

Dysprosium - Yttrium – Erbium

**Heavy Rare Earth (HREE) in the Northern Territory**

Discovery, Demand & Development



**TUC**  
RESOURCES

RIU Melbourne Resources Roundup  
26 September 2012

Video fly through of Stromberg Prospect (available on TUC website)



The Company - Introduction

TUC and the HREE Market

Stromberg Deposit - New Results

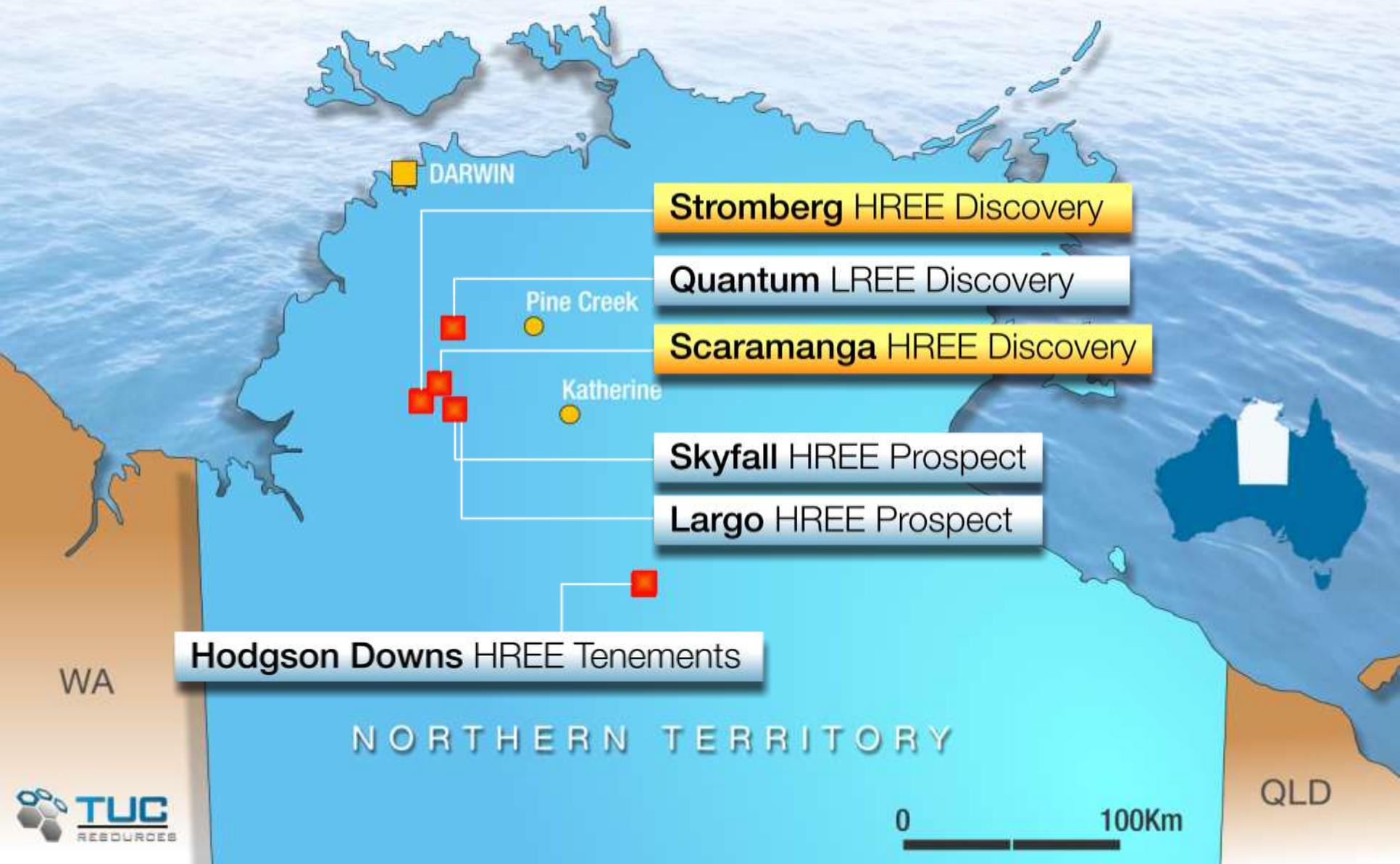
Exploration Breakthrough - Scaramanga - Stakeholders

Margin Drivers; Mining and Processing Costs and Price

Time to Market - TUC Advantage

# Major Projects

NORTHERN TERRITORY



**Hodgson Downs HREE Tenements**

**Stromberg HREE Discovery**

**Quantum LREE Discovery**

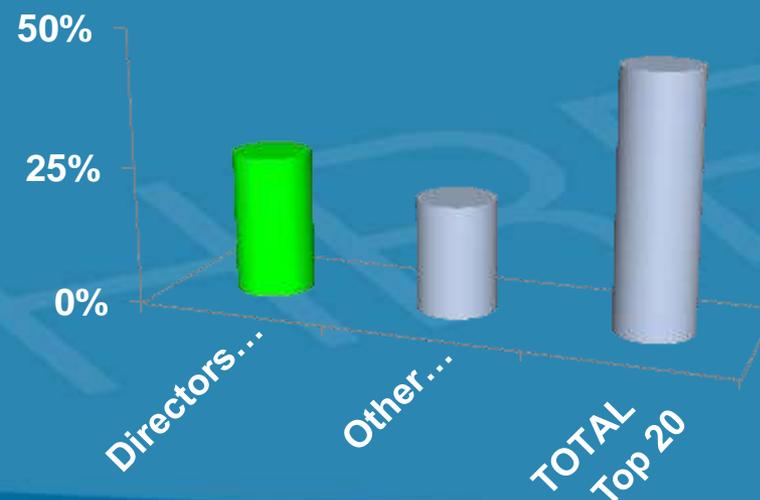
**Scaramanga HREE Discovery**

**Skyfall HREE Prospect**

**Largo HREE Prospect**

Shares 125 million A\$0.12  
 Options 2 free for 5 Shares A\$0.20 Ex. Price  
 Market Cap \$A15 million  
 Shareholders +1200  
 Funds +A\$2.5 million (30 June 2012)  
 Register

As at 25 Sep 2012



An aerial night view of a city skyline, likely Shanghai, featuring the Oriental Pearl Tower and the Bund. The city is illuminated with various lights, and the sky is a deep blue with some clouds. A semi-transparent blue box with a grid pattern is overlaid on the image, containing text.

By 2037, industry will need an annual supply of **Neodymium 700%** greater than is available now and more extraordinarily, **2,600%** more **Dysprosium** than the world (China) produces now.

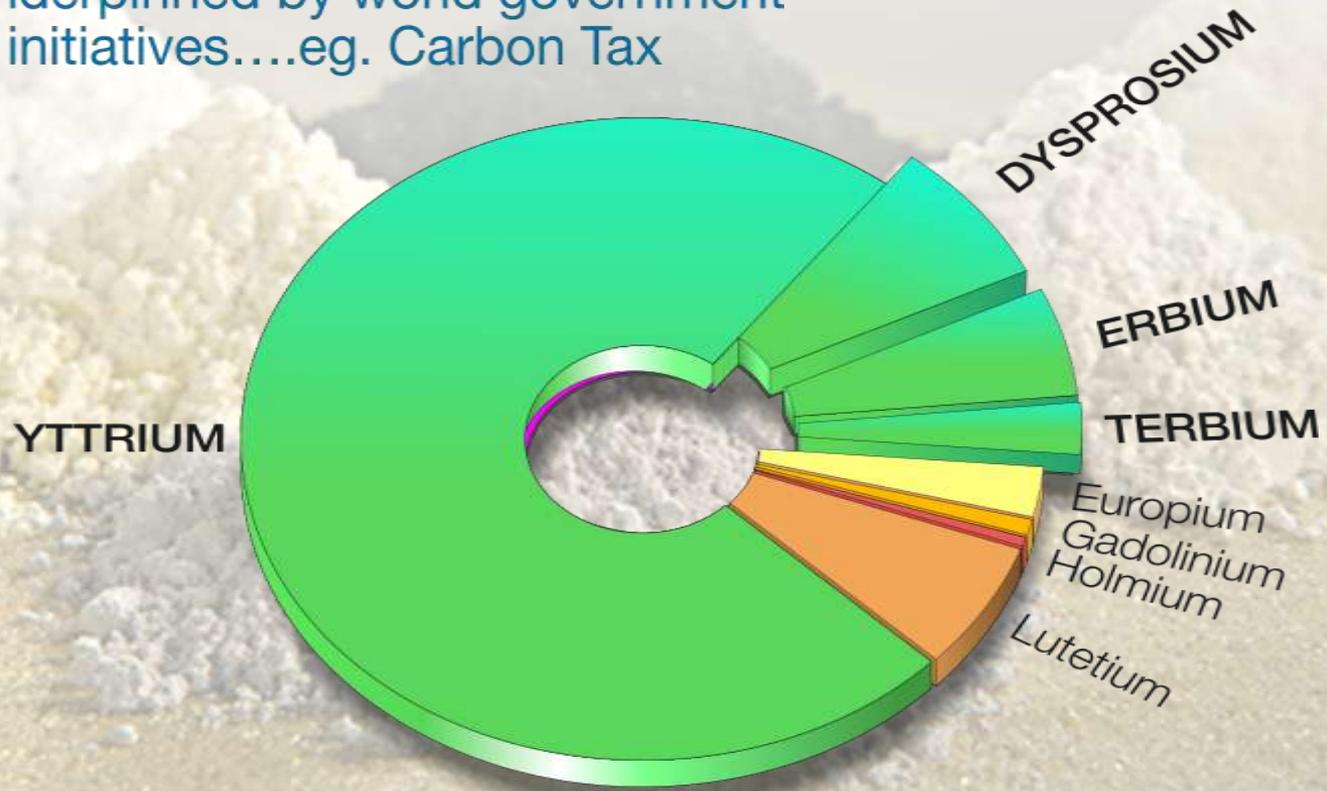
Source: **Robert Bromby** quoting from **Cientifica**, "Simply No Substitute" / MIT Research, Sep 2012

# Stromberg Deposit

Heavy REE's  Light REE's

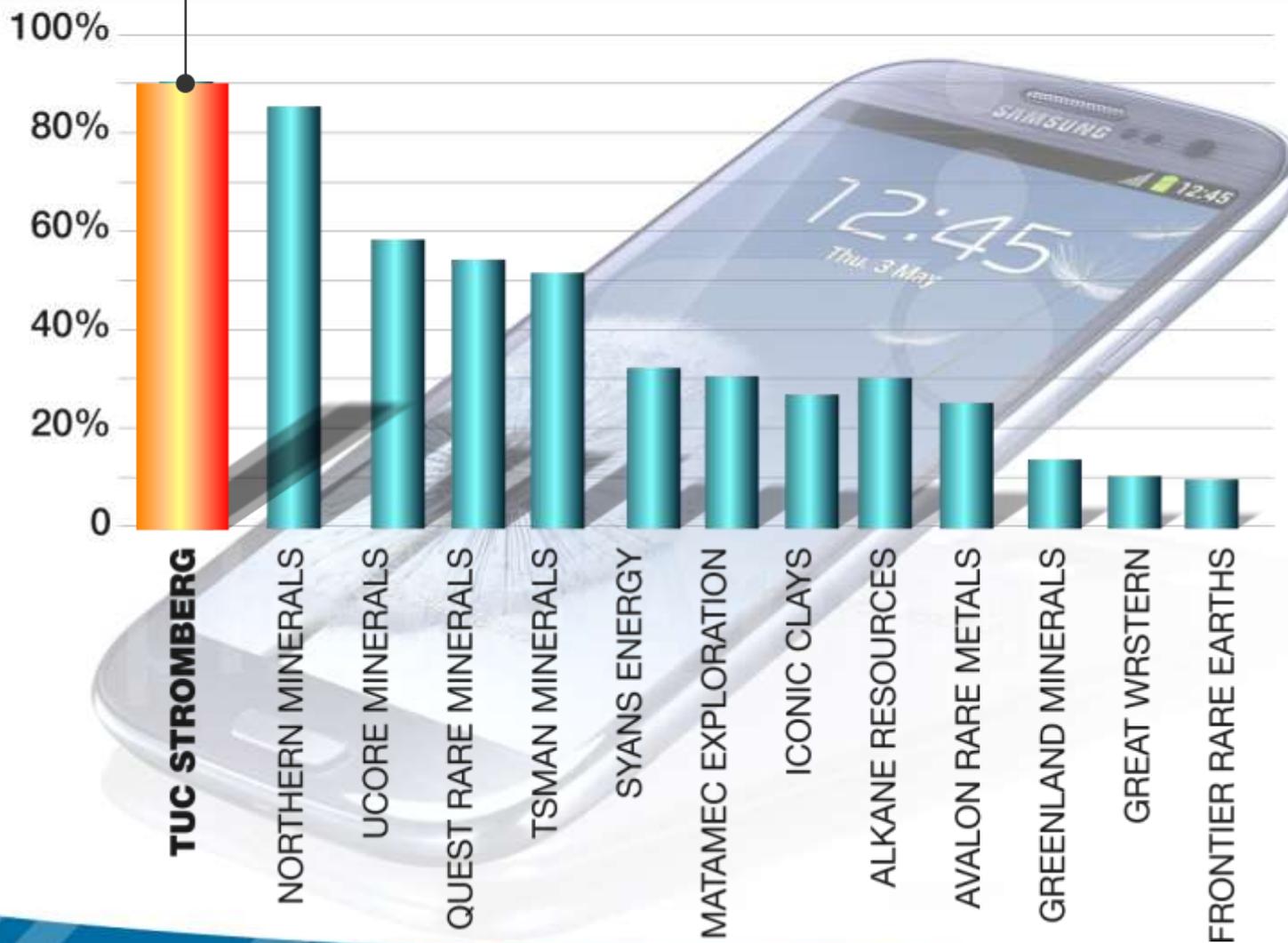
Higher priced critical metals

Demand is underpinned by world government clean energy initiatives....eg. Carbon Tax



# Stromberg Deposit

**No. 1** in terms of HREE Distribution

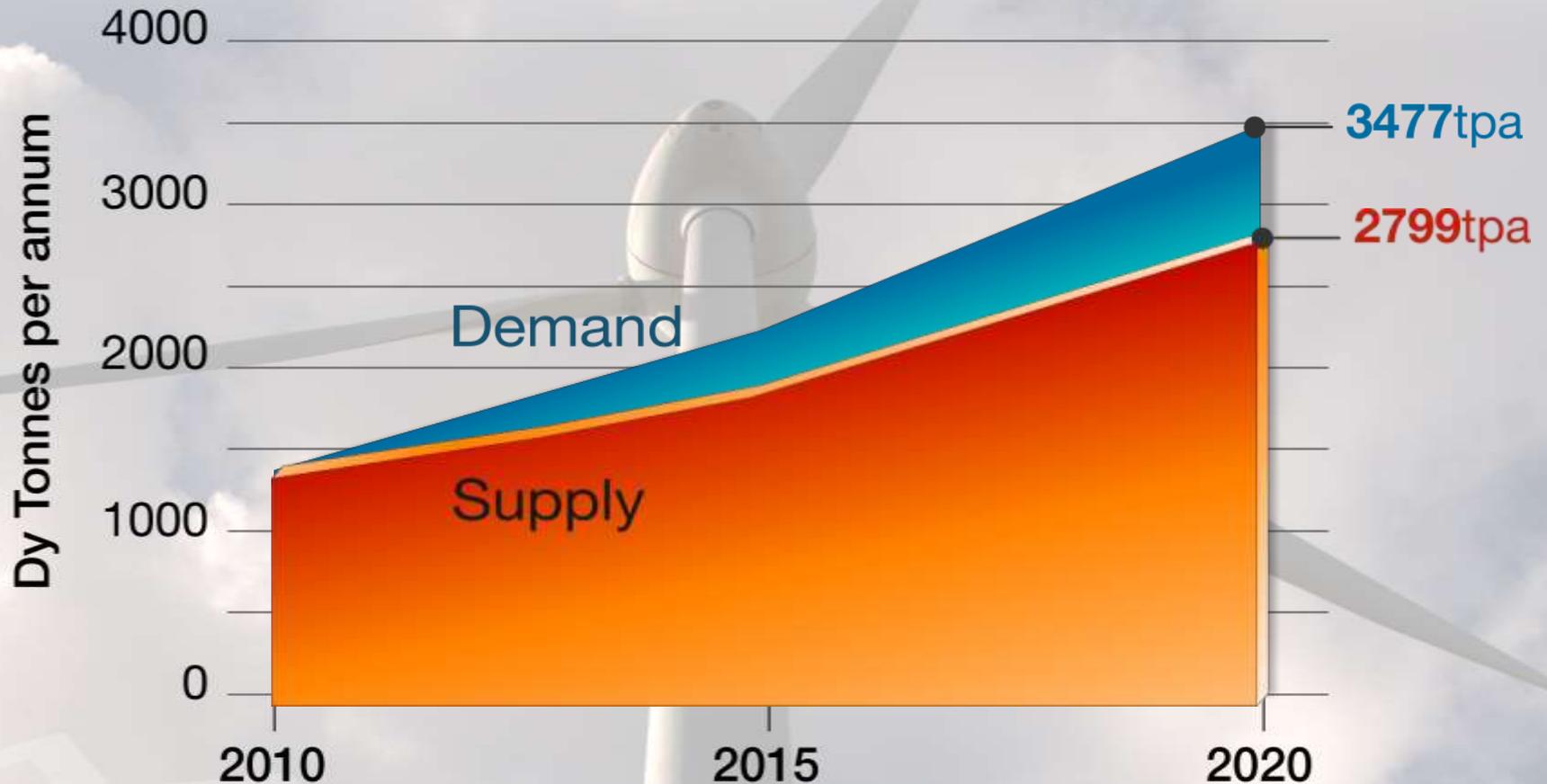


# Dysprosium (Dy)

## DEMAND/SUPPLY

Dysprosium is used in high temperature high efficiency fixed magnets in electric motors and power generation

**Demand/Supply forecast to grow**



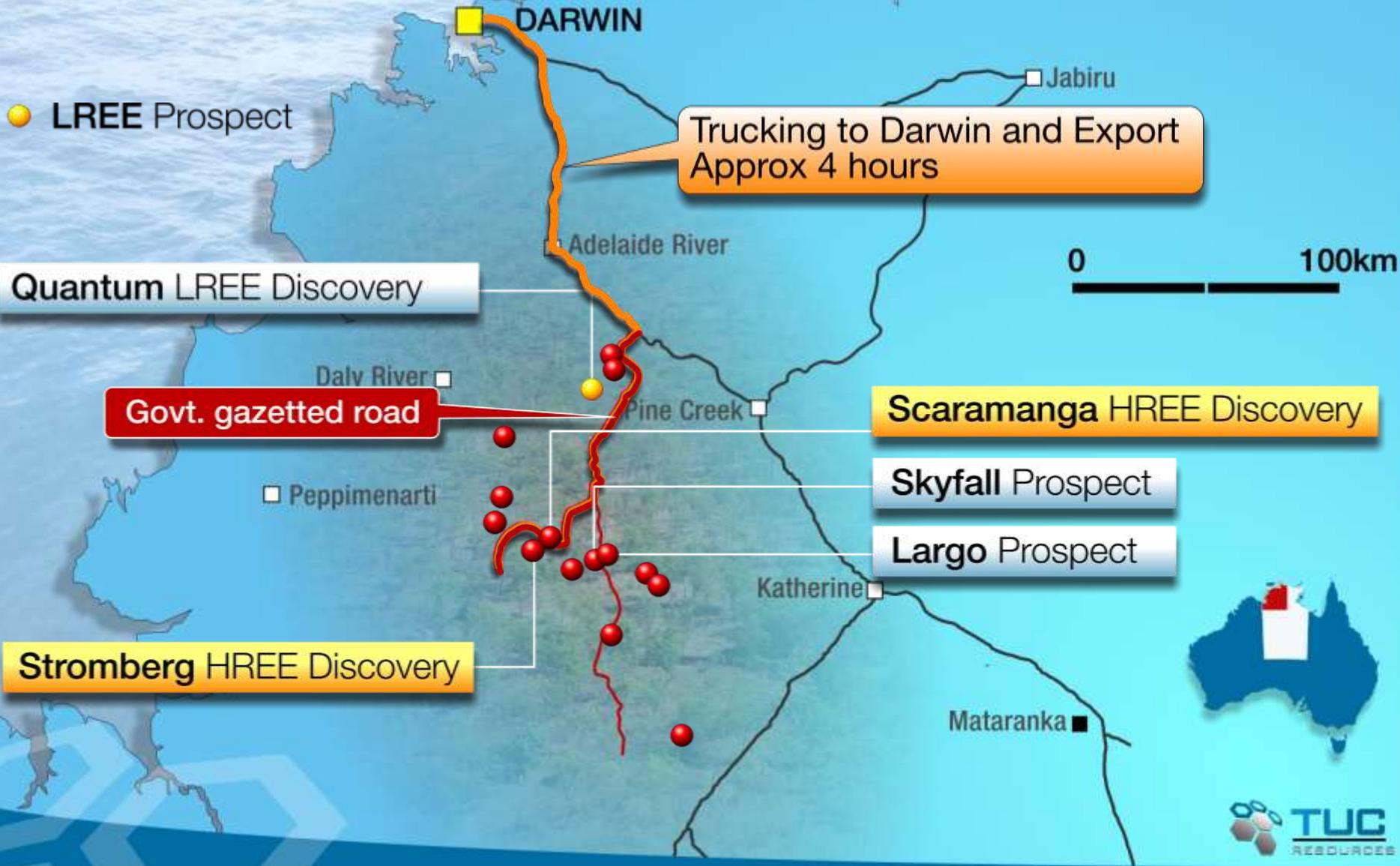


Recent drilling results increase potential



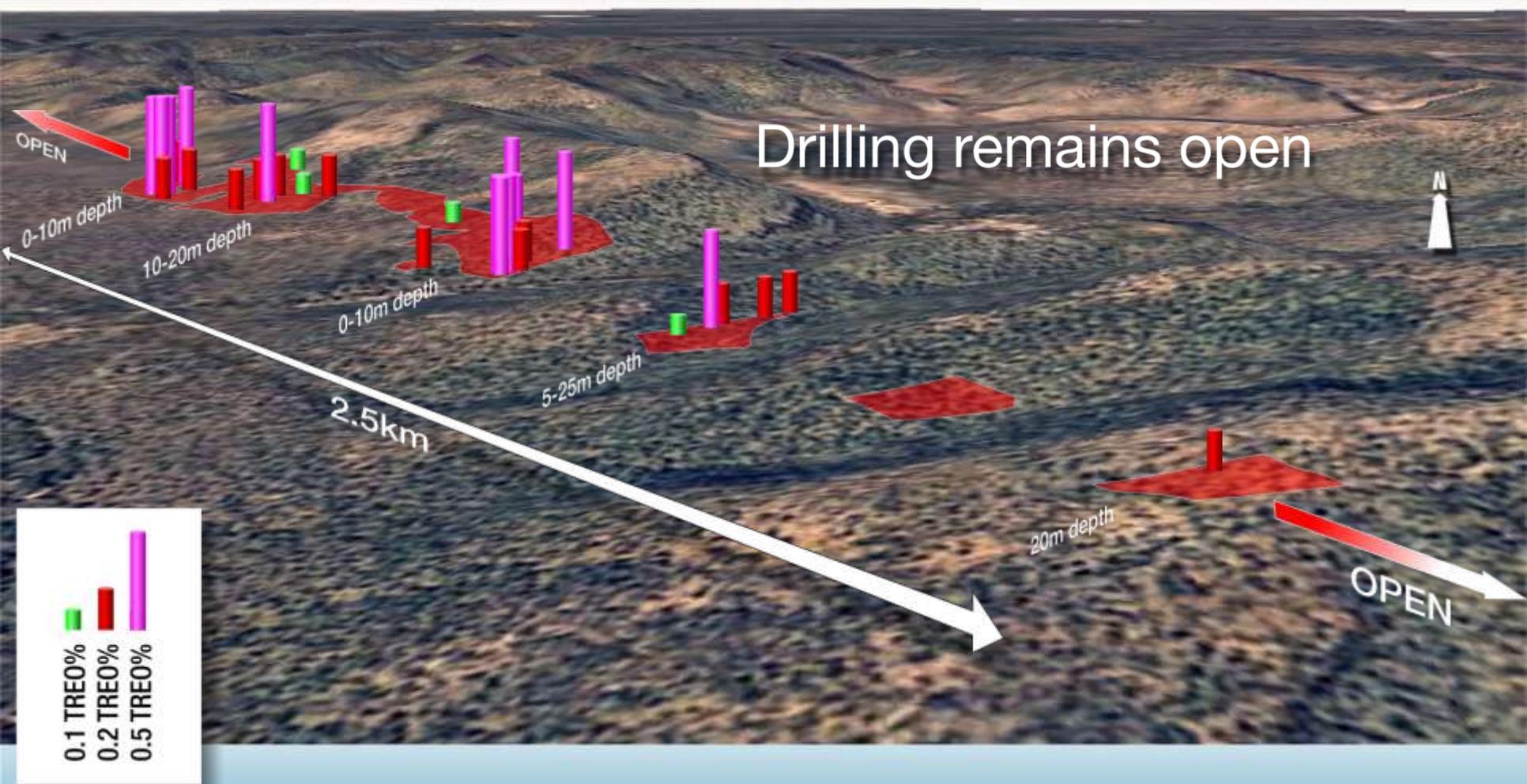
# Infrastructure Map

NORTHERN TERRITORY



# Clear Potential from Exploration Drilling

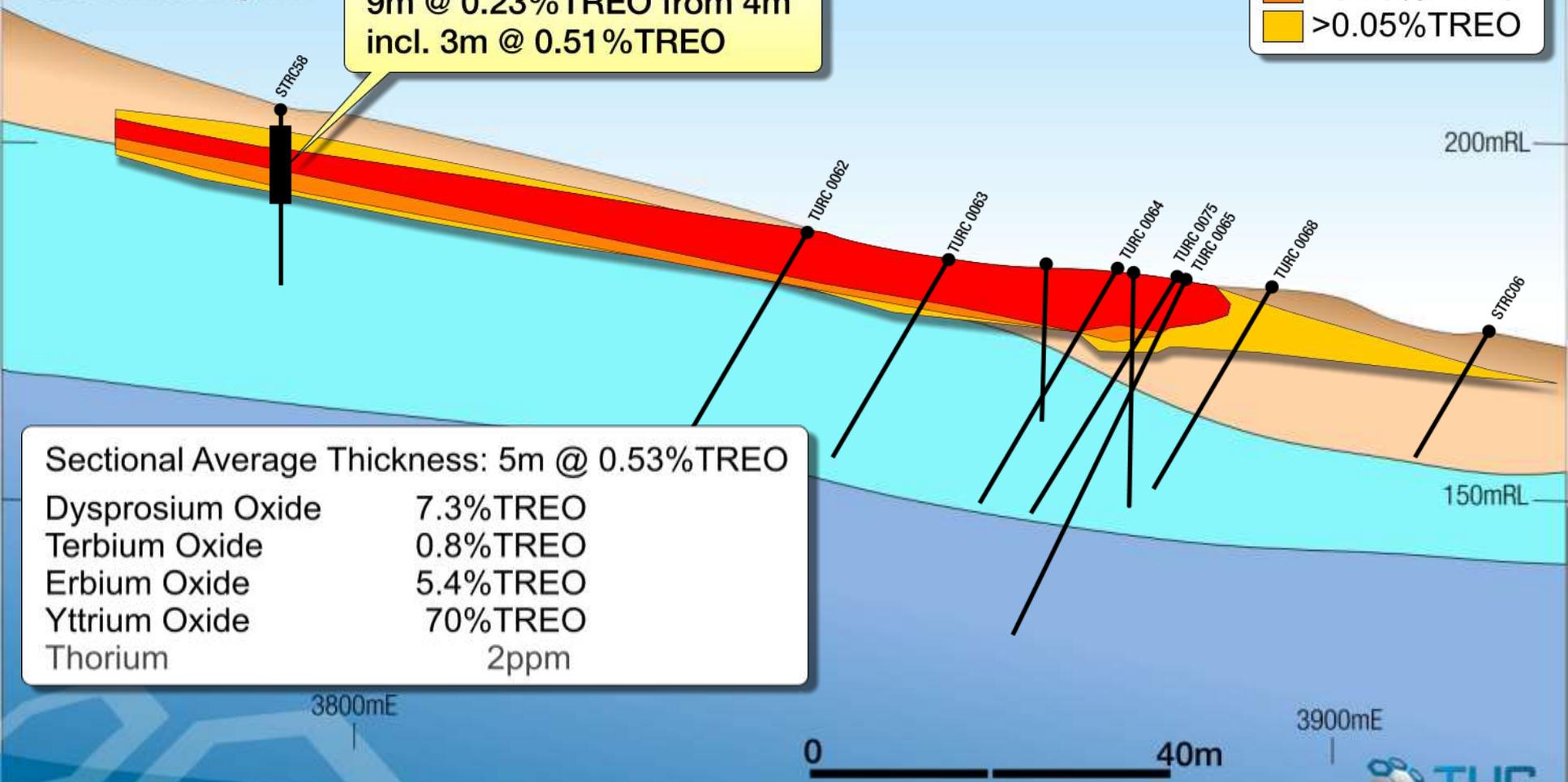
Maximum %TREO intercepts from RC drilling



# Stromberg major stepouts substantially extend mineral inventory

section looking NW

Recent RC drilling confirms zone extension.  
 9m @ 0.23% TREO from 4m incl. 3m @ 0.51% TREO



Sectional Average Thickness: 5m @ 0.53% TREO

Dysprosium Oxide	7.3% TREO
Terbium Oxide	0.8% TREO
Erbium Oxide	5.4% TREO
Yttrium Oxide	70% TREO
Thorium	2ppm



# Another Discovery Scaramanga

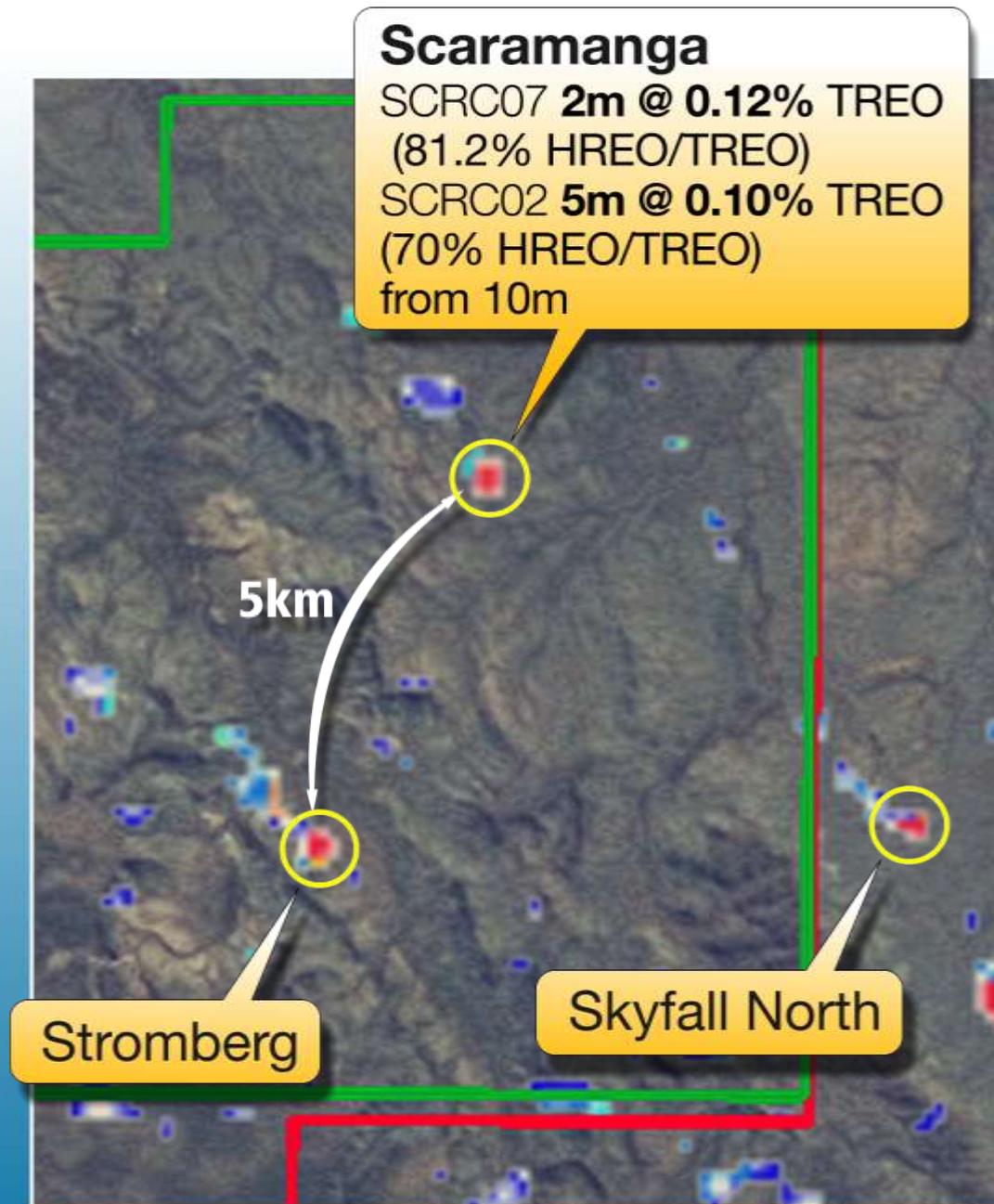
Exploration breakthrough  
proves district potential

# Scaramanga

Significant new results

Upside within a short distance  
of Stromberg

Proves broader district  
potential



# Scaramanga Cross Section

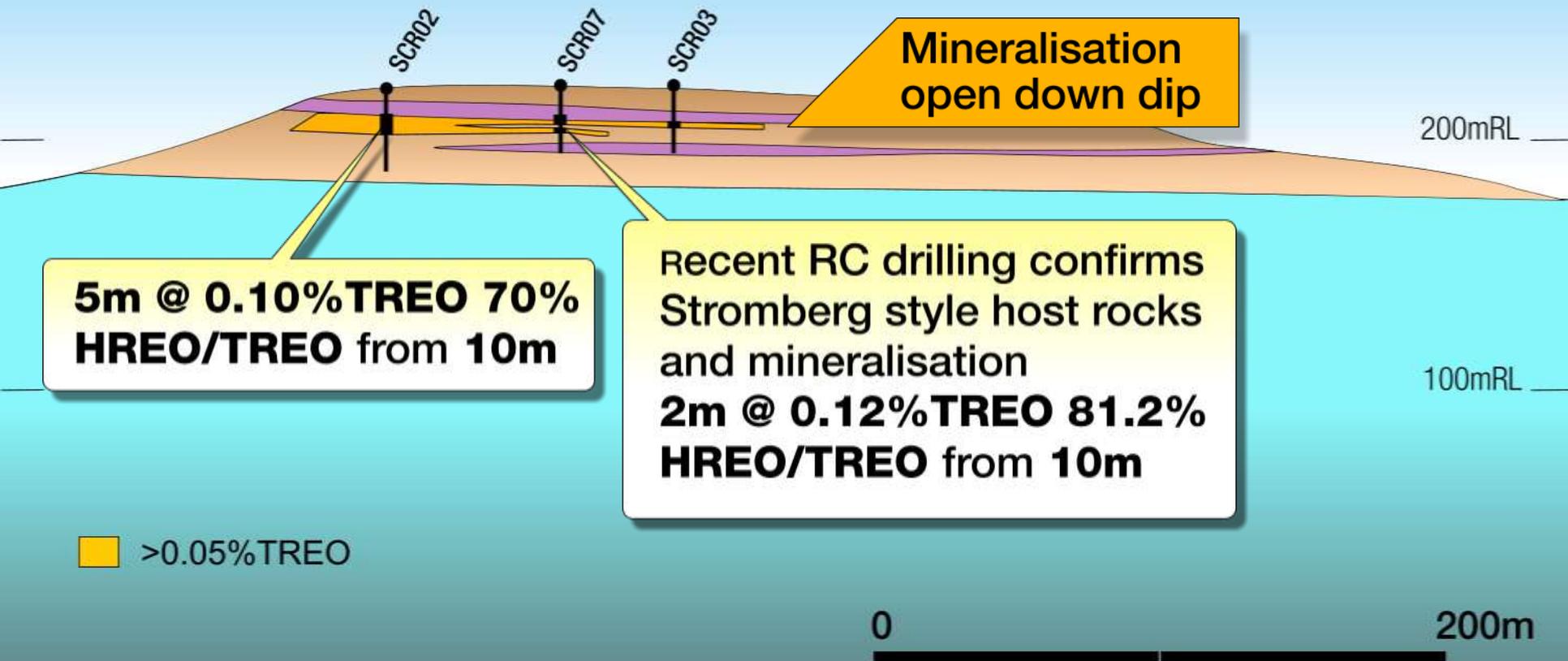
First pass broad spaced Drilling

Two distinct near surface HREE Horizons

Infill drilling planned

NW

SE



**5m @ 0.10% TREO 70% HREO/TREO from 10m**

Recent RC drilling confirms Stromberg style host rocks and mineralisation  
**2m @ 0.12% TREO 81.2% HREO/TREO from 10m**

**>0.05% TREO**

0 200m

# Stakeholder Engagement

George Jebel Huddlestone; Custodian - Stromberg District



On Friday September 14 2012  
Verbal Consent was given to take the  
highly prospective HREE tenement  
ELA27151 out of moratorium and for  
Exploration to begin

# Access Agreed - Major New Targets

**Stromberg**

**Scaramanga**

## **Skyfall Prospect**

Major untested radiometric anomaly  
Most prospective district target  
Access agreed Sep 2012

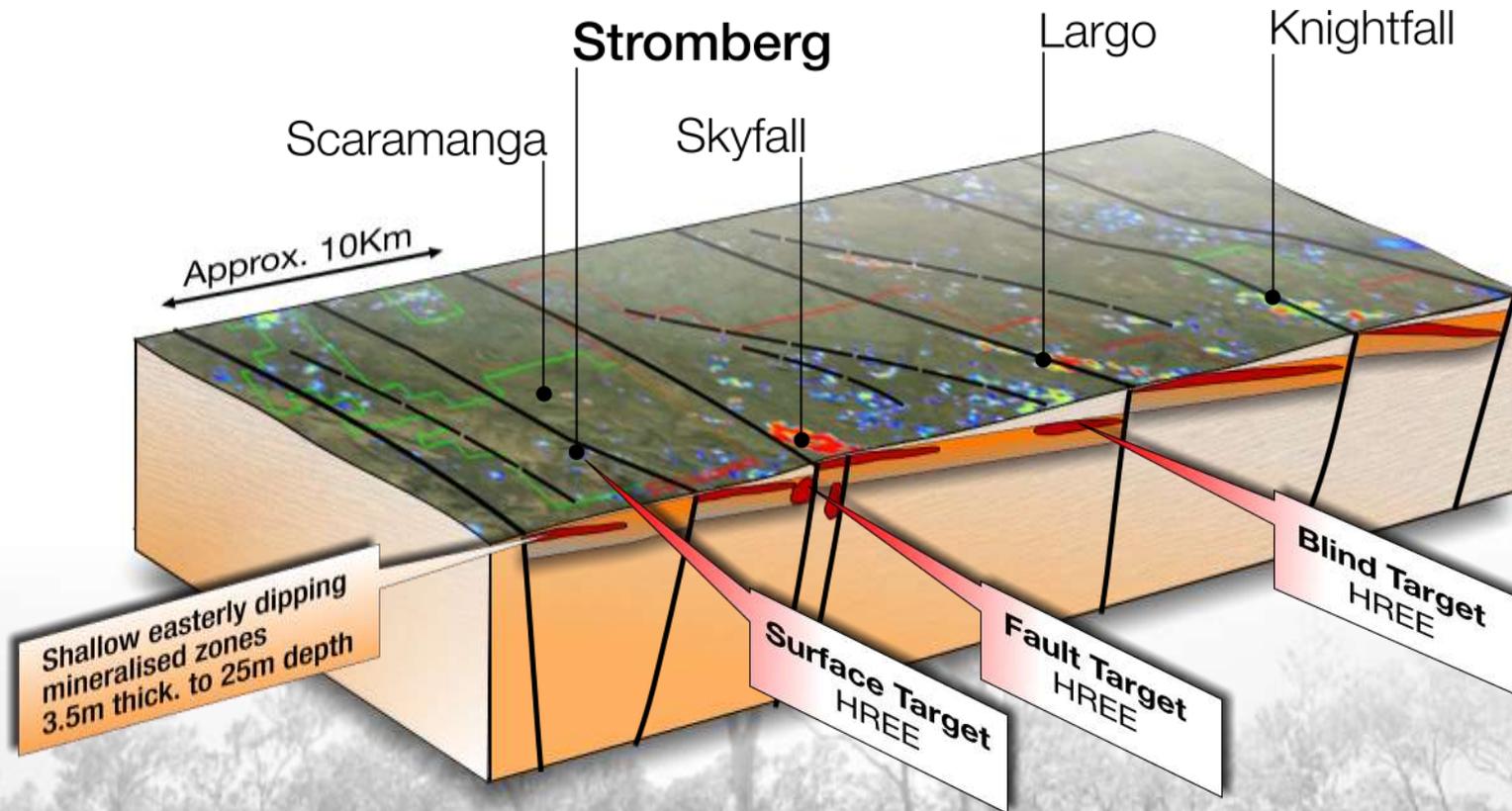
## **Largo Prospect**

Large untested radiometric anomaly  
Access agreed Sep 2012

# Regional Conceptual Model

## High Discovery Potential

Rock Types, Faults and Mineralised Systems Repeat



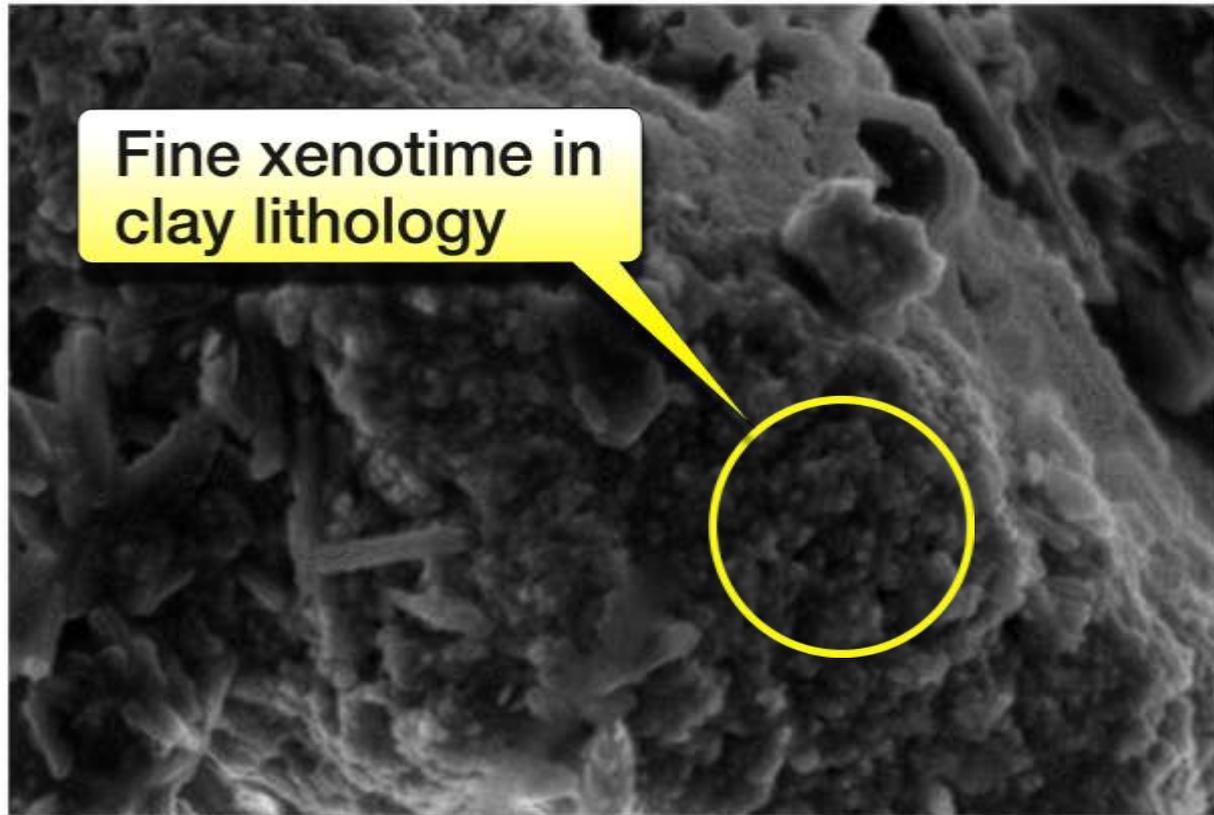
# Cost and Price Advantages



# Xenotime Mineralogy Competitive Advantage

Efficient leach of raw material

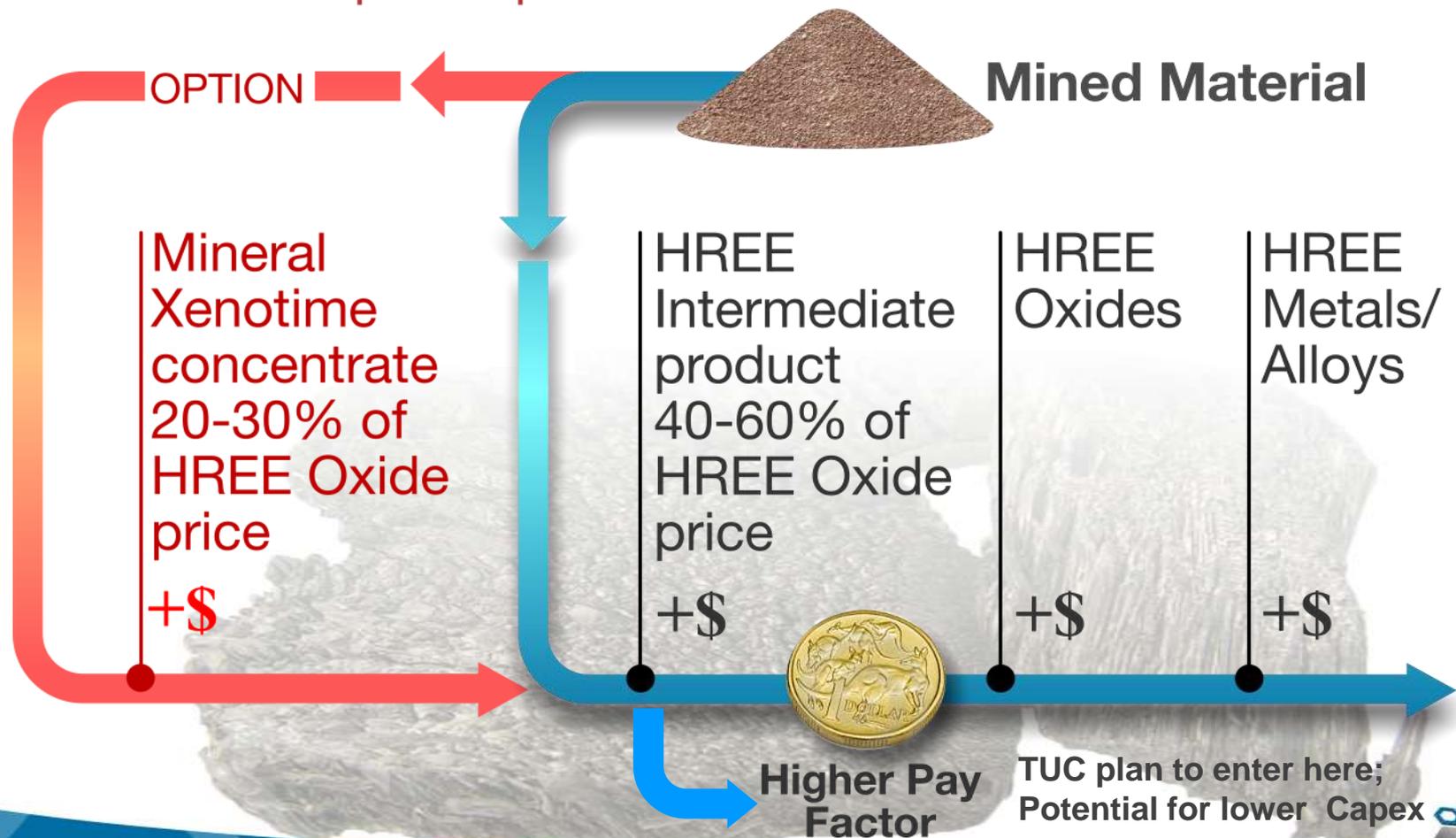
- Amenable to direct acid leach into solution
- Up to 85% recovery



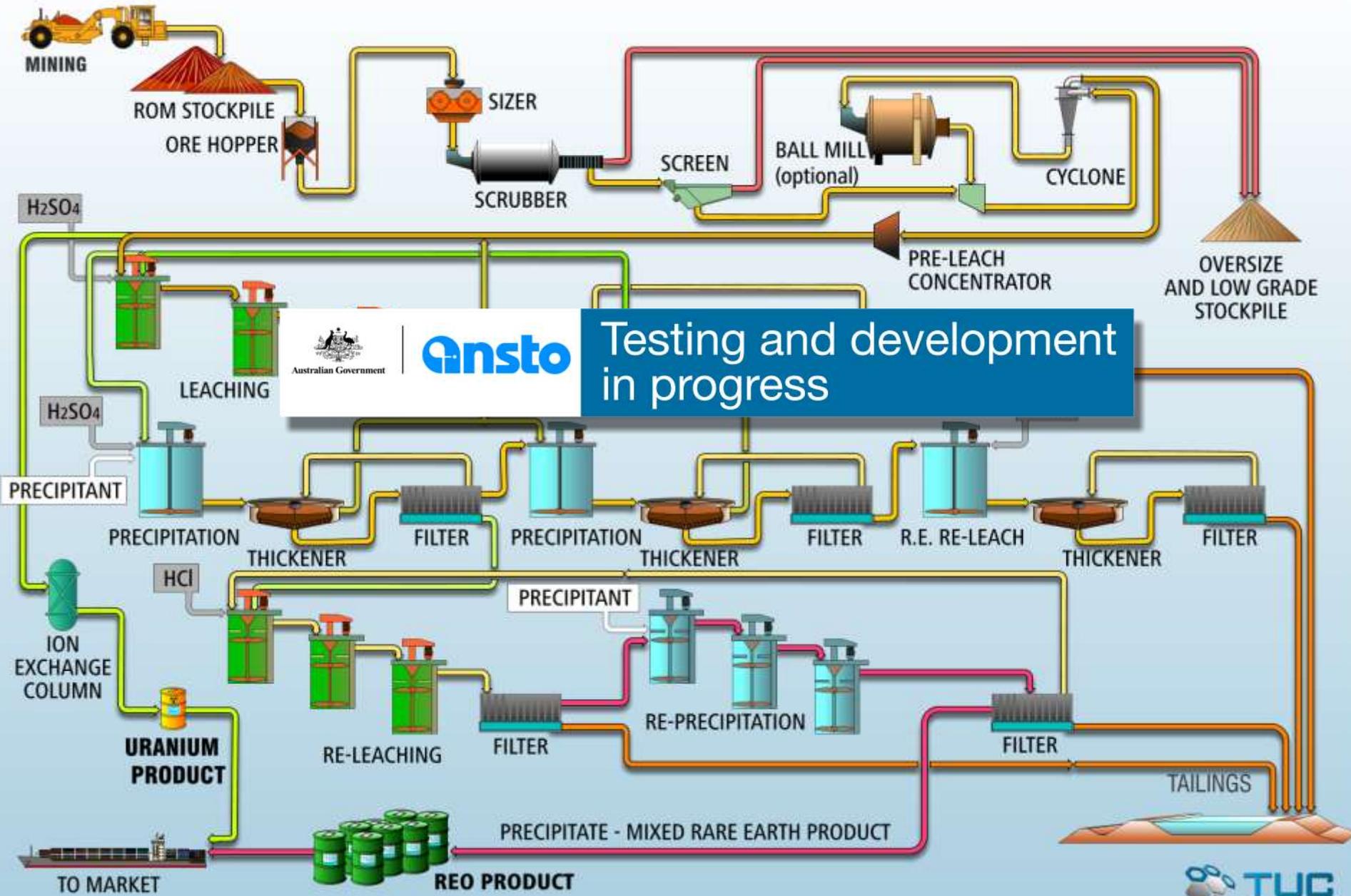
# Direct Leach Process

Entry to market at intermediate stage  
- not mineral concentrate stage

Option for ~15% of Stromberg material  
Quicker startup time possible



# Process Flow Sheet Prove/Improve Conceptual



# Conceptual Regional Model

not to scale

Drilled Mineralised Sections

Mineralised zone  
Confirmed by Drilling

Interpreted  
Mineralisation  
Horizon

2.5km

- At Surface Tabular Bodies
- Easy Access
- Potential for Low Stripping Ratio
- Soft Weathered Clay - Easier to Mine
- Faster Development - Drilling Time

OPEN

20m depth

Mineralised Envelopes >0.1% TREO

Shallow, flat dipping mineralised zones  
extending N-S  
3.5m thick from surface to ~20m depth



Potential for a Shorter Development Time  
and Early Mover Advantage

# Stromberg Project

Small initial modular plant concept

Smaller startup Capex anticipated

12-30tph capacity

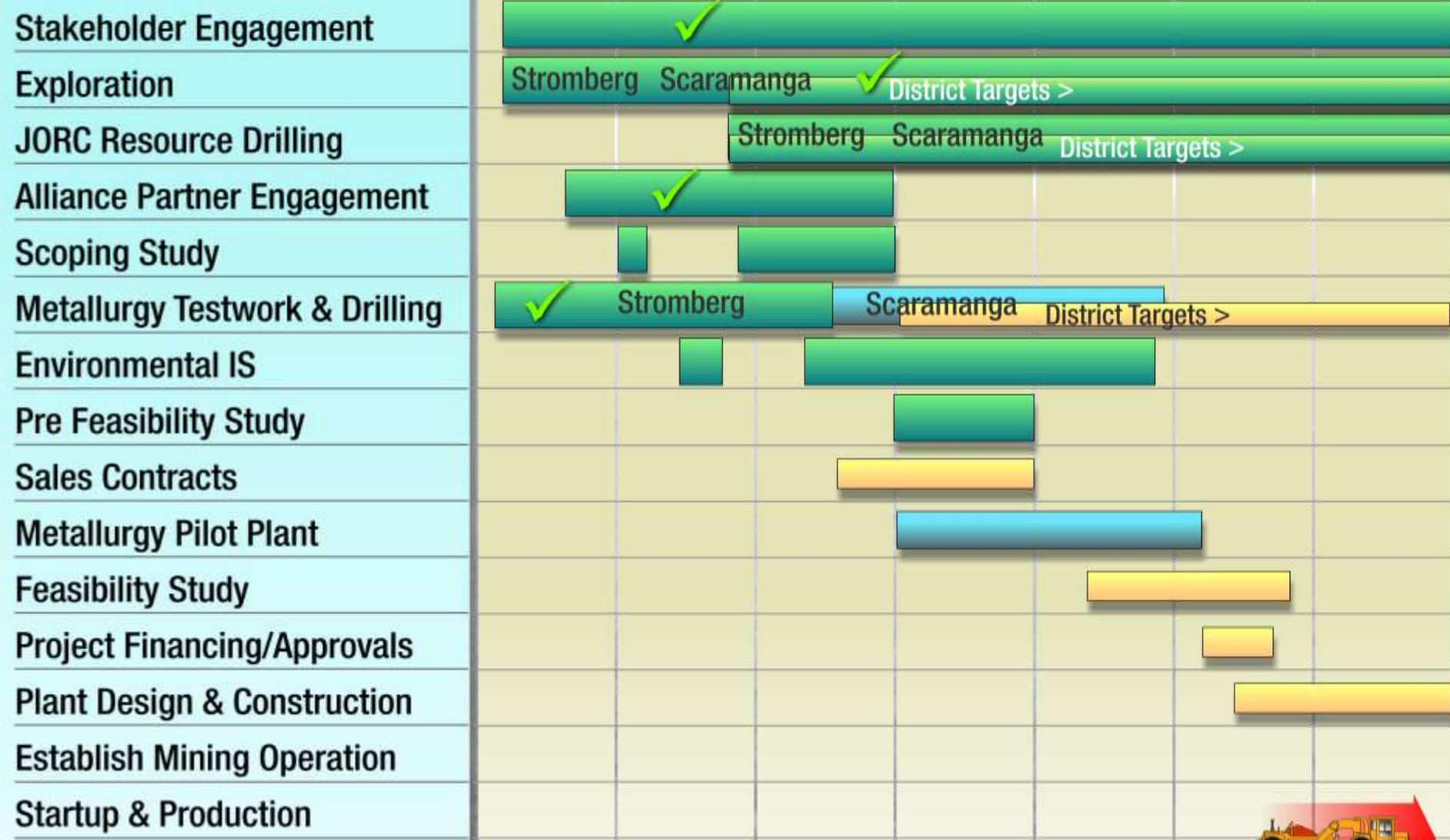


Source: Bateman Engineering

# Planned Stromberg Development Opportunities

+ ■ Certainty ■ Certainty ■ -

2011 2012 2013 2014 2015 2016 2017



# Major Rare Earth Deposits

TUC is actively seeking an REE industry partner



3.1 ■ REE deposit with known reserves - million tonnes

# Value Proposition

Correct HREE Market space

Large HREE exploration upside unlocked

Apparent cost advantages

→ Mineral processing - Mining - Capex

Potential for shorter development time

→ Early mover advantage

Work program underway

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## Competent Person

The information in this report that relates to Exploration Results is based on information compiled by Ian Bamborough, who is a Member of The Australian Institute of Geoscientists. Ian Bamborough is a fulltime employee of TUC Resources Ltd. Ian Bamborough 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 2004 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Ian Bamborough consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

**Ian Bamborough**

Managing Director

[ibamborough@tucresources.com.au](mailto:ibamborough@tucresources.com.au)

Phone: +61 (0)8 9325 7946

**Main Office**

Lvl 10, 553 Hay Street,

PERTH WA 6000

[www.tucresources.com.au](http://www.tucresources.com.au)

ASX:TUC

ABN 94 115 770 226

