# armour energy

# Noosa Mining and Exploration Conference 2015

Robbert de Weijer, CEO July 2015 ASX:AJQ

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# Armour Energy (AJQ)

#### Who are we?

An ASX listed Energy and Resources company.

#### **Our Mission**

To mature our vast resources into reserves and profitable production.





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The Australian Financial Review front page of 18-Feb-2015, "Not enough gas for LNG projects [for East Coast Australia]"

Summary



Assets secured ahead of time, very positive results

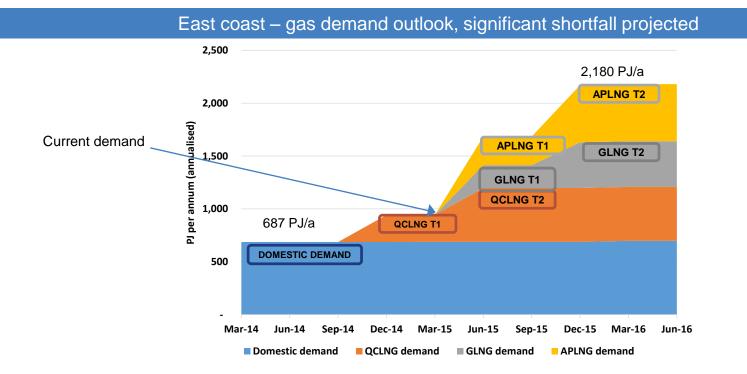
139,000 km2 Prospective, whole basin positions "Data is our currency" (> \$65m spent) Attractive address The market opportunity is building

Strong Asian LNG demand Queensland LNG export – gas market upheaval North-west Queensland needs gas NT to East Coast "NEGI" pipeline A strong team and prudent capital management

Team with track record of major value creation 303 million shares on issue (300m at IPO) \$14m in cash and liquid securities Focus on tenure security and cash flow opportunities

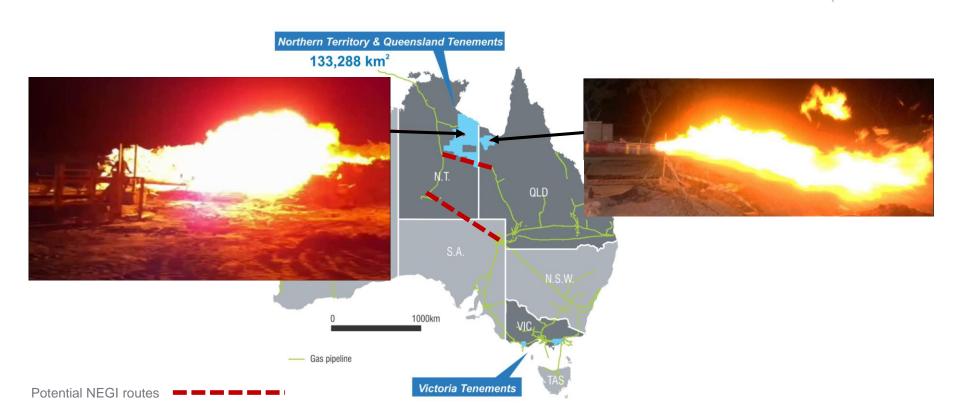
# Australian east coast market is undergoing rapid change





Source: Company Statements, AEMO (domestic demand), Armour estimates

## Large acreage position and very positive results to date



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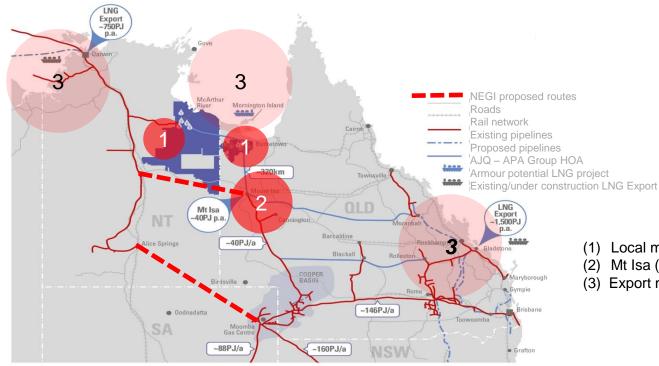
# A track record of exploration success, prudent HSE management and strong external relationships





# Short and long term monetisation routes, HOA with APA Group





- Local markets (5 10 Pj/a)
   Mt Isa (30 60 Pj/a)
- (3) Export markets (60 180 Pj/a)

### 5 Key Projects in Australia



NT Deep oil and gas plays NT Shallow conventional oil and gas plays QLD Isa Super Basin gas play Victoria Onshore Otway and Gippsland Basins

Ripple Resources 100% owned Minerals Company

# NT: Deep Oil and Gas Plays (100% AJQ)



#### Results to date

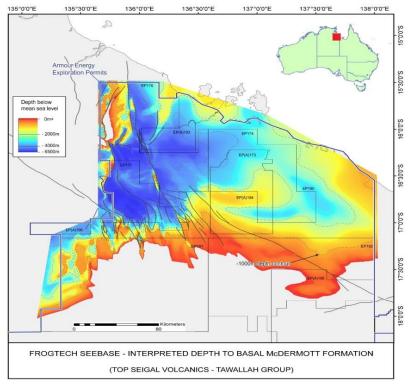
Multiple basins, proven petroleum systems
Recently discovered Tawallah Group in McArthur Basin
Multiple shales present (oil and gas)

#### Opportunity

- $\circ$  Large unexplored areas
- $_{\odot}$  Stacked play opportunities
- $_{\odot}$  Large scale production

#### What's next?

- $\circ$  Regional seismic programme
- $_{\odot}$  Drill and appraise deep stratigraphic well(s)



#### Recently discovered Tawallah Group in McArthur Basin

# NT: Deep Oil and Gas Plays (100% AJQ)

#### **McArthur Basin**

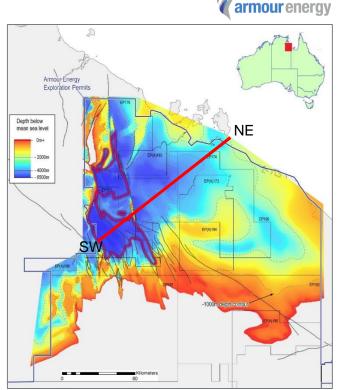
#### McArthur Group

- Barney Creek Formation
- 1.2 MMbbl, 13 TCF Prospective Resource <sup>(1)</sup>

#### Tawallah Group

- Recently discovered
- $_{\odot}$  Underlying and beyond McArthur Group
- $\circ$  Large, thick formations with up to 7% TOC:
- Wollogorang Formation and
- McDermott Formation
- Prospective Resource under assessment.

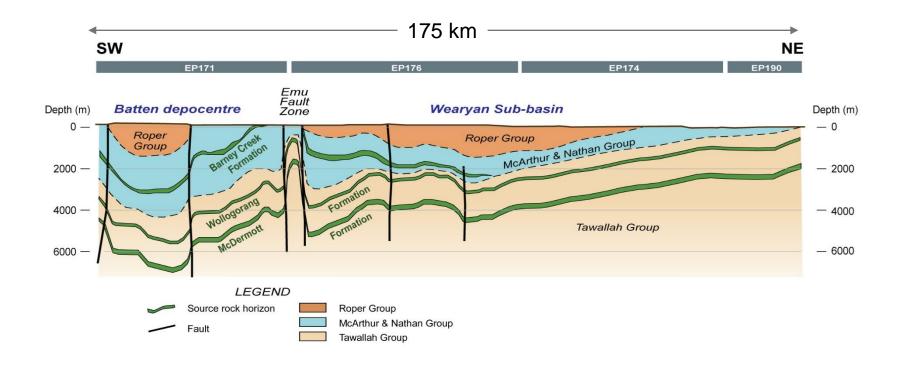
<sup>(1)</sup> Best estimate prospective resource: 13.0TCF in EP171/EP176, MBA 2012



Cautionary statement: The estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons.

#### NT: Deep Oil and Gas Plays Cross section SW - NE

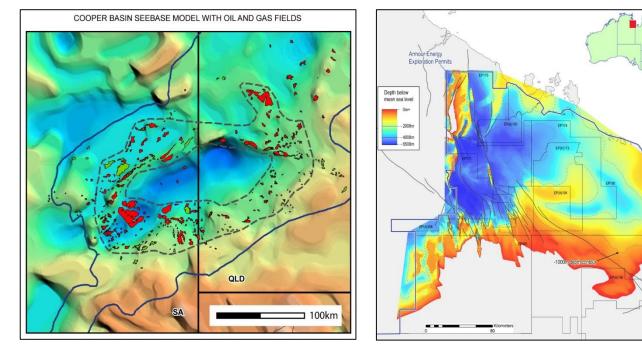




# Comparison of McArthur and Cooper Basins



#### Similar size kitchen areas (75,000 km<sup>2</sup>)



Cooper Basin, QLD, High CO2 (6%-40%), TOC: 2%-4%

McArthur Basin, NT Low CO2 (3%), TOC: 4%-7%

# NT : Shallow Conventional Oil and Gas Plays (100% AJQ)

#### Results to date

o Glyde-1 (2012): 3.3 MMscf/d, 600m depth
o 5 wells drilled, low cost wells
o >80% exploration success
o Targeting Coxco Dolomite

#### Opportunity

- $_{\odot}$  18 drill ready prospects along Batten Trough
- $_{\odot}$  77 prospects and leads
- $\circ$  Batten trough intersects pipeline to McArthur mine  $\circ$  Early monetisation

#### What's next?

Further test Glyde-1

- $\circ$  De-risk drilling targets and appraise play
- $_{\odot}$  Produce gas for domestic market (target 9 PJ p.a.)





# QLD: Isa Super Basin Gas Play (100%)

#### Results to date

- $_{\odot}$  6 wells drilled in ATP1087 to date
- Extensive seismic data
- $\circ$  18.7 TCF Prospective Resource<sup>(1)</sup>
- o Highly prospective shale formations
- Egilabria-2 well an Australian first: flows from a hydraulically stimulated lateral

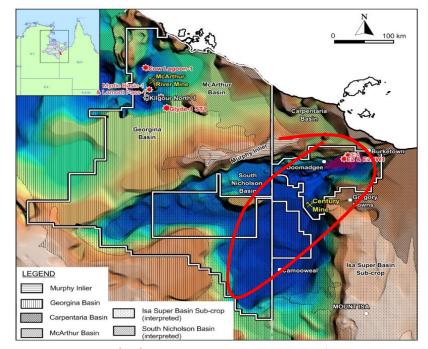
#### Opportunity

- Stacked play opportunities
- $\circ$  Play potentially extends into NT
- o 39 conventional leads
- Large scale production

#### What's next?

- Appraisal to establish commercial flow rates
- $\circ\,$  Seismic plus well in deeper part of basin





<sup>(1)</sup> Best estimate prospective resource: 18.7TCF in ATP1087, MBA 2012 (excludes Riversleigh Shale)

(excludes Riversleigh Shale)

Cautionary statement: The estimated quantities of petroleum that may potentially be recovered by the application of a future development project(s) relate to undiscovered accumulations. These estimates have both an associated risk of discovery and a risk of development. Further exploration appraisal and evaluation is required to determine the existence of a significant quantity of potentially moveable hydrocarbons. 15

# QLD: Isa Super Basin Gas Play



#### Egilabria 2 and 4 wells showed very strong shale play potential

- ✓ Large volumes of gas
- ✓ World-class TOC\*
- Excellent gas composition
- Brittle shales
- ✓ Gas on and off structure
- ✓ Multiple, large shale fairways
  - Lawn 1,500 km2
  - Riversleigh 4,000 km2
- Stacked play
- ✓ Favourable depth intervals
  - 1,500 3,500m
- Pressure regime
- \* TOC: Total Organic Content

1C	2C	3C
33.1	154.4	364.0

 $^{(1)}\,SRK$  Consulting, Nov 13 and Jul 14

Methane	Ethane	CO2	Helium	Other inerts
90%	0.5%	2%	1% <sup>(2)</sup>	6.5%

Typical min. TOC for viable shale play	World class TOC eg. Marcellus Shale (USA)	Armour Energy TOC Lawn/Riversleigh Shale
>2%	>5%	Up to 11%

 $^{(2)}\,\text{Gas}$  isotubes taken while drilling showed  $up\ to\ 6\%$  helium

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# Victoria: Onshore Otway and Gippsland Basins



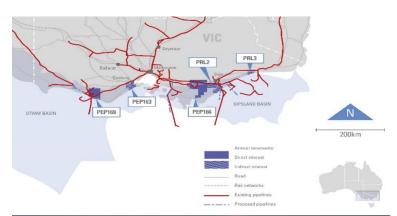
Otway and Gippsland basins highly prospective
AJQ : 51% in PEP169 and 25% in PEP166 (Otway)
Farmin rights to PRL2 (Gippsland)
Substantial shareholder in Lakes Oil

#### Opportunity

- $\circ$  Conventional and unconventional plays
- Stacked play opportunities
- $\circ$  Near existing infrastructure and major gas users

#### What's next?

- $_{\odot}$  Continue work programs upon lifting of moratorium
- $\ensuremath{\circ}$  Pursue commercial monetisation opportunities



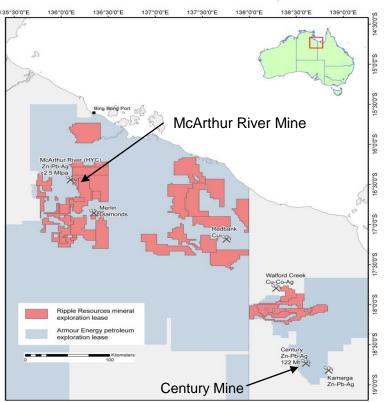




## Ripple Resources – a 100% AJQ owned Minerals Company

#### Synergies for Armour

- $\circ$  Carpentaria Mineral Belt highly prospective for minerals
- Strong minerals expertise and track record within board and management team
- $\circ$  Low cost exploration for petroleum and minerals simultaneously
- $\circ$  Dual discovery potential in some areas
- o Adopting exploration techniques inspired by the petroleum industry
- o Mitigates overlapping tenure risk





# Ripple Resources -Redefining a World Class Base Metal Province

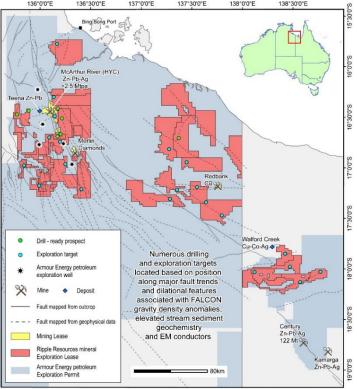
#### **Current Portfolio**

- $_{\odot}$  ~ 20,000km2 of prospective exploration licences
- $_{\odot}$  Potential for zinc, lead, copper and other base metals
- On trend with existing McArthur River (NT) and Century (QLD) mines
- $_{\odot}$  15 high graded areas for shallow drilling campaign
- $\circ$  8 drill ready holes; 20 exploration targets
- Targeting 8 metal prone source rock packages, in addition to diamondbearing kimberlites
- $\circ$  Central to concentrate ship loader at Bing Bong Port



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# 137'90'E 137'300'E 138'90'E 138'300'E

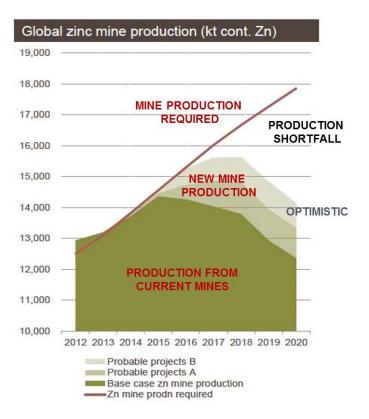


# Ripple Resources -Why Zinc, Lead and Copper ?

#### New mines are needed

- Massive production shortfall is leading to higher prices over the next decade.
- Smelting and refining capacity is able to absorb new supplies but major mines such as Century are closing.
- Ripple well positioned to discover next Super Giant SEDEX deposit





Summary



Assets secured ahead of time, very positive results The market opportunity is building A strong team and prudent capital management

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# Thank you

Armour Energy is focussed on the discovery and development of world class resources in northern Australia.

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