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ASX ANNOUNCEMENT
22 March 2021

Production of heavy Rare Earth Carbonate from Browns Range exceeds 210,000kg

Highlights

- A shipment of 40,406kg of heavy Rare Earth Carbonate (REC) containing 1,835kg of dysprosium and 233kg of terbium is ready for delivery to thyssenkrupp;
- This brings the total REC produced at the Company's 100% owned Browns Range Project to 211,109kg;
- The total REC produced contained 103,731kg of Rare Earth Oxides, which includes 9,751kg of dysprosium and 1,245kg of terbium;
- Both dysprosium and terbium are critical elements in the permanent magnet motors used in E-mobility powertrain applications;
- By 2030, the global light vehicle EV market is expected to be dominated by permanent magnet motor powertrains with more than 75% share of the market forecast; and
- Additional supply from the rare-earths industry is required for the rapidly increasing demand for dysprosium and terbium.



Figure 1: Rare Earth Carbonate produced at Browns Range

Powering Technology.

Northern Minerals
Ground Floor
34 Colin Street
West Perth WA 6005

PO Box 669
West Perth WA 6872
northernminerals.com.au
info@northernminerals.com.au

ASX: NTU
T: +61 8 9481 2344
ABN: 61 119 966 353

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Heavy rare earths producer, Northern Minerals Limited (ASX: NTU) (Company) is pleased to announce that production of heavy Rare Earth Carbonate (REC) at the Browns Range Pilot Plant has now surpassed a new milestone of 210,000kg.

A shipment of 40,406kg of REC that contains 1,835kg of dysprosium oxide and 233kg of terbium oxide is ready at Browns Range for delivery to the Company's offtake partner thyssenkrupp Materials Trading GmbH (thyssenkrupp), bringing total production of REC to 211,109kg.

The REC produced to date contains a total 103,731kg of Rare Earth Oxide, which in turn contains 9,751kg of dysprosium oxide and 1,245kg of terbium oxide.



Figure 2: Browns Range Pilot Plant and Rare Earth Carbonate bags (foreground)

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Dysprosium and terbium demand

Both dysprosium and terbium are critical elements in the permanent magnet motors used in E-mobility powertrain applications, in particular battery electric vehicles (BEV), full/plug-in hybrid electric vehicles (HEV), mild-hybrid electric vehicles (MHEV) and fuel-cell electric vehicles (FCEV).

Global light vehicle production is forecast to reach more than 100 million units by 2030 with over half of expected to be electric, full hybrid and mild hybrid electric vehicles.

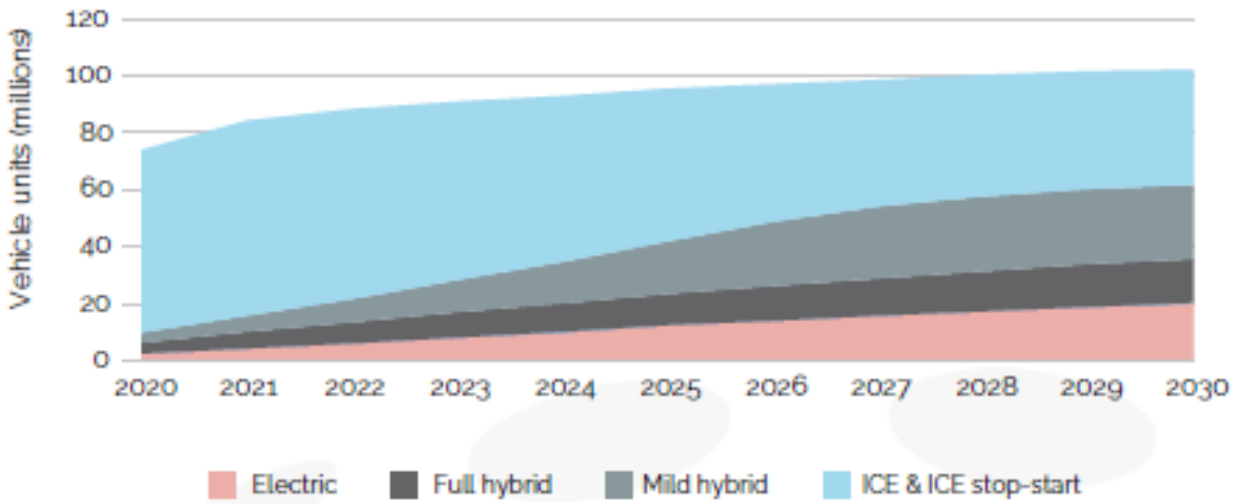


Figure 2: Global light vehicle production forecast (CWIEME Global)

The production of E-motors for light vehicles increased from 11 million units in 2019 to 13.9 million units in 2020 and is further expected to increase by 57% to 21.8 million units in 2021. Such an increase, even during the lockdowns and plant shutdowns, indicates the strong growth of permanent magnet motors used in light electric vehicle powertrain applications.

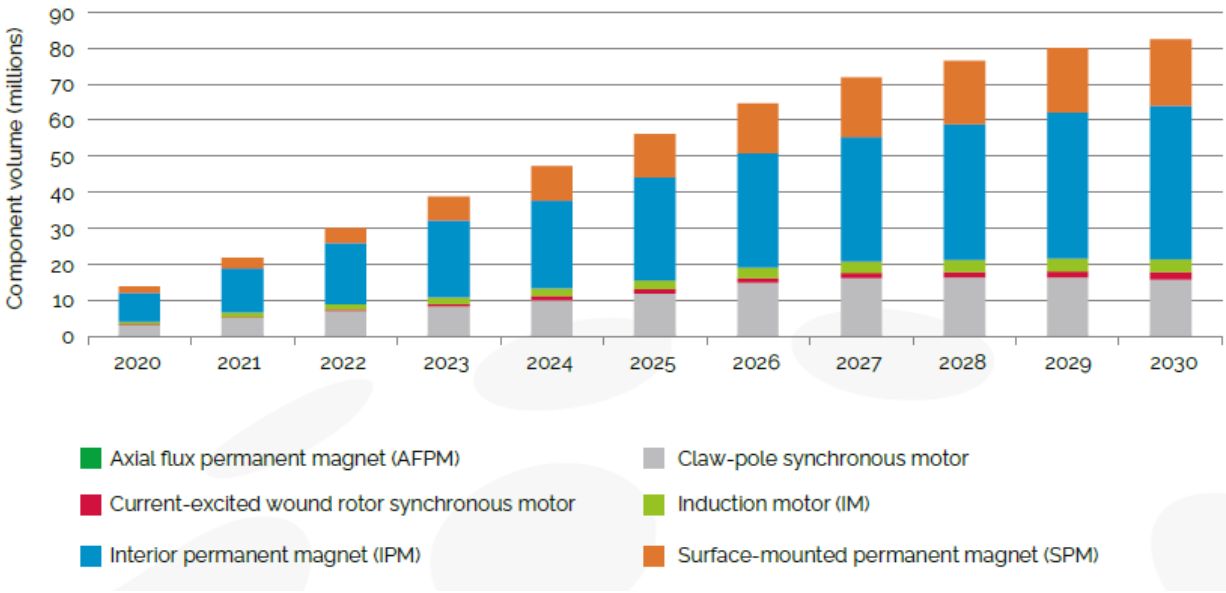


Figure 3: Global light vehicle motor technology trend (CWIEME Global)

By 2030, the global light vehicle EV market is forecast to be dominated by permanent magnet motor powertrains with greater than 75% share of the market.

Additional supply from the rare-earths industry is required for the rapidly increasing demand for dysprosium and terbium used in permanent magnet motors in E-mobility powertrain applications while simultaneously continuing to supply the demand for non-automotive applications.

Northern Minerals CEO Mark Tory said: *"Despite the operational and supply chain challenges in the past 12 months, the global trend toward electrification of transport continues to accelerate as a result of regulatory changes and bold decisions by car manufacturers on transition to fully-electric fleets."*

"Browns Range is still the most strategically placed heavy rare earths operation in the western world, and we continue to apply our significant R&D learnings to successfully produce batches of REC for our European offtake partner thyssenkrupp from our Pilot Plant in the Kimberley region of WA."

ENDS

Authorised by Mark Tory – CEO

For further information:

Mark Tory
Chief Executive Officer
Northern Minerals
+61 8 9481 2344

For media and broker enquiries:

Michael Cairnduff
Cannings Purple
0406 775 241
mcairnduff@canningspurple.com.au

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About Northern Minerals:

Northern Minerals Limited (ASX: NTU) (Northern Minerals or the Company) is one of a few producers of heavy rare earth element Dysprosium outside of China via production from the Browns Range Heavy Rare Earth Project in northern Western Australia.

The Company commenced the production of heavy rare earth carbonate in late 2018 as part of a three-year pilot assessment of economic and technical feasibility of a larger scale development at Browns Range. In March 2020, the operation was placed into care & maintenance as a result of COVID-19 and has partially restarted operations in August 2020.

The work program provides the opportunity to gain production experience and surety of supply for our offtake partner, thyssenkrupp, as well as allowing the assessment of various project enhancement initiatives including ore sorting and the separation of the product into individual rare earth oxides.

Through the development of its flagship project, the Browns Range Project (the Project), Northern Minerals aims to build the Western Australian operation into a significant world producer of dysprosium outside of China.

The Project is 100% owned by Northern Minerals and has several deposits and prospects containing high value dysprosium and other HREs, hosted in xenotime mineralisation.

Dysprosium is an essential ingredient in the production of DyNdFeB (dysprosium neodymium iron-boron) magnets used in clean energy, military and high technology solutions.

For more information: northernminerals.com.au.





ASX Code:	NTU	Market Capitalisation:	A$193.8m
Issued Shares:	4,846m	Cash (as at 18 March 2020):	A$25.2m