New business plan to take Browns Range into production

FEBRUARY | 2016 | ASX:NTU

NORTHERN MINERALS

powering technology for a better future

Important notice

This presentation has been prepared by Northern Minerals Limited ("Northern Minerals" or the "Company"). It should not be considered as an offer or invitation to subscribe for or purchase any securities in the Company or as an inducement to make an offer or invitation with respect to those securities. No agreement to subscribe for securities in the Company will be entered into on the basis of this presentation.

This presentation contains forecasts and forward looking information. Such forecasts and information are not a guarantee of future performance, involve unknown risks and uncertainties. Actual results and developments will almost certainly differ materially from those expressed or implied. Northern Minerals has not audited or investigated the accuracy or completeness of the information, statements and opinions contained in this presentation. Accordingly, to the maximum extent permitted by applicable laws, Northern Minerals makes no representation and can give no assurance, guarantee or warranty, express or implied, as to, and take no responsibility and assume no liability for, the authenticity, validity, accuracy, suitability or completeness of, or any errors in or omission, from any information, statement or opinion contained in this presentation.

You should not act or refrain from acting in reliance on this presentation material. This overview of Northern Minerals does not purport to be all inclusive or to contain all information which its recipients may require in order to make an informed assessment of the Company's prospects. You should conduct your own investigation and perform your own analysis in order to satisfy yourself as to the accuracy and completeness of the information, statements and opinions contained in this presentation and making any investment decision.

Compliance Statement
The information in this presentation that relates to the Mineral Resource Estimates of the Wolverine deposit is extracted from the report entitled "Increased Mineral Resource delivers more good news" dated 23 February 2015 and is available to view on the Company's website (www.northernminerals.com.au). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

The information in the announcement that relates to the Mineral Resource Estimates of the Cyclops and Banshee deposits is extracted from the report entitled "Further Increase in Brown Range Mineral Resource" dated 15 October 2014 and is available to view on the Company's website (www.northernminerals.com.au). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

The information in the announcement that relates to the Mineral Resource Estimates of the Gambit, Gambit West and Area 5 deposits is extracted from the report entitled "Wolverine Total Resource Doubled in a Major Upgrade of Browns Range HRE Mineral Resource Estimate" dated 26 February 2014 and is available to view on the Company's website (www.northernminerals.com.au). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

The information in the announcement that relates to Ore Reserves is extracted from the report entitled Increased Ore Reserve for Browns Range created on 2 March 2015 and is available to view on the Company's website (northernminerals.com.au). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

The information in this report that relates to Exploration Results or Exploration Targets is based on information compiled by Mr Robin Wilson, a full-time employee of Northern Minerals, a Competent Person, who is a member of the Australasian Institute of Mining and Metallurgy. Robin Wilson has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Wilson consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

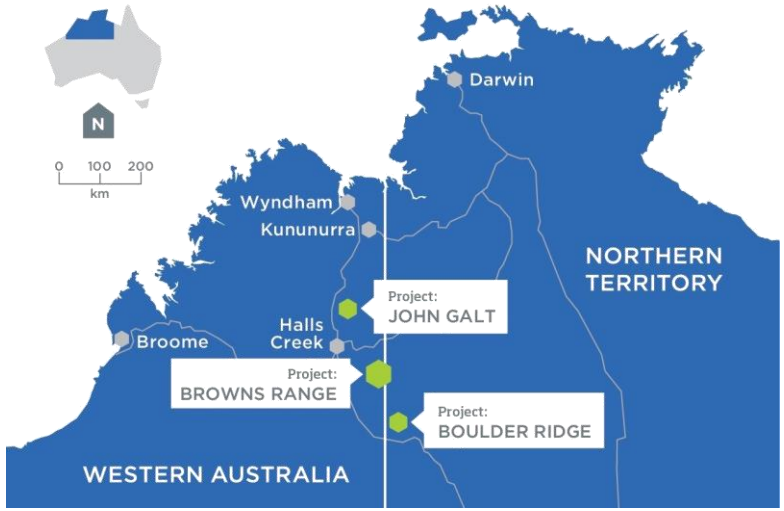
The information in the announcement that relates to production targets is extracted from the report entitled "DFS positions Browns Range Project as next dysprosium supplier" dated 2 March 2015 and is available to view on the Company's website (northernminerals.com.au). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and that all material assumptions and technical parameters underpinning the production targets in the relevant market announcement continue to apply and have not materially changed.

TREO = Total Rare Earth Oxides – La_2O_3, CeO_2, Pr_6O_{11}, Nd_2O_3, Sm_2O_3, Eu_2O_3, Gd_2O_3, Tb_4O_7, Dy_2O_3, Ho_2O_3, Er_2O_3, Tm_2O_3, Yb_2O_3, Lu_2O_3, Y_2O_3
HREO = Heavy Rare Earth Oxides – Total of Sm_2O_3, Eu_2O_3, Gd_2O_3, Tb_4O_7, Dy_2O_3, Ho_2O_3, Er_2O_3, Tm_2O_3, Yb_2O_3, Lu_2O_3, Y_2O_3

As best in class Northern Minerals'

100% owned Browns Range Project is positioned to be the first significant world producer of dysprosium outside of China.

The Project will deliver dysprosium and other heavy rare earths that are vital in powering clean energy technology now and in the future.



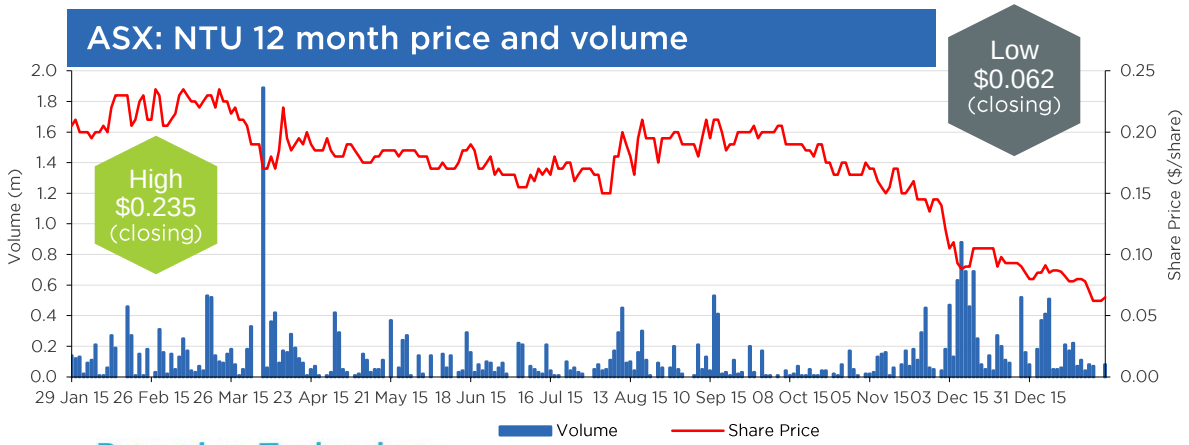
Corporate overview

Market capitalisation $31M

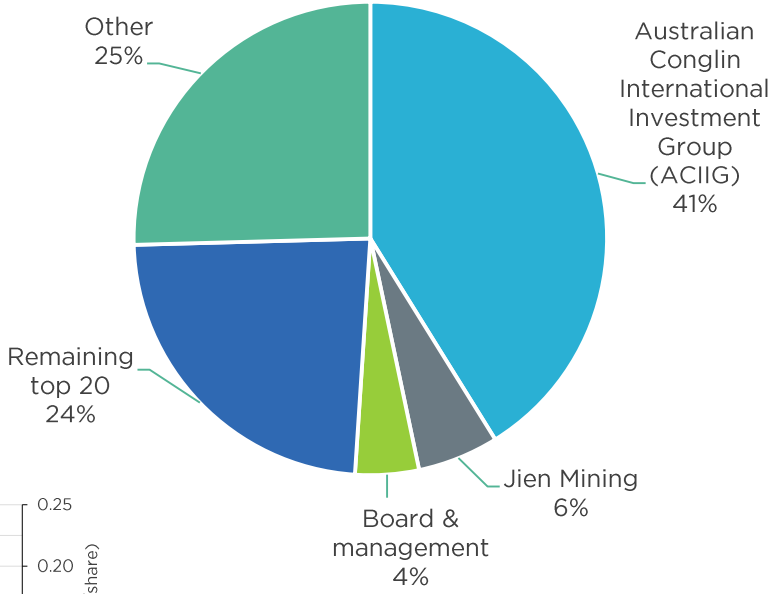
(at 29 January 2016 @ $0.065)

Ordinary Shares	483M
Unlisted Options and Performance Rights	29M
Cash (31 December 2015)	$0.96M
Debt	US$1.4M

ASX: NTU 12 month price and volume



Major shareholders



Powering Technology.

The right leadership

A wealth of experience and knowledge to take Northern Minerals from explorer to the next dysprosium producer

BOARD OF DIRECTORS

Conglin Yue – Executive Chairman
- Long standing relationship with a number of major steel producing companies in China.

George Bauk - Managing Director / CEO
- 25 years' global resource industry experience in senior operational and corporate roles, with particular focus on rare earths and nickel.

Kevin Schultz - Deputy Chairman
- Mining Engineer/Geologist with 40 years record achievement from mineral discovery and appraisal, through to mine development.

Adrian Griffin - Non Executive Director
- Significant expertise in mine management and production with corporate experience as MD and Chairman of listed resource companies.

Colin McCavana - Non Executive Director
- More than 35 years' global management experience in the construction and operation of resources projects.

Yanchun Wang - Non Executive Director
- Strategic investor for a number of Chinese companies.

EXECUTIVE MANAGEMENT TEAM

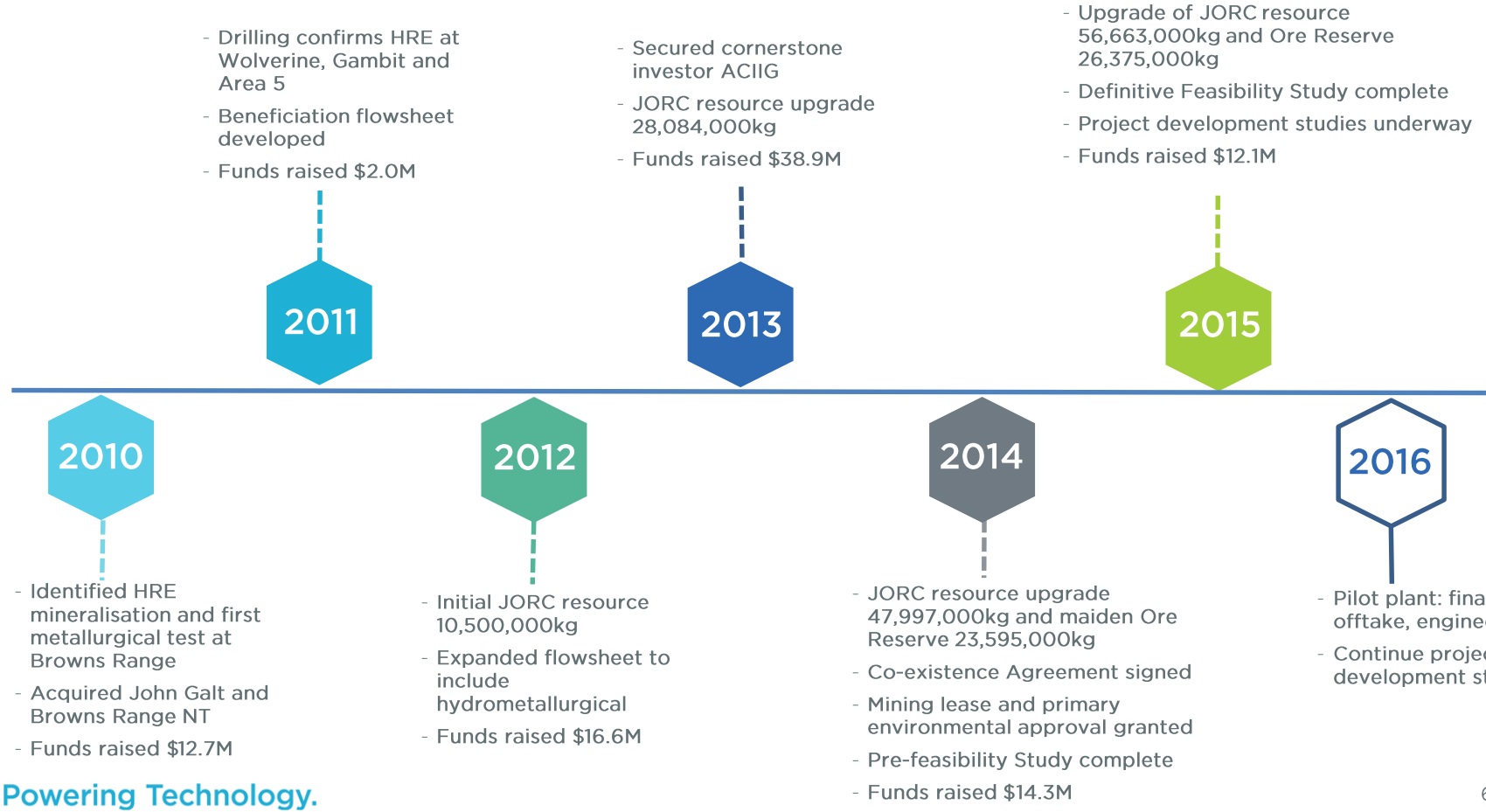
Robin Wilson – Exploration Manager
- Geologist, with 25 years' experience in Australia and Africa including the discovery of the Browns Range Project.

Robin Jones – Project Manager
- More than 20 years' experience, in Australia, Africa and Asia with success in taking projects from scoping study through to production.

Mark Tory – CFO / Company Secretary
- More than 20 years' experience in the management (operational and finance) of mining companies both national and international.

Bin Cai – Alternate Director
- Experience with the China Investment Bank, along with global resource investment.

Over the past six years



Powering Technology.

NORTHERN MINERALS

Positioned for success

Browns Range Project competitive advantage

Exploration potential

Large landholding
1,500km²
12% explored

Current mineral resource
4,759,000kg dysprosium within 56,663,000kg TREO

Mineralogy & production

High grade
Xenotime mineralisation

Ease of processing
30 x upgrade

Competitive CAPEX
Dysprosium rich, mixed RE carbonate

Licence to operate

Secure tenure
100% ownership

Licencing/approval
Primary approval received

Native title
Co-existence agreement signed

NORTHERN MINERALS

Browns Range: pathway to full scale production

Stage 1

TEST PILOT PLANT

- 60,000tpa capacity
- 52% TREO mixed RE carbonate
- 590,000kg pa TREO for 3 years, including 49,000kg Dy
- Initial operation excludes yttrium rejection

Stage 2

DEVELOP PROJECT

- Reduce mining cost - modify mining method
- Boost production – increase head grade
- Develop premium product – yttrium rejection
- Increase reserve - drilling

Stage 3

BUILD FULL SCALE

- 1,500,000kg TREO in a premium product
- Developed based on successful outcomes of stage 1 and 2

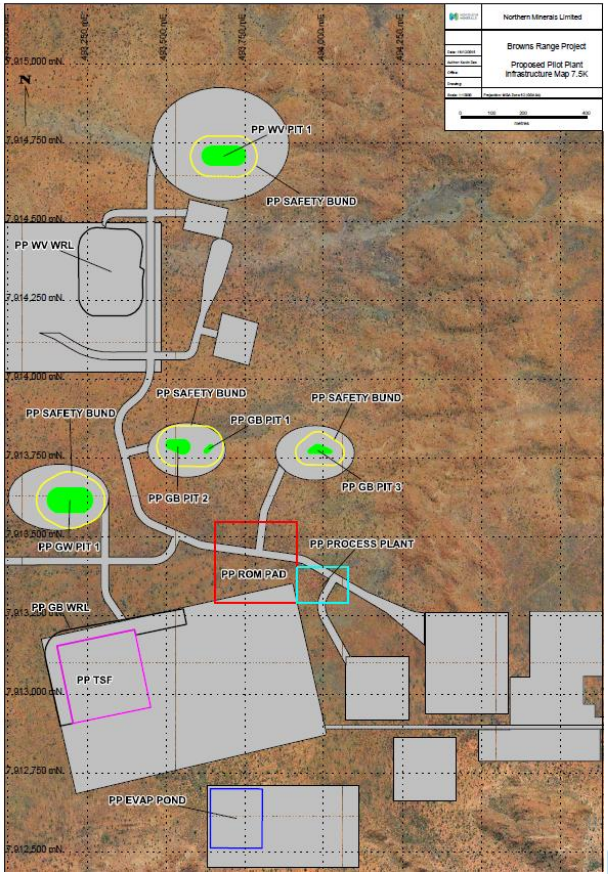
Why a continuous pilot plant at Browns Range?

- New business plan well received by offtake partners and strategic investors
- Stage one expected to be funded on attractive terms

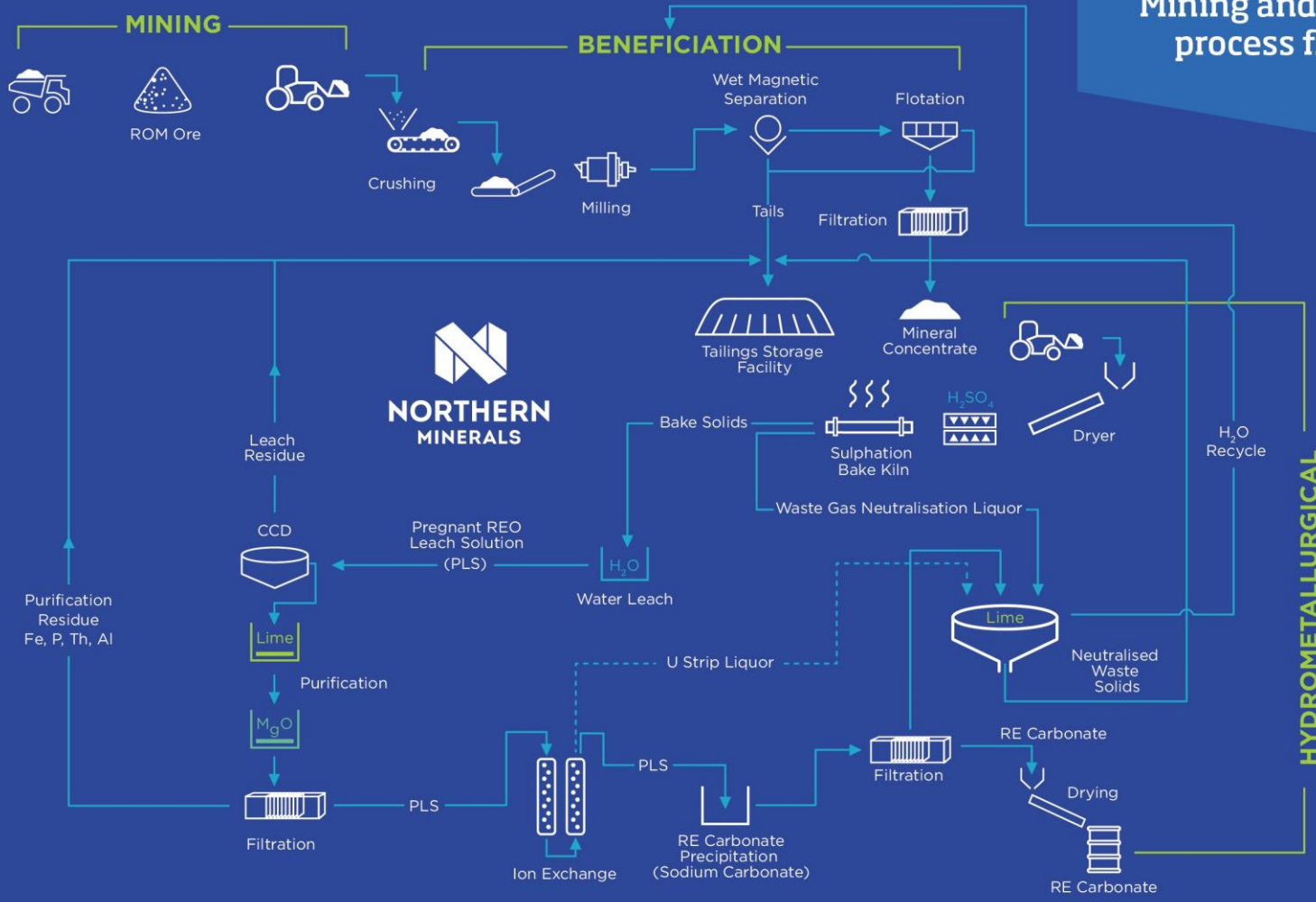
Pilot plant: Browns Range

- 172,000t @ 1.19% TREO, campaign mined from multiple open pits
- 3 year operation producing 49,000kg dysprosium in 590,000kg TREO contained in a mixed RE carbonate (REC) per annum
- Two stages of processing on site: beneficiation 60,000tpa and hydrometallurgical 3,200tpa
- TREO recovery: 90% beneficiation and 92% hydrometallurgy
- Road transport via Halls Creek to/from Wyndham or Darwin port
- US$18M* capital estimate including contingency - beneficiation and hydrometallurgy
- 9 month construction timeline

*AUD/USD 0.70 exchange rate



Mining and production process flowsheet



Pilot plant: targeted production

- Mixed RE carbonate (REC) produced
- Product specification available for REC
- REC samples validated by several downstream separators
- REC suitable for solvent extraction separation
- Low thorium and uranium levels
- Engaged marketing agent

REO contained in mixed RE carbonate	Annual production (000s kgs)
Lanthanum	10.8
Cerium	27.3
Praseodymium	3.9
Neodymium	19.3
Samarium	11.7
Europium	2.3
Gadolinium	33.2
Terbium	6.5
Dysprosium	48.6
Holmium	12.8
Erbium	37.7
Thulium	5.3
Ytterbium	32.1
Lutetium	4.3
Yttrium	334.7
Total TREO Produced	590

Figures may not add due to rounding
TREO = Total Rare Earth Oxides- Total of Dy_2O_3,La_2O_3, CeO_2, Pr_6O_{11}, Nd_2O_3, Sm_2O_3, Eu_2O_3, Gd_2O_3, Tb_4O_7, Ho_2O_3, Er_2O_3, Tm_2O_3, Yb_2O_3, Lu_2O_3, Y_2O_3

Pilot plant: key testwork

Beneficiation

- Flotation reagent selection
- Grind size
- Site water quality
- Flotation temperature
- Magnetic separation variables
- Ability of equipment to operate at extreme temperature
- Gangue depressant reagent regime
- Deposit variability
- X-ray sorting viability

Hydrometallurgical

- Yttrium rejection
- Magnesia recycle
- Aluminium rejection
- Selective rare earth carbonate precipitation
- Impurity removal in bake/leach
- Impurity and radionuclide removal in neutralisation

Pilot plant: approvals and stakeholders

Department of Mines and Petroleum
- Advised of trial mine and pilot plant
- Project Management Plan
- Mining Proposal including closure plan

Environmental Protection Authority
- Advised of trial mine and pilot plant
- Fauna clearance prior to vegetation clearing

Department of Environment Conservation
- Advise of trial mine and pilot plant
- Works approval and licence for process plant and tailings storage facility

Department of Water
- Licence granted to abstract water

Jaru Traditional Owners
- Area cleared ethnographically
- Complete archaeological clearance

Local Government
- Shire of Halls Creek
- Shire of Wyndham-East Kimberley

Stage 2: develop Browns Range to BFS

REDUCE mining costs

Through modification of mining method

BOOST production

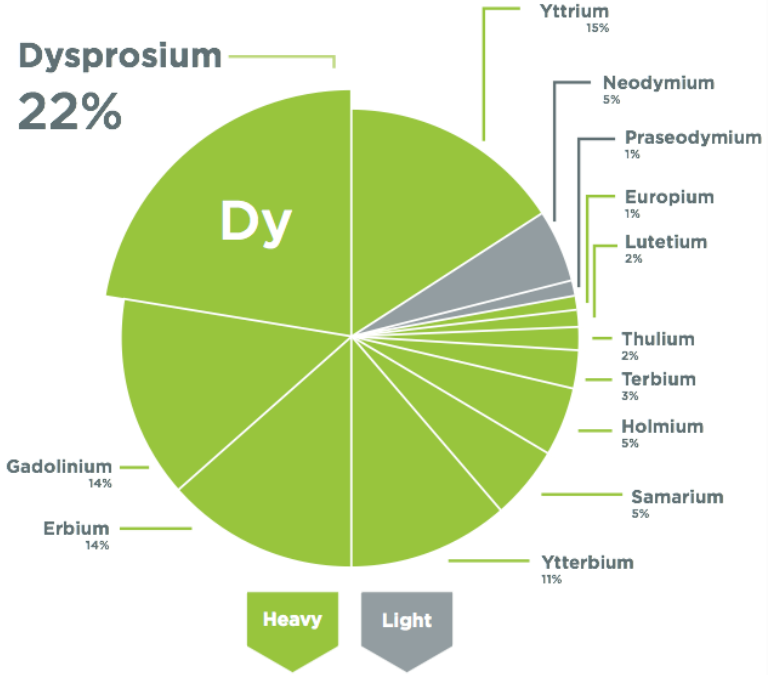
Through increase in ore head grade

CREATE premium product

Through removal of yttrium

INCREASE reserve

Through drilling



Distribution of mixed rare earth carbonate following yttrium removal

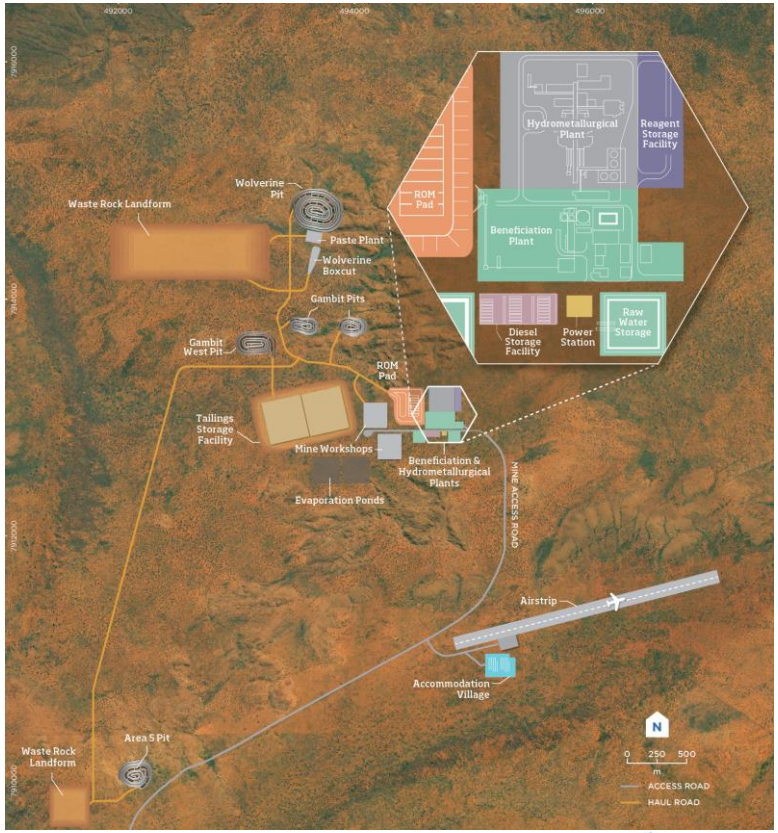
NORTHERN MINERALS

Stage 3: build full scale Browns Range

DFS data:

- 585,000tpa @ 0.66% TREO, open pit and underground mining
- 11 year operation producing 279,000kg dysprosium in 3,098,000kg TREO contained in a mixed RE carbonate
- Two stages of processing on site: beneficiation and hydrometallurgical plants
- TREO recovery: 87% beneficiation and 93% hydrometallurgy
- Road transport via Halls Creek to/from Wyndham Port
- US$247M* capital expenditure including infrastructure and contingency
- 18 month construction timeline
- US$28* per kg TREO in a mixed RE carbonate
- Native title, mining lease and EPA approved

*AUD/USD 0.75 exchange rate

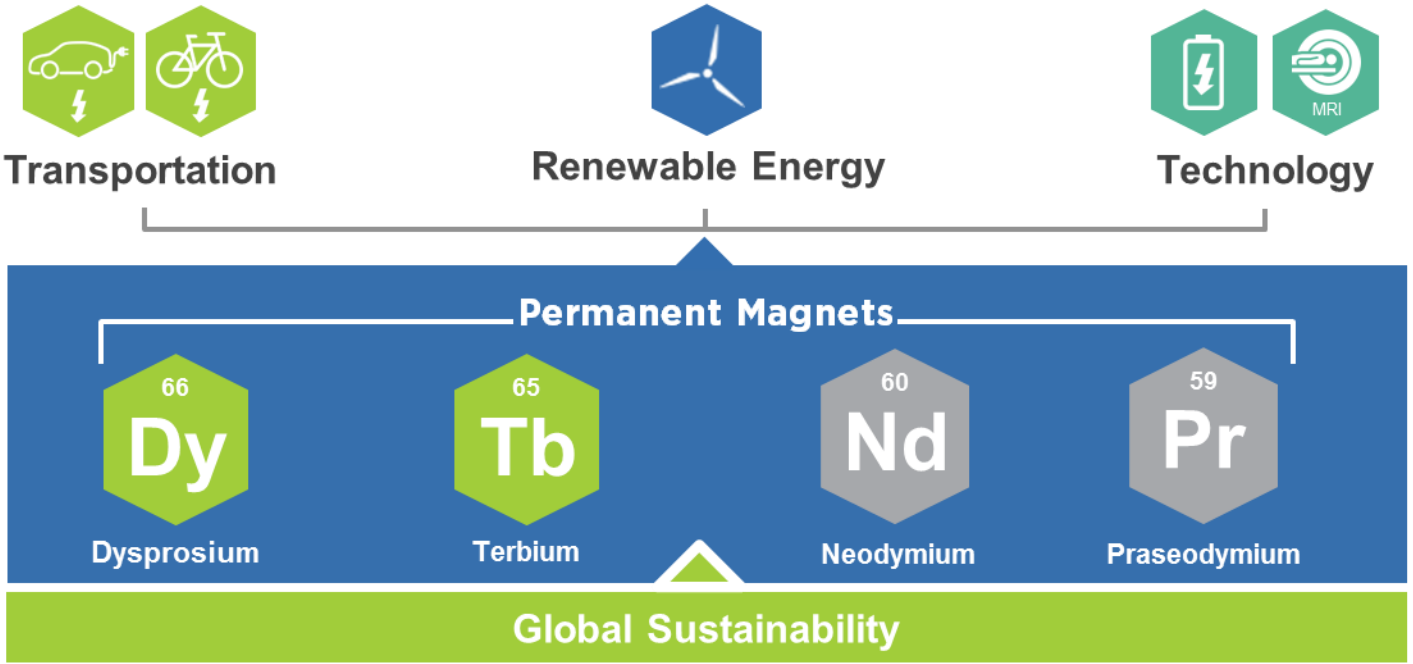


Powering Technology.

15-20%
annual growth in Dy demand to 2020*

12-14%
share of global NdFeB demand in 2020*

6-10%
annual growth in Dy demand for energy storage systems to 2020*



5 million
China's target of hybrid & electric vehicles by 2020

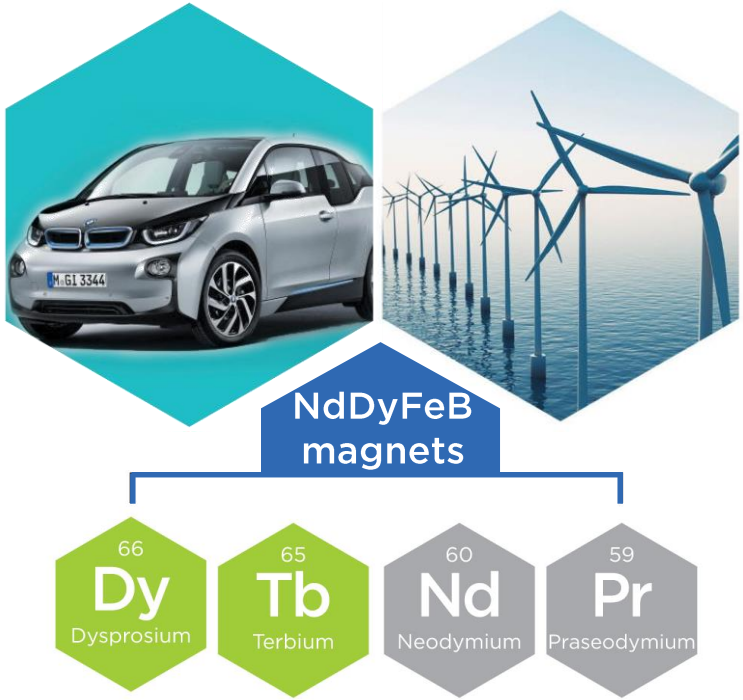
Kyoto Protocol
United Nations Framework Convention on Climate Change

39
countries have introduced carbon pricing

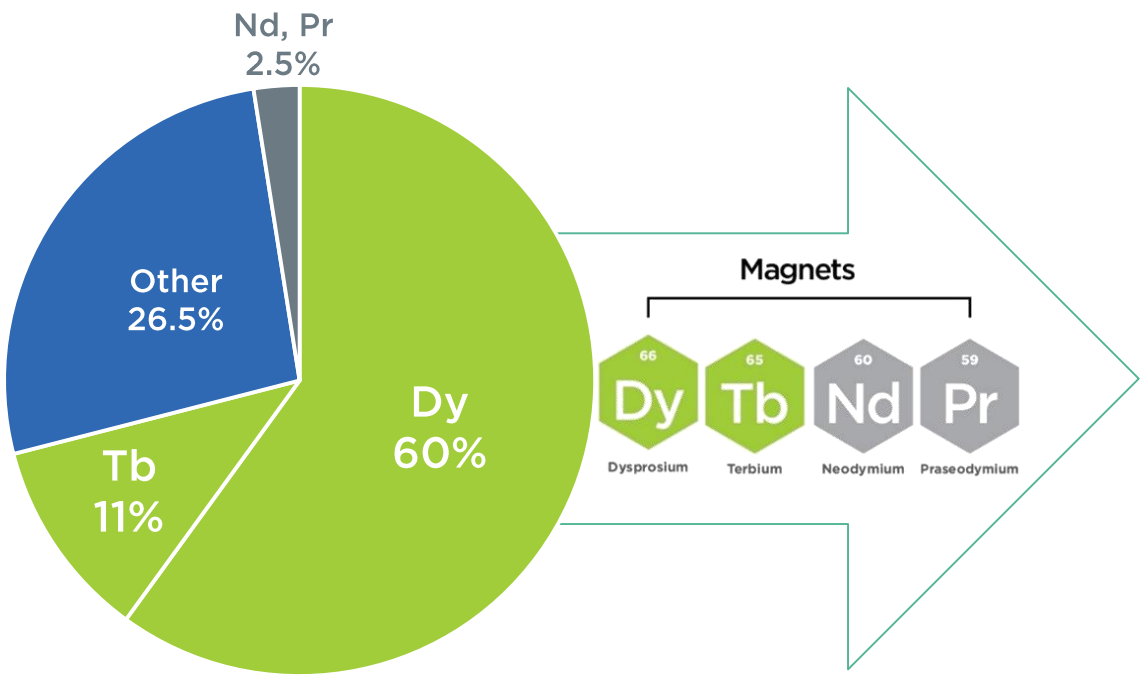
*Source: Adamas Intelligence. "Rare Earth Market Outlook: Supply, Demand, and Pricing from 2014 – 2020" report

Dy delivers optimal performance

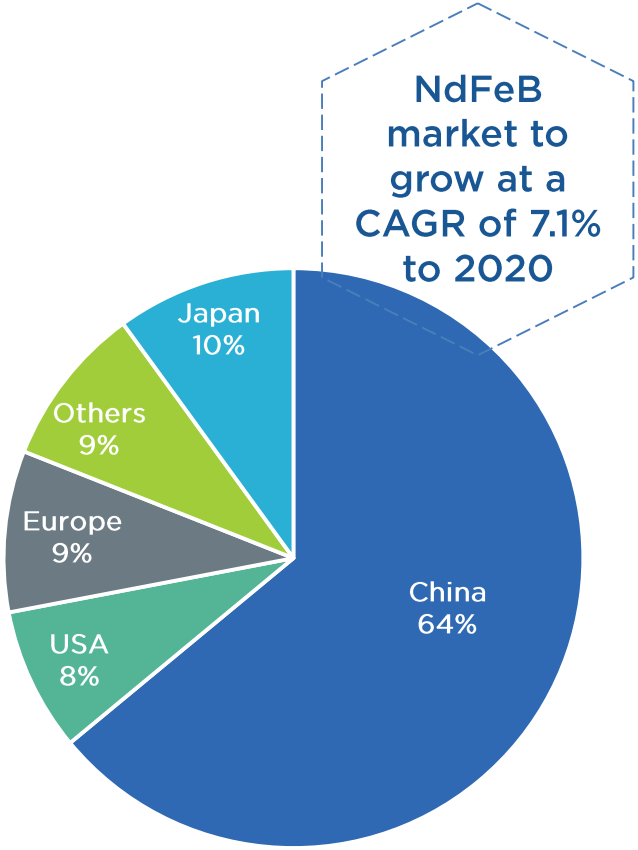
The addition of Dy allows these magnets to work at higher temperatures, this is essential in the operation of high performance applications



Global magnet market

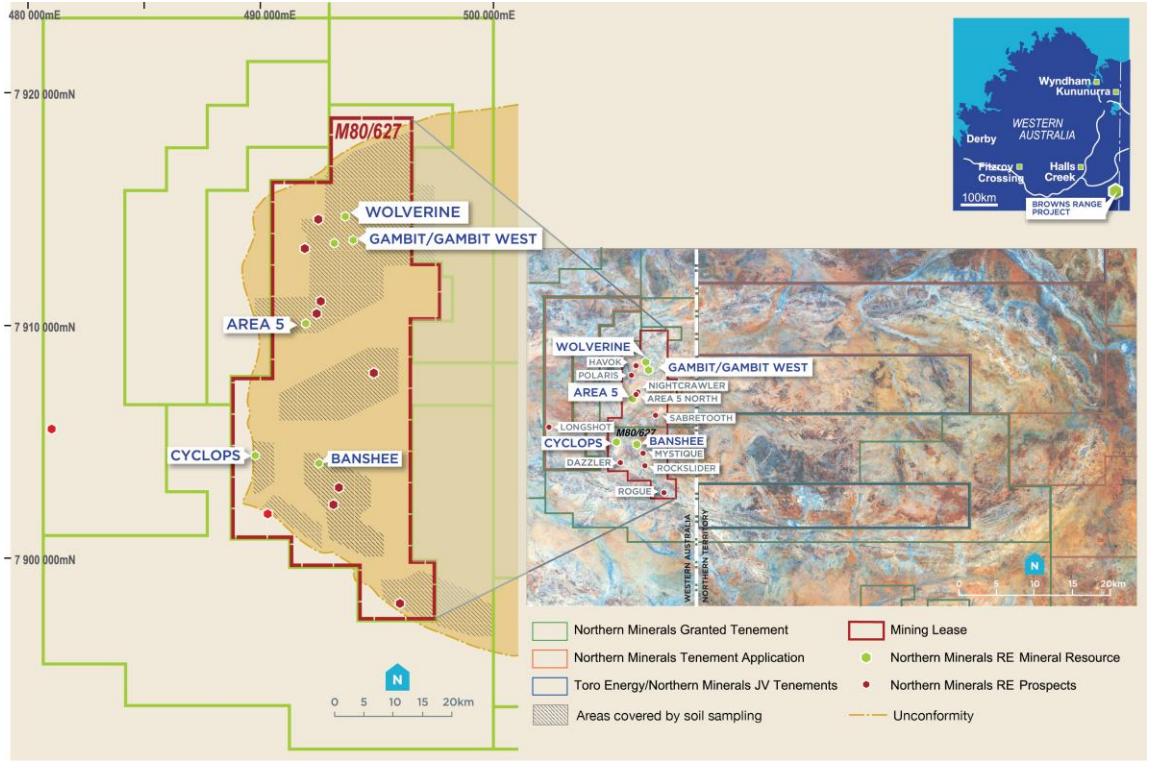


Breakdown of value contribution – Browns Range Project



NdFeB magnet market consumption by region 2014

Browns Range Dome: under explored

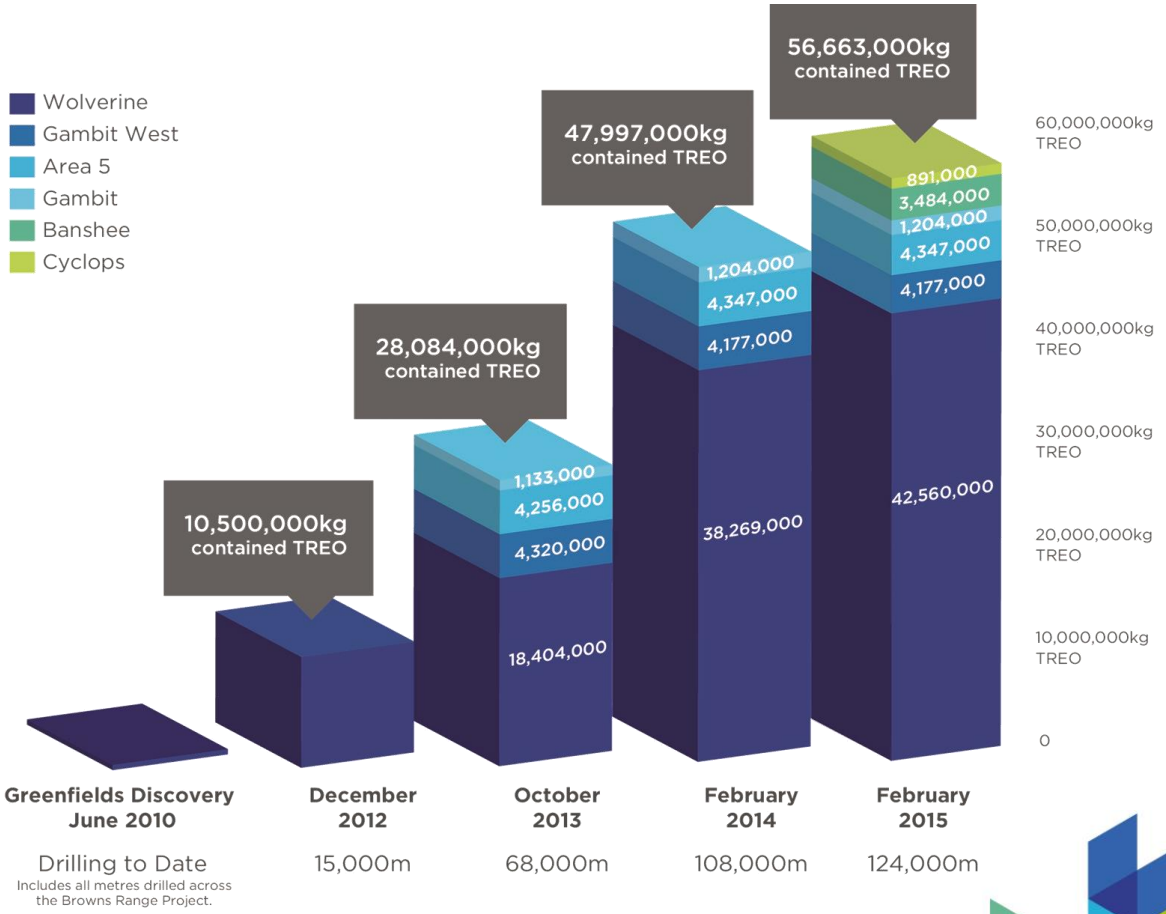


The dome is a massive geological feature covering 1,500km^2 and stretching

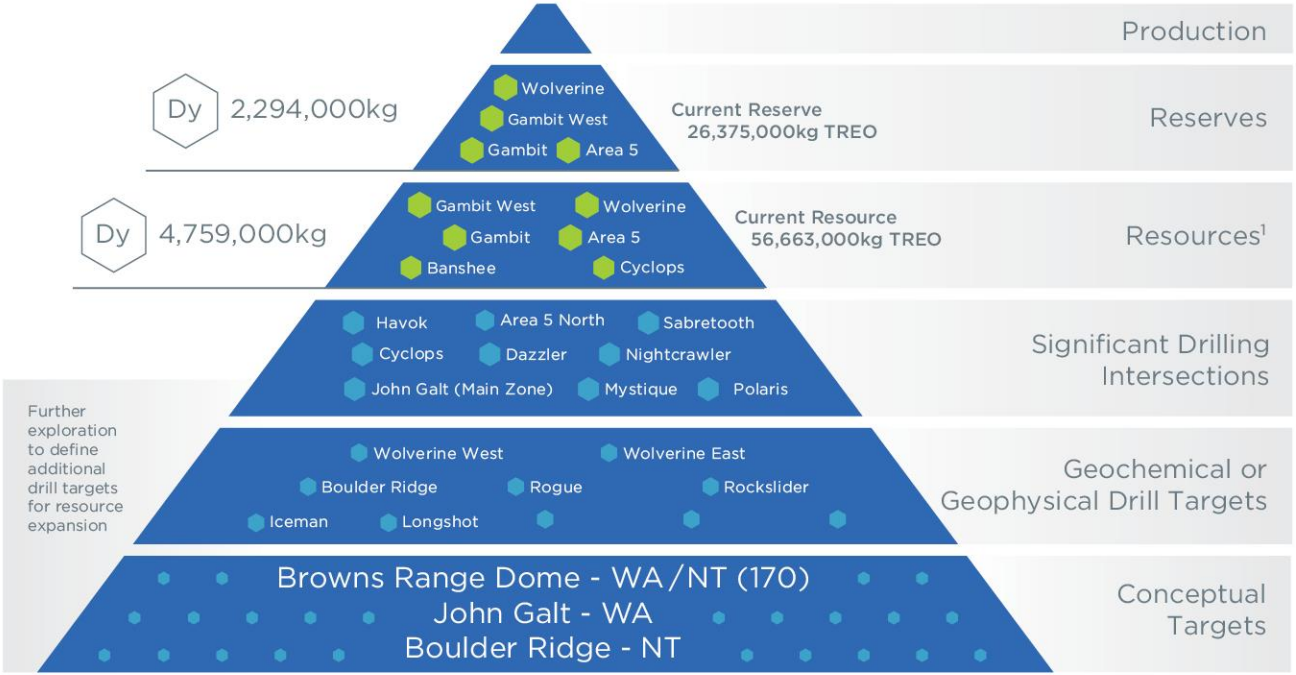
60km x 30km

most of which hasn't been effectively explored

Five-fold increase in Mineral Resource



11 years is only the beginning

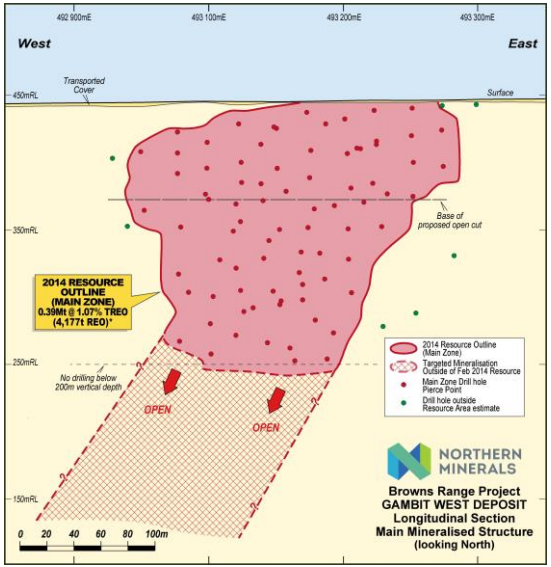


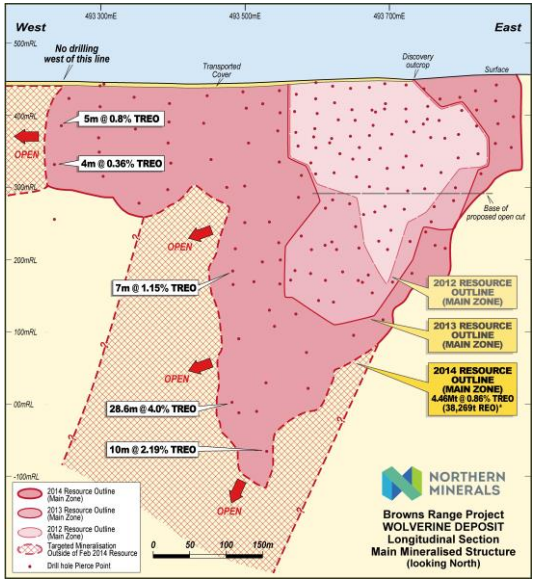
Resource size only limited by funding

Extend mine life by increasing resources

OPEN....

Gambit, Gambit West and Area 5 open near surface and open at depth, no drilling below 200m





OPEN...

Wolverine deposit open at depth and along strike, no drilling below 550m

Stage 1: key next steps

Approvals	Utilise existing approvals on a smaller scale
Costings	Finalise capital and operating cost estimates
Offtake	Engage partner, discussions underway
Financing	Modelling underway, data room under development, engaged Argonaut

APPENDICES

NORTHERN MINERALS

Probable Ore Reserve

(March 2015)

Deposit	Classification	Ore Tonnes	TREO kg/t	TREO kg Contained	Dy_2O_3 kg/t	Dy_2O_3 kg Contained	Tb_4O_7 kg/t	Tb_4O_7 kg Contained	Y_2O_3 kg/t	Y_2O_3 kg Contained
OPEN PIT										
Wolverine	Probable	833,000	6.15	5,124,000	0.55	460,000	0.08	66,000	3.59	2,989,000
Gambit West	Probable	219,000	10.10	2,212,000	0.83	182,000	0.11	25,000	5.52	1,209,000
Gambit	Probable	37,000	8.05	298,000	0.68	25,000	0.09	3,000	4.74	176,000
Area 5	Probable	467,000	2.24	1,048,000	0.14	65,000	0.02	10,000	0.99	463,000
UNDERGROUND										
Wolverine	Probable	2,104,000	8.00	16,833,000	0.70	1,483,000	0.10	221,000	4.71	9,908,000
Gambit West	Probable	90,000	9.54	860,000	0.88	79,000	0.11	10,000	5.78	521,000
RESERVE										
Total	**Probable[1]**	**3,750,000**	**7.03**	**26,375,000**	**0.61**	**2,294,000**	**0.09**	**335,000**	**4.07**	**15,266,000**

[1]Rounding may cause some computational discrepancies

TREO = Total Rare Earth Oxides – Total of: La_2O_3, CeO_2, Pr_6O_{11}, Nd_2O_3, Sm_2O_3, Eu_2O_3, Gd_2O_3, Tb_4O_7, Dy_2O_3, Ho_2O_3, Er_2O_3, Tm_2O_3, Yb_2O_3, Lu_2O_3, Y_2O_3

Mineral Resource Estimate

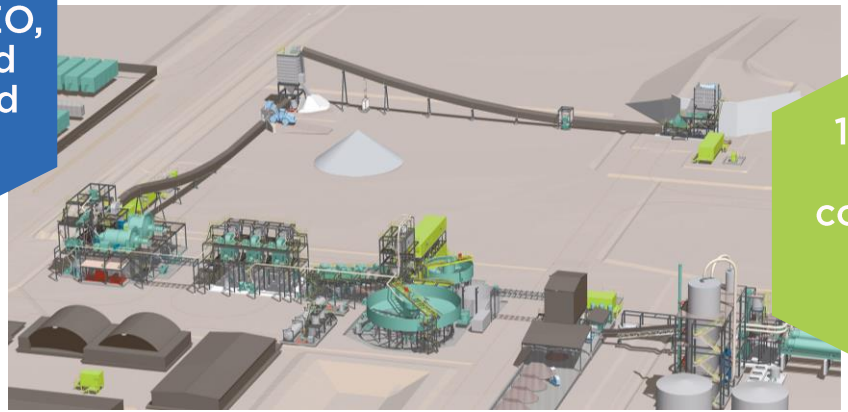
(JORC compliant, February 2015)

Deposit	Category	Mt	TREO	Dy_2O_3	Y_2O_3	Tb_4O_7	HREO	TREO
			%	Kg/t	Kg/t	Kg/t	%	Kg
Wolverine	Indicated	2.99	0.83	0.73	4.86	0.11	89	24,952,000
	Inferred	1.97	0.89	0.76	5.13	0.11	88	17,609,000
	Total[1]	4.97	0.86	0.74	4.97	0.11	89	42,560,000
Gambit West	Indicated	0.27	1.26	1.07	7.06	0.14	90	3,424,000
	Inferred	0.12	0.64	0.54	3.67	0.07	85	753,000
	Total[1]	0.39	1.07	0.91	6.04	0.12	89	4,177,000
Gambit	Indicated	0.05	1.06	0.92	6.62	0.12	97	533,000
	Inferred	0.06	1.2	1.01	6.8	0.15	95	671,000
	Total[1]	0.11	1.13	0.97	6.72	0.13	96	1,204,000
Area 5	Indicated	1.38	0.29	0.18	1.27	0.03	69	3,953,000
	Inferred	0.14	0.27	0.17	1.17	0.03	70	394,000
	Total[1]	1.52	0.29	0.18	1.26	0.03	69	4,347,000
Cyclops	Indicated	-	-	-	-	-	-	-
	Inferred	0.33	0.27	0.18	1.24	0.03	70	891,000
	Total[1]	0.33	0.27	0.18	1.24	0.03	70	891,000
Banshee	Indicated	-	-	-	-	-	-	-
	Inferred	1.66	0.21	0.16	1.17	0.02	87	3,484,000
	Total[1]	1.66	0.21	0.16	1.17	0.02	87	3,484,000
Total[1]	Indicated	4.69	0.70	0.59	3.95	0.09	87	32,862,000
	Inferred	4.28	0.56	0.46	3.15	0.07	87	23,802,000
	Total[1]	**8.98**	**0.63**	**0.53**	**3.56**	**0.08**	**87**	**56,663,000**

[1]Rounding may cause some computational discrepancies
The Mineral Resource is inclusive of the Ore Reserves
TREO = Total Rare Earth Oxides - Total of La_2O_3, CeO_2, Pr_6O_{11}, Nd_2O_3, Sm_2O_3, Eu_2O_3, Gd_2O_3, Tb_4O_7, Dy_2O_3, Ho_2O_3, Er_2O_3, Tm_2O_3, Yb_2O_3, Lu_2O_3, Y_2O_3
HREO = Heavy Rare Earth Oxides– Total of Sm_2O_3, Eu_2O_3, Gd_2O3, Tb_4O_7, Dy_2O_3, Ho_2O_3, Er_2O_3, Tm_2O_3, Yb_2O_3, Lu_3, Y_2O_3

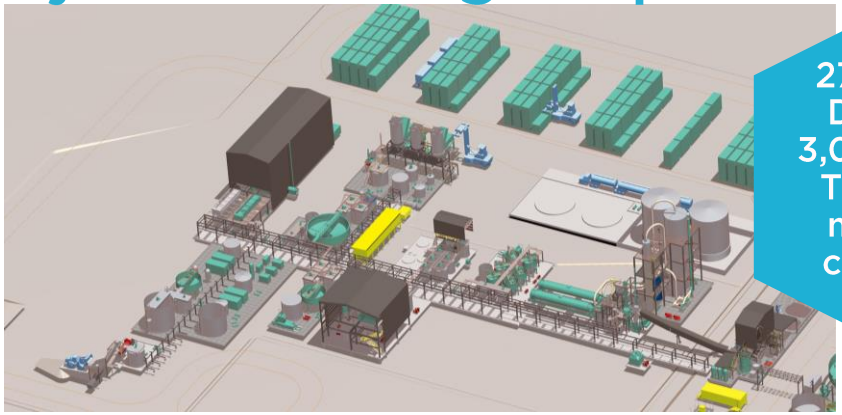
Full scale: Beneficiation plant

585,000tpa @ 0.66% TREO, open pit and underground mining



16,700tpa mineral concentrate @ 20% TREO

Hydrometallurgical plant

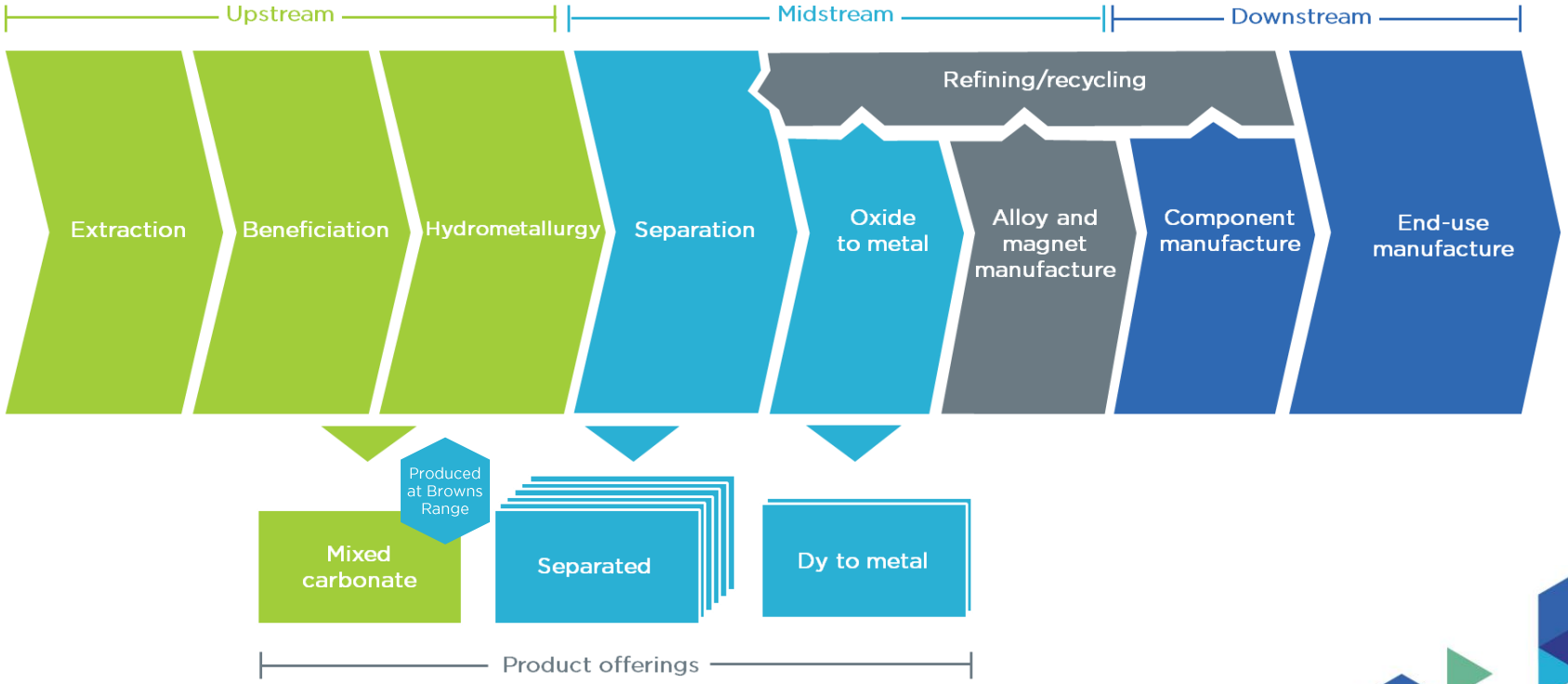


279,000kg Dy within 3,098,000kg TREO, in a mixed RE carbonate

Powering Technology.

NORTHERN MINERALS

Expanding the product offering: toll treat SX and metal



Powering Technology.

Target separated oxide production (incl. yttrium rejection) full scale production

Rare earth oxide	Annual production (kgs)
Dysprosium	328,000
Erbium	213,000
Holmium	74,000
Lutetium	24,000
Terbium	45,000
Thulium	30,000
Ytterbium	176,000
Yttrium	220,000
Europium	16,000
Gadolinium	211,000
Samarium	74,000
Cerium	1,000
Lanthanum	0
Neodymium	73,000
Praseodymium	7,000
Total TREO produced	1,495,000

Figures may not add due to rounding
Based on implementing all initiatives from optimisation of DFS
TREO = Total Rare Earth Oxides- Total of Dy_2O_3,La_2O_3, CeO_2, Pr_6O_{11}, Nd_2O_3, Sm_2O_3, Eu_2O_3, Gd_2O_3, Tb_4O_7, Ho_2O_3, Er_2O_3, Tm_2O_3, Yb_2O_3, Lu_2O_3, Y_2O_3