



norwesterly

SECOND EDITION MAY 2011

Fellow Norwest Shareholder,

Your company, Norwest Energy NL, is about to undertake a major evaluation campaign to prove the shale gas potential of the Northern Perth Basin. In fact, we have been planning and preparing this event for more than twelve months. In the first edition of **norwesterly**, published in June 2010, we introduced our vision of the shale gas potential for the Northern Perth Basin and our concept of what we intended over the next year.

Well, that year has almost passed and we are now about to put the plan into action and prove the concept. Norwest Directors and management are optimistic about the anticipated results.

Success in the Northern Perth Basin will be a Company maker.

We know that the basin contains thick shale sequences and preliminary work indicates that the shales have the right characteristics for gas. There have been reports by others of the potential for the middle interval of the Carynginia shale sequence to hold gas in place of 13 - 20 Tcf and the Carynginia sequence exists throughout the basin which includes EP413.

Norwest has a 27.945% interest in EP413 where drilling of the Arrowsmith-2 well is planned to commence toward the end of May. Norwest is the operator of this historic project, the first ever dedicated shale gas well to be drilled in the basin, and for that matter, Western Australia. It is a major undertaking and is not just a case of drilling a well, the campaign will involve recovery of core from the shale sequences, fracture stimulation and flow testing. Whilst the prime focus is on shale gas, the deep, tight gas potential will also be tested. It is expected that the overall campaign will run through to the end of September 2011. Following that we will have the data to assess the commercial potential.

Whilst this is an extended program, early indications of prospectivity should start to unveil towards the end of June after the cores are recovered and wireline logs run. As activities proceed we will keep shareholders abreast of progress with regular weekly reports to ASX every Thursday, and additional reports as and where necessary. And, of course, these reports will be posted to Norwest's web page.

It has been a busy period since edition one in June 2010 and we have advanced significantly. This second edition of **norwesterly**, like the first edition, is also very much focussed on shale gas and is intended to explain the process of converting the concept into reality. We trust you find it informative and we will appreciate any feedback.

Yours sincerely

Peter Munachen
Chief executive Officer / Director
Norwest Energy NL
24 May 2011



In June 2010 we concluded

“Given all of these factors, Norwest’s Directors certainly recognise the potential value of the northern Perth Basin shale gas play. It would also be fair to say that you, the Norwest shareholder will also share this view.

Even so it is early days and we still have to tick all of the boxes to establish the commercial viability and then it will require substantial capital to develop the project to its full potential.

In the meantime, your Directors will consider all options available to fund the project through this evaluation period, with the objective to retain maximum project equity adding to shareholder value.”

Where we are in May 2011

We farmed out 50% of our interest in EP413 to Bharat PetroResources Limited to carry us through the Arrowsmith drilling and testing phase.

We have retained a 27.803% meaningful interest in EP413 out of our initial 55.606% and added a further 0.142% taking our equity to 27.945%.

The campaign is now underway to convert the vision of 2010 into reality.

Arrowsmith-2 and the Game Plan

With the knowledge that Arrowsmith -1 flowed gas at 4MMCF/day in the 1960’s, together with the well log data of over one hundred wells drilled in the basin, Norwest was encouraged to develop a plan to assess the shale gas potential of the basin.

Norwest, its partners AWE Limited and Bharat PetroResources Ltd, together with a team of world class professionals have worked closely to design a very detailed program. The very best have been engaged to contribute to each phase of the campaign to ensure its success.

The various studies of the Basin clearly identify that there are three main shale sequences of interest in EP413;

- Kockatea
- Carynginia
- Irwin River Coal Measures

and that The Carynginia and Irwin River Coal Measures shales demonstrate the right characteristics to produce gas. (See Figure 1)

We are confident the Kockatea will also have the potential to produce gas, however there is a question that it has sufficient thermal maturity. This question and others will be answered by evaluating Arrowsmith-2. The shales vary in thickness from 180m to 1,000m and exist throughout the basin and in particular EP413 where Arrowsmith -1 flowed gas from the Carynginia.

Modelling by Norwest using a shale thickness of as little as 60m indicates the potential for a possible 3tcf gas within EP413. The task now is to prove that and of course the ultimate potential of the three sequences to contain a much greater quantity.



Figure 1. Graphic depicting shale sequences.

Converting concept to reality

Drilling

At the time of writing, Weatherford's Rig 826 is being mobilised to the Arrowsmith-2 location with spud planned for, on or about 28 May. Target Depth (TD) is 3,400m and drilling is scheduled to take 37 days.

Whilst drilling is in progress, core will be recovered at each of the different shale intervals and the well will be continuously logged for gas readings and wireline log data will be recorded from the Top Kockatea to Basement.



Figure 2. Rig-up process at Arrowsmith-2 site, as at 20th May 2011.



Figure 3. Rig-up process at Arrowsmith-2 site, as at 20th May 2011.

Coring

Coring is an important part of the evaluation process. Upon reaching surface, the cores will be sealed and transported to specialist laboratories in the US for analysis. The coring results will be received progressively and used to optimise the Fracture Stimulation

design program. At completion of coring, Rig 826 will be released.

Fracture Stimulation

Following the completion of drilling and coring, there will be a break of approximately 8 weeks whilst the fracture stimulation equipment is mobilised to Western Australia.

Initially, the equipment will be contracted to other projects in the basin, and then re-located to Arrowsmith-2. Subject to the timing of other projects, this is expected to occur at the end of August. The program will consist of 5 stages over 530 metres collectively in the various sequences and is scheduled to run over 14 days.

The object of fracture stimulation is to liberate the gas from the cracks and pores in the shales. Commercial shale gas production generally requires fracture stimulation. To stimulate shale, water and chemicals are injected at high pressure along with a proppant, such as light sand, to keep the fractures open to permit the flow of gas.

Testing

With the knowledge that Arrowsmith-1 flowed gas 50 years ago without stimulation, Norwest is confident that Arrowsmith-2 will flow gas.

Immediately upon completion of the fracture stimulation program, Arrowsmith-2 will be flow tested over a four week period to measure its flow rate. Gas flows from a vertical well such as Arrowsmith-2 will allow an expected flow rate from horizontal wells to be predicted.

The 64 million dollar question is: At what rate will it flow? And will it be commercial?

What's Next?

“One hole does not make a mine” is a phrase often used by the hard rock explorers! Even if the results are outstanding, it still takes many drill holes to define a resource.

The same adage may be applied with shale gas exploration and evaluation.

A positive flow rate at Arrowsmith-2 will certainly provide enormous encouragement to proceed. Even if the Arrowsmith-2 flow rate is substantial, it alone will not produce sufficient volumes to solitarily support a commercial shale gas operation, nor will it be adequate upon which to establish a development plan. It will require a number of wells to be drilled to evaluate the ultimate commercial potential and provide the justification to make a major capital investment in the infrastructure to develop the field.

Arrowsmith-2 is the first step in this process and Norwest is optimistic for the future. The North Perth Basin is adjacent to the gas pipelines that deliver to Western Australia's domestic gas market where there is an unmet demand for gas and it sells for circa \$8mcf (versus East coast Australia- \$4mcf).

Following Arrowsmith-2 an initial step-out drilling program would be a high priority to establish a gas resource. Studies could then be undertaken for the commercial development of the field. An important element of the development will be to reduce considerably drilling and service costs. It is going to take the providers to recognise the potential of the field and bring equipment (drill rigs and hydraulic stimulation) into Western Australia at more economic prices than currently. This will all be tied into a

development plan that would ultimately see wells drilled progressively and sequentially brought into production.

Shale gas wells have a high initial flow rate in the early years, then tail off and would produce for around 20/25 years depending on various economic project factors prevailing at the time.

Any development plan would be built around numerous wells being drilled and fracture stimulated to maximise production. A minimum base case of say ten wells drilled and fracture stimulated annually, going out for five years could, at this scale of operations produce circa 250Bcf gas over a 20 year life with each well producing 5Bcf (assumption based on US models and data). Considering the potential size of the field of 3tcf from the Carynginia alone, this would be minor in the scheme of things and would justify a substantial increase to the scale of operations in the event that the concept is proven.

Focus on the Basin

The Basin has recently attracted attention with the success of Empire Oil and Gas NL at the Red Gully conventional gas play.

Transerv, partnered and funded by ALCOA, has just drilled the Warro-4 deep, tight gas target in the basin, and has announced plans to stimulate the well in July once Beach Energy completes its stimulation program in the Cooper Basin and the equipment is mobilised to Western Australia.

AWE Limited, Norwest's partner in Arrowsmith-2, has also announced plans to stimulate the Woodada shale gas play just south of Arrowsmith when the fracture

stimulation equipment is brought to the basin.

Norwest, AWE and Transerv are working together to bring the equipment to the North Perth Basin and to achieve cost saving.

Recently Norwest was represented with a booth at the annual APPEA conference held in Perth. The booth attracted a significant volume of traffic with particular interest on the impending Arrowsmith-2 campaign, bringing further focus onto the basin and, in particular, the Arrowsmith shale gas play and Norwest.

The stage is now set to prove the shale gas potential of the North Perth Basin.

If the Basin follows the US shale gas phenomenon, then Norwest is certainly in the box seat to capitalise and is set to enjoy an exciting time ahead.

The shale gas potential of the North Perth Basin has caught the attention of US Energy Information Administration (EIA) and in a report just recently published by EIA commenting on world shale gas resources outside of the USA; the WA Perth Basin was mentioned.

On Australia, the EIA is optimistic about the development of a viable shale-gas industry. It wrote "With the geologic and industry conditions resembling those of the US and Canada, the country appears poised to commercialise its shale gas resources on large scale".

Jurien has shale gas potential

The recent award of Special Prospecting Authority – STP-SPA-0013 (SPA) to conduct an FTG survey to evaluate the hydrocarbon potential over 21 onshore blocks in the

Northern Perth Basin is a significant development. The SPA extends Norwest's footprint in the basin by adding a further 212,522 acres (816km²) to its shale gas acreage in the basin and it is held 100% by Norwest.

The blocks lie to the south of Norwest's TP15 (offshore) and EP413 (onshore) acreage and covers an onshore area running along the Western Australian coast. (see Figure 4).

The sedimentary section on the acreage is known to contain thick shale formations, principle amongst which is the prolifically developed Kockatea Shale. This shale is mature for gas, with significantly high total organic carbon (TOC) content in the area of the SPA.

The potential for shale gas in the region is further supported by a third party study commissioned by Norwest in mid 2010. Two of a number of wells reviewed in this study were Point Louise-1 (drilled in 1981) and Jurien-1 (drilled in 1963), both located on the western side of the Beagle Fault, and both of which showed favourable indicators for shale gas. The report stated that the Kockatea shales have the potential maturity to produce gas, contain fair TOC content and are composed predominantly of type II kerogen. Both wells intersected thick sections of the Kockatea Shale, with Point Louise-1 intersecting 459m and Jurien-1 247m.

The SPA is valid for six months during which time Norwest will acquire an airborne, full tensor gradiometer survey (FTG) on the area.



Figure 4. SPA location in relation to other Norwest permits.

The FTG survey is designed to identify more accurately potential basement related fault blocks and adjacent deep troughs suitable for unconventional shale gas targets. If the FTG results prove favourable, Norwest has a further six months to submit an application for a petroleum exploration permit over the SPA area.

Norwest is experienced in the acquisition and application of the low impact FTG Survey technique, having successfully deployed the technology on both TP15 and its Southern England acreage.

The recently drilled Red Hill South-1 well located within TP15 was evaluated using FTG, and whilst the presence of commercial hydrocarbons was not established at Red Hill South, it was considered a technical success, with FTG playing a major part in selecting the well location. The geology encountered

during the drilling program proved consistent with the FTG modelling results.



Figure 5. NWE plans to conduct an FTG survey over the SPA in August 2011.

Norwest has staked its claim in the Basin

The grant of the Jurien SPA has added to Norwest's concentrated efforts to position itself in the Perth basin which it views as a greatly underexplored region with potential for upside in both the "conventional" and more specifically the "unconventional" plays.

This expansion has not occurred without the efforts of a hard working team of staff and consultants which has grown significantly in this time.

Norwest has built this team by engaging a combination of full time staff; together with local and international consultants. Norwest has also become a project operator; and as such has developed, adopted and implemented procedures necessary to manage projects such as Red Hill South and Arrowsmith-2 in accordance with regulatory requirements.

Just over one and a half years ago Norwest had very minor interests in a number of permits in the Basin. Since then it has expanded those interests;

- **EP413** from 1.278% to 27.945% - currently carried for \$5m on 27.806 % by Bharat for the Arrowsmith project.
- **SPA013** newly awarded – from nil to 100% held outright.
- **TP/15** 10% to 100% then farmed down to 50% working interest.
- **EP368/426** 10% in EP368 to a working 20% working interest in each permit.
- **L14** Jingemia producing field – 1.278% to 6.278% working interest.

The foundations were laid a year ago to evaluate the potential for the Perth Basin Shale Gas play.

Over the next three months results will materialise to prove the concept.

Success at Arrowsmith will contribute to the next phase of the growth and development of Norwest.



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