

New business plan to take Browns Range into production

Highlights

- Three stage business plan to take Browns Range into full production.
- Stage one incorporates the construction of a test pilot plant at Browns Range with a 60,000tpa capacity to produce 49,000kg dysprosium, in 590,000kg TREO per annum.
- Test pilot plant will de-risk the full scale project, and position Browns Range as the world's leading long term supplier of heavy rare earths.
- New business plan and stage one well received by potential offtake partners and strategic investors.
- Stage one expected to be funded by strategic investors and offtake partners on attractive terms, negotiations underway.



Northern Minerals Limited (ASX: NTU; Northern Minerals) is pleased to announce its new business plan to support the pathway to production for the Browns Range Project (the Project). The business plan, which separates the Project's development into three stages, is in response to the current rare earth market which has seen the lowest rare earth prices in years. This new staged approach allows Northern Minerals to test the Project and market, develop the Project to bankable feasibility study (BFS) level and then build the full scale operation.

Northern Minerals' Managing Director, George Bauk considers the staged approach, which has been well received by potential offtake partners, prudent in the current testing economic and commodity market.

"During the development of this plan Northern Minerals has been working closely with potential offtake partners to assess whether short term production from the pilot plant, followed by longer term production of a premium product from a full scale operation would be acceptable in the market. The response has been extremely encouraging, with Northern Minerals confident that this new approach will result in it realising its vision to become the first significant dysprosium producer outside of China."

Negotiations are well underway with potential offtake partners and strategic investors to fund stage one. Northern Minerals is assessing all alternatives with its financial advisor, Argonaut. A key consideration in these assessments is ensuring long-term benefits to Northern Minerals' shareholders are realised.

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The first stage involves the construction of a pilot plant at Browns Range to test all elements of the Project such as mining and processing, and deliver a product to market. The testwork undertaken in the pilot plant is important for de-risking the development of the full scale operation by providing Northern Minerals the ability to test a number of process flowsheet variables that cannot be replicated in a laboratory. Stage one will also provide improved knowledge of grade control and the geology of each deposit through the commencement of open pit mining.

Mr Bauk said that de-risking the Project technically is one of the major advantages in building the pilot plant, however there are also other many reasons why Northern Minerals has decided to build the pilot plant.

“Without a doubt the technical understanding we gain from the testwork in stage one is a significant advantage. However, the pilot plant also provides a number of other advantages by allowing us to penetrate the market with our own product and gain valuable market knowledge and experience, while at the same time building our reputation as a new reliable source of dysprosium.”

“In particular the pilot plant is a better option in current markets as it requires less capital, provides less risk and will be delivered in shorter timeframes.”

Stage two involves completing the project development studies and undertaking the engineering and design to a BFS level. The final stage, stage three, is to build the Project to full scale production.

Once the Project reaches full production it is envisioned the pilot plant, that will be modularised and containerised, be transported and utilised to evaluate other exploration projects such as John Galt (WA).

Stage 1

Stage one involves the construction of a 60,000tpa pilot plant operation at the Project. The three year operation will consist of both a beneficiation and hydrometallurgical process to produce 49,000kg dysprosium, in 590,000kg TREO contained in a mixed rare earth carbonate (REC) per annum. Construction of stage one is estimated to take nine months once funding is in place.



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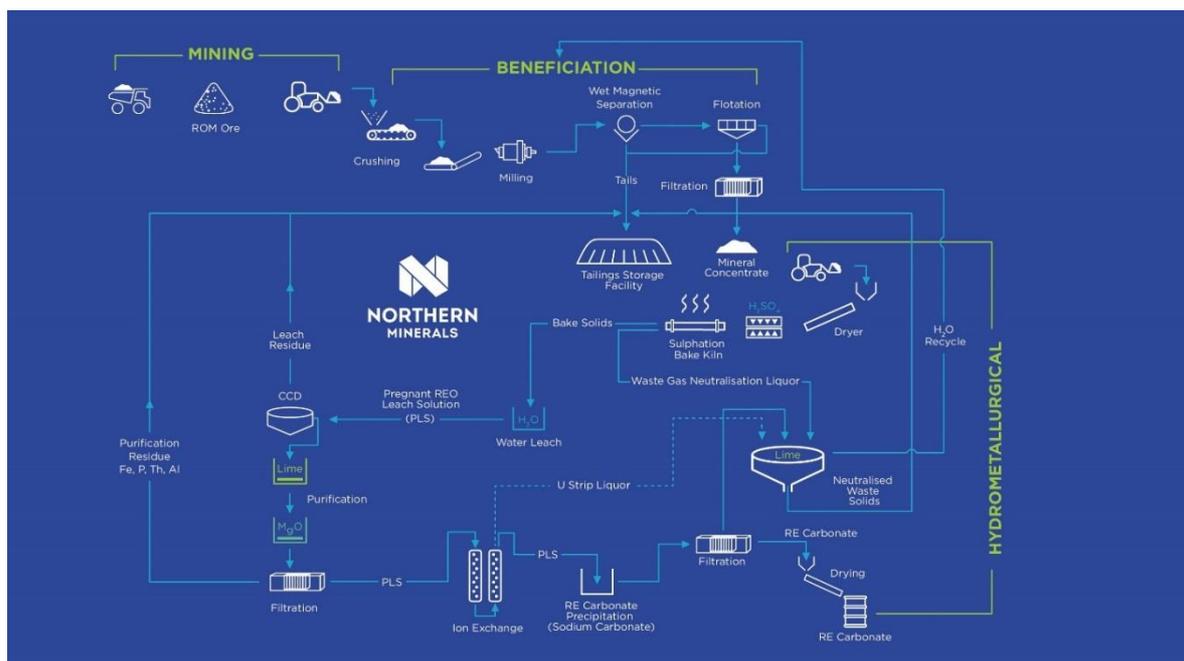
The mining operation will consist of an open pit mining campaign over five months from relatively shallow pits at the Wolverine, Gambit West, Gambit Central and Gambit East deposits. A total 172,080t of mineralised material @ 1.19% TREO, containing 2,047,000kg TREO will be mined and stockpiled ready to be fed into the pilot plant. A 1.19% TREO grade is achieved as a result of higher grade ore near surface of the deposits to be mined and will have minimal impact on the ore grade when the Project is developed at full scale.

It is estimated that of the 2,047,000kg TREO to be mined and processed through the pilot plant, 75% will be from within the Probable Ore Reserve and 25% will be from Inferred Mineral Resources, which is material that will be carried with the ore within the mine designs. There is a low level of geological confidence associated with Inferred Mineral Resources and there is no certainty that further exploration work will result in the determination of Indicated Mineral Resources or that the production target will be realised.

The ore that will be mined and processed for the pilot plant represents a small portion of the DFS Ore Reserve, reported according to the JORC (2012) Code and Guidelines in ASX announcement "Increased Ore Reserve for Browns Range Project – 2 March 2015" at 3,750,000t ore containing 26,375,000kg TREO, and the balance from the Mineral Resource Estimates reported according to the JORC (2012) Code and Guidelines in ASX announcements "Increased Mineral Resource delivers more good news" dated 23 February 2015, and "Wolverine Total Resource Doubled in a Major Upgrade of Browns Range HRE Mineral Resource Estimate" dated 26 February 2014.

The pilot plant will consist of all the processing steps detailed in the Project's Definitive Feasibility Study (DFS) shown in Figure 1, however will be downsized to a capacity to process 60,000tpa of ore at 1.19% TREO through the beneficiation plant, and 3,200tpa of xenotime concentrate at 20% TREO through the hydrometallurgical process. Previous offsite testwork has shown that these two processes are capable of delivering superior recoveries of 90% and 92% respectively. The processes will be modularised and containerised for the pilot plant where possible to facilitate a compressed site construction period and allow for the pilot plant to be transported to undertake testwork at other projects if required.

Figure 1: Mining and production process



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The existing road network will be used to transport equipment and materials during the construction phase, and reagents, consumables and product during the operational phase via Wyndham or Darwin port.

The pilot plant will be supported by a rostered fly in, and fly out workforce who will be accommodated through an expansion of the existing 20 person exploration camp to 40 room capacity.

Power will continue to be supplied by diesel generators and water sourced from the Gardiner Sandstone aquifer located 10km southwest of the pilot plant area. A tailings storage facility and evaporation pond will be constructed to manage the waste streams from both processes, however downsized from the DFS to suit the processing capacity of the pilot plant.

Northern Minerals is working with government regulators in relation to utilising existing approvals in conjunction with any additional approvals required to execute stage one.

The current scoping level capital expenditure required for the beneficiation and hydrometallurgical plants is estimated at US\$18M (AUD/USD 0.70 exchange rate), which includes contingency. This capital estimate is based on all new equipment and Northern Minerals expects to significantly improve on this as detailed design and costing is completed.

Stage 2

Stage two involves developing the Project to BFS level with the inclusion of the results from the studies aimed at reducing mining costs, boosting production, the production of a premium product and increasing the Ore Reserve previously announced (ASX announcement 27 August 2015).

The results of testwork undertaken during the operation of the pilot plant will also be key contributors to the completion of the BFS during stage two.



Stage 3

Following, the stage one pilot plant and completion of subsequent study work and Project BFS as detailed in stage two, Northern Minerals intends to build the full scale Project based on the successful outcomes of these stages, and the DFS completed in March 2015.

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The Project's current Mineral Resource supports an 11 year mine life, and with significant scope to expand this through exploration, the Project's future is promising.

As per the DFS, the full scale operation will use a combination of open pit and underground mining methods to extract 585,000t @ 0.66% TREO per annum, which will be treated through a beneficiation and hydrometallurgical plant.

The beneficiation plant will have the capacity to treat up to 585,000t of ore to produce approximately 16,700t of mineral concentrate at a grade of 20% TREO per annum¹.

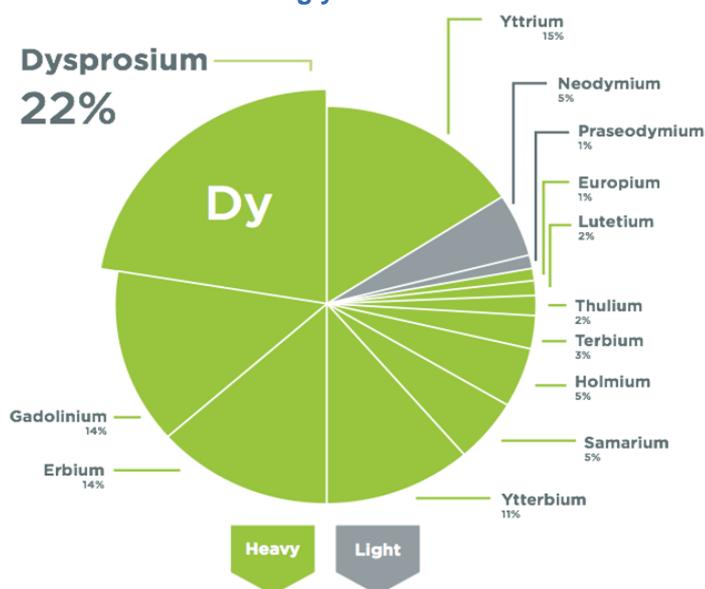
The hydrometallurgical process will then further treat the 16,700tpa of mineral concentrate to produce 279,000kg of dysprosium, contained within 3,098,000kg TREO per annum¹, prior to yttrium rejection.

The inclusion of the stage two study component is expected to deliver a higher output at lower cost to the DFS and with the inclusion of the additional process components to reject the majority of the yttrium, the Project will produce a premium, high purity mixed RE carbonate product (Figure 2), which will be highly sought after by downstream processors.

The same road and port network will be used to transport materials to and product from the Project, however, upgrades will be undertaken to the road network to support the increased movements and traffic to support full scale production.

All ancillary infrastructure will be expanded on site to support full scale operations. This includes diesel generators, water supply infrastructure, onsite reagent and consumable storage, tailings storage facilities, 2km sealed airstrip, in addition to the construction of a 276 accommodation village.

Figure 2: Distribution of mixed rare earth carbonate following yttrium removal



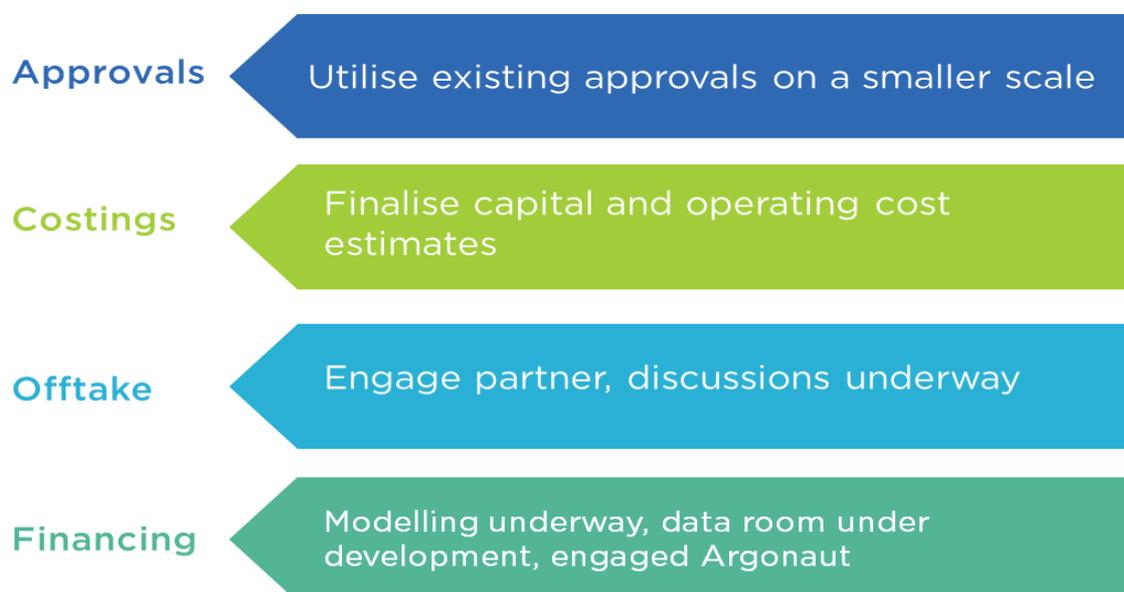
¹ This public report cross-references the initial public report (the DFS announcement of 2 March 2015) made in accordance with 5.16 and/or 5.17. The entity confirms in this public report that all the material assumptions underpinning the production target, or the forecast financial information derived from a production target, in the initial public report referred to in rule 5.16 or rule 5.17 (as the case may be) continue to apply and have not materially changed.

Next steps

The plan to progress stage one to development is well underway. Discussions are advancing with several potential offtake partners and strategic investors in relation to product offtake and funding. In addition to this, Northern Minerals has engaged with government regulators in relation to utilising existing approvals for stage one. Northern Minerals is also working through cost development and project scheduling with the assistance of an engineering firm and mining contractor.

In order to progress the new staged business plan, work over the coming months will focus on completing the steps detailed in Figure 3.

Figure 3: Next steps



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About Northern Minerals:

Northern Minerals Limited (ASX: NTU; Northern Minerals or the Company) is focussed on the delivery of the heavy rare earth (HRE) element, dysprosium. The Company has a large landholding in Western Australia and the Northern Territory that is highly prospective for this element. Through the development of its flagship project, the Browns Range Project (the Project), Northern Minerals aims to be the first significant world producer of dysprosium outside of China.

The Project is 100% owned by Northern Minerals and has a number of deposits and prospects containing high value dysprosium and other HREs, hosted in xenotime mineralisation. Dysprosium is an essential ingredient in the production of NdFeB (neodymium iron-boron) magnets used in clean energy and high technology solutions. As a result of increasing global demand for these applications dysprosium supply is critical.

The xenotime mineralisation is rich in dysprosium and other high value HREs, and this in combination with the mainly silica host rock, provides a key competitive advantage. It allows the ore to be significantly concentrated, up to 30 times through the beneficiation stage, with excellent recoveries. Northern Minerals has undertaken extensive testwork to develop a two stage process flowsheet, consisting of a beneficiation and hydrometallurgical plant, to produce a high value, high purity dysprosium rich product.

Exploration continues at Browns Range (WA and NT), and is also underway at the geologically similar John Galt and Boulder Ridge projects. For more information northernminerals.com.au.

