LOW COST, LARGE AND SUSTAINABLE REES FROM GREENLAND

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Abstract

Kvanefjeld – Sustainable Rare Earth Production form Greenland

Greenland Minerals is developing the world class Kvanefjeld rare earth project in Southern Greenland. The project hosts one of the largest deposits of rare earths globally while also containing by-product uranium, zinc and fluorspar. The project is well advanced with an updated Feasibility Completed in 2016 and optimised in 2019. The optimised Feasibility study outlined a >30,000 tonnes per year of REO production at a capex of US$505M and an opex of <US$4/kg REO. Rigorous metallurgical testwork has been completed which has produced a low cost and relatively simple process. The process has been well tested with pilot plant operations completed with assistance from the EURARE project. Extensive environmental baseline surveys have been completed to produce a comprehensive environmental impact assessment for permitting. Other permitting aspects such as social and marine transport assessments have been completed. Access to downstream processing for the rare earth product has been secured through co-operation with Shenghe Resources. Shenghe are a leading producer of rare earths elements based in China and with sales throughout the world. Rare Earths produced in Greenland will undo separation and further value adding with Shenghe Resources to provide a path to market for the main rare earth product. Other by-products produced by the project will include uranium, zinc and fluorspar. The project is currently in the permitting phase with public consultation expected in 2020 with the mining licence awarded in 2021. From this point development plans will be finalised through detailed design and bankable studies.

A combination of favourable metallurgy, location and by-products will result in Kvanefjeld being a large, low cost and sustainable long term producer of rare earths.