



Mkango Announces Grant-Funded Project to Develop Rare Earth Recycling for Loudspeakers

LONDON and VANCOUVER, British Columbia, Nov. 30, 2020 -- Mkango Resources Ltd. (AIM/TSX-V: MKA) (the "Company" or "Mkango") is pleased to announce that HyProMag Limited ("HyProMag") and partners, European Metal Recycling Limited ("EMR") and University of Birmingham ("UoB") have been awarded a grant from the Industrial Strategy Challenge Fund, delivered by UK Research and Innovation ("UKRI"), for a new project entitled "Rare-Earth Extraction from Audio Products" ("REAP" or the "Project").

REAP will investigate ways of recycling rare earth magnets from speakers used in automotive and consumer electronics applications, which account for approximately 20% of the current market for rare earth magnets, according to Adamas Intelligence, and therefore represent a significant opportunity for rare earth magnet recycling.

Mkango's subsidiary, Maginito Limited ("Maginito"), holds a 25% equity interest in HyProMag, with an option to increase its interest up to 49%.

William Dawes, Chief Executive of Mkango stated: *"Rare earth magnet recycling from end-of-life components represents a significant market opportunity and will become an increasingly important part of the rare earth supply chain in the UK, Europe and elsewhere. The REAP project complements the RaRE project (Rare Earth Recycling for E-Machines) announced earlier in the year, and further cements HyProMag's and University of Birmingham's positions as leaders in the field. Mkango is uniquely positioned in the rare earths supply chain, developing sustainable solutions for the supply of rare earth carbonate, NdPr oxide, NdFeB alloys and magnets, underpinned by the strategic partnership with HyProMag and sustainable development of the Songwe Hill rare earths project in Malawi, for which a feasibility study is underway."*

Nick Mann, Operations General Manager of HyProMag stated: *"With demand for rare earth magnets accelerating, it is imperative that we find viable economic solutions to reclaim end of life magnets that are currently lost. Current estimates suggest that the recycling rate of rare earth magnets from end of life products stands at below 5%. The REAP project is focused on one of the biggest potential sources of those magnets, namely loudspeakers. Innovative processes developed to overcome the challenges around extracting magnets from assemblies are integral to the REAP project, and we are very pleased to be working with EMR and the University of Birmingham to further optimise these processes for audio products."*

Fundamental to the REAP Project is a patented process for extracting and demagnetising neodymium iron boron ("NdFeB") alloy powders from magnets embedded in scrap and redundant equipment named HPMS (Hydrogen Processing of Magnet Scrap), originally developed within the Magnetic Materials Group at the University of Birmingham and subsequently licenced to HyProMag.

The other Project partner, EMR, is a global leader in metal recycling, operating at 150 locations around the world. EMR will pre-process automotive and flat screen TV loudspeaker scrap to provide a feed of scrap components containing NdFeB magnets to HyProMag. HyProMag will use the HPMS process in conjunction with the University of Birmingham to extract the magnets as a demagnetised alloy powder, which can be used in the remanufacture of magnets. The short loop recycling processes which are being developed by HyProMag will have a significant environmental benefit compared to primary production of magnets.

The total budget for REAP is £256,144, of which £174,744 will be funded by UKRI through the Driving the Electric Revolution challenge, part of the Industrial Strategy Challenge Fund, with the balance funded by the Project partners. HyProMag's contribution will be fully funded from the £300,000 investment made by Maginito in January 2020.

Maginito is 75.5% owned by Mkango, which is completing a Feasibility Study for the Songwe Hill rare earths project in Malawi, and 24.5% owned by Talaxis Limited ("Talaxis"), a wholly-owned subsidiary of Noble Group Holdings Limited ("Noble"), which is focused on investment in and development of technology metal opportunities.

Maginito has the first right to supply primary production from Songwe Hill, if required, for blending with recycled production from HyProMag, as well as product offtake and marketing rights.

About HyProMag

The Magnetic Materials Group within the School of Metallurgy and Materials at the University of Birmingham has been active in the field of rare earth alloys and processing of permanent magnets using hydrogen for over 40 years. Originated by Professor Rex Harris, the hydrogen decrepitation method, which is used to reduce NdFeB alloys to a powder, is now ubiquitously

employed in worldwide magnet processing.

In a further development, the MMG patented a process for extracting and demagnetising NdFeB powders from magnets embedded in redundant equipment using hydrogen in a process called HPMS (Hydrogen Processing of Magnet Scrap). This patent and related intellectual property is at the core of HyProMag's business. The MMG continues to develop new research and development opportunities, cooperates widely in Europe, including a major EU project, SusMagPro, which is also focused on recycling of magnets. The directors of HyProMag all provide their expertise to the MMG and there is potential for HyProMag to gain possible future access to new intellectual property.

HyProMag is also a partner in the Innovate UK grant funded project, "Rare-Earth Recycling for E-Machines" ("RaRE") together with University of Birmingham, Advanced Electric Machines Research Limited, Bentley Motors Limited, Intelligent Lifecycle Solutions Limited and Unipart Powertrain Applications Limited.

RaRE will for the first time establish an end to end supply chain to incorporate recycled rare earth magnets into electric vehicles, whereby recycled magnets will be built into an ancillary electric motor to ultimately support the development of a commercial ancillary motor suite.

HyProMag's strategy is to establish a recycling facility for NdFeB magnets at Tyseley in Birmingham to provide a sustainable solution for the supply of NdFeB magnets and alloy powders for a wide range of markets including, for example, automotive and electronics. A number of product options are being evaluated including hydrogen decrepitated (HD) demagnetised powders suitable for magnet producers, alloy ingot remelted from HD powders suitable for alloy feed or magnet production, anisotropic alloy powders (HDDR) for bonded magnets and sintered NdFeB magnets as required by the RaRE project for automotive applications.

The founding directors of HyProMag, comprising Professor Emeritus Rex Harris, former Head of the MMG, Professor Allan Walton, current Head of the MMG, and two Honorary Fellows, Dr John Speight and Mr David Kennedy, are leading world experts in the field of rare earth magnetic materials, alloys and hydrogen technology, and have significant industry experience. Following the investment by Maginito, HyProMag appointed William Dawes, a Director of Maginito and Chief Executive Officer of Mkango, to the Board of HyProMag.

For more information, please visit <https://hypromag.com/>

About Mkango

Mkango's primary business is exploration for rare earth elements and associated minerals in the Republic of Malawi, a country whose hospitable people have earned it a reputation as "the warm heart of Africa". The Company holds interests in four exclusive prospecting licenses in Malawi: the Phalombe licence, the Thambani licence, the Chimimbe Hill licence and the Mchinji licence.

The main exploration target in the 51% held Phalombe licence is the Songwe Hill rare earths deposit. This features carbonatite-hosted rare earth mineralisation and was subject to previous exploration in the late 1980s. Mkango completed an updated Pre-Feasibility Study for the project in November 2015 and a Feasibility Study is currently underway, the initial phases of which included a 10,900 metre drilling programme and an updated mineral resource estimate, announced in February 2019. In March 2019, the Company announced receipt of a £7 million (C\$12.3 million) investment from Talaxis to fund completion of the Feasibility Study. Following completion of the Feasibility Study, Talaxis has an option to acquire a further 26% interest in Songwe by arranging financing for project development including funding the equity component thereof.

The main exploration targets in Mkango's remaining three 100% held licences are, in the Thambani licence, uranium, niobium, tantalum and zircon, in the Chimimbe Hill licence, nickel and cobalt, and in the Mchinji licence, rutile, nickel, cobalt, base metals and graphite. Mkango recently announced commencement of an extensive exploration program following a new rutile discovery within the Mchinji licence.

Mkango also holds a 75.5% interest in Maginito (www.maginito.com) with the balance owned by Talaxis. Maginito was established by Mkango and Talaxis to pursue downstream green technology opportunities in the rare earths supply chain, encompassing neodymium (NdFeB) magnet recycling as well as innovative rare earth alloy, magnet and separation technologies.

Maginito's strategy is underpinned by offtake rights for sustainably sourced primary and secondary raw materials, and geared to accelerating growth in the electric vehicle sector, wind power generation and other industries driven by decarbonisation of the economy.

For more information, please visit www.mkango.ca.

About Talaxis

Founded in 2016, Talaxis is a wholly-owned subsidiary of Noble Group Holdings Limited and invests in and develops projects that are related to technology metals, with a special focus on rare earth elements. Talaxis focuses on battery and electric vehicle materials such as nickel, lithium, graphite and vanadium. Talaxis has supply chain partners in the upstream and midstream segments, and also focuses on research and development solutions for industrial consumers in the downstream segment. Talaxis prioritises sustainable ventures with a strong emphasis on corporate social responsibility. These include projects that contribute to the decarbonisation of the economy and that are aligned with the United Nations Sustainable Development Goals.

Market Abuse Regulation (MAR) Disclosure

Certain information contained in this announcement may have been deemed inside information for the purposes of Article 7 of Regulation (EU) No 596/2014 until the release of this announcement.

Cautionary Note Regarding Forward-Looking Statements

This news release contains forward-looking statements (within the meaning of that term under applicable securities laws) with respect to Mkango, its business and the Project. Generally, forward looking statements can be identified by the use of words such as “plans”, “expects” or “is expected”, “scheduled”, “estimates” “intends”, “anticipates”, “believes”, or variations of such words and phrases, or statements that certain actions, events or results “can”, “may”, “could”, “would”, “should”, “might” or “will”, occur or be achieved, or the negative connotations thereof. Forward looking statements in this news release include statements with respect to the global market for rare earth metals the Company is exploring for, completion of the feasibility study for Songwe, investments by Maginito in Hypromag contemplated in the agreement between Maginito and HyProMag and of the plans and results with respect to the Project, as well as plans for Tyseley and first commercial sales from Tyseley. Readers are cautioned not to place undue reliance on forward-looking statements, as there can be no assurance that the plans, intentions or expectations upon which they are based will occur. By their nature, forward-looking statements involve numerous assumptions, known and unknown risks and uncertainties, both general and specific, that contribute to the possibility that the predictions, forecasts, projections and other forward-looking statements will not occur, which may cause actual performance and results in future periods to differ materially from any estimates or projections of future performance or results expressed or implied by such forward-looking statements. Such factors and risks include, without limiting the foregoing, governmental action relating to COVID-19, COVID-19 and other market effects on global demand for the metals and associated downstream products for which Mkango is exploring, researching and developing, the positive results of a feasibility study on the Project and delays in obtaining financing or governmental or stock exchange approvals. The forward-looking statements contained in this news release are made as of the date of this news release. Except as required by law, the Company disclaims any intention and assumes no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise, except as required by applicable law. Additionally, the Company undertakes no obligation to comment on the expectations of, or statements made by, third parties in respect of the matters discussed above.

For further information on Mkango, please contact:

Mkango Resources Limited

William Dawes	Alexander Lemon
Chief Executive Officer	President
will@mkango.ca	alex@mkango.ca
Canada: +1 403 444 5979	

www.mkango.ca
@MkangoResources

Blytheweigh

Financial Public
Relations
Tim Blythe
UK: +44 207 138 3204

SP Angel Corporate Finance LLP

Nominated Adviser and
Joint Broker
Jeff Keating, Caroline
Rowe
UK: +44 20 3470 0470

Alternative Resource Capital

Joint Broker
Alex Wood
UK: +44 20 7186 9004

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