



nupower

RESOURCES LTD



# Phosphate Projects - September 2012

NuPower - A Northern Territory Phosphate Company

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## NuPower Competent Person's Statement

The information in this presentation that relates to Exploration Results and Mineral Resources is based on information compiled by Mr Andrew Johnstone who is an Officer of the Company. Mr Johnstone is a Member of the Australian Institute of Geoscientists. Mr Johnstone 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'. Mr Johnstone consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

The information in this report that relates to mineral resource estimation is based on work completed by Mr Jonathon Abbott who is a full-time employee of MPR Geological Consultants Pty Ltd and a member of the Australian Institute of Geoscientists. Mr Abbott 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'. Mr Abbott consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

# NuPower - Presentation Focus

## NUPOWER – Phosphate

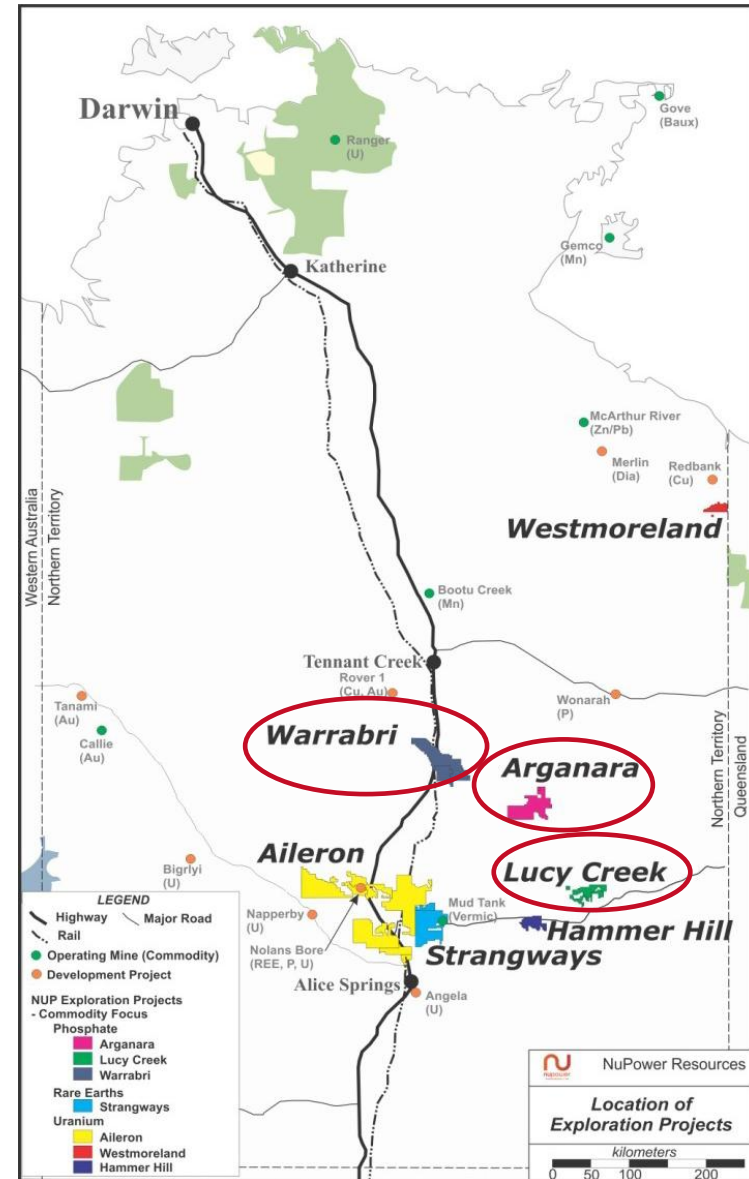
- **Phosphate** (100% owned)
  - Arganara
  - Lucy Creek
  - Warrabri
- Arganara Phosphate Resource

## NUPOWER – Development

- **Growth & Development Strategy**

## NUPOWER – Company Snapshot

- **Directors, Capital Structure, SP**



## Phosphate use – Fertilisers

- Intensive Agriculture is impossible without phosphate fertilisers.
- Phosphate increases yields and growing cycles per year
- Growing populations and urbanisation in India and Asia is driving food demand. Food security is important.
- Tropic and Sub Tropic soils are deficient in phosphate.
- Phosphate fertiliser is critical for protein rich crop production such as soy beans.
- Phosphate application on pasture for dairy increases yields and milk quality.
- Australia is an importer of Phosphate

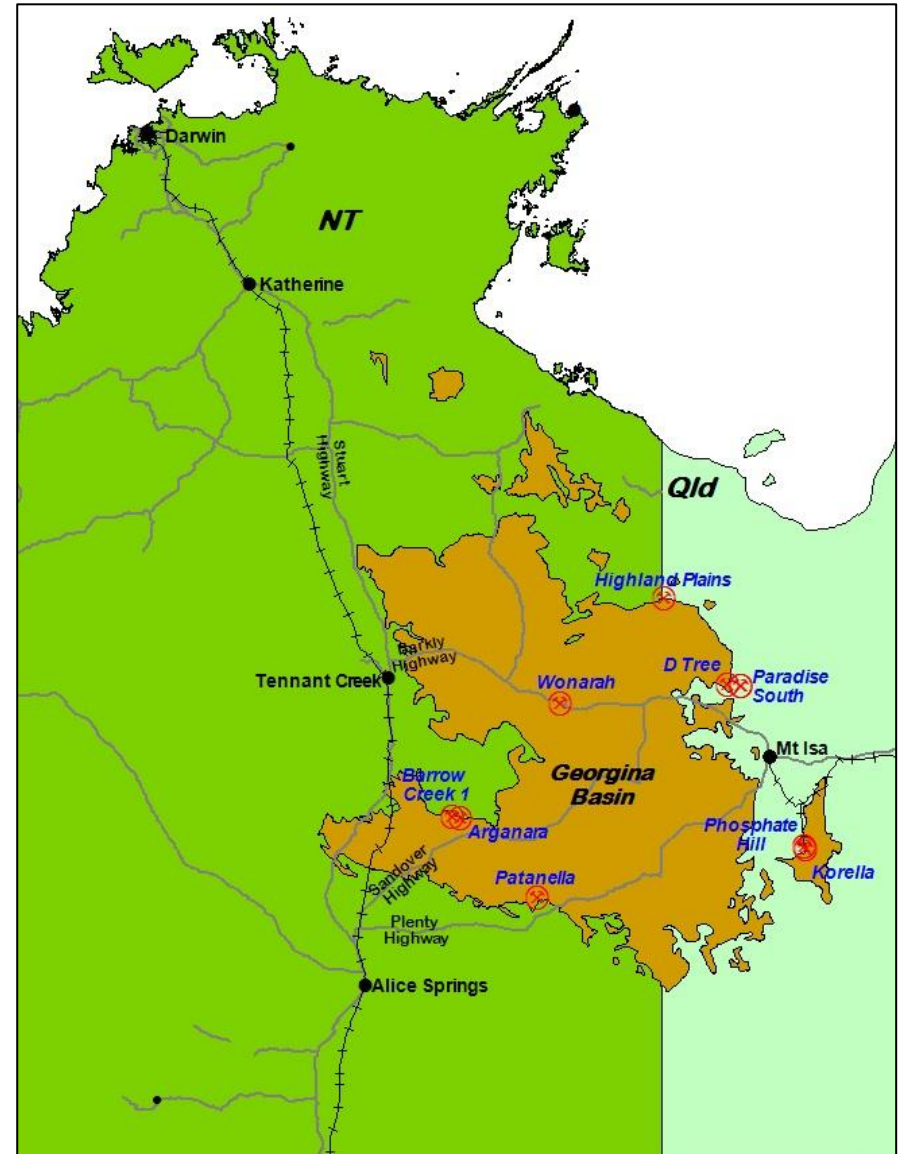


Advantages of Phosphate Fertiliser

Aerial Phosphate  
Application

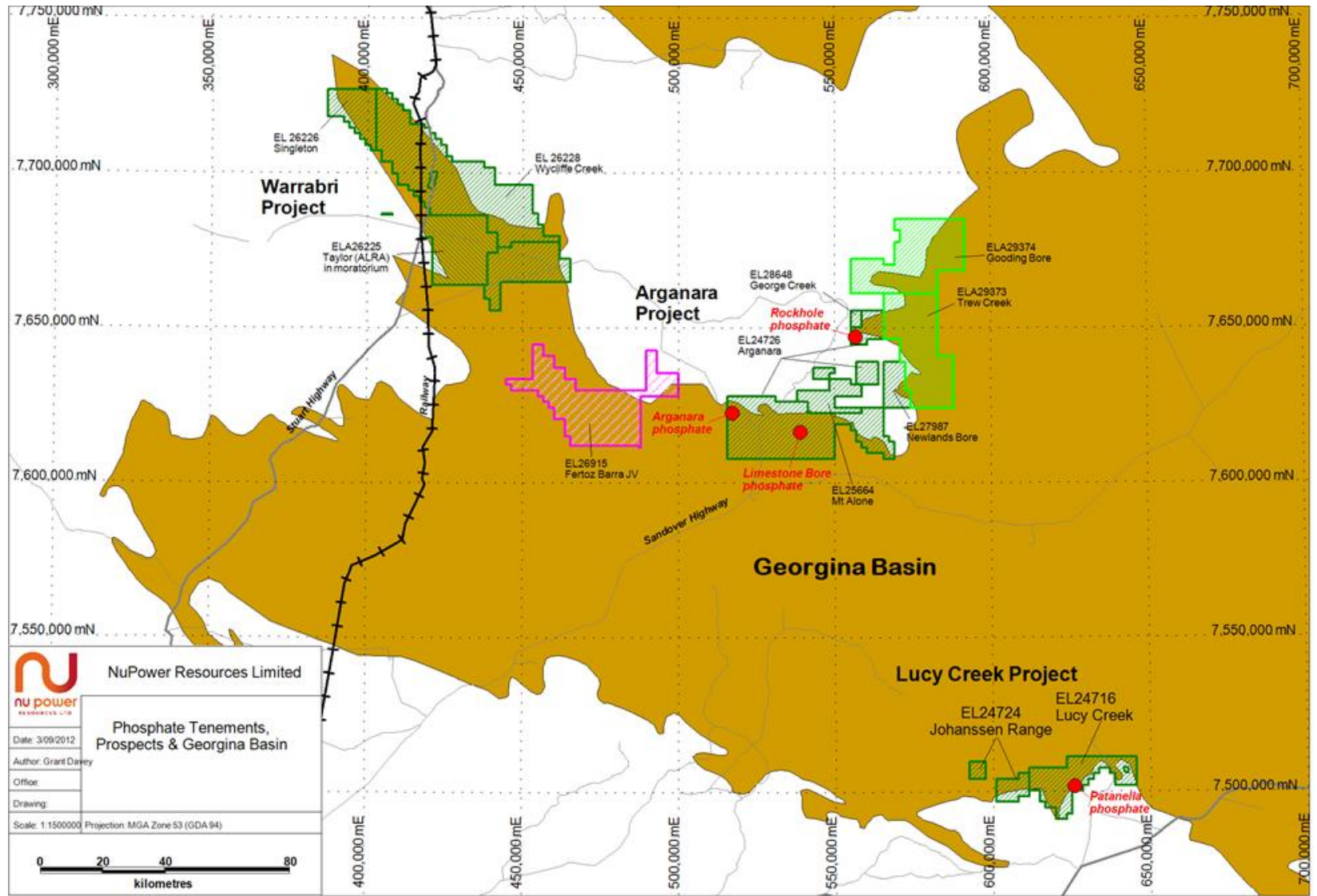
## Phosphate

- Australia's major phosphate reserves are found in the Georgina Basin
- For Fertiliser, phosphate rock or need to have phosphate levels of ~30% ( $P_2O_5$ ).
- Worldwide resources of high-grade ore are declining, and the beneficiation of lower grade ores by washing, flotation and calcining is becoming more widespread.
- Common phosphate based fertilisers:
  - Superphosphate
  - Triple Superphosphate (TSP)
  - Mono-ammonium Phosphate (MAP)
  - Di-ammonium Phosphate (DAP)
- Global consumption of rock phosphate continues is increasing.
- Rock phosphate prices have remained relatively stable during 2012
- World's largest exporters of Rock Phosphate are China, America and Morocco.
- Largest importer of Phosphate and Phosphate Fertilisers is India
- Growing global food requirements



# NuPower – Phosphate Projects – Northern Territory

## NT Phosphate Projects, Arganara, Lucy Creek, Warrabri – 5720km<sup>2</sup> of Georgina Basin



# NuPower – Phosphate Projects – Northern Territory

## Outstanding Phosphate Projects close to transport infrastructure

**Arganara JORC Resource** with high grade 30% P<sub>2</sub>O<sub>5</sub> zones for development

310mt @ 15% P2O5 (10% cutoff)

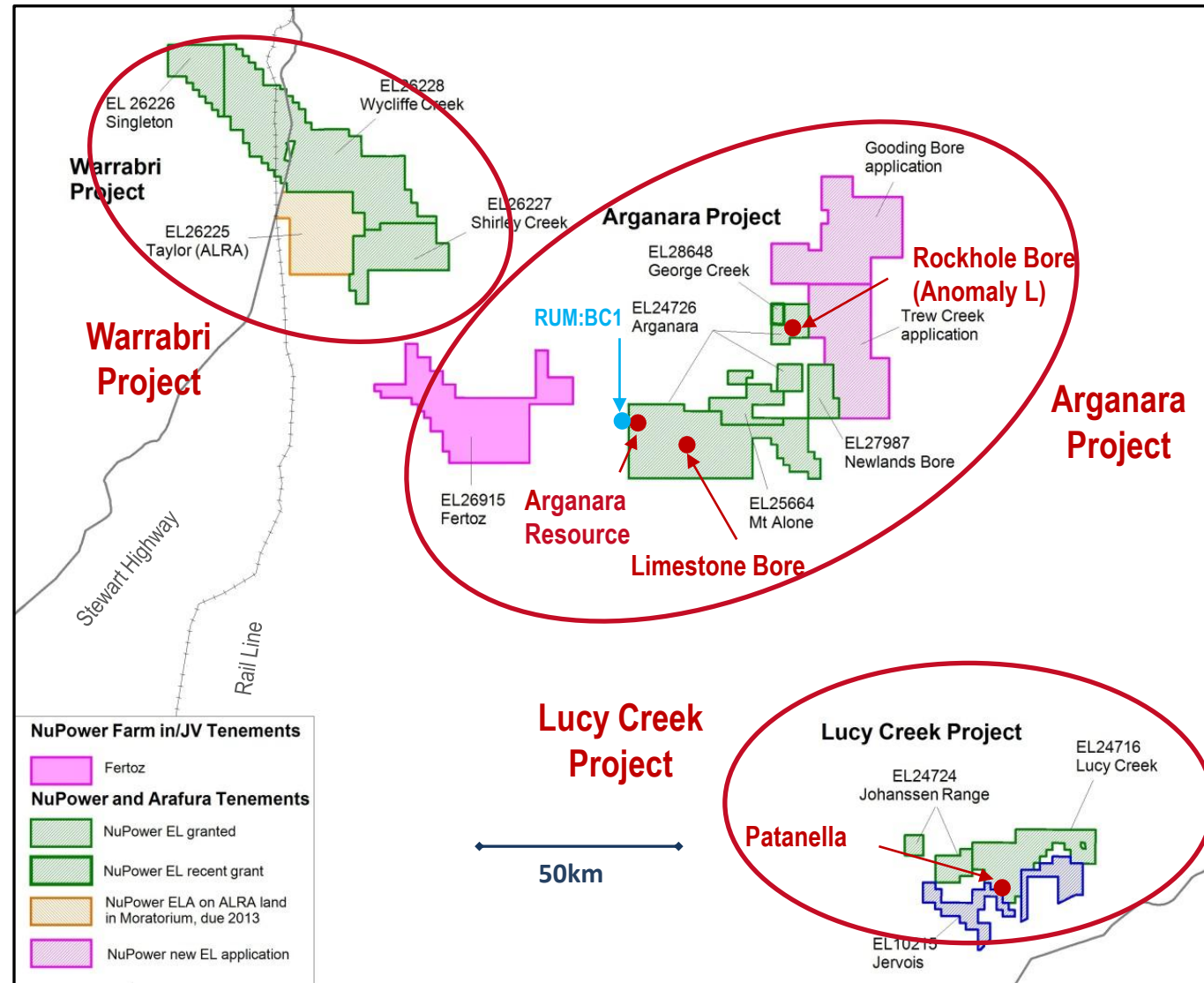
**Rockhole Bore** high grade phosphate has also been confirmed

NuPower has now defined a 27km mineralised corridor at Arganara between Arganara Resource and Limestone Bore

**Lucy Creek Project** NuPower has completed a small drill program discovering significant phosphate grades at the Patanella Prospect (>30% P<sub>2</sub>O<sub>5</sub>)

**Warrabri Project** which lies on the Stewart Highway and Darwin to Adelaide rail line, historic reported Phosphate at Wycliffe Well

**Fertoz Barra JV** secured in early 2012, good phosphate potential, close to rail



## Arganara

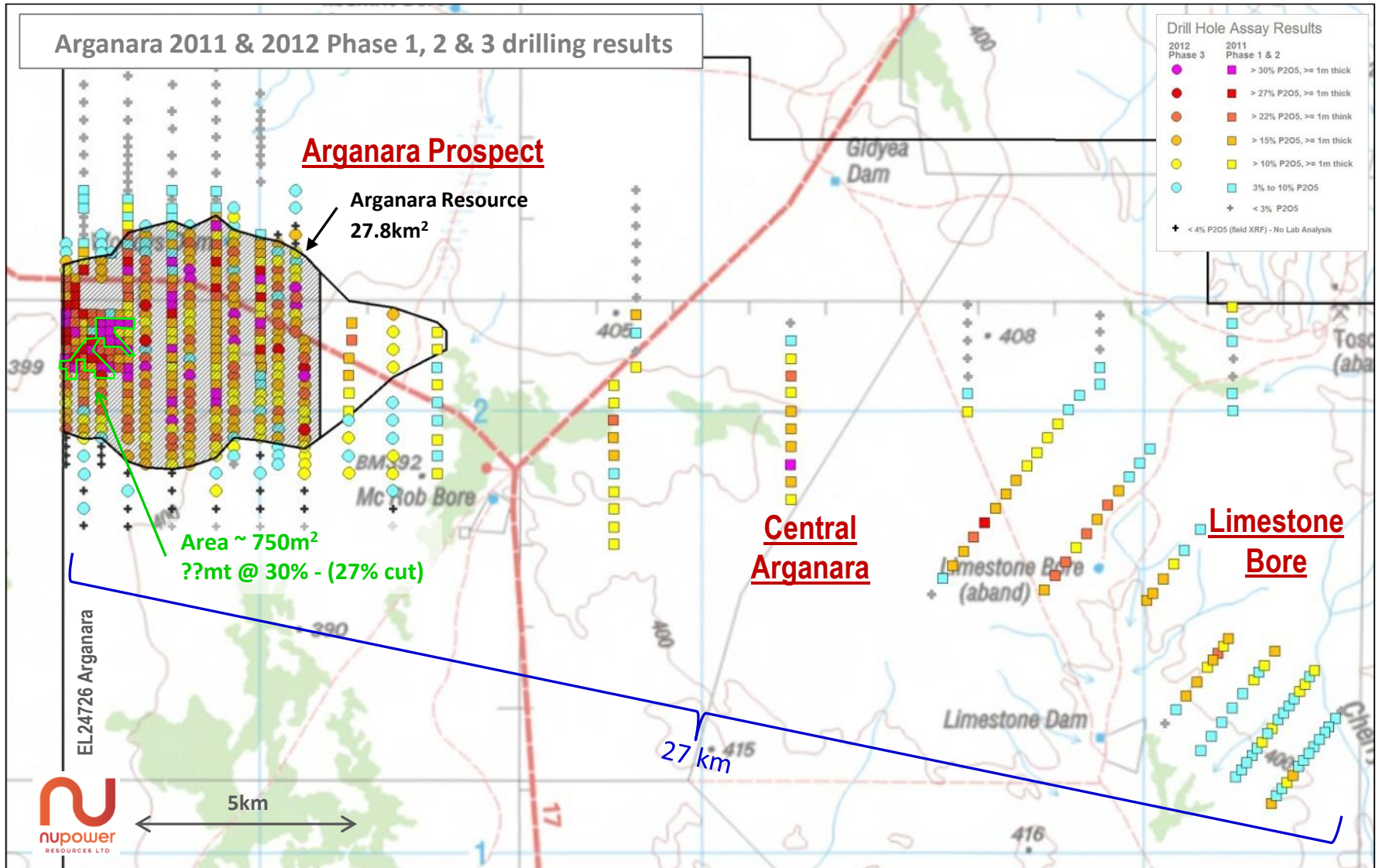


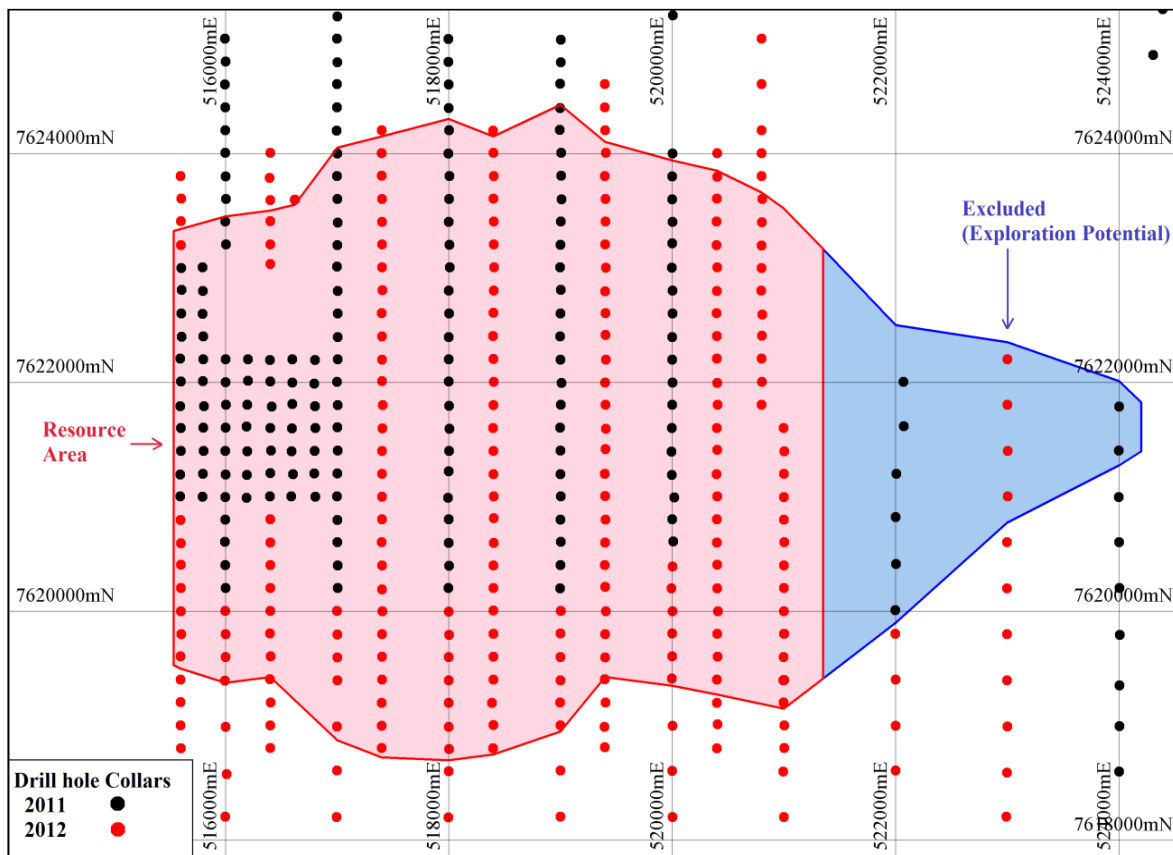
## Arganara Phosphate Project (100% owned)

310 million tonnes (mt) @ 15% Phosphate ( $P_2O_5$ ) using 10% cutoff

- Maiden JORC Resource – (August 2012)
- 2nd largest reported resource in the Northern Territory - Globally significant
- High grade +30% Phosphate Zones (Direct Ship Ore, DSO)
- Close to the Darwin to Alice Springs rail line,
- Situated on a major outback road.

# Arganara Resource





## Arganara JORC Inferred Resource Estimate

- 397 holes used in calculation
- 5.8km east west x 5.4km north south
- Resource covers 27.8km<sup>2</sup>
- Average thickness 7m
- Average depth 19m
- Exploration Potential Estimate
- 400x200 and 600x200m spaced holes
- Validation of XRF Studies
- Density 1.7t/bcm

310mt @ 15%P<sub>2</sub>O<sub>5</sub> (10% cutoff)

120mt @ 18%P<sub>2</sub>O<sub>5</sub> (15% cutoff)

4mt @ 23%P<sub>2</sub>O<sub>5</sub> (20% cutoff) 200x200

| Cut off                         | Tonnes     | P <sub>2</sub> O <sub>5</sub> | Al <sub>2</sub> O <sub>3</sub> | CaO       | Fe <sub>2</sub> O <sub>3</sub> | K <sub>2</sub> O | MgO         | MnO         | Na <sub>2</sub> O | SiO <sub>2</sub> | TiO <sub>2</sub> | U         | LOI        |
|---------------------------------|------------|-------------------------------|--------------------------------|-----------|--------------------------------|------------------|-------------|-------------|-------------------|------------------|------------------|-----------|------------|
| P <sub>2</sub> O <sub>5</sub> % | Million    | %                             | %                              | %         | %                              | %                | %           | %           | %                 | %                | %                | ppm       | %          |
| 5                               | 360        | 14                            | 7.4                            | 19        | 5.8                            | 1.6              | 0.80        | 0.18        | 0.17              | 46               | 0.41             | 15        | 3.7        |
| <b>10</b>                       | <b>310</b> | <b>15</b>                     | <b>7.3</b>                     | <b>20</b> | <b>5.8</b>                     | <b>1.5</b>       | <b>0.80</b> | <b>0.18</b> | <b>0.18</b>       | <b>45</b>        | <b>0.40</b>      | <b>15</b> | <b>3.7</b> |
| 15                              | 120        | 18                            | 6.6                            | 24        | 4.9                            | 1.3              | 0.73        | 0.16        | 0.18              | 39               | 0.35             | 15        | 3.5        |
| 20                              | 4          | 23                            | 5.2                            | 31        | 5.5                            | 1.1              | 0.62        | 0.27        | 0.17              | 31               | 0.28             | 12        | 3.2        |

One of the Largest Phosphate Resources defined in Australia. 2<sup>nd</sup> largest in Northern Territory

# Arganara Resource

## High Grade Phosphate (DSO) Intersections

| Hole  | East   | North   | From (m) | To (m) | Interval (m) | P2O5 (%) |                              |
|---|--------|---------|----------|--------|--------------|----------|------------------------------|
| ARC180  | 515596 | 7622205 | 14       | 19     | 5            | 29.3     | includes 2m @ 33.9% from 17m |
| ARC090  | 519996 | 7623000 | 12       | 15     | 3            | 28.3     | includes 2m @ 30.3% from 12m |
| ARC196  | 516189 | 7621611 | 23       | 25     | 2            | 27.8     |                              |
| ARC200  | 516399 | 7621001 | 25       | 31     | 6            | 26.7     | includes 3m @ 32.5% from 26m |
| ARC354  | 516415 | 7621787 | 24       | 30     | 6            | 25.8     | includes 2m @ 32.9% from 24m |
| ARC197  | 516194 | 7621395 | 24       | 29     | 5            | 25.7     | includes 2m @ 30.3% from 26m |
| ARC351  | 516401 | 7621204 | 22       | 25     | 3            | 25.3     |                              |
| ARC169  | 520001 | 7621995 | 23       | 30     | 7            | 24.9     |                              |
| ARC086  | 517995 | 7620200 | 20       | 26     | 6            | 24.8     | includes 2m @ 30.4 from 23m  |
| ARC181  | 515601 | 7622004 | 13       | 19     | 6            | 24.5     | includes 2m @ 31.9% from 16m |
| 15% cutoff, includes up to 2m @ 10% internal dilution |        |         |          |        |              |          |                              |

- Arganara Prospect Phosphate. DSO 30% P<sub>2</sub>O<sub>5</sub> Grades
- 27% and 30% Phosphate 200x 200m grid
- Shallow near surface high grade Phosphate along road
- Potential for a number of DSO grade resources within Arganara Resource



2011 Drilling,  
Arganara Prospect

## NuPower – Phosphate Developer

- The Arganara Resource has grades and location that indicate the project will have robust economics.
- At Arganara NuPower has defined a 27km corridor of phosphate mineralisation which could host a significantly larger resource.
- Pipeline of phosphate projects, Warrabri, Lucy Creek and Fertoz Barra JV
- Available infrastructure to utilise, rail to both Darwin and southern states of Australia
- Significant complimentary development in Darwin – INPEX
- Darwin Port – Gateway to Asia and India
- Strong phosphate demand – essential for food production – Food Security
- End users desire to have alternative phosphate supply options

NuPower is a Phosphate Company with a bright future:

**CENTRAL AUSTRALIAN PHOSPHATE LIMITED**

# NuPower Phosphate Development Options

## DSO OPERATION

Simple Mining – Free digging

Crush and Screen – Grade ~ 30%P<sub>2</sub>O<sub>5</sub>

Containerized product to Darwin

Transport , Truck 120km to siding then Rail to Darwin Port

FOB sales via Darwin to: India, SE Asia, China

Aim: 150,000 to 200,000tpa

Low Capex – Quick startup



## LONG TERM FERTILIZER OPERATION

Simple Mining – Free digging

Crush and Screen – Grade ~ 20 to 30%P<sub>2</sub>O<sub>5</sub>

Bulk movement of P<sub>2</sub>O<sub>5</sub> to Darwin - Rail

Production of Super phosphate (low capex)

MAP or DAP production (med high capex)

Ammonia and Sulfur, bi-products from INPEX.

Aim: 1,000,000t to 2,000,000 tpa

Larger Capex – Longer development time



## The remainder of year Arganara - 2012:

- Ongoing Environmental Monitoring
- Metallurgical test work – Phase 1
- Notice of Intent – First Step in Mining Lease Q4 - 2012
- Development strategies: DSO vs Value added Products
- Market assessment (CRU, Ferticon),
- 2013 – Metallurgical test work - Phase 2, DSO Drilling, Bulk Samples
- Transport Studies, Social Impact Studies
- Relationships, Partnerships, Marketing, Off-take agreements

## Hypothetical Economics (DSO):

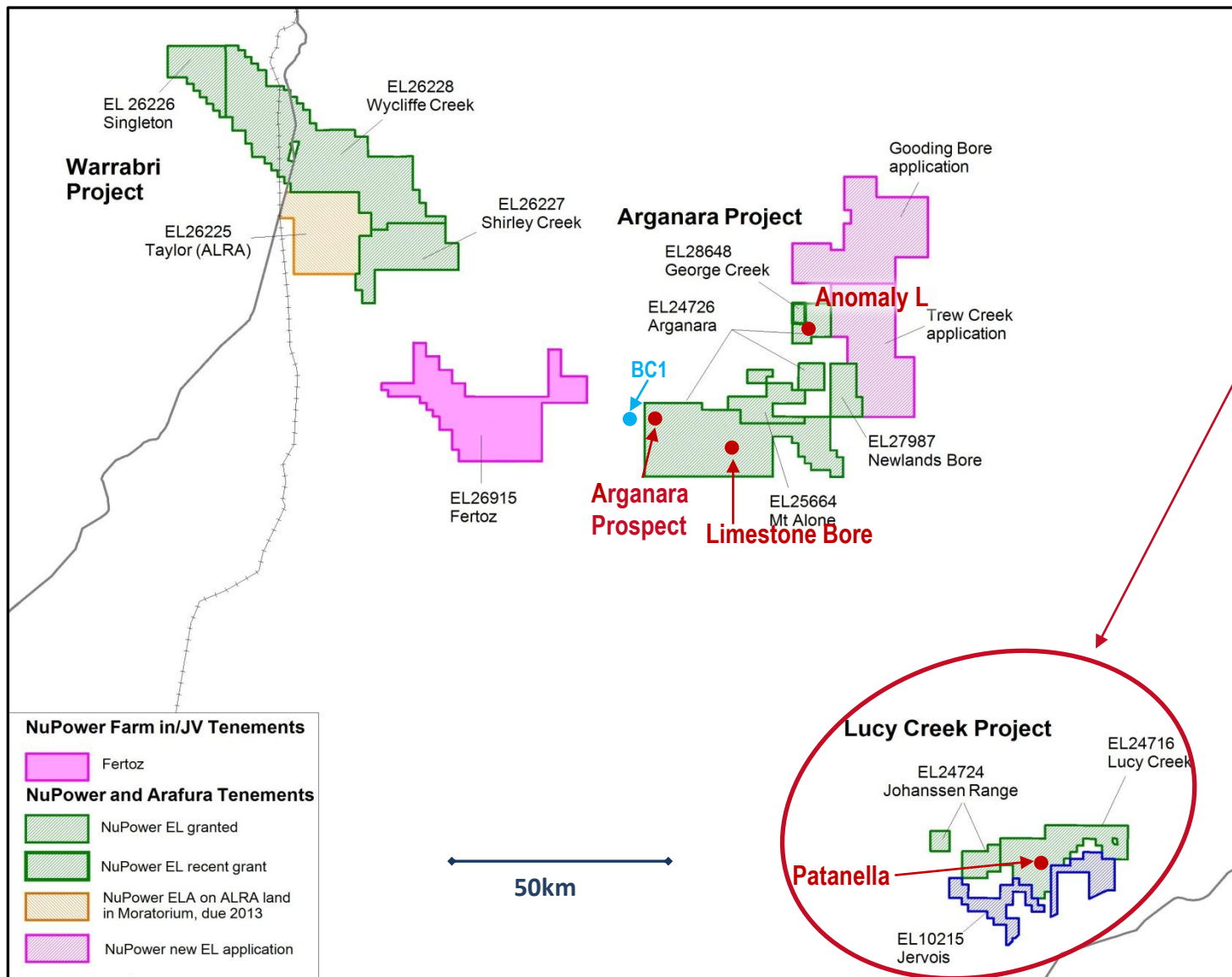
- Phosphate loaded Darwin ~ \$65 to \$75
- FOB Sales +30% P<sub>2</sub>O<sub>5</sub> ~ \$150 to \$175
- 200Ktpa profit ~ \$15million pa



- **Lucy Creek**
- **Warrabri**
- **Corporate Snapshot**

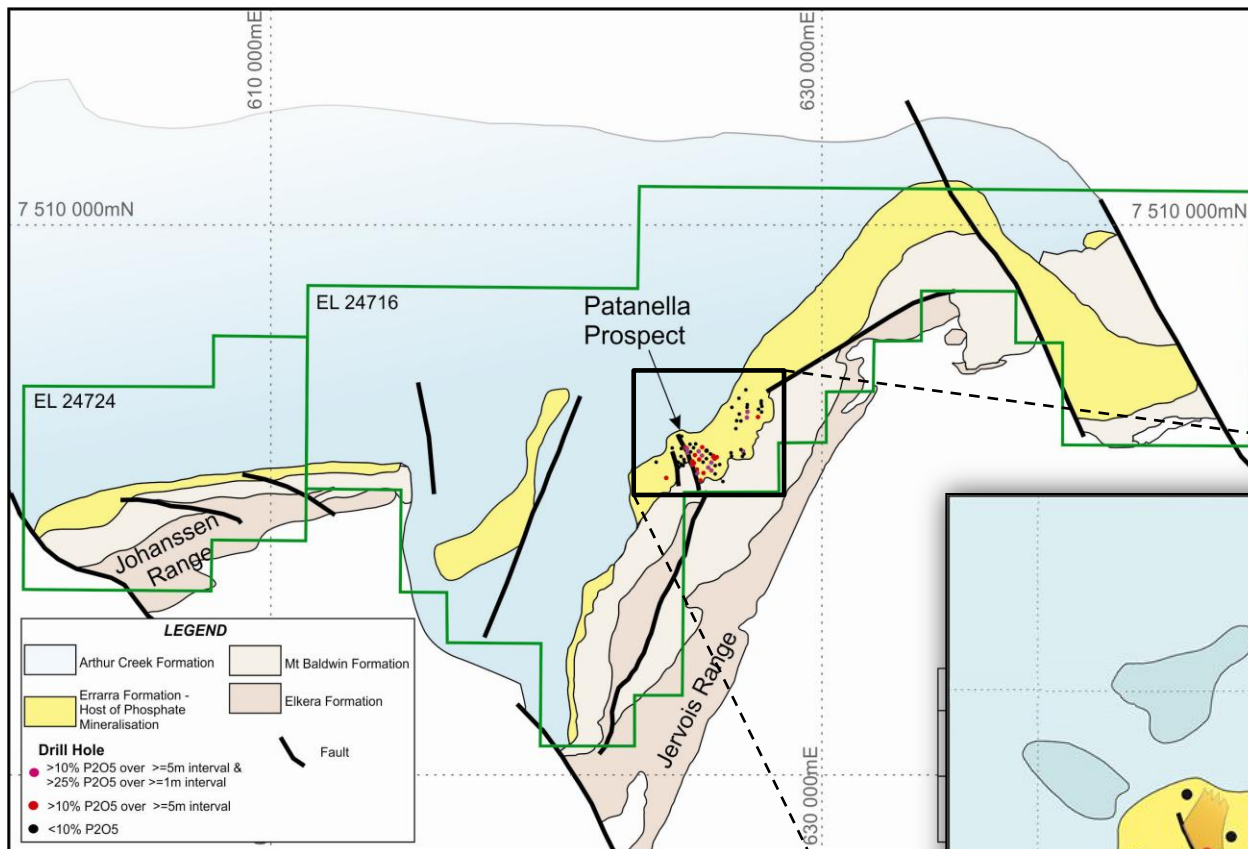


# Lucy Creek Phosphate Project



At **Lucy Creek Project** Nupower has also confirmed phosphate and completed a small drill program showing significant phosphate grades at the **Patanela Prospect (>30% P<sub>2</sub>O<sub>5</sub>)**

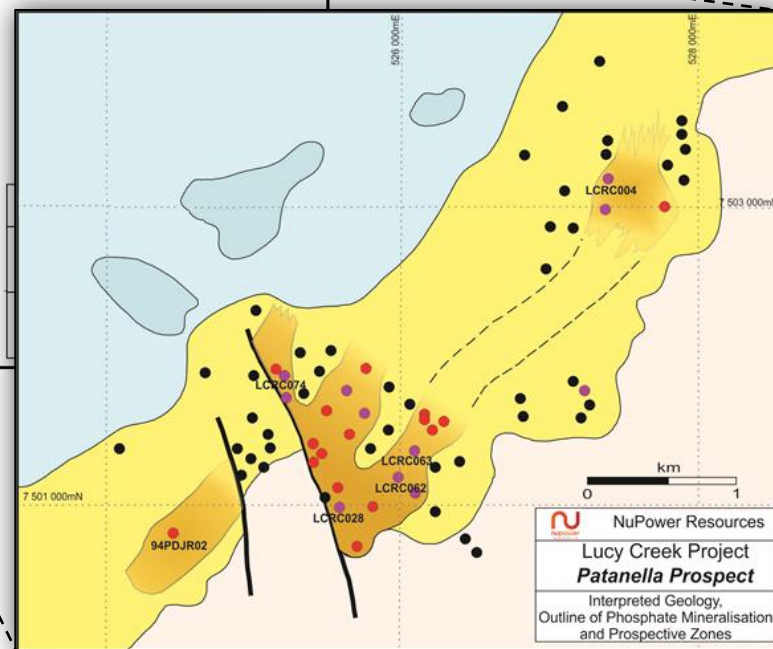
# Lucy Creek - DSO Phosphate Intersected



At **Lucy Creek** in 2009 Nupower drilled significant thickness of shallow, high grade phosphate

- 10m @ 32.0% P<sub>2</sub>O<sub>5</sub> from 20m
- 5m @ 30.6% P<sub>2</sub>O<sub>5</sub> from 5m
- 5m @ 29.6% P<sub>2</sub>O<sub>5</sub> from 5m

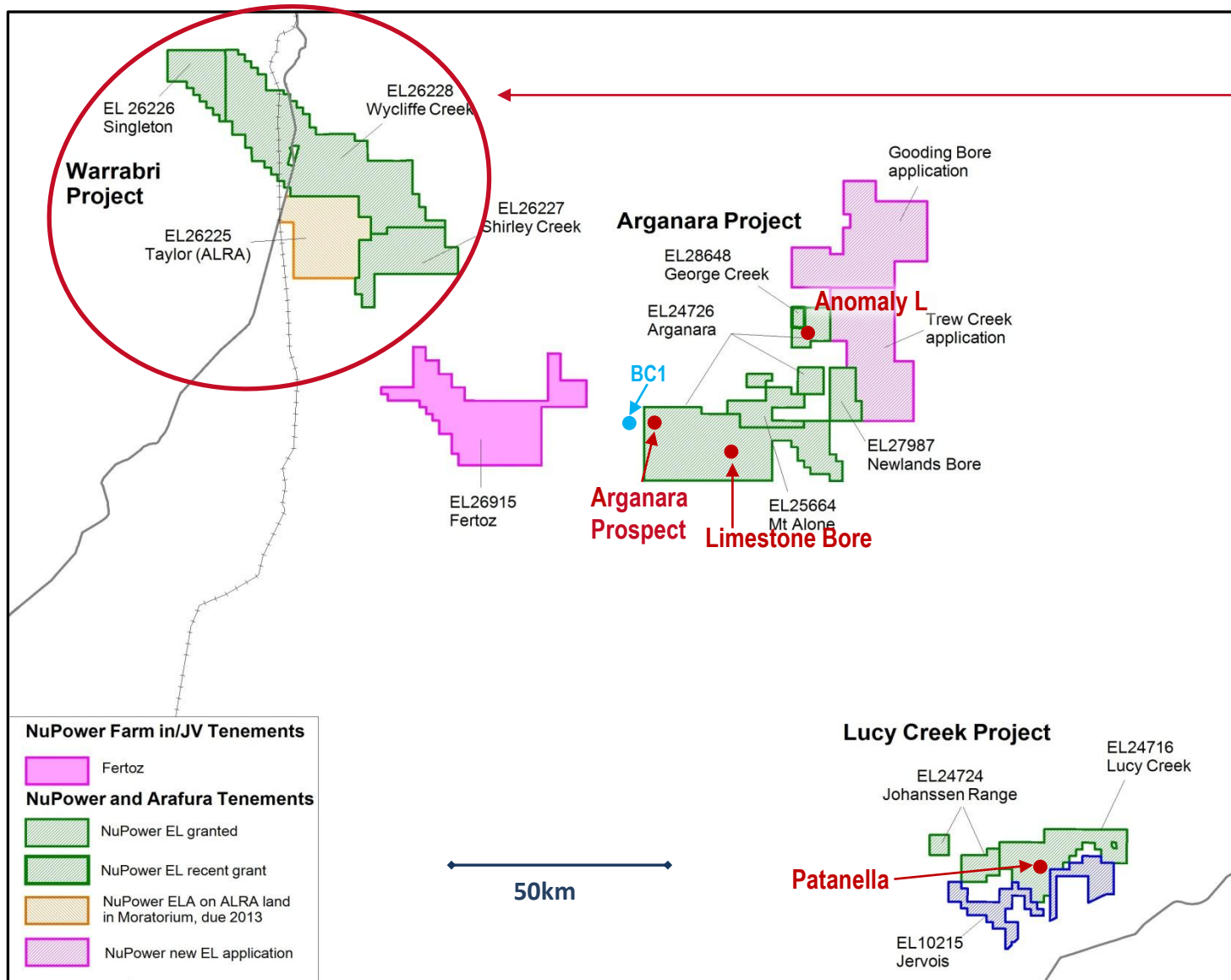
35km only ~ 5km currently tested



Exploration is required to define extent of phosphate at **Patanella** and along 35km horizon (yellow in fig.)

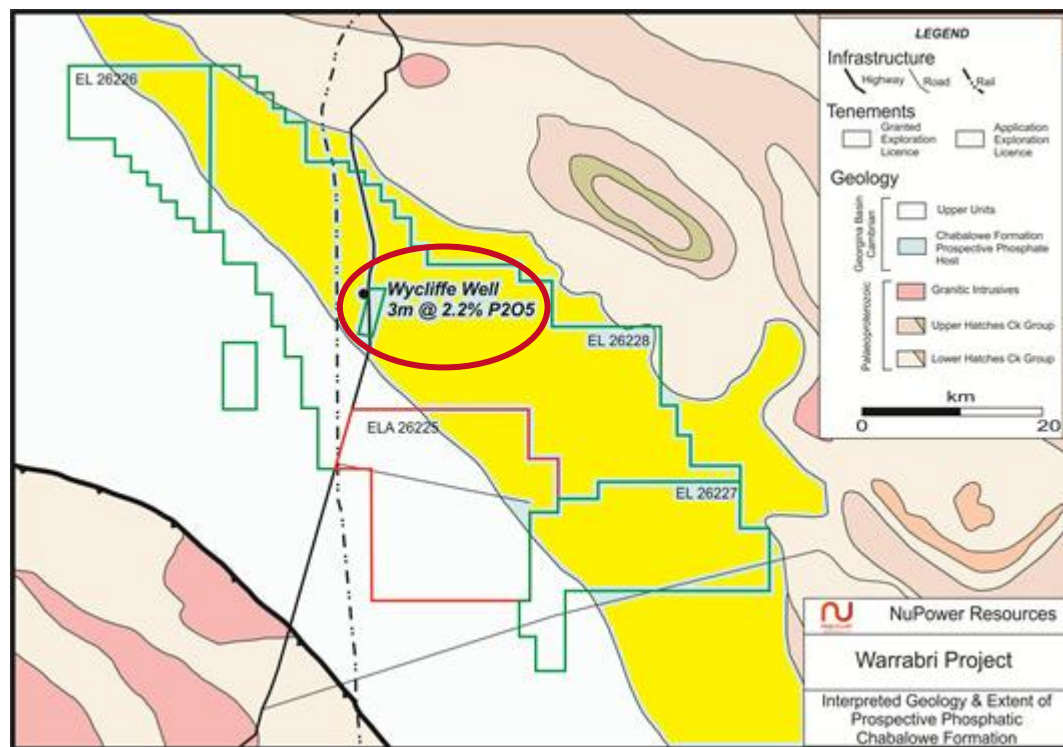
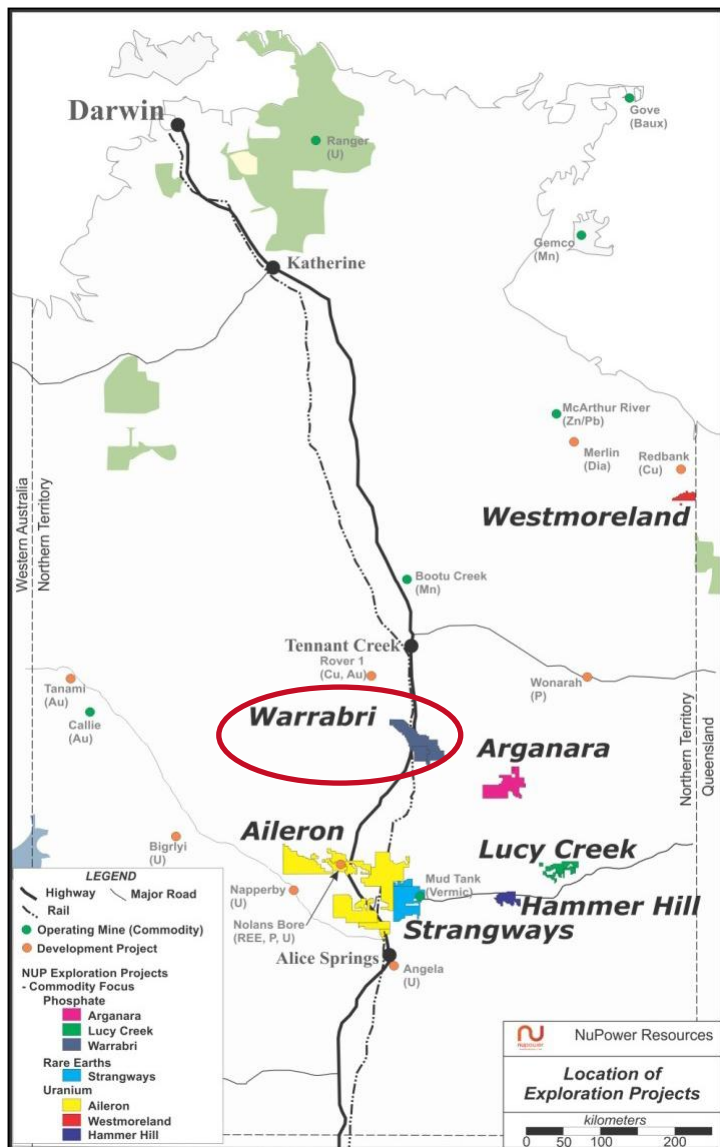
Deleterious elements are low and studies of the mineralogy indicate that fluorapatite is the main phosphate phase present, in common with other deposits in the Georgina. **Lucy Creek has excellent DSO potential**

# Warrabri Phosphate Project



NuPower also has historic phosphate recorded on it **Warrabri Project** which lies on the Stewart Highway and Darwin to Adelaide rail line

# Warrabri Phosphate Project



At **Warrabri** NT Geological Survey reported cuttings from a drill hole at Wycliffe Well that assayed **3m @ 2.2% P<sub>2</sub>O<sub>5</sub>** from 3m.

Prospective Chabalowe Formation may be present over a strike length of up to 80km with a potential width of 12km. Surface exploration is planned for later in 2012.

**NuPower**

**ASX: NUP**

**Market Cap**  
**\$11.2 million**  
 (share price 1.9c)

**Shares on Issue:**  
**511.8 million**

**Unlisted options**  
**5 million**  
 (exp: 6/2013 @ 3.5c)

**Cash at hand:**  
**\$1.5 million**

## Experienced Board and Management Team

|                     |                        |
|---------------------|------------------------|
| Bob Owen            | Chairman               |
| Andrew Johnstone    | Managing Director      |
| Sam Herszberg       | Non-executive Director |
| Ian Kowalick        | Non-executive Director |
| Mick Muir           | Non-executive Director |
| Anthony Schildkraut | Company Sec. CFO       |



**Andrew Johnstone (Managing Director):** a mining and resources executive with 20 years experience including: Exploration Manager, Chief Operating Officer, General Manager and Board positions in ASX listed exploration and mining companies.

**Grant Davey (Chief Geologist):** a chief geologist with over 30 years experience in the exploration and mining industry covering a wide range of commodities and projects from grass-roots exploration to development and mining

**Andrew Crispe (Resource Development Manager):** a geologist with over 20 years experience in the exploration and mining industry, Most recently Andrew had an important role at Atlas Iron: validating, building and developing their impressive resource base.



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