PENSANA
RARE
EARTHS

16 November 2020

Update on BFS and the establishment of a sustainable magnet metal supply chain

Pensana Rare Earths Plc (LSE: PRE, ASX: PM8) is pleased to report on the progress the Company is making to bring Longonjo online as the first major rare earth mine in over a decade and in establishing a sustainable magnet metal supply chain to meet the burgeoning demand from the EV and Offshore Wind industries.

Highlights

- Two studies are currently underway, a feasibility study into the production of a mixed rare earth sulphate in Angola, which is being undertaken by a number of internationally recognised consultants in Perth, Western Australia and the recently announced Wood Group study into the establishment of a UK-based processing facility to produce separated rare earth oxides.

- The Longonjo mine and concentrator study is well advanced with the capital costs in line with the $130 million reported in the Preliminary Feasibility study in November 2019.

- In March 2020 the scope of the studies was expanded to include the processing of the concentrate to produce a mixed rare earth carbonate (MREC), and in early October a high grade MREC was successfully produced.

- Subsequent to this, a resin-based process route was developed which yields a high grade mixed rare earth sulphate, an ideal feedstock for the proposed UK separation facility. This innovative process route has the potential for lower capital and operating costs and is being actively pursued.

- Project manager Paradigm Project Management has recently gone out with several equipment packages for quotation from suppliers and contractors in preparation for the commencement of construction of the initial infrastructure and bulk site services at the Longonjo Project in the first quarter 2021.

- The Wood Group study into the establishment of a rare earth processing facility in the UK is well underway and is expected to be reported in January 2021.

- The study has highlighted the internationally competitive power, labour and reagent costs at each of these post-Brexit Freeport locations in the Local Enterprise Partnership zones of Merseyside, Tees Valley and Humber. A decision on the location is expected shortly.

Chairman Paul Atherley commented:

"The response to our announcement that we are looking to establish a UK based rare earth processing facility as a key part of a sustainable mine to magnet supply chain to supply the burgeoning EV and offshore wind industries has been overwhelmingly positive, and it's very clear already that the proposed investment would receive strong support across a wide range of stakeholders.

We are expecting to draw the various studies to a decision point in January and are looking forward to reporting on the capital requirements and the overall economics of the investment at that time."

Establishing a sustainable mine to magnet supply chain

Recent announcements by the EU have made it clear that it is no longer acceptable to import unsustainably sourced raw materials to build the green economy. A particular focus is the establishment of rare earth processing in Europe to meet the growing demand for critical magnet metals.

In response to this new policy setting the Company is looking to work with the UK government and others to establish a sustainable magnet metal supply chain

through the sustainable development of the Longonjo mine in Angola to supply a UK-based processing facility.

The study is based on the processing facility supplying existing downstream suppliers to the automotive and offshore wind turbine original equipment manufacturers both in the UK and the EU.

BFS well advanced. Capital costs supported.

The mine and concentrator study is well advanced and the capital cost estimates are in line with the $130 million estimated for the mining and flotation operations reported in the Preliminary Feasibility Study (PFS) in November 2019.

A list of the consultants with their respective contributions is provided below.

AREA OF EXPERTISE	CONSULTANT
Lead Engineer, TSF, infrastructure, mining, process plant engineering, cost estimation, surface water management	Wood Group
Mineral Resource estimate and model	SRK Consulting
Pit Optimisation	Snowden, Perth
Comminution & flotation Pilot Plant	ALS Metallurgy, Perth
MREC testwork	Nagrom
Site and camp infrastructure, bulk services, road & rail infrastructure logistics	Paradigm Project Management
Financial Modelling	Ockham
Environmental and social impact assessment (ESIA) and baseline studies	HCV Africa
Environmental and Social assessment, stakeholder engagement - Angola	Grupo Simples
Angola Legal	AVM Advogadas
Australian Legal	Thomson Geer
Metallurgical consultant	Mr Vic McLaglen
Metallurgical testwork facility - flotation	Auralia Metallurgy
Metallurgical testwork – tailings storage facility	Bureau Veritas Minerals
Mineralogy testwork	ALS Mineralogy
Geological Consultant	Dr Wally Witt
Geotechnical studies	ARQ Consulting
Hydrology, Borefield testing and modelling	HCV Africa
Transport rail and shipping	Conrad Partners
Rare earth markets and pricing	Roskill / Adamas
Sample Assays	Nagrom Laboratories

Successful production of a mixed rare earth carbonate

In March 2020 the technical studies were expanded to include the processing of the concentrate for the production of a high grade mixed rare earth carbonate (MREC), and in early October a high grade MREC with NdPr comprising 33.5% of the total rare earths content was successfully produced.

The finalisation of this part of the process route is well advanced with a number of innovative and highly encouraging metallurgical developments in the final stages of testing by Nagrom under the direction of the Wood team.

Development of an innovative resin-based process route to produce a mixed rare earth sulphate

One of these innovative process routes incorporates the preferential adsorption of leached mixed rare earths onto resin which when stripped yields a high grade mixed rare earth sulphate, which is an ideal feedstock for the proposed UK facility.

A patent reservation is underway to protect the intellectual property of this novel process route which re-purposes existing technology and is expected to replace the high capital cost and energy-intensive process route most commonly used to produce a mixed rare earth carbonate and as a result is expected to lower the overall capital and operating costs for this part of the project.

Initial infrastructure

In July 2020 African based Paradigm Project Management (Paradigm) was engaged as the Company's owner representative to co-ordinate the various studies and to deliver the front-end engineering design (FEED) for the main infrastructure elements of the Longonjo Project.

Paradigm has recently gone out for quotation to suppliers and contractors with several equipment packages in preparation for the commencement of construction of the initial infrastructure and bulk site services (water, power,

reagents, communications, and accommodation) for commencement in Q1, 2021.

A decision on the commencement of construction will be subject to completion of the relevant part of the studies, the availability of funding and Board approval.

Upgraded Mineral Resource estimate expected to increase mine life.

In September 2020, a substantial upgrade to the Mineral Resource estimate was reported, which contained 2.3 times the Measured and Indicated resources used in the Preliminary Feasibility Study. This increase is expected to lead to an extended mine life subject to a favourable outcome of the various studies currently underway.

Decision on the site for the UK processing facility expected shortly

The Wood Group study is in the final stages of evaluation of potential sites within the three Northern Powerhouse post-Brexit Freeports, Merseyside, Tees Valley and Humber and a decision on the preferred site location is expected shortly.

The study has highlighted the international competitiveness of each of the three locations, particularly in relation to power, labour and reagents costs.

Detailed discussions with local councils and experienced planning agents have confirmed that subject to a final investment decision and funding being available, the necessary planning permission for the proposed UK facility can be obtained with sufficient time for it to be constructed contemporaneously with the mine development.

Government initiatives

The Northern Powerhouse is a government proposal to boost economic growth based on the benefits of agglomeration which aims to reposition the British economy away from London and the South East and comprises 11 local enterprise partnerships including Liverpool, Tees Valley and Humber.

The Company notes the various initiatives surrounding the Northern Powerhouse, in particular, the most recent meeting between Conservative MPs of the Northern Research Group which is calling for a post-pandemic recovery plan based on jobs and infrastructure investment.

Chancellor Rishi Sunak, himself a Yorkshire MP, was reported to have thrown his weight behind calls for a special package of support for northern businesses and funding for large-scale building projects.

In this light the Company welcomes the approval by the Government for Less Common Metals Limited to carry out a feasibility study into a fully integrated supply chain for rare earth permanent magnet production in the UK and looks forward to providing whatever support is required in assisting a favourable outcome for this important study.

Less Common Metals Limited is a Merseyside based world leader in the manufacture and supply of a range of metals and alloys based on rare earth elements for a range of specialist uses including permanent magnet production.

The Company also welcomes the recent policy statements by the EU Commissioner Maros Sefcovic; "The EU is pushing the concept of open strategic autonomy on raw materials by developing its own supplies of rare earths and having its own rare earth mining and refining capacity ready by 2030".

It is clearly no longer acceptable to import unsustainable raw materials into Europe (EU and UK) to develop the Green economy. The Company has joined a range of industry bodies including the Critical Minerals Association, the Rare Earth Industry Association and the European Raw Materials Alliance in order to support this message.

Increasing magnet metal rare earth prices

The rapid uptake in electric vehicle production is well documented with record global electric car sales reported in September, up 91% year on year, however, it is the accelerating growth in offshore wind capacity that is capturing attention.

The EU, which is already home to 42% of the world's offshore wind capacity, has just announced a planned five-fold increase in offshore wind generation this decade and a 25-fold increase by 2050 to meet its' climate goals.

China, in its' recently announced *Beijing declaration,* has set out plans to increase wind capacity by four times to over 800 GW by 2030 and "at least" 3,000 GW by 2060.

To put the scale of these expansions into perspective the total UK electricity generation capacity from all sources, not just wind, is currently around 75 GW.

The US which is currently lagging the EU and China in terms of the growth of offshore wind capacity is now expected to accelerate its investment in the renewables sector in general and more specifically in offshore wind capacity under the Biden Presidency. The IEA has reported that the United States is now anticipated to become one of the largest offshore markets in 2024.

All three major rare earth commodity forecasters Roskill, CRU and Adamas are forecasting substantial increases in magnet metal prices over the next few years, with Adamas forecasting '*unfathomable demand*' post-2030 as the demand from electric vehicles and offshore wind takes off.

Rare earth prices have already begun to respond. Over the past twelve months, despite the COVID downturn, spot neodymium oxide prices have increased by 35% to over US$57,000 per tonne on the Shanghai metal market and are quoted at over US$72,000 per tonne in Europe and the US.

Cash and LSE listing

The Company is well funded with US$9.2 million cash at hand. The Company continues to receive strong support from UK investors following the standard listing on the Main Board of the LSE in July.

The LSE has recently reported that based on average daily trading volume Pensana is now one of the most liquid ASX/LSE dual-listed companies across all sectors on the LSE, ranking fourth behind Rio Tinto, BHP and South 32.

PENSANA
RARE
EARTHS

ENDS

The information in this report that relates to the 2020 Mineral Resource estimates is based on work done by Rodney Brown of SRK Consulting (Australasia) Pty Ltd. Rodney Brown is a member of The Australasian Institute of Mining and Metallurgy and has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration, and to the activity he is undertaking, to qualify as a Competent Person in terms of The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012 edition).

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement on 14 September 2020 and, in the case of estimates of Mineral Resources estimates that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

FORWARD LOOKING STATEMENTS

Statements regarding plans with respect to the Company's project are forward-looking statements. There can be no assurance that the Company's plans for development of its projects will proceed as currently expected. These forward-looking statements are based on the Company's expectations and beliefs concerning future events. Forward looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of the Company, which could cause actual results to differ materially from such statements. The Company makes no undertaking to subsequently update or revise the forward-looking statements made in this announcement, to reflect the circumstances or events after the date of that announcement.

This Announcement has been approved in accordance with the Company's published continuous disclosure policy and authorised for release by the Company's Board.

For further information:

Pensana Rare Earths Plc

Website:	www.pensana.co.uk
Paul Atherley Chairman / Tim George CEO	contact@pensana.co.uk
Buchanan (UK Financial PR)	+44 (0) 207 466 5000
Bobby Morse/ Augustine Chipungu /James Husband	pensana@buchanan.uk.com

About Pensana Rare Earths Plc

Pensana is a rapidly growing sustainable resources company with shares trading on the London Stock Exchange's Main Market for listed securities (PRE: LSE) and on the Australian Stock Exchange (PM8: ASX).

Pensana has appointed the Wood Group to undertake a study into the establishment of an integrated rare earth processing facility in the UK ("the Wood Group Study") with a view to creating the world's first sustainable magnet metal supply chain.

Having progressed the design of the Longonjo project to include the production of a mixed rare earth carbonate, Pensana now has a unique opportunity to explore the potential for it to make one further step downstream and to create additional value by establishing a rare earth oxide production facility in the UK.

By linking a mid-stream magnet metal supply with downstream magnet manufacturing capacity there is the potential to create a sustainable magnet metal supply chain at a time of increasing concern over the provenance of these critical metals for the electric vehicle and Offshore Wind Turbine industries.

Following the recent resource upgrade, the Longonjo project is now one of the world's largest known rare earth resources.

Thierry Breton, the EU's internal market commissioner, recently announced the establishment of a European Raw Materials Alliance recognising that the EU needs to establish sustainable supply and processing capacity of rare earths to support the UK government's plans for the UK to become the Saudi Arabia of wind. Pensana is focused on this broader context.

As the Angolan government continues to diversify its economy away from oil and gas and diamonds and to develop its agriculture, tourism and mining sectors, Longonjo is the flagship mining project and is receiving strong support both within the community and from government at all levels.

The Company has ongoing consultation with the local community and elected authorities and is working closely with them to ensure that the benefits of the project in terms of training, jobs and broad community support meet the aspirations of as many stakeholders as possible.

As the Company continues on its path to building one of the world's lowest carbon footprint mines it also strives to be a trusted partner for its employees, stakeholders and the communities where it operates. The Pensana team is particularly passionate about developing young Angolan professionals, especially women in STEM, engaging responsibly with the environment and broad social engagement with the local community.

Across the Company, at every level, the Pensana team is committed to sustainable value creation and to the advancement of the UN Sustainable Development Goals. The project is being planned to the highest ESG standards and the Company is conducting a detailed assessment of the appropriate international ESG standards, initiatives and reporting frameworks to adopt to ensure the Company remains best in class as the project moves into the development phase.

With Presidential approval for the mining licence and strong financial backing from FSDEA, the Angolan Sovereign Wealth Fund which now holds a 23% stake in the Company, Pensana is in a strong position to bring the project online as the world's first sustainable supplier of critical magnet metal rare earths.