21 April 2021

Establishing a World-Class Sustainable Supply of critical Rare Earths for the Green economy

Pensana Plc (LSE: PRE) ("Pensana" or "the Company") today announces the Company has adopted a business plan to seek to establish, subject to funding, a world-class, independent and sustainable supply chain of the rare earth metals vital for electric vehicle, wind turbine and other strategic industries. This involves:

- Plans to establish the world's first sustainable rare earth separation facility at the "plug and play" Saltend Chemicals Park ("SCP") in Humber, UK, and with a target production of circa 12,500 annualised tonnes of rare earth oxides, including 4,500 tonnes of magnet metal rare earth oxides ("NdPr"), which would represent approximately 5% of 2025 projected world demand.

- Plans to establish the Saltend rare earth separation facility ("Saltend") as the world's first major separation facility established in over a decade and which would be one of only three major producers located outside China. The planned US$125 million facility would create over 100 direct jobs processing purified rare earth sulphates, which would be imported from the Company's state-of-the-art Longonjo mine in Angola.

- Benefitting from the recently awarded Humber Freeport status, Saltend has the potential to bring high value manufacturing jobs back to the UK and, through Pensana's plans, could become one of the world's largest rare earth processing hubs, importing sustainably, globally sourced feedstock and processing it into valuable oxide and metal products for consumption by European OEMs and beyond.

Pensana's Chairman, Paul Atherley commented:

"Saltend has the potential to become the first major separation facility to be established in over a decade – one of only three major producers outside China – at a critical juncture when Europe depends on China for 98% of its rare earth magnets.

Saltend will initially seek to source high purity feedstock from the Company's Longonjo mine and will look to take advantage of the recently granted Humber Freeport status to create a high value processing hub in the UK.

The global rare earth market, driven by demand from industries including electric vehicles and offshore wind, is expected to increase five-fold by 2030 and the NdPr oxide price is forecast to increase at a CAGR of 4.8 - 9.9%, underpinning strong economics for the investment.

With approvals in place for both Saltend and Longonjo, we are looking to commence the development of both projects later this year."

Financial Summary*

Annual Production of Rare Earth Oxides (REO)	C. 12,500 tpa	
Annual Production NdPr Oxides	C. 4,500 (included in REO)	
Opex	US$ 22/kg rare earth oxide	
Capex	Saltend Refinery	US$ 125M
	Longonjo Mine and Infrastructure	US$ 38M
	Longonjo Concentrator	US$ 105M
	Longonjo MRES Refinery	US$ 124M
	Growth Allowance and Contingency	US$ 31M
Revenue (Average steady state)	US$ 550 million (average per annum based on first five years)	
EBITDA (Average steady state)	US$ 359 million (average per annum based on first five years)	
NPV_8 ** (un-leveraged , post-tax)	US$ 2.3 billion	
IRR	57%	
Payback from first production	2.0 years	

* Management estimates, inclusive of Angolan and UK operations, are based on underlying independent studies undertaken by:

    - SRK: Mineral resource estimates
    - Snowden: Mine plan schedule and pit optimisation
    - Wood Group: Longonjo and Saltend technical engineering and design; capex and opex cost estimates; supervision of metallurgical testwork and pilot plant programs
    - Paradigm Project Management: Longonjo site infrastructure and bulk services technical engineering, design and cost estimates
    - HCV Africa: ESIA, EMP, RAP and hydrology
    - Grupo Simples – Angolan ESIA
    - Adamas Intelligence: Market forecasts

** NPV is calculated at an operational level (pre-financing) which is anticipated to be a blend of equity and long term debt financing. Revenue based on the Shanghai Metals Market spot price as at 31 March 2021 and price escalation using Adamas Intelligence market forecasts.

Potential financial backing from major shareholder and a range of financial institutions

Saltend has received first phase progression from the UK Government's £1 billion Automotive Transformation Fund which seeks to support the national transition to electric vehicles.

Pensana has received indications of potential financial backing which include its major shareholder, the Angolan Sovereign Wealth Fund, and approaches from a wide range of financial institutions to date as it seeks to review the potential funding sources and structures to deliver its plans.

Corporate Profile

The Company has 204 million ordinary shares on issue with a standard listing on the Official List in the United Kingdom and is admitted to trading on the London Stock Exchange's Main Market under the code (PRE.L). At its share price on 20 April 2021 the Company had a market capitalisation of circa £350 million (US$490 million).

The top 20 shareholders own over 70% of the register and include the Angolan Sovereign Wealth Fund (23%), HNW and Family Offices (18%) and Management (11%).

Building a world class management team

Recent appointments have strengthened the management team including Non-Executive Director Jeremy Beeton, who was Director General of the London Olympic and Paralympic Games, and Chief Operating Officer Rocky Smith, who was previously Managing Director of Molycorp's Mountain Pass rare earth mine in the US, now owned by NYSE listed MP Materials. They join ex Anglo American, CEO Tim George ahead of the developments at Saltend and in Angola.

Pensana has recently received planning permission to establish a world-class processing facility at the Saltend Chemicals Park

The "plug and play" facility, located within the Humber Industrial Cluster, will cost around $125 million to build and create over 100 jobs. Ground clearing and site preparation is scheduled to commence almost immediately with construction and commissioning expected to take 18 months from completion of financing.

With a nameplate capacity of circa 12,500 tonnes per year of rare earth oxides – including 4,500 tonnes of magnet metal rare earth oxides – representing approximately 5% of 2025 projected world demand, under the Company's plans, Pensana's plant at Saltend would become the world's first major separation facility established in over a decade and one of only three major producers outside China.

Lynas Corporation of Australia, (ASX: LYC, market capitalisation: US$4.1 billion) currently the world's largest non-Chinese producer, last year produced around 4,700 tonnes of magnet metal oxides from its facility in Malaysia. MP Materials (NYSE: MP, market capitalisation: US$5.0 billion) is planning to produce c. 6,000 tonnes of magnet metal oxides from 2023.

China supplies 98% of Europe's rare earth magnets. Concerns are growing that China will need all of this production for its US$11 trillion Carbon Neutral 2060 plan

Europe's industries central to the green economy are almost totally dependent on magnets supplied from China and there are concerns that much of that supply is "unsustainably" produced.

China installed 58GW of wind capacity in 2020, exceeding the total capacity installed worldwide in the previous year.

Under the recently announced US$11 trillion Carbon Neutral 2060 Plan, China will spend a further US$3.8 trillion on wind and solar up to 2050, raising concern that it will need all of its current magnet production and more.

ERMA: Establishing sustainable rare earth production in Europe is critical

Pensana is a founding member of the European Raw Materials Alliance (ERMA) which has stated that building sustainable rare earth oxide production and separation capacity in Europe is critical to meet the burgeoning demand from electric vehicle and offshore wind growth.

"Green and digital technologies currently depend on a number of scarce raw materials. We import lithium for electric cars, platinum to produce clean hydrogen, silicon metal for solar panels, 98 percent of the rare earth elements we need come from a single supplier - China - and this is not sustainable," Ursula von der Leyen EU President, February 2021

"It is not sufficient to have the raw materials if we do not have the processing facilities in Europe. The overall goal of the European Raw Materials Alliance is to boost EU resilience in the rare earths and permanent magnets value chain that are vital for many industrial ecosystems." Thierry Breton – EU Commissioner, September 2020

Ethically Sourced Rare Earths from the state-of-the-art Longonjo mine in Angola

UK Engineering experts Wood Group plc have designed the Longonjo mine in Angola to international standards which features hydro-electric power and a tailings storage facility to meet the recommendations of the Church of England Pensions Board and ICMM guidelines.

The near surface, high-grade project is linked to the Atlantic port of Lobito by the recently upgraded Benguela railway line. The Wood Group supervised metallurgical testwork and pilot plant trials undertaken to date demonstrate that this will produce a clean, high-value mixed rare earth sulphate for further separation at Saltend. Angola is focused on diversifying its economy away from depending on oil, gas and diamonds, towards tourism, agriculture and value-added resource development.

Angolan President Lourenço recently commented to international media that he has high hopes for Longonjo as a flagship achievement of his mining reforms.

Freeport status will help establish an international rare earth processing hub at Saltend

Recently awarded Humber Freeport status creates a financial and regulatory environment to enable Saltend to become one of the world's largest rare earth processing hubs.

By importing sustainably sourced feedstock from around the world and processing it into high value oxides and metal products, Saltend will have the potential to export to supply chains in Europe and beyond.

The Company is in active discussions with third parties for the additional supply of sustainably sourced rare earth carbonates in addition to plans to process Longonjo feedstock material. Once in production, Pensana will look to expand production capacity when additional feedstock becomes available.

Establish a certified magnet metal supply chain for wind turbine, electric vehicle and other strategic original equipment manufacturers

Through teaming up with alloy makers and magnet manufacturers, the Company is looking to establish a 3,000 tonne per year metal facility at Saltend to supply European automotive and wind turbine original equipment manufacturers.

The ability to provide manufacturers with proof of provenance and independently verified lifecycle certification of raw materials will become increasingly important under the EU 2023 Carbon Border Tax.

In January 2021, Pensana's Chairman led discussion with UK Treasury officials on technological applications for lifecycle analysis of raw material supporting UK decarbonisation and circular economy objectives.

Using Hydrogen to recycle wind turbine nacelles at Saltend and help create a Circular Economy for rare earth metals

Europe currently recycles less than 1% of magnet metals at a time when consumption is growing rapidly.

To tackle this problem, Pensana is exploring the use of blue hydrogen generated by Equinor at Saltend Chemicals Park to recycle an addressable annual market

of 4,000 tonnes of permanent magnets from end-of-life electric vehicle motors and wind turbine nacelles.

The Equinor-led Hydrogen 2 Humber (H2H Saltend) project plans to capture carbon and supply blue hydrogen as part of Zero Carbon Humber, a partnership to build the world's first net zero industrial cluster.

Community and social engagements

As part of Pensana's commitment to communities in which the Company operates, alongside its inclusion of outsourced services and agri-business within the development plan, the Company has commissioned a detailed study which involves helping to revive parts of Angola's coffee industry with enhanced certification and a fairer distribution of profits to farmers, thereby promoting inclusive growth and reducing poverty.

Previously a major coffee exporter, Angola now produces 1.5% of the tonnes of coffee it produced in the 1970s. Traditional family farmers, who make up 95% of the growers, earn just 6% of the profit with the remaining 94% going to processers and traders.

The Company has engaged international consultants and with officials in-country and the UK Embassy in Luanda to weigh opportunities to establish a centralised hub with anchor farms feeding into a roasting facility at the port of Lobito to produce coffee for export to Europe.

Providing positive opportunities for talented young women to help build a sustainable economy

Metals and minerals are the building blocks of the green economy. Pensana believes that it is unacceptable to extract them unsustainably and that smart chemistry and energy transition are the keys to establishing a net zero circular economy.

Pensana is actively seeking bright and aspirational women with STEM backgrounds, particularly those who come from diverse and/or disadvantaged backgrounds and want to be part of creating solutions for a sustainable future.

In this regard, the Company is engaging with engineering centres of excellence, the University of Hull, local authorities and engagement experts to progress women in STEM across operations from the very outset of hiring and development.

For further information:

Pensana Plc

Website: www.pensana.co.uk
Paul Atherley, Chairman / Tim George, CEO contact@pensana.co.uk

Forward Looking Statements

This Announcement may contain "forward-looking statements" with respect to certain of the Company's plans and its current goals and expectations relating to its future financial condition, performance, strategic initiatives, objectives and results. Forward-looking statements sometimes use words such as "aim", "anticipate", "target", "expect", "estimate", "intend", "plan", "goal", "believe", "seek", "may", "could", "outlook" or other words of similar meaning. By their nature, all forward-looking statements involve risk and uncertainty because they relate to future events and circumstances which are beyond the control of the Company. As a result, the actual future financial condition, performance and results of the Company may differ materially from the plans, goals and expectations set forth in any forward-looking statements. Any forward-looking statements made in this Announcement speak only as of the date they are made. These forward-looking statements reflect the Company's judgment at the date of this Announcement and are not intended to give any assurance as to future results and cautions that its actual results of operations and financial condition, and the development of the industry in which it operates, may differ materially from those made in or suggested by the forward-looking statements contained in this Announcement and/or information incorporated by reference into this Announcement. The information contained in this Announcement is subject to change without notice and except as required by applicable law or regulation the Company expressly disclaims any obligation or undertaking to publish any updates, supplements or revisions to any forward-looking statements contained in this Announcement to reflect any changes in the Company's expectations with regard thereto or any changes in events, conditions or circumstances on which any such statements are based.