaign used samples from the Lola deposit to create a master composite and variability composites. The master composite graded 5.98 % Cg and 0.19 % sulfur and the variability composites ranged from 2.83 % C(t) to 11.0 % C(t).

The mineralogical analysis showed that the major gangue minerals were quartz, aluminum/iron silicates and oxides, feldspars, micas, and iron oxides; and that the graphite contained in the master composite was 56.6 % liberated, with most of the remaining particles being exposed. Overall, less than 4 % of the graphite was locked. In the slimes product, 100 % of the graphite particles were liberated; the aggressive agglomeration of the slimes is likely due to the presence of kaolinite.

The Bond ball mill work index of the master composite was 10.7 kWh/t, ranking the material as soft. The scrubbing tests showed size reduction without the addition of media, which is advantageous in preserving graphite flake size.

Roughing and cleaning tests were used to develop a process flowsheet, which treated coarse and fine flotation concentrates (+100/-100 mesh) separately to improve the final concentrate grade. The best cleaner flotation tests on the master composite produced concentrates, all above 96.3 % C(t) at recoveries of between 78.7 % C(t) and 83.2 % C(t). The test work found that the fine (-100 mesh) product could be improved by using longer attrition times prior to flotation (up to 93.5 % C(t)).

The graphite purity was high over a range of size fractions. Bulk flotation tests produced high concentrate grades of 98.9 % C(t) for the +48 mesh, 96.1 % C(t) for the +80 mesh, 94.6 % C(t) for the +100 mesh, and 97.9 % C(t) for the -100 mesh. An overall recovery of 75.3 % C(t) was obtained by processing 150 kg of feed material.

The variability composites showed some promise in all samples with final coarse concentrates being greater than 93.2 % C(t). In general, most of the fine concentrates required longer attrition milling to achieve greater than 95 % C(t). However, all were above 90 % C(t).

13.1.2 SGS Saprolite Test Work

Following the 2018 PEA, a test work campaign on the Saprolite was performed to build and optimize the metallurgical results. This test work was executed in 2018 and 2019 by SGS, Lakefield.

13.1.2.1 Master Composite Sample

Samples from three mineralized material types (1,590 kg) were sent to SGS to create a master composite for the test work program: graphite soil, soft Saprolite and hard Saprolite. The graphite content of these samples ranged from 3.41 % Cg to 6.45 % Cg. The samples were used to create a master composite sample, which represented the planned average mill feed and the expected mass distribution of the three mineralized material types in the mine production schedule. However, before the test work campaign began, the mining plan was altered, and the master composite was re-blended to account for the change. A second series of lower grade samples were sent to SGS to adjust the composite to the new expected head grade of 4.2 % C(t). The new samples were re-mixed with the composite in the ratio presented in Table 19 to create the final master composite for the test work.

Table 19: Blending Ratios to Create Master Composite

Sample	Soil [%]	Saprolite	
		Soft [%]	Hard [%]
Original Master Composite	1.0	31.9	1.0
80408 Soil	3.9	-	-
80235 Soft Saprolite	-	-	-
80233 Soft Saprolite	-	43.2	-
80242 Hard Saprolite	-	-	19.0

13.1.2.2 Grindability of Master Composite

During the comminution testing campaign, the composite sample was found to be very friable to sustain the tests conditions for Bond Crushing Work Index and Rod Mill Work Index. Unconfined compressive strength testing was not possible due to the friability of the sample.

The Bond Work Index testing resulted in 10.4 kWh/t value, which is consistent with the material being soft. Since primary grind size targets for graphite mineralized material are typically between P80 = 200 µm and 250 µm, the test was performed at a screen size of 300 µm.

Bond Abrasion test resulted in 0.035 g which describes the sample as low abrasion.

13.1.2.3 Mineralogy

The master composite was examined by optical microscopy, scanning electron microscope (with an energy dispersive spectrometer) (SEM-EDS) and X-ray diffraction ("XRD") analysis. The XRD analysis identified that major mineralization in the sample are quartz, moderate kaolinite, minor graphite, and mica, with minor traces of sillimanite, goethite, chlorite, and pyrite.

The graphite made up between 4 % and 5 % of the sample and was found to be fine-grained (between <20 µm and 2 mm) and generally smaller than 300 µm. From the master composite, 15 % to 20 % of the graphite was found to be liberated with predominant associations with non-sulfide gangue (70 % to 75 %). There was also some (5 % to 10 %) association with iron-oxides and iron-oxyhydroxides.

13.1.2.4 Flotation test work

The flotation test work aimed at refining the flowsheet proposed during the 2018 PEA. The preliminary flotation test of the new campaign trialed the flowsheet from the previous study with the new master composite. This bench test produced a combined concentrate grade of 91.6 % C(t) at a graphite recovery of 46.2 %, which was significantly poorer recovery than obtained in the 2018 PEA test work.

Rougher Test

To improve on the performance of the bench tests, a series of roughing tests were designed to focus on creating a graphite rougher concentrate of acceptable quality at high recovery. The roughing test work considered the effect of scrubbing (by varying scrubbing time) and the effect of desliming the rougher flotation feed. The composites were deslimed using a screen in the laboratory (screening the scrubbed and reground material at 400 mesh).

The rougher tests show that desliming the feed prior to flotation resulted in a significant improvement in flotation response (Figure 10). The results also show that the scrubbing time is also important: if the time is insufficient the flotation response will decrease. However, the effect of scrubbing time appears to plateau after 8 minutes (Figure 11).

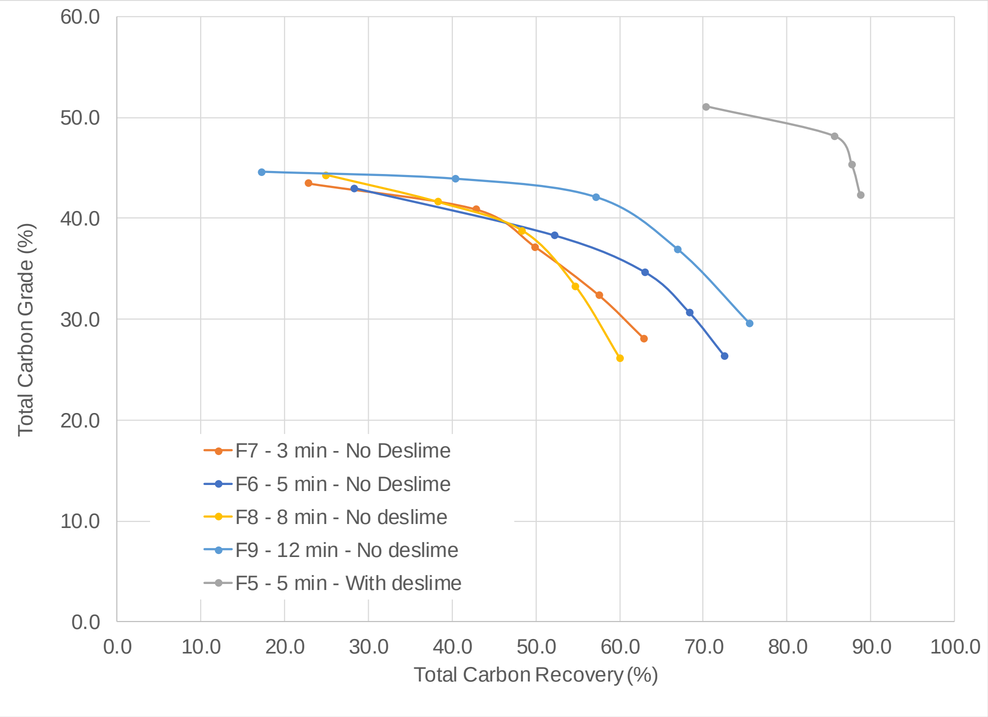

Figure 10: Rougher Flotation With and Without Desliming (DRA 2023)

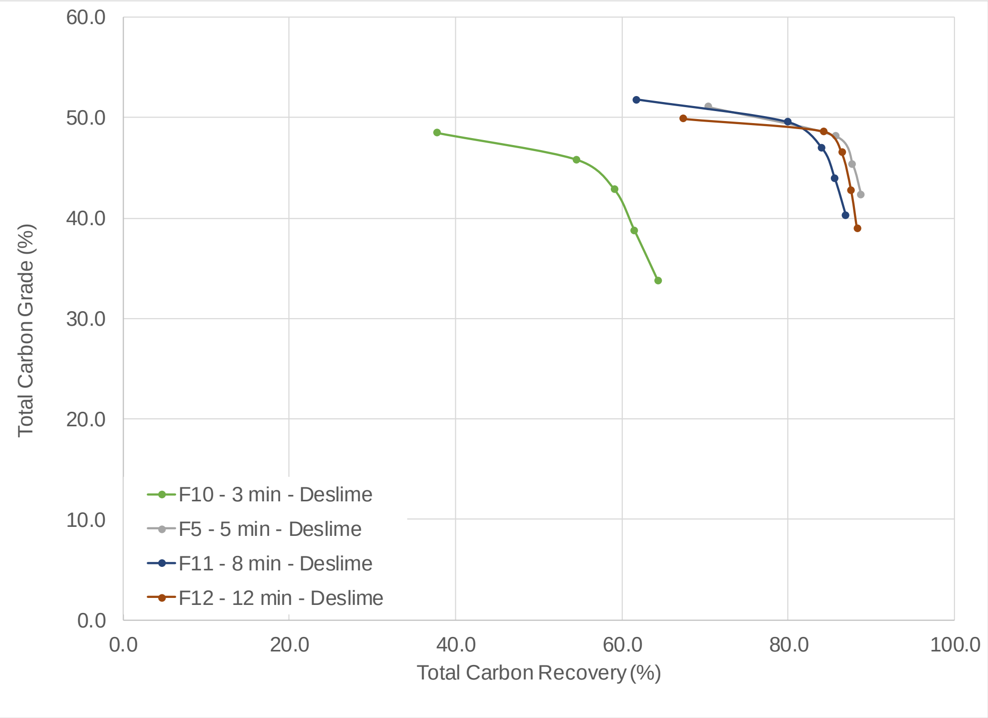

Figure 11: Increasing Rougher Flotation Scrubbing Time (DRA 2023)

Given the positive flotation response due to desliming of the master composite, it was decided to deslime a large quantity of material using a hydro cyclone. Two repeat tests were performed from this deslimed feed to validate the flotation response and reproducibility. The tests showed good reproducibility, and the rougher test with the deslimed rougher feed was able to produce a rougher concentrate at 44.7 % C(t) and 96.6 % recovery (Table 20).

Table 20: Deslimed Master Composite Rougher Flotation Results

Test	Product	Weight [%]	Grade [% C (t)]	Distribution [%]
Deslimed Master Composite	Rougher Concentrate	12.8	44.7	96.6
	Rougher Tails	87.2	0.23	3.4
	Head	100.0	5.93	100.0

Once an acceptable rougher flotation product was achieved, the emphasis of the test work moved on to the cleaning stages of flotation. Cleaning the rougher concentrates was considered in two parts: primary and secondary cleaning.

Primary Cleaning

The primary cleaning tests consisted of five tests, varying the time of polishing prior to flotation and the type of mill used for polishing. The polishing mill used 1/2” ceramic media whereas the stirred media mill used 6 mm steel balls. These tests showed that increasing the time to 30 minutes in the polishing mill resulted in a primary cleaning concentrate of increased grades (at similar recovery). In these tests, a polishing ball mill was found to yield better results than a stirred media mill. The tests with the stirred media mill resulted in higher grades at a lower recovery.

The polishing mill test work resulted in a third cleaner concentrate grading between 79.5 % C(t) and 84.8 % C(t), at recoveries ranging from 87.5 % to 90.5 %. The stirred media mill test resulted in a third cleaner concentrate at 92 % C(t) at 81.2 % recovery.

The effect of milling on the graphite flake size was also considered during the primary cleaning tests. With the use of a polishing mill, the graphite flake sizes were similar across all the tests. However, the stirred media mill resulted in graphite flake loss in the size fractions greater than 65 mesh. Given that the flake size adds value to the NFG concentrate, the polishing mill was selected to move forward with additional test work.

Secondary Cleaning

The secondary cleaning test work was required to produce a NFG concentrate of saleable grade through upgrading of the primary cleaning concentrate. The test work considering two cleaning options:

- Splitting the first cleaner concentrate into coarse and fine fractions to adjust secondary polishing and flotation to each particle type (see Figure 12); and,
- Re-cleaning the whole first cleaner concentrate (see Figure 13).

The test work considered different mill types (stirred media mill and pebble milling) and different polishing times for the coarse and fine particle sizes. The best results were obtained at 6 minutes of polishing for coarse graphite and 15 minutes for fine graphite in a stirred media mill (with the split at 60 mesh produced a final concentrate of 95.8 % C(t) at 78.8 % recovery. The split flowsheet concentrates with stirred media mill polishing provided a range of results between 95.0 % C(t) and 95.8 % C(t) with recoveries ranging between 76.1 % and 83.0 %.

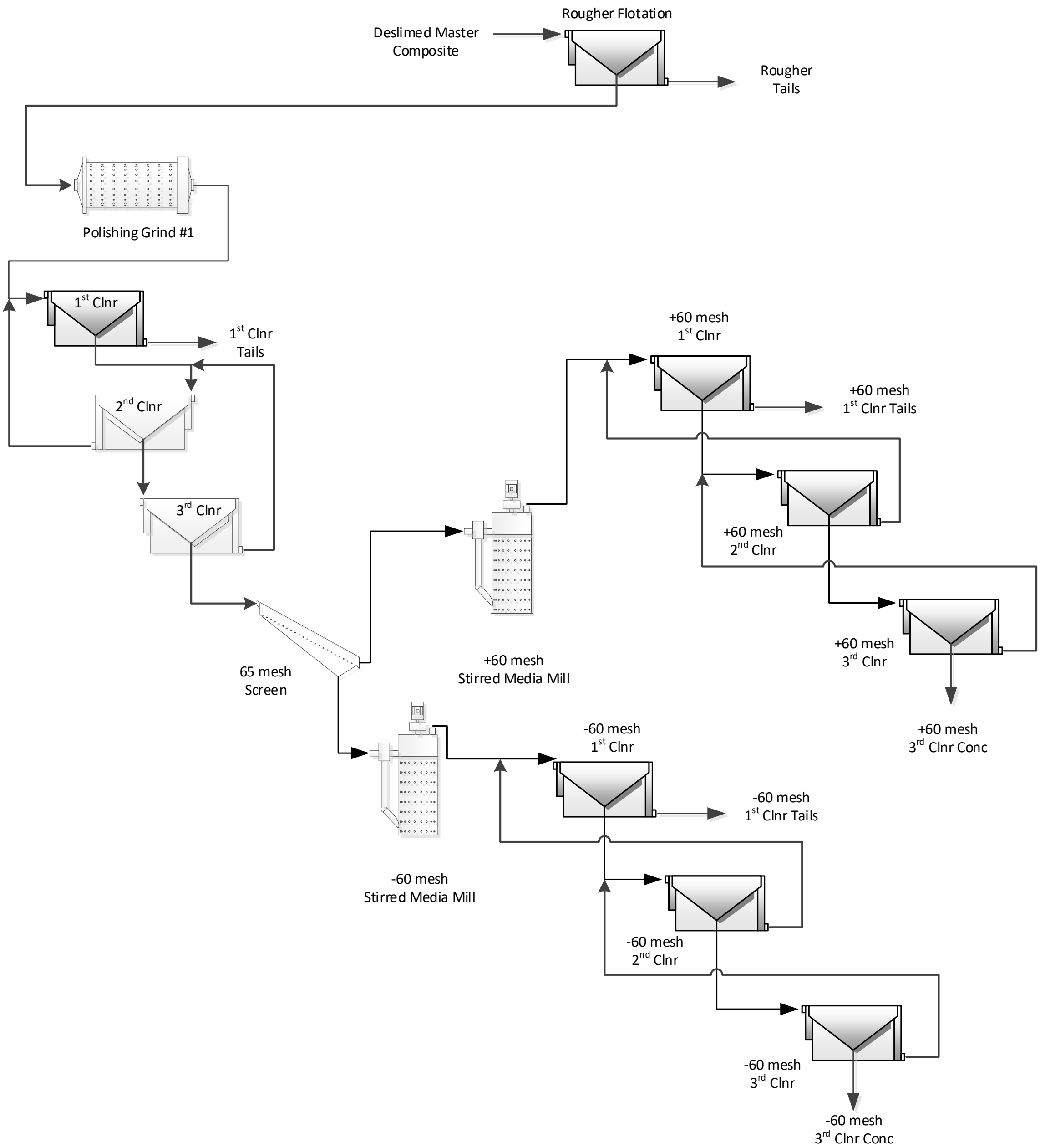

Figure 12: Split Flowsheet (DRA 2023)

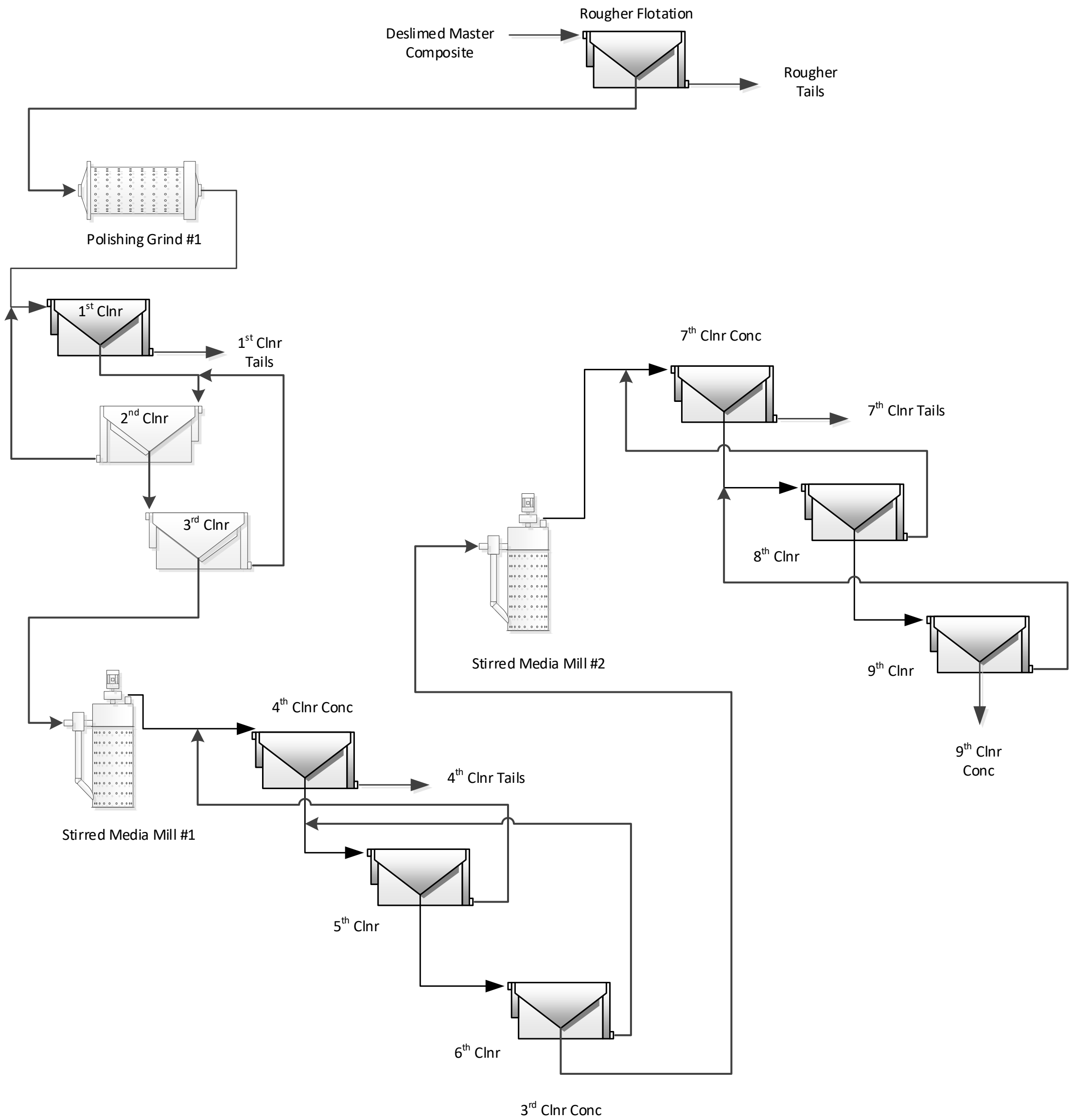

Figure 13: Sequential Flowsheet (DRA 2023)

The continuous flowsheet considered grinding in a stirred media mill, with a single and two stage grinding process. With a single stage of grinding, six stages of cleaning were insufficient to produce the desired concentrate grade of 94 % C(t). However, using two grinding stages and nine stages of cleaning produced a grade of 97.7 % C(t) at 71.3 % recovery.

The split flowsheet (Figure 12) and sequential flowsheet (Figure 13) were validated with locked cycle test work on the master composite. In locked cycle testing, the split flowsheet produced a combined concentrate grade of 94.9 % C(t) at 80.8 % recovery. The sequential flowsheet produced a combined NFG concentrate of 97.1 % C(t). However, the recovery was lower at 68.4 %.

The graphite distribution by size class (assay-by-size) data for the split flowsheet concentrate is presented in Table 21. It shows that the graphite is purest in the coarser size fractions.

Table 21: Graphite Distribution in the Split Flowsheet Lock Cycle Test

Concentrate Distribution	**Weight [g]**	**Weight [%]**	**Assays [% C(t)]**	**Distr. [% C(t)]**
+32 mesh	1.1	1.6	97.2	1.6
+48 mesh	7.6	11.2	96.3	11.4
+65 mesh	8.7	12.8	95.2	12.9
+80 mesh	5.1	7.6	95.8	7.7
+100 mesh	4.9	7.2	95.4	7.2
+150 mesh	9.7	14.4	95.9	14.6
+200 mesh	8.7	12.8	95.0	12.8
+325 mesh	11.6	17.2	94.6	17.2
+400 mesh	3.0	4.4	93.6	4.3
-400 mesh	7.3	10.8	90.6	10.3
Final Concentrate (SA)	67.6	100.0	94.8	100.0

To gain an understanding of variability, soil, high grade, and low grade samples were tested. The different samples showed a large degree of variability with combined concentrate grade varying between 93.9 % C(t) and 97.9 % C(t), and final recovery varying between 64.1 % and 84.7 %.

13.1.3 SGS Concept Level Testing on Fresh Rock and Blends

Further to the Saprolite optimization test work, an opportunity was identified in the Fresh Rock samples. High-level test work was performed by SGS during May 2019 and June 2019 considered grindability, flotation, and solid/liquid separation.

The sample for test work included 149 kg of mineralized material from the Lola deposit considered Fresh Rock sampled from four locations in the deposit. The head grade of the samples varied between 2.24 % Cg to 9.42 % Cg with an average grade of 3.79 % Cg.

13.1.3.1 Grindability

A representative sample of Fresh Rock was submitted to SGS for grindability testing (Bond and Rod Work Indices, abrasion testing, and SMC testing). The abrasion index was measured as 0.318.

13.1.3.2 Flotation Work

The flotation tests followed the split flowsheet determined during the Saprolite optimization test program. The Fresh Rock tests considered 100 % Fresh Rock, and blends of Fresh Rock and Saprolite. The preliminary roughing tests focused on establishing an appropriate grind time for the Fresh Rock, followed by cleaning tests. The results from the Fresh Rock only flotation tests achieved a grade of 96.2 % C(t) at 90.3 % recovery.

Two blends (25 % Fresh Rock, 75 % Saprolite; and 45 % Fresh Rock, 55 % Saprolite) were tested with and without desliming. Results indicated that desliming did not improve the metallurgical results. The results varied between 94.9 % and 96.2 % C(t) with recoveries varying between 84.2 % and 85 %.

It was observed that the particle size of the final concentrate improves compared to the Saprolite processing and produces coarser concentrates.

13.1.3.3 Solid/Liquid Separation

Scoping test work was done on the Fresh Rock combined tailings (two-stage). The Fresh Rock tailings settled well using 13 g/t of BASF Magnafloc 10, producing a 73 % underflow from a feed containing 14 % solids, the total suspended solids ("TSS") in the supernatant was 13 mg/L. The thickener underflow unit area was 0.08 $m^2/(t/d)$ and the initial settling rate was 774 $m^3/m^2/d$.

13.1.4 Concentrate Production Pilot Campaign

SGS conducted a pilot plant, processing 200 tonnes of mineralized material from surface material sampled from various locations in the Lola deposit. The goal of the pilot plant was to validate the metallurgical response of the Lola mineralized material and create a quantity of concentrate for customer assessment. The key results from the pilot plant are shown in Table 22.

Table 22: Key Results from Concentrate Production Pilot Campaign

Parameter	**Value**
Feed Weight	200 t
Head Grade	9.11 % C(t)
Mass Lost to Desliming	9.7 %
Graphite Lost to Desliming	3.9 %
Flotation Recovery	88.0 %
Overall Recovery	84.5 %
Mass Recovery	8.0 %
Concentrate Grade (Average)	96.8 %C(t)
Flake Distribution	
+48 mesh	13 %
+80 mesh	26 %
+100 mesh	12 %
<100 mesh	49 %

13.5 Bulk Material Properties

Jenike and Johanson were engaged to conduct flow and material property tests on the Lola material. This is due to the importance of defining the minimum flow angles of bins and hoppers to prevent blockage. The test work was performed on 140 kg (-8 mesh) material supplied by SGS Canada, representing the three principal types of mineralized material from the Lola deposit: Fresh Rock, hard Saprolite, and soft Saprolite. The test program assessed five key components: particle density, saturation moistures, compressibility, flow function, and wall friction. The key measurable parameters are summarized in Table 23.

Table 23: Test Parameters Determined by Jenike and Johanson

Material Type	Saturation Moisture	Tested Moisture	Bulk Density [kg/m³]	Particle Density [kg/m³]
Fresh Rock	21.0	1.52 (As Received)		2,427
Hard Saprolite	24.7	19.0	1,280-1,770	2,334
		15.0	1,120-1,540	
Soft Saprolite	26.9	22.0	1,180-1,734	2,355

This information, alongside the flow function and wall friction, were used by Jenike and Johanson to calculate outlet size requirements for hoppers and hopper wall angles to achieve mass flow.

The bulk material test work found that the Saprolite and soil samples were cohesive and sensitive to over-pressure and can form rat holes and stable arches. Jenike and Johanson recommend handling the material gently and utilizing mass flow (first in, first out flow pattern). Jenike and Johanson recommend a Kamengo style feeder to promote mass flow.

At the tested moistures, the results showed that it was largely impossible to achieve unassisted gravity flow. This means that the storage of Saprolite in bins/hoppers for any extended periods of time would not be possible.

13.6 Vendor Testing

Vender testing includes the following:

- Centrifuge technology was tested by Andritz Separation Inc.;
- Pilot scrubbing test work performed at Met-Solve Laboratories Inc.;
- Met-Solve tested the applicability of wet screening to the scrubber discharge and the first cleaner concentrates;
- 1st cleaner concentrate screening of stack sizer technology by Derrick Corporation;
- Mineral sizer testing by FLSmidth Abon; and,
- Cyclone testing.

13.7 Conclusions

Following the 2018 PEA, a test work campaign on the Saprolite was performed to build and optimize the metallurgical results. This test work was executed in 2018 and 2019 by SGS, Lakefield. The test program resulted in two alternative process flowsheets, which only differ in the configuration of the secondary cleaning circuit. Both flowsheet options achieved a combined concentrate grade that meets the minimum target grade of 94 %C(t). The flowsheet that includes a separate secondary polishing of the coarse and fine concentrates is preferred since it provides better recovery compared to the single train option.

The grinding portion of the circuit has been changed to include a single stage semi-autogenous grinding ("SAG") mill. This equipment change is required due to the increase in plant throughput. The low aspect ratio SAG mill will provide both scrubbing and size reduction in one unit.

When processing Saprolite only, desliming of the rougher feed is required. This results in additional graphite losses. However, at improved rougher flotation performance. The graphite losses to the deslime cyclone overflow were exclusively small graphite flakes with a size of 30 µm or less. Liberating the -325 mesh (44 µm) graphite flakes proved difficult and failed to meet the 94 %C(t) grade target. Hence, recovering more of these fines into the final concentrate would only lower the grade of the - 100 mesh NFG concentrate.

Flotation of the domain composites displayed a considerable variation in terms of concentrate grades and graphite recovery. Therefore, blending of the mill feed will be required.

A combination of polishing in the tumbling mill and polishing in the vertical stirred media mill is required to achieve the grade targets due to the presence of graphite interlayered with gangue minerals. A higher energy input is required to liberate the graphite from the interlayered gangue.

Solid liquid separation tests produced underflow densities for the concentrate and tailings of up to 35.9 % w/w solids and 49.9 % w/w solids, respectively. A typical phenomenon of the froth build-up was observed during the graphite concentrate settling tests. Due to the difficulties associated with concentrate thickening, there is no thickener in the process flow. The concentrate will be sent directly to filtration.

Testing of the Fresh Rock demonstrated that the Mineral Resource can be expanded with this type of rock when processed as purely Fresh Rock as well as mixes with the Saprolite. As expected, the Fresh Rock is substantially harder than the Saprolite, and should preferably be treated as a mixture with Saprolite.

Mixing of Fresh Rock and Saprolite has a positive effect on the metallurgical results via improved recovery, no reduction in concentrate grade, and coarser final concentrates as compared to Saprolite feed processing. It was observed that no desliming was required during processing of the Fresh Rock and Saprolite mixtures to achieve the target concentrate grade, recovery, and particle size.

The settling properties of the tailings improves when Fresh Rock is added due to lower quantities of ultra fines. Concentrate settling performance, as expected, was observed to be the same as during the Saprolite testing campaign.

A pilot flotation campaign, processing 200 t of surface sample produced NFG concentrate for marketing and to perform vendor test work.

Testing of material handling properties allowed to project the Saprolite behavior with regards to the conveying and storage and reduced technical risks for the material handling design.

13.2 Active Anode BMP

Falcon Energy retained Anzaplan GmbH in Hirschau, Germany, to perform test work to add value to the NFG concentrate from the Lola Project. The value addition test work was conducted during 2022 and 2023 at the facilities of Anzaplan GmbH. Certain specialist test work was performed at designated original equipment manufacturers in Germany, due to their well-established graphite experience.

The value addition test work consists of graphite micronization (flake size reduction), spheroidization (spherical shape formation), purification (impurity removal) of spherical graphite ("SG"), and coating (surface carbon covering) of SPG. The test work focused on producing CSPG battery anode material.

The test work was performed on a 200 kg NFG concentrate sample identification ("ID") No. SRG 964 from the Lola Project with an average grade of 94.6 wt.- % FC. Besides graphite, XRD analysis also found the sample to contain minor quantities of muscovite, kaolinite, layered silicate clay mineral phases associated with graphite, and another layered mineral.

The broad outline of the test work includes the following:

- Graphite spheroidization performed at a vendor with broad expertise in graphite spheroidization;
- Sighter test work to evaluate different SG purification methods;
- Optimization test work for the caustic pressure leaching purification processes;
- SPG coating test work; and,
- Electrochemical characterization of CSPG.

The salient results of the value addition test work performed by Dorfner Anzaplan GmbH are summarized in the following sections. Considering the strategic partnership agreement between Falcon Energy and Hensen to jointly develop an anode plant in Morocco, a multi-acid purification method was selected, which is similar to the standard HF purification method, for the PEA due to Hensen's broad experience with this established purification method. However it had not been tested during the test work campaign.

13.2.1 Spherical Graphite

The test work to produce SG was performed at the facilities of an original equipment manufacturer in Germany, due to their broad expertise in spheroidization of graphite.

The spheroidization test work included an initial phase to indicate operating conditions and preliminary performance and a subsequent phase to optimize spheroidization performance.

These tests aimed to identify the optimum spheroidization operating conditions regarding size distribution, yield, throughput, and product capacity, and to generate sufficient SG for downstream test work.

In total 47 spheroidization tests were performed from NFG concentrate from the Lola Project.

The results of the SG test ID No. 40093, run 19, are presented in Table 24 and are compared against typical uncoated SPG products (Ref 10 / Ref 17 / Ref 26). The results indicate that NFG concentrates from the Lola Project can achieve an SG product within the range of typical market specifications. However, the BET surface area, is slightly higher than the usual market specification. It is proposed to perform further optimization test work during the subsequent phase to improve the BET surface area.

SEM images of the SG produced display well-rounded SG, similar to SG products within the market.

Table 24: Uncoated SG results versus typical market specifications

Description	**Yield test [wt.- %]**	**Tap density [g/cm³]**	**D_{50} [µm]**	**D_{90}/D_{10} [-]**	**BET [m²/g]**
40093 run 19	53.0	1.0	14.0	3.1	10.5
Typical SG market values					
Fine product		>0.85	10–14	<4	<8
Medium product		>0.90	15–19	<3.5	<6.5
Coarse product		>0.95	19–25	<3	<6
Reference materials					
Ref 10		0.88	12.1	2.6	7.0
Ref 17		0.92	15.9	2.2	5.5
Ref 26		1.01	23.4	2.8	3.8

13.2.2 Purification

Leaching test work to remove impurities for production of high purity (≥99.95 wt.- % FC) battery grade SG, focused on the following four purification methods:

- Standard purification using HF;
- Leaching with HCl acid and ammonium fluoride;
- Caustic baking; and,
- Autoclave-assisted pressurized leaching.

The test work included 12 sighter tests (first-stage tests to assess processing options) – three tests per purification method. The sighter tests were performed to determine the various purification methods from which to recommend a purification method, most suited for the particular impurities contained within material from the Lola Project.

High-purity graphite was achieved in HF purification test No. SRG-AL1-HF4, which yielded a FC content of 99.97 wt.- %. This test applied a single-stage acid treatment comprising a HF and HCl mixture.

Leaching with HCl and ammonium fluoride (No. SRG-AL-NH4F1 to SRG-AL-NH4F4) did not achieve battery-grade quality.

Caustic bake test No. SRG-CB8 achieved high-purity graphite (99.98 wt.-% FC) by baking at 450 °C with caustic soda (sodium hydroxide) followed by two sequential caustic and sulfuric acid leaching stages.

Caustic pressure leach test No. SRG-AC6 achieved high-purity graphite at 99.99 wt.- % FC. Purification in this method is performed by primary and secondary caustic and acid leaching. The initial caustic leaching in the primary purification is performed in a pressurized autoclave whereafter all subsequent purification steps are performed at atmospheric pressure.

Considering the strategic partnership agreement between Falcon Energy and Hensen to jointly develop an anode plant in Morocco, a multi-acid purification method (consisting HCl, HNO_3, and HF), was selected for the PEA due to Hensen's broad experience with this established purification method. This multi-acid approach is similar to the tested standard HF purification method. However, testing with the process and under the conditions as selected for the PEA is necessary to confirm the chosen purification method and its suitability for mineralized material from the Lola Project.

13.2.3 Coating

Surface coating (including high-temperature processing) is the final step in transforming NFG concentrate into anode material for use in LIBs.

During coating, a thin layer of amorphous carbon is created on the surface of the SPG to enhance performance (amongst others, improved conductivity, hardness, and to seal the surface of the SPG) of the anode. The current industry standard is to add carbon in the form of pitch tar.

The following two coating methods were assessed during the PEA: 1) atomic layer deposition ("ALD"); and, 2) dry pitch tar.

Coating by ALD is a novel method tested due to its cost-saving potential, thickness control, and enhanced film quality. However, it was decided that the PEA would be based on the dry pitch tar method as it is currently the industry standard and can be used as a baseline for market-related studies.

The pitch tar coating starts with the micronization (milling) of pitch tar that forms the solid carbon precursor. Next, the milled pitch tar is mixed with the SG and heated in a furnace for pyrolysis of the pitch to form an amorphous carbon layer on the SG surface. The final step is deagglomeration and sieving to obtain the required PSD.

Test work included an initial pitch tar coating test to indicate the production of CSPG battery anode material.

Coating tests were performed at a German research institute with experience in research, and development of coating and drying process steps for active anode materials. The initial coating test used both standard process conditions and carbon-coating precursors (pitch-tar) to modify the SPG surface, applying 10 % pitch tar addition for the coating process. The initial coating test, which included basic electrochemical performance tests on the CSPG, was conducted using SPG feed material purified through caustic pressure leaching. This coated material achieved a BET surface area for the CSPG that is slightly elevated compared to typical market specifications.

Further coating test work, as well as electrochemical test work, should be conducted to assess the BET and electrochemical performance of the CSPG produced from the Lola Project, having been purified through the proposed multi-acid purification method. Additionally, further studies are necessary to determine the optimum conditions for achieving the required BET surface area and electrochemical performance of the CSPG anode material.

14 Mineral Resource Estimates

Section 14 has been summarized from the 2023 DRA Technical Report. It relates to the subject property of the Mineral Resource Estimate, i.e. Lola Project, and does not require a discussion on the proposed BMP in Morocco.

14.1 Introduction

The Mineral Resource Estimate of the Lola Graphite deposit is based on 638 boreholes, for a total of 22,240 m and 10 trenches for 1,326 m.

The Mineral Resources Estimate, which was performed by Dr. Marc-Antoine Audet, P. Geo., Ph.D. Geology, has been verified and validated to ensure compliance with NI 43-101. Validation involved independently re-interpreting and re-estimating the Measured and surrounding Indicated Mineral Resources portions of the deposit. Results of the validation yield a 1 % increase in tonnage and 1 % decrease in Cg grade.

The criteria used for classifying the Mineral Resource Estimate are based on confidence and continuity of geology and grades.

The Mineral Resource Estimate was prepared using a block model constrained with 3D wireframes of the principal mineralized domains. Values for Cg were interpolated using the Gemcom software with Ordinary Kriging interpolation methodologies on 5 × 5 × 2 m blocks. A preliminary open pit optimization algorithm was run on the estimated grade block model to constrain the Mineral Resources and support the CIM's requirement that Mineral Resources have "reasonable prospects for eventual economic extraction."

An optimized pit shell was determined using the Lerchs-Grossman algorithm in the MineSight® software. Only mineralization contained within the pit shell has been included in the Mineral Resource Estimate.

The Mineral Resource Estimate is summarized in Table 25 at a CoG of 1.00 % Cg in Saprolite and 1.40 % Cg in Fresh Rock. All estimates are constrained within a Lerchs-Grossman optimized pit shell.

Table 25: Mineral Resources (Effective Date February 27, 2023)

Category	**Tonnage** (Mt)	**Grade** (% Cg)	**Contained Cg** (kt)
Oxide (Saprolite)	7.78	4.04	314.6
Fresh (Hard) Rock	0.47	4.01	19.0
Total Measured	8.26	4.04	333.6
Oxide (Saprolite)	25.40	3.83	972.6
Fresh (Hard) Rock	20.29	4.14	839.3
Total Indicated	45.70	3.97	1,812.0
Total Measured and Indicated	**53.96**	**3.98**	**2,145.6**
Oxide (Saprolite)	10.97	3.52	386.4
Fresh (Hard) Rock	1.33	4.23	56.1
Total Inferred	**12.30**	**3.60**	**442.5**

Notes from 2023 DRA Technical Report:

1. The Mineral Resources are reported in accordance with the CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines prepared by the CIM Standing Committee on Resource Definitions and adopted by the CIM Council.
2. Resources are constrained by a Pseudoflow optimized pit shell using HxGn MinePlan software.
3. Pit shell was developed using a 34-degree pit slope in Saprolite and 42-degree pit slope in Fresh Rock, concentrate sales price of USD1,389/t concentrate, mining costs of USD2.75/t Saprolite, USD3.25/t Fresh Rock, processing costs of USD10.25/t Saprolite and USD15.18/t Fresh Rock processed, G&A cost of USD1.52/t processed and transportation costs of USD50/t concentrate, 84.2 % process recovery and 95.4 % concentrate grade and an assumed 100,000 t/a concentrate production.
4. Mineral Resources, which are not Mineral Reserves, do not have demonstrated economic viability. The Mineral Resources estimate may be materially affected by environmental, permitting, legal, title, taxation, socio-political environment, marketing, or other relevant issues. There is no certainty that Mineral Resources will be converted to Mineral Reserves.
5. The Inferred Mineral Resource in this estimate has a lower level of confidence than that applied to an Indicated Mineral Resource and cannot be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration.
6. Contained graphite without mining loss, dilution, and processing recovery (In-situ).
7. The Effective Date of the estimate is February 27, 2023.
8. The open pit Mineral Resources are estimated using a cut-off grade of 1.0 % Cg Saprolite and 1.4 % Cg Fresh Rock.
9. Totals may not add due to rounding.

The Mineral Resource Estimate is established with data from boreholes drilled and sampled by December 1, 2018. The key assumptions and methodologies used for the Mineral Resource Estimate as presented in the 2023 DRA Technical Report are summarized below.

14.2 Exploration Data Analysis

The Mineral Resource modelling was carried out using GEMS and data stored in a GEMS database. GEMS use the Microsoft Jet database engine.

Drilling, surveying, and assay data were managed using AcQuire and Microsoft Access databases. Assay results from Actlabs were delivered electronically in a pre-defined Microsoft Excel format, and imported directly into the AcQuire database, then automatically linked with the appropriate sample drill holes and sample intervals. Upon verification, the drill-hole, survey, and assay data were extracted and merged into the GEMS database.

14.2.1 Topography

A 3D DTM of the topography was supplied by Falcon Energy as 1.0 m contours in ASCII format. Collar elevations from trenches and drill holes have been resurveyed using a differential GPS and incorporated into the topography. The topography is undulating with the highest elevation in the north and the central south. Elevations within the area of study range from 446 m to a maximum elevation of 571 m.

14.2.2 Drill Holes

This Mineral Resource Estimate is based on 638 drill holes (totaling 22,240 m) and ten trenches (totaling 1,326 m). Drill spacing varies between 20 m × 50 m, 20 m × 100 m and 20 m × 200 m. Figure 14 illustrates a plan view of the drill holes. Drill holes are drilled along lines oriented 110° to 290°, dipping at 60° from the vertical toward 110°.

Figure 15 and Figure 16 present, at cross-sections 3400N and 4800N, the geological relationship between the weathered mineralized material and the underlying graphite rich paragneiss. The drilling results are expressed as Cg (%). The deposit continued at depth.

14.2.3 Density Measurements and Rock Codes

Refer to Section 11.1.4 of the Technical Report.

14.3 Geological Interpretation

The Lola Graphite Project's Mineral Resource database meets industry standards and is compliant with CIM codes for public reporting.

The QP responsible for the Mineral Resource Estimate is not aware of any factors, such as environmental, permitting, legal, title, taxation, socioeconomic, marketing, political, or other relevant issues, that may materially affect the Mineral Resource Estimate herein; nor that the Mineral Resource Estimate may be affected by mining, metallurgical, infrastructure or other relevant factors. Mineral Resource Estimate may be materially affected by environmental, permitting, legal, title, taxation, socio-political, marketing, or other relevant issues.

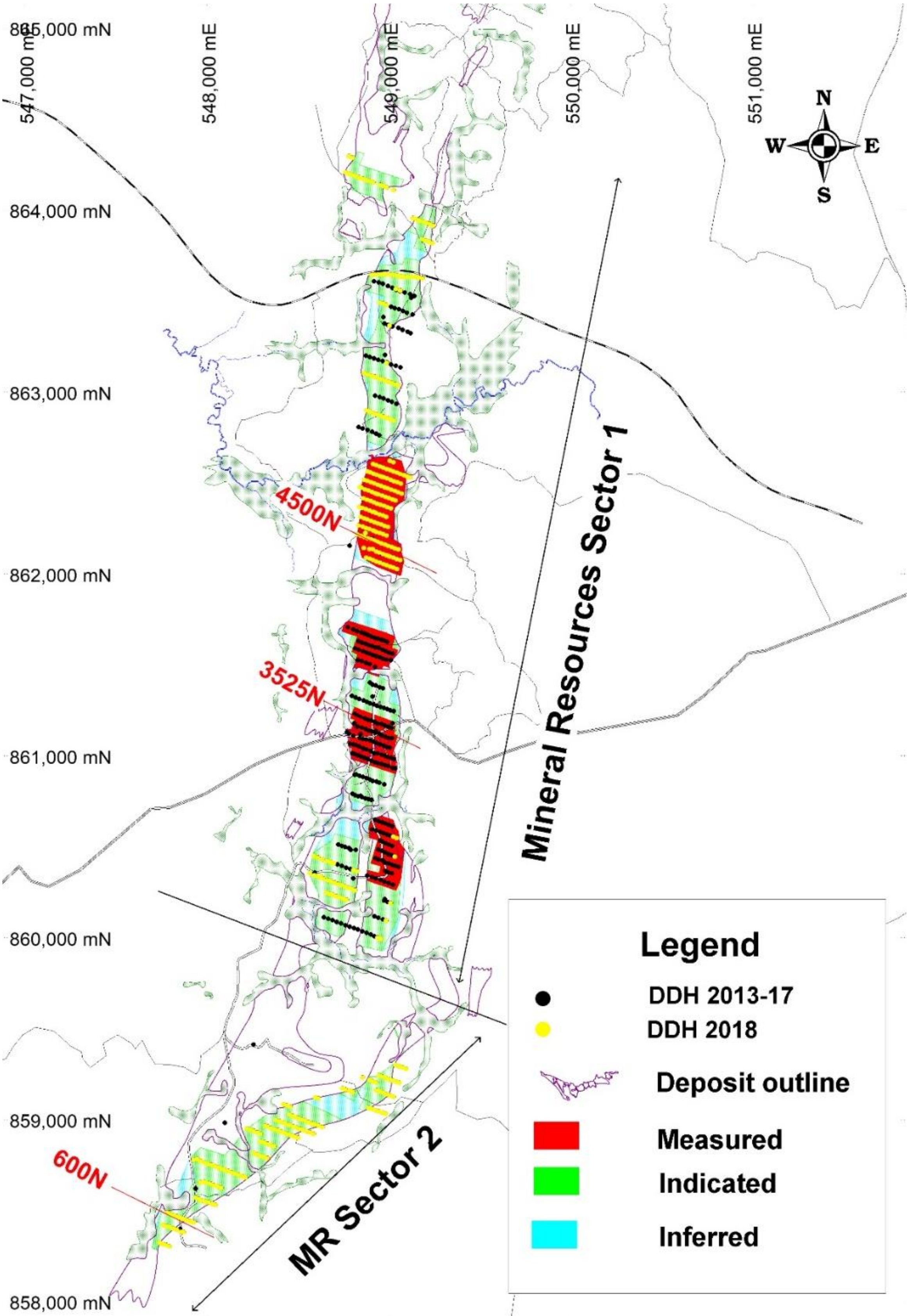

Figure 14: Drilling and Subdivision by Sectors (DRA 2023)

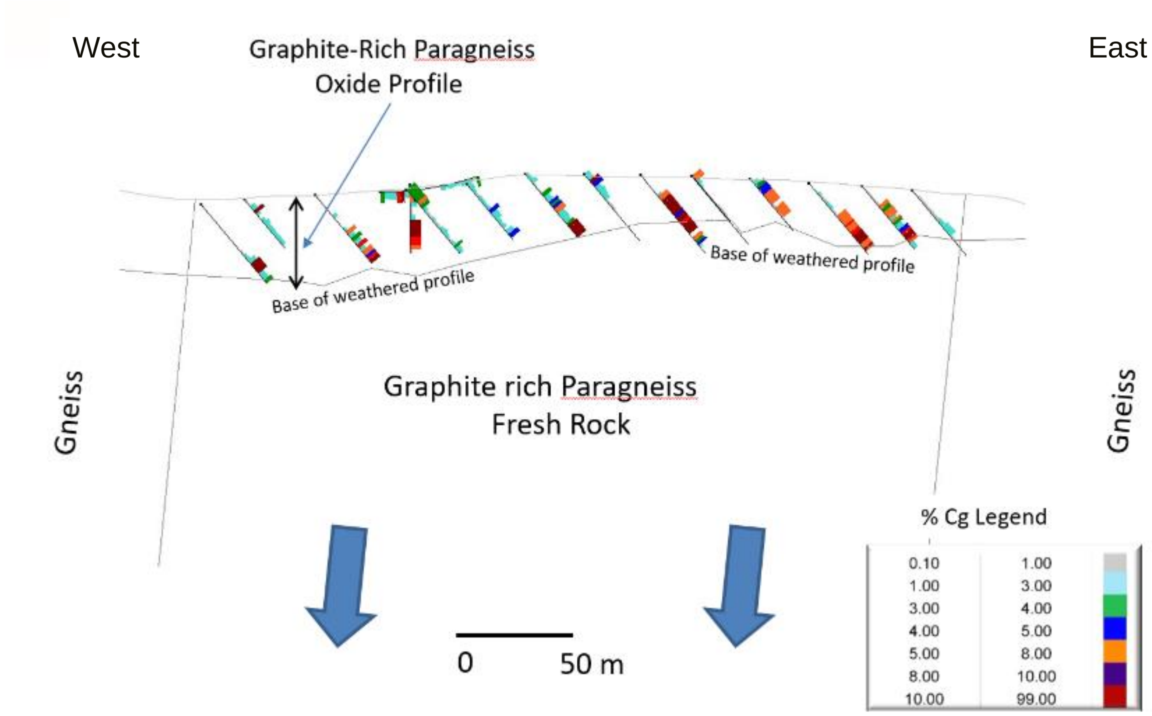

Figure 15: Cross-Section 3400N (DRA 2023)

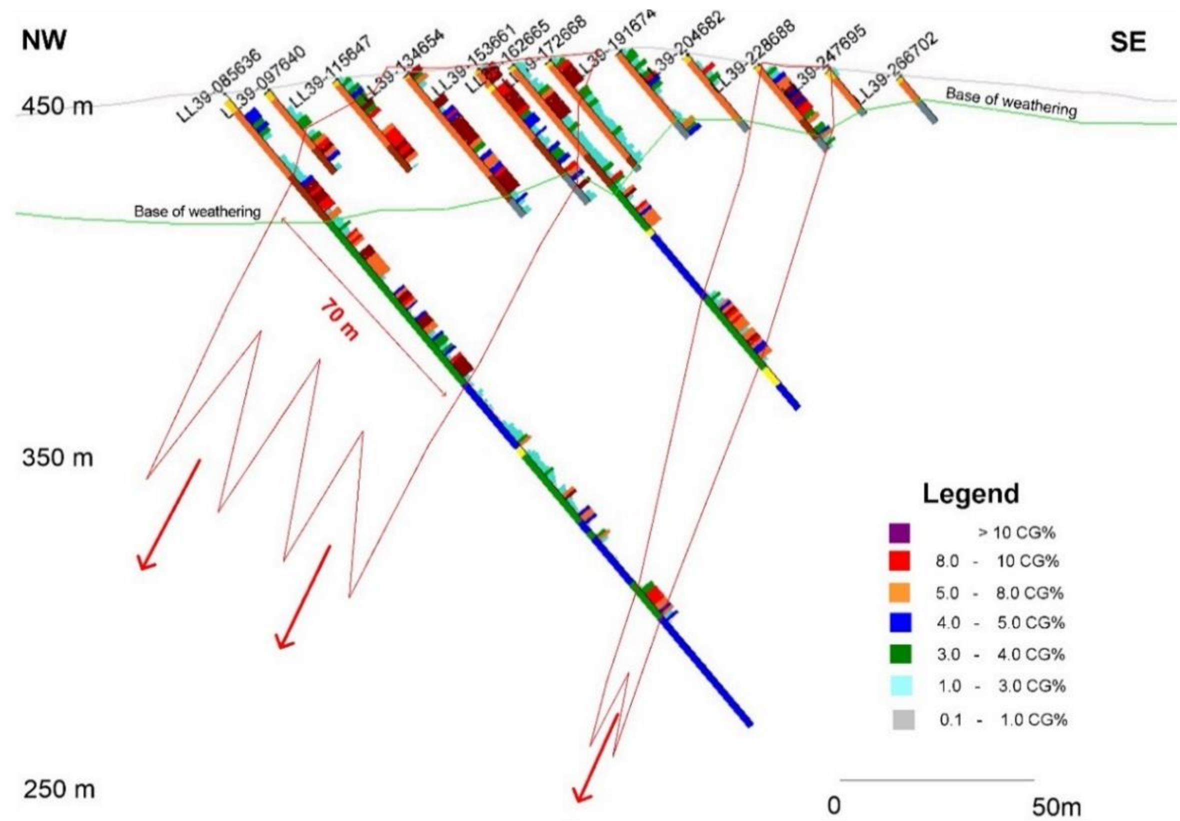

Figure 16: Cross-Section 4800N (DRA 2023)

A checklist has been prepared and confirm high overall confidence of the various assessment and reporting criteria applied to estimate the Mineral Resources in accordance with CIM Standards on Mineral Resources and Reserves, Definitions and Guidelines.

14.3.1 Resource Modelling

The Mineral Resources were estimated using block estimation with Ordinary Kriging interpolation methodologies on 5 × 5 × 2 m blocks oriented along the long axe of the deposit with a rotation of 20º clockwise.

3D models for the Lola deposit were created using collar positions using the UTM coordinates for all boreholes. All models integrated the concept of geological horizons (soil, limonite, alterite, Saprolite, hard Saprolite and bedrock (Fresh Rock)) to create the 3D block model. A surface geological constraining envelope was generated using borehole data, as well as information from geological mapping.

14.3.2 Horizons

A 'horizon code' system has been introduced to interpret geological succession of laterite facies, with all lithology's categorized into the following six major groups:

- 100 – Limonite and Alterite;
- 150 – Saprolite;
- 200 – Hard Saprolite;
- 600, 605, 670 and 690 – Graphite rich Gneiss;
- 700 – Silicified Bedrock; and,
- 800 – Country Rock.

Horizons 100 to 600 represent consecutive sub-horizontal layers.

14.3.3 Compositing

Interpolations were based on drilling data composited on 1.0 m intervals.

14.3.4 Block Coding

An orthogonal block model was created with the block model limits selected to cover the overall extent of the mineralization. The block model consists of separate variables for estimated grades, volume percent domain inclusion, rock codes, bulk density, and classification attributes. It is noted that the orientation of the block model does correspond to the principal orientation of the deposit.

The rock-type block model was constructed by filling blocks of 5 m × 5 m × 2 m between the surface topography and horizon surfaces on a priority basis within the graphite rich gneiss solid, leading to the unique assignment of each model block with primary horizon codes. The 50 % 'in-out' coding rule was applied such that a minimum volume of 50 % was required to assign a horizon code to the block model prototype.

For the interpolation processing, eight main rock codes (10, 11, 50, 60, 200, 210, 600, and 610) were used for the 3D model.

Each block within a defined geological zone was subsequently categorized by assigning the grade of the nearest 1.00 m composite to the block using oriented search ellipsoids. Orientations of search ellipsoids are strongly dipping at -82º toward the west and oriented north-south for the Sector 1, and strongly dipping -80º toward the north-west and rotated 60º clockwise for the Sector 2 (Figure 14). Blocks with a resulting grade of ≥ 1.0 % Cg were categorized as potentially mineralized material and assigned a Rock Code of 50, 200 and 600 for Sector 1 and 60, 210 and 610 for Sector 2. Blocks with a nearest composite grade of less than 1.0 % Cg were categorized as waste and assigned a Rock Code of 10 or 11.

The resulting block categorization was then used to back-tag the assay, bulk density, and composite tables with unique rock codes. The back-tags were derived directly from the categorized block model.

The current methodology used for estimating Mineral Resources differs slightly from the 2018 Mineral Resource estimation.

The current methodology used to estimate the Mineral Resources consists of creating mineralized material with economic potential waste horizons using the nearest 1.00 m composite to the block using an oriented search ellipsoid, and proved to be more effective at defining waste material for exclusion from the estimation

14.3.5 Variography

Continuity directions were assessed for the soil, weathered, and bedrock horizons respecting geological surfaces created from drill holes. Variogram analysis and modeling were performed using Snowden's Supervisor software. Variography was generated for the Cg for Sectors 1 and 2. The Cg group variogram model was fitted and applied to the Mineral Resource estimation. Table 26 presents the variograms model for Sectors 1 and 2

Table 26: Cg Variogram Parameters Used for Interpolation

Direction	**Nugget**	**C1**	**Range 1 [m]**	**C2**	**Range 2 [m]**	**C3**	**Range 3 [m]**
			Sector 1				
00	0.15	0.5	50	0.2	100	0.15	250
270	0.15	0.5	25	0.2	30	0.15	50
90 > 000	0.15	0.5	5	0.2	7	0.15	10
			Sector 2				
60	0.15	0.5	75	0.2	150	0.15	250
350	0.15	0.5	25	0.2	20	0.15	30
90 > 000	0.15	0.5	5	0.2	7	0.15	10

14.4 Mineral Resource Classification

Classification of Mineral Resources has been based on the following drill spacing:

- Class: Drill spacing;
- Measured: 20 × 50 m and less;
- Indicated: 50 × 100 m and less; and,
- Inferred: 50 × 200 m.

A drill hole spacing study was performed to determine the optimum spacing for consideration during the classification of Measured, Indicated and Inferred Mineral Resources. The drill hole spacing was analyzed at 10 m increments in both the down dip and along strike directions. Outputs analyzed were the Kriging Variance, Kriging Efficiency, and Slope of Regression. Figure 17 shows the Kriging Variance plot from the study, with the X axis representing the down dip direction and the Y axis representing the along strike direction of mineralization. This plot shows that for an estimation error of less than 0.6, the maximum drill hole spacing should be approximately 50 m in the dip direction and 100 m in the strike direction. Overall, the results from this study show that the optimum drill spacing used for consideration of Measured, Indicated and Inferred, is acceptable.

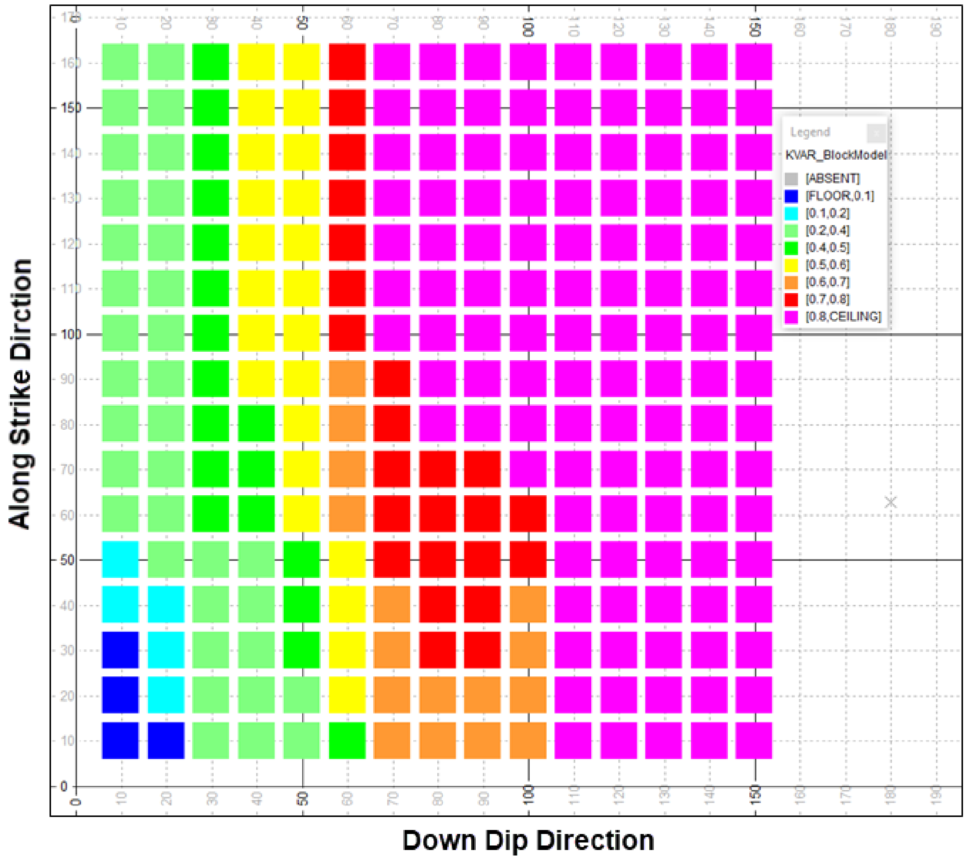

Figure 17: Drill Hole Spacing Study (DRA 2023)

The following rock code system refer to 3D block models for classified materials (Table 27).

Table 27: Rock Code System for the Resources Classification

Facies	Horizon	Inferred	Indicated	Measured
Soil	50 -60	3	2	1
Saprolite	200-210	3	2	1
Bed Rock	600-610	3	2	1

14.5 Mineral Resource Estimation

To comply with the definition from the CIM and demonstrate the "reasonable prospects for economic extraction" of the Lola Graphite deposit, the following methodology has been used for the Mineral Resource Estimation.

Based on the geological block model, a pit shell has been generated using MineSight Economic Planner module of MineSight®. This software bases its calculations on the Lerchs-Grossman method, a common and precise algorithm used in the mining industry for pit optimization process.

The automated Lerchs-Grossman, founded in 3D graph theory, relies on a regular system of blocks that defines the value (profit, loss) and type (ore, waste) of material contained in the blocks. Each block receives a positive or negative value representing the dollar value (profit/loss) that would be expected by excavating and extracting the mineral. It works from the top down through every combination of blocks that would satisfy wall slope constraints to find the one solution (optimum pit) with the largest positive value.

Table 28 presents the parameters summary used for the Lerchs-Grossman optimization process.

Table 28: Summary Lerchs-Grossman Input Parameters

Description	Unit	Resources
Mining Cost (Oxide)	USD/t (mined)	2.75
Mining Cost (F. Rock)	USD/t (mined)	3.25
Processing Cost (Oxide)	USD/t (milled)	10.25
Processing Cost (F. Rock))	USD/t (milled)	15.18
General and Administration	USD/t (milled)	1.52
Transport Cost	USD/t (conc.)	50.00
Sales Price	USD/t (conc.)	1,389
Overall Mill Recovery	%	84.2
Concentrate Grade	%	95.4
Pit Slope (Oxide)	Degree	34
Pit Slope (F. Rock)	Degree	42

The 2023 Mineral Resource Estimate (Table 25) defines a pit-constrained Mineral Resource in the Measured and Indicated classification of 53.96 Mt grading 3.98 % Cg and an Inferred Mineral Resource of 12.30 Mt grading 3.60 % Cg of, using a CoG of 1.0 % Cg for Saprolite and 1.4 % Cg for Fresh Rock. The Mineral Resource Estimate is based on data from boreholes drilled and sampled by December 1, 2018.

The Mineral Resources in Fresh Rock were outlined using boreholes drilled over an area representing only 0.12 km^2 for approximately 5 % of the entire deposit surface layout. The Mineral Resource in Fresh Rock as defined by the optimum pit extends from below the Saprolite layer down to 177 m from surface. The resources continue along strike of the deposit and at depth.

The effective date of the estimate is February 27, 2023.

A surface map outlining the Inferred, Indicated and Measured Resources is presented Figure 14.

14.6 Block Model Validation

The estimated block model was validated by a combination of methods, including:

- Visual inspection/comparison of the block model against the drillhole data; and,
- Swath plot analysis to check for potential bias and smoothing effects.

15 Mineral Reserve Estimate

The Technical Report excludes a Mineral Reserve Estimate in keeping with CIM Estimation of Mineral Resources and Mineral Reserves Best Practices that considers:

- A PEA is preliminary in nature, it includes Mineral Resources that are considered too speculative geologically, to have the economic considerations applied to them that would allow them to be categorized as Mineral Reserves; and,
- A PEA is not sufficient to support the designation of the estimated tonnage and grade as a Mineral Reserve.

16 Mining Methods

Section 16 has been summarized from the 2023 DRA Technical Report. It relates to the subject property of the Mineral Resource Estimate, i.e. Lola Project, and does not require a discussion on the proposed BMP in Morocco.

16.1 Pit Optimization

An economic pit analysis, excluding the Inferred Resources, was performed to determine the optimal pit limits of the Lola Project. The analysis was performed using the 3-D Mineral Resource block model, which was also the basis for the Mineral Resource Estimate. The HxGN MinePlan®'s MSOPit module was used to generate the pit shells for the analysis. The MSOPit module uses the Pseudoflow algorithm to evaluate the economic viability of each block in the model based on the parameters in Table 29.

Table 29: Pit Optimization Parameters

Description	Units	Value		
		North Pits	Central Pits	South Pit
Mining Cost – Saprolite	USD/t (mined)	2.75	3.25	3.75
Mining Cost – F. Rock	USD/t (mined)	3.25	3.75	4.25
Processing Cost	USD/t (milled)		12.71	
General and Administration	USD/t (milled)		1.52	
Transport	USD/t (conc.)		50.00	
Sales Price	USD/t (conc.)		1,289	
Overall Mill Recovery	%		84.2	
Concentrate Grade	%		95.4	
Overall Pit Slope – Saprolite	%		34	
Overall Pit Slope – Fresch Rock	%		42	

The parameters were developed assuming a standard open pit truck and shovel operation and a production rate of 100 kt of NFG concentrate per year. The parameters were developed based on similar projects in the area and were updated in more detail during the study, during which time it was determined that the updated costs did not warrant to re-optimize the pits.

The mining areas (sectors) are presented in Figure 18.

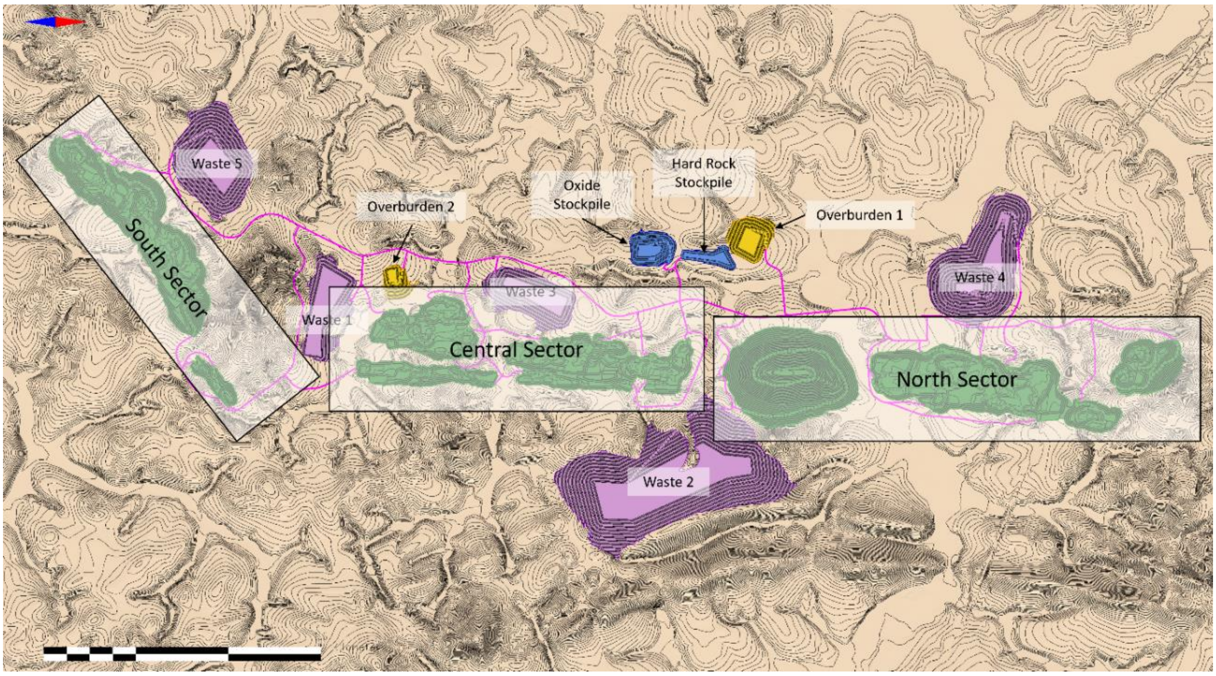

Figure 18: Mining Areas (DRA 2023)

16.1.1 Cut-off grade

Using respective economic parameters, COGs were calculated for each mining area, and for each type of material (Saprolite or Fresh Rock). Table 30 presents the COG result in each case. A higher CoG was used to feed the mill with higher-grade material.

Table 30: Cut-off Grade Results

Description	Cut Off Type	Units	Area		
			North	Central	South
Saprolite	Marginal	% Cg	1.30		
	Calculated	% Cg	1.55	1.60	1.64
	Used	% Cg	1.90		
Fresh Rock	Marginal	% Cg	1.30		
	Calculated	% Cg	1.60	1.64	1.69
	Used	% Cg	1.90		

16.1.2 Pit Restrictions

The mineralized material is contained within three areas (North, Central, and South) where North and Central have been separated by two areas each to avoid flood zones. Hard constraint has been specified from the 1-100-years flood lines surface that cannot be mined. A proportion of the mineralized material under the flood-line area could potentially be mined if hydrogeological and geotechnical studies proved feasible and government authorizations obtained.

16.1.3 Dilution and Mine Recovery

Due to the geometry of the deposit, a 2 % mining loss and an 8 % dilution factor were applied to contacts between the waste and the mineralized material. This resulted in an overall grade reduction of 0.12 %.

16.1.4 Pit Optimization Results

Pit shells were generated using HxGN MinePlan's MSOPit module. The pits were generated for revenue factors from 0.1 to 1.2 at 0.05 increments, therefore varying the concentrate selling price from USD128.90 to USD1,546.80. All three mining sectors (South, Central, and North) were optimized simultaneously. The undiscounted cashflows increase gradually until reaching a maximum at revenue factor 1 (concentrate price of USD1,289). Past this inflexion point, the net present value ("NPV") decreases as the costs exceed the revenues.

The pit shell, excluding Inferred Resources, corresponding to revenue factor 0.70 (concentrate selling price of USD902.30) was selected as the ultimate pit limit to be used as a guide for the pit design and mine planning. This pit shell contains 44.2 Mt of mineralized material at an average grade of 4.24 % and 28.6 Mt of waste, for a strip ratio of 0.65. This pit shell provides cashflows of approximately USD1,100 million and approximately 15.4 years of production and was limited to only Measured and Indicated Resources. The remaining LoM production was complemented by the inclusion of Inferred Resources to equate a total LoM of 25-years.

The selected 16 year pit shell is highlighted in green in Figure 19.

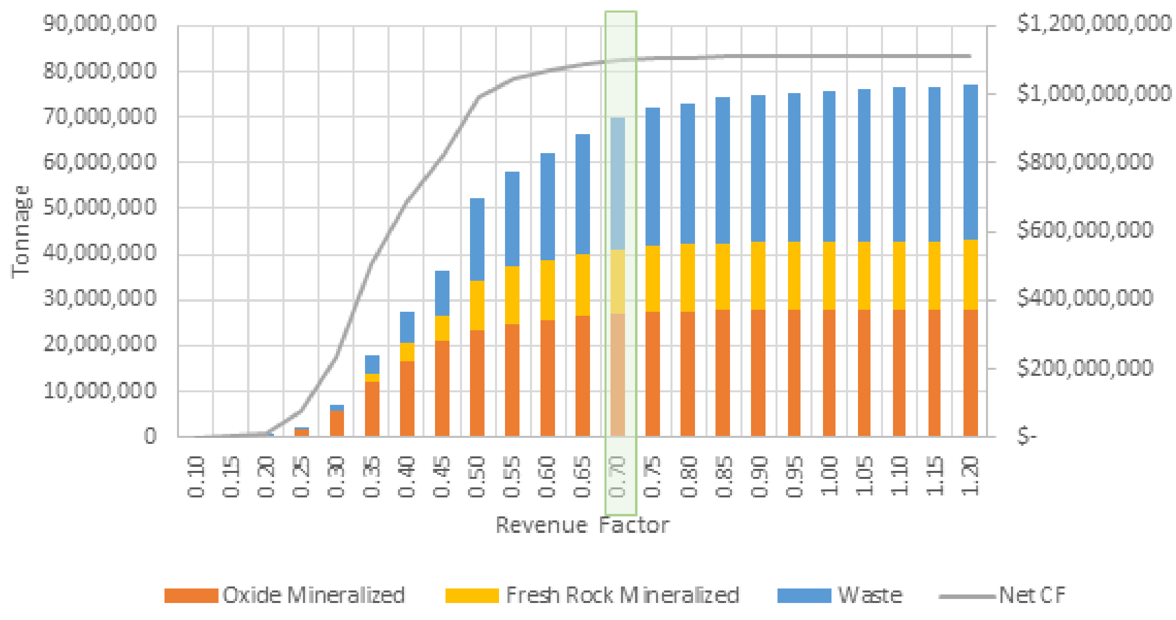

Figure 19: Pit Shell Comparison (DRA 2023)

16.2 Open Pit Design

Once a pit shell is selected, the next step is to design an operational pit that will form the basis of the mine production schedule. The pit design uses the selected pit shell as a guideline, and includes smoothing the pit walls, adding ramps to access the pit bottom, and ensuring that the pit can be mined using the initially selected equipment.

The pits were designed in HxGN MinePlan, based on the 3D resource block model and the selected pit shell.

The parameters used for the open pit design are as follows:

- The ramps and haul roads were designed with an overall width of 15.5 m for double-lane traffic and a width of 11m for single -lane traffic for the bottom two benches of the pit; and,
- The pit designs followed the recommended geotechnical pit slopes as follows:
    - slopes with a total height of ≤24 m, maximum overall slope angle of 40 degrees;
    - slopes 24 to 54 m, maximum overall slope angle of 34 degrees; and,
    - slopes of North Pit 2 the inter-ramp angle in the Fresh Rock should be no more than 39° for single benches and 50° for double benches.

16.2.1 Open pit design results

The pits designed for the Lola Project are generally shallow, mining primarily Saprolite, except for North Pit 2, which is deeper to extract Fresh Rock. This pit was separated into two Phases, where Phase 1 primarily includes the Saprolite located near the surface and where Phase 2 primarily includes the Fresh Rock located at depth. Figure 20 presents the overall designs for the Project. Table 31 presents a comparison of the pit designs to the pit shells.

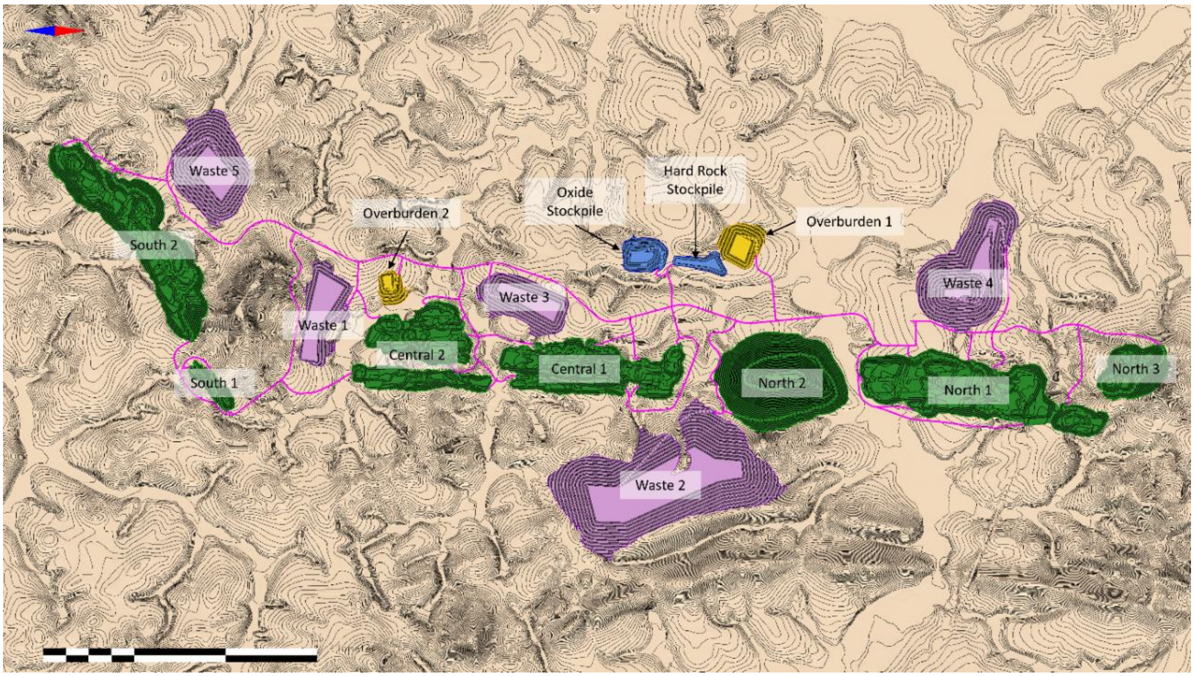

Figure 20: Lola Pits (DRA 2023)

Table 31: Comparison of Pit Shells and Pit Designs

Revenue Factor	**Units**	**Sector**		
		South	**Central**	**North**
Pit Shells				
Saprolite	kt	7,902.5	6,056.0	12,999.9
Fresh Rock	kt	567.1	710.6	12,949.8
Cg Grade	%	4.11	4.04	4.35
Waste Material	Kt	4,177.2	3,618.7	20,907.1
Cashflow Estimate	USDm	220.2	169.9	1,814.7
Pit Designs				
Saprolite	kt	7,876.6	6,071.2	13,070.7
Fresh Rock	kt	588.3	671.5	12,974.7
Cg Grade	%	4.08	3.99	4.34
Waste Material	Kt	5,198.8	4,846.3	27,078.4

Revenue Factor	Units	Sector		
		South	Central	North
Cashflow Estimate	USDm	214.5	162.0	1,768.6
Difference				
Saprolite		-0.3 %	0.25 %	0.54 %
Fresh Rock		3.7 %	-5.51 %	0.19 %
Cg Grade		-0.6 %	-1.21 %	-0.21 %
Waste Material		26.3 %	33.92 %	29.52 %
Cashflow Estimate		-2.58 %	-4.68 %	-2.54 %

Table 32 presents a general summary of the surface, maximum width, length, depth and roughly area for each of the 7 pits designed for the Lola deposit.

Table 32: Pit Dimension

Pit	No.	Length [m]	Width [m]	Depth [m]	Surface [ha]
North	1	1,200	275	35	34.6
	2	560	150	170	29.8
	3	315	265	25	9.2
Central	1	855	235	35	23.5
	2	600	440	35	21.9
South	1	320	75	25	2.8
	2	1,250	225	35	31.6

16.2.2 Waste and Overburden Stockpile Design

There will be five waste stockpiles and two overburden stockpiles. Design parameters for the stockpiles are presented in Table 33, while their capacities are presented in Table 34 and their locations are presented in Figure 21.

The stockpiles will be located near the different pits, to minimize haulage costs. A swell factor of 1.25 was used.

Table 33: Overburden and Waste Stockpile Design Parameters

Description	**Unit**	**Saprolite**	**Fresh Rock**
Lift Height	m	3	3
Berm Width	m	5	5
Face Angle	°	30	30

Table 34: Overburden and Waste Stockpile Capacities

Stockpile	**Maximum Volume [m³]**	**Target Pits**
Overburden 1	2.1	Central 1, North 1, North 2 and North 3
Overburden 2	3.7	South 1, South 2 and Central 2
Waste 1	15.1	Central 2
Waste 2	0.7	North 2
Waste 3	2.6	Central 1
Waste 4	3.5	North 1 and North 3
Waste 5	10.4	South 1 and South 2

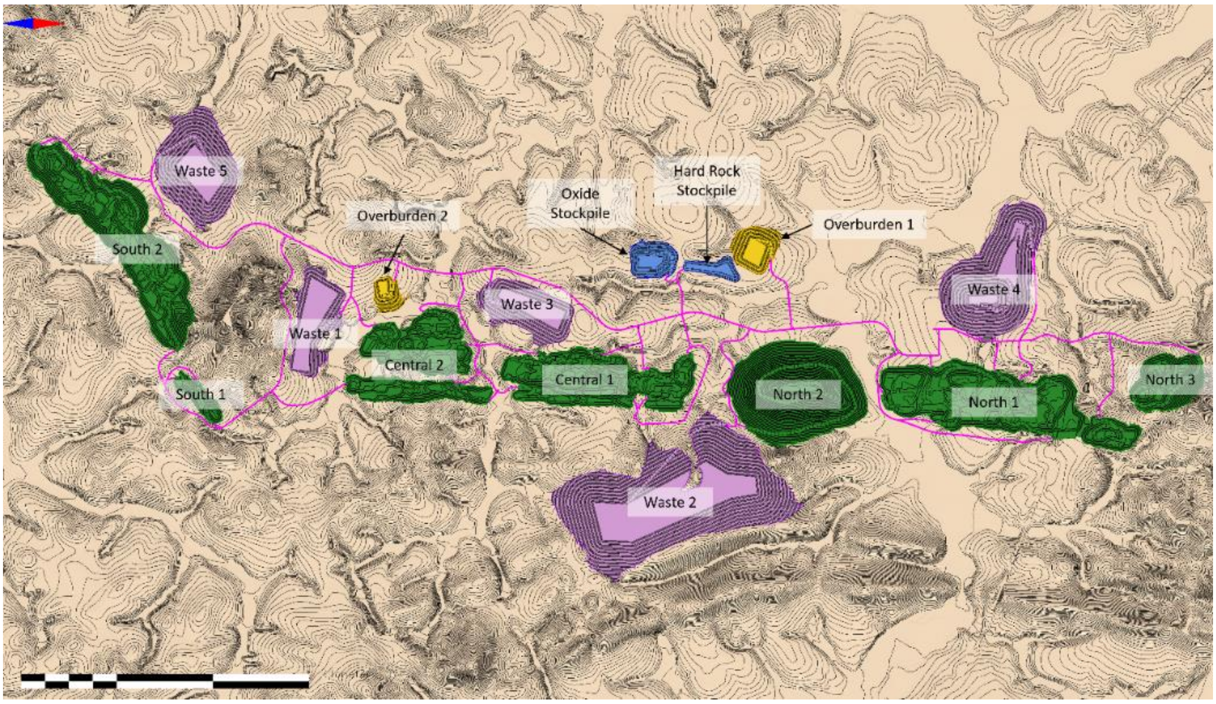

Figure 21: Waste and Overburden Stockpile Locations (DRA 2023)

16.3 Mining Methods

The mine is planned as a conventional open pit operation with articulated haul trucks, hydraulic excavators, and loaders. The mineralized material will be transported from the pit to either the mill or the appropriate stockpile, overburden will be transported to the overburden stockpiles and the waste material will be transported to a waste stockpile. There will be separate stockpiles for Saprolite and Fresh Rock to facilitate blending at the mill. The overburden and waste materials will be sent to the nearest stockpile available to reduce haulage times.

The mineralized material and waste have a combination of Saprolite and Fresh Rock. The Saprolite is a weathering of the bedrock surface that requires a minimum of drilling and blasting (approximately 10 %). All Fresh Rock requires to be drilled and blasted.

The mine will be contractor operated. The mining capital expenditure ("CAPEX") and operating expenditure ("OPEX") costs were based following a procurement tendering process from which a single contractor was selected by Falcon Energy.

The mine will be operated year-round, seven days per week, 24 hours per day with three 8-hour shifts per day. Fifteen days of weather delays have been considered in the mine production schedule.

16.3.1 Mining Operations

The mineralized material within the Lola Project is contained mostly within three areas, from which seven pits have been developed. All will be mined by surface operations.

The optimal plant recovery requires a blend of Saprolite and Fresh Rock. The maximum amount of Fresh Rock is 45 %. The overall amount of Fresh Rock within the 7 pits is 35 %, and a total of 85 % will be produced from

North Pit 2. To maintain an optimal mill-feed blend, it is necessary to work in two to three pits at same time.

To reduce haulage times and distances, nearby waste dumps will be available for each of the seven pits.

In order to mine the northern portion of the North Pit 1, it will be required to relocate the national road. The North Pit 1 has been separated into several phases so that the portion of the pit located north of the national road be mined first, and then be backfilled with some waste material coming from another portion of the same pit.

Once this In-Pit waste dump has been constructed, then the National Road will be relocated to the north and will be constructed over the In-Pit dump. Then, the remainder of the North Pit 1 will be mined without any other constraints.

The rest of the pits will be mined consecutively, with the Central Pit 1 starting from Year 8, the Central Pit 2 starting from the Year 10 and the South Pit from the Year 11.

16.4 Mine Planning

A mine plan was developed for the Lola Project from which a mine production scenario was generated. The mine production schedule formed the basis of the discounted cashflow ("DCF") model, estimation of mine equipment, as well as mine CAPEX and OPEX. The mine plan was based on feeding the mill a maximum of 2,565 kt per year to produce 100 kt of NFG concentrate per year.

The mill is designed for a 45 % Fresh Rock and 55 % Saprolite blended feed. However, the deposit has only 35 % Fresh Rock overall. Therefore, the design blend was maintained for as many years as possible, and the proportion of Saprolite in the feed was not allowed to exceed 75 %. The only exception is the first year of production, when the mill will be fed 100 % Saprolite since the Fresh Rock is located more at depth and the Saprolite is easier to access earlier. During this period, the mill recovery has been lowered to 73 %. A three-month pre-production is planned prior to feeding the mill.

The mine plan was developed using HxGN MinePlan Schedule Optimizer and the final pit designs. Constraints were placed on the number of pits being mined in a single period to optimize the amount of equipment necessary and reduce unnecessary equipment movement. Additionally, pits located closer to the mill were favored in earlier periods to reduce haulage times and costs.

The mine plan was estimated monthly for the first year of activity, which includes the pre-production period; the remaining mine life was generated on a yearly basis.

16.4.1 Mine Production Schedule

A detailed mine production schedule was developed for the IDP. The IDP mine production schedule is based on the LoM Mineral Reserve production schedule (from which Inferred Mineral Resources have been excluded) as outlined in the 2023 DRA Technical Report. However, for the purposes of the Technical Report, the IDP mine production schedule has been revised to include Inferred Mineral Resources. The IDP mine production schedule leverages the Lola Project’s total Mineral Resources, thereby increasing the LoM to 25-years. The IDP mine production schedule is based on the same initial 16-year production schedule outlined in the 2023 DRA Technical Report, adding to this incremental Inferred Mineral Resources of both the Saprolite and Fresh Rock.

The IDP mine production schedule includes Inferred Mineral Resource that has a lower level of confidence than that applied to an Indicated Mineral Resource and cannot be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration. The PEA is preliminary in nature, it includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves, and there is no certainty that the PEA will be realized.

The 2023 Mineral Resource Estimate (Table 25) defines a pit-constrained Saprolite (oxide) Mineral Resource in the Measured and Indicated classification of 33.2 Mt grading 3.88 % Cg and an Inferred Mineral Resource of 10.97 Mt grading 3.52 % Cg, using a CoG of 1.0 % Cg for Saprolite. The Fresh Rock Mineral Resources include a Measured and Indicated Mineral Resource of 20.76 Mt grading 4.14 % Cg and an Inferred Mineral Resource of 1.33 Mt grading 4.23 % Cg, based on a CoG of 1.4 % Cg. Fresh Rock Mineral Resources represent approximately 5 % of the total surface layout of the Lola deposit. These Mineral Resources are defined from below the Saprolite layer to a depth of 177 m from the surface and continue along the strike of the deposit, extending further at depth.

The mine production schedule for the IDP will utilize the same fleet during the additional 9 years as outlined in the 2023 DRA Technical Report. The fleet will maintain productivity levels to sustain a 3 to 6-month stockpile inventory, with total excavation ranging annually between 5 Mt and 6 Mt.

The mine production schedule for the IDP targets a mill feed of up to 2,565 kt per year, with emphasis on treating higher-grade carbon material. The total NFG concentrate recovered from this will be ~ 88,000 t/a. All of the -100 mesh contained in the NFG concentrate (45,000 t/a) will be processed by the BMP to produce ~26,400 t/a CSPG t/a product.

To optimize plant recovery, the feed schedule is designed to incorporate a blend of 45 % Fresh Rock and 55 % Saprolite. However, during the first year of production, RoM will exclusively be Saprolite since this material is easier to access than the Fresh Rock located at depth. A three-month pre-production phase has been planned to ensure adequate preparatory time and to ensure sufficient stockpiling to be able to feed the concentrator plant without feed delay.

To note is that approximately 2.79 Mt at 4.02 % Cg Mineral Resources are left unmined in the pit since the mine production schedule of the IDP has been capped at 25-years LoM.

The total mineralized material and waste mined from the Saprolite and Fresh Rock plus the average LoM stripping ratio is presented in Table 35.

Table 35: Total Materials Mined

Name	Units	Total
Saprolite	[kt]	43,626
Saprolite Grade	[Cg %]	3.80 %
Fresh Rock	[kt]	19,751
Fresh Rock grade	[Cg %]	4.14 %
Saprolite Waste	[kt]	39,452
Fresh Rock Waste	[kt]	16,414
Total material mined	[kt]	119,243
Average grade	[Cg %]	3.91 %
Strip ratio	-	0.881

17 Recovery Methods

17.1 Lola Project

Section 17.1 has been summarized from the 2023 DRA Technical Report.

17.1.1 Processing Plant

The mineral processing plant consists of a crushing area and a concentrator where material beneficiation and concentrate dewatering, screening, and packaging takes place. The process flowsheet includes crushing, grinding, desliming (for Saprolite only), rougher flotation, polishing, and cleaner flotation. The back end of the concentrator includes tailings thickening, concentrate filtration and drying, dry screening and bagging of graphite products, and material handling. All the tailings from the concentrator will be thickened and pumped to the tailings ponds. Reclaiming water from the tailings ponds has been considered in the process design to minimize freshwater makeup to the concentrator.

The NFG concentrate will be recovered by a conventional flotation process. The plant startup will have Saprolite only feed for approximately nine months. Subsequently, blends with Fresh Rock ranging from 25 % to 45 % will feed the plant for the remainder of the LoM. Table 36 shows the expected recoveries for different feeds as well as for the LoM. Recoveries for Saprolite only are lower than for blends, thus it is advantageous to start feeding blends as soon as possible. A NFG concentrate grade of 95.4 % Cg is expected regardless of feed type. A suitable process flowsheet able to handle Saprolite as well as blends with Fresh Rock has been developed. Processing plant equipment have all a design factor of 15 % above the nominal production rate.

Table 36: Expected Flotation Recoveries

Feed	Graphite Recovery [%]
25-45 % Fresh Rock Blend	84.2
100 % Saprolite	73.1
LoM	83.6

Over the LoM, the process plant will produce NFG concentrate divided into four standard-size fractions: +48 mesh, -48+80 mesh, -80+100 mesh and -100 mesh.

17.1.2 Key Process Design Criteria

NFG concentrate quality is measured with flake size and purity. The design of the processing plant will target minimizing degradation of the graphite flakes and production of a high-grade NFG concentrate. All nominal throughput rates are based on the production of 92,435 dry metric tonnes of 95.4 % Cg concentrate. The average weight recovery over the LoM is 3.6 %. The average graphite overall recovery of 83.6 % over the LoM has been used for the design of the process plant. These figures are based on test work completed on the blend of Fresh Rock and Saprolite as well as Saprolite only RoM.

The crushing plant and the concentrator will operate 24 hours per day, seven days per week, 52 weeks per year. The crushing plant will operate at 90 % as the mineral sizer selected for that duty has a run-time factor equal to that of the concentrator as per the equipment supplier. The concentrator run-time is 90 %, typical for graphite processing facility operations.

Concentrator feed throughput has been established at an average rate of 7,029 dry tonnes per day or a nominal throughput rate of 325.4 dry metric tonnes of material per hour, accounting for a plant availability of 90 %.

Table 37 summarizes the design basis for the processing plant.

Table 37: Processing Key Design Criteria

Parameter	Units	Value
Total RoM Processing Rate	Dry Tonnes Per Year	2,565,443
Crusher Run Time	Percentage	90
Nominal Crushing Rate	Dry Tonnes Per Hour	325.4
Concentrator Run Time	Percentage	90
Nominal Processing Rate	Dry Tonnes Per Hour	325.4
Nominal NFG Concentrate Production Rate	Dry Tonnes Per Year	92,435
Final NFG Concentrate Grade	Percentage	95.4
Overall Graphite Recovery	Percentage	83.6

17.1.3 Mass and Water Balance

The process plant mass balance is summarized in Table 38, and is based on the key design criteria in Table 37 and the process flowsheet as depicted in Figure 23. Throughput and flow rates in Table 38 are shown in metric tonnes per day (t/d) and cubic meters per day (m³/d), respectively.

Table 38: Concentrator Mass Balance Summary

Mass Entering Concentrator				Mass Exiting Concentrator		
Streams	**Dry Solids [t/d]**	**Water [m³/d]**	**Mass [t/d]**	**Dry Solids [t/d]**	**Water [m³/d]**	**Mass [t/d]**
Solids	7,029	781	7,810	—	63	63
Fresh Water	—	978	978	—	20	20
Reclaim Water	—	4,996	4,996	6,775.3	6,671	13,447
Concentrate	—	—	—	253.3	1	254
Total	**7,029**	**6,755**	**13,784**	**7,029**	**6,755**	**13,784**

The summary water balance is shown in Figure 22. The tailings pond is not considered as part of the concentrator water system and is only added for illustrative purposes.

A simplified process flowsheet is presented in Figure 22.

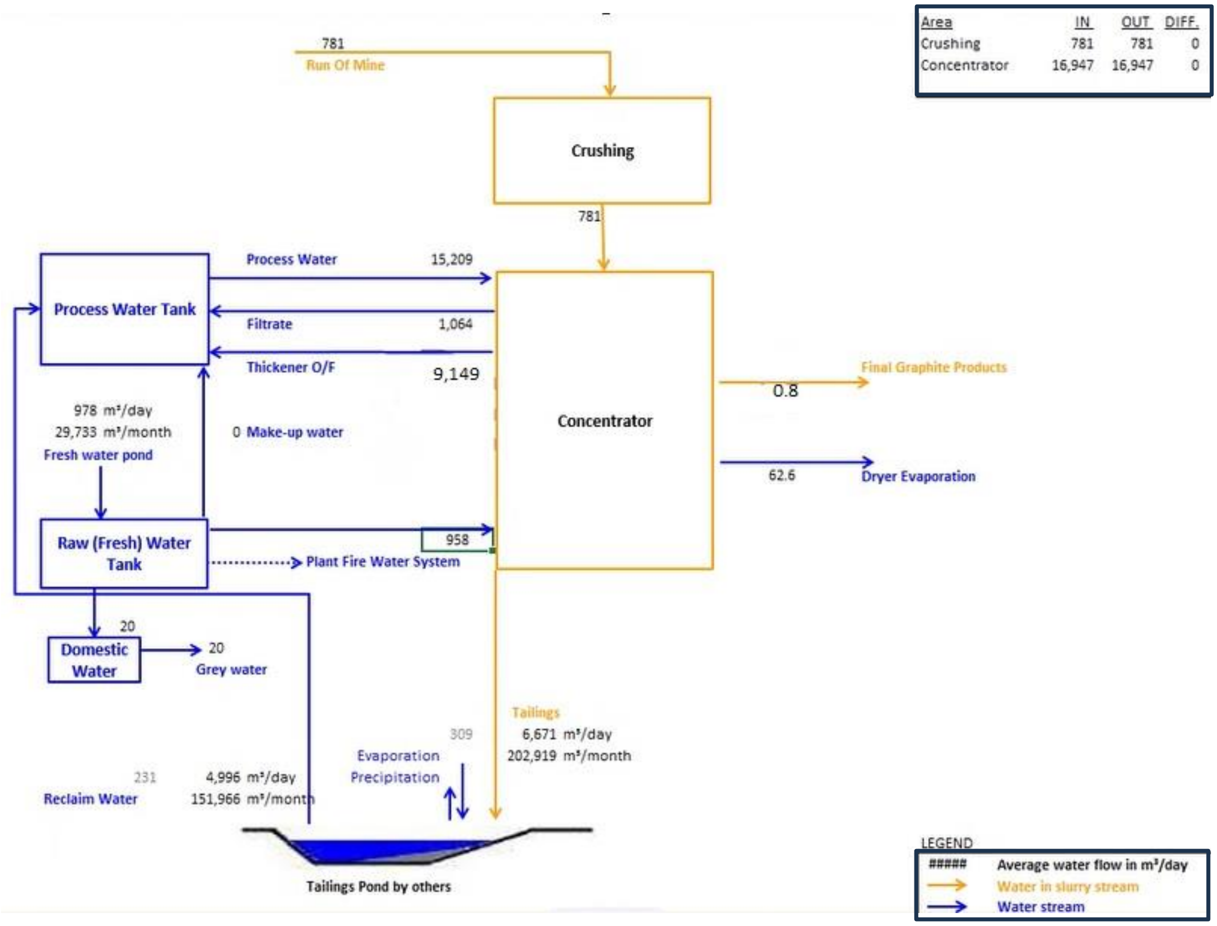

Figure 22: Water Balance Summary (DRA 2023)

17.1.4 Flowsheet and Process Description

The processing area includes the following major facilities:

- Crushing and emergency crushed stockpile that will provide crushed material to the downstream concentrator;

- A concentrator that will include grinding, conventional rougher flotation, polishing, and conventional cleaner flotation;
- A graphite concentrate dewatering area that will consist of filtering and drying; this area will include a concentrate screening as per size specification and bagging as per customer's requirements; and,
- A tailing dewatering area that will consist of thickening.

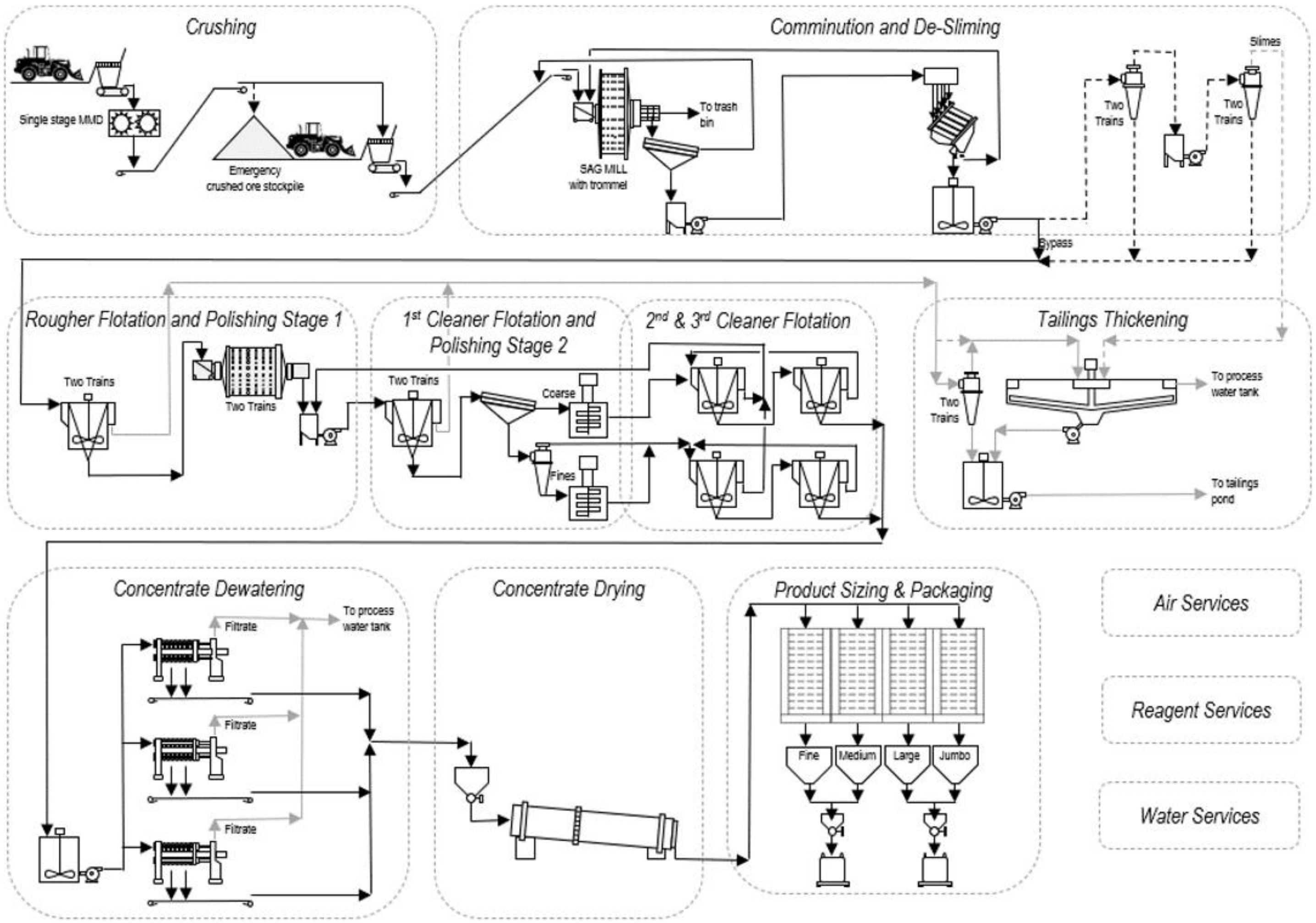

Figure 23: Simplified Flowsheet (DRA 2023)

The process description by area is described in the following sections.

17.1.4.1 Crushing and Storage

The RoM mineralized material will be deposited directly into a feed hopper using a front-end loader. From the hopper, an apron plate feeder will convey the material to the mineral sizer where it will be crushed by means of rotating toothed rolls reducing the material from a maximum of 24″ (600 mm) to 8″ (200 mm).

The crushed material from the mineral sizer is then conveyed past a self-cleaning permanent magnet where any tramp steel will be removed. The material will discharge onto a radial stacker. During normal operation, the stacker will discharge directly into the crushed hopper. A belt feeder, located under the hopper, will feed the crushed material onto belt conveyors to feed the SAG mill in the concentrator. Another self-cleaning permanent magnet will remove any tramp steel on the first of these conveyors.

When the plant is not operating and the mineral sizer is still operating, the radial stacker will feed an emergency stockpile. Crushed material can be reclaimed from the emergency stockpile by a front-end loader to feed the plant while the mineral sizer is not operating. The front-end loader will dump material in an emergency hopper which discharges directly onto the first conveyor belt.

17.1.4.2 Grinding and Desliming

The SAG mill operates in a closed circuit with a single deck screen to remove pebbles >13 mm. The pebbles are returned via two conveyors to the plant feed conveyor for further grinding by the SAG mill. There is also the option to dump pebbles in an emergency pile if required. Undersize material from the single deck screen is pumped to four multi-deck vibrating screens (three operating and one standby), also in a closed circuit with the SAG mill. The oversize material is returned by gravity to the SAG mill feed chute. The - 0.8 mm screen undersize material discharges to a tank. Depending on the plant feed material, the material is directed to one of the two following:

- For a blended feed, the material is pumped directly to rougher flotation; or
- For Saprolite only, the material is pumped to desliming.

There are two parallel trains of desliming, each with two stages. The first cyclone cluster in each train removes the fine slime particles reporting to the cyclone overflow. The deslimed material in the cyclone underflow will flow by gravity to the rougher flotation circuits for further upgrading. The first stage cyclone overflow is then pumped to the second desliming cyclone clusters. The cyclone overflow from this stage flows by gravity to the tailings thickener. The cyclone underflow from the second stage will flow by gravity to the rougher flotation circuits.

17.1.4.3 Rougher Flotation

There are two parallel rougher flotation trains, each processing half of the material. The rougher flotation circuits recover graphite flakes early in the process to maintain as many of the large flakes as possible and to minimize flake degradation. To aid the flotation process, the reagents used are diesel as a collector and methyl isobutyl carbinol as a frother. The rougher flotation trains each consist of a bank of eight conventional flotation cells of 16 m^3 each, which provides sufficient flotation residence time (sixteen cells total). The rougher concentrate is expected to be approximately 36 % Cg grade. The rougher concentrate from each train is collected and pumped to its own polishing mill. The rougher flotation tailings from each train are pumped to its own tailings thickener guard cyclones cluster as final tailings.

Rougher concentrate cleaning is completed in three stages.

17.1.4.4 First Polishing Stage and First Cleaner Flotation

Rougher concentrate from each train is fed to one of two first stage polishing mills, which use ceramic media to scrub the graphite flake surfaces of the gangue minerals with a minimal size reduction. The polished rougher concentrate from each mill is combined in a tank. The rougher concentrate is re-split into two trains of first cleaner flotation cells. Each train has a bank of four conventional flotation cells (eight cells total), 10 m^3 each, which provides sufficient residence time for the cleaning. It is expected to upgrade the rougher concentrate up to 83 % Cg. The combined first cleaner flotation tailings are pumped to the two rougher tailings pump boxes.

First cleaner concentrate is pumped to a high frequency multi-deck vibrating wet screen. The screen is the same model as the units in the grinding circuit, albeit with a different aperture on the screen decks. The feed is split into two fractions: one screen oversize coarse fraction (+100 mesh) and another screen undersize fines (-100 mesh).

17.1.4.5 Further Polishing and Subsequent Cleaner Flotation

Based on the knowledge of the graphite flotation circuits and applicable test work results available to date, it is presently understood that the split between the coarse (+100 mesh) and the fine (-100 mesh) fractions for the first cleaner flotation concentrate are expected to be about 50 %/50 % weight ratio. After the screening, both the screen oversize (+100 mesh) and the undersize (-100 mesh) streams will be upgraded in the parallel polishing and cleaner flotation circuits, each dedicated to the respective size fraction. Each of the screen products will be polished through the second stage dedicated polishing mills to facilitate the graphite liberation.

In the case of the screen undersize, the solids in the polishing mill feed will be controlled with the polishing mill dewatering cyclones installed in open cycle with the mill to obtain proper solids density during polishing.

The discharge of each second stage polishing mill is fed to second cleaners of the coarse and fines cleaner circuits, respectively. Second cleaner concentrates are cleaned through the dedicated third cleaners.

The third cleaner concentrate of each circuit (combined grade of 95.4 % Cg) is pumped to filtration for dewatering. The tails from the second cleaners are recirculated upstream to the first cleaner flotation, and the tails from the third cleaner are recirculated upstream to the second cleaners feed.

The coarse and the fines second cleaner flotation is performed in the dedicated banks of three conventional flotation cells of 2 m^3 each. Similarly, the third cleaner flotation for the coarse and the fines is performed in the dedicated banks of two conventional flotation cells of 2 m^3 each.

17.1.4.6 Graphite Concentrate Filtering and Drying

Graphite concentrates from third cleaner flotation banks are pumped to a concentrate holding tank prior to being pumped to pressure filtration. The holding tank allows to de-couple the continuous operation of the flotation cleaners upstream from the pressure filtration downstream, which is a batch process.

The concentrate filtration circuit consists of three vertical plate pressure filters and produces a graphite product filter cake that contains 20 % moisture. The concentrate cake is gravity discharged onto dedicated conveyors for each filter which feed a common conveyor. The material is transported to the dryer via a feed hopper and a feed screw conveyor. The filtrate from the filter presses gravitates to a filtrate tank, which overflows to the process water pond.

Concentrate is dried by means of a diesel-fired indirect rotary dryer. The dryer reduces concentrate moisture content down to 0.3 %, which is required for efficient dry screening and packaging.

17.1.4.7 Graphite Dry Screening and Packaging

Four size fractions will be produced from the NFG concentrate as shown in Table 39.

Table 39: Saprolite NFG Concentrate Breakdown by Size

NFG Concentrate Size Fraction	Weight [%]
+ 48 Mesh	13.4
– 48 + 80 Mesh	26.0
– 80 + 100 Mesh	9.0
– 100 Mesh	51.6

After the dryer, the NFG concentrate is pneumatically transported to a bulk graphite bin. From this bin, graphite is pneumatically transported to two sifter screening systems. Each sifter system consists of eight sections of 27 sizing screens each. The screened fractions discharging from the sifter systems gravitate to the four appropriate dedicated bins. Packaging of the NFG concentrate will be performed in the graphite bagging circuit. Dry screened NFG concentrate will be fed from the dedicated bins to a semi-automatic bagging system. Concentrate will be loaded into one tonne bulk bags. All bags are weighed, put on a pallet, and stretch wrapped. Bags can be stored as needed in a storage area prior to being loaded for shipment.

17.1.4.8 Reagents and Utilities

The concentrator plan reagents and utilities include the following:

- Diesel;
- Methyl isobutyl carbinol;

- Flocculant;
- Concentrator water services:
  - fresh water; and,
  - process water.
- Compressed air:
  - high pressure air; and,
  - low pressure air.

17.2 Active Anode BMP

The basis of the PEA is a BMP that consists of an initial, reduced, Coating Plant that will produce for the first two years, approximately 5,300 t/a of CSPG product, whilst undergoing product qualification. Thereafter, the coating capacity will increase to produce approximately 26,400 t/a CSPG product. At full capacity, the BMP will process 45,000 t/a of -100 mesh (- 150 µm) NFG concentrate from the Lola Project at a minimum feed grade of 94.6 wt.- % FC to produce approximately 26,400 t/a of battery anode CSPG at a FC content of ≥99.95 wt.- %. During the 2-year qualification period, the majority of SPG produced will be sold as uncoated SPG.

The BMP contains three main sections: the Spheroidization Plant, the Purification Plant, and the Coating Plant. The Spheroidization Plant is designed to produce 27,000 t/a of SG from 45,000 t/a of NFG concentrate.

The PEA assumes an optimized combined yield of 60 wt.- % (NFG to SPG), divided into two size fractions. The micronization and spheroidization process is designed to produce spherical particles of a size of 20 µm (categorized as "SG20") and 10 µm (categorized as "SG10"). In addition to producing SG20 and SG10, 18,000 t/a of SG fines (≤9 µm, ~95 wt.- % FC) will be generated as a by-product, which Falcon Energy intends to market internationally. The 60 wt.- % yield assumption is based on Hensen's experience of their plants in China and that of the Weihai Plant.

The Purification Plant is designed to process 27,000 t/a of SG feed with a FC content of ≥95.0 wt.- %, resulting in 23,970 t/a of purified SPG with a FC content of ≥99.95 wt.- %. The Coating Plant applies pitch tar coating technology at an addition rate of 10 wt.- %, leading to a final CSPG production of approximately 26,400 t/a, that will meet the 99.95 wt.- % FC battery-grade specification.

Figure 24 shows the overall process flow of the BMP with SEM images of material from the Lola Project.

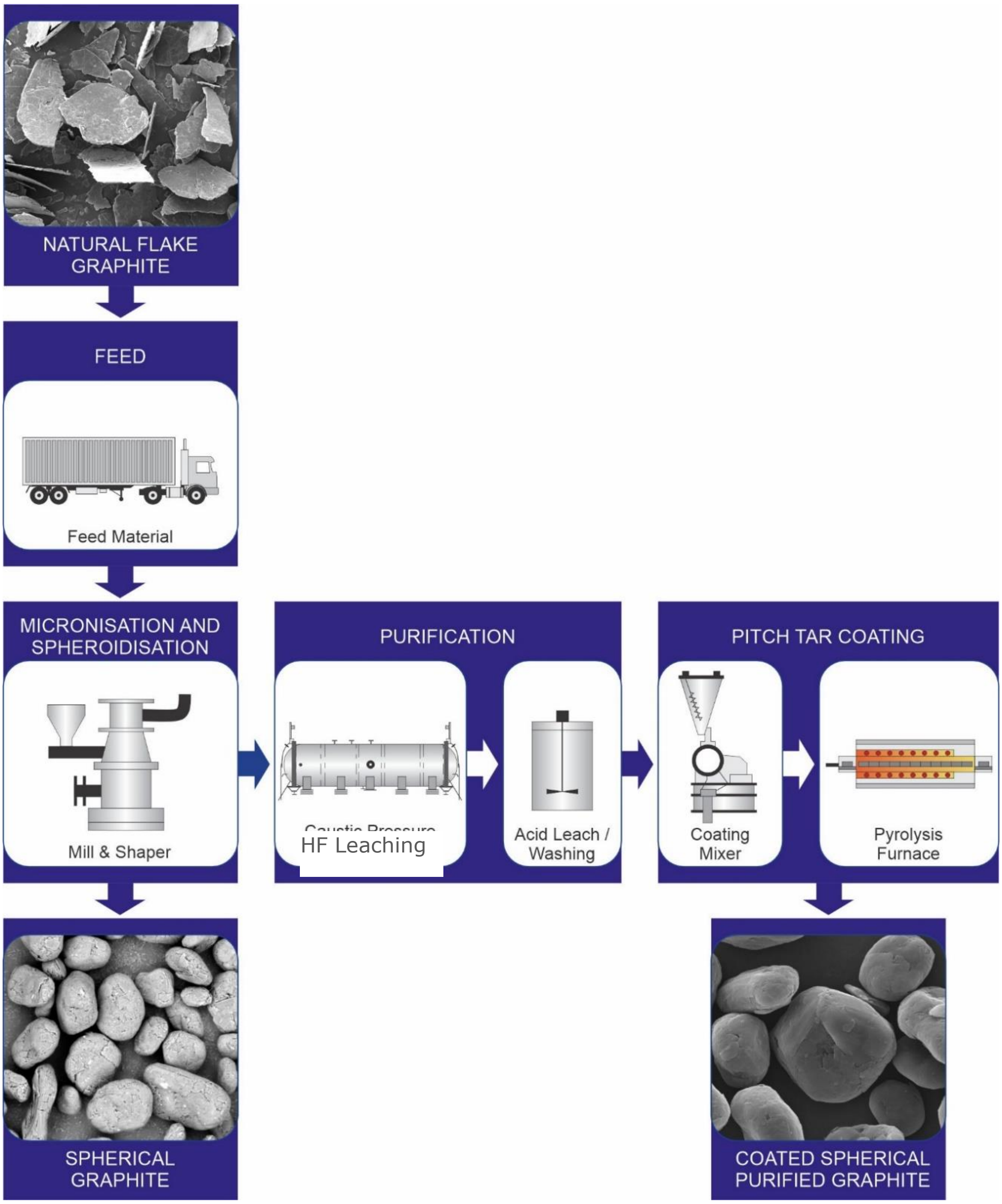

Figure 24: BMP process flow with Lola Graphite SEM images

17.2.1 Spheroidization Plant

Processing of the NFG to form SG takes place at the Spheroidization Plant and entails three-unit operations. The process begins with the micronizing of the NFG to meet the required feed PSD. Micronizing takes place in a specialized mill that reduces the PSD without destroying the crystalline properties of the graphite. Following micronization the micronized graphite is ready to be spheroidized.

The spheroidization process involves the mechanical shaping of the graphite flakes into smooth, rounded particles to improve their performance in battery applications. Spheroidization enhances the graphite's packing density and conductivity by rounding the particles.

The Spheroidization Plant is structured into three stages: the first step is micronization, where the NFG is comminuted to a fine PSD. In the second stage, spheroidization begins, where the micronized graphite undergoes a process that changes it into coarse SG. The third step involves refining the material to produce a secondary SG product.

Each equipment set in the BMP consists of a mill, a cyclone classifier, and a bag filter, all are integrated through a closed-loop pneumatic piping system. The classified materials are transferred through pneumatic piping to the subsequent equipment set, where the process repeats, until the final stage delivers coarse SG, fine SG (secondary SG), and tailings (SG fines).

17.2.1.1 Milling

The process begins with the milling phase, where NFG is conveyed via a vacuum feeder into a superfine air jet mill. This stage reduces the PSD to meet the required PSD specification.

17.2.1.2 Spheroidization

After milling, the material is transported to the spheroidization unit through a pneumatic, sealed, pipeline under negative pressure. This critical stage shapes the graphite, rounding its edges to form an oval or spherical structure.

17.2.1.3 Classification

The material is transferred to the classification stage, where a cyclone classifier, connected in a closed circuit with a bag filter, splits the material into coarse SG and secondary SG. The airflow and fine powder not captured by the cyclone are directed to the bag filter, which collects the fine SG as tailings.

17.2.2 Purification Plant

SG is fed to the Purification Plant containing FC at a minimum grade of 94.6 wt.- % for impurity removal to ≥99.95 wt.- % FC.

The proposed BMP applies graphite purification that consists of a mixed acid, which is a combination of HCl, HNO_3, and HF. This multi-acid approach efficiently removes impurities from the graphite, yielding high-purity SPG.

The Purification Plant operates in alternating batches, processing the two SG product streams i.e. the coarse SG and fine SG (secondary SG). This operational strategy allows for greater flexibility and efficiency in handling the different SG products, ensuring that each stream is purified according to its specific requirements.

Purification in the graphite production process at the BMP is split into four stages: thermally induced chemical reaction, pressure filtration, washing, and drying. Each stage is designed to efficiently remove impurities and prepare the graphite for further processing into battery-grade material.

17.2.2.1 Thermally induced chemical reaction

The reaction begins by transporting SG into raw material tanks using a negative pressure system. From there, the SG is transferred to the reaction vessel, introducing a mixture of water, HF, HCl, and HNO_3. The mixture is stirred and heated with the slow introduction of steam as a heating source. The temperature is controlled at 60 °C for 12 hours, allowing to remove impurities such as SiO_2, Al_2O_3, MgO, Fe_2O_3, and CaO. These impurities react with HF to form soluble compounds, while precipitates like CaF_2, MgF_2, and FeF_3 that are dissolved by HCl and HNO_3. The multi-acid purification method removes the impurity elements except the unreactive graphite remains as a purified product.

17.2.2.2 Pressure filtration

In the pressure filtration stage, the purified SG is dewatered by a filter press to separate the liquid from the solid material. The remaining acids are collected and recycled for reuse in the thermal reaction stage. The bleed stream is sent to wastewater treatment.

17.2.2.3 Washing

In the washing phase, the purified SG undergoes two sequential washing stages - an initial wash, followed by a second wash, to remove any remaining water-soluble impurities. After washing, the graphite is dewatered using a filter press to a moisture content of around 30 %. The filter cake is conveyed to the next stage drying.

17.2.2.4 Drying

In the drying stage, the wet SPG is introduced to hot air generated by a gas furnace, which is blown into the dispersion drying chamber. The drying process, performed at around 100 °C, dries the SPG to a moisture content below 1 %. The dried SPG is collected via a two-stage cyclone separator and transported through sealed discharge pipeline into storage bags, ready for further processing.

The graphite purification and wastewater treatment process flow are graphically presented in Figure 25 and *Figure 26*, respectively.

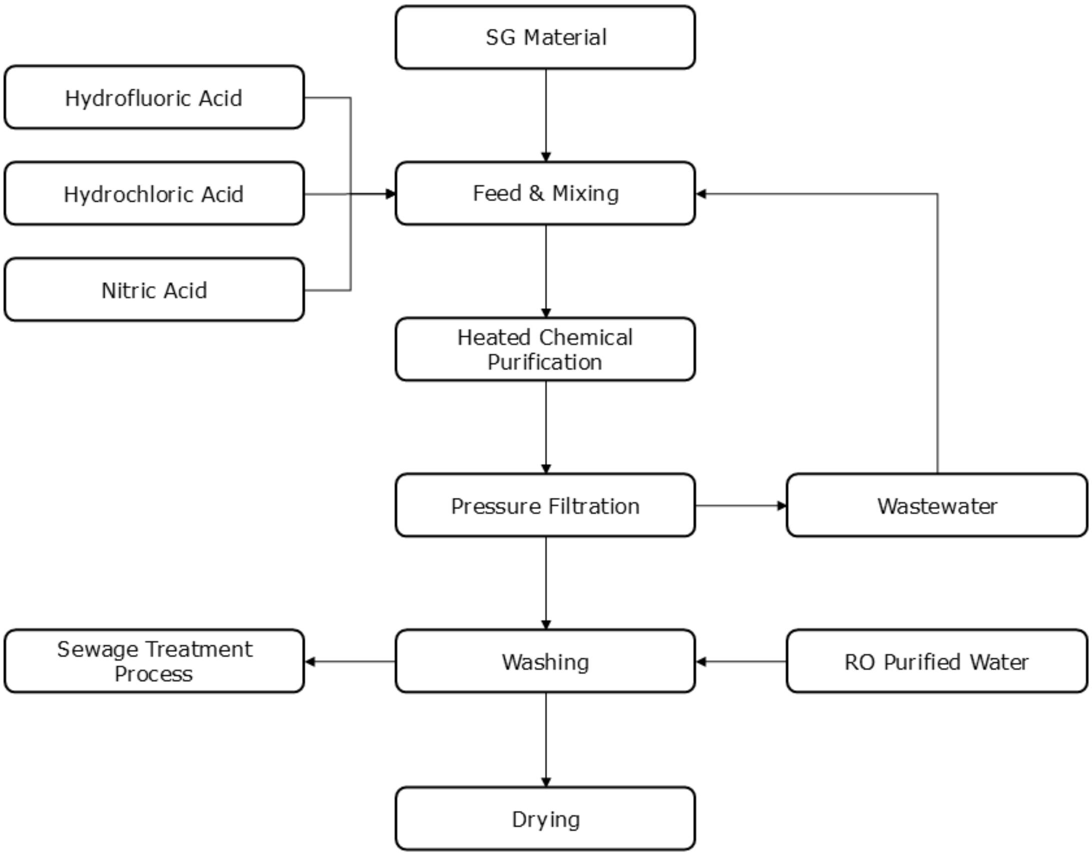

Figure 25: Simplified block flow diagram of the graphite purification

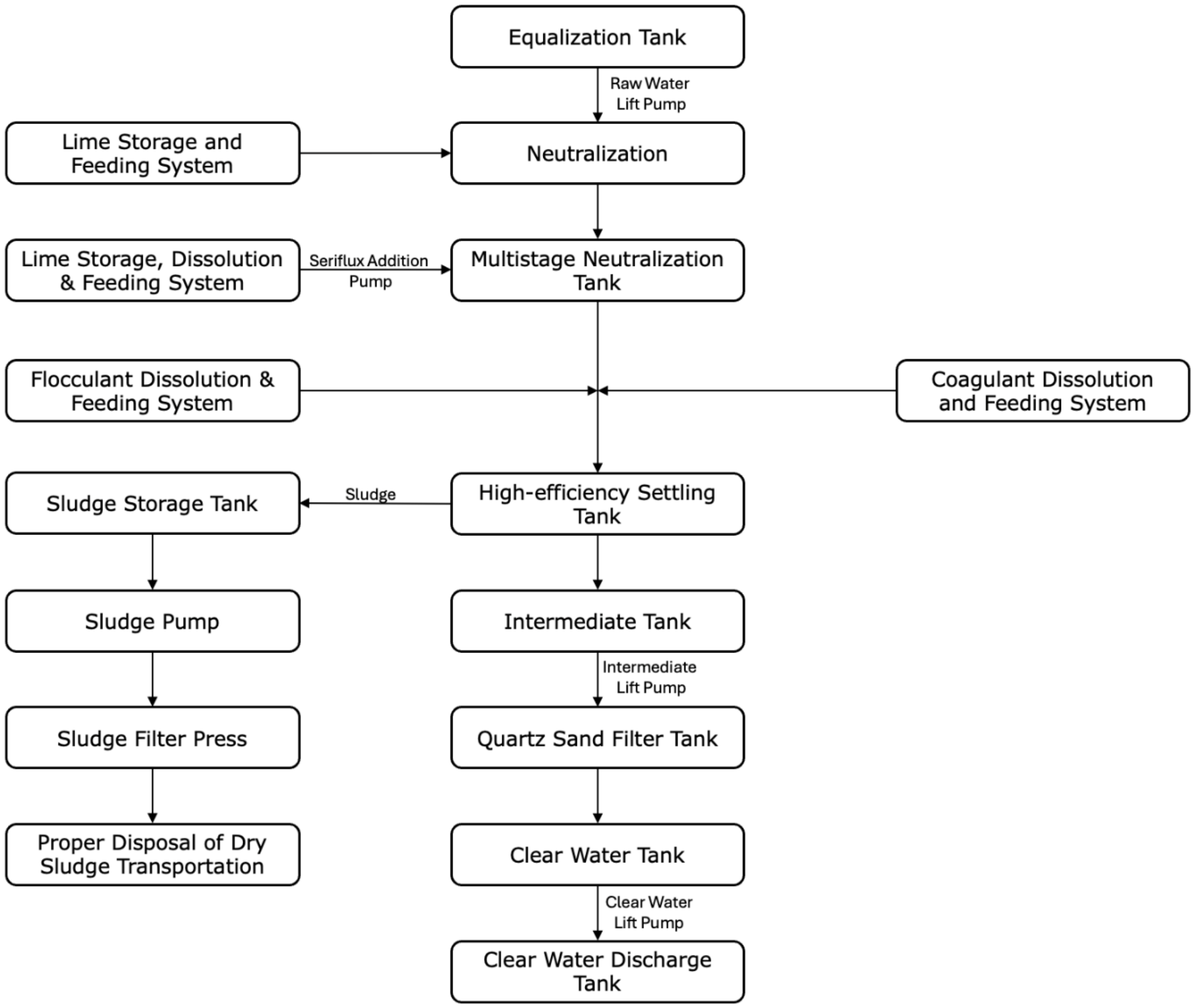

Figure 26: Simplified block flow diagram for wastewater treatment

17.2.3 Coating Plant

The Coating Plant is sized to treat 23,970 t/a SPG by applying pitch tar coating technology at an additional rate of 10 wt.- %. The final CSPG production of the BMP, producing FC battery grade at ≥99.95 wt.- %, is approximately 26,400 t/a.

The coating process uses SPG as the primary raw material, which is processed in the carbonization plant after being mixed with milled pitch tar.

The carbonization stage ensures the material undergoes the necessary transformation to prepare it for sale. Following carbonization, the material is mixed, screened, demagnetized, and packaged, producing the final CSPG product ready for the market.

The coating process, which represents the final stage in upgrading SPG to battery-grade anode material, is done after spheroidization and purification. The dry pitch tar coating method was selected for the BMP, as it remains the industry standard to produce CSPG product. This method involves four main steps: pitch tar size reduction, mixing, carbonization, demagnetization screening, and automatic packaging.

17.2.3.1 Pitch Tar Milling

In this step the pitch tar is transported by a conveyor to a jet mill. The pitch tar is control fed to a jet mill by a screw conveyor. Compressed air is used to mill (atomize) the pitch tar into fine particles of approximately 2-3 µm in size. The fine material is collected in a sealed container.

17.2.3.2 Mixing

For mixing, the dried SPG and milled pitch tar are transferred in one-ton bags to the workshop, where they are mixed in a sealed environment using vacuum feeding to ensure a closed-loop system. Mixing of the materials occurs in the mixer under full containment.

17.2.3.3 Carbonization

Once mixing is completed, the material is pneumatically conveyed through sealed pipeline to the rotary kiln for carbonization. Nitrogen gas is used in the rotary kiln to create an inert atmosphere. Electrical heating raises the temperature gradually from 200 °C to 1,200 °C. The carbonization process is completed over approximately 13 hours, followed by 9 hours of cooling.

During this process, amorphous carbon is formed on the surface of the SPG material.

17.2.3.4 Demagnetization, Screening, and Automatic Packaging

In the final stages, demagnetization and screening, the CSPG product is further refined. CSPG is pneumatically conveyed through sealed pipeline to a demagnetizer, which removes any magnetic particles. After demagnetization, the CSPG is screened to ensure it conforms to the required PSD specification. The final CSPG product is then pneumatically conveyed to the packaging plant, through sealed pipeline, where it is automatically packaged into sealed one-ton bags for storage and sale.

17.2.4 Process Design

17.2.4.1 Spheroidization Plant

17.2.4.1.1 Process Design Criteria

The PEA is based on processing 45,000 t/a (-100 mesh, -150 µm) NFG concentrate at a minimum feed grade of 94.6 wt.- %. The operating hours of the Spheroidization Plant is 7,500 h/a. This results in an hourly feed rate of 6.0 tons per hour of NFG.

Based on experience in graphite spheroidization an optimized production of various SG products with specified PSD was assumed for the SP plant.

The Spheroidization Plant consists of three processes: micronization, first spheroidization of the micronized graphite to produce a coarse SG and a secondary SG product.

The process design criteria ("PDC") are based on Hensen's experience and operating plants in China. The spheroidization system is flexible regarding the PSD of the final products. That is, the process design and equipment sizing are based on the production of two SG products and an SG fines by-product.

A summary of the main PDC for the spheroidization plant is presented in Table 40.

Table 40: Process design criteria – Spheroidization Plant

Description	Unit	Value
General		
Annual NFG concentrate feed	[t/a]	45,000
Annual production hours	[h/a]	7,500
NFG feed rate (dry)	[t/h]	6.0
Plant availability	[%]	85.6
SG - pre-grinding		
Pre-ground product PSD, D_{50}	[µm]	20 to 25
Feed rate pre-grinding	[t/h]	6.0
SG - SG		
Annual feed SG production	[t/a]	45,000
Target product PSD, D50	[µm]	10 - 20
Feed FC	[wt.- %]	>94.6
Product FC	[wt.- %]	>94.5
Ratio D_{90}/D_{10}	-	<3.5
Tap density	[g/cm³]	>0.95
Overall SG product yield, greater than	[wt.- %]	60

17.2.4.1.2 Mass Balance

The Spheroidization Plant's high-level mass balance is summarized in Table 41. The data is based on the PDC (Chapter 17.2.4.1.1) which is derived from the test work, and the process flow diagrams.

Table 41: Mass balance summary – Spheroidization Plant

Equipment	Flow description	Total		
		Mass		Hours
		[t/a]	[t/h]	[h/a]
Pre-grinding				
Feed pre-grinding		45,000	6.0	7,500
SG production				
SG feed	Feed SG production	45,000	6.0	7,500
SG production	SG product	27,000	3.6	-
	SG 20 µm	23,400	-	-
	SG 10 µm	3,600	-	-
	SG fines	18,000	2.4	-

17.2.4.2 Purification Plant

17.2.4.2.1 Process Design Criteria

The PEA is based on a Purification Plant sized to produce 23,970 t/a SPG at ≥99.95 wt.- % FC from 27,000 t/a SG feed at ≥95.0 wt.- % FC.

The operating hours of the Purification Plant are 7,500 h/a. This results in an hourly feed rate of 3.6 tons per hour of SG. The throughput rates are based on the stated production rates with an average mass yield of 93 wt.- % and an average FC recovery of 95.9 wt.- %. Minor losses in FC occur in the filtrates during filtration and washing after the leaching stages.

The PDC was developed based on Hensen's experience and operating plants in China.

The main PDC for the Purification Plant is presented in Table 42.

Table 42: Process design criteria – Purification Plant

Parameter	**Unit**	**Value**
Annual SG feed	[t/a]	27,000
Annual production hours	[h/a]	7,500
SG feed rate (dry)	[t/h]	3.6
Plant availability	[%]	85.6
Graphite feed (SG) FC	[wt.- %]	>94.5
Average mass yield	[wt.- %]	93.0
Average FC recovery	[wt.- %]	95.9
Graphite product (SPG) FC	[wt.- %]	>99.95

17.2.4.2.2 Mass Balance

The mass balance for the Purification Plant including disposal to wastewater treatment is summarized in Table 43. The mass balance is based on the PDC and the process flow diagrams.

Table 43: Mass balance summary – Purification Plant

Streams	**Total mass [t/h]**	**Solids mass [t/h]**	**Fluids mass [t/h]**
Mass entering the system			
SG feed	3.6	3.6	-
HF	1.26	-	1.26
HCl	2.34	-	2.34
HNO3	0.54	-	0.54
Fresh water	59.03	-	59.03
Lime	1.8	1.8	
Total	**68.57**	**5.40**	**63.17**
Mass exiting the system			
Dried product	3.35	3.35	-
Evaporated water	1.44	-	1.44
Wastewater	57.6		57.6
Gypsum	1.8	1.8	
Total	**64.18**	**5.15**	**59.03**

17.2.4.3 Wastewater Treatment Plant

17.2.4.3.1 Process Design Criteria

The PEA includes a wastewater treatment plant to treat the wastewater generated by the Purification Plant at a rate of 432,000 t/a. The PEA did not include any further expansion for the wastewater treatment plant's next development phase.

A summary of the main PDC for wastewater treatment plant is presented in Table 44.

Table 44: Process design criteria – wastewater treatment plant

Parameter	Unit	Value
Wastewater Treatment		
Annual combined wastewater feed	[t/a]	432,000
Annual production hours	[h/a]	7,500
Plant availability	[%]	85.6
pH after neutralization	-	7

17.2.4.3.2 Mass Balance

The mass balance for wastewater treatment is summarized in Table 45. It is based on the PDC in Chapter 17.2.4.3 and Table 44.

Table 45: Mass balance summary – wastewater treatment

Streams	Dry solids [t/h]	Fluids [t/h]	Total mass [t/h]
Mass entering the system			
Wastewater from the Purification Plant	--	57.6	57.6
Lime	1.8		1.8
Total	**1.8**	**57.6**	**59.4**
Mass exiting the system			
Filter cake gypsum	1.8		1.8
Treated wastewater	-	57.6	57.6
Total	**1.8**	**57.6**	**59.4**

17.2.4.4 Coating Plant

17.2.4.4.1 Process Design Criteria

The Coating Plant is designed to produce 26,366 t/a CSPG while operating for 7,500 h/a, equating to an hourly product rate of 3.5 tons per hour CSPG.

The PDC for the dry pitch tar Coating Plant was based on Hensen's experience and operating plants in China.

A summary of the main PDC for the CSPG plant is presented in Table 46.

Table 46: Process design criteria – CSPG plant

Item	**Unit**	**Value**
General		
Annual SPG feed	[t/a]	23,970
Annual production hours	[h/a]	7,500
Graphite SPG feed rate (dry)	[t/h]	3.3
Plant availability	[%]	85.6
Graphite coating		
Pitch tar (100 %) addition (ton per ton of initial graphite (SPG) feed)	[t/t]	0.1

17.2.4.4.2 Mass Balance

The CSPG plant mass balance is summarized in Table 47. Data are based on PDC (Chapter 17.2.4.4.1) and process flow diagrams.

Table 47: Mass balance summary – CSPG

Equipment	**Total**		
	Mass		**Hours**
	[t/a]	**[t/h]**	**[h/a]**
Coating			
Feed coating	23,970	3.3	7,500
Pitch tar addition	2,397		
CSPG production			
CSPG product	26,366	3.5	-
Volatiles	1,255		-

18 Project Infrastructure

18.1 Lola Project

Section 18.1 has been summarized from the 2023 DRA Technical Report.

The Lola Project consists of both on-site and off-site infrastructure. The on-site infrastructure includes the following:

- Developing of a new access road from the highway N2;
- Various site roads providing access to the process facility, administration offices, mine offices, and mine garage, product storage warehouse, tailings storage facility ("TSF"), and power plant;
- Haul road Mine roads, totaling 20 km, providing access to connection between the North, Central, and South pit exists and the waste dumps and main haul road, RoM stockpiling area, mineral sizers, and mine truck shop;
- Water supply and distribution;
- Fuel storage and distribution;
- Warehouse;
- Truck shop, maintenance facility, and mining offices;
- Plant offices and control room;
- Administrative offices;
- Change house facilities;
- Tailings storage facility;
- Waste water treatment plant;
- Power distribution;
- Five electrical rooms supply power to the plant and facilities;

- Electrical power will be generated by heavy fuel oil power plant supplying 11 kV, 3 phases, 50 Hz. Power shall be generated by five medium-speed generator sets, with four units in operation and one unit stand-by;
- A gate house measuring 100 m2 will be located at the main entrance to the site and includes security access and offices. In addition, the process plant will be fenced using security fence. The pits and waste dumps will use cattle fences;
- As the mine will be located adjacent to the town of Lola, only a small operations camp has been planned for expatriate and out-of-town employees. Additional accommodations, if required, will be provided through the rental of villas in the towns of Lola and N'Zérékoré;
- Administrative office building (756 m^2) will be located southwest of the plant. It will include a combination of single and open plan offices, boardrooms, storerooms, filing rooms, and washrooms. A change house (220 m^2) has included. A kitchen and dining building (360 m^2) will be located close to the administration offices and will accommodate process plant and mining crews;
- Plant offices and a control room measuring 190 m^2 will be located inside the concentrate filtering and drying facility;
- An assay and metallurgical laboratory were constructed in 2018. The building is located East of North Pit #1. The laboratory measures 264 m^2 and includes office space, assay and metallurgical laboratories, storage for samples and other associated facilities;
- A 1,500 m^2 warehouse for product storage will be located in front of the graphite bagging area. It will be able to store 1,408 bags (6 days production) of graphite product; and,

- Provision has also been made for control system (automation process network), network automation communication services, process control system and telephone and internet communication systems.

The off-site infrastructure includes but not limited to:

- Road Lola – Yekepa;
- Customs office at Bossou;
- Road Yekepa – Ganta; and,
- Tractor trucks pulling a train of two trailers, each carrying 40 tonnes, will be used to transport the 1-tonne bagged graphite from Lola to the port of Monrovia in Liberia. The vehicles will be licensed in Liberia to benefit from the ECOWAS transit regime in Guinea.

18.1.1 Tailings Storage Facility

The design of the TSF is based on the following guidelines, the design criteria are summarized in Table 48:

- The CDA Dam Safety Guidelines (2018); and,
- The South African National Standards 0286:1998 Code of Practice for Mine Residues.

Table 48: Design Criteria for the Lola TSF

Item	Design Criteria	Value
1	Tailings Material	Graphite
2	Design Life of Facility	25-years
3	Deposition Rate	Varies. Average at ~2.4 million dry tonnes/annum
4	Total Tailings Tonnage	~61 million dry tonnes

Two mineralized material types are planned to be mined, namely Saprolite (soft mineralized material) and Fresh Rock. Only the geochemical and geotechnical characterization of the Saprolite and Saprolite tailings have been assessed. The Fresh Rock tailings will be assessed in future. The 2019 geochemical assessment of the Saprolite tailings has been carried out under the supervision of Bishop-Brogen Associates, Inc., and indicated that:

- The composite tailings sample showed a 0.55 % sulfide content;
- Static leaching tests showed a potential of leaching for copper, zinc, and manganese;
- Kinetic tests showed significant concentrations of copper, zinc, nickel, and manganese in the initial leachate (week #0). However, concentrations of copper, zinc, and nickel were significantly lower in the leachates collected from week #1 to week #30. Manganese showed an increase in concentrations from week #0 to week #30. With one exception, pHs remain between 5.55 and 6.00 for the first 30 weeks. To note is that for this PEA, tailings will be processed faster resulting in different kinetics that will have to be assessed in future;
- Considering that the contents of environmentally sensitive metals (copper, nickel, zinc, etc.) and the tailings of the Lola deposit are low (close or below average content of surficial earth crust), metals leaching from the tailings should not be a potential concern;
- The addition of lime in the tailings sedimentation pond or in the tailings box may be required in the event neutralization of the tailings is required. In addition, processing of Fresh Rock could raise the pH and decrease metals concentrations of TSF effluent;

Based on the results of the geochemical assessment of the Saprolite tailings there is no need to line the TSF. This conclusion will be confirmed on completion of the kinetic testing of the Saprolite tailings, the assessment of the Fresh Rock tailings, together with an assessment of the receiving water quality.

Within the current mine boundary tenement, 12 potential TSF sites were identified for consideration and assessed based on:

- An initial design storage capacity of approximately 61.2 million dry tonnes of tailings over the 25-years LoM of the Lola Project;
- Full containment and a self-raising depositional method; and
- Various topographical, social, financial, and other technical factors.

The preferred site for the development of the TSF was selected based on:

- Its proximity to the plant, thereby minimizing the pumping distances and pumping head associated with slurry deposition pipeline and return water lines;
- Its proximity to the pit, plant, and other mining infrastructure, which minimizes the mining footprint and impact on the environment;
- It being one of the more cost-effective sites to develop and operate;
- There being no villages near the selected site; and,
- Its capacity to accommodate increases in the tailings storage or deposition rate associated with changes to the LoM.

The final TSF site comprise of two tailings dams and in-pit deposition (North Pit #2) based on the IDP mine production schedule to store ~61 million dry tonnes of tailings.

A geotechnical site investigation of the selected TSF footprints was undertaken comprising 70 test pits. Typical soils encountered include a 0.5 m thick topsoil layer below which a 1 m thick transported horizon occurs in the form of a stiff, clayey sand. This is underlain by a thin gravel horizon separating it from the soils below, which have weathered in-situ from gneiss. These are typically clayey sands, occasionally silt or clayey silt, and extend to the bottom of the test pits. In the low-lying marsh areas, the soils encountered comprise clays and sand clay mixtures of alluvial origin and are underlain by residual gneiss.

The TSF at Lola comprises:

- Two separate, but adjacent unlined, full containment valley tailings dams;
- Associated tailings dam infrastructure includes slurry delivery and distribution pipelines, catchment paddocks, toe drain system, curtain drain system, solution trench, collection sumps and manholes, seepage cut-off trench, storm water diversion trenches, emergency spillways and access roads;
- In-pit deposition of the North Pit #2 consisting of a 3m high perimeter embankment wall, a slurry delivery/distribution pipeline, and an emergency spillway; and,
- Floating barges to decant supernatant tailings slurry water and storm water from the various facilities back to the plant or discharged, post settlement of the suspended solids, via settlement ponds.

The two adjacent full containment tailings dams (referred to as TSF 1 and 2) as well as the perimeter embankment wall surrounding North Pit #2 are to be constructed in phases over the LoM as initial and ongoing sustained CAPEX.

Figure 27 displays the general layout of TSF 1, TSF 2 and North Pit 2 within the mining site.

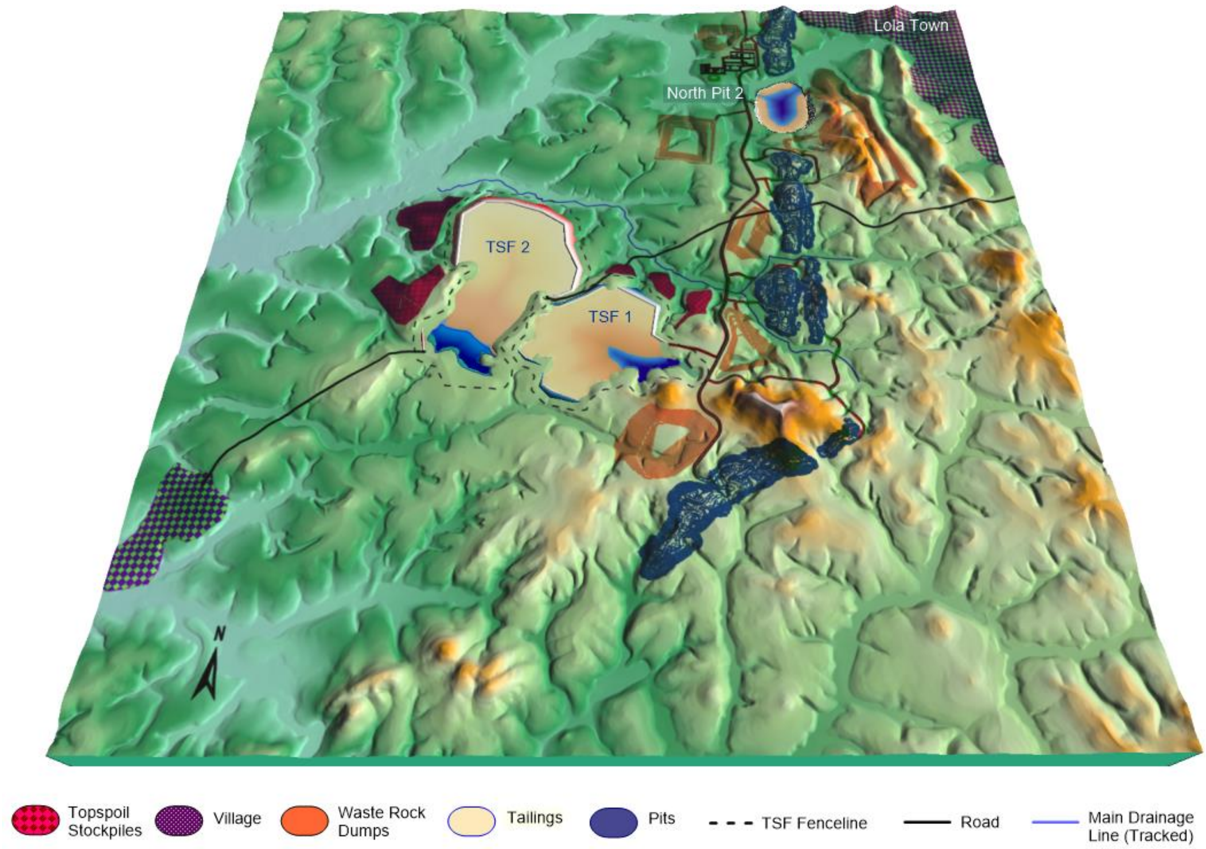

Figure 27: General Arrangement of the Lola Mine Site (DRA 2023)

Figure 28 shows a close up with 1:100-year flood lines and the covered Balemou Road.

The preliminary high-level classification and zone of influence of the TSFs' have been carried out in accordance with the CDA Dam Safety Guidelines and the South African National Standard 0286:1998 Code of Practice for Mine Residues. Various failure scenarios were considered to determine the overall zone of influence delineation, achieved by the overlapping of the various breach scenarios. The zone of influence extent falls short of the mining pits and waste rock dumps and does not include any villages.

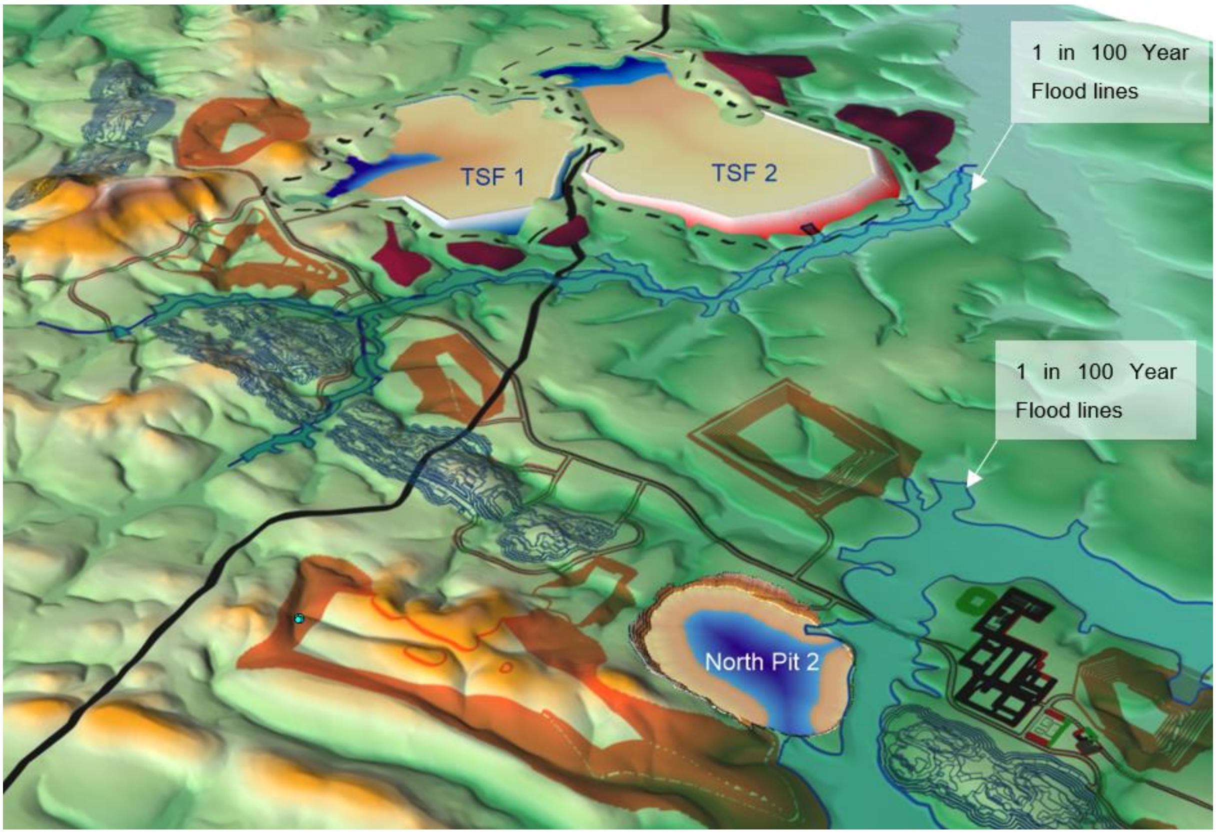

Figure 28: General Arrangement of the Lola Tailing layout (DRA 2023)

Based on the assessment criteria outlined in the guidelines, the TSFs are considered to be High Hazard Facilities, due to their potential impact at failure on adjacent public road infrastructure and the surrounding environment.

Seepage and slope stability analysis were conducted on the TSFs using the material parameters determined from the geotechnical investigation of the in-situ materials and the soft Saprolite tailings. It is assumed that the Fresh Rock tailings have similar geotechnical characteristics to that of the soft Saprolite tailings. The slope stability factors meet, or are greater than, the prescribed values under normal, upset and seismic conditions, namely 1.5, 1.3 and 1.0, respectively.

A TSF deterministic monthly water balance has been developed in EXCEL, based on average normal year monthly, wettest year monthly, driest year monthly rainfall and evaporation figures, and simulates the flow of water between the various TSFs and plant over the LoM. The outcomes of the balance indicate that the TSF water balance is a water positive balance resulting in the need to treat (suspended solids) and discharge water into the downstream environment anywhere between 2 months and 8 months of the year.

18.2 Active Anode BMP

The supporting infrastructure required for the BMP includes electricity, water, natural gas, access roads, stormwater, industrial effluent removal, waste management, and communication/internet connectivity. As a stand-alone chemical facility, the BMP is designed to be situated within a prime industrial park, benefiting from ready-to-use development plots and cost-effective options for additional services, customized to meet the project's specific needs. The necessary infrastructure to be established, not normally provided as part of industrial utilities, are vehicle (motor and truck) parking bays, internal roads, stepdown transformers from bulk power supply, power distribution, water distribution, water purification, compressed air, steam generation, effluent treatment, as well as specific HF handling and storage systems.

Under the management of Tanger Med Utilities, the industrial park will provide management solutions, including shared infrastructure and environmental services, alongside energy provision. These shared resources have significantly reduce the initial CAPEX required for the BMP, making it a cost-effective solution for the project’s infrastructure needs.

The industrial park already has infrastructure, such as internet connectivity, ample parking for cars and trucks, access and internal road networks, a dedicated substation for power supply, and facilities for electricity distribution and communications. In addition, water distribution, purification systems, wastewater treatment, stormwater management, and effluent treatment services are already in place, ensuring the BMP has access to first-class industrial utilities. Industrial gas and steam requirements can be fulfilled through partnerships with local gas distributors, a solution already implemented by existing factories in the area. The site will also benefit from direct road connections to Tanger Med

Port, proximity to urban nodes, and rail and air transport infrastructure, ensuring robust logistics and supply chain management.

Figure 29 below illustrates the size of the various industrial parks in the Tanger zone.

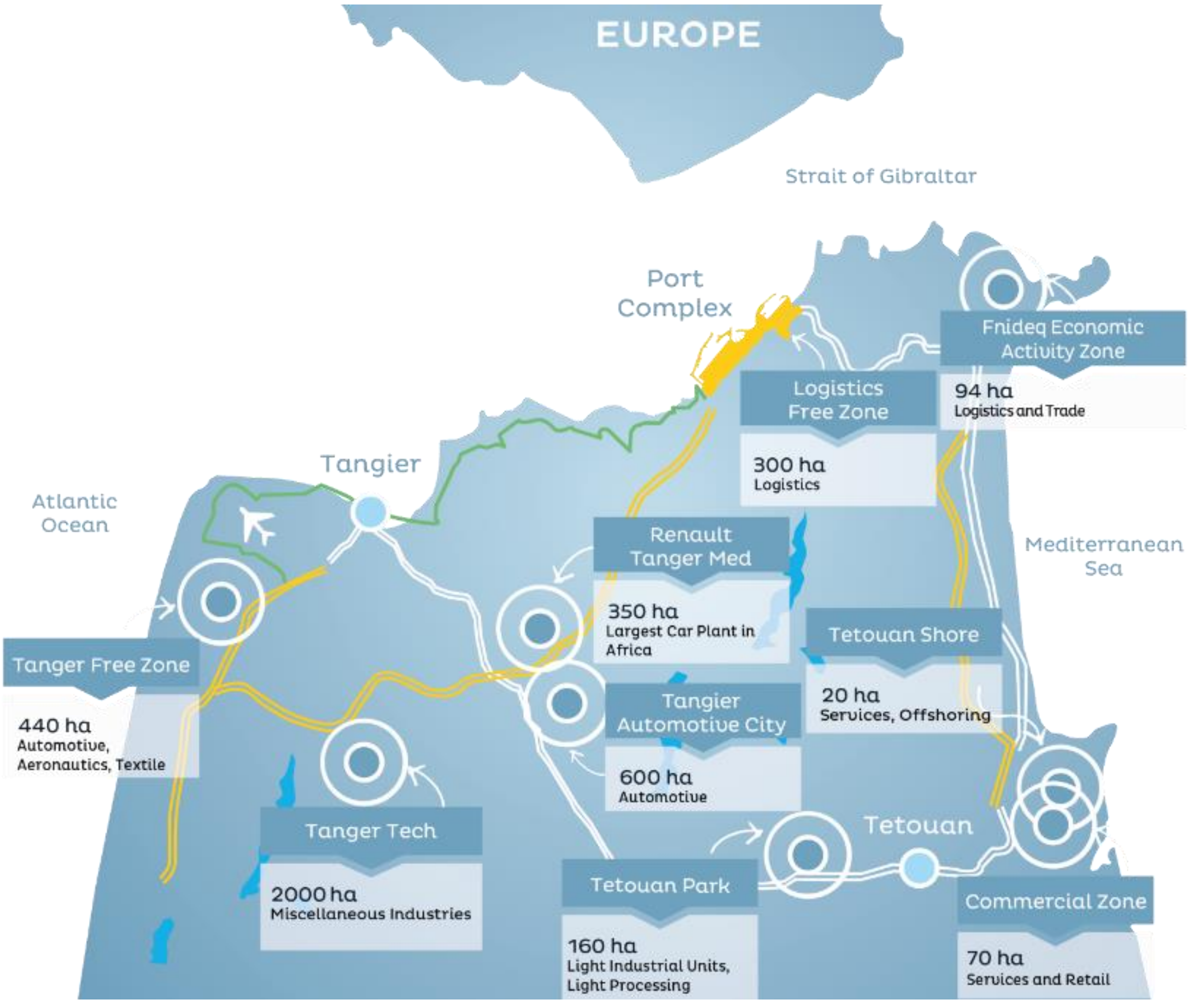

Figure 29: Illustration of industrial zones in the Tanger region

Tanger Med Port provides connectivity on a global scale, offering regular connections to over 180 ports in 70 countries across five continents through numerous shipping companies. For instance, shipping routes from Tanger Med Port reach Northern Europe in approximately three days, the Americas in about ten days, and China in around twenty days, ensuring access to global markets.

Figure 30 below shows the expected transit time and other international ports located over the globe.

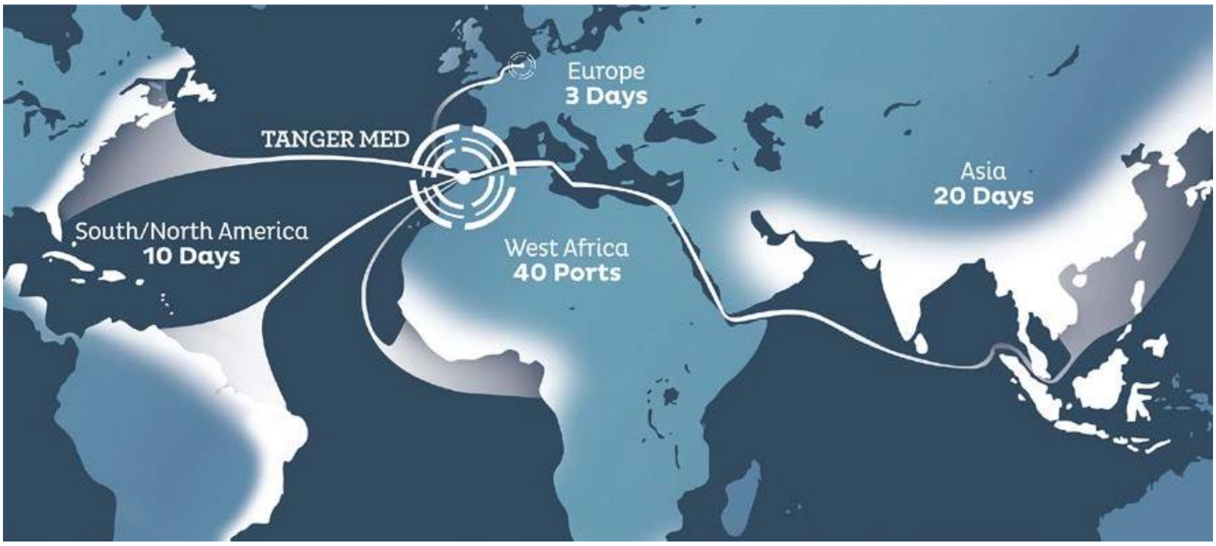

Figure 30: Transit time between Morocco and other global ports

Tanger Med Port is a strong African shipping hub that maintains weekly connections with nearly 40 ports across 22 African countries. The Passenger and Ro-Ro Port also offers a significant maritime link between Europe and Africa, providing a ferry service that crosses the Strait of Gibraltar in less than 45 minutes.

According to a 2020 Morocco infrastructure Review by the World Bank, Morocco's infrastructure has improved substantially over the last twenty years, and rates of access to most services are high. The country has invested heavily in all economic infrastructure sectors, i.e. transport (roads, rail lines, airports, and ports), water (including sanitation and irrigation), information and communication technology ICT, and electricity. The stock and quality of infrastructure compares favorably to other similar lower-middle-income countries. For instance:

- Morocco is ahead of its peers in paved road density. It has one of the most developed highway networks in Africa;

- Morocco has world class ports. The Tanger Med Port is a major international port hub and a global gateway. The Port of Tangier is the largest maritime transit hub in the Mediterranean Sea and on the African continent;
- The airport sector has witnessed massive growth in demand in the past few years, spurred by the signing of the Open Skies Agreement with the European Union in 2006;
- Morocco has one of the best railway networks in Africa. In the 2017-18 Global Competitiveness Index, Morocco was ranked 38th out of 138 countries for the quality of its railroad infrastructure. It is the first African country to build a high-speed rail line, connecting Tangier and Casablanca over a 350 km. This line free-up the existing line to carry more freight to Tanger Med Port;
- Morocco is on course to maximizing the use of domestic renewable energy resources. The country has more than 3,500 MW of renewable energy projects in operation;
- Electricity access increased from 18 % in 1995 to 99.6 % in 2018. Although the National Office of Electricity and Drinking Water in Morocco continues to experience network losses, it has significantly improved the duration of power cuts;
- Morocco has invested in resource mobilization (dams, transfers), based on extensive planning by watershed. The country has developed dam storage capacity of 18.6 billion m^3. It has also set up inter-basin transfers to secure water resources for strategic consumption in Casablanca and Marrakech.; and,
- Morocco compares favorably to some of its peers in Africa and Asia on the Global System for Mobile Communications connectivity index. Maroc Telecom’s financial health can be characterized as robust.

19 Market Studies and Contracts

The Market Assessment has been generated based on a "Graphite Lenders Market Report" for Falcon Energy by BMI dated 30 November 2022, as well as current supplier cost insights, price benchmarking, interactions with other key graphite role players, and public domain information on graphite markets and price projections.

Feedstock for the battery industry prioritizes fine mesh size due to the spheroidization process, which results in higher losses in changing the particle shape in larger size fractions than the finer ones.

SG is typically produced from the fine flake size. Flake sizes larger than 100 mesh are normally not used for battery applications, resulting from process inefficiencies and the increased cost of larger flake material due to their higher prevailing prices. However, as battery demand continues to grow, it is envisioned that the larger flake sizes will increasingly be processed for use in the battery supply chain.

NFG concentrate is typically shipped with a minimum carbon grade of 94 wt.- % and 95 wt.- %, which requires upgrading via multiple purification methods into the high purity (≥99.95 wt.- %) battery grade anode material.

Graphite is the choice for around 90 % of all LIB anode materials. Robust growth in the battery sector will require new projects to come online.

19.1 NFG Market Assessment

19.1.1 Market Drivers and Trends

19.1.1.1 Traditional Industries

The large-scale adoption of renewable battery technologies has driven a sharp rise in demand for NFG, essential for the negative anode electrode, marking a critical shift in demand across multiple sectors and escalating the need for high-value SPG. In 2022, the battery industry's consumption of NFG accounted for 43 % of total demand (Figure 31), a significant increase from just 12 % in 2015. Projections indicate that this growth will continue, with the battery sector expected to represent 80 % of total NFG demand by 2032, positioning it as the primary driver of market expansion.

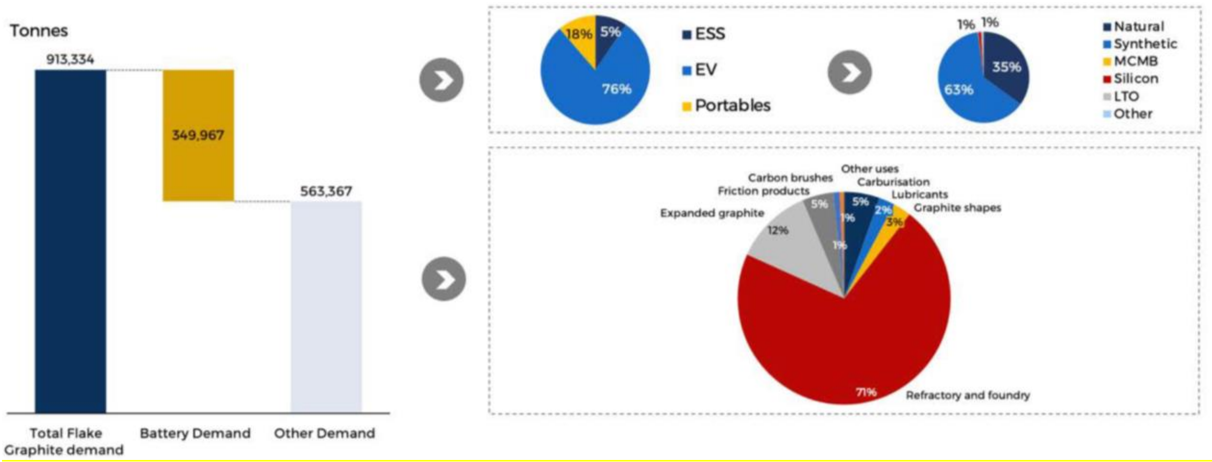

Figure 31: NFG demand breakdown, 2022 (Benchmark, 2022)

In absolute terms, each conventional market segment is projected to expand through 2032, with an average compound annual growth rate (CAGR) of 2.8 %. However, the primary force behind overall market growth remains the battery industry, which is anticipated to surge to 80 % of total demand by 2032 (Figure 32).

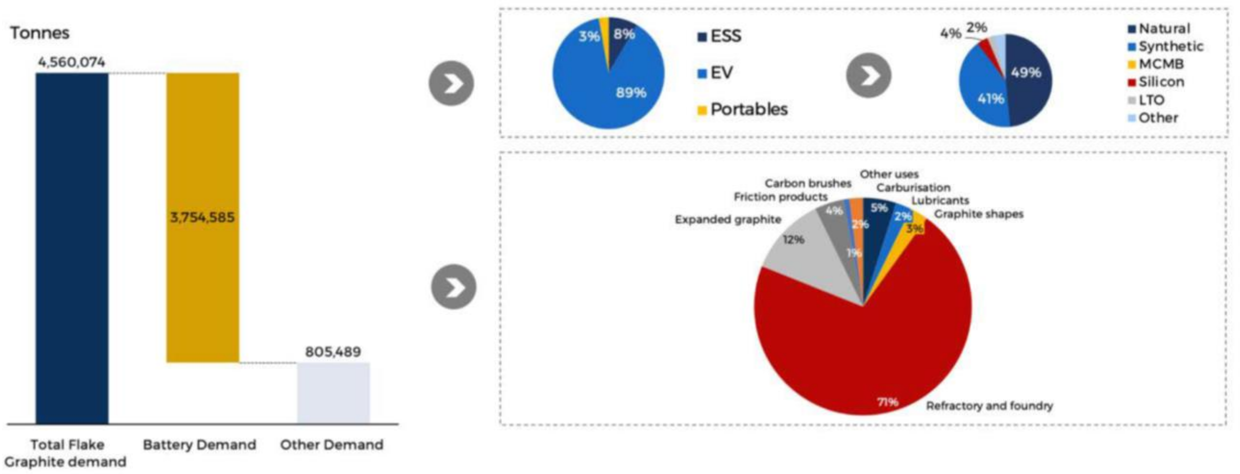

Figure 32: NFG demand breakdown, 2032 (Benchmark, 2022)

Figure 33 illustrates the projected impact of emerging battery market trends on NFG demand dynamics. Demand parity between battery applications and traditional industries is anticipated by 2023. Thereafter, NFG demand is forecast to accelerate with a CAGR of 16 % through 2040, reaching a high-tech industry total of 8.17 million tonnes.

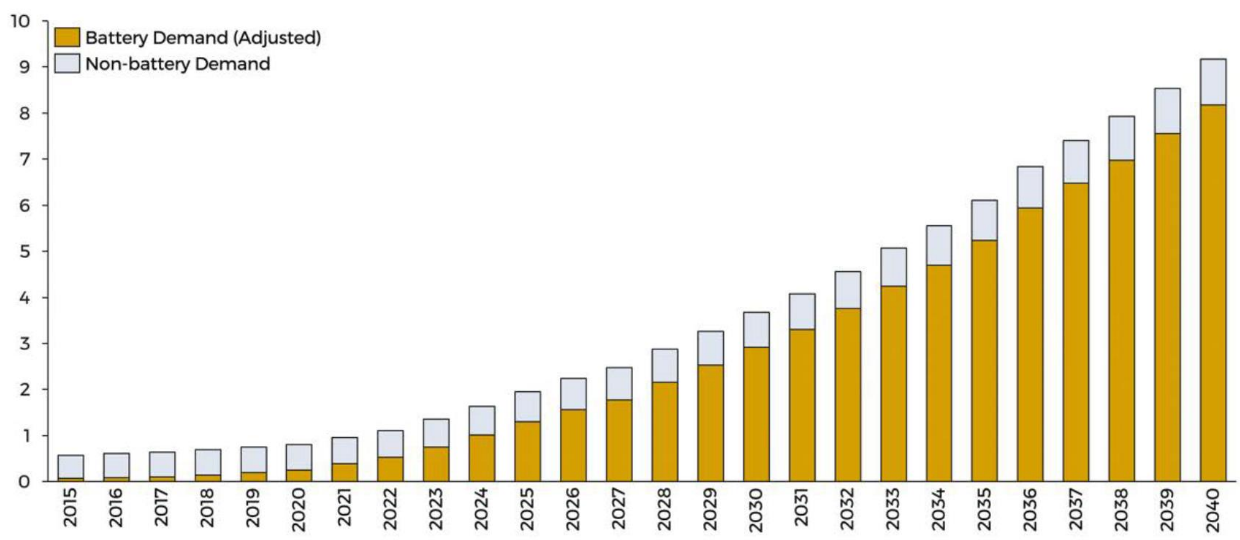

Figure 33: NFG Demand in million tonnes (Benchmark, 2022)

19.1.1.2 Anode Technology

Renewable battery technology relies on the flow of lithium ions between the cathode (positive electrode) and the anode (negative electrode) during the charge and discharge cycle.

The dominant form of lithium-ion technology combines a cathode made from lithium multi-metal oxides (e.g., lithium, nickel, and cobalt) and a mainly carbon-based anode.

Graphite is the favored form for current commercial anode compositions due to its excellent conducting properties for electricity, relatively high theoretical capacity, stability over a broad operating temperature range, abundance, and cost profile.

NFG and synthetic graphite are traditionally used in a blend within the anode because each has inherent benefits. This is forecast to continue. Synthetic graphite is usually a more consistent battery-purity product while NFG anode material has a higher energy density and generally is cheaper.

While the anode represents the greatest portion by mass, its contribution to the battery's cost is relatively modest, compared to the cathode.

The performance of NFG can be sufficiently enhanced via supplementary coating to match the commercial performance of synthetic graphite, offering improved performance with equivalent cost addition.

19.1.1.3 Anode Demand

NFG and synthetic graphite are traditionally used in a blend within the anode because each has inherent benefits. In 2024, synthetic materials represent 60 % of the anode material market share compared to NFG's 40 % share. NFG is forecast to become the dominant anode material, growing market share to 50 % by 2030.

The principal trends influencing the relative increase of NFG in anode materials are driven by:

- Rising synthetic feedstock prices;
- Elevated carbon emissions linked to the manufacturing of synthetic graphite;
- The broad global distribution of NFG resources offers the potential for a diversified supply chain, away from China;
- Technological improvements will create a more consistent NFG product. Also, coating technology will provide enhanced NFG performance; and,
- NFG supply is potentially more elastic that synthetic graphite.

19.1.2 Global NFG supply

Exploring the supply response for NFG, the global industry is forecast to grow at 12 % CAGR from current levels of 1.17 million tonnes to 3.73 million tonnes by 2032.

The majority of current NFG production comes from the fine (-100 mesh) flake size, representing approximately 50 % of global output. This is forecast to maintain until 2040.

NFG supply will be dominated by the -100 mesh size due to the demand from LIB. However, the larger flake sizes will have to be directed into this market to meet demand.

Exploring the distribution of supply on a global basis, the market is characterized by Chinese dominance, responsible for almost two-thirds of production. However, domestic Chinese extraction is typically represented by low-grade material (therefore high cost), with slowly falling resource quality. This will limit long-term potential of regional supply.

With the introduction of additional ex-China greenfield production, the market share of China is forecast to fall to 37 % by the end of the decade.

The majority of new supply is forecast to originate from Africa, with total supply rising by a factor of 7x from the current output of 247 kt/a to 1.67 million tonnes/a by 2030. This will be driven principally from the east-African deposits originating from Mozambique, Tanzania, and Madagascar.

Despite China representing a major hub for NFG consumption, domestic supply is forecast to fall 43 % short of the necessary demand level defined by the battery industry and traditional industries by 2035. This continues to place regional reliance on import volumes of global concentrate production, which has represented the standard business model since 2019.

19.1.3 Pricing outlook – NFG

Accelerating LIB demand and subdued traditional industry growth will generate evolving market dynamics that will strongly influence NFG pricing.

Presented below is BMI's near-term, medium-term, and long-term price forecast based on their price research (short-term), detailed modelling applying risk assessment metrics (medium-term) and price to sustain global supply growth, applying an 30 % Internal Rate of Return ("IRR") hurdle for a 'Typical' greenfield project (long-term).

19.1.3.1 Medium-term pricing

Moving into 2024 and beyond, the flake industry is forecast to remain under tight conditions. BMI expects negative balances of 36 kt and 19 kt in 2023 and 2024, respectively. This will support the pricing environment.

19.1.3.2 Long-term pricing

Long-term market dynamics will narrow the spread across the mesh sizes, with convergence from current levels. The +50 mesh is forecast to remain slightly elevated in the long-term, as the +80 and +100 mesh sizes will primarily be directed towards the battery market. The +50 mesh will hold its premium.

Figure 34 presents future price forecast that highlights a tightening of the basket price spread over the medium to long-term.

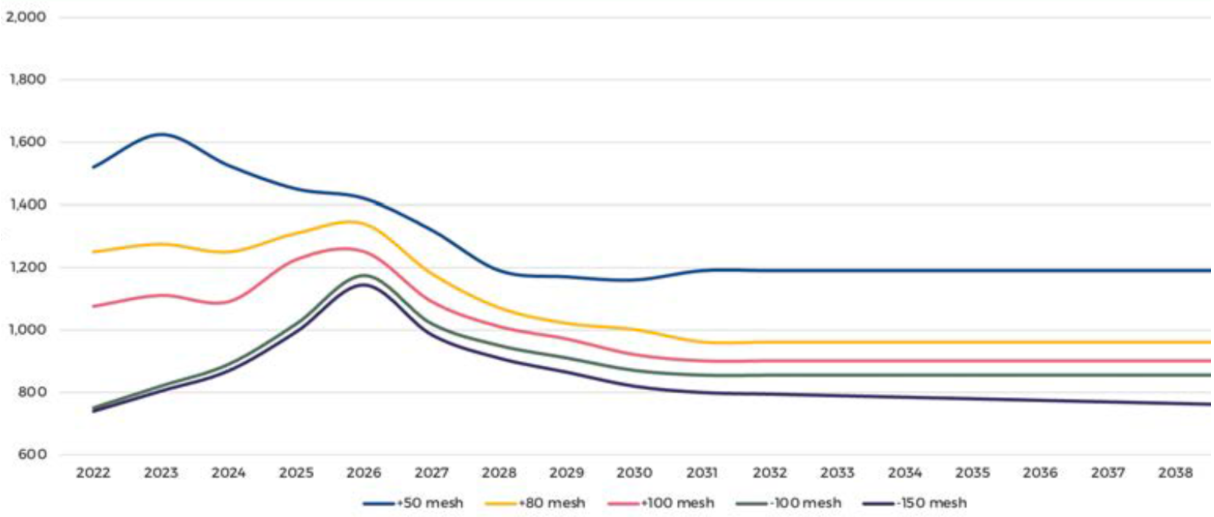

Figure 34: China FOF 94 to 95 % flake price (Benchmark, 2022)

19.1.3.3 NFG Global Cost Curves

Manufacturing NFG presents a broad range of OPEX, scaling from USD 251/t to USD 1,345/t, while the mean global OPEX is USD 615/t in 2022.

African resources are the lowest NFG cost source with average total production costs of USD 393/t due to reduced mining, labor, and logistics drivers. Chinese manufacturing dominates the cost curve, with an average total production cost of USD 657/t.

The average African greenfield OPEX has risen to USD 575/t. The total OPEX of the Lola Project, as determined during the April 2023 Feasibility Study, equates to USD 547.90/t NFG concentrate. This compares well with other African greenfield projects.

Chapter 19.1.3 does not present BMI's price forecast for NFG sales from the Lola Project since revenue from the BMP will be derived from the sale of CSPG product and the SG fines by-product.

The NFG concentrate purchase price of USD 754/t is a transfer price between the Lola Project and the BMP, consisting of:

- A sales price for fines flake (-100 mesh) only; and,
- NFG concentrate sales price of USD 586/t, based on the July 15, 2024, spot price (from ICC -195), plus FOB China USD168/t all-inclusive freight rate.

To note is that the pit shell was developed using a weighted basket price of USD1,389/t concentrate that includes fine and course NFG.

19.1.4 Transport of graphite

Shipping protocols for NFG concentrate and SPG differ from those of cathode active materials due to their inert properties, which significantly reduce handling risks. Unlike cathode chemicals, which exhibit hygroscopic behavior and reactivity with carbon dioxide thereby limiting their shelf life to three to six months. NFG, SG, and anode materials remain stable for extended periods, often allowing storage for two to three years. Consequently, handling and shipment preparation for NFG involve minimal health and safety concerns.

The primary consideration in transporting NFG focuses on moisture content, which is often audited upon arrival at the port. Defined maximum moisture thresholds aim to minimize additional drying requirements prior to mechanical shaping. To control moisture exposure, NFG is securely packed in containers, while bulk bags offer the flexibility for transport via container or break bulk, ensuring safe transit and material integrity.

19.2 Spherical graphite market assessment

19.2.1 Introduction

Dependence on global NFG feedstock introduces considerable variability in processing methods to attain anode-ready SPG, as purification techniques differ widely to meet stringent battery-grade specifications. Analyzing the cost structure for CSPG reveals that the coating phase and raw material inputs exert the most significant cost implications. Adjustments to NFG pricing factor in the inherent material losses during the spheroidization process, while substantial energy demands, and the cost of pitch coke feedstock further elevate manufacturing expenses.

The high variability in NFG feedstock costs underscores a compelling case for vertically integrated SPG production, enabling processes to mitigate expenses. Figure 35 provides an average cash cost breakdown for each critical phase in the conversion of NFG concentrate to battery-grade anode material.

19.2.2 Natural Graphite Anode Demand

The primary driver for future NFG demand, projected to account for 80 % of total demand by 2032, is the LIB market. This sector is set to generate substantial and sustained demand for high-value SPG, with forecasted growth multiplying 3.7 times to reach 2.78 million tonnes per annum by 2032, thereby sharply escalating SPG requirements.

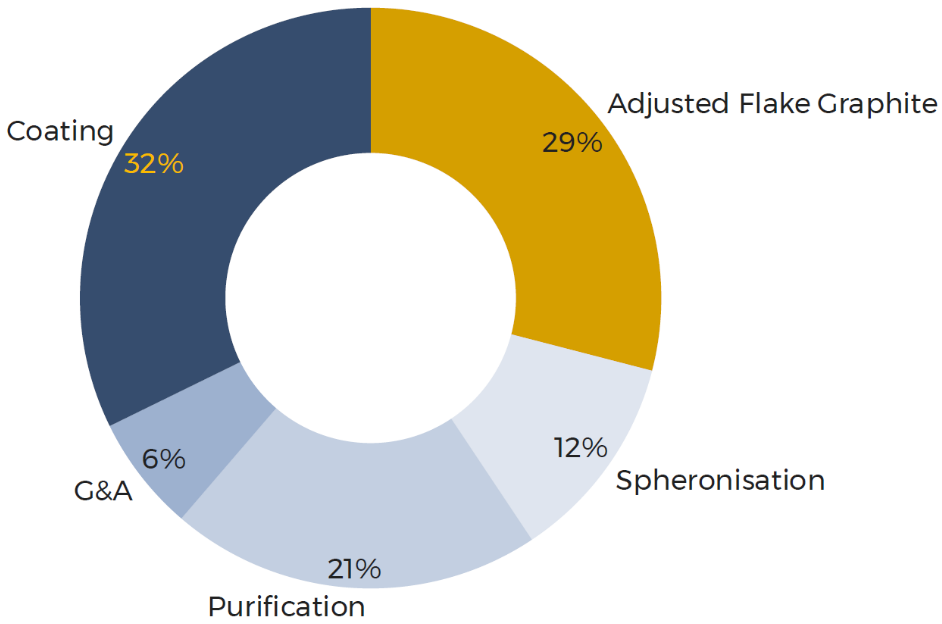

Figure 35: Average cash cost breakdown (Benchmark, 2022)

The usage intensity of SPG derived from NFG in blended anode materials is projected to rise across all segments. In the primary markets—electric vehicles, energy storage systems, and portable battery segments—average SPG consumption is anticipated to increase by approximately 50 %, establishing it as a key component in all anode material blends. *Figure 36* illustrates the substantial volume of SPG the global industry will require to meet market expectations. Over the coming decade alone, SPG consumption for the battery industry is forecast to surge 6.6 times, reaching 1.74 million tonnes per annum by 2032.

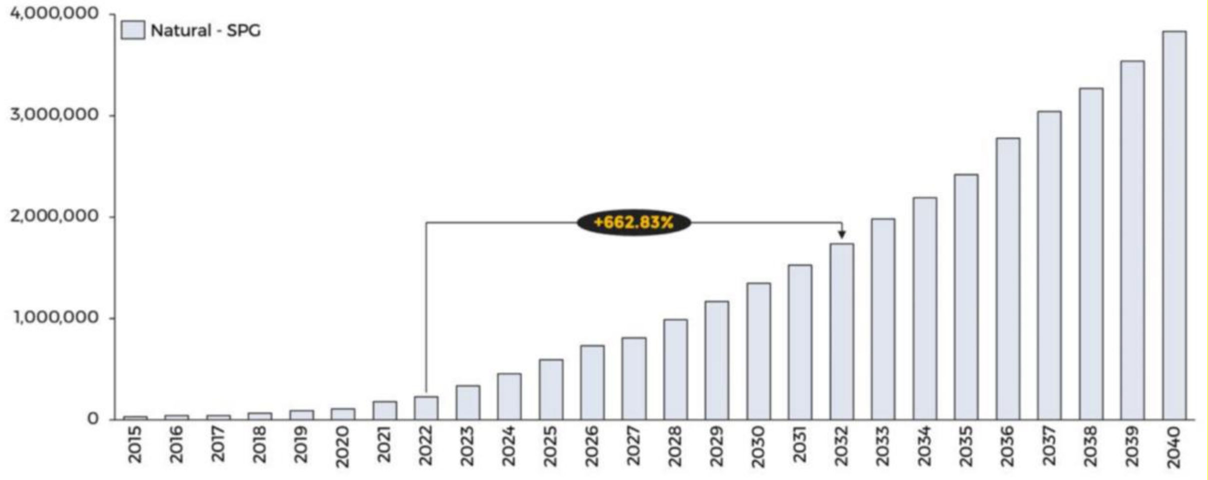

Figure 36: Anode material demand for SPG (Benchmark, 2022)

Global demand for active anode materials is concentrated within Asian consumer markets. Beyond Asia, downstream demand from Europe and North America is also projected to require substantial volumes of anode materials to meet regional market needs.

19.2.3 Spherical graphite supply

19.2.3.1 Global SPG supply

To sustain the swelling global demand for natural SPG, both operating and greenfield facilities are expanding production. Operating production is expected to grow at 45 % from 2022 levels to 428 kt/a by 2032 and represent 47 % total supply. The industry is therefore highly reliant on the additional 53 % from greenfield projects, forecast to massively grow by almost 14x factor to 487 kt/a over the same period.

The potential for greenfield production is greater than currently forecast via BMI’s methodology, which considers risk factors for new global supply. The probability of reaching full commercial volumes is improved as projects de-risk and move towards production.

Figure 37 presents SPG supply response from higher-risk greenfield projects.

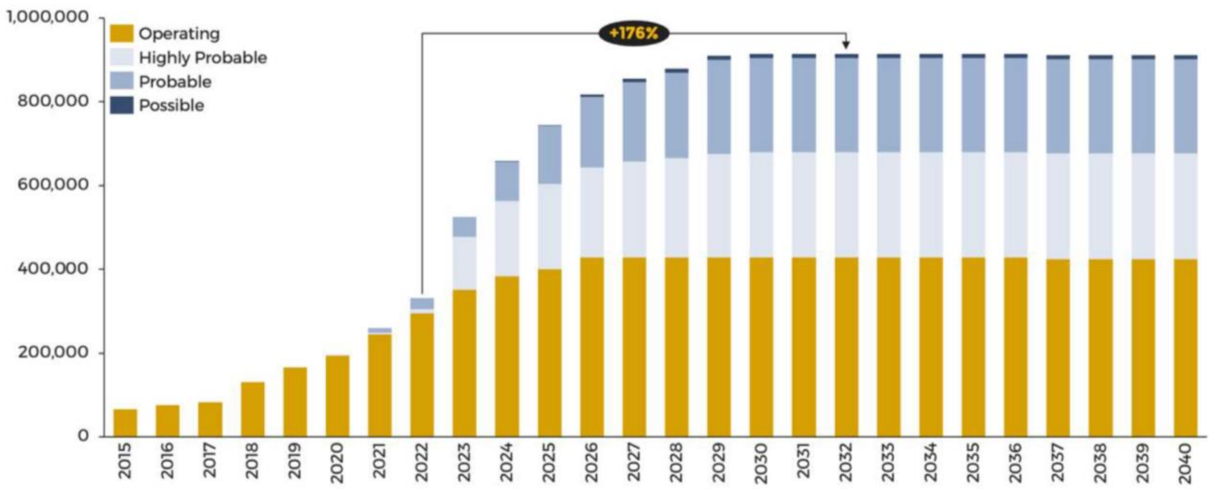

Figure 37: Global SPG supply response (Benchmark, 2022)

Analyzing the regional supply potential, current manufacturing capacity is all located in China, responsible for 100 % SPG processing for the anode market. The role of China will remain globally significant. However, while growing in absolute supply by 112 % to just over 700 kt/a, their relative market share will fall to 77 % by 2032.

The potential of ex-Chinese SPG supply remains currently still highly concentrated, with only nine announced greenfield projects. There is a broad spectrum of target capacities, developed in a phased strategy, while the average production site will target around 24 kt/a SPG by 2035.

Supplementing Chinese capacity, the most significant growth will originate from greenfield assets in the United States, Norway, and Australia. While the most influential growth for NFG concentrate is forecast to expand from the African continent.

However, there is currently no SPG manufacturing planned for the region. Syrah Resources is developing a SPG plant in Louisiana to process NFG from their operation in Mozambique.

Unlike the Chinese business model, these operations are vertically integrated with internal security of NFG feedstock. As such this structure will favor cost-optimized production due to internal raw material, which will support some competitive manufacturing vs. the scaled Chinese output.

19.2.3.2 SPG anode balance

Analyzing the global relationship between total NFG anode supply and demand, near-term excessive production volumes will sustain a net positive balance until 2025. Thereafter, the market transitions to a sustained structural deficit due to the accelerating LIB demand.

Inherently, the shortfall of NFG anodes at the close of the decade, rising to 455 kt by 2030, is the consequence of NFG concentrate supply constraints at the mine site as highlighted in Figure 38. To remedy the deficit, sustained capital investment is required.

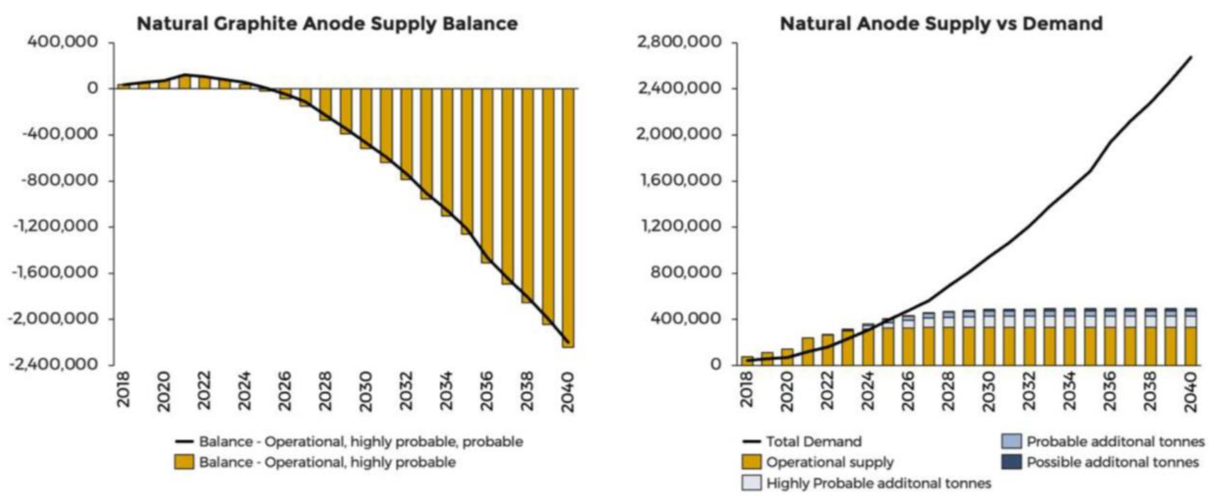

Figure 38: Global balance of NFG anode (Benchmark, 2022)

19.2.3.3 BMP price forecasting

Consensus CSPG sales price forecasts in Table 49 are based on independent market intelligence, including available statistics, supplier cost insights, price benchmarking and interactions with other key graphite role players.

Pricing of the BMP products are based on the average forecast graphite prices in USD over the project life for the most common battery grade anode material and SG fines (≤9 µm, ~95 wt.- % FC) by-product. During the 2-year qualification period, the majority of SPG produced will be sold as uncoated SPG.

The Full Production Basket Price is based on sales after year 2 when all SPG will be coated and sold as CSPG (thus no uncoated SPG sales) plus sale of SG fines.

Table 49: Consensus CSPG graphite price forecast

Description Price	**Price [USD/t]**
SG (fines) by-product	500
CSPG	9,000
Full Production Basket Price	**5,550**
Uncoated SPG (first 2-years)	5,000

19.3 Contracts

19.3.1 Industry Contract Terms for Anode Material

Suppliers targeting battery-grade purity and active anode materials face contractual responsibilities due to the specifications and quality controls required for specialty chemicals. Compliance with these specifications is important, as battery manufacturers demand consistent quality across multiple production batches.

The qualification timelines for new refined battery materials range from 6 months to 18 months, depending on how well the material integrates with existing production processes and the level of coordination with downstream partners. This extended qualification period shows the complexity of battery systems and the non-fungible nature of anode materials, which must meet particular criteria for performance and safety.

Given the requirements and the time required for qualification, commercial contracts for active anode materials usually span three to five years. However, due to tight market conditions and anticipated long-term supply deficits, many contracts are being extended to five years, providing suppliers with a more stable, long-term commitment and ensuring secure supply chains for battery manufacturers.

19.3.2 BMP Contracts

Given that the BMP is still in the preliminary assessment stage and the final location has yet to be determined, it is not unusual that no contracts related to the project's development, production, or marketing and sales have been finalized or are currently under negotiation. This absence of contracts extends to development, acquisition, service provision, operations, maintenance, transport, handling, sales, hedging, and forward sales agreements.

Since the BMP functions similarly to a chemical processing plant, the contracts necessary for its development and production can be negotiated during the later stages of the project’s development timeline. This flexibility provides time to secure these agreements, presenting a low-risk scenario for contract finalization as the project progresses toward construction and operation.

20 Environmental Studies, Permitting, and Social Impact

20.1 Lola Project

Section 20.1 has been summarized from the 2023 DRA Technical Report. The full summary of the ESIA on the Lola Project is presented in a report entitled "Étude d'impact environnemental et social Projet de Graphite Lola" by EEM Environmental & Social Impact Ltd., issued on February 8, 2019, which has been reproduced from the 2023 DRA Technical Report and is presented in Appendix 1, Section 29, of the Technical Report.

20.1.1 Licensing Status

Regulations applicable to impact assessments in Guinea are set out in the Code for the Protection and Development of the Environment (Ordinance No. 045/PRG/87 of May 28, 1987, as amended by Ordinance No. 022/PRG/89 of March 10, 1989, on the Code of Protection and Enhancement of the Environment), also known as the Environment Code.

The Environment Code establishes fundamental legal principles to ensure the protection of environmental resources and the human environment. Article 82 of Title V of the Environment Code requires proponents of projects likely to have a significant impact on the environment to carry out an environmental impact assessment and submit it to the Minister Delegate for Environment, Water and Forests before beginning the project. This assessment must enable the Minister Delegate to assess the project's direct and indirect impacts on the ecological balance of Guinea's environment, on the quality of life of residents and on the protection of the environment.

Presidential Decree D/2014/014/PRG/SGG covers the adoption of a directive to perform an ESIA of mining operations. The directive is intended for companies, organizations and individuals who hold or wish to obtain mineral and quarry titles. It informs the proponent of the nature and scope of the environmental impact assessment and defines the principles for conducting ESIAs of mining projects up until the minister responsible for the environment grants the necessary environmental authorization.

This directive, intended to be a reference document for all mining projects, is organized into four main parts: types of mining operations, general criteria for the ESIA of mining projects, and the procedure for and content of ESIA of mining projects.

The integration of sustainable development objectives and the consideration of community concerns, from the outset to the end of the project, are presented as a goal to be achieved for responsible mining.

The two main required licenses for a mining permit in Guinea are: "Certificate of environmental conformity" and the "mining permit".

- Falcon Energy obtained its environmental certificate from the Bureau guinéen d'étude et d'évolution environnementale in March 2019; and,
- Falcon Energy obtained the mining license in 2019 and is currently working with local authorities to complete the mining convention.

Section 29 presents the stakeholder consultations, landscape, soil and water resource study, the various impact studies pertaining to air, noise, biological, social and other, water management, closure and reclamation, and the ESMP, that form part of the ESIA.

20.2 Active Anode BMP

Morocco, with the enactment of the law on impact studies, has set itself the task to ensure the preservation of water resources and the environment. The law requires that all projects that are likely to generate negative impacts need to perform an ESIA. The adoption of this law is also part of a wide, and variety of national legal and regulatory areas, grouping a multitude of sectoral laws.

TME has been engaged by Falcon Energy to perform the ESIA on the BMP. The final location of the BMP has not been finalized. However, it is currently foreseen that the BMP will be located within an industrial zone in the city of Tangier i.e. either Automotive City or Tanger Tech. The ESIA will ensure the BMP complies with Moroccan environmental regulations and assess its potential impacts on the physical, biological, and socio-economic environments. The ESIA will analyze the various phases of the Project, focusing on air, soil, and water pollution, as well as impacts on biodiversity and social.

The BMP is economically viable and is expected to generate positive outcomes, particularly regarding local employment. However, efforts are required to manage environmental risks and ensure compliance with Moroccan law to minimize any negative effects on local communities and ecosystems. The following Sections outline the ESIA processes necessary to obtain approval to construct and operate the proposed BMP in Morocco, addressing potential environmental and social impacts, and propose suitable mitigation measures to safeguard the community and the environment.

20.3 Environmental Acceptability

The authorization of the BMP is contingent on a decision regarding environmental acceptability, which is granted following a review of the ESIA by the Unified Regional Investment Commission of the Tangier–Tetouan–Al Hoceima region. A positive decision allows the provision of an environmental acceptability certificate. This certificate is granted upon submitting and approving of an Environmental Monitoring and Surveillance Program ("EMSP"), which ensures ongoing compliance with environmental regulations throughout the development and operational phases.

Figure 39 presents indicative times to obtain an ESIA in Morocco.

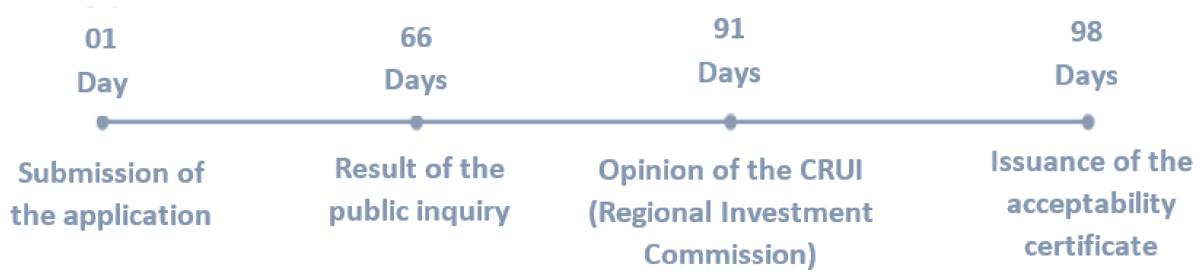

Figure 39: Indicative average completion time of an ESIA

20.3.1 ESIA Framework

The structure for performing of an ESIA is guided by the Moroccan regulatory framework on environmental and social management. This is governed by Moroccan Law No. 12-03 on Environmental Impact Studies. This las outlines the specific requirements for projects that may have environmental and social impacts. According to Article 2, any industrial project that, due to its nature or scale, could have significant negative ecological effects must undergo an ESIA. Given that the BMP falls under the category of industrial projects - chemical industries, metal processing, and infrastructure, it is therefore subject to this regulatory requirement.

20.3.2 The Management and Review Process of ESIA

The management procedures of an ESIA as required by Law No. 12-3 are:

- Assessing the requirement to perform and ESIA;
- Filing the notice of the proposed ESIA to the supervising ministry and the delegated Ministry for the Environment;
- Establish the terms of reference of the ESIA by the supervising ministry, in collaboration with the Developer;
- Filing of the ESIA by the Developer. This should include a description of the project and its proposed site, all environmental impacts,

compensation or mitigation measures, monitoring and supervising the project program; and,

- Public inquiry and submission to the secretariat of the ESIA committee a description outlining the main technical characteristics of the project, a summary of project, and the limits of the expected impact zone of the project.

A committee chaired by the supervising ministry responsible for the project is appointed for the public inquiry. After public consultation, the commission prepares a report summarizing the observations of the consultation and forwards it to the national or regional committee of ESIA.

20.3.3 Environmental Monitoring and Surveillance Program

The EMSP is a critical document that formulates the Developer's obligations toward environmental protection and ensures compliance with current regulations. The EMSP outlines the specific actions required to mitigate environmental and social impacts. It ensures that all project phases adheres to the required standards. By clearly defining these responsibilities, the EMSP provides a structured approach to reduce negative effects and maintain sustainable practices throughout the project's life.

20.3.4 Public Inquiry

Decree No. 2-04-564 of November 4, 2008, defines the importance of public inquiry procedure to be performed as part of an ESIA. Its primary goal is to inform and collect feedback from the local communities (population) regarding projects that may have a significant environmental or social impact. This procedure ensures transparency and provides a platform for the affected communities to raise their concerns, suggestions, or objections. By incorporating public input, the process promotes community engagement and ensures that local perspectives are considered before making a final decision.

20.3.5 Project Location

It is currently foreseen to locate the BMP within either Automotive City or Tanger Tech that are both industrial zones located in the city of Tangier.

Automotive City, primarily focused on the automotive industry, has modern infrastructure, strict regulatory frameworks, and access to Tanger Med Port, thereby facilitating efficient export operations. Additionally, Automotive City is recognized for its stringent management of industrial discharge and offers attractive tax incentives to foreign companies.

Tanger Tech has a strong presence in new technology and industrial sectors, alongside a commitment to environmental management.

Both industrial zones offer ideal settings for industrial operations, combining innovation, compliance with environmental standards, sufficient infrastructure focused on the needs of the automotive and technology sectors, offer significant incentives for foreign investment. Selecting Morocco as location for the BMP aligns with Falcon Energy’s strategic goal of situating the BMP in a country that benefits from free trade agreements with key European and North American markets and are located in close proximity to Guinea to facilitate the import of NFG from the Lola Project.

20.3.6 Legal Framework of the Project

The ESIA on the BMP will be perform in accordance with various regulations relating to the environmental and social framework that governs the ESIA process, including regulations relating to public inquiry and ecological aspects, not limited to:

- National Charter for the Environment and Sustainable Development;
- Organization and operation of the environmental police;
- Environmental impact studies and its implementing texts;
- Protecting and enhancing the environment;
- Regional investment centers and creating of regional investment commissions;
- Decentralized investment management;
- Responsibilities and operation of the national and regional environmental impact studies committees;
- Public inquiries on projects subject to environmental impact studies;
- Implementation of the application decrees of Law No. 12-03 on environmental impact studies;
- Fees for services provided by the administration related to the public inquiry for projects subject to ESIA;
- Public inquiry procedure for projects subject to ESIA;
- Environment and sustainable development;
- Air pollution control and its implementing texts;
- Water and its implementing texts;
- Management and disposal of solid waste and its implementing texts;
- Prohibiting manufacture, import, export, marketing, and use of plastic bags;

- Conservation and exploitation of forests;
- Protected areas; and,
- Concerning the defense and restoration of soils.

In addition to the regulatory framework relating to environmental protection, the ESIA Report will reference other relevant regulatory requirements, including urban planning, and other regulations applicable to the BMP. This is required to ensure full compliance with the legal requirements, providing a framework that addresses environmental, safety, and planning considerations.

20.4 Assessment of Potential Environmental Issues

20.4.1 Potential Impacts of the Project

Although some of the BMP's technical specifications are at the PEA stage only broadly defined, the preliminary ESIA performed by TME during the PEA has identified general environmental impacts based on potential activities associated with similar projects. The preliminary EIA applied a standardized methodology evaluating the intensity, extent, and duration of potential impacts on physical, biological, and socio-economic environments.

The key environmental impacts of the BMP as proposed during the preliminary EIA are as follows:

- Impact on water consumption: The water consumption for manufacturing activities and sanitary needs will be carefully assessed during the next phase detail ESIA. The BMP will source water through the potable water supply network managed by one of the industrial zones. Given the critical situation of water resources in Morocco, and per the King's speech during the Throne Day 2024 regarding responsible water management, particular attention will be paid to sustainable water consumption.

The need for careful wastewater management, particularly due to the use of acidic substances during purification, will require careful assessment during the next phase detail ESIA. It is likely that an effluent treatment system may be required to neutralize wastewater before discharge;

- Treatment of Wastewater and Chemicals: The BMP applies a multi-acid purification method. The purification and associated sections will be appropriately designed and maintained to prevent the release of hazardous substances to the environment. Liquid effluent discharges will be treated in accordance with Moroccan standards for wastewater and industrial discharge limits. Liquid effluent discharges will be treated in accordance with Moroccan standards for wastewater and industrial discharge limits;
- Solid Waste Management: The production process will produce graphite fines and other solid by-products. Improper storage or disposal of these materials could lead to soil contamination, endangering human health and affecting long-term biodiversity. Morocco enforces stringent regulations for handling hazardous waste, both liquid and solid. Solid waste discharge from the BMP will comply to these regulations. A detailed analysis of the discharge levels will be included as part of the next phase detail ESIA, comparing them to the limits set by Moroccan law per Decree No. 2-07-253 of 14 Rajab 1429 (July 18, 2008), which governs waste classification and defines hazardous wastes.

  Filtration residues and sludges will be generated by the purification processes. The ESIA will outline the need for safe handling, disposal, and potential recycling of these materials;
- Risks Related to the Coating Process: The final stage of producing CSPG product involves coating the materials with pitch. This process

releases volatile organic compounds ("VOCs") and other emissions. Prolonged exposure to these substances could degrade air quality and pose human health risks without proper filtration and emission control systems. To address and mitigate these concerns, a thorough ESIA will be performed. Release of VOCs and other air emissions will be done to ensure the design is compliant with Moroccan regulations.

Anticipated emissions from graphite purification and coating processes will require air quality monitoring and filtration systems to mitigate emission of VOCs;

- Social and Community Impacts: The BMP will have socio-economic and environmental impacts on the local community. While the BMP is expected to bring notable advantages, such as job creation and economic growth, it may also raise environmental and social concerns. To ensure the community benefits from the BMP and to minimize the risk of opposition, it will be important to implement effective communication strategies, impact management plans, and social responsibility initiatives. These should be implemented in collaboration with key stakeholders, including local authorities such as the municipality and provincial representatives, to foster positive engagement and address concerns proactively;
- Health and Safety: It will be vital to ensure implementation of comprehensive safety protocols, focusing on worker safety and security, and compliance with relevant regulations;
- Worker Safety: Operating in an industrial setting, especially when handling chemicals and operating heavy machinery, presents specific hazards. Proper safety measures, including protective equipment, training, and risk management, are critical to safeguard workers from potential accidents or exposure to harmful substances;

- Facility Safety: Ensure the safety and integrity of the infrastructure is important to prevent industrial accidents. This protects workers and mitigates risks to the surrounding environment and local communities;
- Compliance with Legislation: Adherence to national and appropriate international safety standards is necessary to ensure that the BMP operates legally and responsibly. Following applicable guidelines and regulations is key to maintaining a safe working environment and avoid legal or operational challenges;
- Compliance with Moroccan Standards: The BMP will be subject to Law No. 65-99, part of the Labor Code, which requires strict regulations regarding workplace safety to ensure the protection of all employees. The BMP must also comply with Law No. 12-03, which governs ESIA, ensuring that operations meets the necessary environmental safety and sustainability standards;
- International Regulations: The BMP needs to align with appropriate international standards, including those established by the International Labor Organization for occupational health and safety. The BMP will be required to implement safety management systems per ISO 45001, a globally recognized occupational health and safety management standard;
- Regular Audits and Inspections: To maintain high safety standards, the BMP will undergo regular audits, including external inspections, to verify that it adheres to relevant environmental and safety regulations;
- Corporate Social Responsibility: Beyond regulatory requirements, Falcon Energy may adopt corporate social responsibility initiatives, further committing to enhancing safety, sustainability, and transparency; and,

- Biodiversity: While specific flora and fauna impacts are not yet known, since the location of the BMP has not been finalised, the ESIA anticipates possible impacts to local habitats during construction and operation phases that will be assessed during the next phase detail ESIA.

Ensuring safety within the design and operation of the BMP is important to safeguard workers, facilities, and the environment. A comprehensive risk management system is required to address potential hazards associated with handling of chemicals and industrial processes. It is necessary to approach these by ensuring that all employees are adequately trained and that the BMP's infrastructure is designed with the highest safety standards. Operations must adhere to local and international regulations, including labor safety and environmental laws.

Regular audits and inspections will be essential, ensuring the BMP continues to operate in a manner that prioritizes safety and complies with the regulatory framework. Training programs will be updated regularly to reflect new safety protocols and regulatory changes.

20.5 Preliminary ESIA Overview

A preliminary ESIA has been conducted in preparation for the proposed BMP. Many critical specifics, such as the exact project location, land status, and technical details, have not been finalized to date. This preliminary ESIA performed by TME is intended to provide a broad framework for environmental considerations while adhering to Morocco’s regulatory requirements, particularly Law 12-03 and related decrees on ecological assessments. Figure 40 outlines the location of where the preliminary ESIA was performed.

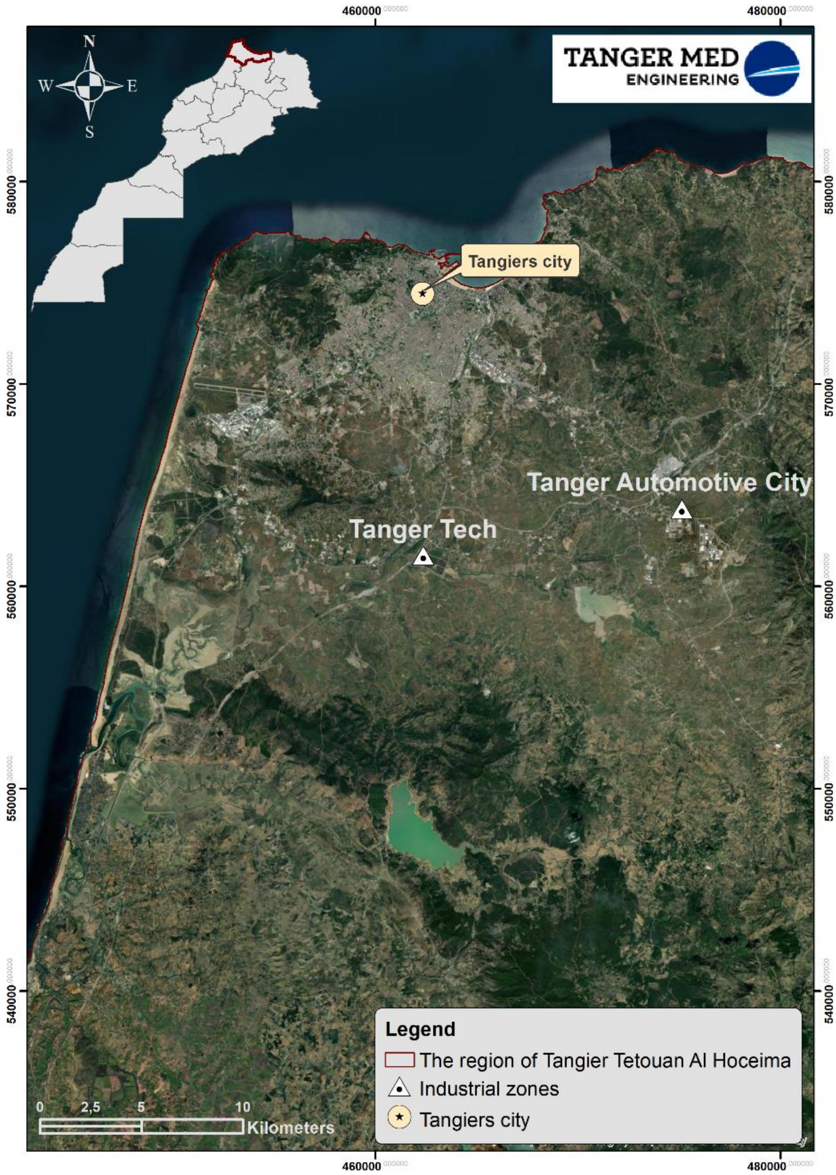

Figure 40: Location Map (Preliminary ESIA)

20.5.1 Socio-Economic Considerations

The Project is expected to have substantial positive socio-economic impacts, including job creation during both construction and operational phases. The development of local infrastructure, such as roads, electricity, and water, would further benefit the region and its population. The ESIA also acknowledges the potential challenges, such as the need for careful management of emissions, noise, and waste, which could otherwise affect the quality of life of nearby communities.

20.5.2 Regulatory Compliance

The preliminary ESIA adheres to several key Moroccan environmental laws, including Law 12-03, the Dahir decrees on environmental protection, and local guidelines for project permitting and impact assessments. However, it is emphasized that the preliminary ESIA remains highly generalized and requires more detailed studies, particularly once the location of the BMP has been finalized and the technical parameters defined.

20.5.3 Next Steps

The next phase detail ESIA will involve detailed site-specific investigations, further refining the potential impacts and mitigation measures. A full ESIA will need to be performed to meet appropriate international standards and ensure that the BMP complies with both national and relevant international environmental regulations.

21 Capital and Operating Costs

Costs includes an open pit mine, processing facilities, and other infrastructure normally associated with a mining operation in West Africa to process (at stable operating conditions) ~2.565 million t/a of RoM. The total NFG concentrate recovered from this will be ~ 88,000 t/a. All of the -100 mesh contained in the NFG concentrate (45,000 t/a) will be processed by the BMP to produce ~26,400 t/a CSPG t/a product.

21.1 Lola Project

Section 21.1 has been summarized from the 2023 DRA Technical Report.

21.1.1 Capital Cost

CAPEX for the Lola Project includes the mine, process plant, tailings management, and other required infrastructure. It includes direct and indirect costs, as well as a 9.15 % contingency. The accuracy of the initial CAPEX of the Lola Project has been estimated with a range varying between +15 % and -15 %.

A mechanical equipment list was developed by the engineering team. Quantity estimates, supplemented by general arrangements drawings, were used for civil works, including earthworks, concrete, and structural steel. To ensure the entire scope coverage, some allowances were added, based on experience. Piping as well as instrumentation and controls, were factored from mechanical costs.

Indirect costs included temporary buildings and facilities, temporary construction utility services, dust suppression and loss of productivity, construction site supports and operations, construction camp, catering and services, health, safety and environment program and training, construction fuel, spare parts, initial fills, freight, vendor's representatives, engineering, procurement, construction and management costs, third party engineering, commissioning and start-up, total indirect costs, owner's cost, and contingency.

The initial CAPEX of the Lola Project is summarized in Table 50.

Table 50: Initial CAPEX Summary

Description	**Total [USD]**
Mining	8,221,664
Tailings and Water Management	3,560,996
On-Site infrastructures	10,761,494
Concentrator	61,694,960
Preliminary and General Expenses	16,096,695
Electric	35,675,737
Indirect costs	25,369,273
Owner's Costs	6,363,845
Contingency, escalation, and risk	16,933,883
Grand Total	**184,678,547**

The initial CAPEX summary of the Lola Project by work breakdown structure ("WBS") is presented in Table 51. The breakdown of the Indirect costs are provided in Table 52. The initial CAPEX Summary by Commodity is presented in Table 53.

Table 51: Initial CAPEX Summary by WBS

WBS Breakdown	**Total [USD]**
Crushing, stockpile & reclaim	6,278,221
Comminution and Rougher Flotation	14,297,192
Polishing & cleaner flotation	6,613,084
Graphite tailings dewatering	4,466,688
Graphite concentrate dewatering	6,214,122
Graphite sizing and bagging	2,185,785
Reagent system	1,118,728
Plant Utilities - Water and Air	2,457,762
Tailings pond	2,175,448
Tailings piping and return lines	831,192
Access Roads	81,812
Non-Process Building	1,034,864
Plant Mobile Equipment	4,100,331
Camp	1,766,618
Power plant	1,181,641
Concentrator	27,477,410
Pole line 11 kV Site distribution	406,293
P & G's Bulk Earthworks	6,390,000
P & G's SMP (Structural Steel, Mechanical & Piping)	6,748,313
Pre-production	7,665,273
EPCM services	14,347,871
Vendor commissioning	396,880
Spares	2,959,249
Owner costs	6,363,845
Contingency, escalation and risk	16,933,883
Electric	115,361
P & Gs Concrete	781,104
P & Gs Buildings	1,481,000
Mineral Sizer and crushed material stockpile	130,107
Crushed material reclaim and Mill Feed	956,792
SAG Mill	3,062,222

WBS Breakdown	Total [USD]
Rougher Flotation	1,090,530
Polishing Mill #1 & 2	659,699
1st Cleaner Flotation	479,445
Polishing Mill #3	557,976
2nd Cleaner Flotation (Coarse)	449,388
Tailings Thickening	2,471,075
Concentrate Filtering	3,611,389
Floc	229,278
Process Water	5,943
Raw Water (Fresh Water)	267,761
Air Distribution	97,672
Fuel station (HFO & LFO)	256,783
Support Equipment	270,000
Mine development	549,129
Concentrate Transport Equipment	3,812,000
Main Haul Road	5,651,541
Road to Explosives	36,082
Tailings Access Road	88,961
Plant Site Terrace	3,548,060
Explosives Terrace	34,101
Security and access control, c/w gate #1 & #2	54,004
Site Development	175,805
Plant Sedimentation Pond	456,521
NP6: Branch from Main to Overburden Dump 1	1,680,810
Concentrator	5,160,615
Crusher	1,077,633
Access Road to Water Settling Pond	8,874
P & G Mining	696,278
Concentrator Plant Services	182,104
Total	**184,678,547**

Table 52: Indirect CAPEX Breakdown

Description	**Total [USD]**
Temporary Buildings & Facilities	1,443,708
Temp Construction Utility Services	2,200,00
Dust Suppression & Loss of Productivity	277,160
Construction Site Supports & Operations	82,500
Construction Camp, Catering & Services	244,100
HSE Program & Training	200,000
Construction Fuel	823,315
Spare Parts	2,119,594
Initial Fills	839,655
Freight	4,374,490
Vendor's Representatives	396,880
Detail EPCM	13,496,702
Third Party Engineering	300,000
Commissioning & Start-up	551,168
Total Indirect Costs	**25,369,273**

Table 53: Indirect CAPEX Summary by Commodity

Row Labels	**Sum of Total [USD]**
Earthworks	13,910,208
Concrete	8,253,086
Structural Steel	8,022,001
Architectural and Unit Building	3,855,174
Mining	819,129
Mechanical Platework and Tanks	1,350,372
Mechanical Equipment	40,635,175
Piping	4,484,676
Electrical Equipment	26,242,762
Conduit and Cable Tray	1,580,473
Wire and Cable	5,590,673
Instrumentation	1,359,121
Field Indirect	31,733,118
Contingency, Escalation and Risk	16,933,883
Other Indirect	3,812,000
Preliminary & General Expenses (Contractor)	16,096,695
Grand Total	**184,678,547**

21.1.1.1 Qualifications

All estimates have been developed within a frame of reference defined by assumptions and exclusions, grouped under the estimate qualifications. Assumptions and exclusions are listed in the following paragraphs.

21.1.1.1.1 Assumptions

The following items are assumptions concerning the CAPEX:

- Estimate is based on rotations schedule of 4 and 2, i.e., 4 weeks in and 2 weeks R&R, with traveling during the 2 weeks R&R;
- Estimate is based on 6 days at 8 hours per day workweek;

- Estimate assumes that labor skills will be medium;
- Estimate assumes all equipment and materials will be new;
- Estimate assumes aggregates used for fill, adequate both in terms of quality and quantity, will be available within a 5 km radius from site;
- Estimate assumes overburden disposal will be within a 5 km radius from the construction site;
- Estimate assumes fresh water, adequate both in terms of quality and quantity, is available locally at no costs and does not need any treatment to be used for concrete mix, leak/hydro testing, flushing, cleaning, etc.;
- Estimate assumes drinking water will be bottled;
- Estimate assumes EPCM and Owner's teams will be in sufficient quantity so as not to delay contractors;
- Estimate assumed smooth coordination between contractors' battery limits;
- Estimate assumes 40 % of manual labor will be sourced within the Lola area, while 60 % will be a combination of remote Guinean workers and expats from neighboring countries;
- Estimate assumes no labor decree is in effect in Guinea;
- Estimate assumes no camp or catering;
- Estimate assumes no limitation to site access;
- Estimate assumes construction contract types will be either lump sum, cost plus, or unit rates;
- Estimate assumes no underground obstructions of any nature;
- Estimate assumes no hazardous materials in excavated materials;
- Estimate assumes no delay in Client's decision-making;

- Estimate assumes no delay in obtaining permits and licenses of any kind;
- Estimate assumes no interruption in job continuity;
- Estimate assumes normal BFSk workforce; and,
- Estimate assumes engineering progress prior to the execution will be sufficient to avoid rework

21.1.1.1.2 Exclusions

The following items are not included in the CAPEX:

- Currency fluctuations;
- All scope changes;
- Cost related to any force majeure;
- Operating cost;
- Working capital;
- Inflation beyond the CAPEX estimate Base Date;
- Expected Monetary Value (EMV) of identified risks;
- Financing and interest charges during construction;
- Changes to design criteria;
- Scope changes or accelerated schedule;
- Delays resulting from community relation, permitting, project financing, etc.;
- All taxes, customs charges, excises, etc.; and,
- Changes in Guinean, Liberian, or Canadian law; and,
- Provision for risk, inflation, currency fluctuations, and escalation after the Base Date.

21.1.1.2 Sustaining CAPEX

For the sustaining CAPEX, no mining equipment replacement was considered as the project assumes a contractor-mining approach. The LoM expansion of the mine haul roads was provided by the mining group. Also included in the sustaining CAPEX is the cost of the overhauls of the power plant generators as recommended by the supplier. Phased concentrate transportation equipment and off-site infrastructure cost as well as phased land acquisition cost were also included in the estimate. The sustaining CAPEX included a 10 % contingency provision.

The sustaining CAPEX allowance shown in Table 54

Table 54: Sustaining CAPEX

Description	**Cost [USD]**
Owner Mine Equipment and Contractor demobilization	1,018,365
Mine Haulage Roads	9,885,582
Power Plant	12,061,500
Tailings Management	93,206,210
Concentrate Transportation Equipment	14,709,200
Off-site Infrastructure	7,496,374
Land Acquisition	1,111,022
Total Sustaining Capital	139,488,253
Closure Costs	none

21.1.2 OPEX

21.1.2.1 OPEX Summary

The following are examples of cost items specifically excluded from the OPEX:

- Value Added Tax;
- Project financing and interest charges; and,
- Provision for risk, inflation, currency fluctuations, and escalation after the Base Date.

Table 55 presents the LoM OPEX summary by major discipline, which excludes the first year of ramp-up.

Table 55: OPEX Summary

Description	**Annual Costs [USD]**
Mining	15,760,673
Process	30,060,332
General & Administration	4,790,896
Sub-Total	**50,611,901**
Concentrate Transport	3,494,781
Total	**54,106,682**

21.1.2.2 Mining OPEX

The mine OPEX was estimated for each period of the mine plan. This cost is based on equipment operation costs, mine-related manpower, explosives cost as well as the costs associated with dewatering, road maintenance and other activities. The breakdown of these costs is summarized in Table 56, which excludes the first year of ramp-up. The OPEX is based on a diesel fuel price of USD 1.09 / liter paid in Guinea.

Table 56: Summary of Mining OPEX

Type of Material	Annual Cost [USD/year]	Cost [USD/t moved]
RoM Saprolite	4,665,141	0.98
RoM Fresh Rock	3,698,645	0.78
Waste Saprolite	3,668,698	0.77
Waste Fresh Rock	3,530,295	0.74
Rehandling	197,892	0.04
Total OPEX	**15,577,900**	**3.31**

21.1.2.3 Process OPEX

The estimated process OPEX are divided into eight main components: Manpower, electrical power, grinding media and reagent consumption, dryer fuel consumption, consumables, and wear items, bagging system, mobile equipment and spare parts and miscellaneous.

The process OPEX as outlined in Table 57 is based on feed blend of 45 % Fresh Rock and 55 % Saprolite.

Table 57: Summary Process OPEX

Operating Cost	Annual Cost [USD/year]	Cost [USD/t milled]
Manpower	3,052,201	1.19
Electrical Power	12,926,969	5.04
Grinding Media and Reagent Consumption	3,642,122	1.42
Dryer Fuel Consumption	4,052,502	1.58
Consumables and Wear Items	3,308,688	1.29
Bagging System	1,538,925	0.60
Mobile Equipment	1,179,842	0.46
Spare Parts and Miscellaneous [3]	359,082	0.14
Total OPEX	**30,060,332**	**11.72**

21.1.2.4 General & Administration OPEX

The General and Administration ("G&A") costs include the following categories:

- Manpower;
- General Services; and,
- Site Services.

The overall G&A annual costs are estimated at USD 4.8 million per year. Given the nature of G&A costs, plant operations and throughput have little to no impact on these costs. As a result, G&A was assumed to be constant over the LoM. Table 58 summarizes the G&A breakdown.

Table 58: Summary of G&A OPEX

Description	**Annual Costs [USD]**
Manpower	2,464,696
General Services	1,396,700
Site Services	930,500
Total	**4,790,896**

21.1.2.5 Graphite Transport OPEX

Graphite will be transported from the Lola Mine to Monrovia in Liberia using road trains. Each road train will be able to carry 80-tonne of graphite. Shipment frequency has been estimated at four road trains per day, 6 days a week.

The logistics costs to export graphite from Lola through the port of Monrovia in Liberia have been estimated at USD3,494,781 per annum that equates to at USD39.70/t, free on-board Monrovia.

21.2 Active Anode BMP

21.2.1 Introduction

The PEA cost estimate include CAPEX and OPEX for the BMP comprising separate Spheroidization Plant, Purification Plant, and Coating Plant.

The cost estimates were performed in accordance with AACE International Class 5, RP 47R-11 (2020), with typical variation in accuracy ranges at an 80 % confidence interval of:

- Low: between -20 % and -50 %; and,
- High: between +30 % and +100 %.

All CAPEX and OPEX costs are expressed in USD.

The estimation Base Date and currency exchange rates were performed at the Effective Date.

All costs in RMB (currency of the People's Republic of China) were converted to USD at the exchange rate of USD 1.00 = RMB 7.10.

No cost allowance has been made for bulk services, infrastructure, connection, and access at the BMP since it is assumed the proposed prime industrial site intended to locate the BMP does include these costs as part of the land rental fee.

21.2.2 Summary Costs

The cost estimates include CAPEX and OPEX for the Spheroidization Plant, Purification Plant, and Coating Plant.

CAPEX includes direct and indirect costs, as well as a 35 % contingency provision. CAPEX excludes sustaining capital. However, the DCF does include sustaining CAPEX based on Hensen’s experience of their plants in China and that of the Weihai Plant.

Major equipment costs were provided by Hensen based on their plants in China and the recently constructed Weihai Plant.

OPEX includes NFG concentrate cost of sales, processing, maintenance, waste disposal, sales, G&A, and marketing. It also includes a 10 % contingency provision. The contingency provision is based on a mass balance derived from test work, and includes imported reagent costs from China, including allowance for all-inclusive freight cost to Morocco. The QP responsible for the OPEX believes application of the low accuracy provision to the OPEX is appropriate considering inclusion of all material operating expenditures.

Table 59 summarizes the total CAPEX to develop the BMP. The total CAPEX of USD 106.1 million includes the expanded Coating Plant and thus includes all five trains. The total annual OPEX for the BMP is presented in Table 60.

Table 59: CAPEX

Description	**Cost [USD]**
Spheroidization Plant	19,011,166
Purification Plant	13,176,056
Coating Plant initial	18,046,259
Land acquisition	5,280,000
Contingency	17,581,719
Total Pre-development CAPEX	**73,095,200**
Coating Plant expansion	24,414,815
Contingency	8,545,185
Total Expansion CAPEX	**32,960,000**
CAPEX total	**106,055,200**

Table 60: OPEX

Description	Cost [USD/a]	Cost [USD/t CSPG]
Spheroidization Plant	8,275,483	314
Purification Plant	21,867,900	829
Coating Plant	13,267,809	503
Waste disposal	129,600	5
General and Administration	1,423,789	54
Sales and Marketing	949,193	36
Contingency	4,354,079	165
Direct OPEX	**50,267,853**	**1,907**
Concentrate Purchase	33,907,500	1,286
OPEX total	**84,175,353**	**3,193**

21.2.3 Spheroidization Plant CAPEX and OPEX

The cost estimates for the Spheroidization Plant are based on a feed rate of 45,000 t/a NFG concentrate to produce 27,000 t/a of SG per the PDC, and mass balance presented in Chapter 17.2.4.1.

21.2.3.1 Major Equipment CAPEX

Equipment sizing has been based on the mass balance and the PDC, which were derived from the process development and test work. Major equipment costs are based on Hensen's plants in China and the recently constructed Weihai Plant.

The CAPEX of the major mechanical equipment of the Spheroidization Plant totals USD 3.7 million of the total USD 19.0 million CAPEX for the Spheroidization Plant.

21.2.3.2 CAPEX Estimate

The total CAPEX for the Spheroidization Plant is estimated by a factored estimate based on the costs for the major equipment. The CAPEX breakdown for the Spheroidization Plant is presented in Table 61.

The individual cost items are described in Chapter 21.2.3.3.

The initial CAPEX of the Spheroidization Plant consists of direct costs of USD 15.1 million, indirect costs of USD 3.9 million, and 35 % contingencies of USD 6.7 million. The total initial CAPEX for the Spheroidization Plant equates to USD 25.7million.

Table 61: *Total direct and indirect CAPEX for Spheroidization Plant*

CAPEX	[USD]	[%]
Direct cost item		
Equipment cost and delivery to China	4,339,370	23
Instrumentation and controls cost	513,880	3
Piping cost	205,352	1
Electrical systems cost	669,078	4
Buildings material cost	3,811,719	20
Equipment delivery	283,795	1
Equipment installation	1,692,354	9
Instrument, Piping and Electrical Installation	541,441	3
Building installation	1,486,570	8
Land	0	0
Site development	520,724	3
Service facilities	1,084,843	6
Total direct plant cost	**15,149,127**	**80**
Indirect cost item		
Engineering	1,388,598	7
Construction expenses	1,475,386	8
Legal expenses	173,575	1
Contractor's fee	824,480	4
Total indirect cost	3,862,040	**20**
Total plant cost	19,011,166	**100**
Contingency	6,653,908	35
Total CAPEX	**25,665,075**	**135**

21.2.3.3 Basis of CAPEX Estimate

The total CAPEX consists of direct and indirect costs. Direct costs represent the expenses to purchase and install all process equipment necessary for operation, including buildings and site preparation costs. Indirect costs cover expenses not directly related to process operation e.g., engineering, contractor fees, and other costs.

CAPEX is estimated by a factored estimate based on major equipment costs.

The prices of the major equipment does not include delivery. Delivery costs depend on size, weight, and distance from the supplier. The shipping costs were based on the expected equipment containers and at a rate delivered to Morocco per ton.

The item "equipment installation" includes the cost directly related to the erection and installation of the major equipment, e.g. platforms, foundations, construction expenses, and labor costs. The item "piping" covers the price for all piping used directly in the process. This includes all valves, fittings, and supports necessary for the erection of the piping system. Steam, air, and fresh and wastewater piping have been included.

The installation includes electrical motors, wiring and switch cabinets, and labor costs. Instrumentation and controls cover the cost of measurement and control technology for the machinery and the processing plant's process control system.

The item "land" refers to the cost of purchasing the land, in this case the total land acquisition was added to the overall CAPEX and not split over the three sections of the BMP.

The item "building material costs" and "installation" consist of the expenses for labor and construction materials necessary to erect all buildings, including processing plant buildings, auxiliary buildings (e.g., offices, social buildings, maintenance shops), and stockpile for neutralization residue of wastewater treatment. Building costs cover costs for heating, lighting, plumbing, and ventilation.

The item "site development" includes the costs for site clearing, grading, fencing, roads and parking areas, landscaping, and similar items.

Service facilities include the cost of utility power, steam generation, fresh water, cooling water, deionized water and compressed air, chemicals storage, fuel oil storage, waste disposal, and ventilation treatment (scrubber units). In addition, this item contains raw materials and product storage and handling equipment.

The items “engineering and construction” contain all indirect expenses related to engineering, procurement, construction, and commissioning of the processing plant.

The item “legal expenses” covers the cost of contracts concerning land purchases, equipment purchases, and construction contracts - another major part of legal costs results from proving compliance with environmental and safety requirements.

Contingencies are included to cover minor necessary design changes within the scope of the PEA, variation in quantities (steel, concrete, piping, etc.), labor rates, equipment prices, and unforeseen events, which will increase CAPEX. This may result from natural causes, accidents, price fluctuations, or errors in estimation.

21.2.3.4 OPEX Estimate

This Section provides information on the OPEX of the Spheroidization Plant. The cost data (Table 62) that forms the basis of the OPEX estimate was obtained from Anzaplan UK’s internal data for similar type and size operations or supplied by Falcon Energy and Hensen from their current plants in China.

Table 63 presents the OPEX summary of the Spheroidization Plant in terms of the following items:

- Energy;
- Labor; and,
- Operational maintenance.

Table 62: Cost data used to estimate Spheroidization Plant OPEX

Parameter	**Unit**	**Value**
Electrical energy	[USD/kWh]	0.09
Labor rates		
Engineer	[USD/a]	36,000
Shift supervisor	[USD/a]	24,000
Plant operator (skilled)	[USD/a]	18,000

Table 63: OPEX of the Speroidizatoin Plant

Cost item	**Consumption**	**Unit**	**Cost [USD/a]**	**Cost [USD/t feed]**
Energy				
Electrical energy	48,600,000	[kWh/a]	4,282,371	95.16
Labor				
Plant, laboratory, maintenance	14	[Persons]	794,200	6.93
Operational maintenance				
Maintenance & operational supplies			3,681,113	81.80
Total	**-**	**-**	**8,275,483**	**183.90**

The following Sections outline the estimation of the main OPEX items i.e., energy, labor, and operational maintenance.

21.2.3.4.1 Energy

Electrical power consumption has been estimated based on Hensen's experience. The electrical power consumption was calculated at 1,800 kWh/t (related to SG product), based on 7,500 h/a operating hours per year.

The energy prices are based on the economic profile of Morocco in 2023, as proposed by the Moroccan Agency for Investment and Export Development. This Agency is a public organization under the Ministry of Industry and

Trade of Morocco. It was established with the goal, among others, to attract trade, tourism, and foreign investment to Morocco.

21.2.3.4.2 Labor

In total 14 employees are required to operate the Spheroidization Plant.

The Spheroidization Plant operates a three-shift configuration, seven days a week. The labor complement of the Spheroidization Plant includes, one engineer, two skilled workers, one worker for maintenance per shift, and one plant supervisor. Additionally, allowance has been made for one skilled worker when any of the main staff are either on vacation, training or sick.

21.2.3.4.3 Operational Maintenance

The cost for maintenance and repair of the Spheroidization Plant is estimated based on the major equipment CAPEX and Hensen's operating plants in China. OPEX for maintenance includes labor and materials necessary for the maintenance and repair of the equipment.

The item operating supplies represent consumables costs, e.g., lubricants, oil, and similar supplies, which are not considered raw materials or maintenance and repair materials.

21.2.4 Purification Plant CAPEX and OPEX

The CAPEX estimate for the Purification Plant is based on producing 23,970 t/a SPG from 27,000 t/a SG feed.

21.2.4.1 Major Equipment CAPEX

Equipment sizing for the Purification Plant has been based on the mass balance and the PDC presented in Chapter 17.2.4.2.

Major equipment costs are based on Hensen's plants in China and the recently constructed Weihai Plant.

The CAPEX of the major equipment of the Purification Plant, including wastewater treatment, totals approximately USD 2.7 million.

21.2.4.2 CAPEX Estimate

The total direct and indirect costs have been estimated using a factored cost estimate approach based on cost for the major equipment. A contingency allowance of 35 % has been added. The initial CAPEX breakdown is presented in Table 64.

The individual cost items are described in Chapter 21.2.3.3.

The initial CAPEX of the Purification Plant (including wastewater treatment) consists of direct cost of USD 10.4 million, indirect cost of USD 2.8 million, and 35 % contingencies of USD 4.6 million. The total initial CAPEX for the Purification Plant equates to USD 17.8 million.

Table 64: Total direct and indirect CAPEX for the Purification Plant

CAPEX	[USD]	[%]
Direct cost item		
Equipment cost and delivery to China	3,189,093	24
Instrumentation and controls cost	125,105	1
Piping cost	136,901	1
Electrical systems cost	446,052	3
Buildings material cost	2,541,146	19
Equipment delivery	208,567	2
Equipment installation	1,243,746	9
Instrument, Piping and Electrical Installation	276,143	2
Building installation	991,047	8
Land	-	0
Site development	382,691	3
Service facilities	797,273	6
Total direct plant cost	**10,337,763**	78
Indirect cost item		
Engineering	1,020,510	8
Construction expenses	1,084,292	8
Legal expenses	127,564	1
Contractor's fee	605,928	5
Total indirect cost	2,838,293	22
Total plant cost	13,176,056	100
Contingency	4,611,620	35
Total CAPEX	**17,787,675**	**135**

21.2.4.3 OPEX Estimate

This Section provides information on the OPEX of the Purification Plant.

No allowance has been made for disposal of wastewater filter cake including gypsum since other industries can use this as raw material and as such may not incur a disposal cost.

Table 65 presents the cost data used to estimate the OPEX of the Purification Plant. Table 66 presents the OPEX summary of the Purification Plant in terms of the following items:

- Energy;
- Chemicals;
- Process water;
- Labor; and,
- Operational maintenance.

Table 65: Cost data for estimation of the Purification Plant OPEX

Cost item	Unit	Value
Energy		
Electrical energy	[USD/kWh]	0.09
Natural gas	[USD/m³]	0.56
Water		
Fresh water	[USD/m³]	1.82
Chemicals		
HF (20 %)	[USD/t]	514
HCl (35 %)	[USD/t]	331
HNO3 (25 %)	[USD/t]	177
Lime ($Ca(OH)_2$) (100 wt.- %)	[USD/t]	232
Labor rates		
Engineer	[USD/a]	36,000
Shift supervisor	[USD/a]	24,000
Plant operator (skilled)	[USD/a]	18,000

Table 66: Purification Plant OPEX

Cost item	Consumption	Unit	Cost [USD/a]	Cost [USD/t feed]
Energy				
Electrical energy	4,860,000	[kWh/a]	428,237	15.86
Natural gas	4,050,000	[m^3/a]	2,278,695	84.40
Water				
Fresh water	442,761	[m^3/a]	804,497	29.80
Chemicals				
HF (20 %)	9450	[t/a]	4,854,465	179.80
HCl (35 %)	17,550	[t/a]	5,803,785	214.96
HNO3 (25 %)	4050	[t/a]	716,546	26.54
Lime (Ca(OH)2) (100 wt.- %)	13,500	[t/a]	3,130,650	115.95
Labor				
Purification, Lab, Maintenance	20	[Persons]	1,095,400	15.56
Operational maintenance				
Maintenance & operational supplies			4,707,887	127.08
Total			**21,867,900**	**809.92**

The following Sections outline the estimation of the main OPEX items i.e., energy, chemicals, process water, labor, and operational maintenance.

21.2.4.3.1 Energy

Electrical power consumption is estimated based on the installed electrical power. The power was based on Hensen's experience and total operating hours of 7,500 h/a.

21.2.4.3.2 Chemicals

Prices for chemicals are based on imported reagent costs from China, including allowance for all-inclusive freight cost to Morocco.

21.2.4.3.3 Process Water

The required amount of process water is calculated based on the overall mass balance.

21.2.4.3.4 Labor

In total, 20 employees are required to operate the Purification Plant.

The Purification Plant operates a three-shift configuration, seven days a week. The labor complement of the Purification Plant includes, one engineer and five skilled workers per shift, plus one plant supervisor. Additionally, allowance has been made for one skilled worker when any of the main staff are either on vacation, training or sick.

21.2.4.3.5 Operational Maintenance

The cost for maintenance and repair of the Purification Plant is estimated based on the major equipment CAPEX and Hensen's operating plants in China. OPEX for maintenance includes labor and material necessary for maintenance and repair of the equipment.

Operating supplies includes cost for consumables e.g., lubricants, oil, and similar supplies, which are not considered raw materials or maintenance and repair materials.

21.2.5 Coating Plant CAPEX and OPEX

21.2.5.1 CAPEX Estimate

The CAPEX for the Coating Plant as outlined in Table 67 is based on Hensen's plants in China and the recently constructed Weihai Plant.

Given the qualification period required for CSPG, the execution methodology will proceed as follows: an initial coating equipment train with a capacity of 5 kt/a will be purchased and installed. During construction, provisions will be made for five additional trains to reach a total capacity of

25 kt/a. The additional trains will be installed, after qualification, at the end of the second year of operation.

The initial CAPEX for the graphite 5 kt/a Coating Plant includes direct costs of USD 14.7 million and indirect costs of USD 3.4 million. A 35 % contingency of USD 6.3 million has been added, equating to a total CAPEX for the initial coating train to USD 24 million.

After the two-year qualification period, the Coating Plant will be expanded to achieve a total capacity of 25 kt/a. The combined CAPEX for both the initial and expansion phases includes direct costs of USD 30.2 million, indirect costs of USD 12.3 million, and a 35 % contingency of USD 14.9 million to equate to a total CAPEX of USD 57.3 million. A breakdown of the expanded Coating Plant CAPEX (all five trains) is presented in Table 67.

Table 67: Total direct and indirect CAPEX for expanded Coating Plant

CAPEX (25 kt/a)	**[USD]**	**[%]**
Direct cost item		
Equipment cost and delivery to China	13,797,520	32
Instrumentation and controls cost	990,317	2
Piping cost	114,085	0
Electrical systems cost	371,710	1
Buildings material cost	2,117,621	5
Equipment delivery	902,357	2
Equipment installation	5,381,033	13
Instrument, Piping and Electrical Installation	575,684	1
Building installation	825,872	2
Land	-	0
Site development	1,655,702	4
Service facilities	3,449,380	8
Total direct plant cost	**30,181,281**	71
Indirect cost item		
Engineering	4,415,206	10
Construction expenses	4,691,157	11
Legal expenses	551,901	1
Contractor's fee	2,621,529	6
Total indirect cost	**12,279,793**	**29**
Total plant cost	**42,461,074**	**100**
Contingency	14,861,376	35
Total CAPEX	**57,322,450**	**135**

21.2.5.2 OPEX Estimate

This Section provides information on the OPEX of the Coating Plant.

Table 68 presents the cost data used to estimate the OPEX of the Coating Plant. Table 69 presents the OPEX summary of the Coating Plant in terms of the following items:

- Energy;
- Reagents;
- Labor; and,
- Operational maintenance.

Table 68: Cost data used for estimation of the Coating Plant OPEX

Cost item	Unit	Value
Energy		
Electrical energy	[USD/kWh]	0.09
Natural gas	[USD/m³]	0.56
Reagents		
Pitch tar (100 wt.- %)	[USD/t]	1,338
N2 Gas	[USD/m³]	0.06
Labor rates		
Engineer	[USD/a]	36,000
Plant supervisor	[USD/a]	24,000
Plant operator (skilled)	[USD/a]	18,000

Table 69 presents the summary OPEX of the Coating Plant.

Table 69: Coating Plant OPEX

Cost item	Consumption	Unit	Cost [USD/a]	Cost [USD/t CSPG]	Percentage [%]
Energy					
Electrical energy	46,578,977	[kWh/a]	4,104,289	155.66	30.93
Natural gas	1,276,136	[m³/a]	718,006	27.23	5.41
Reagents					
Pitch tar (100 wt.- %)	2,511	[t/a]	3,359,789	127.43	25.32
N2 Gas	14,037,500	[m³/a]	790,845	29.99	5.69
Labor					
Purification, Lab, Maintenance	20	[Persons]	420,000	15.93	3.17
Operational maintenance					
Maintenance and operational supplies			3,041,086	146.96	2.17
Total			**13,267,809**	**503.21**	**100**

The following Sections outline the estimation of the main OPEX items i.e., energy, reagents, labor, and operational maintenance.

21.2.5.2.1 Energy

Electrical power consumption is estimated based on Hensen's experience.

21.2.5.2.2 Reagents

The main reagent in the Coating Plant is standard pitch tar that was costed at a pitch addition rate of 10 wt.- %.

21.2.5.2.3 Labor

In total 20 employees are required to operate the Coating Plant.

The Coating Plant operates at a three-shift system, seven days a week. The labor complement of the Coating Plan includes one engineer and five skilled workers per shift, plus one plant supervisor. Additionally, allowance has been made for one skilled worker to make provision for vacation, training and sick leave of the main staff.

21.2.5.2.4 Operational Maintenance

The cost of maintenance and repair for the Coating Plant is estimated based on the plant's major equipment CAPEX and Hensen’s operating plants in China. OPEX for maintenance includes labor and materials necessary for maintaining and repairing the equipment.

The item operating supplies represent consumable costs e.g., lubricants, oil, and similar supplies, which are not considered raw materials or maintenance and repair materials.

22 Economic Analysis

The economic potential of the IDP was assessed by performing an Economic Analysis using a DCF model. The DCF model was estimated in real (constant USD) terms, thus excluding the effect of current long-term inflation uncertainty.

The Economic Analysis is based on Q2 2024 sales price projections and cost estimates in USD at the Effective Date. It is based on processing (at stable operating conditions) ~2.565 million t/a of RoM to produce NFG concentrate at the Lola Mine of ~ 88,000 t/a. Sales comprise ~42,000 tpa of +100 mesh NFG concentrate, ~ 26,400 tpa CSPG product, and 18,000 tpa SG (fines) by-product.

The Economic Analysis is based on the mine production schedule developed for the IDP. The IDP mine production schedule has been revised to include Inferred Mineral Resources. It leverages the Lola Project's total Mineral Resources, thereby increasing the LoM to 25-years. The IDP mine production schedule is based on the same initial 16-year production schedule outlined in the 2023 DRA Technical Report, adding to this incremental Inferred Mineral Resources of both the Saprolite and Fresh Rock.

Recoveries Spheroidization yield, recoveries, CAPEX, OPEX, commodity prices, and other inputs to the DCF model were determined during the PEA as outlined in the Technical Report.

Pre-tax and post-tax estimates were developed. Tax estimates involve many complex variables that can only be accurately calculated during operations. Consequently, the post-tax results are only indicative approximations to model the tax effect, rather than accurately determining the amount of tax due.

Sensitivity analyses were performed for changes in sales revenue, OPEX, CAPEX, and discount rate to determine their relative importance as value drivers.

Revenue is derived from selling +100 mesh NFG concentrate, CSPG product and the SG fines by-product. The CSPG product can be expected to attract a European premium. However, inclusion of a price premium has been allowed for in the revenue sensitivity assessment and thus has not been added to the forecasted CSPG price.

The DCF determines the appropriate economic potential of the IDP and is not a valuation. Due to the various subjective inputs involved in generating a DCF, it is standard for the outcome to be regarded as an opinion, and not as a fact.

The concluding opinion is based on material inputs presented in Table 70 and general assumptions and exclusions to develop the DCF model is presented in Chapter 22.6 and Chapter 22.7, respectively.

The Economic Analysis was performed at 100 % attributable to Falcon Energy and on an "all equity basis" (initial CAPEX at 0 % debt) thus excluding interest payments.

The NPV is based on a real discount rate of 8.0 % in accordance with the 2023 DRA Technical Report on the Lola Project. The QP responsible for the Economic Analysis believes this discount rate is appropriate for the risks, and development stage of the proposed IDP.

This Section outlines the approach taken to perform the Economic Analysis of the IDP. It presents all the relevant information to ensure the Economic Analysis adheres to the guiding principles (competence, materiality, reasonableness, transparency, independence, and objectivity) described by the International Mineral Valuation ("IMVAL") Standards Template. The Economic Analysis is not purported to be a mineral asset valuation.

Adhering to the IMVAL guiding principles, has been done to ensure the Economic Analysis adhere to current international best practices in determining the economic potential of the IDP proposed by Falcon Energy.

22.1 Scope of Work

The scope of work was to perform an Economic Analysis as a DCF model. The Economic Analysis evaluates if the IDP proposed to be developed by Falcon Energy has technical feasibility and economic viability at a PEA level (AACE International Class 5). The Economic Analysis will be an important part of documentation during investment decisions to guide decision-making on whether to proceed to the next development phase of the IDP.

It is based on the IDP mine production schedule, as well as concentrate and by-product production, CAPEX, OPEX and revenue estimates, all determined during the PEA or supplied by Falcon Energy. It applies the PEA deliverables as inputs to calculate cash flows from which pre-tax and post-tax NPVs are determined as well as the IRR and payback.

The Economic Analysis is subjected to sensitivity analyses to determine their relative importance as value drivers. The resulting value range derived from the sensitivity analyses guides the concluding opinion of economic value.

The concluding opinion of the Economic Analysis is based on the methodology, assumptions and exclusions presented in the following Sections.

22.2 Statement of Independence

Anzaplan UK is an independent advisory company. Its consultants have extensive experience preparing Technical, Competent and Qualified Persons, Technical Advisors, and Valuation Reports for mining and exploration companies. The QP responsible for the Economic Analysis has significant experience in the analysis and evaluation of mining and exploration properties worldwide and is a member in good standing with appropriate professional institutions.

Neither Anzaplan UK, nor its staff, associates, shareholders, or subcontractors, have, or have had, any interest in Falcon Energy, or the projects or properties being the subject of the Economic Analysis, capable of affecting their ability to give an unbiased opinion.

Anzaplan UK has not received, and will not receive, any financial or other benefits in connection with this assignment, other than normal consulting fees.

Anzaplan UK was remunerated an agreed fee amount for the preparation of their scope of services, with no part of the fee contingent on the conclusions reached or the content of their services or the Economic Analysis.

The QP responsible for preparing the Economic Analysis, Mr. Derick, R. de Wit, is considered competent, according to the IMVAL Template, by way of his relevant and appropriate education, experience, and Professional association (ethics). Mr. de Wit is a Professional Engineering Technologist (Chem. Eng.) registered with the Engineering Council of South Africa. He has more than five years of relevant experience in the analysis and evaluation of the type of exploration and mining properties discussed in the Technical Report. He is a Fellow in good standing of both the Australasian and Southern African Institutes of Mining and Metallurgy.

Anzaplan UK is not qualified to provide extensive commentary on the legal issues associated with the proposed IDP. No warranty or guarantee, be it express or implied, is made with respect to the completeness or accuracy of any of the legal aspects of the proposed IDP.

22.3 Personal Inspection

The QP responsible for the Economic Analysis has not performed a personal inspection (site visit) of the Lola Project in Guinea or the proposed sites for the BMP in Tangier, Morocco. The QP has performed a review of the 2023 DRA Updated Feasibility Study report, had discussions with the other QPs and Specialists capable of impacting the outcome of the Economic Analysis, and has sufficient understanding of the material factors capable of influencing the outcome of the Economic Analysis.

Considering the above, the QP responsible for the Economic Analysis is satisfied that there is sufficient current understanding and information available to allow an informed Economic Analysis without an inspection of the proposed sites of the IDP.

The QP responsible for the Economic Analysis place reliance on the inspections made to the properties of the IDP by the QPs as outlined in Section 2.6 and that in accordance with Subsection 6.2(3) of Form 43-101F1, at least one QP who is responsible for preparing of the technical report, has inspected the properties of the IDP.

22.4 Economic Analysis Approach

The methods used to determine the economic potential of a mineral property differ depending on the developmental stage i.e., exploration, development, and production properties.

The following three approaches are internationally accepted to evaluate mineral properties:

- **Cash Flow:** used for development and production assets and relies on the "value in use" principle and requires determination of the present value of future cash flows over the useful life of the mineral asset;

- **Market:** used for exploration and development assets which is based on the relative comparisons of comparable properties for which a transaction is available in the public domain. The market approach relies on the principle of "willing buyer, willing seller" and requires that the amount obtainable from the sale of the mineral asset is determined as if in an "arm's length" transaction; and,
- **Cost:** used for early-stage exploration assets which relies on the historical and future exploration expenditure.

The selection of an appropriate evaluation approach is dependent on the availability of information and the purpose of the engagement. Since the Economic Analysis aims to evaluate if the IDP has technical feasibility and economic viability, determining the present value of the future cash flows (i.e., the Cash Flow Approach) is the suited approach to assess its economic potential.

The Cash Flow Approach focuses on the value of a project's future income streams. The future forecasts are usually based on either historic results or the results of a feasibility assessment study and the value is based on the value, in present day terms, of an anticipated series of future income streams. The cash flow assumptions are based upon realistic estimates, at the time of the economic evaluation, of the costs of ongoing capital spending, production, sales revenues, and expenditures.

A discount rate is applied to the cash flows, dependent on the nature of the project and operating company's cost of capital and risk profile, to yield a NPV on the un-escalated DCF. The Cash Flow Approach considers the unique technical and financial characteristics of each project.

In the experience of the QP responsible for the Economic Analysis, the difference between the results of the escalated and un-escalated DCF models is zero, where the correct real (excluding inflation) and nominal (including inflation) discount rates have been applied, and the correct cost inflation rates used to compile the nominal cash flows.

Considering the current long term inflation and commodity price uncertainties, and since the model excludes debt finance and estimates post-tax indicative approximations, the un-escalated (real) model, discounted at a real (no inflation) discount rate, is considered accurate.

22.5 Economic Analysis Date

The Economic Analysis was performed at the Effective Date.

The parameters, plans, assumptions and current economic, regulatory, financial and market conditions, may change over time. The concluding option is based on certain forward-looking statements regarding operations, economic performance, commodity prices, exchange rates, and financial conditions, etc. Although the QP responsible for the Economic Analysis believes that the expectations reflected in such forward-looking statements are reasonable, no assurance can be provided that such expectations will prove to be correct.

Subsequent developments and changes to the forward-looking statements may affect the concluding opinion. As such, the concluding opinion is related and applicable only as at the Effective Date.

22.6 Economic Analysis Assumptions

The concluding opinion is based on the technical and economical parameters determined during the PEA as outlined in the Technical Report, the material inputs presented in Table 70, and the following assumptions:

- Information provided by Falcon Energy, Hensen Graphite, TME, and the specialist contractors of Falcon Energy, as presented in the Technical Report, can be relied upon as input to develop the DCF model;
- Regulatory approvals will be timeously obtained and kept valid;
- Falcon Energy will continue as present and has or will secure the necessary funds to develop the IDP as intended in the Technical Report;
- Project execution (detail engineering design and construction) is based on the following:
  - detail engineering, design, construction, and commissioning will require 24 months, followed by ramp-up to full production; and,
  - linear ramp-up of the IDP will occur from ~20 % in year 1, 20 % in year two and 100 % from year three onwards.
- Direct equipment cost of the BMP will incur a 13 % increase factor for higher transportation, logistics, procurement, and operational costs in Morocco compared to China;
- G&A expenditure will be 60 % in the year prior to construction;
- Sales and marketing will be 60 % in the year prior to construction;
- Sustaining capital will be 40 % in year two, 60 % in year three, 80 % in year 4 and 100 % from year five onwards and will decrease to 75 % (year 23), 50 % (year 24) and 0 % (year 25);

- The initial CAPEX will be split 60 % to the first year of construction and 40 % to the second year of construction;
- The proposed industrial site in Morocco has existing bulk supply services and access road and connection for gas, water, electricity, effluent and sewage disposal and treatment, stormwater management and waste removal, without any connection charge;
- Falcon Energy would be able to secure markets and offtake for the projected CSPG and SG fines by-product;
- The NPV is based on a real discount rate of 8.0 % which the QP responsible for the Economic Analysis believes is appropriate for the risks, and development stage of the proposed IDP;
- Reliance can be placed on the forecasted head grades, mining and milling production rates, recoveries, sales price forecasts, costs and other material assumptions as presented in Table 70; and,
- Accounting depreciation (10-year straight line) is equal to tax wear and tear.

Table 70: DCF model material inputs

Description	Units	Value	Notes
Economic.			
Tax rate	[%]	9 %	After 5 years of total exemption
Financing interest rate	[%]	0 %	Zero for "all-equity" basis
Discount rate)	[%]	8.0 %	Per Lola Project
Debt	[%]	0 %	% of capital. Zero for "all-equity" basis
General and Administration	[%]	3 %	% of revenue
Sales and Marketing	[%]	2 %	% of revenue
BMP OPEX Contingency	[%]	10 %	Included in the consumption balance
Chinese/Morocco CAPEX factor	[%]	13 %	Increase factor Morocco compared to China
Lola Project CAPEX Contingency	[%]	9.15 %	Per 2023 DRA Technical Report
Lola Project Sustaining CAPEX	[%]	10	Per 2023 DRA Technical Report
BMP CAPEX Contingency	[%]	35 %	Reduced, BMP has high know mechanical cost
Working Capital	[%]	10 %	% of Production Cost
Sustaining CAPEX	[USD/month]	5,916,086	
Industrial maintenance	[USD/a]	176,000	
Production			
NFG feed concentrate	[t/a]	45,000	Per mass balance
SG (intermediate product)	[t/a]	27,000	Per mass balance
SG (fines) By-product	[t/a]	18,000	Per mass balance
CSPG Product	[t/a]	26,366	Per mass balance

Description	Units	Value	Notes
Yield SG production	[%]	60.0 %	From test work for 2 spheroidized products
Yield purification and coating	[%]	97.7 %	From test work
Waste disposal	[USD/t]	0.3	from wastewater treatment purification
Waste disposal	[t/a]	432,000	Per mass balance
Purchase price NFG concentrate	[USD/t conc.]	586	July 15, 2024, spot price, from ICC -195, FOB China
Concentrate shipping all-costs	[USD/t]	168	Assumption: 1 container 20t for USD2,500
NFG concentrate delivered	[USD/t conc.]	754	
Sales Prices			
Full Production Basket Price	[USD/t]	5,550	
SPG Price (first 2-years)	[USD/t]	5,000	
Capital Costs			
Total Mine CAPEX	[USDm]	184.7	
Total Pre-development BMP CAPEX	[USDm]	73.1	
Total Expansion BMP CAPEX	[USDm]	33.0	
CAPEX total	[USDm]	290.7	
Operating Costs			
Lola Project OPEX	[USD/t]	616	per ton NFG concentrate
Direct BMP OPEX (excl. NFG purchase)	[USD/t]	1,907	per ton CSPG product
BMP NFG Concentrate Purchase	[USD/t]	1,286	per ton CSPG product
OPEX total	[USD/t]	3,193	per ton CSPG product

22.7 Economic Analysis Exclusions

The concluding opinion is based on the following exclusions:

- Cost provisions does not include any licensing fees or intellectual property costs;
- Provision for mining related taxes and royalties;
- Price escalation, inflation or exchange rate changes;
- Interest payments and debt repayment since the DCF model is based on “all equity basis”;
- All CAPEX and sales exclude value-added tax;
- Provisional tax payments have been excluded from the DCF model;
- DCF models only look at future cash flows and thus exclude all sunken costs (losses carried forward);
- The terminal value after the 25-years life of the IDP; and,
- There is no cost allowance for bulk supply services, connection, and access. All required bulk services are assumed to exist at the proposed industrial site in Morocco.

22.8 Cautionary Statement

The Economic Analysis is based on certain "forward-looking information". These include, but are not limited to, statements concerning the economic potential of the proposed IDP, the future price of commodities, the success of development activities, costs and timing of future development, the conclusion of the Economic Analysis, requirements for capital and other statements relating to the financial and business prospects of Falcon Energy and the IDP. The Economic Analysis is based on reasonable assumptions, estimates, analysis, opinions, preliminary metallurgical test work, and engineering designs and estimates made during the PEA and in light of Anzaplan UK's experience and its perception of trends, current conditions, and expected developments, as well as other factors that are believed to be relevant and reasonable in the circumstances of a PEA.

A PEA is inherently subject to known and unknown risks, uncertainties, and other factors that may cause the actual results, level of activity, performance, or achievements to be materially different from those expressed or implied.

There can be no assurance that the Economic Analysis will prove to be accurate, as actual results and future events could differ materially from those anticipated in the DCF model.

The DCF model includes Inferred Mineral Resource that has a lower level of confidence than that applied to an Indicated Mineral Resource and cannot be converted to a Mineral Reserve. It is reasonably expected that the majority of the Inferred Mineral Resource could be upgraded to an Indicated Mineral Resource with continued exploration. The PEA is preliminary in nature, it includes Inferred Mineral Resources that are considered too speculative geologically to have the economic considerations applied to them that would enable them to be categorized as Mineral Reserves, and there is no certainty that the PEA will be realized.

Given the uncertainties involved, the outcomes of the PEA and Economic Analysis and Falcon Energy's current expectations of future results or events should not be solely relied upon by investors when making investment decisions.

22.9 Economic Analysis Summary

A real DCF model was constructed, applying the "value in use" principle, using cash flow projections and future production, recoveries, sales, and expenses over the life of the Project, as determined during the PEA and outlined in the Technical Report.

Table 71 and Table 72 presents the financial highlights of the IDP and BMP, respectively. Table 73 and Table 74 presents the forecasted cash flows over the proposed 25-years life of the IDP and the BMP, respectively.

Table 71: IDP Financial Highlights

Description	Units	Value
Project Life	[years]	25
Pre-tax NPV @ 8 % Discount Rate	[USDm]	1,584
Post-tax NPV @ 8 % Discount Rate	[USDm]	1,321
Pre-tax IRR	[%]	47.2 %
Post-tax IRR	[%]	43.1 %
After-tax Payback Period (After Production Commences)	[years]	2.6
CAPEX (Including Expanded Coating Plant)	[USDm]	290.7
Steady State Annual OPEX	[USDm/a]	103.9
Full Production Basket Price	[USD/t]	5,550

Table 72: BMP Financial highlights

Description	Units	Value
Project Life	[years]	25
Pre-tax NPV @ 8 % Discount Rate	[USDm]	1,259
After-tax NPV @ 8 % Discount Rate	[USDm]	1,149
Pre-tax IRR	[%]	87 %
After-tax IRR	[%]	82 %
After-tax Payback Period (After Production Commence)	[years]	1.0
CAPEX (Including Expanded Coating Plant)	[USDm]	106.1
Steady State Annual OPEX	[USDm/a]	84.2
Full Production Basket Price	[USD/t]	5,550

Table 73: IDP Cash Flow Forecast (25-years)

Description	**Units**	**Total**	**-2**	**-1**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**24**	**25**
External NFG Concentrate Sales	[USDm]	**1,844**	0	0	53	84	83	83	83	83	83	83	81	67	67
Internal NFG Concentrate Sales	[USDm]	**846**	0	0	24	39	38	38	38	38	38	38	37	31	31
NFG Concentrate Feed	[t]	**1,125,000**	0	0	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
SG Fine By-product	[t]	**450,000**	0	0	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
SG Production (Intermediate Product)	[t]	**675,000**	0	0	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000
CSG Product	[t]	**616,975**	0	0	5,273	5,273	26,366	26,366	26,366	26,366	26,366	26,366	26,366	26,366	26,366
Gross Sales Revenue SPG	[USDm]	**230**	0	0	115	115	0	0	0	0	0	0	0	0	0
Gross Sales Revenue CSPG	[USDm]	**5,763**	0	0	49	49	246	246	246	246	246	246	246	246	246
Production Cost Lola Project	[USDm]	**-1,340**	0	0	-41	-59	-60	-57	-54	-55	-53	-54	-53	-54	-54
Cost of sales (Morocco Delivered)	[USDm]	**-848**	0	0	-34	-34	-34	-34	-34	-34	-34	-34	-34	-34	-34
Internal Purchases	[USDm]	**846**	0	0	24	39	38	38	38	38	38	38	37	31	31
Production Cost BMP	[USDm]	**-1,174**	0	0	-36	-36	-48	-48	-48	-48	-48	-48	-48	-48	-48
Industrial Maintenance BMP	[USDm]	**-5**	0	0	0	0	0	0	0	0	0	0	0	0	0
Operating Profit	[USDm]	**5,317**	0	0	130	158	225	228	230	230	231	231	229	208	208
General and Administration	[USDm]	**-167**	0	0	-1	-1	-7	-7	-7	-7	-7	-7	-7	-7	-7
Sales and Marketing	[USDm]	**-111**	0	0	-1	-1	-5	-5	-5	-5	-5	-5	-5	-5	-5
EBITDA	[USDm]	**5,040**	0	0	127	156	213	216	218	218	219	219	217	196	196
Sustaining CAPEX	[USDm]	**-264**	0	0	-3	-7	-9	-9	-11	-14	-11	-15	-15	-9	-5
Depreciation (10-yr, straight line)	[USDm]	**-543**	0	-26	-26	-30	-31	-32	-33	-34	-36	-37	-39	-12	-11
EBT	[USDm]	**4,233**	0	-26	98	119	173	175	174	170	173	167	164	175	180
Tax	[USDm]	**-691**	0	0	-9	-14	-21	-22	-35	-34	-35	-34	-34	-27	-17
Net Profit After Tax	[USDm]	**3,542**	0	-26	89	105	151	153	140	136	138	133	131	148	163
Losses Carried Forward	[USDm]	**n/a**	0	-26	0	0	0	0	0	0	0	0	0	0	0
EBITDA	[USDm]	**5,040**	0	0	127	156	213	216	218	218	219	219	217	196	196
CAPEX	[USDm]	**-258**	-155	-103	0	0	0	0	0	0	0	0	0	0	0
Expansion Capital	[USDm]	**-33**	0	0	0	-33	0	0	0	0	0	0	0	0	0
Sustaining Capital	[USDm]	**-264**	0	0	-3	-7	-9	-9	-11	-14	-11	-15	-15	-9	-5
Working Capital Movement	[USDm]	**0**		0	-9	0	-1	0	0	0	0	0	0	0	10
Undiscounted Cashflows	[USDm]	**3,794**	-155	-103	106	102	181	185	173	170	174	170	169	160	185
NPV (25-Year)	[USDm]	**1,321**	-155	-96	91	81	133	126	109	99	94	85	78	23	25

Table 74: BMP Cash Flow Forecast (25-years)

Description	Unit	Total	-2	-1	1	2	3	4	5	6	7	8	9	24	25
NFG Concentrate Feed	[t]	**1,125,000**	0	0	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000	45,000
SG Fine By-product	[t]	**450,000**	0	0	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000	18,000
SG Production (Intermediate Product)	[t]	**675,000**	0	0	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000	27,000
CSPG Product	[t]	**616,975**	0	0	5,273	5,273	26,366	26,366	26,366	26,366	26,366	26,366	26,366	26,366	26,366
Gross Sales Revenue SPG	[USDm]	**230**	0	0	115	115	0	0	0	0	0	0	0	0	0
Gross Sales Revenue CSPG	[USDm]	**5,763**	0	0	49	49	246	246	246	246	246	246	246	246	246
Cost of Sales (Morocco Delivered)	[USDm]	**-848**	0	0	-34	-34	-34	-34	-34	-34	-34	-34	-34	-34	-34
Production Cost BMP	[USDm]	**-1,174**	0	0	-36	-36	-48	-48	-48	-48	-48	-48	-48	-48	-48
Industrial Maintenance BMP	[USDm]	**-5**	0	0	0	0	0	0	0	0	0	0	0	0	0
Operating Profit	[USDm]	**3,967**	0	0	94	94	164	164	164	164	164	164	164	164	164
General and Administration	[USDm]	**-167**	0	0	-1	-1	-7	-7	-7	-7	-7	-7	-7	-7	-7
Sales and Marketing	[USDm]	**-111**	0	0	-1	-1	-5	-5	-5	-5	-5	-5	-5	-5	-5
EBITDA	[USDm]	**3,690**	0	0	92	92	152	152	152	152	152	152	152	152	152
Sustaining CAPEX	[USDm]	**-125**	0	0	0	-2	-4	-5	-6	-6	-6	-6	-6	-3	0
Depreciation (10-yr, straight line)	[USDm]	**-226**	0	-7	-7	-11	-11	-12	-12	-13	-13	-14	-15	-6	-5
EBT	[USDm]	**3,339**	0	-7	84	79	138	136	134	134	133	133	132	143	147
Tax	[USDm]	**-292**	0	0	-7	-7	-12	-12	-12	-12	-12	-12	-12	-13	-13
Net Profit after Tax	[USDm]	**3,047**	0	-7	78	72	126	124	123	122	121	121	120	131	134
Losses Carried Forward	[USDm]	**0**	0	-8	0	0	0	0	0	0	0	0	0	0	0
EBITDA	[USDm]	**3,690**	0	0	92	92	152	152	152	152	152	152	152	152	152
Tax	[USDm]	**-292**	0	0	-7	-7	-12	-12	-12	-12	-12	-12	-12	-13	-13
CAPEX	[USDm]	**-73**	-44	-29											
Expansion CAPEX	[USDm]	**-33**	0	0	0	-33									
Sustaining CAPEX	[USDm]	**-125**	0	0	0	-2	-4	-5	-6	-6	-6	-6	-6	-3	0
Working Capital Movement	[USDm]	**0**		0	-4	0	-1	0	0	0	0	0	0	0	5
Undiscounted Cashflows	[USDm]	**3,167**	-44	-29	81	50	136	136	135	135	135	135	135	137	144
NPV (25-years)	[USDm]	**1,149**	-44	-27	70	39	100	92	85	79	73	68	63	20	20

22.10 Annual Cash Flow

The projected annual cash flow of the IDP and BMP is graphically presented in *Figure 41* and *Figure 42*, respectively.

This Figure presents the cumulative discounted and undiscounted cash flow over the life of the BMP, as well as yearly gross sales revenue, CAPEX, OPEX, and tax payments.

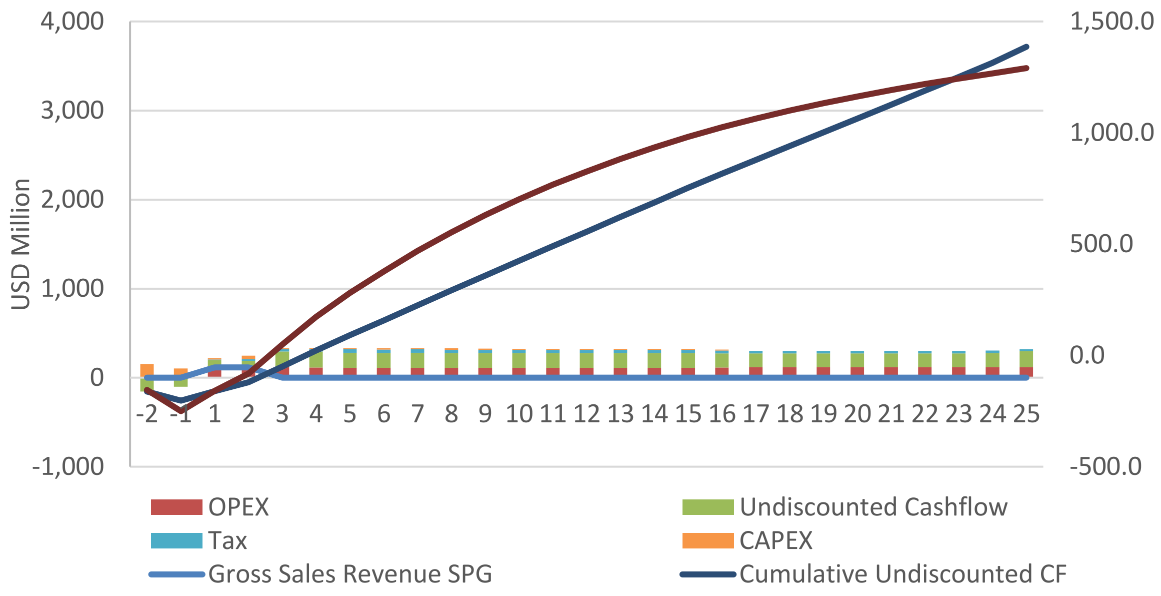

Figure 41: IDP projected annual cash flow

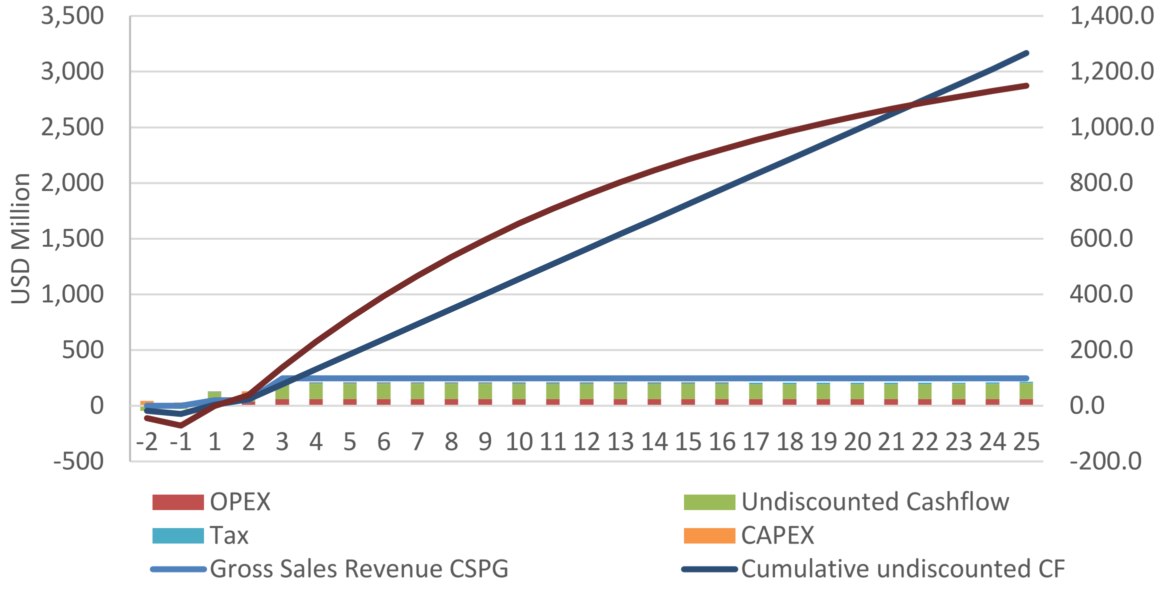

Figure 42: BMP projected annual cash flow

22.11 Sensitivity Analyses

Sensitivity analyses were performed for variations in the key economic parameters of sales revenue, OPEX and CAPEX. This was done to determine the key economic parameter's relative importance as value driver.

The results of the sensitivity analyses based on changes in NPV_8 (i.e. 8 % real discount rate, after tax) and IRR, after tax, to the key economic parameters are presented in the form of a spider diagram. Figure 43 and, Figure 44 present changes in NPV_8 and IRR spider diagrams for the IDP, respectively. The spider diagrams for the BMP have similar trends

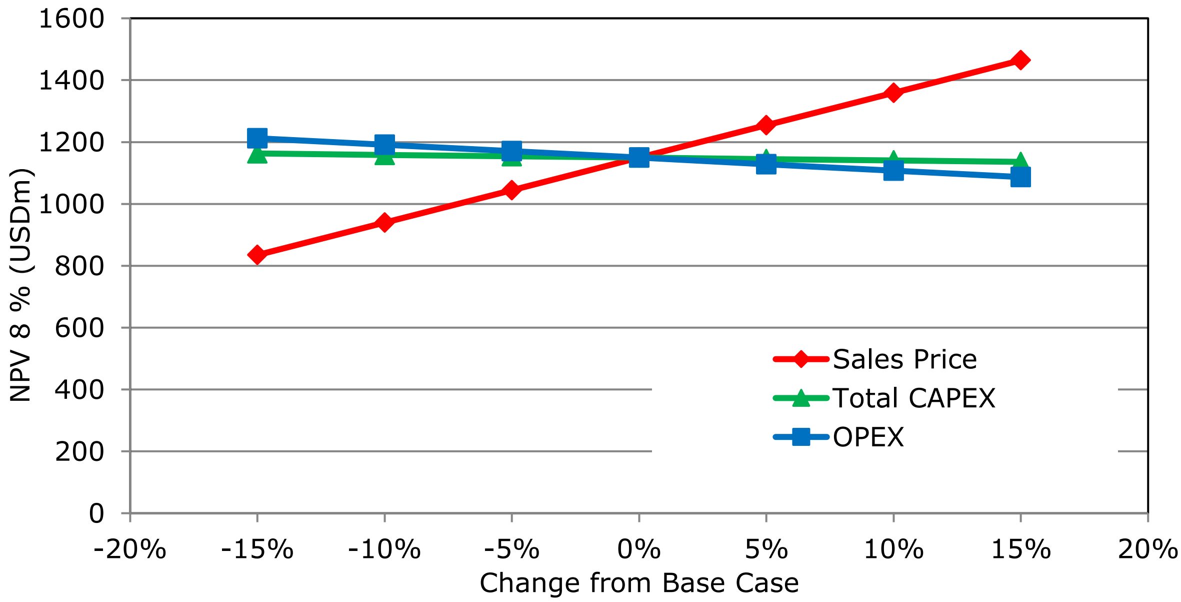

Figure 43: NPV sensitivity to key economic parameters

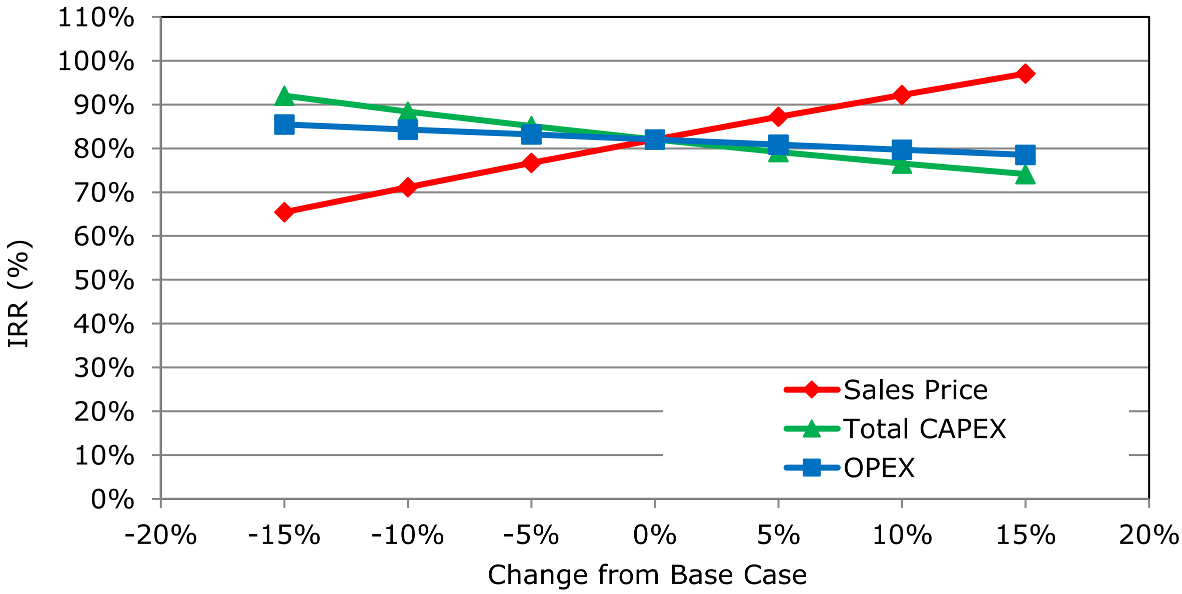

Figure 44: IRR sensitivities to key economic parameters

Figure 45 and *Figure 46* presents the respective after-tax payback sensitivities of the IDP and BMP, to key economic parameters. Both payback durations are based on years after construction has been completed and production has commenced.

The various figures presented in Section 22.11 all indicates most sensitivity to sales revenue and only slightly more sensitive to CAPEX compared to OPEX.

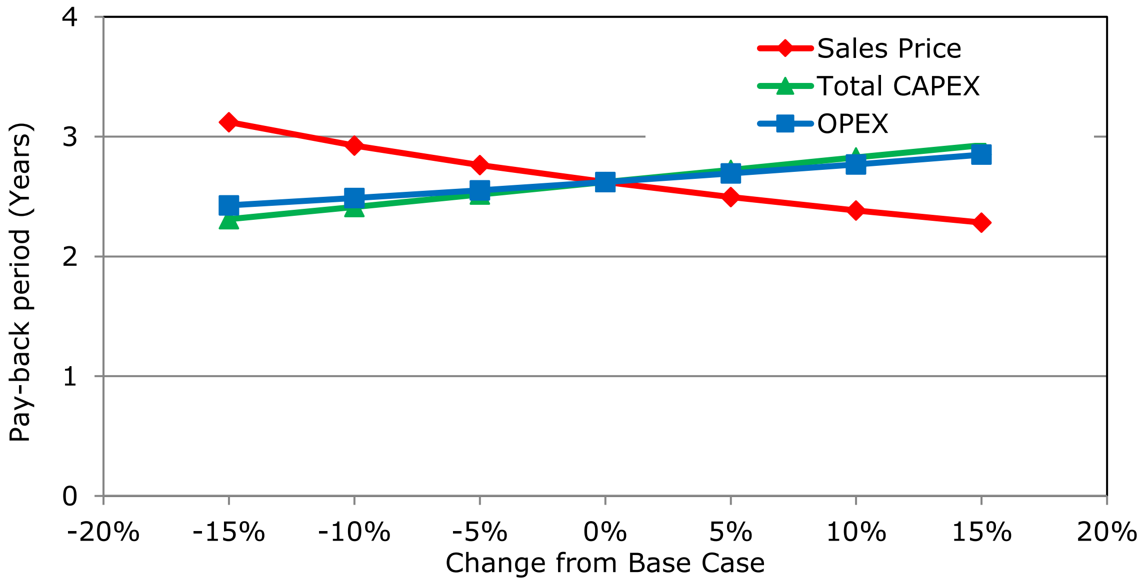

Figure 45: Payback sensitivity of IDP to key economic parameters

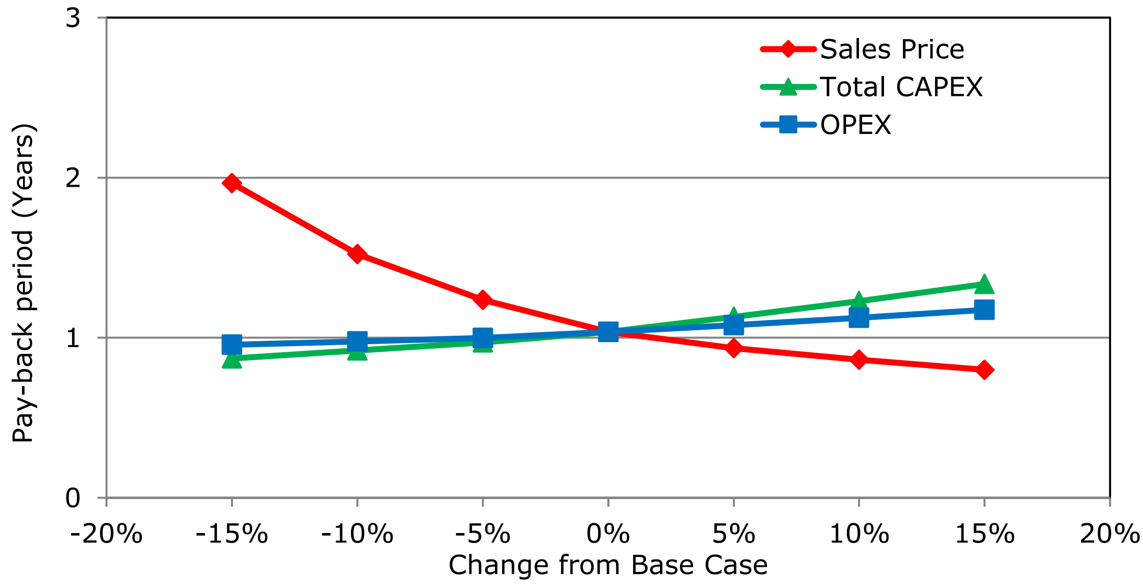

Figure 46: Payback sensitivity of BMP to key economic parameters

22.12 Concluding Opinion

At an average saleable production of ~26,400 t/a CSPG and 18,000 t/a fines (-100 mesh) from the BMP alongside 42,000 t/a of +100 mesh NFG concentrate from the Lola Project, the Cash Flow Approach presents an 100 % attributable pre-tax NPV for the IDP of USD1.584 billion, and post-tax NPV of USD1.321 billion, at an 8.0 % real discount rate to the un-escalated cash flows. The discounted payback is 2.6 years after production commence with a post-tax IRR of 43.1%.

The technical and financial results indicate that the IDP is viable processing NFG from the Lola Project for 25-years.

In the event Falcon Energy initially proceeds with only the BMP, awaiting improved NFG prices, before developing the Lola Project, then the Cash Flow Approach presents an 100% attributable pre-tax NPV for the proposed BMP of USD1.259 billion, and post-tax NPV of

USD1.149 billion, at an 8.0 % real discount rate to the un-escalated cash flows. The discounted payback is approximately one year after production commence with a post-tax IRR of 82.0 %.

23 Adjacent Properties

Section 23 has been summarized from the 2023 DRA Technical Report. It relates to the subject property of the Mineral Resource Estimate, i.e. Lola Project, and does not require a discussion on the BMP in Morocco.

The Lola Graphite Exploration License (PR 5349) is surrounded by four adjacent Exploration Licenses (Permis de Recherche Industrielle) (*Figure 47*). However, all infrastructure related to the Lola Project lies within the Falcon Energy's PR 5349 property.

Other exploration licenses for graphite, iron and base metals, and a quarry, are located in the surrounding area, some distance away from PR 5349 (*Figure 47*).

Official information on the adjacent properties are available from the Mining Land Registry of the Republic of Guinea (Portail du Cadastre Minier de la République de Guinée) which can be assess from http://guinee.cadastreminier.org/fr/. A QP has not verified the information about the adjacent properties. However, official information on the publicly available website of the mining registry can be obtained using the provided link. The information on adjacent properties is not necessarily indicative of the mineralization on the property that is the subject of the Technical Report.

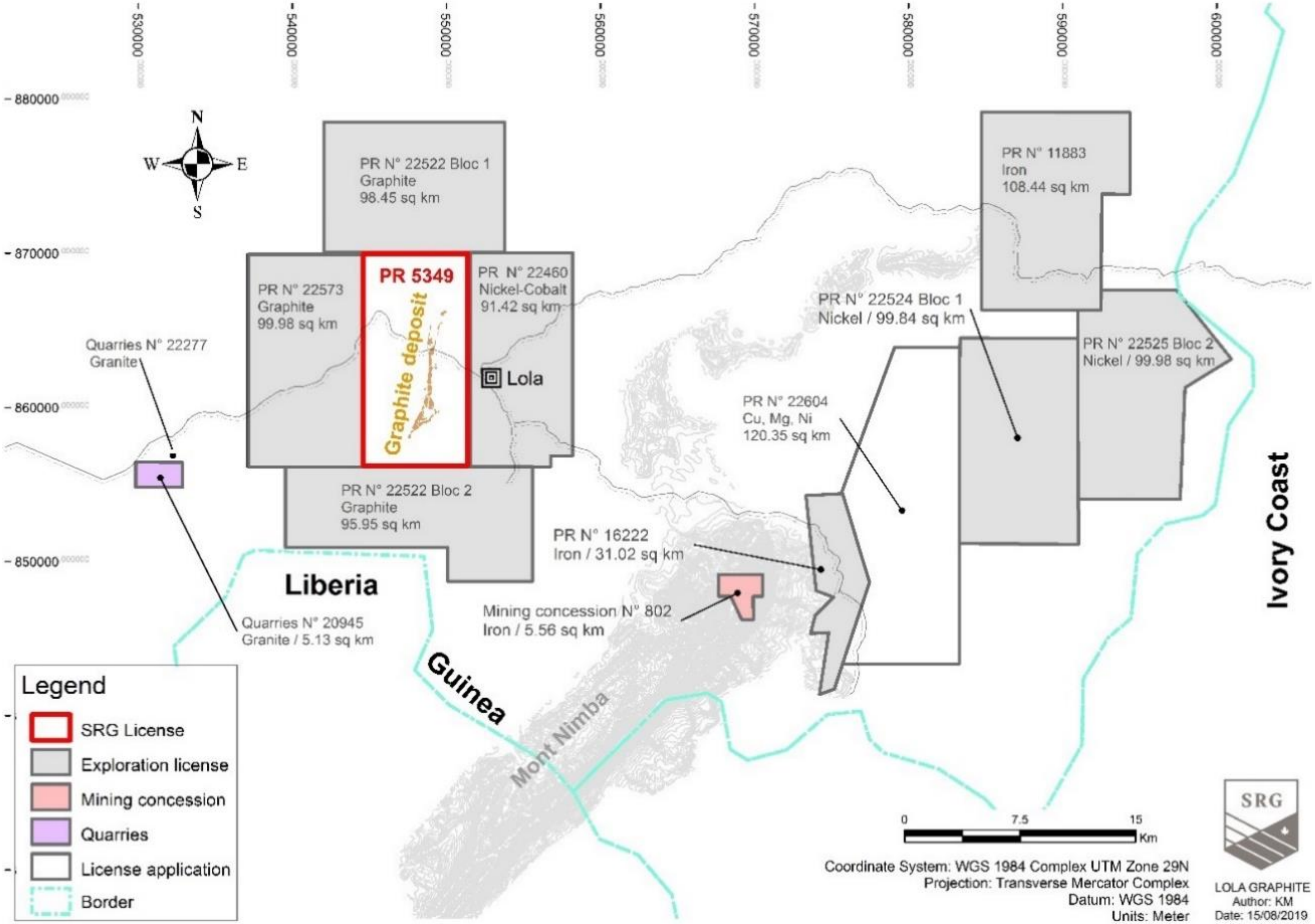

Figure 47: Adjacent Properties to the Lola Graphite PR 5349

24 Other Relevant Data and Information

24.1 Lola Project

Section 24.1 has been summarized from the 2023 DRA Technical Report.

24.1.1 Project Risks

The following are the main risks of the Lola Project that have been identified:

- Currently available comminution results lack information on variability which poses a limited risk on the sizing of the SAG mill. Future planned metallurgical test work should be prioritized to confirm the sizing of the mill;
- Vendor test work for the concentrate filtration is required to confirm current sizing of the filter-presses;
- Additional flotation testing of Saprolite and Fresh Rock blends is required to improve confidence on expected recovery and concentrate quality;
- There is a risk of equipment blockage as the RoM have a high moisture content and is exposed to open-air. There is a need to ensure mill front-end robustness of design for mill feed;
- There is a risk of graphite blockage in chutes and silos. Testing is required for the dried NFG concentrate to support the detailed design of silos;
- There is a risk of slippage in the project schedule caused by future metallurgical test work. The risk is that the test work takes longer than the quoted eight months to complete;

- There is an additional schedule risk relating to the metallurgical test work. Available Frech Rock core for test work is being assessed. However, should there be insufficient representative material, additional drilling will be required, causing a slippage in the test work schedule;
- There is a risk that current geotechnical parameters for the laterite and Saprolite are overestimated. Consequently, downgraded parameters may affect slightly the slope angle. Additional drilling, testing, and monitoring is required to confirm the initial parameters;
- Blasting in the North Pits, which are close to the milling plant, may represent a safety risk. The planning of blasting operations must be coordinated with plant operations;
- There is a risk that hydrogeological parameters are overestimated. Consequently, drilling dewatering wells and installing pumps may be needed. Additional drilling, testing, and monitoring is required to confirm the initial parameters; and,
- There is a risk that during an unusually wet rainy season, water rises above the flood-line, flooding the pits, posing risk to personnel and equipment resulting in disruption of the mine operations. Appropriate mitigations should be assessed and implemented before mining operation commence.

To continue to mitigate risks, it is recommended that sufficient risk management effort be performed during the next development phase. A formal risk review should be performed at the start of the next phase. The appropriate levels of Hazard and Operability study should be performed during the subsequent development phases.

24.1.2 Project Opportunities

The following are the main opportunities of the Lola Project that have been identified:

- Convert Mineral Resources into the mine plan, if justifiable based on the Modifying Factors and confirmed by a hydrogeological and geotechnical study;
- Evaluate the possibility of including development of the TSF in the scope of the mining contractor (to reduce haulage distances);
- Evaluate the possibility of co-disposal of mine waste and tailings;
- Evaluate the possibility of including the haulage and access roads in the mining contractor scope of work;
- Consider a "Schedule of rates" type of contract with the mining contractor based on an open book integrated set-up;
- Based on the results of the planned future metallurgical test work at SGS, re-evaluate the current comminution energy requirements;
- Based on the results of the planned future metallurgical test work at SGS, re-evaluate the mesh size distribution of the concentrate;
- Evaluate the option of a build, operate and maintain strategy for power generation;
- Evaluate the option of hiring a contractor to transport the concentrate to the port of Monrovia, Liberia;
- Evaluate the possibility of eliminating the camp and housing employees in Lola;

- Group the equipment into large procurement packages to be able to negotiate lower prices;
- Investigate the possibility of equipment financing via export-support governmental agencies; and,
- Engage competent contractors early in the next phase of the project and consider alternative contract management strategies such as Guaranteed Maximum Price.

24.2 Active Anode BMP

All relevant data and information regarding the BMP are included in the other Chapters of the Technical Report.

Of interest to the development and technical experience to become a fully integrated producer of battery anode material is Falcon Energy's September 2024 proposed Strategic Technical Partnership announcement with Hensen to advance the anode plant in Morocco. On September 9, 2024, it was announced in a news release that Falcon Energy and Hensen had signed a technical and strategic partnership agreement to jointly develop an anode plant in Morocco that will produce CSPG.

The takeaway points of the September 9, 2024, News Release are summarized as follows:

- Hensen is a leading, privately owned, CSPG producer;
- Hensen has successfully constructed and operated several synthetic and natural graphite anode plants in China;
- Hensen is building a large-scale anode plant in Weihai, China, which is expected to be commissioned during Q4 2024;

- Under the terms of the strategic partnership agreement, Hensen and Falcon Energy will collaborate to develop a process flow sheet to produce CSPG that meets all end-user quality requirements while promoting industry-leading transparency and sustainability standards;
- Falcon Energy has made significant progress in discussions with several strategic partners interested in becoming Tier One international supplier of CSPG to the Western battery markets;
- Falcon Energy is evaluating various strategic options and anticipates announcing a Commercial Partner for the Anode Plant in due course;
- Hensen will be responsible for the engineering, procurement, qualification and construction expertise to produce CSPG;
- The Commercial Partner will be responsible for the integration of Falcon Energy within the battery supply chain, including the qualification of the CSPG to end-user specifications;
- All potential Commercial Partners whom Falcon Energy has engaged with have existing production of synthetic CSPG, which is an essential component of any commercially available graphite anode; and,
- Falcon Energy believes that aligning with a Commercial Partner who has existing synthetic CSPG production is strategically important, as most graphite anodes consists of a blend between synthetic and natural graphite.

The News Release can be downloaded from Falcon Energy's website at https://falconem.net/ or from the Canadian System for Electronic Document Analysis and Retrieval at www.sedarplus.ca.

25 Interpretation and Conclusions

25.1 Integrated Development Plan

Falcon Energy is advancing a vertically integrated global strategy to produce battery anode material aimed at supporting the growing LIB industry. Central to this is Falcon's IDP comprising the open cast mining operation and associated flotation concentrator plant in Guinea, termed the "Lola Project, and the active anode flake graphite BMP, planned to be located in Morocco. Sales from the IDP comprise ~42,000 tpa of +100 mesh NFG concentrate, ~ 26,400 tpa CSPG product, and 18,000 tpa SG (fines) by-product.

The pre-production initial CAPEX, including contingency, of the Lola Project, is estimated at USD185 million. The initial CAPEX, including contingency, of the BMP is estimated at USD73 million. After an estimated two-year qualification period, the Coating Plant will be expanded at an CAPEX, including contingency, of USD33 million.

The annual OPEX of the IDP comprise an all-in sustaining OPEX of USD680/t NFG concentrate for the Lola Project and USD3,193/t CSPG for the BMP.

The 100 % attributable pre-tax NPV for the IDP is USD1.584 billion, and post-tax NPV is USD1.321 billion, at an 8.0 % real discount rate to the un-escalated cash flows. The discounted payback is 2.6 years after production commence with a post-tax IRR of 43.1 %.

The technical and financial results indicate that the IDP is viable processing NFG from the Lola Project for 25-years.

In the event Falcon Energy initially proceeds with only the BMP, awaiting improved NFG prices, before developing the Lola Project, then the 100% attributable pre-tax NPV8 will be USD1.259 billion, and the post-tax NPV8 will be USD1.149 billion. The discounted payback reduces to approximately one year after production commence with a post-tax IRR of 82.0 %.

25.2 Lola Project

Section 25.2 is a summary of the 2023 DRA Technical Report.

25.2.1 Geology

The Lola graphite deposit manifests itself by ample surface exposure and is defined by core holes drilled over a systematic, tight grid. The field procedures and analytical work have adhered to best practices and industry standards required by NI 43-101. The data verification process did not identify any material issues with the drilling, logging, assaying work and with the results from the QAQC system.

25.2.2 Mineral Resource Estimate

The 2023 Mineral Resource Estimate defines a pit-constrained Saprolite (oxide) Mineral Resource in the Measured and Indicated classification of 33.2 Mt grading 3.88 % Cg and Inferred Mineral Resource of 10.97 Mt grading 3.52 % Cg, using a CoG of 1.0 % Cg for Saprolite. The Fresh Rock Mineral Resources include a Measured and Indicated Mineral Resource of 20.76 Mt grading 4.14 % Cg and an Inferred Mineral Resource of 1.33 Mt grading 4.23 % Cg, based on a CoG of 1.4 % Cg.

25.2.3 Mining Method

A detailed mine production schedule was developed for the IDP. The IDP mine production schedule is based on the same initial 16-year production schedule outlined in the 2023 DRA Technical Report, adding to this incremental Inferred Mineral Resources of both the Saprolite and Fresh Rock. Thereby, increasing the LoM to 25-years.

Over the LoM, 43,626 kt Saprolite at 3.80 % Cg, 19,751 kt Fresh Rock at 4.14 % Cg, and 55,866 kt waste will be mined to yield an average LoM stripping ratio of 0.881.

The mine production schedule for the IDP targets a mill feed of up to 2,565 kt per year, with emphasis on treating higher-grade carbon material. The total NFG concentrate recovered from this will be ~ 88,000 t/a. All of the -100 mesh contained in the NFG concentrate (45,000 t/a) will be processed by the BMP to produce ~26,400 t/a CSPG t/a product.

To optimize plant recovery, the feed schedule is designed to incorporate a blend of 45 % Fresh Rock and 55 % Saprolite. However, during the first year of production, RoM will exclusively be Saprolite since this material is easier to access than the Fresh Rock located at depth.

The PEA is preliminary in nature, it includes Inferred Mineral Resources that are considered too speculative geologically to enable them to be categorized as Mineral Reserves, and there is no certainty that the PEA will be realized.

25.2.4 Mineral Processing and Metallurgical Testing

During 2018 and 2019 process optimization metallurgical test work was completed on Saprolite samples.

Due to the weathered nature of the mineralized material, scrubbing is sufficient to provide the required size reduction and only a small percentage of the feed requires grinding to pass the 1 mm rougher feed screen. Desliming of the rougher feed resulted in small graphite flakes losses. However, improved rougher flotation performance substantially.

Flotation of the domain composites displayed a considerable variation in terms of concentrate grades and graphite recovery, therefore a blending strategy is very important for successful operation of the commercial plant.

A combination of intermediate concentrates polishing in a tumbling mill and polishing in the stirred mill is required to achieve the grade targets due to the presence of graphite interlayered with gangue minerals. A higher energy input is required to liberate the graphite from the interlayered gangue compared to gangue minerals that are attached to the outside of the graphite flakes.

Test work confirmed suitability of the flowsheet for Saprolite.

Testing Fresh Rock demonstrated that the Mineral Resource can be expanded when this material is blended with Saprolite. As expected, the Fresh Rock is substantially harder compared to Saprolite. Mixing Fresh Rock with Saprolite yields improved recovery, no reduction in concentrate grade, and coarser final concentrates, compared to treating Saprolite only.

A flotation pilot plant campaign, processing of 200 t of surface sample, generated NFG concentrate sample for marketing purposes as well as generated several samples for the equipment supplier testing.

Equipment (vendor) supplier test work included scrubbing, scrubber discharge, intermediate concentrate screening, and concentrate dewatering (centrifuge). The tests were conducted in laboratories of reputable equipment suppliers and allowed to confirm the applicability of the equipment proposed for the commercial flowsheet and set the preferences for the concentrate dewatering.

25.2.5 Recovery Method

NFG concentrate will be recovered by a conventional flotation process. Saprolite beneficiation has an overall graphite recovery of 73.1 %, producing a graphite concentrate grade of 95.4 % Cg. The addition of up to 45 % of Fresh Rock in the feed blend improves the overall graphite recovery to 84.2 %. A suitable process flowsheet able to handle Saprolite as well as a feed blend with Fresh Rock has been developed. The overall LoM recovery is estimated at 83.6 %.

Based on market demand, the process plant will produce graphite concentrate divided into four standard-size fractions: + 48 mesh, -48 + 80 mesh, -80 +100 mesh and -100 mesh.

25.2.6 Geochemical

Geochemical leaching and acid rock drainage (“ARD”) static tests have been performed on limited samples of waste and mineralized material. However, further long term geochemical tests are required. A geochemical kinetic test has been performed on tailings produced from representative Saprolite composite sample. However, since the mine production schedule comprise mixture of Fresh Rock and Saprolite, further kinetic tests are required on a sample comprising the proposed feed mixture.

The current water management plan is not optimized to reduce the number of sedimentation ponds and requires further assessment.

25.3 Active Anode BMP

The interpretation and conclusion of the PEA on the BMP for value addition transformation of NFG concentrate into CSPG battery anode material for Falcon Energy is summarized in the following Sections.

25.3.1 General

Falcon Energy is developing a fully integrated global battery anode material strategy to supply the expanding LIB market.

Falcon Energy's strategy includes a graphite mine and NFG concentrator in Guinea and a separate BMP in Morocco for value addition transformation of the NFG concentrate into high-purity, battery-grade, anode material.

Hensen's technical experience in anode material can position Falcon Energy favorably to become an integrated producer of battery anode material and advance the development of the IDP.

It is planned to locate the BMP in either the Automotive City, or within the Tanger Tech industrial zones that are both located in the city of Tangier, northern Morocco. Both industrial zones offer ideal settings for industrial operations, combining innovation, compliance with environmental standards, sufficient infrastructure focused on the needs of the automotive and technology sectors, and offer significant incentives for foreign investment. Selecting Morocco as location for the BMP aligns with Falcon Energy's strategic goal of situating the BMP in a country that benefits from free trade agreements with key European and North American markets, and are located in close proximity to Guinea to facilitate the import of NFG from the Lola Project.

The BMP will transform NFG concentrate from the Lola Project into high-purity, battery-grade, anode material as follows:

- Spheroidization Plant producing 27,000 t/a of SG from 45,000 t/a of -100 mesh NFG concentrate (≥94.6 wt.- % FC) comprising two size fractions (SG20 and SG10), plus 18,000 t/a of SG fines (≤9 µm, ~95 wt.- % FC) by-product; and,

- The Purification Plant is sized to treat 27,000 t/a SPG by applying pitch tar coating technology at an addition rate of 10 wt.- %. The final CSPG production of the BMP producing FC battery grade at 99.95 wt.- % is 26,366 t/a.

The subject matter of the Technical Report is limited to the production of high-purity, battery-grade, active anode CSPG material produced from NFG concentrate from the Lola Project.

Considering the strategic partnership agreement announced on September 9, 2024, between Falcon Energy and Hensen to jointly develop an anode plant in Morocco should be favorable positioned Falcon Energy to become an integrated producer of battery anode material and to advance the development of the IDP.

25.3.2 Mineral processing and metallurgical testing

Falcon Energy retained Anzaplan GmbH in Germany to perform graphite spheroidization, SG purification, and coating SPG test work from NFG concentrate produced from the Lola Project.

The findings of the PEA test work are summarized as follows:

- The equipment can successfully micronize and spheroidize NFG concentrate from the Lola Project;
- The PEA tested only for the production of coarse SG product that achieved a 53 wt.- % yield. However, based on Hensen's experience in graphite spheroidization, and that of the Weihai Plant, the PEA assume an optimized combined yield of 60 wt.- %;

- SG tests indicate that NFG concentrate from the Lola Project can achieve a product in the typical general market specification range. However, the BET surface area of the CSPG is higher, compared to the usual market specification – see discussion below;
- Various methods for purification were tested on a laboratory scale. High-purity graphite (FC content of 99.97 wt.- %) was achieved by applying a single-stage acid treatment comprising a HF and HCl mixture. Considering the strategic partnership agreement between Falcon Energy and Hensen to jointly develop an anode plant in Morocco [2], a multi-acid purification method was selected for the PEA due to Hensen's broad experience with this established method. The multi-acid approach efficiently removes impurities from the graphite, yielding high-purity SPG;
- The reagent recovery and wastewater treatment are integral parts of the Purification Plant and is key to the economics of the BMP due to the recovery and reuse of certain reagents. Therefore, the future test work programs should also evaluate in detail reagent recovery and wastewater treatment;
- ALD and dry pitch tar coating test work was performed during the PEA. The initial test applied both standard process conditions and carbon-coating precursors. Only limited test work was performed for the pitch tar coating using standard pitch addition (10 wt.- %), conditions, and precursors;
- The product from the coating test work showed elevated BET specific surface area, compared to typical market products. Further coating test work should be conducted to assess the BET

of SPG produced from the Lola Project having been purified through the proposed multi-acid purification method; and

- Further detailed coating test work including electrochemical analyses is required during the next phase to establish suitable coating parameters and to determine the optimum conditions to achieve the required BET surface area.

25.3.3 Market Studies

The surge in renewable battery technology, especially LIBs, has significantly boosted demand for NFG, which is essential for producing anode materials. The primary driver of NFG demand, accounting for 86 % of total demand by 2034, is the LIB market. This demand is projected to grow significantly, reaching 4.1 Mt annually by 2034, creating a strong need for NFG concentrate and SPG.

By 2030, synthetic active anode material is forecasted to meet roughly 62 % of total active anode material demand. However, natural graphite is expected to grow from 27 % in 2024 to 35 % in 2034, while synthetic graphite's share is projected to decline from 69 % to 57 %.

In response to rising global SPG demand, both existing and new operators are ramping up SPG production. Notably, ex-China aspirants aim to focus on natural graphite expansions, while producers in China seek to expand their dominance in synthetic supply.

Although China's output is projected to decline as a percentage of global supply by 2030, there are limited ex-China production projects to diversify sources. Africa's resources, known for their low-cost production, stand out as a viable source for NFG, aligning well with

Falcon Energy's strategy to source and process NFG from various international operations.

Chinese players have continued to announce notable developments at synthetic projects. As such, synthetic supply is projected to increase to 3.1 Mt by 2034. The forecasted production will be significantly higher than the natural equivalent.

The global active anode material market is expected to remain in a net positive balance until 2029 due to ongoing capacity expansions. However, the total market is projected to experience a marginal deficit of roughly 27 kt in 2029. After 2029, the rate of supply growth is anticipated to decrease as fewer new projects are developed. The market deficit is expected to widen significantly to 2.3 Mt by 2040.

By 2030, the NFG anode market is expected to face a shortfall of approximately 455,000 tonnes, primarily due to concentrate supply limitations at mining sites. A Moroccan manufactured, battery-grade CSPG product from companies like Falcon Energy, produced at commercial scale, is expected to be highly attractive to the ex-China LIB supply chain.

25.3.4 Contracts

Given that the BMP is still in the preliminary assessment stage and the final location has yet to be finalized, it is not unusual that no contracts relating to development, production, or marketing and sales have not been finalized or are currently under negotiation. This absence of contracts extends to development, acquisition, service provision, operations, maintenance, transport, handling, sales, hedging, and forward sales agreements.

Since the BMP functions similarly to a chemical processing plant, the contracts necessary for its development and production can be negotiated during the later stages of the BMP's development timeline. This flexibility provides time to secure these agreements, presenting a low-risk scenario for contract finalization as the BMP progresses toward construction and operation.

25.3.5 Environmental studies, permitting and social impacts

The Law n°12-03 of the Kingdom of Morocco on EIA describes the content and procedure for carrying out ESIAs. This law requires that all projects that are likely to generate negative impacts need to perform an ESIA.

The BMP is economically viable and expected to generate positive outcomes, particularly regarding local employment. However, efforts are required to manage environmental risks and ensure full compliance with Moroccan law to minimize any negative effects on local communities and ecosystems.

Although some of the BMP's technical specifications are at the PEA stage only broadly defined, the preliminary ESIA performed by TME during the PEA has identified general environmental impacts based on potential activities associated with similar projects. The preliminary EIA applied a standardized methodology evaluating the intensity, extent, and duration of potential impacts on physical, biological, and socio-economic environments.

The Project is expected to have substantial positive socio-economic impacts, including job creation during both construction and operational phases. The development of local infrastructure, such as roads, electricity, and water, would further benefit the region and its population. The ESIA also acknowledges the potential challenges, such as the need for careful management of emissions, noise, and waste, which could otherwise affect the quality of life of nearby communities.

The key environmental impacts of the BMP as proposed during the preliminary EIA are as follows:

- The need for careful wastewater management, particularly due to the use of acidic substances during purification, will require careful assessment. It is likely that an effluent treatment system may be required to neutralize wastewater before discharge;
- The BMP applies caustic soda and acidic water. These systems will be appropriately designed and maintained to prevent the release of hazardous substances to the environment. Liquid effluent discharges will be treated in accordance with Moroccan standards for wastewater and industrial discharge limits;
- Filtration residues and sludges will be generated by the purification processes. The ESIA will outline the need for safe handling, disposal, and potential recycling of materials;
- Release of VOCs and other air emissions will be done to ensure the design compliance with Moroccan regulations;
- The BMP will have socio-economic and environmental impacts on the local community. To ensure the community fully benefits from the BMP and to minimize opposition, it will be important to implement effective communication strategies, impact management plans, and social responsibility initiatives. These should be implemented in collaboration with key stakeholders;
- The BMP will implement comprehensive safety protocols that will focus on worker safety and security, and compliance with relevant health and safety regulations;

- To maintain high safety standards, the BMP needs to undergo regular audits, including external inspections, to verify that it adheres to the relevant environmental and safety regulations. Training programs will be updated regularly to reflect new safety protocols and regulatory changes.

The next phase will include a full ESIA that will involve detailed site-specific investigations, further refining the potential impacts and mitigation measures.

26 Recommendations

Given the positive NPV, the IDP demonstrates reasonable prospects for technical and economic viability. Based on the results of the PEA, Falcon, Anzaplan and Hensen are evaluating the possibility of advancing the IDP to a feasibility level study. If the Company decides to proceed with such a study, it is anticipated that it would be completed during mid-2025. A feasibility study for the IDP would also form the basis for the environment impact analysis and is required to complete the permitting process for the Anode Plant in Morocco.

The technical expertise from Hensen strengthens Falcon Energy's position, enhancing its ability to develop the IDP and become a fully integrated producer of battery anode material.

The QPs responsible for the Technical Report recommend that the work outlined in the following Sections be performed during the next development phase.

26.1 Lola Project

Section 26.1 is a summary of the 2023 DRA Technical Report.

26.1.1 Mineral Resources

- The Mineral Resource remain open along strike and dip. Further exploration along the strike may extend the open pit LoM;
- Perform infill drilling to upgrade all Inferred Mineral Resources within the pit shell to at least Indicated category thereby extending the LoM of the mining operations; and,
- Develop a grade control model prior to mining. Before commencing with this it will be important to determine the optimum spacing for grade control drilling.

26.1.2 Mining

- Additional drilling, testing, and monitoring is required to confirm the geotechnical parameters utilized for the Fresh Rock and Saprolite pit slope design;
- Evaluate in-pit filling versus out of pit dumps to reduce travel distance and cost. Additional drilling will be required in the Saprolite pits to determine if there is additional Fresh Rock before considering in pit dumping;
- Perform a detailed hydrogeological study. This study will provide an estimate of the quantity of water that is expected to be encountered during the mining operation; and,
- A detailed hydrogeological and geotechnical study should be performed to evaluate if the 1-100 years flood lines area can be reduced to increase the LoM.

26.1.3 Process

- Locked cycle flotation test work for Fresh and Saprolite mixes is required to produce metallurgical results that closely replicate the mine production schedule and evaluate recoveries, concentrate grade, and PSD;
- Comprehensive variability testing should be conducted on samples of the Saprolite and Fresh Rock to develop an understanding of the full extent of metallurgical variation that may be encountered in the Lola deposit. Once the degree of variation is better understood, blending strategies can be developed for the commercial operation; and,

- Variability comminution testing is recommended for the Fresh Rock to determine a hardness variation to reduce the process risks for the comminution equipment design.

26.1.4 Environmental and Social Management Plan

- Currently, the use of HFO fuel for the generators results in SO2 and NO2 emissions which exceed the Guinean and International Finance Corporation ("IFC") in-stack limits. Consider installing generators which meet the emissions limits or increasing the stack high or exhaust velocity;
- Consider implementing noise controls around the Crusher and SAG mill and/or relocate the Camp to reduce the impact of noise on its occupants;
- Recover the stripped soil to be used at closure;
- Vegetate bare soil quickly; build drainage ditches, containment dikes around tank and fuel stations and settling pond to avoid runoff water;
- Drill additional piezometers around site infrastructure to establish water management plan and underground water quality and level monitoring procedures;
- Develop and implement Influx Management Plan;
- Establish necessary monitoring measures with key performance indicators to measure the project's impact and the effectiveness of ongoing management measures;
- Develop and implement Community Health and Safety Management Plan, including dedicated Traffic Management Plan to cover communities along the export route and communicable diseases and sanitation & hygiene awareness campaigns;

- Develop, implement and communicate local hiring policy with transparency; and,
- Use the RAP Framework to guide the resettlement and livelihood restoration program.

26.1.5 Tailings Storage Facility

- Update the water balance of the TSF for the new LoM;
- Re-assess the freeboard of each phase of the TSF development according to the updated water balance; and,
- Re-assess the phasing of the construction of TSF1 and TSF2 and optimize for fewer phased wall lifts to produce a discontinuous construction period between the phases.

26.1.6 Hydrogeology

- Acquire aerial photographs of the project area and conduct a detailed lineament analysis;
- Perform a ground geophysical investigation using electric methods to locate major faults around the pits;
- Drill selected points to assess productivity of deep aquifers and determine their hydrodynamical parameters; and,
- Update the hydrogeological and pits dewatering model and update the hydrogeological report.

26.1.7 Geochemical

Geochemical leaching and ARD static tests must be carried on more waste and mineralized material samples to obtain more information on variability and allow calculation of statistics (average, median, etc.).

Geochemical kinetic tests carried out on tailings, Fresh Rock and Saprolite, to clearly predict long term behavior of those materials. A kinetic test must be carried out on a representative composite tailings sample produced at the pilot plant from Saprolite and Fresh Rock in proportion conforming to the mine production schedule.

To have the volume of topsoil available for revegetation at closure of the different infrastructure, various topsoil stockpiles must be planned and located on the lay-out. Ideally, topsoil must be cleared and saved at the process plant, TSF, waste dumps and pits location. Topsoil management plan must be developed to maintain agronomical characteristics and control wind and water erosion.

Water management plan must be optimized to reduce the number of sedimentation ponds. Considering the location of the various infrastructures, water with similar characteristics should be sent to the same pond for treatment before discharge. This strategy will limit the cost of ponds construction and pH adjustment installations. However, piping, and pumping costs could be higher. Following water management optimization carried out during detailed engineering, the CAPEX and OPEX will have to be updated.

The CAPEX and OPEX associated with the water management plan is estimated at ±40% accuracy as it is not based on any level of design. It is recommended that both optimization of the current concept and improved level of design be undertaken so that a better level of accuracy can be attained with respect to project costs for this item.

26.2 Active Anode BMP

26.2.1 General

- The resultant of the next development stage should be a single development option, applying the Hensen Process Technology, in accordance with the appropriate AACE International Class of work to proceed to the definitive or basic engineering, design, and cost estimation level;
- During the next phase the location of the BMP, either in Automotive City or Tanger Tech, should be concluded since the location is required to finalize logistics, layout, bulk supply and infrastructure services and is required to perform the ESIA and ensure the design conforms to local regulatory requirements;
- The next development stage will require further definition that will require defined input to logistics, reagent supply and storage, environmental and social impacts, soil and hydrology, site plan, as well as energy (electricity and gas) and water requirements. Consequently, it is recommended that the required studies, to provide the required definitions, be performed during the Feasibility Study to quantify and assess these parameters.

26.2.2 Mineral Processing and Metallurgical Testing

It is recommended that the metallurgical responses of the NFG be assessed through further optimization of spheroidization, purification and coating conditions to enhance the quality and yield of the battery anode material by performing the test work outlined below.

- Spheroidization Plant:
  - Perform further assessments to improve the BET surface area of the SG;
  - Confirm the assumed optimized combined yield of 60 wt.- %, currently based on Hensen's experience of their plants in China and that of the Weihai Plant; and,
  - Perform a spheroidization pilot plant campaign to generate metallurgical upscaling parameters for basic and detailed engineering and design, equipment sizing, and vendor test work.

    In addition, produce sufficient quantities of SG material for enhancement, pilot purification, and coating test work to supply CSPG material for initial qualification and customer assessment.
- Purification Plant:
  - Perform locked cycle test work to confirm the grade and overall graphite recovery the production plant can achieve. Additionally, the test work will determine the influence of recycling streams and potential impurity build-up;
  - Perform chemical recovery test work including wastewater treatment (based on locked cycle test work);
  - Perform a bulk purification pilot plant campaign to generate metallurgical upscaling parameters for basic and detailed engineering and design, equipment sizing, and vendor test work.

    In addition, produce sufficient quantities of purified material for enhanced and pilot coating test work to supply CSPG material for initial qualification and customer assessment; and,

- Perform test work applying the multi-acid purification method to confirm suitability to purify mineralized material from the Lola Project and achieve high-purity SPG.

- Coating Plant
  - Perform a coating pilot plant campaign to generate metallurgical upscaling parameters for basic and detailed engineering and design, equipment sizing, and vendor test work.

    In addition, produce sufficient quantities of purified material for enhance and pilot coating test work to supply CSPG material for initial qualification and customer assessment;
  - Further coating and electrochemical test work should be conducted to assess the BET of SPG produced from the Lola Project having been purified through the proposed multi-acid purification method and to determine the optimum conditions to achieve the required BET surface area and electrochemical performance; and,
  - Further test work should confirm achieving CSPG battery anode specification (99.95 wt.- % FC and electrochemical performance).

26.2.3 Recovery Methods

The process flow should be assessed to evaluate the impact of variability of NFG concentrate from the Local Project on performance, quality, and costs.

26.2.4 Environmental Studies, Permitting, and Social Impact

Falcon Energy should commence with the next phase detail ESIA on the BMP following the conclusion of the site selection. The ESIA should be done in accordance with Moroccan Law No. 12-03 on Environmental Impact Studies, which outlines the specific requirements for projects that may have environmental and social impacts.

The ESIA should be performed at an early stage to minimize or avoid adverse environmental and social effects.

It is recommended to verify the need to perform an ESIA on the BMP in accordance with the management procedure as required by Law No. 12-3 of Morocco. The first step will be to assess if the BMP is specified on the list of projects requiring performing of an ESIA. If listed, then an ESIA report should be prepared, outlining the following:

- Feedback from stakeholders and the public on the project as obtained during the public inquiry;
- The EIA, presenting potential impacts and proposes mitigations;
- The EMSP, presenting the control mechanisms to be followed during the implementation and operational phases; and,
- The EIA and EMSP should be submitted for review to the regional commission of the Regional Investment Center who will evaluate the project's compliance with environmental requirements and regulatory standards.

26.3 Capital and Operating Costs

The next development stage should include activities, deliverables, and appropriate engineering and design, to perform the required cost estimates as outlined in AACE International RP 47R-11 for the Class selected for the development phase.

No cost allowance for bulk services, connection, and access has been made since the PEA intends to locate the BMP in an established prime chemical industrial site. This estate provides ready-to-go plug-and-play development plots with shared infrastructure, environmental, and energy services. Since the precise site selection has not been concluded, engineering, design, and cost estimation may be required during the next development stage in the event the selected industrial site does not include the provision of infrastructure and service.

26.4 Market Studies

Assess the market and sales price for the SG fines by-product since future market requirements and sales price forecasts are undefined.

The Market Study should be kept current since changing commodity prices is a major factor impacting the Economic Analysis. Therefore, the Economic Analysis should be updated with price changes to assess the magnitude of their impact and the need to proactive implement corrective action.

Further advantages of keeping market research current are:

- Minimize investment risk;
- Identifies potential threats and opportunities;
- Facilitate strategic planning; and,
- Focuses on customer needs and demands.

26.5 Economic Analysis

The Economic Analysis should be kept current by regularly updating it with the best available technical and economic information. This will ensure that the Economic Analysis remains reliable for sound decision-making.

Changes to feed, CAPEX, OPEX, commodity prices, recovery, and risk are major factors impacting the Economic Analysis. Therefore, the Economic Analysis should be updated when any of these major factors change to assess the magnitude of their impact and the need to implement corrective action proactively.

The DCF determines the economic potential of the IDP and does not accurately project loan repayments, cash flow, working capital, or tax payments. A separate corporate finance DCF model should be developed during the execution phase to accurately predict these projections and tax payments.

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28 QP Certificates

CERTIFICATE OF DERICK, R. DE WIT

To accompany the technical report entitled: "Technical Report on the Natural Graphite Active Anode Integrated Global Strategy Preliminary Economic Assessment" prepared for Falcon Energy Materials, PLC. (the "Issuer"), dated January 23, 2025, with an Effective Date of August 31, 2024 (the "Technical Report").

I, Derick Ryk de Wit, do hereby certify that:

a) I am Principal Chemical Engineer with Dorfner Anzaplan UK Limited with an office at 49 Greek Street, W1D 4EG London, United Kingdom.

b) I hold the following academic qualifications: MBA, B. Tech (Chem. Eng.), PMP (PMI®).

c) I am a Fellow of the Australasian Institute of Mining and Metallurgy under membership number 301519. I am a Fellow of the Southern African Institute of Mining and Metallurgy under membership number 704185.

d) I have worked as a Chemical Engineer continuously within the mineral resources and chemical industries since 1998. My relevant experience includes engineering and design of mineral and chemical processes and development of projects worldwide in accordance with the major reporting codes, including this Instrument, from geological exploration, through the different feasibility phases, receipt of legislative permits and licenses and implementation, including graphite process flow development, overseeing of metallurgical test work, engineering, design and cost estimation.

e) I have read the definition of "Qualified Person" set out in National Instrument 43-101 Standards of Disclosure for Mineral

Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.

f) I have not performed a personal inspection of the property intended to locate the Project that is the subject of the Technical Report.

g) I am a co-author of the Technical Report, responsible for Chapters 1.1-1.3, 1.7.1, 1.10, 1.11-1.16, 1.17.1.3-1.17.1.6, 2-5, 13.1, 17, 18-24, 25.1, 25.2.4-25.2.6, 25.3.1, 25.3.3-25.3.5, 26.1.3-26.1.7, 26.3-26.5, and 27, and I accept professional responsibility for those capters of the Technical Report.

h) As a Qualified Person, I am independent of the Issuer as defined in Section 1.5 of NI 43-101.

i) I have had no prior involvement with this Project that is the subject of the Technical Report.

j) I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

k) As of the date of this certificate, to the best of my knowledge, information and belief, the portion of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the portion of the Technical Report for which I am responsible not misleading.

Dated this 23rd day of January 2025.

"Signed and Sealed"

Derick, R. de Wit, B. Tech (Chem. Eng.), FAusIMM, FSAIMM

CERTIFICATE OF JOHANNES SIEGERT

To accompany the technical report entitled: Technical Report on the Natural Graphite Active Anode Integrated Global Strategy Preliminary Economic Assessment" prepared for Falcon Energy Materials, PLC. (the "Issuer"), dated January 23, 2025, with an Effective Date of August 31, 2024 (the "Technical Report").

I, Johannes Siegert, do hereby certify that:

a) I am a Senior Manager Mineral Processing of Dorfner Anzaplan GmbH, with an office address of Scharhof 1, 92242 Hirschau, Germany.

b) I hold the following academic qualifications: Dipl.-Ing. (FH), EUR ING.

c) I am a Member of the Institute of Materials, Minerals and Mining, United Kingdom under Registration No 483483.

d) I am a Member of the Australasian Institute of Mining and Metallurgy, membership number 3098710.

e) I have practiced as a metallurgical engineer for 16 years. I have been directly involved in metallurgical test work, flow sheet development, engineering and design and the development of mineral resource projects for graphite as well as lithium, high purity quartz, industrial minerals, rare earth elements, fluorspar, and others, internationally.

f) I have read the definition of "Qualified Person" set out in National Instrument 43-101 Standards of Disclosure for Mineral Projects ("NI 43-101") and certify that by virtue of my education, affiliation to a professional association and past relevant work experience, I fulfill the requirements to be a "Qualified Person" for the purposes of NI 43-101.

g) I have not performed a personal inspection of the property intended to locate the Project that is the subject of the Technical Report.

h) I am a co-author of the Technical Report, responsible for Chapters 1.7.2, 1.17.2, 13.2, 25.3.2, and 26.2.2, and I accept professional responsibility for those chapters of the Technical Report.

i) As a Qualified Person, I am independent of the Issuer as defined in Section 1.5 of NI 43-101.

j) I have had no prior involvement with this Project that is the subject of the Technical Report.

k) I have read NI 43-101 and Form 43-101F1, and the Technical Report has been prepared in compliance with NI 43-101 and Form 43-101F1.

l) As of the date of this certificate, to the best of my knowledge, information and belief, the portion of the Technical Report for which I am responsible contains all scientific and technical information that is required to be disclosed to make the portion of the Technical Report for which I am responsible not misleading.

Dated this 23rd day of January 2025.

"Signed and Sealed"

Johannes Siegert, Dipl.-Ing. (FH), EUR ING, MIMMM, MAusIMM

CERTIFICATE OF MARC-ANTOINE AUDET

To accompany the technical report entitled: "Technical Report on the Natural Graphite Active Anode Integrated Global Strategy Preliminary Economic Assessment" prepared for Falcon Energy Materials, PLC. (the "Issuer"), dated January 23, 2025, with an Effective Date of August 31, 2024 (the "Technical Report").

I, Marc-Antoine Audet, Ph.D., P.Geo, do hereby certify that:

a) I am the CEO of Sama Resources Inc located at 1320 Graham suite 132, Mont-Royal, QC, H3P 3C8.

b) I am a graduate from Université du Quebec a Chicoutimi and University of Nouvelle-Calédonie (Ph.D. Geology, 2009), University of the Witwatersrand, Johannesburg, RSA (Master in Geology 1996) and University Laval, Quebec, Canada in Geology (1986).

c) I am a member in good standing of the Ordre des Géologues du Québec (OGQ 1341) and Professional Geoscientists Ontario (PGO: 612).

d) My relevant experience includes 40 years' experience in mineral exploration and project development.

e) I have read the definition of "Qualified Person" set out in the NI 43-101 – Standards of Disclosure for Mineral Projects and certify that, by reason of my education, affiliation with a professional association, and past relevant work experience, I fulfill the requirements to be a Qualified Person for the purposes of NI 43-101.

f) I am not an independent of the issuer applying all the tests in Section 1.5 of NI 43-101.

g) I am a co-author of the Technical Report, responsible for Chapters 1.4-1.6, 1.8, 1.17.1.1, 6-12, 14, 25.2.1, 25.2.2, and 26.1.1, and I accept professional responsibility for those chapters of the Technical Report.

h) I personally visited the site several times. The last visit was during 2019.

i) I have prior involvement with the property that is the subject of the Technical Report.

j) As at the Effective Date of the Technical Report, to the best of my knowledge, information and belief, the Drilling Report is not misleading.

Dated this 23rd day of January 2025.

"Signed and Sealed"

Marc-Antoine Audet Ph.D. P.Geo, OGQ 1341

CERTIFICATE OF PATRICK MORYOUSSEF

To accompany the technical report entitled: "Technical Report on the Natural Graphite Active Anode Integrated Global Strategy Preliminary Economic Assessment" prepared for Falcon Energy Materials, PLC. (the "Issuer"), dated January 23, 2025, with an Effective Date of August 31, 2024 (the "Technical Report").

I, Patrick Moryoussef, do hereby certify that:

a) I hold the position of Chief Operating Officer, since February 2022 for Falcon.

b) I have a bachelor's degree in applied sciences, elective in mining engineering as well as an engineering diploma from the University of McGill of Montreal, obtained in 1994.

c) I am a member in good standing of the Ordre des Ingénieurs du Québec (No. 116242) and of the Canadian Institute of Mining, Metallurgy and Petroleum.

d) I have been practicing as a Professional Mining Engineer ever since my graduation from university 30 years ago in all the various fields of Mining Engineering.

e) I have read the definition of "Qualified Person" in National Instrument 43-101 (the "National Instrument") and certify that given my studies, my membership in a professional association (within the meaning given to this term in the National Instrument) and my past relevant professional experience, I can be considered as a "Qualified Person" within the meaning of said National Instrument.

f) I am a co-author of the Technical Report, responsible for Chapters 1.9, 1.17.2, 16, 25.2.3, and 26.1.2, and I accept professional responsibility for those chapters of the Technical Report.

g) I personally visited the site several times. My last personal inspection of the Lola property was from June 26 to June 28, 2023.

h) It is not the first time that I have been consulted regarding the Lola property or the Anode Facility discussed in the Technical Report. Since February 2022, I act as Chief Operating Officer. I have been on several missions in Guinea and Morocco.

i) As of the date of this certificate, to the best of my knowledge, information and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the Technical Report not misleading.

j) Pursuant to the requirements of Section 1.4 of National Instrument 43-101, I cannot be considered independent from Falcon inc. since I hold stock options of Falcon and since I have earned most of my income from Falcon for the past three years.

k) I have read National Instrument 43-101 and Form 43-101F1 and I hereby certify that the Technical Report was prepared in compliance with the requirements thereof.

Dated this 23rd day of January 2025.

"Signed and Sealed"

Patrick Moryoussef, P.Eng.

29 Appendix 1: Lola Project ESIA

The information presented in the following sections are translated and summarized from the report entitled "Étude d'impact environnemental et social Projet de Graphite Lola" by EEM Environmental & Social Impact Ltd., issued on February 8, 2019, and is referred to as the ESIA on the Lola Project.

The two main required licenses for a mining permit in Guinea are the "Certificate of environmental conformity" and the "mining permit".

Falcon Energy obtained its environmental certificate from the Bureau guinéen d'étude et d'évolution environnementale in March 2019, and applied for its mining license in April 2019 which is currently under review by the Service national de coordination des projets miniers.

Section 29 presents the stakeholder consultations, landscape, soil and water resource studies, the various impact studies pertaining to air, noise, biological, social and other, water management, closure and reclamation, and the Environmental and Social Management Plan ("ESMP"), that forms part of the ESIA on the Lola Project.

29.1 Stakeholder Consultations

The approach adopted by Falcon Energy and its consultants for stakeholder consultations on the Lola Project's environmental and social impact assessment ("ESIA") is in line with the Guinean directive to perform an ESIA of mining operations, as described in Decree D/2014/014/PRG/SGG.

Falcon Energy's Stakeholder Engagement Plan, summarizes existing stakeholder engagement efforts and those planned for the Project's upcoming phases. As described in the Stakeholder Engagement Plan, identification of the Project's stakeholders is based on the most recent scoping survey conducted in June 2018.

The principles of public consultation are as follows:

- They are preceded by institutional consultations in order to prepare for public consultations and to inform the authorities;
- They are based on documents containing objective information;
- They are open to all;
- They are aimed at populations affected by the Project, in particular, where applicable, people to be relocated as well as host populations;
- Where appropriate, there should be a gap between consultations with the populations to be relocated and host populations. Expectations of people to be relocated should be shared with host populations;
- The consultations are organized in two cycles:
    - the first is about reciprocal information; and,
    - the second is for presenting measures and collecting opinions, once the draft ESIA report has been submitted to the Bureau guinéen d'études et d'évaluation environnementale, for validation.

Figure 48 summarizes the consultations performed and how they fit within the public consultation process that informs the ESIA.

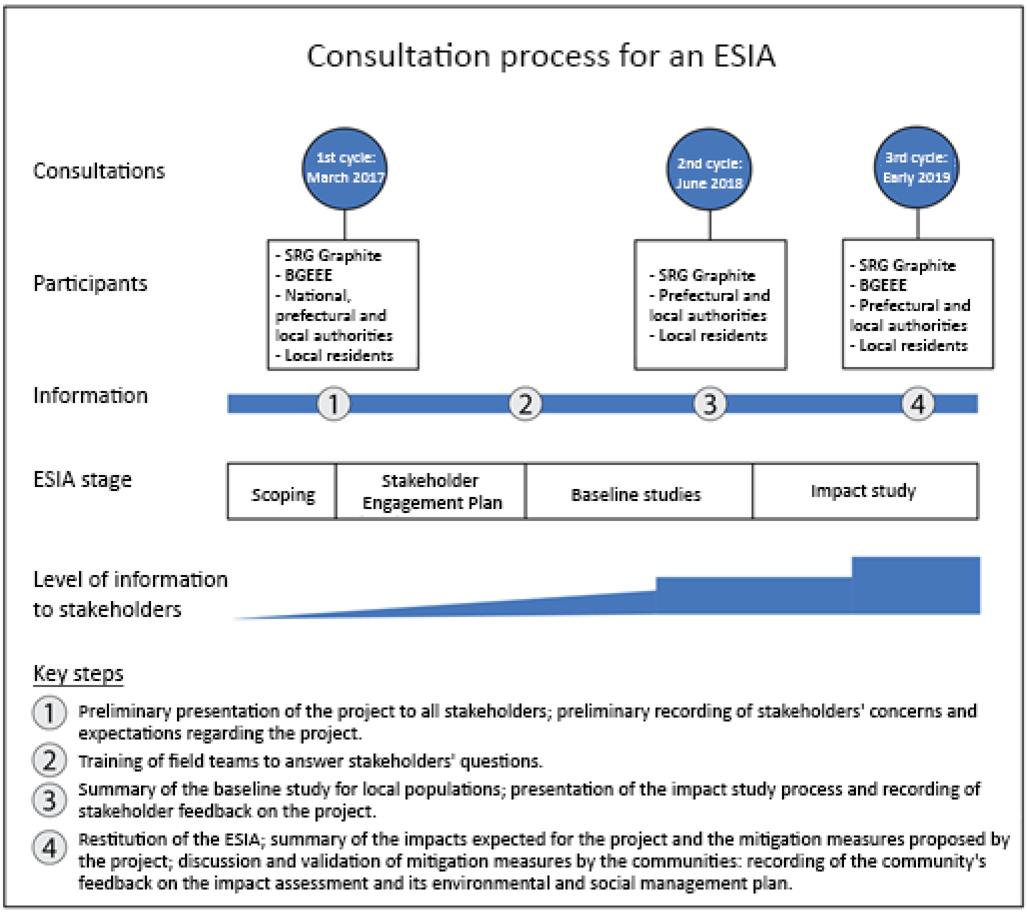

Figure 48: Consultation Process for the Lola Project ESIA (DRA 2023)

29.2 Summary of Public Consultations

The results show that almost all respondents are in favor of the Lola Project in their communities and are willing to transfer land ownership while respecting forthcoming commitments and protecting their interests. The results also indicate that respondents who own farmland have doubts as a result of negative experiences with some companies that have set up in the area and across the country in the past.

According to the respondents, implementing this Project must create employment for young people and open up their communities, as there is a notable lack of certain basic social services such as health, transportation, water and electrical services, and infrastructure. Throughout the public and individual consultations, specific requests were made for the construction of access roads, access to a potable water supply and employment in local communities.

29.3 Landscape, Soil and Water Resource Study

29.3.1 Baseline study

The study deals with the following main topics:

- Physiography;
- Geology;
- Soil;
- Climate;
- Hydrology;
- Hydrogeology; and,
- Surface and groundwater quality.

29.3.1.1 Field Surveys

The following reports were available at the time of compiling the ESIA:

- Meteorology/climatology;
- Surface and groundwater quality; and,
- Preliminary hydrogeology.

The locations of surface water, groundwater, and soil sampling stations as well as of water measurement stations and boreholes relevant to the study are shown in Figure 49.

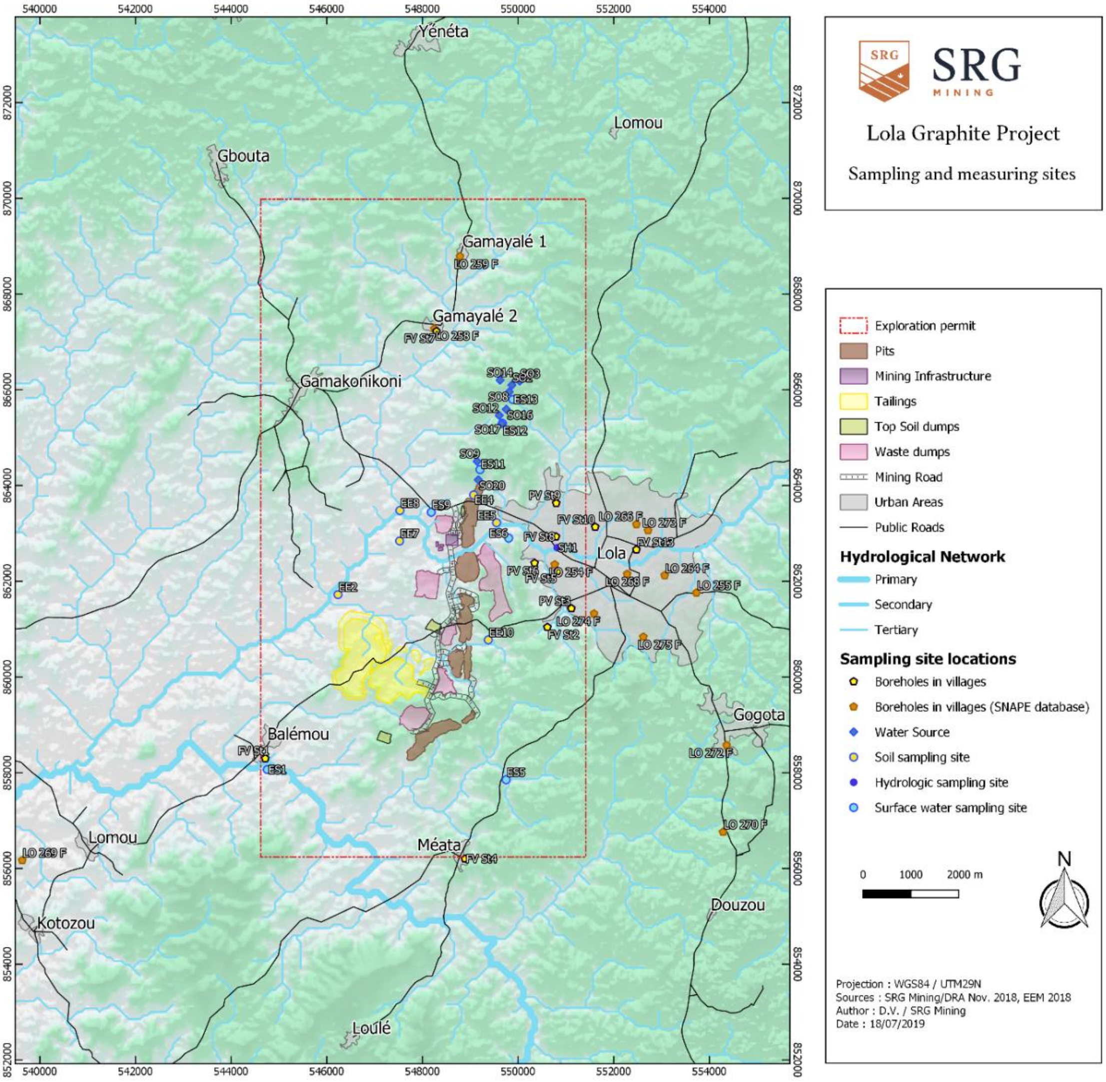

Figure 49: Locations of Drilling, Sampling and Measuring Sites

As a result of a variogram analysis, the following field surveys and laboratory tests were recommended and have been completed in 2019 with minor work ongoing on continual data collect:

- Meteorology: a weather station was installed at the mining camp;

- Hydrology: hydrological monitoring of stations on the Tighen stream and some small streams began in October 2018 and will continue during the dry season to assess low water flows;
- Groundwater: samples will be collected from the mining camp water supply wells and possibly from other boreholes at the mine site;
- Surveying: the drilling sites used in the hydrogeological study were surveyed to obtain precise elevations;
- Water balance: study was ongoing at the time of ESIA; and,
- Static and kinetic residue tests: assessments of acid generation.

29.3.2 Assessment of the Main Impacts on Landscape, Soil and Water Resources

29.3.2.1 Landscape

The various types of mining infrastructure will impact the visual environment because of the modification of the landscapes that are familiar to the local population. In particular:

- Waste rock dumps will change the land's natural topography. Dump 1 may be visible from the road between N'Zérékoré and Lola. Dump 2 may be visible from the west side of Lola;
- The tailings facility will be built in two phases on either side of the road between Balemou and Lola and will therefore be visible to road users; and,
- Pits that will be dug at an extended plateau covered with a sparse forest. North pit #1 will be visible from the road between N'Zérékoré and Lola. The road between Balemou and Lola passes through the center of Central pit #1, which will be visible to locals. These pits will then be filled with rainwater and

groundwater. Entrances to pits must be secured to prevent access;

29.3.2.2 Geology and Soil

There are four types of impacts on soil and overburden to consider:

- Topsoil stripping at new mining sites and on mining roads;
- Burying of soil under tailings and waste rock;
- Soil erosion at new mining sites and mining roads; and,
- Unintended pollution related to accidental spills from equipment or leaking fuel tanks, which are considered technological risks.

29.3.2.3 Surface and Groundwater

The sources of impact on surface and groundwater are:

- Physical modification of the water system and reduced flow of waterways resulting from partial destruction of waterways;
- Reduced flow of waterways resulting from the drying of springs (resurfacing groundwater) near pits;
- Reduced flow of waterways resulting from dewatering (draining) pits;
- Modification of surface water quality resulting from soil erosion at the industrial production site and elsewhere;
- Modification of surface water quality resulting from drain water from waste rock dumps and the tailings facility;
- Groundwater contamination resulting from an accidental spill of petroleum products (fuel, hydraulic oil, lubricants) on the ground; and,

- Decrease in groundwater levels in village wells and boreholes because of dewatering pits.

Figure 50 presents hydrogeological features in the Project area.

Figure 51 present traditional well versus a modern borehole for water supply, and Figure 52 presents and the vegetation of the Project Area.

Tighen stream that crosses the deposit

"Bas-fonds" crossed by the Tiéta stream

Kpaya Spring (seasonal)

Haraya Spring (perennial)

Figure 50: Hydrological Features in the Project Area

Traditional well, Tighen-mo 1

Modern borehole, Tighen-mo 2

Figure 51: Traditional Well and Modern Borehole

Forest islets

Shrub savanna

Figure 52: Vegetation Cover in the Project Area

29.3.2.4 Summary of the Impact Assessment

Impacts on landscape, soil and water resources, together with the main prevention and reduction measures, are presented in Table 75, Table 76, and Table 77.

Table 75: Landscape, Mitigations, and Residual Impacts

Ecosystem Valued Component (EVC)	Construction	Operation	Closure	Description of impact	Degree of potential impact	Mitigation measures	Type of action	Degree of residual impact
Landscape - pits		x	x	The pits will be dug where there are currently plateaus/ridges covered with sparse forest. Upon closure, they will be flooded, creating artificial lakes. Some pits will be visible from the N'Zérékoné-Lola and Bamelou-Lola roads.	High	The pits' surroundings will have to be reforested to act as a visual screen. They will also have to be secured.	Mitigation	High
Landscape - waste rock dumps	x	x		Waste rock dumps will alter the land's natural topography. Dump 1 may be visible from the road between N'Zérékoré and Lola. Dump 2 may be visible from the west side of Lola.	Medium	Maintain the vegetation north of Dump 1 and Dump 2 if possible, and improve it as needed. Recover the stripped soil, place it on the dumps as covering material and revegetate.	Rehabilitation	Medium
Landscape - tailings facility	x	x	x	The tailings facility will be built in two phases on either side of road between Balemou and Lola and will therefore be visible to road users.	High	Preserve the existing vegetation as much as possible on either side of the road. Recover the stripped soil, place it on the tailings facility as covering material and revegetate.	Rehabilitation	Medium
Landscape - industrial site	x	x	x	The plant site will include several buildings (some of which will be tall), tanks, etc. These structures will have a visual impact.	Medium	Maintain a visual screen of trees around the site. Dismantle buildings and other infrastructure at closure; reforest.	Mitigation/ rehabilitation	Low

Table 76: Soil, Mitigations, and Residual Impacts

Ecosystem Valued Component (EVC)	Construction	Operation	Closure	Description of impact	Degree of potential impact	Mitigation measures	Type of action	Degree of residual impact
Soil and overburden - ecological environment	x			Excavation and stripping of soils in preparation for future pit sites as well as the industrial site (buildings, plants, offices, parking lots, garages, tanks, etc.) and for mining roads	High	Recover the stripped soil, store it near the disturbed site and use it at closure as a covering material to facilitate revegetation	Rehabilitation	Medium
Soil and overburden - ecological environment	x	x		Soil burial when filling low-lying wetlands at tailings facility sites and waste rock dumps	High	Recover the stripped soil, store it near the disturbed site and use it at closure as a covering material to facilitate revegetation	Rehabilitation	Medium
Soil and overburden - erosion	x	x	x	Erosion of bare soils by heavy rains and incidentally by wind	High	Vegetate bare soil quickly; build drainage ditches around the various types of infrastructure with a settling basin, and build settling ponds on either side of mining roads ahead of waterway crossings	Mitigation	Low
Soil and overburden - quality	x	x	x	Risk of spills or accidental releases of petroleum products such as oils, lubricants and hydrocarbons (gasoline, diesel) following mechanical breakdowns (hoses, pipes, etc.)	Medium	Procedures for the rapid recovery of hydrocarbons and contaminated soils; staff training; preventive maintenance of equipment	Rehabilitation	Low
Soil and overburden - quality	x	x	x	Risk of accidental spills or releases of petroleum products following the breaking of a tank (tank area and service station)	High	Equipment verification procedures; containment dikes around the tank area; procedures for the rapid recovery of hydrocarbons and contaminated soils; staff training	Rehabilitation	Low
Soil and overburden - quality	x	x	x	Risk of accidental spills or releases or human errors of petroleum products during mechanical maintenance and fueling of vehicles and other machinery (at the garage or the worksite).	Low	Field procedures, monitoring and control, waste oil and fuel management; staff training; procedures for rapid recovery of hydrocarbons and contaminated soils	Prevention/rehabilitation	Low
Soil and overburden - quality			x	Risk of accidental spills or releases of petroleum products during the dismantling of structures.	Low	Control of construction work; procedures for the rapid recovery of hydrocarbons and contaminated soils	Rehabilitation	Low

Table 77: Water, Mitigations, and Residual Impacts

Ecosystem Valued Component (EVC)	Construction	Operation	Closure	Description of impact	Degree of potential impact	Mitigation measures	Type of action	Degree of residual impact
Integrity of the water system		x	x	Destruction of the heads of small waterways as waste rock dumps 1 and 6 are formed	Low	Arrange the dumps so that the overflowing water is poured into the initial waterway, while limiting the concentration of suspended solids	Mitigation	Low
Integrity of the water system		x	x	Destruction of a small tributary of the Gnahya River through the development of the tailings facility	Low	Arrange the tailings facility so that the overflowing water is poured into the initial waterway, and pour all drained water in it upon closure, while limiting the concentration of suspended solids	Mitigation	Low
Sources around the deposit, near future pits		x	x	Desiccation of sources located around the deposit	Medium	No possible mitigation measures		Medium
Sources north and south of the deposit, a few hundred metres from the pits		x		Reduction in flow up to and including temporary desiccation of sources located along the deposit, but away from the pits	Low	Set up one or more water distribution points to compensate users	Compensation	Low
Flow in small waterways adjacent to pits		x		Significant decrease in flow rates due to dewatering of pits (duration of dewatering)	Low	No possible mitigation measures, impact is time-limited		Low
Flow in large waterways such as the Tighen stream		x	x	Decrease in flows that can go, in the case of very small watercourses, as far as temporary desiccation (duration of dewatering)	Low	No possible mitigation measures, impact is time-limited		Low
Surface water quality (SS)		x	x	Erosion of bare soils by heavy rains and incidentally by wind could carry soil to waterways and increase concentrations of suspended solids	High	Vegetate bare soil quickly; build drainage ditches around the infrastructure with settling basin	Mitigation	Medium
Surface water quality (SS)		x	x	Drainage water from waste rock dumps and/or the tailings facility could be loaded with suspended solids and thus affect receiving waterways; also risk of dam failure	High	Adequate sizing of infrastructure (geotechnical, etc.) and settling tanks to control SS	Mitigation	High
Groundwater quality - accidental spills	x	x	x	Risk of spills or accidental releases of petroleum products such as oils, lubricants and hydrocarbons into the soil and infiltration down to the groundwater	Medium	Procedures for the rapid recovery of hydrocarbons and contaminated soils; staff training; preventive maintenance of equipment	Rehabilitation	Low
Groundwater in village wells		x	x	Decrease in water levels in some village wells, up to and including desiccation, caused by dewatering of pits	High	Drilling program to provide water in compensation for losing the use of certain village wells	Compensation	High

29.4 Air and Noise Assessment

29.4.1 Baseline Study

The activities associated with the Project are expected to cause changes in atmospheric emissions, localized noise, and vibration levels due to mining activities and material-processing infrastructure. Increased atmospheric emissions are in addition to existing baseline conditions and could negatively impact humans and ecology depending on the proximity of activities to inhabited areas and recognized natural habitats[3]. Effect indicators, in the form of air quality, noise and vibration guidelines provided by international and Guinean organizations, were used in the assessment to determine whether the expected effects of the Project have associated mitigation measures.

If a comparison with the appropriate effect indicators shows that one of the Project's activities will likely have a negative effect, mitigation options are explored to eliminate or reduce the severity of the impact.

Ambient air quality is characterized by measurable air concentrations of constituents of potential concern ("COPC"). The Project's activities have the potential to generate COPC emissions, including airborne dust (airborne particulate matter) and gaseous products of combustion (e.g., nitrogen oxides). COPCs are standard indicators of air quality:

- Particulate matter less than 10 microns;
- Particulate matter less than 2.5 microns;

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[3] It should be noted that only impacts on humans were considered in the atmospheric environment assessment. Ecological impacts were evaluated in the biological environment assessment.

- Nitrogen dioxide (NO_2);
- Sulfur dioxide (SO_2); and,
- Carbon monoxide (CO).

Existing air quality and ambient noise conditions were measured at several locations within the mining concession, as well as in many communities in the town of Lola.

29.4.2 Assessment of the Main Impacts on Air and Noise Conditions

29.4.2.1 Results of Predictive Modelling

Atmospheric Dispersion

- Based on current Project information, it appears that the in-stack concentrations of particulate matter, NO_2 and SO_2 for the proposed generator sets exceed the Guinean and IFC in-stack emissions limits. Further, the current fuel proposed for generators (heavy fuel oil @ 3.5 % S) exceeds the IFC criteria of 1.5 % S. Up to 3 % S is acceptable if a suitable justification can be provided (i.e., economic feasibility of using low sulfur fuel); and,
- Most sensitive receptor locations included in the modelling were predicted to either comply with the established air quality criteria, or to have mostly insignificant or low impacts. For all modelling scenarios, the worst-case receptor for Lola (i.e., the receptor with the highest predicted concentrations for all of Lola), was predicted to have a moderate impact for 10-minute SO_2, and high impact for 1-hour NO_2.

Figure 53 provides an example of the impact of the Project's north pit on NO_2 levels in the area surrounding the proposed mine.

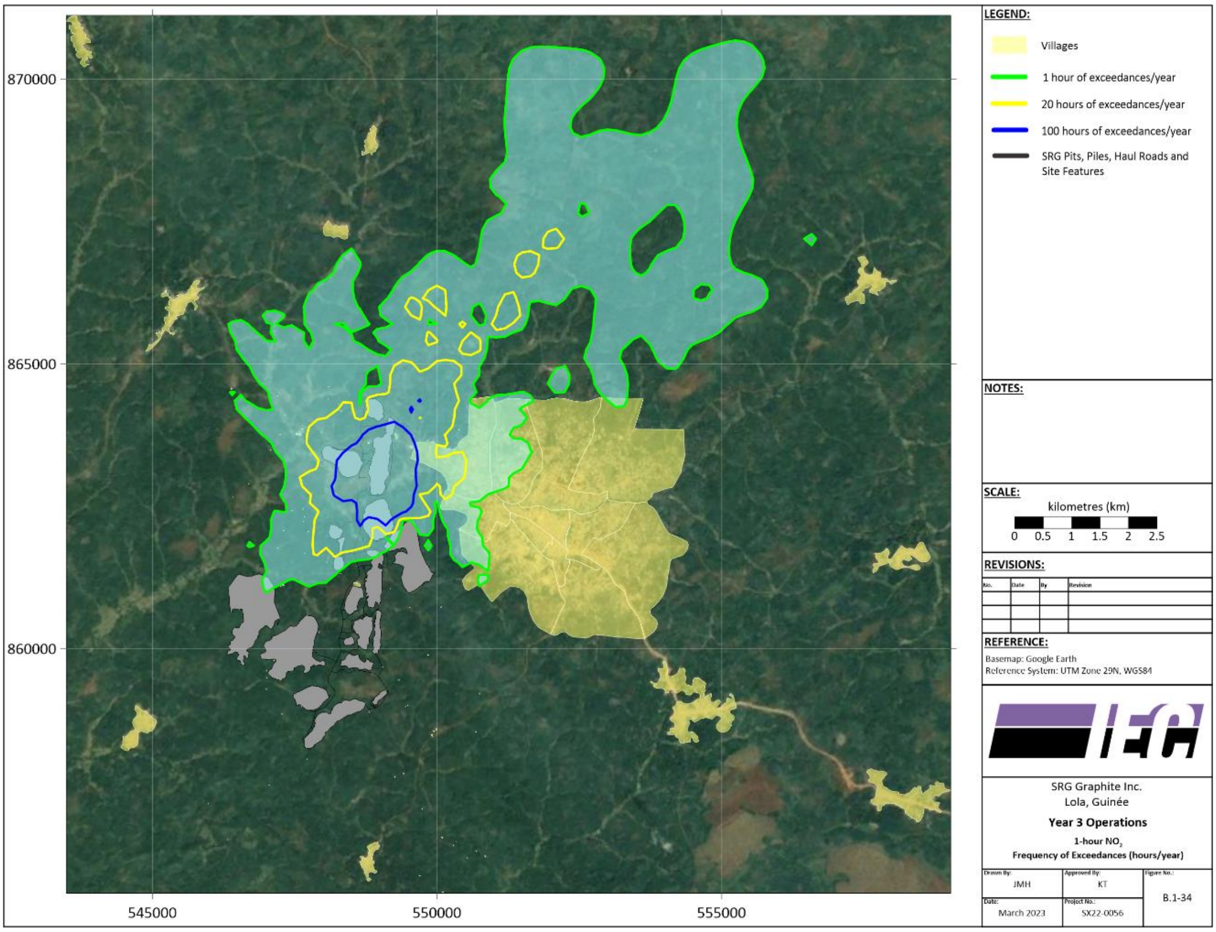

Figure 53: Frequency of Exceeded 1-hr NO_2 per Year – North Pit

Noise and Vibration Propagation

- Airblast overpressure and ground-borne vibration from potential blasting operations were estimated using propagation equations that resolved the maximum allowable charge mass per delay (kg) over a range of distances to establish minimum separation distances from receptors that would ensure compliance with the project effects criteria. Sensitive receptors that are located within the established setback would be subject to potentially adverse noise effects from the Project. To mitigate potential effects, the charge mass per delay would either need to be reduced by an amount that would allow the criteria to be met, or the graphite material would need to be extracted via other means; and,

- While most of the receptor locations were predicted to either comply with the established noise criteria, or to have marginal or low impacts (i.e., <5 dBA above the criteria), there were locations identified in each modelling scenario that had predicted moderate impacts (i.e., 5 to 10 dBA above the criteria). These were identified as follows (accounting for the removal of receptors that are within 100 m of mine infrastructure, which were assumed to be resettled to an unimpacted area as part of the Resettlement Action Plan):
    - Scenario 1 (north pit): three moderate impacts at locations;
    - Scenario 2 (central pit): two moderate impacts at locations; and,
    - Scenario 3 (south pit): three moderate impacts at locations.

29.4.3 Summary of the Impact Assessment

The impacts on air quality and noise conditions and the main prevention and mitigation measures are presented in Table 78.

Table 78: Air and Noise, Mitigations, and Residual Impacts

Ecosystem Valued Component (EVC)	Construction	Operation	Closure	Description of Impact	Degree of potential impact	Mitigation Measures	Type of action	Degree of residual impact
Human health air quality		x		Impacts. on air quality associated with the operation phase: - Release of potentially concerning contaminants from ore mining, concentration and transport - Release of potentially concerning	Moderate to High	Develop and implement an air quality management plan, including appropriate monitoring and mitigation measures. Resettlement or compensation of affected communities.	Mitigation and Monitoring	Medium
Human health noise and vibration		x		Impacts on noise and vibration associated with the operating phase: - Noise from ore mining, concentration and transport - Noise and vibration from blasting	Moderate	Develop and implement an noise and vibratiob management plan, including appropriate monitoring and mitigation measures. Resettlement or compensation of affected communities.	Mitigation and Monitoring	Medium

29.5 Biological Study

29.5.1 Baseline Study

This study deals with the following main topics:

- Botany and habitats;
- Large and medium-sized mammals;
- Birds;
- Herpetofauna (reptiles and amphibians); and,
- Aquatic fauna.

For each of these studies, an internationally recognized specialist was partnered with at least one senior national researcher.

29.5.2 Assessment of the Main Impacts on Air and Noise Conditions

The state of habitat degradation coupled with very high hunting pressure have had an extreme impact on the biodiversity of the Project area. Of the originally rich fauna of this region, only the small species that can withstand habitat disturbances and strong hunting pressure have survived. While bird life remains relatively abundant, the other taxonomic groups studied show the scarcity of fauna in the Project area. The few somewhat preserved forest habitats are very small, fragmented and disconnected, and do not support forest wildlife.

The Project area is home to only one conservation-related animal species, a locally common fish species, and to ten also locally common plant species that are threatened according to International Union for Conservation of Nature criteria.

The high resilience of tropical ecosystems could allow for the implementation of local forest habitat restoration programs. However, the current hunting pressure is a significant obstacle to the growth and maintenance of mammal populations.

29.5.2.1 Summary of the Impact Assessment

Table 79 presents the results of impact assessments for major biological species, habitats, and biological resources. Proposed mitigation measures and residual impacts are also shown, followed by expected residual impact levels.

Table 79: Biological, Mitigations, and Residual Impacts

Ecosystem Valued Component (EVC)	Construction	Operation	Closure	Description of impact	Degree of potential impact	Mitigation measures	Type of action	Degree of residual impact
Biodiversity - important species - a fish species with VU status	x	x		Risk of impacts on waterways and water quality	Medium	Measures to reduce impacts on waterways during construction and operation.	Mitigation	Medium
Biodiversity - important species - ten tree species with VU status	x			Eradication of treed areas potentially including these species	Medium	Measures during rehabilitation to plant local species, including these	Rehabilitation	Medium
Biodiversity - natural habitats - waterways and gallery forests	x	x		Eradication of these habitats and impacts during operation (water quality, dust, pollutants, noise)	Medium	Measures to reduce impacts on waterways and reduce dust, noise	Mitigation	Medium
Biodiversity - biological resources - wood	x	x		Eradication of areas where residents obtained firewood or lumber	Low	No definite measures. Possibility of improvement with rehabilitation but remains to be seen		Low
Biodiversity - biological resources - bushmeat	x	x	x	A significant increase in noise can affect people	Low	No definite measures. Possibility of improvement with rehabilitation but remains to be seen		Low

29.6 Social Study

29.6.1 Baseline Study

Field research carried out in June 2018 made it possible to describe the socioeconomic environment over the entire local area of influence. Quantitative and qualitative methods were used to collect information and data: questionnaire surveys, focus groups and direct observations on the Lola Urban Community, including the 12 central Lola districts (Tighen-Mo 1, Tighen-Mo 2, Woroya-Po, Souowala-Koly 1, Souowala-Koly 2, Tiéta, Kpèlè-Koly, Homeya-Koly 1, Homeya-Koly 2, Flaya-Po, Ghotey-Koly, and Maghan-Mo) and the three connected districts (Tokpanata, Balémou, and Gamayalé). The socioeconomic surveys targeted these communities in particular because of their physical and economic proximity to the Project area (as known in June 2018) and the presence of inhabitants considered as Project Affected Persons and is part of a future Resettlement Action Plan framework.

In all, 111 questionnaires, 15 focus group discussions and direct observations were conducted in these locations.

Figure 54 presents photos of the public consultations in some districts during the site visit.

29.6.2 Assessment of impacts on air and noise conditions

The socioeconomic environment's valued components selected for this study stem from the structuring dimensions of the socioeconomic baseline study and the consultations conducted as part of the impact study. The choice of these components will make it possible to present the majority of the potential social impacts (positive and negative) that the Lola Project will create.

Flayapo (Urban Community)

Balémou

Gama Konikoni

Gama Yalé

Tokpanata

Tingha-Mo 2

Figure 54: Public Consultations in Some Districts during the Site Visit

The six components and their main sub-components analyzed as part of this study are presented in Table 80.

Table 80: Main Components of the Socioeconomic Environment

Main Ecosystem Valued Components Analysed	Sub-Components Considered
Demography and social dynamics	Issues associated with migration movements, and social and family structure.
Population health and safety	Population health, transport and road safety, and public safety.
Employment and economic development	Local economy and supply, direct and indirect job creation, inflation/accentuation of social inequalities, community development, and increase in social inequalities.
Land rights and land loss	Loss of land (cultivated land, fallow land, pastures, etc.) and property, changes in land rights and relationship to land, and Food security.
Cultural heritage and archaeology	Tangible (sacred and archaeological sites), and intangible (languages, ritual practices).

29.6.2.1 Summary of the Impact Assessment

Table 81 presents the results of the impact assessments for key aspects of the socioeconomic environment. Proposed mitigation measures and residual impacts are also shown, followed by expected residual impact levels.

Table 81: Socioeconomic, Mitigations, and Residual Impacts

Socioeconomic Environment and Ecosystem Valued Component (EVC)	Construction	Operation	Closure	Description of impact	Degree of potential impact	Mitigation measures	Type of action	Degree of residual impact
Demography and social dynamics	x	x		Rural exodus and migration to economic centres	Medium	Measures to mitigate and manage the impacts arising from migration as described in Chapter 7, Section 7.5.2.1. Elaboration of a Migration Flow Management Plan in collaboration with competent authorities (prefecture, sub-prefectures, municipalities) that will address how the Project will: •Minimize the migratory inflow induced by the Project as much as possible; •Understand the context and the risks of migratory flow into the local area of influence; •Manage and guide the flow of newcomers in accordance with local and regional planning objectives; and •Develop and implement mitigation measures to address negative social and environmental impacts and optimize benefits; •Establish the necessary monitoring measures with key indicators to measure the Project's impact and the effectiveness of ongoing management measures.	Mitigation	Low
	x	x		Migratory inflow (direct and induced)	High		Mitigation	Medium
Population health and safety	x	x		Deterioration of air quality and noise conditions	Medium	Implement the measures detailed in Chapter 7, Section 7.5.2.2, including: •Measures to manage impacts as part of a Community Health and Safety Management Plan, covering aspects of safety, Project risks, disease prevention, and sanitation and hygiene practices; •Avoidance and mitigation measures discussed in Chapter 5 - Air and Noise Study and Chapter 4 - Soil, Sediment and Water Resources Study ; •Appropriate environmental emergency response procedures (including a Hazard and Emergency Management Plan) for spills and potential accidents; •Measures and procedures comprising a Transport and Road Safety Management Plan.	Mitigation	Medium
	x	x		Pressure on basic health services	High		Mitigation	High
	x	x		Increased propagation rates of communicable diseases	High		Avoidance Mitigation	Medium
	x	x		Increased propagation rates of malaria and waterborne diseases	Medium		Mitigation	Medium
				Dangers associated with the use of hazardous products	Medium		Avoidance Mitigation	Low
	x	x		Increased pressure on transport and road safety	Medium		Mitigation	Medium
	x	x		Deterioration of public safety	High		Mitigation	Medium
			x		Undetermined		n/a	Undetermined
Employment and economic development	x	x		Job creation	Medium	Measures to maximize the economic advantages of the Project for local communities as detailed in Chapter 7, Section 7.5.2.3: •Local, regional and national communication plan on hiring opportunities and the skills and training levels required for each of the open positions (direct and contract), in order to "democratize" access to employment; •Transparent hiring policy; •Training and skills development plan; •Local hiring plan based on Mining Code guidelines; •Implementation of a Community Development Plan (CDP) in collaboration with the affected municipalities, the use that will be made of the funds, according to the needs and priorities identified in the Local Development Plan (LDP) of the Lola UC.	Enhancement	High
	x	x		Increase in social inequalities	High		Mitigation	Medium
	x	x	x	Community development	High		Enhancement	High
Land rights and land loss	x	x		Weakening of traditional land management / modification of land rights	High	•Use the RAP Framework to guide the resettlement and livelihood recovery program implemented through a future Resettlement Action Plan (RAP). •Optimize the configuration of the Project in order to avoid disruptions on access roads. If the impact cannot be avoided, and in the absence of acceptable alternatives, reach an agreement with the communities on appropriate measures to mitigate losses and disruptions. The agreed-upon measures, including the provision of alternative routes (e.g. roads, trails, bridges, etc.) and compensation for loss of access, will be implemented through the RAP Framework. See Chapter 7, Section 7.5.2.4.	Mitigation	Medium
	x	x	x	Loss of land: - Physical displacement - Economic displacement	High		Avoidance Mitigation Compensation	High
	x	x	x	Disruption of access roads within the village and to the city	High		Avoidance Mitigation Compensation	Medium
Cultural heritage and archaeology	x	x		Risk of damage to the integrity of tangible cultural heritage sites	Non-significant	See detailed measures in Chapter 7, Section 7.5.2.5, including: •Conduct a document-based study of the archaeological cultural heritage by means of a general review of the regional literature; •Hire an archaeologist to carry out a study to identify the archaeological potential in the Project area in order to, at a minimum, suggest areas most likely to include sites; •If archaeological potential is identified, conduct a comprehensive archaeological survey in the study area; •Ensure avoidance of areas with high archaeological potential or, if this is not possible, conduct archaeological rescue excavations of any discoveries; and •Ensure the implementation of an effective Accidental Discovery Management Procedure from the beginning of construction.	Avoidance Mitigation	Non-significant
	x	x		Risk of damage to the integrity of intangible cultural heritage	Undetermined		n/a	Undetermined
	x	x		Risk of damage to the integrity of the archaeological heritage	Undetermined		n/a	Undetermined

29.7 Environmental and Social Management Plan

29.7.1 Objectives

The ESIA conducted allowed for the collection of baseline data on the physical, biological, and social environment, among other things. Once this data was analyzed, a comprehensive ESIA was carried out. Systematic evaluations have made it possible to quantify the degree of expected impacts, and to prioritize the control and mitigation measures to be put in place to either eliminate, minimize, or control them.

This data, impact analyses and mitigation measures, provide a tool for identifying the main environmental and social issues associated with the Project and form the basis for the implementation process of the mitigation measures identified in the ESIA and the environmental audit, which are summarized in the Project's ESMP.

One of the objectives of the ESMP is to ensure that the Project complies with applicable international and Guinean environmental and social legislation and requirements for the four identified phases of the Project: design, construction, operation and closure.

In Guinea, investment projects (both public and private) that may have an impact on the environment must do an impact assessment study and produce an ESMP, as per articles 82 and 83 of the Code for the Protection and Development of the Environment (Ordinance No. 045/PRG/87 of May 28, 1987). The general guide for implementation of ESIA studies of the Republic of Guinea, adopted on March 11, 2013 (No. A/2013/474/MEEF/CAB), integrate the ESMP in the structure of the environmental and social impact assessment report.

The Lola Project will be carried out in compliance with the Guinean Mining Code (2011 Mining Code), in particular, the articles in of Title IV, Chapter III, Section III entitled "Relations with Third Parties".

The ESMP also allows Falcon Energy to aim for compliance with the IFC standards on social and environmental sustainability, as well as the Equator Principles for managing the environmental and social impacts of international investment projects. This ensures the implementation of best practices in the industry to mitigate or improve the impacts of the Project. In this way, the ESMP becomes a tool for managing both the environmental and socio-economic aspects related to the Project during its implementation and for minimizing/mitigating impacts.

Among others, it enables to:

- Apply measures to better protect the environment;
- Minimize the impacts of the Project on the biological environment;
- Minimize the impact on the health of populations as well as the multiple socioeconomic impacts;
- Reduce nuisances during construction;
- Facilitate the involvement or participation of local populations and organizations in the implementation of the Project;
- Maximize opportunities to improve and enrich living conditions;
- Reduce the risk of accidents;
- Ensure mining operations are consistent with the commitments made under the ESMP and that they protect/improve living conditions for the nearby communities affected by the Project; and
- Measure Falcon Energy's performance in terms of good environmental and social management.

29.7.2 Health, Safety, Environment, and Community Management

Falcon Energy has a general obligation on performance and compliance regarding health, safety, and responsible management of the environment and of community relations to ensure, among other things, that planned conditions are met and that employees work safely. In the event of an injury or environmental incident, the presumption of liability lies with Falcon Energy.

The following international guidelines have oriented the approach to managing risks to the health, safety, and security of communities:

- IFC Performance Standards;
- IFC General Environmental, health and Safety Guidelines; and,
- Guinean Mining Code: Title IV, Chapter VII - Environment and Health.

IFC Performance Standard #4 requires that an evaluation of the risks and health and safety impacts to which affected communities are exposed be conducted and that prevention and mitigation measures consistent with good industrial practices be identified.

The Lola Project must also comply with Title IV, Chapter VII of the 2011 Mining Code as well as with the Environment Code, or with international best practices in this area (Article 142). Appropriate techniques and methods must be used to protect the environment and to ensure the safety of workers and local populations in accordance with the Environment Code or international best practices in this area (Article 142).

29.7.3 Register of Avoidance, Mitigation And Compensation Measures

This section describes all the avoidance, mitigation and compensation measures that Falcon Energy will undertake over the life of the Lola Project. These actions result from the Lola Project ESIA and form the basis of the operational controls to be introduced into the Project's ESMP Framework. The monitoring and audit process (described above) will measure the Project's compliance with these actions.

The register of avoidance, mitigation and compensation measures presented in the ESIA is organized by subject and sub-item and indicates the phase and specific component to which these actions relate. The actions are divided into the following categories:

- Landscape;
- Soil;
- Water resources;
- Air quality;
- Noise and vibration;
- Biodiversity; and,
- Socioeconomic environment.

For each avoidance, mitigation and compensation measure, the table includes:

- The details of the commitment; and
- The phase to which the commitment applies: construction, operation, closure.

The ESIA provides a preliminary list of topics that require follow-up. Details regarding methods, measurement frequency and locations will be elaborated for all these parameters in detailed follow-up plans developed as part of the proposed ESMP. Follow-up requirements will be updated as new ones emerge and following a review of previous follow-up reports, audit results and summary reports. Follow-up requirements will also be updated if the Project scope changes or if there is a significant change to a Project component such that new mitigation measures are required to ensure appropriate management of the impacts and environmental and social risks.

29.8 Hydrogeology

Additional details about the hydrogeological site investigations and hydrogeological modelling can be found in the corresponding section of the 2019 NI 43-101 Report. The current section is extracted from the updated hydrogeological report titled "Hydrogéologie et dénoyage des fosses minières" prepared by Schadrac Ibrango, P. Geo, PhD, MBA, dated March 2023.

A conceptual model was developed to estimate ground water and rainwater inflow rates into the different pits and select the most suitable and cost-effective approach to conduct the pits dewatering. Ground water inflow rates were estimated based on mine plans mining solely the Saprolite. No mining was scheduled in the Fresh Rock. It is necessary to update the hydrogeological model integrating possible ground water income from deep fractured aquifers. Since no field hydrogeological investigation was undertaken targeting the characterization of hydrodynamical parameters of possible fractured deep aquifers, it was elected to extrapolate to the Lola Project hydrodynamical parameters established for high flow rate boreholes recently drilled by the Service des Eaux de Guinee to supply the city of Lola with drink water. Only few kilometers are separating the location of these boreholes with the location of the scheduled pits of the Lola graphite project. The extrapolation of the Service des Eaux de Guinee's boreholes hydrodynamical parameters to the north pit 2 allowed estimating an ultimate maximum daily flow rate of 27,000 m^3/day originating from fractured deep aquifers. This deep aquifer flow rate was added to the flow rates estimated from the Saprolite and alluvial aquifers by numerical modelling to result to a total maximum ground water flow rate of about 40,500 m^3/d.

Rainfall Intensity-Duration Frequency curve for the Lola area was used to estimate an ultimate rainwater height with a period of return of 20 years (148 mm). An infiltration rate of 15 % of this estimated rainwater height was applied since the occurrence of such extreme event is supposed to coincide with a high saturation level of the soil. An evaporation rate of 1.5 mm was considered since this extreme event is supposed occurring during a cooler month of the season. A water balance model was used to result to a project water height of 124.3 mm which was applied to the exposed pit surfaces to result to an ultimate daily rainwater inflow rate of about 189,000 m^3/d.

Dewatering sizing is based on daily maximum ground water inflow rate and not on the maximum rain flow rate for cost efficiency. In the occurrence of an extreme event such as the project rainfall with a return period of 20 years the dewatering will have to be managed strategically focusing first on the more important pits o in terms of mine planning and operation efficiency. Additionally, it will not be possible to manage a so huge amount of ground water in one day only. It will take several days to remove the water. The dewatering sizing is targeting the removal of a total maximum volume of 43,200 m^3 daily using a combination of nine submersible pumps.

Water will be collected in sumps located at pit floors and pumped to the surface or to intermediate sumps located at higher benches to not disturb mining activities. Table 82 summarizes the characteristics of the selected pumps to achieve the targeted dewatering needs. Additionally, it is planned to acquire four generators for power supply to the pumps. Two will have a power capacity of 150 KVA each and the other two will have a power capacity of 100 KVA each.

Table 82: Characteristics of the Proposed Submersible Pumps

Pump Type	**Discharge [m³/h]**	**Height [m]**	**Number to acquire**	**pumping capacity [m³/day]**
Sakuragawa U-2606C	120	75	6	17,280
Sakuragawa U-4308KB	240	22	3	17,280
Sakuragawa U-4306D	120	33	3	8,640
TOTAL				**43,200**

For a single isolated event all the generators could be used simultaneously to supply power to all the submersible pumps for a dewatering purpose. For an extreme event requiring pumping over several days the generators should be used alternately for more efficiency and durability.

It is recommended to perform the following works and update the pits dewatering study before developing the mine:

- Acquire aerial photographs covering the project area and conduct a detailed lineament analysis;
- Performed a ground geophysical investigation using electric methods to locate major faults around the different pits;

- Drill selected points to locate and assess the productivities of deep aquifers and determine their hydrodynamical parameters; and,
- Update the hydrogeological and pits dewatering model.

The achievement of these additional hydrogeological investigations will allow to have a better understanding of the deep hydrogeological condition. Drilling on expected productive points will allow to conduct pumping tests whose interpretation will permit determining the discharge and hydrodynamical parameters of the deep aquifers being intersected. Conducting a new modelling and updating the dewatering report will allow discussing the opportunity to keep or not the proposed dewatering scheme. Depending on the productivities of intersected aquifers, the opportunity of using peripheral holes to the pits to dynamically draw down the water table below the pit floors instead of collecting the groundwater into sumps prior pimping it to the surface. A such alternative will help to improve pits walls stability and deliver clean water for plant and other operating uses.

29.9 Geochemical Characterization

A geochemical characterization program has been carried out at SGS Laboratories on representative waste, mineralized material, and tailings samples.

29.9.1 Waste

Four individual waste samples have been selected according to the following lithologies: laterite, soft Saprolite, hard Saprolite and Fresh Rock.

The samples have been submitted to the following tests/analysis:

- Whole rock analyses for total content of major elements;

- Environmentally available metals contents (partial digestion by aqua regia);
- ARD potential: Acidification Potential by sulfide content measurement and Neutralization Potential by Modified Acid Base Accounting ("ABA") method;
- ARD potential by non-acid generating ("NAG") method; and,
- TCLP (USEPA-1311), SPLP (USEPA-1312) and Shake Flask Extraction static leaching tests.

29.9.2 Soft Waste

Laterite, soft Saprolite and hard Saprolite samples showed sulfide concentration lower or equal to analytical detection limit (≤ 0.02 %) and therefore do not present ARD potential as confirmed by Modified ABA and NAG tests. Those samples also showed no metals leaching potential.

Leachates from a soft material waste pile should show low metals content with pH slightly higher than the IFC/World Bank recommendation (pH>6). Management of runoff waters from soft materials waste dump do not require special measures at the exception of suspended sediments.

29.9.3 Fresh Rock Waste

Sulfide content of the Fresh Rock waste sample was significant (1.35 %) and could potentially generate ARD due to the low neutralization potential as confirmed by Modified ABA and NAG tests. Static leaching tests showed significant leaching potential for copper and to a lesser extent for nickel and zinc. However, copper (160 mg/kg), nickel (75 mg/kg) and zinc (100 mg/kg) contents are low.

It should be noted that static leaching tests are very aggressive and therefore the leaching potential is usually largely overestimated. Kinetic testing, which is more representative of the real conditions encountered on the field, has not been carried out on Fresh Rock waste sample.

However, kinetic testing carried out on Fresh Rock composite sample showing similar neutralization potential as well as sulfide and metals contents has shown that metals leaching is very low with a pH staying higher than 6.0 after 25 weeks of assay.

Moreover, static and kinetic tests are carried out on crushed samples and therefore the real active contact surfaces in a Fresh Rock waste dump which contains boulders is significantly lower than in laboratory testing.

Considering this limited contact surfaces, the limited contact between the percolating waters and the waste rock, the waste low metals contents and the results obtained with kinetic test performed on the Fresh Rock composite sample, it can be expected that leachate from a Fresh Rock waste pile should show low metals content but, pH could be slightly below IFC/World Bank recommendation (pH>6).

29.9.4 Mineralized Material

In addition to the tests carried out on the waste samples, an initial soft mineralized material composite sample (mixture of laterite, soft Saprolite and hard Saprolite) and a Fresh Rock composite sample have been submitted to semi-quantitative XRD for determination of the mineral species and kinetic leaching test as per humidity cell procedure. A second composite Saprolite sample has also been produced and characterized.

29.9.4.1 Saprolite

The original Saprolite composite sample showed a 0.47 % sulfide content and low metal content copper (200 mg/kg), nickel (96 mg/kg) and zinc (150 mg/kg) contents. However, the neutralization potential is quite low, and the sample is potentially ARD according to Modified ABA and NAG tests results.

Static leaching tests showed a potential of leaching for copper, nickel, and zinc. Kinetic testing commenced in January 2019. Kinetic test which is more representative of the real conditions encountered on the field showed significant concentrations of copper, zinc, nickel, and manganese in the initial leachate (week #0). First flush of contaminants is very often observed in kinetic test. Concentrations of copper, zinc, and nickel were significantly lower in the leachates collected from Week #1 to Week #20, but remains higher than IFC/World Bank recommendation especially for copper and to a lesser extent for zinc. The pH remains close to 3.7 between Week #15 and Week #20.

The second Saprolite composite sample showed characteristics similar to the original composite sample: 0.65 % sulfide content and low metal content (Cu: 323 mg/kg, Ni: 121 mg/kg and Zn: 166 mg/kg). The neutralization potential is quite low, and the sample is also potentially ARD according to Modified ABA and NAG tests results. Static leaching tests showed very low copper, nickel, and zinc concentrations in leachate from laterite composite sample, but significant concentrations were observed in leachates from soft Saprolite and hard Saprolite composite samples.

Kinetic testing has commenced in late April 2019 for 42 weeks. The pH level remained close to 4.2 between Week #2 and Week #5 but was lower than 3.5 from week #26 and even lower than 3.5 from week #36. Sulfate concentrations were significant when pH was lower than 3.5 (120 mg/l to

250 mg/l) which indicate that sulfide oxidation was still on-going at the end of the test (week #42).

Significant concentrations of copper, zinc, nickel, and manganese have been observed in initials leachate (Week #0 and Week #1). Following the first flush, copper concentrations decreased but remains significant (0,72 mg/l at week #40). From week #15, nickel, zinc and manganese concentrations showed a constant decrease, reaching 0,316 mg/l, 0,288 mg/l and 1,71 mg/l, respectively at week #40. Iron concentrations showed a constant increase following the first flush reaching 2.46 mg/l at week #40. Copper and iron concentrations at week #40 were slightly higher than World Bank corresponding recommendations. Levels of pH were constantly not respecting World Bank recommendation (pH<6.0).

Globally, the results obtained with the two Saprolite composites are similar. Mitigation measures should be put in place at stockpile locations in order to project groundwaters from potential metals contamination.

Dewatering waters from soft materials pits could show pH lower than the IFC/World Bank recommendation (pH>6) even considering the low contact of precipitation and runoff with the mineralized material, the relative proportion of pits walls containing mineralized material and in pH of the inflowing groundwaters. However, metals concentrations should respect World Bank recommendations in dewatering waters.

29.9.4.2 Fresh Rock

The Fresh Rock composite sample showed low copper (120 mg/kg), nickel (110 mg/kg) and zinc (150 mg/kg) contents. Sulfide content is significant (1.65 %), and the neutralization potential is quite low and therefore the sample is potentially ARD according to Modified ABA and NAG tests results.

Kinetic test has been carried out for 60 weeks on a Fresh Rock sample. From week #28 to week #50, remained lower than 6,0 for most leachates. From weeks #51 to week #60, pH lower than 5,0 were observed in four samples. Sulfate concentrations remained low but higher when pH was lower than 5,3. Copper concentrations were low (<0,01 mg/l). However, from week#40 to weeks #60, constant increases of nickel and zinc concentrations could be observed. At week#60, leachate showed concentrations of 0.072 mg/l and 0,044 mg/l for nickel and zinc, respectively.

Dewatering waters from Fresh Rock materials pits could show pH lower than to the IFC/World Bank recommendation (pH>6) even considering the low contact of precipitation and runoff with mineralized material, the relative proportion of pits walls containing mineralized material and in the pH of the inflowing groundwaters. However, metals contents should be lower than World Bank guidelines in dewatering waters.

29.9.5 Tailings

A tailings composite sample produced from processing of Saprolite has been submitted to the same list of tests/analysis carried out on them. The sample showed copper (280 mg/kg), nickel (83 mg/kg), zinc (230 mg/kg), and sulfide (0.55 %) contents similar to Saprolite composite samples contents. Semi-quantitative X-Ray diffraction identified higher contents of Mn-containing chlorite (3.7 %) and biotite (7.1 %) in tailings than in Saprolite. Neutralization potential is quite low, and the sample is potentially ARD according to Modified ABA and NAG tests. Static leaching tests showed a potential of leaching for copper, zinc, and manganese.

Kinetic testing which has commenced in December 2018 for 65 weeks. Results showed significant concentrations of zinc and manganese in the initial leachate (week #0). However, concentrations of copper, zinc and nickel were significantly lower than the corresponding IFC/World Bank recommendation in the leachates collected from Week #1 to Week #65. At the opposite, manganese showed a constant increase in concentrations from the beginning to the end of the test, reaching 15.3 mg/l at week #65. There are no IFC/World Bank recommendation for manganese concentration in mining effluent.

The pHs have remained generally between 5.5 and 6.0 for the 65 weeks. Neutralization potential of chlorite and biotite is lower than carbonates potential but is significant. The presence of those minerals can explain the higher pH in tailings kinetic test than in the Saprolite kinetic tests.

Considering that the contents of environmentally sensitive metals (copper, nickel, zinc, etc.) in the Saprolite and the corresponding tailings of the Lola deposit are low, metals leaching from the tailings storage facility ("TSF") should not be a potential issue for the respect of IFC/World Bank recommendations for mining effluents. However, control of pH level could be required for respect of IFC/World Bank recommendation (pH>6). Moreover, processing of Fresh Rock could raise the pH and decrease metals concentrations of TSF effluent.

29.10 Water Management

Water management for the Lola project concerns mining activities and graphite production (mill and tailings storage facilities).

Water reclaimed from the TSF will be sent to a Process Water Pond which will also collect water from the tailings thickener overflow, raw water make-up and concentrate filtrate. A second pond, the Fresh Water Settling Pond, will collect runoff water which will be pumped to a Raw Water Tank feeding the process plant.

Inputs to the TSF will include water contained in the slurry, direct precipitation, and runoff from the upstream watersheds. The TSF will comprise two cells which will be operated sequentially. Outputs will include evaporation, water captured in tailings voids, seepage, and reclamation to the mill. Surplus water will be discharged in the receiving environment (Gnahya River, a tributary of Tighen River) during the rainy season. To comply with IFC/World Bank recommendations for mining effluents, pH adjustment will also be carried out before discharge.

The industrial site will comprise various infrastructure and buildings (mill, camp, generators, diesel reservoir, road, parking, etc.). A network of ditches will collect contact water and send it by gravity to the Fresh Water Settling Pond.

Waters from the mine pits walls and direct precipitation will be collected in sumps located at the bottom of the pits and pumped to the collection ponds to comply with IFC/World Bank TSS recommendation for mining effluents. In addition, pH adjustment will be made before discharge. Whenever possible, surface runoff from upstream watersheds will be diverted from the pits.

Runoff water from the waste dumps will be collected in ditches and sent to the sedimentation ponds to comply with IFC/World Bank TSS recommendation for mining effluents. In addition, for the Fresh Rock dump, pH adjustment will be made before discharge. Due to the unconsolidated nature of the laterite and the Saprolite, explosives utilization will be limited and therefore nitrates and ammonia concentrations in mine waters will be low. An explosive management plan will be put in place for North Pit #2 in which Fresh Rock will be mined.

Waters for domestic and sanitary uses will come from the Fresh Water Settling Pond. A sanitary wastewater treatment unit will be installed. Discharge will comply with IFC/World Bank recommendation for sanitary effluents. Water treatment facilities will also be installed for domestic waters (potable and showers). Treatment installations will comprise cartridge filtration, UV disinfection, and chlorination.

29.11 Closure and Reclamation

At the end of the LoM, Falcon Energy will either sell the project to another mining company or offer to hand it over to governmental authorities with first right of refusal. In case the project is sold, the transaction will ensure all environmental liabilities and closure responsibilities are transferred to the Buyer. If the mine is handed over to the local authorities, Falcon Energy will transfer to them the ownership of project installations, buildings, power plant, equipment, and inventory.

Rehabilitation works will include buildings dismantling and revegetation of impacted area such as the infrastructure's footprints. Rehabilitation works will also include revegetation of the TSF, the waste rock dumps, the top soil stockpiling site and the sedimentation ponds.

29.11.1 Dismantling Buildings and Other Infrastructure

Buildings and infrastructure specifically erected for the operation of the mine will be dismantled to retrofit the sites to a state compatible with the surrounding environment. Other infrastructure may be maintained for the benefit of the local communities, such as roads and camp.

During the dismantling operations and disposal of the Project buildings, all buildings and surface infrastructures not required for the closure plan follow-up process will be taken apart by a certified contractor. Waste material resulting from the dismantling operations will be transported to authorized recycling sites. During the dismantling operations of the buildings and infrastructures, rehabilitation work will include the following activities:

- Salvageable material and equipment will be set aside and then either given or sold to recycling sites;
- Any process, production, or service equipment, such as silos, reservoirs, tanks, pipelines, and pumps will be drained and cleaned. The wash water will be collected for treatment (settling, water/oil separation if needed) before being discharged into the environment;
- Any equipment containing oils or other potentially contaminating liquids, such as electrical equipment and vehicles, will be drained and cleaned before being discarded; and,
- Management of chemical products, waste materials, and dangerous goods will be carried out safely according to Guinean regulations in effect or with international best practices.

29.11.2 Revegetation of Impacted Areas

All impacted areas such as laydown areas and industrial work bay, as well as the various dismantled buildings footprint areas, will be revegetated. A 15 cm topsoil layer will be placed on the ground before seeding.

29.11.2.1 Tailings Storage Facilities

TSF #1 and TSF #2 will be revegetated with a 15-cm topsoil layer placed on the tailings surface before seeding. The tailings stored in North pit #2 will be covered with water when the mine waters pumping will be completed. No revegetation will be required.

29.11.2.2 Waste Dumps

When no longer in use, the dumps will be rehabilitated. A 15-cm top soil layer will be placed on dump surface (top and slope) before seeding. For Dump 4 which contains Fresh Rock waste (including boulders) a 30 cm of soft waste will also be placed at the surface of the dump to obtain continuous surfaces before placement of topsoil.

29.11.2.3 Water Management

A breach will be realized in all sedimentation ponds when they will no longer be required for water treatment. Topsoil will be placed inside the pond and revegetation will be carried out.

To the extent possible, original drainage will be restored. Most culverts and bridges will remain in place since the roads will be required for post-closure monitoring and will be transferred to the communities.

At closure of a given pit, the dewatering activities will be stopped; and the water will reach the groundwater level and even freely discharge to the environment during rainy season.

29.11.2.4 Site Safety

At closure, a berm will be placed around North pit #2 because of the steep slope of the pit walls and the possible presence of significant height of water. All others pit walls slopes will be gentle and therefore, no safety measures are deemed necessary. Pits could be a water source for the communities.

29.11.2.5 Heavy Mobile and Stationary Surface Equipment

Whenever possible, heavy mobile and stationary surface equipment, including the pipelines will be sold on the used equipment market. The remaining unwanted equipment will be sold as scrap metal or disposed of at designated dump sites. Excessively worn or old parts will be sent to scrap metal recyclers or disposed of at designated dump sites.

29.11.2.6 New and Used Controlled Products

Petroleum products, fuels, diesel, oils, and greases will be spent out at the end of the LoM. All petroleum products reservoirs and associated piping used on site to store will be drained, cleaned and dismantled. Soils contiguous to the reservoirs or containers will be characterized and corrective measures will be taken in compliance with applicable Guinean regulation.

All reagents and other chemical products will be spent at the end of the LoM, except those required for water treatment during the environmental post-closure follow-up period. Residual reagents and chemical products not required for that purpose will be put into properly labelled containers and transported to an approved site for recycling.

No residual hazardous materials will be found on the Property after the cessation of the mining operations. All used oils will be sent to an approved recycling/burning site, and the other residual dangerous goods will be collected, packaged, labelled, and transported at approved sites for elimination. Residual non-dangerous materials will be sorted; and recyclable materials will be sent to an authorized recycling facility.

29.11.2.7 Soils and Contaminated Materials

At cessation of mining activities, the properties will be characterized and rehabilitated if the characterization study reveals presence of contamination. Incidents associated with handling of petroleum products or other chemical products could occur, especially at the following sites:

- Petroleum products storage facility;
- Point of use locations of petroleum products;
- Reagents and chemical products storage facility; and,
- Near plants and mechanical shops.

All soils affected by petroleum hydrocarbons shall be excavated and disposed of at an authorized site.