

# Norwest Energy NL

Investor Presentation  
November 2011



## Exploration for unconventional shale gas in the Northern Perth Basin – the Game Changer

### CAPITAL STRUCTURE

ASX Code	NWE
Share Price	\$0.036
Option Price	\$0.008
Shares on Issue	732.6M
Listed Options	104.5M
Market Cap.	\$26.4M

07/11/2011

### SHAREHOLDING

Top 20	139m / 19%
Directors	38.4M / 5.3%

31/10/2011

### CONTACT

Mr. Peter Munachen  
CEO & Director  
or  
Mr. Ernie Myers  
Company Secretary  
Norwest Energy NL  
P: +61 8 9227 3240  
F: +61 8 9227 3211  
E: [info@norwestenergy.com.au](mailto:info@norwestenergy.com.au)  
288 Stirling Street  
PERTH WA 6000

**The potential to establish a shale gas industry is emerging just 300km's north of Perth, in the northern Perth Basin, where Norwest has significant permit interests.**

The shale gas phenomenon has been a game changer in the US where shale gas now provides 23% of US energy requirements and forecast to grow to 46% by 2035. In addition to transforming the US energy industry it has attracted huge investments, such as BHP's \$5billion investment in US giant shale gas player Chesapeake in February this year. The shale gas potential of the northern Perth Basin was recently acknowledged by the US Energy Information Agency (EIA), estimating 59TCF from two shale sequences alone, in the Basin. Norwest has net potential shale gas permit interest of circa 1500km<sup>2</sup>.

In June 2011, Norwest drilled Arrowsmith-2, the first dedicated shale gas well in Western Australia on prime Basin permit EP413. Arrowsmith-2 was drilled to 3300m and met all objectives, including confirmation of thicknesses for each of the sequences: Kockatea Shale (450m), Carynginia Formation (250m), and the Irwin River Coal Measures (330m). The High Cliff Sandstone (tight gas) sequence was also intersected (22m).

Significant results from the drilling and subsequent evaluation program, including interpretation of logs and cores confirmed the presence of gas in all formations. It is important to note that Arrowsmith-1, located just 400m away and drilled in the sixties flowed gas from the Carynginia Formation at 4 MMscf/day. The ultimate test will be to establish the flow rate at Arrowsmith-2 for each formation, following the hydraulic fracture stimulation program planned for end of Q4/2011. At the completion of flow testing, Norwest will be in a position to high grade target intervals for development, scale up flow test results from the vertical well to predict production for horizontal wells producing from these formations, to design a program for the next phase of the project and to estimate contingent resource volumes.

The commercial drivers behind the Arrowsmith project are

- close proximity to both the Dampier to Bunbury and Parmelia gas pipelines that both service the Western Australian domestic gas market,
- prevailing price of \$8 - \$12/GJ
- Predicted shortfall in supply in coming years, with the Western Australian daily consumption currently 1000 TJ/day and predicted to grow to 1600 TJ/day by 2016.

Norwest holds a 27.945% interest in EP413 and is operator of the JV with AWE Limited (44.252%) and Indian government company Bharat PetroResources Limited (27.803%). Bharat is currently funding the Norwest share of Arrowsmith costs including an agreed 'cap' of \$5.2m for the proposed hydraulic fracture stimulation program. Norwest expects that it will be required to contribute \$500,000 to program costs, being its 27.945% share of anticipated costs in excess of the agreed "cap".



## Norwest's Other Assets

### Australia – Northern Perth Basin

**TP/15:** Offshore northern Perth Basin. Norwest has 50% interest, and is Operator, with JV partner Bharat PetroResources holding the other 50%. Adjacent to the successful offshore Cliff Head oil producer. The key prospect is Xanadu with un-risked oil in place of 90MMbbls.

**L14:** Onshore northern Perth Basin. Jingemia oil producer. Norwest has 6.278% interest, with Origin the Operator. This asset provides approximately \$650,000 p.a. to Norwest in cash flow. This field is in decline however, and an enhanced oil recovery (EOR) program is currently under consideration to extend the life of the field by ~250,000 bbl and a further two years.

**EP368 / 426:** Onshore northern Perth Basin. Norwest has a 20% interest, with JV partners Empire (Operator) and Origin. Multiple targets including shale gas potential.

**SPA-0013:** Onshore northern Perth Basin. Norwest 100%. Shale gas potential. Recently conducted an airborne gravity gradiometry survey, with data currently being processed for interpretation. If results are promising, Norwest intends applying to convert the Special Prospecting Authority (SPA) to an exploration licence over this area.

### Timor Sea

**AC/P22:** Puffin Project. Norwest has a 1.25% over-riding royalty (ORRI). JV between Chinese national oil company Sinopec and ASX suspended company AED (administrator appointed). Production is currently suspended. Puffin had previously delivered circa \$2M in royalties to Norwest. In 2009 AED reported estimated P50 reserves of 20.93 MMbbls, and leads and prospects with cumulative volumes of un-risked oil in place in excess of 700MMbbl. The ORRI entitles Norwest to a royalty on all production from the permit without any deduction of costs. Norwest considers the ORRI to have a long term future benefit, given the 'blue sky' of the high potential leads and prospects.

### United Kingdom – Southern England, Wessex Basin

**PEDL238/PEDL239:** Onshore southern England. Norwest has 50% of PEDL238 (mainland) and 75% of PEDL239 (Isle of Wight). Adjacent to the Wytch Farm project with original OIL of circa 500Kbbl. Currently producing 15,000 bbl/d. BP recently sold its 67% interest to Perenco and Premier Oil for \$610M. Norwest has an application in place to acquire new offshore permits linking PEDL238 and PEDL239. Norwest has identified seven leads with potential for un-risked recoverable oil ranging from 7.8MMbbls to 53.9MMbbls in its current permits.



# Norwest Activity Schedule & Timeline through to June 2012

## Activity Timeline

Project	Q3 2011	Q4 2011	Q1 2012	Q2 2012	Outcomes
EP413 (Northern Perth Basin, AUS)	intensive post-drilling evaluation program on A-2 ✓	conduct frac and well test on A-2 well, followed by review and development of five year work program		commence implementation of 5 yr plan	Estimate contingent resource (huge shale gas potential)
TP/15 (Northern Perth Basin, AUS)	intensive post-drilling evaluation program on RHS-1		remapping of prospects & planning for 2D seismic		Prospect & Lead evaluation
EP368/426 (Northern Perth Basin, AUS)	planning for seismic program over North Erregulla prospect ✓		acquire and interpret 3D seismic over North Erregulla	remapping an further evaluation program	North Erregulla Prospect evaluation
SPA-0013 (Northern Perth Basin, AUS)	acquired gravity survey over SPA area ✓	data compilation and evaluation underway	apply for exploration permit submit work program	commence further development and evaluation of SPA area	Evaluation of SPA area (shale gas potential)
PEDL238 / 239 (Wessex Basin, UK)	prepare to run 2D seismic program over Razorback prospect, Isle of Wight		conduct 2D seismic program with subsequent compilation and evaluation of results		Prospect & Lead evaluation
	Q3 2011	Q4 2011	Q1 2012	Q2 2012	



## Directors and Operations Team Profiles

### Directors

**Mike Fry** - Non-executive Chairman, BCom, FFin (53). A former stock broker with extensive experience in capital markets and corporate treasury, specialising in risk management. He is also chairman of ASX quoted Red Fork Energy Limited with US oil and shale gas activities.

**Dave Kennedy** - Non-executive director . MA (Geology), SEG, PESA, AIG (75). A senior and very experienced geologist in both hydrocarbon's and hard rock. He is Chairman of ASX Pancontinental Oil and Gas that has an offshore African focus.

**Peter Munachen** - Chief Executive Officer and Director (65). FCA, FAICD. A chartered accountant by profession with over 30 years experience in the administration and management of junior resource listed companies in both petroleum and hard rock. He also specialises in project financing, evaluation and acquisition, and is a non executive director of East Africa Resources Limited and TSX listed Currie Rose Resources Limited.

**Ernest Myers** - Company Secretary (63). CPA with over 30 years experience in the resource industry, holding senior management and executive roles within a number of ASX quoted companies. He has both corporate and operational experience in a variety of fields within the resources sector including project development, feasibility studies, debt and equity financing.

### Operations team

**Andrew Sutherland** BSc(Hons) Geophysics, MS Business Chief technical advisor , 30 years E&P experience ex – Elf Aquitaine, BHP Petroleum, Delhi, Halliburton and Schlumberger.

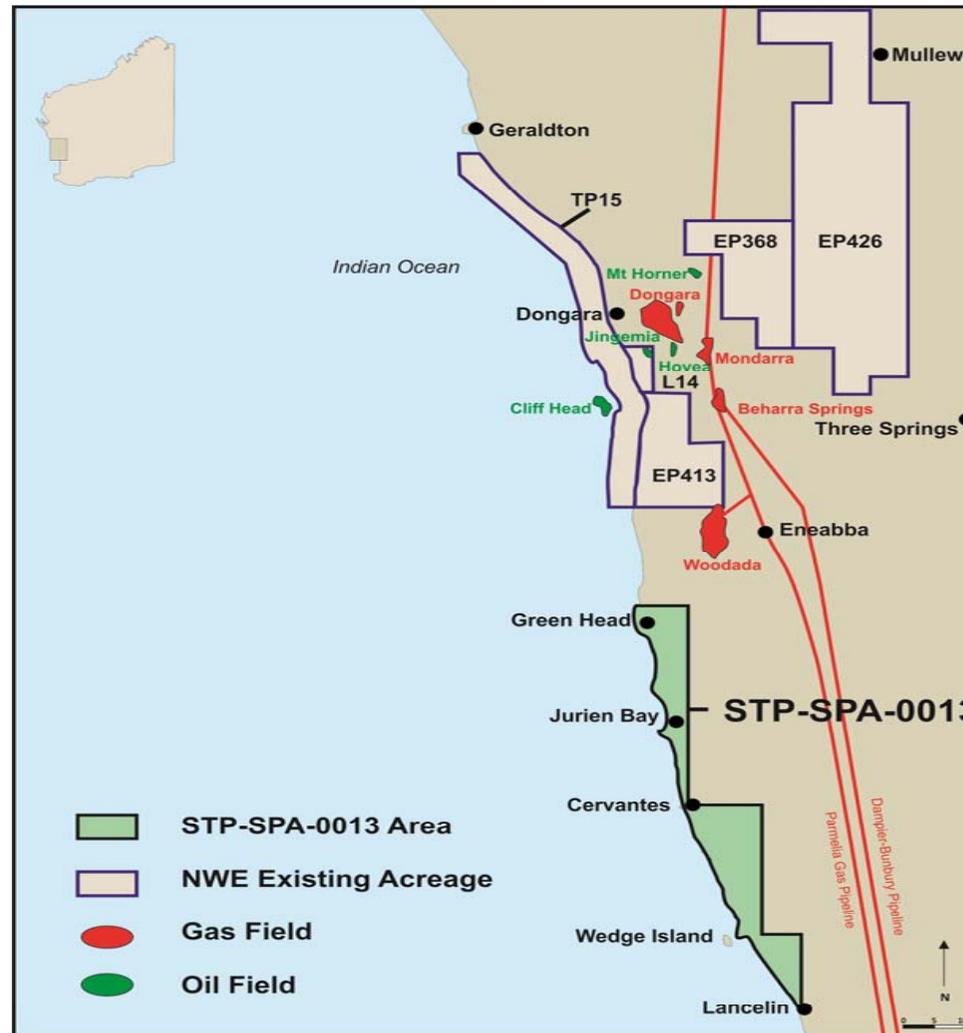
**Shelley Robertson** BSc Eng, PostGradDip IT, MEngSc Petroleum Engineering (ongoing), BM. Asset manager 20+ years O&G / Mining experience ex Woodside, BHP Petroleum, Rio Tinto. Member SPE, PESA.

**Aztech Well Construction** headed by Darrell Girgenti. Advised and managed 2011 successful drilling program and is advising and assisting with ongoing field activities and logistics for upcoming hydraulic fracture stimulation program.

**Moyes and Co**, world class US Dallas based specialist shale gas advisors who have worked alongside of Norwest team for the advancement of the northern Perth Basin shale gas play.

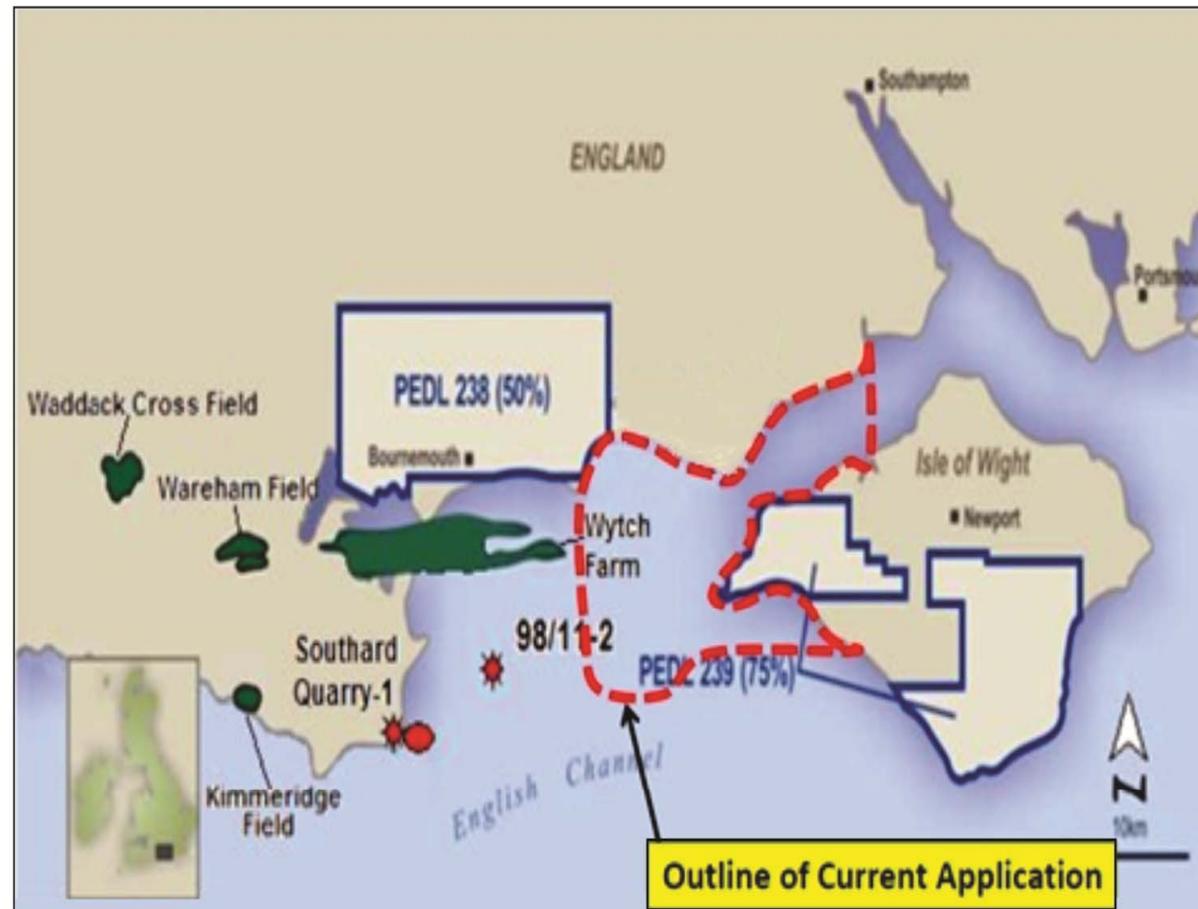
## Highlights

- Arrowsmith-2 shale gas well poised for Q4/2011 hydraulic fracture stimulation and testing.
- Airborne gravity gradiometric (GGI) survey conducted over SPA-0013 in Q3/2011 with focus again on shale gas potential.
- Origin Energy farms into EP368/426 for 3D seismic commitment to earn 40%. Norwest sees shale gas potential in permits as well as conventional targets, and maintains 20% interest.



## Highlights

- Planning underway for onshore 2D seismic program over key UK Wessex Basin prospects, scheduled for Q1/2012.
- Together with Wessex Exploration Limited, Norwest has applied for an offshore licence in the 26<sup>th</sup> bid round. Results pending. Norwest will hold a 65% interest in the permit if the application is successful.



## Further Information

Should the reader require further information, we encourage them to go to the Norwest company website

[www.norwestenergy.com.au](http://www.norwestenergy.com.au) for more detailed information on projects and activities.

### Competent Person

The summary report on the oil and gas projects is based on information compiled by Mr Andrew Sutherland of Dataco Australasia Pty Ltd. Mr Sutherland holds a Bachelor Degree in Science, a Master Degree in Business and has 30 years experience in petroleum exploration. Mr Sutherland has consented in writing to the inclusion of the information stated in the form and context in which it appears.



**Arrowsmith-2 Well**