

**ASX CODE: AJQ** 

**SHARES ON ISSUE** 

301,699,096

**LISTED OPTIONS** 

57.7 million

MARKET CAPITALISATION

\$48m (at AUD\$0.16)

**DIRECTORS** 

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#### **HIGHLIGHTS**

- Cash position is sound, and expected to be further increased through a significant R&D tax credit in Q3 2014.
- > Detailed planning of the 2014 exploration program is continuing with field activities expected to commence in September in the Northern Territory.
- Discussions with potential joint venture partners are ongoing, but timing to conclude an agreement remains uncertain.
- Maiden shale gas contingent resources have been certified within ATP1087 of 364 BCF (3C); 154 BCF (2C); 33 BCF (1C).
- An MOU has been signed with MMG Century for future gas supply to MMG's Queensland operations, and will evaluate volume of 7-9PJs per annum.
- Ongoing analysis of ATP1087 results showing world class Total Organic Carbon, high methane and very low CO2 contents is very positive for Lawn and Riversleigh Shale potential.
- Tenure reform by Queensland Government has enhanced the value of Armour's tenements in Queensland.
- Drilling of conventional well Otway-1 has been postponed until at least 2015 due to Victorian onshore drilling moratorium. The Company will continue to focus on its tenements in Northern Australia.
- Armour will continue to monitor surface pressure and sample fluids and gas from Egilabria 2 on a regular basis, before decisions on further capital expenditure on the well are made in the coming weeks.





### Cash position is sound, and expected to be further increased through an R&D tax credit in Q3 2014.

The Company's cash balance was approximately \$6.5m at 30 June 2014. Cash reserves are expected to be further enhanced by the receipt of a substantial Research and Development tax credit in Q3 2014. Accordingly, the Company has no plans for an equity raising until 2015, if at all.

# Detailed planning of the 2014 exploration program is continuing with field activities expected to commence in September.

Ongoing analysis of exploration work undertaken to date has been very encouraging as shown by Total Organic Content (TOC) and gas composition results announced during the quarter, as well as maiden contingent resources in relation to the Egilabria 2 well drilled in ATP1087 during 2013. TOC is a measure of the capacity of the rock to generate hydrocarbons.

These analyses, together with the considerable feedback gained through ongoing partnering discussions on appropriate future programs, are being used to plan a targeted and cost-effective work program for 2014.

The program is expected to consist primarily of further seismic survey work to enhance the Company's understanding of the large, unconventional depo-centres believed to exist within Armour Energy's tenements.

Further announcements on the 2014 work program will be made in the current quarter, and activities in the field are likely to commence in September 2014.

# Discussions with potential joint venture partners are ongoing, but timing to conclude an agreement remains uncertain.

As previously reported, Armour has received significant interest from major players in partnering with Armour in the region in which we operate. The Company believes that interest provides a strong technical external endorsement of Armour's acreage and has been useful in directing our future exploration program.

The nature and timing of any farm-in transaction depends on a number of factors including achieving acceptable terms and conditions, and the availability of exploration capital and risk appetite of potential joint venture partners.

At this stage Armour is progressing a dialogue with several potential partners.



Maiden shale gas contingent resources have been certified within ATP1087 of 364 BCF (3C); 154 BCF (2C); 33 BCF (1C).

As reported in August 2013, the Egilabria 2 DW1 (lateral) well was cased and hydraulically stimulated in the Lawn Hill Formation in ATP1087. Armour Energy has a 100% working interest in ATP1087. The locations of ATP1087 and the Egilabria 2 DW1 well are shown in Figure 1.

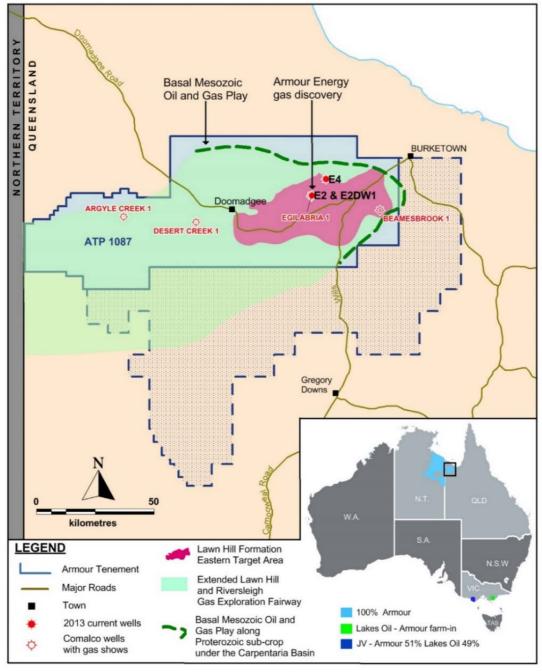


Figure 1: Map of ATP1087



During the flowback of stimulation fluids at Egilabria 2 DW1, the Lawn Hill Formation produced gas at surface comprising a very high methane content, together with ethane, helium, other inert gases and very little  $CO_2$  and other inert gases. Gas production through an on-surface separator commenced after recovery of approximately 45% of the stimulation fluids.

Since the end of the quarter, SRK Consulting has provided an independent assessment of the Egilabria 2 hydraulically stimulated DW1, Lawn Hill Formation, Contingent Gas Resource Estimation, ATP1087 as of July 2014. The results of this assessment are set out below in **Table 1**. The 3C contingent resource of 350 PJ covers an area of just 64 km² around well Egilabria-2. The entire Lawn shale "fairway" is estimated to cover 1,500 km² (see pink area in **Figure 1** above). Consequently there are good opportunities to further increase the contingent resources for the Lawn shale formation. Furthermore the prospective resource assessment of the Riversleigh shale formation, which is deeper than the Lawn and also expected to have a significantly larger fairway, is still to be concluded.

	Net Gas Resources (less fuel and flare 5%)		
Category	BCF	PJ <sup>(1)</sup>	
Total Proved (1C)	33.1	31.8	
Total Proved + Probable (2C)	154.4	148.5	
Total Proved + Probable + Possible (3C)	364.0	350.1	

<sup>(1)</sup> Conversion 0.962 PJ/BCF

Table 1: Egilabria-2 DW1 Lawn Hill Formation, Contingent Gas Resource Estimation, ATP1087

An MOU has been signed with MMG Century for future gas supply to MMG's Queensland operations, and will evaluate volume of 7-9PJs per annum.

Since the end of the quarter, Armour signed a non-binding Memorandum of Understanding ("MOU") with MMG Century Pty Ltd ("MMG") to work together towards gas supply arrangements from Armour's exploration tenements in North West Queensland to MMG's Queensland operations.

MMG's Century Lawn Hill mine site is located on Armour Energy's 100% owned ATP1107 which covers 7,943km<sup>2</sup> and is pending grant by the Queensland Government. ATP1107 lies adjacent and south of Armour's 100% owned ATP1087 which covers 7,138 km<sup>2</sup> (**Figure 2**).

The initial stages of the MOU will involve a scoping study by the parties to evaluate project feasibility and economics of gas supply for potentially expanded on site power generation at MMG's Lawn Hill site, or development of new power generation facilities either on the Century mine lease or at greenfield sites between the mine and Mount Isa. Scenarios to be evaluated will include for MMG's current and possible future needs and potential third party customers' requirements.



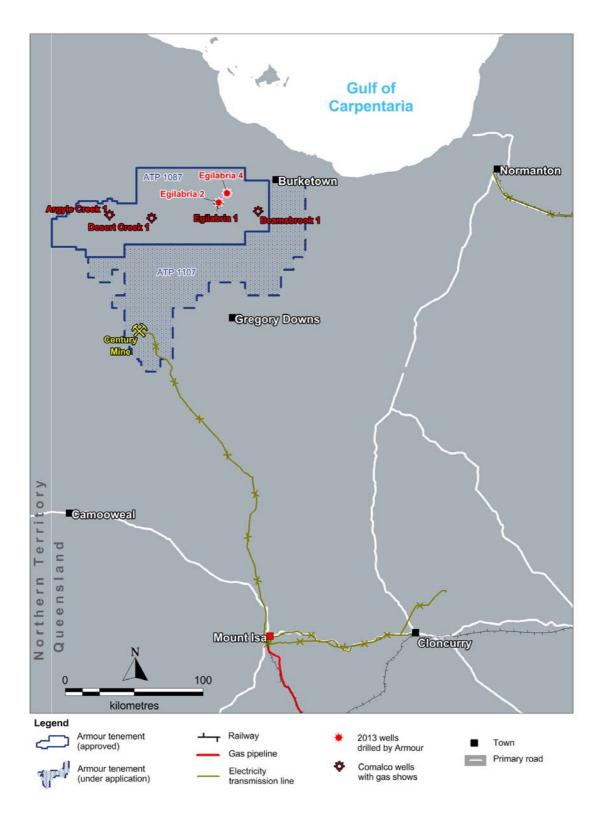


Figure 2: Location of MMG Century Mine and Armour's Queensland ATPs



The study will evaluate gas supply volumes of up to 7-9 Petajoules per annum plus an overlay for potential third party requirements. Pricing will be determined so as to achieve a minimum return on invested capital for both Armour and MMG while providing "most favourable" price status to MMG compared with other gas sales contracts signed by Armour (other than contracts with upstream equity participants). Should Armour farm-out interests in its tenement to third parties, gas supply to MMG would relate to Armour's equity gas only, unless a future upstream partner elects to participate pro rata in the sale of gas to MMG.

The Century ore body, one of the most exciting base metals discoveries in Australia, has produced over 6 million tonnes of zinc in concentrate to date. While last production from the Century open pit is expected during 2015, MMG is continuing to investigate a number of options to further utilise its extensive infrastructure in the Gulf. An important driver of the feasibility of future projects for MMG is cost and availability of energy.

Ongoing analysis of ATP1087 results showing world class Total Organic Carbon, high methane and very low CO<sub>2</sub> contents is very positive for Lawn and Riversleigh Shale potential.

During the quarter, the Company reported a technical update on the Company's Queensland tenement ATP1087.

The conclusions of detailed source rock analysis (SRA) has been consistent with Armour's view that the Lawn and Riversleigh Formations within the Isa Superbasin of Northern Australia have amongst the highest Total Organic Carbon (TOC) content of any shale play in Australia. Total Organic Carbon (TOC) is one of the key measures for a shale formation to be economically viable as it provides a measure for the capacity of the rock to generate hydrocarbons. A typical minimum TOC required for a shale is 2%. World class TOCs, such as seen in the commercial Marcellus Shale in the USA, are in excess of 5%. Both the Lawn and Riversleigh shale formations show sweet spots well in excess of these numbers with TOCs recorded up to 11%. Armour is very encouraged by these results.

Gas samples taken from the separator during the flow back of Egiliabria-2 lateral were fully analysed and show a very high methane content (90%), ethane (0.5%) and very little  $CO_2$  (2%), helium (1%) and other inert gases (6.5%). This low  $CO_2$  content is considered very positive as it alleviates any requirements for major gas processing facilities during the development phase, including  $CO_2$  sequestration facilities. Additionally from a different sampling method, several isotubes of gas taken while drilling contained up to 6% helium. [Gas content percentages are in mole %]

During air drilling operations at Egilabria 2 and Egilabria 4, several pressure sealed canisters were filled with Lawn and Riversleigh cuttings as an exercise to understand if the shales would desorb gas. After several days, the canisters were reported to have a range of pressure values as high as 100psi. The canistered gas samples were taken from the high TOC intervals in the Lawn and Riversleigh shales.



Gas samples were drawn off the Egilabria 4 canisters for compositional analysis. Average nitrogen and oxygen corrected measurements (a lab technique that attempts to remove atmospheric contamination from the sample values) contained 83% methane which is similar to the 90% methane gas sample recovered from the separator that was purged of atmospheric contamination prior to post-stimulation gas sampling.

During sidewall coring operations at Egilabria 4, three sidewall cores were canistered and gas samples from those underwent isotopic analysis. The results of which strongly suggests the gas is thermogenic in origin. This provides evidence that the gas is derived through burial and heating of the original organic material that is now the rich TOC found in these shales.

# Tenure reform by Queensland Government has enhanced the value of Armour's tenements in Queensland.

The Company advised of the effect of recently announced changes to the Petroleum and Gas (Production and Safety) Act 2004, as a result of the passing of the Land and Other Legislation Amendment Bill 2014 by the Queensland Government. These changes constitute a major reform and improve, by extension of Armour's tenures, the current strong foundation for Armour to further explore, appraise and develop its highly prospective tenements in Queensland - in a manner that benefits both the State of Queensland and the Company. Armour believes the changes demonstrate a strong commitment by the Queensland Government to ongoing growth in the State's petroleum exploration sector.

The changes are expected to significantly enhance Armour's plans to attract capital to its Queensland gas and oil exploration projects.

The two year extension to Armour's ATP1087 and ATP(a)1107 (see Figure 1) will allow the Company to optimise technical aspects of its exploration programme and allow more time for development planning, community consultation and environmental studies.

Under the amendments, mandatory relinquishment requirements applying to the tenements will be deferred by two years. In addition, Armour will be able to enjoy more flexible relinquishment arrangements and or work programme requirements across the tenures it holds in Queensland.

Work programme amendments will be assessed on a case by case basis at the Minister's discretion. This will allow Armour to seek approval for an amended work programme proposal, on the basis that it meets the State's objective with regards to optimisation of the State's petroleum resources.



Following the amendments, in order to apply for a Petroleum Production Licence, Armour will now simply need to submit, with the application, a statement from a suitably qualified person confirming the presence of commercial quantities of oil and gas in combination with a development plan. These arrangements replace the previous requirement to demonstrate that at least 20% of the discovered resources were a proved or probable reserve. These amendments will allow production and development more rapidly and with less capital investment than under the previous regime.

Drilling of conventional well Otway-1 has been postponed until at least 2015 due to Victorian onshore gas moratorium. The Company will continue to focus on its tenements in Northern Australia.

Armour previously report that it was waiting on formal governmental approval to drill conventional well Otway-1 in PEP169, Victoria.

The Otway-1 well is considered highly prospective and is in close proximity to the Iona gas processing plant and nearby producing fields. If successful, Armour believes Otway-1 could provide an early cash flow option for the Company.

In May 2014, the Victorian Coalition Government announced its decision to put a hold on work plan approvals for onshore gas exploration until more information is available including evidence from the water study, community views, and industry impacts.

As a result of this decision, approval to drill Otway-1 is not expected during 2014 and plans to drill have been postponed until at least 2015. In the meantime, Armour Energy will continue to focus on its exploration activities in Northern Australia.

Armour will continue to monitor surface pressure and sample fluids and gas from Egilabria 2 on a regular basis, before decisions on further capital expenditure on the well are made in the coming weeks.

As reported in August and September 2013, the Egilabria 2 DW1 (lateral) well was cased and hydraulically stimulated in the Lawn Hill Formation in ATP1087. The well was testing the Lawn Shale, as well as fractured gas intervals immediately overlying the Lawn Shale. A total of eight stages were originally targeted and twelve zones were hydraulically stimulated in the shale formation. The majority of proppant was placed in the middle four stages covering the top 66m of the organic rich 137m thick Lawn Shale.

The aim of the production test at Egilabria 2 was to prove the concept that horizontal well technology, together with hydraulic stimulation, can flow hydrocarbons to surface from the Lawn Shale formation. This aim was achieved and represents a landmark for the Australian oil and gas industry as the well is the first successful application of multi-stage, hydraulically stimulated, lateral well technology developed in North America to an Australian shale gas formation.



Following the onset of the wet season in November last year the well was closed in with about 45% of the stimulation fluids recovered. Since that time only monitoring of pressure and sampling of fluids and gas has taken place.

During July, Armour has had personnel onsite to monitor pressure build-up, and to take samples of fluids and gas. This information is still being analysed and the Company is keeping its options open with regard to further work. Further work could be restricted to well monitoring only or more expenditure to clean-up and test the well more quickly. Any decision to incur more significant capital expenditure on the well at this time will be based on the incremental benefits anticipated from doing so versus the associated costs.

In addition to booking maiden contingent resources, which were directly related to results to date from Egilabria 2, the Company has also been able to establish:

- 1. That the Lawn shale is brittle and which intervals within the Lawn shale are best suited to fracture stimulations.
- 2. That the Lawn shale has a world-class Total Organic Carbon (TOC) content. TOC is the capacity of the source rock to generate hydrocarbons.
- 3. Gas production through an on-surface separator commenced after recovery of approximately 45% of the stimulation fluids.
- 4. That the Lawn Hill Formation produced gas at surface comprising a very high methane content, together with ethane, helium, other inert gases and very little CO2 and other inert gases.
- 5. That hydrocarbons can be moved from the shale formation to surface, a key factor in early shale exploration.
- 6. That, at the location of Egilabria-2, the shale formation is somewhat over-pressured and that significantly higher pressures are expected further away from the fault line which exists nearby to Egilabria-2.
- 7. That the Lawn shale forms part of a homogeneous shale "fairway" (about 1,500km<sup>2</sup>).
- 8. How to best drill and complete future wells which will potentially yield very significant cost reductions.

Having established the above, the next steps are now a matter of further exploring and appraising the area by identifying the 'sweet spots' in the Lawn shale fairway and improving drilling, completion and stimulation techniques such that gas can be produced at commercial rates.

Egilabria-2 was the very first well to produce hydrocarbons in the Lawn shale formation. Whilst the results have been very encouraging it represents only the first step and a number of significant improvement opportunities have been identified that will help us achieve our goal to produce hydrocarbons at commercial rates.



#### **HEALTH, SAFETY AND ENVIRONMENT**

#### **Queensland & Northern Territory**

No accidents or incidents to report.

On behalf of the Board Karl Schlobohm Company Secretary

#### **ABOUT AMOUR ENERGY**

Armour is focused on the discovery and development of world class gas and associated liquids resources in an extensive hydrocarbon province in northern Australia which was first discovered in the early 1990s. This region has only recently had its shale potential identified by Armour Today's business environment with strong domestic and global demand for gas, gas prices trending towards LNG netback combined with proven shale extraction technologies and world class personnel, provides the Company with an extraordinary opportunity to define and ultimately develop a major new gas province.

Armour's permit areas in northern Australia, which are all 100% owned, are characterised by low population densities, cooperative stakeholders and a natural environment suited to the exploration and development of a major future hydrocarbon province. Armour is focusing on the exploration of the McArthur, South Nicholson and Georgina Basins in the Northern Territory and Queensland, and in the onshore Gippsland Basin in Victoria in joint venture with Lakes Oil, for gas and associated petroleum liquids.

See www.armourenergy.com.au for more information.

The resources information in this public report is based on, and fairly represents, data and supporting documentation prepared by, or under the supervision, of Dr Bruce McConachie. Dr McConachie is a Principal Consultant of SRK Consulting (Australasia) Pty Ltd and has a PhD (Geology) from QUT and is a member of AusIMM, AAPG, PESA and SPE. The resources information in this public report was issued with the prior written consent of Dr McConachie in the form and context in which it appears. Resource estimations were prepared by SRK Consulting in accordance with the definitions and guidelines of the 2007 Petroleum Resources Management System (SPE, 2007). Additionally, the PMRS Guidelines 2011 were used to distinguish the Contingent Resources from quantities that should be classified as Unrecoverable. Further details are contained within the Company's announcement of 16 July 2014.



### **INTERESTS IN TENEMENTS FOR THIS QUARTER**

TYPE	LOCATION	NAME	OWNER	INTEREST	
Acquired During Quarter					
EPM 19795 EPM 19797 EPM 25410 EPM 25411 EPM 25412 EPM 25413 EPM 25414 EPM 25415 EL 30076	Queensland Queensland Queensland Queensland Queensland Queensland Queensland Queensland Queensland Northern Territory	Egilabria North Egilabria South Bowthorn - extended Buffalo Creek Brookdale Punjaub Bluebush Northwest Buffalo Creek North	Ripple Resources P/L	100% 100% 100% 100% 100% 100% 100%	
EL 30077 EL 30078 EL 30079 EL 30080 Held at Begin	Northern Territory Northern Territory Northern Territory Northern Territory		Ripple Resources P/L Ripple Resources P/L Ripple Resources P/L Ripple Resources P/L	100% 100% 100% 100%	
EPP 171 EPP 174 EPP 176 EPP 190 EPP 191 EPP 192 EPM 19833 EPM 19835 EPM 19836 EL 29837 EL 29951 EL 29952 EL 29953 EL 29954 EL 29955	Northern Territory Northern Territory Northern Territory Northern Territory Northern Territory Northern Territory Queensland Queensland Queensland Northern Territory	Abner Range Robinson River 2 Ryans Bend Calvert Wallhollow Wollogorang Bowthorn Shadforth East Shadforth Catfish Hole	Armour Energy Ripple Resources	100% 100% 100% 100% 100% 100% 100% 100%	
ATP 1087 PEP 169 PEP 166 PRL2	Queensland Victoria Victoria Victoria	Moreys Holdgate	Armour Energy Lakes Oil Lakes Oil Lakes Oil	100% 51% 25% 15%	





**Exploration Permit - Minerals EPM** 

EL **Exploration Licence** 

EPP **Exploration Permit - Petroleum** 

**ATP Authority to Prospect** 

PEP **Petroleum Exploration Permit** PRL **Petroleum Retention Lease**