Marathon Resources Ltd
Unit 8, 53 - 57 Glen Osmond Road, Eastwood SA 5063
PO Box 181, Fullarton SA 5063

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www.marathonresources.com.au

ABN 31 107 531 822

ASX RELEASE MARATHON RESOURCES ASX RELEASE

27 April 2015

Manager Companies
Companies Announcements Office

Australian Securities Exchange Ltd

ASX Code: MTN: 2015 Extraordinary General Meeting

As recently foreshadowed the Company is pleased to confirm its Extraordinary General Meeting (**"EGM")** will be held on Wednesday 27 May 2015.

The primary business of the EGM is to seek shareholder approval of the proposed acquisition of ARP TriEnergy Pty Ltd ("**TriE**") which owns the Leigh Creek Energy Project (**"LCEP"**).

Full details are contained in the Notice of Meeting and associated explanatory material.

Attached please find the following documents which have been despatched to the Company's shareholders today:

- Notice of Extraordinary General Meeting and
- Proxy Form

Also **attached** is a report by Australian Mineral Consultants which is a Specialist Technical Report on deep coal assets which form the LCEP held by TriE, within Petroleum Exploration Licence (PEL) 650 in South Australia.

Following release on the ASX platform, the documents will be available on the Company's website www.marathonresources.com.au.

Yours sincerely

Sam Appleyard
Company Secretary

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Notice of General Meeting
and
Explanatory Memorandum

For the proposed acquisition by Marathon Resources Limited of ARP TriEnergy Pty Ltd

VOTE YES

Your Independent Directors unanimously recommend that you vote in favour of the Transaction.

The Independent Expert has concluded that the Transaction is fair and reasonable.

This is an important document and requires your immediate attention.

You should read it in its entirety before making a decision whether or not to vote in favour of the Resolutions.

If you are in any doubts as to how to deal with this Notice, you should discuss it with your financial adviser, legal adviser or broker.

Important Notices

General

This document is important. You should read it in full before making any decision as to how to vote on the Resolutions to be considered at the Meeting. A Proxy Form for the Meeting is enclosed.

Purpose of this Notice

This document comprises a Notice of General Meeting and an Explanatory Memorandum issued by the Company (together, the **Notice**). The Notice provides Shareholders with information that is material to your decision whether or not to vote in favour of the Resolutions to be considered at the Meeting.

ASX and ASIC

A copy of this Notice has been lodged with ASX and ASIC. None of ASX, ASIC nor any of their officers takes any responsibility for the contents of this Notice.

Preparation and responsibility

Other than as set out below, this Notice has been prepared by the Company.

Mr Derek Ryan of DMR Corporate Pty Ltd (**Independent Expert**) has prepared the Independent Expert's Report contained in Annexure A of this Notice and is responsible for that report and any statements based on it. The Independent Expert is not responsible for any other information contained in this Notice. The Independent Expert has given, and has not withdrawn, his consent to the inclusion of the Independent Expert's Report in the Notice in the form and the context in which it appears. Shareholders should read the Independent Expert's Report carefully to understand the scope of the report, the methodology of the assessment, the sources of information and the assumptions made.

Deloitte Corporate Finance Pty Limited (**Investigating Accountant**) has prepared the Investigating Accountant's Report contained in Annexure B of this Notice and is responsible for the report and any statements based on it. The Investigating Accountant is not responsible for any other information contained in this Notice. The Investigating Accountant has given, and has not withdrawn, its consent to the inclusion of the Investigating Accountant's Report in the Notice in the form and the context in which it appears. Shareholders should read the Investigating Accountant's Report carefully to understand the scope of the report, the methodology of the assessment, the sources of information and the assumptions made.

Investment decisions

This Notice does not take into account the investment objectives, financial situation, tax position or requirements of any particular person. The information contained in this Notice is not financial product advice. This Notice should not be relied on as the sole basis for any investment decision in relation to Shares. You should seek independent financial and taxation advice before making any decision in relation to Shares or the Resolutions to be considered at the Meeting. It is important that you read this Notice in full before making any decision as to how to vote on the Resolutions to be considered at the Meeting.

Forward looking statements

This Notice contains forward looking statements which are subject to known and unknown risks, uncertainties and other factors that could cause the actual results, performance or achievements of the Company, or the effect or implementation of the Transaction (details of which are set out in section 2 of the Explanatory Memorandum), to vary materially from those expressed or implied in such forward looking statements.

Actual events or results may differ materially from the events or results expressed or implied in any forward looking statement and deviations are both normal and to be expected. None of the Company or any person named in this Notice makes any representation or warranty (either express or implied) as to the accuracy or likelihood of fulfillment of any forward looking statement, or any events or results expressed or implied in any forward looking statement. Shareholders are cautioned not to place undue reliance on those statements. The forward looking statements in this Notice reflect views held only as at the date of this Notice.

Privacy and personal information

The Company and the Registry may collect personal information in the process of implementing the Transaction. The personal information may include the names, addresses, other contact details and details of the holdings of Shareholders, and the names of individuals appointed by Shareholders as proxies, corporate representatives or attorneys at the Meeting. The collection of some of this information is required or authorised by the Corporations Act. Shareholders who are individuals and the other individuals in respect of whom personal information is collected have certain rights to access the personal information collected in relation to them. Such individuals should contact the Company at enquiries@marathonresources.com.au if they wish to exercise those rights. If the information outlined above is not collected, the Company may be hindered in, or prevented from, conducting the Meeting or implementing the Transaction effectively or at all.

The information may be disclosed to related bodies corporate of the Company, third party service providers, including print and mail service providers and parties otherwise involved in the conduct of the Meeting, professional advisers and to regulatory authorities, and also where disclosure is otherwise required or allowed by law. Shareholders who appoint an individual as their proxy, corporate representative or attorney to vote at the Meeting should ensure that they inform that individual of the matters outlined above.

Defined terms and financial information

Certain terms used in this Notice have been defined in the Glossary in section 17 of the Explanatory Memorandum. All financial and operational information contained in this Notice is stated as at the date of this Notice, unless otherwise specified. Currency amounts are in Australian dollars, unless otherwise specified.

Date

This Notice is dated 24 April 2015.

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Letter from the Chairman

Dear Marathon Shareholder,

Acquisition of ARP TriEnergy

As announced to the market on 7 January 2015, Marathon Resources Limited (the **Company**) entered into a binding term sheet to acquire all the issued capital in ARP TriEnergy Pty Ltd (**ARP TriEnergy**) which owns the Leigh Creek Energy Project (**LCEP**). As further announced to the market on 3 March 2015, the Company has entered into a binding Share Sale Agreement with ARP TriEnergy and each of the Vendors for the acquisition of the ARP TriEnergy shares (**Share Sale Agreement**). On 9 April 2015 the Company also entered into an Interim Funding Agreement with ARP TriEnergy to provide ARP TriEnergy with funding for working capital purposes and to facilitate the conduct of the planned preliminary appraisal drilling program on the LCEP in the short term while the broader transaction with the Company is consummated (**Interim Funding Agreement**).

Background to the Transaction

As Shareholders are aware, the Company has been investigating potential targets for acquisition since 2012. During that time, the Board has considered some 300 potential projects, predominantly in the minerals and energy sectors. The Board has identified ARP TriEnergy as a suitable target for acquisition, which would reposition the Company as an energy and minerals explorer and developer.

On 18 November 2014 ARP TriEnergy was issued a petroleum exploration licence (**PEL 650**) on which the LCEP is situated. ARP TriEnergy is also the applicant in respect of 7 exploration licence applications in South Australia for both petroleum and coal. The LCEP aims to produce synthetic natural gas (**syngas**) via in situ gasification (**ISG**) for sale to major gas users in the eastern states of Australia and as feedstock for power generation and fertiliser and explosives production.

Further details in relation to ARP TriEnergy, its tenements and licence applications, the LCEP (including the Company's intentions for its development) and ISG more generally are set out in section 5 of this Notice below.

Summary of the Transaction

The Company:

- has agreed to acquire 100% of the issued capital in ARP TriEnergy (**ARP TriEnergy Shares**) in return for issuing 138,311,683 Shares (**Marathon Consideration Shares**) to the Vendors in proportion to their holdings in ARP TriEnergy. The terms of the Share Sale Agreement are set out in more detail in section 2.2 below;

- will, following the acquisition of the ARP TriEnergy Shares, procure that ARP TriEnergy enter into a Royalty Deed in relation to PEL 650 pursuant to which ARP TriEnergy will have an obligation to pay royalties to the trustees of the South Australia ISG Trust No 1., the

beneficiaries of which trust are the Vendors. Further details in relation to the Royalty Deed are set out in section 2.3 below; and

- has entered into an Interim Funding Agreement with ARP TriEnergy pursuant to which the Company has agreed, subject to Shareholders approving the arrangement and the transactions contemplated by the Share Sale Agreement, to provide funding to ARP TriEnergy for working capital purposes and to allow ARP TriEnergy to undertake certain appraisal drilling activities in the period between the date of the Meeting and the date on which Completion occurs in respect of the Share Sale Agreement. Completion is expected to occur on or about the date on which the Company receives confirmation from ASX that it has re-complied with Chapters 1 and 2 of the ASX Listing Rules (further details regarding the requirement for re-compliance are set out in section 10.4 of the Explanatory Memorandum). Further details of the funding arrangement are set out in section 2.4 below,

(together, the **Transaction**).

As a part of the Transaction, ARP TriEnergy is required to enter into an arrangement with a custodian pursuant to which, during the 12 month period following Completion, all shares in the Company held by ARP TriEnergy at the time of Completion (**ARP TriEnergy Holding**) are to be disposed of by the custodian. This is to ensure that the Company complies with the requirements of section 259D of the Corporations Act. As at the date of this notice, the ARP TriEnergy Holding comprises 15,000,000 Shares, being 16.27% of the Company's issued capital.

Impact on control of the Company

On Completion of the Transaction, the Vendors will together hold 60.00% of the expanded share capital of the Company.

ARP TriEnergy's current major shareholder is Allied Resource Partners Pty Ltd (**Allied**), which holds 75.75% of the ARP TriEnergy Shares. Following completion of the Transaction and upon issue of the Marathon Consideration Shares (**Completion**), Allied will directly hold 45.45% of the Company's Shares. As set out in further detail in section 11.3 below, as a result of various associate relationships the total voting power in the Company's Shares attributed to Allied will be slightly higher than its direct Shareholding, at 46.02% in aggregate. In addition, it will have the ability to appoint 3 out of a total of up to 6 Directors to the Board of the Company. The Independent Directors are of the view that, following Completion, Allied will effectively be in a position to control the Company.

The Vendors other than Allied (**Other Vendors**) are not related to Allied and hold much smaller parcels of ARP TriEnergy Shares. None of the Other Vendors will acquire an interest in more than approximately 6.06% of the Company as a result of Completion. Please see Schedule 2 for details of the Vendors and the Marathon Consideration Shares to be issued to each of them.

Risks and advantages of the Transaction

Sections 3 and 4 respectively set out the reasons which you may wish to vote for or against the Transaction. In addition, you are encouraged to consider the key risks of the Transaction which are set out in section 6.

Reasons to vote in favour of the Transaction include the following:

- it values the Company at a substantial premium to the on-market value of the Company prior to the Transaction;
- the Independent Expert has concluded that the Transaction is fair and reasonable to Shareholders of the Company other than ARP TriEnergy and its associates;
- the Company will gain immediate access to an ISG project with the potential for rapid development and further upside based on current gas market expectations;
- the Company will also gain access to any further exploration tenements which may be granted to ARP TriEnergy as a result of its existing portfolio of exploration licence applications spanning both the petroleum and minerals space;
- if the Transaction does not complete there is a risk that the Company's Share price will fall upon termination of the Transaction;
- the current ARP TriEnergy Holding represents a significant stake in the Company (16.27%) and is likely to be a significant deterrent to any other party considering a takeover of the Company; and
- if the Transaction does not complete the Company will need to search for an alternative project which will incur further costs and time with no guarantee that such a project can be found.

You may have reasons to vote against the Transaction which could include:

- the Company's business activities will change from an historic focus on minerals exploration to a focus on energy projects;
- the Company may not be in a position to pursue other opportunities that may arise;
- the impact of the Transaction on the control of the Company (as summarised above and in section 2.6 below);
- you may disagree with the recommendation of the Independent Directors or the conclusions of the Independent Expert;
- you may prefer the Company to be wound up and for all surplus assets to be distributed; and
- you may assess that the advantages of the Transaction are outweighed by the risks associated with the Transaction, including the following (please see section 6 for a more detailed discussion of the key risks):
    - geotechnical risks associated with the LCEP;
    - technical and operational risks (including production and contracting risks);
    - uncertainty relating to future gas market conditions;

- regulatory risks (including those associated with the current regulatory environment and those associated with potential future changes to the regulatory environment); and

- project funding risks.

Independent Expert's Report

The Independent Directors have appointed Mr Derek Ryan of DMR Corporate Pty Ltd as the Independent Expert to assess whether the Transaction is fair and reasonable to the non-associated Shareholders of the Company, being those Shareholders other than ARP TriEnergy, the Vendors and their associates (**Non-Associated Shareholders**).

The Independent Expert has concluded that the Transaction is fair and reasonable to the Non-Associated Shareholders.

A complete copy of the Independent Expert's Report is included as Annexure A of this Notice.

Investigating Accountant's Report

The Directors have appointed Deloitte Corporate Finance Pty Limited (**Investigating Accountant**) to prepare for inclusion in this Notice an Investigating Accountant's Report in relation to the pro-forma financial information set out in Schedule 1 (**Financial Information**).

The Investigating Accountant has concluded that, based on its review, nothing has come to its attention that causes it to believe that the Financial Information is not presented fairly, in all material respects, in accordance with the stated basis of preparation as described in section 4 of Schedule 1.

A complete copy of the Financial Information is included in Schedule 1 and the Investigating Accountant's Report is included as Annexure B of this Notice.

Independent Directors' recommendation

Other than in relation to Resolution 7 which relates to Options to be issued to Mr Peter L Williams (via his nominee) and on which no Director makes any recommendation, each of the Independent Directors of the Company recommends that Shareholders vote in favour of all Resolutions put to Shareholders and each intends to vote their personal shares and any undirected proxy votes they hold in favour of the Transaction.

Next Steps

Certain aspects of the Transaction require the approval of Shareholders for the purposes of the ASX Listing Rules and the Corporations Act. For this reason, the Board has convened an extraordinary general meeting to be held at the offices of Marathon Resources Ltd located at Unit 8/53-57 Glen Osmond Road Eastwood South Australia 5063 on 27 May 2015 at 9.30am (Adelaide time) (**Meeting**).

The Resolutions to be put to Shareholders at the Meeting are explained in more detail in sections 10 to 16 (inclusive) below.

On behalf of the Board of the Company, I encourage you to attend the Meeting or appoint a proxy, attorney or (in the case of corporate Shareholders) a corporate representative to vote on your

behalf. Instructions for voting are set out in the 'Information for Members' section of the Notice on page 15 below.

Please read this Notice and the accompanying Independent Expert's Report and Investigating Accountant's Report carefully and in their entirety as they contain important information that will assist you in making an informed decision on how to vote. In addition to the Independent Expert's Report and the Investigating Accountant's Report, the Board has determined that Shareholders may benefit from access to other reports upon which the Board has placed reliance in assessing the Transaction and preparing this Notice. These reports are listed below, and can be accessed via the Company's website at http://www.marathonresources.com.au/documents.php:

- Australian Mineral Consultants, "*Review Report ARP TriEnergy Pty Ltd - Leigh Creek Energy Project PEL 650 South Australia*", dated 20 January 2015 (and updated on 17 April 2015) (**AMC Report**);

- DAME Consulting Pty Ltd, "*Independent Report on the Status and Progress of Underground Coal Gasification (UCG) Technology*", dated 8 December 2014 (**DAME Report**); and

- EnergyQuest Pty Ltd, "*Available East Coast Gas Study*", dated 8 November 2014 (**EnergyQuest Report**).

I also encourage you to seek independent advice from your financial, taxation and other professional advisers prior to making any decision in respect of the Transaction.

Further Information

If you have any questions about the Transaction please contact the Transaction information line on 08 8348 3550 (from within Australia) or +61 8 8348 3550 (from outside Australia) (normal charges apply).

This is a real opportunity for Shareholders to participate in the development of energy resources in South Australia. Your Independent Directors believe that the Transaction is worthy of support & the recommendation to vote in favour of the Transactions is soundly based. I commend the accompanying reports, and also those placed on our website, to you as you consider your voting intentions on the Transaction.

Yours sincerely,

Peter L Williams
Chairman
Marathon Resources Limited

Independent Expert's Opinion

Your Independent Directors appointed the Independent Expert, Mr Derek Ryan of DMR Corporate Pty Ltd, to prepare an independent assessment of the Transaction. The Independent Expert has concluded that the Transaction is **fair and reasonable** to the Non-Associated Shareholders.

A copy of the Independent Expert's Report is contained in Annexure A to the Explanatory Memorandum.

Independent Directors' Recommendations

The Independent Directors comprise three of the four current Board members, being:

- Mr Peter L Williams;
- Dr John G (Shad) Linley; and
- Mr Chris Schacht.

The Independent Directors consider that the Transaction is in the best interests of Shareholders and unanimously recommend that Shareholders vote in favour of the Transaction by voting in favour of Resolutions 1 to 6 (inclusive). In relation to Resolution 7 (Director Options), the Independent Directors make no recommendation. In relation to Mr Williams , this is due to his personal interest in the outcome of the Resolution. In relation to Dr Linley and Mr Schacht, it is not considered appropriate for them to make a recommendation as the Resolution relates to the remuneration of another Director.

In making the above recommendations, your Independent Directors have considered the following key supporting reasons:

- the advantages, disadvantages, impacts and risks of the Transaction detailed in sections 5 and 6 of the Explanatory Memorandum;
- the potential alternative options for the Company and the commercial, execution and financial risks and benefits associated with these; and
- the opinion of the Independent Expert.

Non-Independent Director

Mr Daniel J D Peters is not an Independent Director of the Company.

Mr Peters is a director of both Allied and ARP TriEnergy, and is a minority shareholder in Allied. Accordingly, Mr Peters has a material personal interest in the Transaction and the outcome of Resolutions 1 to 6 (inclusive). As a result, Mr Peters has not participated in any discussions or resolutions of the Board in relation to the Transaction and has abstained from making any recommendation to Shareholders in relation to the Transaction or Resolutions 1 to 6 (inclusive). Further, Mr Peters makes no recommendation to Shareholders in relation to Resolution 7 (Director Options) as the Resolution relates to the remuneration of another Directors and it is not considered appropriate for him to make a recommendation in this regard.

Directors' Voting Intentions

The current shareholding interests of each Director are set out in Table 1 below:

Table 1: Directors' Shareholdings

Director	Shareholding	
	No.	%
Mr Peter L Williams	899,360	0.98%
Mr Chris Schacht	61,050	0.07%
Dr John G (Shad) Linley	375,000	0.41%
Mr Daniel J D Peters	Nil	0.00%

Other than where prohibited as a result of applicable voting exclusions, each of the Directors who holds Shares intends to vote in favour of each of the Resolutions.

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Marathon Resources Limited

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Notice of General Meeting

Notice is hereby given that a General Meeting of the Shareholders of Marathon Resources Limited will be held at the offices of Marathon Resources Limited located at Unit 8/53-57 Glen Osmond Road Eastwood South Australia 5063 on 27 May 2015 at 9.30am (Adelaide time).

Business of the Meeting

The purpose of the Meeting is to consider and, if thought fit, to pass the Resolutions.

Resolution 1 – Change to Nature and Scale of the Company's Activities

To consider and, if thought fit, pass the following resolution as an ordinary resolution:

"That, subject to and conditional upon the passing of Resolutions 2 and 3, for the purposes of ASX Listing Rule 11.1.2 and for all other purposes, the proposed significant change to the nature and scale of the Company's activities as set out in the Explanatory Memorandum be approved."

Voting Exclusion Statement - Resolution 1

The Company will disregard any votes cast on Resolution 1 by:

(a) any Vendor;

(b) ARP TriEnergy;

(c) any other person who might obtain a benefit if Resolution 1 is passed, except a benefit solely in their capacity as a Shareholder; and

(d) any associate of a person referred to in paragraphs (a), (b) or (c) above.

However the Company need not disregard a vote if:

(a) it is cast by a person as proxy for a person who is entitled to vote, in accordance with the directions on the Proxy Form; or

(b) it is cast by the person Chairing the Meeting as proxy for a person who is entitled to vote, in accordance with a direction on the Proxy Form to vote as the proxy decides.

Resolution 2 – Acquisition of ARP TriEnergy

To consider and, if thought fit, pass the following resolution as an ordinary resolution:

"That, subject to and conditional upon the passing of Resolutions 1 and 3, for the purposes of:

(a) ASX Listing Rule 10.1 and for all other purposes, the acquisition by the Company of ARP TriEnergy; and

(b) ASX Listing Rule 7.1, Chapter 2E and item 7 of section 611 of the Corporations Act and for all other purposes, the issue of 138,311,683 Shares to the Vendors as consideration for the acquisition of the ARP TriEnergy Shares,

on the terms and conditions set out in the Explanatory Memorandum be approved."

Voting Exclusion Statement - Resolution 2

The Company will disregard any votes cast on Resolution 2 by:

(a) any Vendor;

(b) ARP TriEnergy;

(c) any other person who might obtain a benefit if Resolution 2 is passed, except a benefit solely in their capacity as a Shareholder; and

(d) any associate of a person referred to in paragraphs (a), (b) or (c) above.

However the Company need not disregard a vote if:

(a) it is cast by a person as proxy for a person who is entitled to vote, in accordance with the directions on the Proxy Form; or

(b) it is cast by the person Chairing the Meeting as proxy for a person who is entitled to vote, in accordance with a direction on the Proxy Form to vote as the proxy decides.

Voting Prohibition - Resolution 2

Under item 7 of section 611 of the Corporations Act, no votes may be cast in favour of Resolution 2 by:

(a) the person proposing to make the acquisition; or

(b) the person (if any) from whom the acquisition is to be made; or

(c) an associate of a person referred to in paragraphs (a) or (b) above.

In addition, under section 224(1) of the Corporations Act, no vote may be cast in favour of Resolution 2 by:

(a) a related party of the Company to whom Resolution 2 would permit a financial benefit to be given; or

(b) an associate of a person referred to in paragraph (a) above.

However, section 224(1) does not prevent the casting of a vote if:

(a) it is cast by a person as a proxy appointed by writing that specifies how the proxy is to vote on Resolution 2; and

(b) it is not cast on behalf of a related party or associate of a kind referred to in section 224(1).

Accordingly, the Company will disregard any votes cast on Resolution 2 by ARP TriEnergy, any of the Vendors and any of their associates.

Additional Note

Under ASX Listing Rule 11.1.3 ASX requires the Company to re-comply with the admission and quotation requirements in Chapters 1 and 2 of the Listing Rules. Accordingly, the issue of the Shares pursuant to Resolution 2 is subject to and conditional upon ASX confirming in writing that the Company has re-complied with those requirements.

Resolution 3 - Royalty Deed

To consider and, if thought fit, pass the following resolution as an ordinary resolution:

"That, subject to and conditional upon:

(a) the passing of Resolutions 1 and 2; and

(b) Completion occurring,

for the purposes of Chapter 2E of the Corporations Act and for all other purposes, the entry into and performance by ARP TriEnergy of its obligations under the Royalty Deed on the terms and conditions set out in the Explanatory Memorandum be approved."

Voting Prohibition - Resolution 3

Under section 224(1) of the Corporations Act 2001, no vote may be cast in favour of Resolution 3 by:

(a) a related party of the Company to whom Resolution 3 would permit a financial benefit to be given; or

(b) an associate of a person referred to in paragraph (a) above.

However, section 224(1) does not prevent the casting of a vote if:

(a) it is cast by a person as a proxy appointed by writing that specifies how the proxy is to vote on Resolution 3; and

(b) it is not cast on behalf of a related party or associate of a kind referred to in section 224(1).

Accordingly, the Company will disregard any votes cast on Resolution 3 by Allied and any of its associates, which includes ARP TriEnergy.

Resolution 4 - Appointment of Mr Daniel J D Peters as Director

To consider and, if thought fit, pass the following resolution as an ordinary resolution:

"That, for the purposes of clause 45.1(a) of the Company's constitution and for all other purposes, Mr Daniel J D Peters be appointed as a Director of the Company with immediate effect."

Resolution 5 - Appointment of Mr David Kit Shearwood as Director

To consider and, if thought fit, pass the following resolution as an ordinary resolution:

"That, subject to the passing of Resolutions 1 to 3 (inclusive), for the purposes of clause 45.1(a) of the Company's constitution and for all other purposes, Mr David Kit Shearwood be appointed as a Director of the Company with immediate effect."

Resolution 6 - Interim Funding of ARP TriEnergy

To consider and, if thought fit, pass the following resolution as an ordinary resolution:

"That, subject to and conditional upon the passing of Resolutions 1 to 3 (inclusive), for the purposes of Chapter 2E of the Corporations Act and for all other purposes, the giving of a financial benefit to ARP TriEnergy on the terms and conditions set out in the Explanatory Memorandum be approved."

Voting Prohibition - Resolution 6

Under section 224(1) of the Corporations Act, no vote may be cast in favour of Resolution 6 by:

(a) a related party of the Company to whom Resolution 6 would permit a financial benefit to be given; or

(b) an associate of a person referred to in paragraph (a) above.

However, section 224(1) does not prevent the casting of a vote if:

(a) it is cast by a person as a proxy appointed by writing that specifies how the proxy is to vote on Resolution 6; and

(b) it is not cast on behalf of a related party or associate of a kind referred to in section 224(1).

Accordingly, the Company will disregard any votes cast on Resolution 6 by ARP TriEnergy and any of its associates.

Resolution 7 - Grant of Options to Cluan Capital Management Pty Ltd as nominee for Mr Peter L Williams

To consider and, if thought fit, pass the following resolution as an ordinary resolution:

"That, for the purposes of ASX Listing Rule 10.14 and for all other purposes, the issue of options to Cluan Capital Management Pty Ltd as nominee for Mr Peter L Williams, on the terms and conditions set out in the Explanatory Memorandum be approved."

Voting Exclusion Statement - Resolution 7

The Company will disregard any votes cast on Resolution 7 by:

(a) Cluan Capital Management Pty Ltd;

(b) any Director who is eligible to participate in the Company's Employee Share Option Plan; and

(c) any associate of a person referred to in paragraphs (a) or (b) above.

However the Company need not disregard a vote if:

(a) it is cast by a person as proxy for a person who is entitled to vote, in accordance with the directions on the Proxy Form; or

(b) it is cast by the person Chairing the Meeting as proxy for a person who is entitled to vote, in accordance with a direction on the Proxy Form to vote as the proxy decides.

In addition, in accordance with section 250BD of the Corporations Act, a person appointed as a proxy must not vote, on the basis of that appointment, on Resolution 7 if:

(a) the proxy is either a member of the key management personnel of the Company (**KMP**) or a closely related party of a member of the KMP; and

(b) the appointment does not specify the way the proxy is to vote on that Resolution.

However, the above prohibition does not apply if:

(a) the proxy is the Chairman of the meeting; and

(b) the appointment expressly authorises the Chairman to exercise the proxy even if the Resolution is connected directly or indirectly with the remuneration of a member of the KMP.

Information for Members

"Snap-shot" Time

In accordance with Regulation 7.11.37 of the Corporations Regulations 2001, the Company has determined that for the purposes of voting at the Meeting, Shares will be taken to be held by those who hold them as at 7.00pm (Adelaide time) on 25 May 2015.

Proxies

A Shareholder entitled to attend and vote at the Meeting may appoint a proxy. The person appointed as a proxy may be an individual or a body corporate and need not be a Shareholder. If a Shareholder is entitled to cast two or more votes, the Shareholder may appoint one or two proxies.

Where two proxies are appointed, each proxy may be appointed to represent a specific proportion of the Shareholder's voting rights. If the proportion is not specified, each proxy may exercise half of the Shareholder's voting rights. Fractional votes will be disregarded.

To record a valid vote, members will need to take one of the following steps no later than **9.30am (Adelaide time)** on **25 May 2015**:

(a) cast your vote online by visiting www.investorvote.com.au and following the instructions and information provided on the enclosed Proxy Form; or

(b) complete and lodge the Proxy Form (and the power of attorney or other authority (if any) under which it is signed, or a certified copy of it) at the Registry of the Company, Computershare Investor Services Pty Limited, located at GPO Box 242, Melbourne VIC 3001, or by facsimile on 1800 783 447 (within Australia) or +61 3 9473 2555 (outside Australia); or

(c) For Intermediary Online subscribers only (custodians), please visit www.intermediaryonline.com to submit your voting intentions.

Corporate Representative

A corporation that is a Shareholder or a proxy may elect to appoint a person to act as its corporate representative at the Meeting, in which case the corporate Shareholder or proxy (as applicable) must provide that person with a certificate or letter executed in accordance with the Corporations Act authorising him or her to act as that Shareholder's or proxy's (as applicable) corporate representative. The authority must be sent to the Company and/or the Registry (detailed above) in advance of the Meeting or handed in at the Meeting when registering as a corporate representative.

Jointly held Shares

If Shares are jointly held, each of the joint Shareholders is entitled to vote. However, if more than one Shareholder votes in respect of jointly held Shares, only the vote of the Shareholder whose name appears first on the Register will be counted.

By order of the Board

S M Appleyard
Company Secretary
Marathon Resources Limited
20 April 2015

Explanatory Memorandum

1. Introduction

This Explanatory Memorandum has been prepared for the information of Shareholders of Marathon Resources Limited in connection with the business to be conducted at the General Meeting of the Company to be held at the offices of **Marathon Resources Limited** located at **Unit 8/53-57 Glen Osmond Road, Eastwood South Australia 5063** on **27 May 2015** at **9.30am** (Adelaide time).

This Explanatory Memorandum should be read in conjunction with the accompanying Notice of General Meeting. Capitalised terms in this Explanatory Memorandum are either defined in the Glossary in section 17 or elsewhere in this Explanatory Memorandum.

2. Transaction summary

2.1 Overview

Under the terms of the Share Sale Agreement, the Company has agreed to acquire 100% of the ARP TriEnergy Shares in return for issuing the Marathon Consideration Shares to the Vendors in proportion to their holdings in ARP TriEnergy. The terms of the Share Sale Agreement are set out in more detail in section 2.2 below.

Following the issue of the Marathon Consideration Shares, the total shareholding of the Vendors in the Company will (based on the current share structure of the Company) be 60.00% of the Company's issued capital. Please see section 2.6 below for details of the changes to the Company's capital structure which will occur on Completion of the Transaction.

There are 19 Vendors in total, with the majority of the ARP TriEnergy Shares (being 75.75%) held by its major shareholder Allied. As at Completion, Allied will hold 45.45% of the Company's Shares (please see section 11.3 for further details regarding Allied's interest and voting power in the Company following Completion).

The Other Vendors hold much smaller parcels of ARP TriEnergy Shares. The Other Vendor with the next-largest holding in ARP TriEnergy after Allied holds 10.10% of the ARP TriEnergy Shares, which would give him a 6.06% interest in the Company following Completion. Please see Schedule 2 for details of the Vendors and the Marathon Consideration Shares to be issued to each of them.

The Share Sale Agreement also contemplates that, following Completion, the Company will procure that ARP TriEnergy enter into a Royalty Deed in relation to the Tenements pursuant to which ARP TriEnergy will have an obligation to pay royalties to the trustees of the South Australia ISG Trust No 1., the beneficiaries of which trust are the Vendors. Further details in relation to the Royalty Deed are set out in section 2.3 below.

Finally, and in order to facilitate the ongoing appraisal drilling work on PEL 650, the Company has entered into an Interim Funding Agreement with ARP TriEnergy pursuant to which the Company has agreed, subject to Shareholders approving the arrangement and the Transaction generally, to provide funding to ARP TriEnergy for working capital purposes and to allow ARP TriEnergy to undertake certain appraisal drilling activities in the period between the date of the Meeting and the date on which Completion occurs in respect of the Share Sale Agreement. Completion is expected to occur on or about the date on which the Company receives confirmation from ASX that it has re-complied with Chapters 1 and 2 of the ASX Listing Rules (further details regarding the requirement

for re-compliance are set out in section 10.4). Further details of the interim funding arrangement are set out in section 2.4 below.

The purpose of this Meeting is to seek the Shareholder approvals required under the ASX Listing Rules and the Corporations Act in order to implement the Transaction. Those approvals are explained in more detail in sections 10 to 16 (inclusive) below.

2.2 Share Sale Agreement

The key terms and conditions of the Share Sale Agreement between the Company, ARP TriEnergy and each of the Vendors dated 3 March 2015 are as follows:

Key Transaction Terms

- The Company will acquire 100% of the ARP TriEnergy Shares.
- In consideration for the acquisition of the ARP TriEnergy Shares, the Company will issue the Marathon Consideration Shares to the Vendors in proportion to their respective holding of ARP TriEnergy Shares.
- The Company will appoint Mr David Kit Shearwood as Managing Director of the Company. Mr Shearwood is currently a director of ARP TriEnergy and Allied and he and his associates collectively have the largest shareholding in Allied.

Key Conditions

The Transaction is subject to the satisfaction of a number of conditions, including:

- the Company obtaining all necessary Shareholder approvals required by the Corporations Act and the ASX Listing Rules including, without limitation:
  - Shareholder approval pursuant to ASX Listing Rule 10.1, Chapter 2E and item 7 of section 611 of the Corporations Act for the acquisition of ARP TriEnergy Shares from, and the issue of Marathon Consideration Shares to, Allied;
  - Shareholder approval pursuant to ASX Listing Rule 7.1 for the issue of the Marathon Consideration Shares to the Other Vendors;
  - Shareholder approval pursuant to ASX Listing Rule 11.1.2 for the change in the nature and scale of the Company's activities resulting from the acquisition of the ARP TriEnergy Shares;
  - Shareholder approval for the entry into of the Royalty Deed for the purposes of Chapter 2E of the Act; and
  - Shareholder approval for the entry into of the Interim Funding Agreement for the purposes of Chapter 2E of the Corporations Act; and
- the Company and ARP TriEnergy obtaining all required governmental or other regulatory consents and approvals, including:
  - the Company re-complying with the requirements of Chapters 1 and 2 of the ASX Listing Rules, as if the Company were applying for admission to the official list of the ASX (as required by ASX Listing Rule 11.1.3) by receiving confirmation from the ASX

that the Company has met the conditions for reinstatement to trading on the official list of ASX;

- any consent required under the *Petroleum and Geothermal Energy Act 2000* (SA) (**PGE Act**) or the *Mining Act 1971* (SA) (**Mining Act**);

- the approval of the Foreign Investment Review Board (**FIRB**) for the Company's proposed acquisition of ARP TriEnergy (on the basis that, as a result of the nationality of certain of the Company's current Shareholders, the Company is a 'foreign government investor' for the purposes of Australia's Foreign Investment Policy); and

- ARP TriEnergy entering into an arrangement with a third party custodian pursuant to which the custodian will be authorised to dispose of the ARP TriEnergy Holding during the period of 12 months commencing on the Completion Date, to ensure that the Company will at all times comply with the requirements of section 259D of the Corporations Act. Section 259D requires that, if a company (in this case, the Company) obtains control of an entity that holds shares in it (in this case, ARP TriEnergy) then within 12 months after obtaining that control, the relevant entity must cease to hold those shares.

If any of the above conditions is incapable of being satisfied, the Company must serve a notice on ARP TriEnergy and the Vendors and the Share Sale Agreement will automatically terminate.

Representations and Warranties

The Share Sale Agreement contains representations and warranties given by the Company and the Vendors which are typical for an agreement of this nature, including in relation to:

- the authority of each party to enter into the Share Sale Agreement;
- good and clear title to the ARP TriEnergy Shares;
- the accuracy of ARP TriEnergy's accounts;
- ARP TriEnergy's assets, employees, intellectual property and licences; and
- compliance with relevant laws.

2.3 Royalty Deed

The Royalty Deed is proposed to be entered into between ARP TriEnergy and each of Murray Kenneth Chatfield, Jan-Per Hole, David Kit Shearwood and Jordan Eliza Mehrtens in their capacity as trustees of the South Australia ISG Trust No. 1 (**ISG Trust**) immediately following Completion. The beneficiaries of the ISG Trust are each of the Vendors in proportion to their current (pre-Transaction) shareholding in ARP TriEnergy. The trustees of the ISG Trust are, or are associated with, certain beneficiaries of the Trust. Murray Kenneth Chatfield and Jan-Per Hole are (either directly or indirectly via entities controlled by them) shareholders of ARP TriEnergy. David Kit Shearwood and Jordan Eliza Mehrtens are (either directly or indirectly via entities controlled by or related to them) shareholders of Allied.

The key terms and conditions of the Royalty Deed are as follows:

- The Royalty Deed applies to a Product derived from PEL 650 and will commence on the date of execution of the Royalty Deed.

- "Product" is defined as a petroleum product extracted and recovered from the area of PEL 650 which is capable of being sold or otherwise disposed of.

- The Royalty Deed entitles the ISG Trust to payment of a royalty calculated as follows:

  - the Royalty Calculation for the sale of CH_4 will be calculated as 30c per gigajoule of CH_4 sold or 3.0% of the Gross Revenue, whichever is greater, with the exception that if the Gas Price falls below $6 per gigajoule, then the Royalty Calculation will drop to 15c per gigajoule of CH_4 sold but only for the period that the Gas Price is below $6 per gigajoule;

  - "Gross Revenue" means the gross proceeds (in Australian dollars, or its equivalent) actually received by ARP TriEnergy from the sale or other disposal of Products, (including any amount received from an insurer in the case of loss of, or damage to Products) less any applicable penalties, refunds, claims or discounts;

  - the Royalty Calculation for the sale of all other Products will be 2% of the Gross Revenue; and

  - the Royalty is required to be calculated and paid each month.

- The Royalty Deed imposes certain obligations on ARP TriEnergy in relation to the operations on PEL 650, including operating safely, efficiently and in a good, workmanlike and commercially reasonable manner, in accordance with good Australian petroleum practice and to maintain PEL 650 in accordance with all relevant legislation.

2.4 Interim Funding Agreement

The Company and ARP TriEnergy have entered into an Interim Funding Agreement pursuant to which, in the period following receipt of Shareholder approval for the Transaction until Completion of the Transaction, the Company has agreed to provide ARP TriEnergy with direct funding of up to a maximum of $400,000. Under the terms of the Interim Funding Agreement, ARP TriEnergy must only apply the funds provided for purposes agreed to in advance by the Company. The Company's intention is that these funds are to be applied by ARP TriEnergy to partially fund the planned preliminary appraisal drilling programme for the LCEP and for working capital purposes.

Details of the preliminary appraisal drilling programme for the LCEP, including the proposed budget, are set out in section 5.4 below.

2.5 Financial Information and Investigating Accountant's Report

The Financial Information set out in Schedule 1 comprises an historical and pro-forma statement of financial position in relation to the Company. The pro-forma statement of financial position has been prepared as at 31 December 2014 and assumes Completion of the Transaction.

The Directors have appointed the Investigating Accountant to prepare an Investigating Accountant's Report in relation to the Financial Information set out in Schedule 1.

The Investigating Accountant has concluded that, based on its review, nothing has come to its attention that causes it to believe that the Financial Information is not presented fairly, in all material respects, in accordance with the stated basis of preparation as described in section 4 of Schedule 1.

A complete copy of the Financial Information is included in Schedule 1 and the Investigating Accountant's Report is included as Annexure B of this Notice.

2.6 Pro-forma capital structure

Table 2 below shows the effect on the share capital of the Company following Completion of the Transaction.

Table 2: Capital Structure

Pre-Transaction Share Structure		**No.**	**%**
Non-Associated Shareholders		75,883,290	82.30%
ARP TriEnergy Holding		15,000,000	16.27%
Associates of ARP TriEnergy		1,324,499	1.43%
Total Shares on issue		**92,207,789**	**100.00%**
Transaction changes			
Issue of Marathon Consideration Shares		138,311,683	N/A
Total Shares on issue		**230,519,472**	**N/A**
Post-Transaction Share Structure			
Non-Associated Shareholders		75,883,290	32.92%
ARP TriEnergy Holding to be disposed of via custodian within 12 months of Completion		15,000,000	6.51%
Associates of ARP TriEnergy		1,324,499	0.57%
Vendors	Allied	104,767,190	45.45%
	Other Vendors	33,544,493	14.55%
	Total Vendors	**138,311,683**	**60.00%**
Total Shares on issue		**230,519,472**	**100.00%**

The associates of ARP TriEnergy referred to in Table 2 above are:

- Mr David Kit Shearwood, who holds 186,772 Shares; and
- Lawry Super Nominees Pty Ltd as trustee for the Lawry Family Superannuation Fund (**Lawry Super Fund**), which holds 1,137,727 Shares. The Lawry Super Fund is controlled by Mr Anthony Scott Lawry, who is currently a director and company secretary of ARP TriEnergy and the company secretary of Allied.

Mr Shearwood and the Lawry Super Fund obtained their respective Shares via a transfer from ARP TriEnergy on 16 March 2015.

As can be seen from Table 2 above, the Transaction will result in the dilution of the percentage interest of the existing Non-Associated Shareholders in the Company from approximately 82.30% to 32.92% (in total). When aggregated with the ARP TriEnergy Holding to be disposed of via custodian following Completion, the total percentage interest in the Company held by Shareholders not associated with the Vendors is 39.43%.

Allied will obtain a relevant interest in 45.45% of the Company as a result of the Transaction. In addition, and as explained more fully in section 11.3, for the purposes of Chapter 6 of the Corporations Act:

- Mr David Kit Shearwood will obtain a relevant interest in the Shares to be issued to Allied; and

- as a result of the associations between them, the voting power in the Company attributed to each of Allied, Mr Shearwood and the Lawry Super Fund will increase to 46.02%.

Your Independent Directors have formed the view that the relevant interest to be obtained by Allied as a result of the Transaction is sufficient to give Allied practical control of the Company. By contrast, the voting power to be acquired by each of Mr Shearwood and the Lawry Super Fund does not give those parties practical control of the Company. A summary of Allied's intentions in relation to the Company following Completion are set out in section 11.3 below.

3. Why you should vote to approve the Transaction

3.1 Summary of reasons

The Independent Directors recommend that you vote to approve the Transaction for the following reasons:

- it values the Company at a substantial premium to the on-market value of the Company prior to the Transaction;

- the Independent Expert has concluded that the offer is fair and reasonable to the Non-Associated Shareholders of the Company;

- the Company will gain immediate access to an ISG project with the potential for rapid development and further upside based on current gas market expectations;

- the Company will also gain potential access to any further exploration tenements which may be granted to ARP TriEnergy as a result of its existing portfolio of exploration licence applications spanning both the petroleum and minerals space;

- if the Transaction does not complete there is a risk that the Company's Share price will fall upon termination of the Transaction;

- the current ARP TriEnergy Holding represents a significant stake in the Company (16.27%) and is likely to be a significant deterrent to any other party considering a takeover of the Company; and

- if the Transaction does not complete the Company will need to search for an alternative project which will incur further costs and time with no guarantee that such a project can be found.

Each of these reasons is considered in more detail below.

3.2 Value premium

The Transaction values the Company at a substantial premium to the value of the Company prior to the Transaction, on the following basis:

- The Independent Expert has placed a preferred valuation on ARP TriEnergy of $20.0 million on a control basis (refer to sections 9.3 and 9.7 of the Independent Expert's Report).

- The Independent Expert has valued the post-Transaction interest in the Company of the Non-Associated Shareholders as being in the range of $7,490,000 to $7,830,000 on a minority basis (refer to section 11 of the Independent Expert's Report).

- The Independent Expert has valued the current interest in the Company of the Non-Associated Shareholders as being in the range of $2,470,000 to $2,800,000 (refer to section 7.8.2 of the Independent Expert's Report).

- This represents a substantial premium of $5,020,000 to $5,030,000 to the existing value of the Non-Associated Shareholders' interests in the Company (refer to section 11 of the Independent Expert's Report). In percentage terms it represents a premium of between 203% and 180%.

- The 90 day VWAP of the Company's Shares in the period prior to the announcement of the acquisition of the LCEP by the Company on 7 January 2015 was 2.80 cents per Share (excluding the distorting effect of the off-market sale of 18,432,337 Shares from Bentley Capital Pty Ltd to ARP TriEnergy in October 2014). On the basis of this price, the implied market capitalisation of the Company was $2,581,818. The Non-Associated Shareholders' interests (82.30%) represent $2,124,732, (say $2,120,000). Therefore the Transaction represents a premium to the value of the Non-Associated Shareholders' interests in the Company as at 7 January 2015 of $5,370,000 to $5,710,000. In percentage terms this represents a premium of 253% to 269%.

3.3 Independent Expert

The Independent Expert has concluded that the Transaction is fair and reasonable to the Company's Non-Associated Shareholders.

For a complete copy of the Independent Expert's Report, please see Annexure A to this Notice.

3.4 Access to an ISG project

The acquisition of ARP TriEnergy will give the Company control of the LCEP which is 100% owned by ARP TriEnergy.

The LCEP is discussed in more detail in section 5.4; however, in summary the aim of the project is to produce syngas via ISG. Coal seams are present* in the Lower, Main and Upper Series, with the Main series comprising essentially a single seam 6-18 metres thick (but with some mudstone partings).

*The 2014 South Australian Fuel and Technology Report produced by the Australian Energy Market Operator (AEMO) in January 2014, states coal tonnage contained within PEL 650 included 150mt of measured and indicated coal and 350mt of inferred coal. (Table 2.1 South Australian Coal Resources - reference Department of Manufacturing, Innovation, Trade, Resources & Energy (DMITRE) Coal Resources in South Australia - in situ tonnage & quality). AMC references this as indicative of the

presence of an exploration target, and emphasises the coal tonnage reported by AEMO is not JORC (2012 edition) compliant.

The LCEP also benefits from proximity to infrastructure which will facilitate the sale of gas produced at the LCEP to potential purchasers.

The eastern Australian gas market is undergoing a period of substantial transformation with the creation of an east coast Liquefied Natural Gas export industry. Once the LNG plants come into operation there will be a massive increase in demand for gas in the eastern Australian market. With pending growth in gas demand due to new LNG production, the outlook for gas pricing is for a likely continuation of the current high gas price which has already seen significant increases over the last few years. Please refer to section 5.6 below for further information in relation to the gas market in Australia.

The Company expects to be able to identify an economic resource at a relatively low cost and expects gas production to commence in a relatively short period thereafter, allowing it to benefit from the expected increase in demand and resultant shortfall in uncontracted supply of gas at a time when gas prices are high.

3.5 ARP TriEnergy exploration applications

In addition to PEL 650, ARP TriEnergy has five petroleum exploration licence applications (**PELAs**) covering 24,481km^2 and two mineral exploration licence applications (**ELAs**) covering 1,293km^2. The PELAs target the exploration of petroleum (which includes deep coal for the purposes of ISG). The ELAs target coal resources. Details of ARP TriEnergy's existing licences and applications are provided in section 5.2.

Although PEL 650 and the LCEP are the primary initial focus, if the Transaction is successful the Company expects to pursue potential developments on these additional Tenements in the future. These applications cover primarily greenfield sites and detailed exploration and development plans will be subject to internal prioritisation and review at the appropriate time.

Further information in relation to ARP TriEnergy's tenements and exploration licence applications is set out in section 5.2.

3.6 Company share price

If the Transaction is not approved there is a risk that the Company's share price will fall back to or below the levels it traded at prior to the announcement of the Transaction.

3.7 ARP TriEnergy Holding

The ARP TriEnergy Holding represents a significant stake in the Company (16.27%) and is likely to be a significant deterrent to any other party considering a takeover of the Company at a time where it is without a major project for development. Accordingly, if the Transaction does not complete and ARP TriEnergy remains on the Company's register at its current holding level, existing Shareholders may have limited options for dealing with their investment given the Shares are unlikely to be highly liquid in the absence of a viable alternative transaction.

Although the Transaction has significant implications for control of the Company, it will result in the Company acquiring an active project with the potential to add significant value to the Company, to the ultimate benefit of all Shareholders.

3.8 Company operations

If the Transaction is not approved, the Company will need to reinitiate the search for an alternative project. Whilst the Company has always been focussed on keeping expenditure to a minimum, the ongoing search will necessarily incur further costs and time. There is no guarantee that an appropriate project will be found within the limitations of existing available funds and further capital may need to be raised within a capital constrained market.

4. Why you may wish to vote against the Transaction

4.1 Summary of Reasons

Although the Independent Directors recommend that you vote in favour of the Transaction, you may be influenced by other factors, including the following, to vote against the Transaction:

- the Company's business activities will change from an historic focus on minerals exploration to a focus on energy projects;
- the Company will not be in a position to pursue other opportunities that may arise;
- the Transaction will have a significant impact on the control of the Company;
- you may disagree with the recommendation of the Independent Directors or the conclusions of the Independent Expert;
- the risks associated with ISG, which is a relatively new technology in Australia; and
- you may prefer that the Company be wound up, with surplus assets distributed to Shareholders.

Each of these reasons is considered in more detail below.

4.2 Change in business activities

Shareholders may have made the decision to invest in the Company on the basis that it was a minerals exploration company, and may not support the change in the nature of the Company's business activities to become an energy and minerals exploration and development company.

4.3 Inability to pursue other opportunities

The Company's commitment to the acquisition of ARP TriEnergy and the development of the LCEP means that it will have limited, if any, resources to pursue other investment opportunities that may arise in the future.

4.4 Impact on control

As set out in section 2.6 above, the shareholdings of the Company's existing Shareholders will be diluted as a result of the Transaction, with the Vendors together to hold 60.00% of the expanded share capital of the Company following Completion.

ARP TriEnergy's current major shareholder Allied will become the major Shareholder of the Company, with an interest in 45.45% of the Company's issued capital.

In addition, Allied will have the ability to appoint to appoint 3 out of a total of up to 6 Directors to the Board of the Company. The Independent Directors are of the view that, following Completion, Allied will effectively be in a position to control the Company. There is a risk that Allied will use its voting power and ability to appoint Directors to the Board to pursue interests which differ from those of other Shareholders.

4.5 Recommendations and Independent Expert's Report

You may disagree with the opinion of the Independent Directors or the conclusion of the Independent Expert that the Transaction is fair and reasonable.

4.6 ISG Risks

You may assess that the risks of ISG, as outlined in the valuation report prepared by Global Resources & Infrastructure Pty Ltd dated 10 April 2015 and attached to the Independent Expert's Report as Annexure B, exceed the advantages of the Transaction. These risks are summarised in section 6 below.

4.7 Winding Up

It is open to the Board not to pursue any new project for the Company and for Shareholders to resolve that the Company be voluntarily wound up. Such a decision would see surplus assets (if any) distributed to Shareholders rather than applied to the pursuit of the LCEP, or other suitable projects.

5. Relevant Considerations for Shareholders

On successful Completion of the Transaction, the Company will be focussed on developing a project to produce syngas via ISG of the deep coal present at Leigh Creek (in particular PEL 650).

5.1 In Situ Gasification

Surface Coal Gasification and In Situ Gasification

Surface gasification of coal was originally used for making town gas. The first commercial gasification was used in the 1800's for industrial and residential heating and lighting.

In gasification, a thermo-chemical process takes place, rather than burning coal directly, to break down the coal into its basic chemical constituents. In modern gasifiers the coal is typically exposed to steam and air or oxygen under high temperatures and pressures. Under these conditions, molecules in the coal break apart, initiating chemical reactions that produce syngas, typically a mixture of carbon monoxide, hydrogen and other gaseous compounds.

ISG and surface gasification can each be used to produce similar syngas that have identical downstream uses.

Gasifying the coal in situ (underground) allows the energy extraction from large coal resources that are not economically or technically recoverable by conventional mining techniques. The hazards related to conventional mining are also reduced. Surface disruption is minimised and surface handling of solid materials is eliminated (i.e. coal and ash handling at the surface is not required). ISG consumes less surface water and generates less atmospheric pollution compared to surface gasification. Capital investment costs and syngas production costs are also less than for surface gasification.

What is In Situ Gasification (ISG)?

Whilst ISG technology has been known since the 1800's, it was first adopted commercially in the former Soviet Union during the 1930's and remains today in the form of the Angren plant in Uzbekistan which feeds a power generation plant. Recent advances in oil and gas technologies (notably directional drilling and computer-based process control) have combined to further enhance ISG's potential to become more commercially attractive.

The ISG process occurs in deep (greater than 300m) coal seams (in situ). By creating the right process conditions (pressure, temperature, presence of oxygen or air, and sometimes steam) in the coal seam, a series of chemical reactions occur, which results in the gasification of the coal. Under this process the solid coal breaks apart into its component gases to produce a synthetic gas (syngas).

The process is controlled via the injection of air or oxygen into the coal seam. These are introduced to the seam via an injection well that is drilled vertically and then horizontally into the coal seam. The injection well is connected to surface facilities including the oxygen, air and nitrogen supply equipment.

The syngas is extracted through production wells drilled in the coal seam to the surface where the gas is collected prior to cleaning for use in downstream processes or direct sale.

To facilitate flow through the injection well, gasification zone and production wells, a "link" needs to be created to enhance the in situ permeability of the coal seam. This is achieved by directional drilling which creates a void along which gases can travel.

While the precise method to be utilised at the LCEP will be finalised during the front end engineering design phase of the project development work, based on preliminary work it is anticipated that the establishment of the channel between the injection well and the production well will be achieved by drilling a horizontal hole. Later, heating of the coal at various locations along the drill hole is likely to utilise the Continuous Retraction Injection Point (**CRIP**) method. This method has been proven at several ISG trial sites and is widely considered to be the preferred method for efficient production of syngas from underground coal seams.[1]

In the CRIP process, the production well is drilled vertically and the injection well is drilled using standard oilfield directional drilling techniques in order to connect the wells as shown in Figure 1 below.[2]

[1] AMC Report, page 25.
[2] AMC Report, page 25.

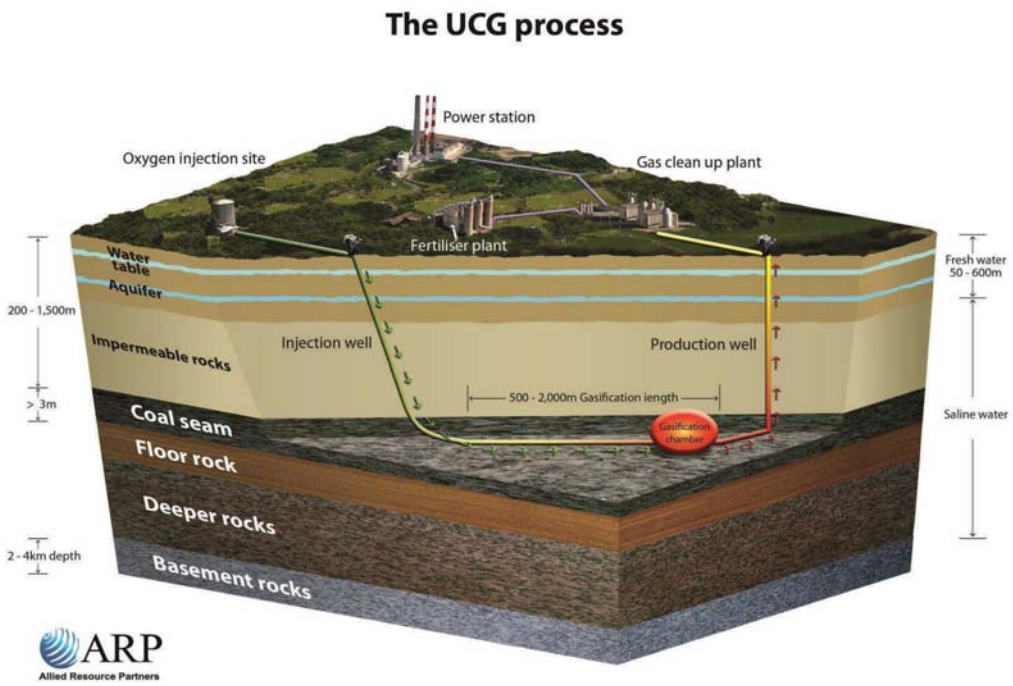


Figure 1: The UCG Process

Once the channel is established and the coal heated, a gasification cavity is initiated at the end of the oxygen (or air) injection well in the horizontal section of the coal seam. When the coal near the recently created cavity is consumed, the injection point is retracted, and a new gasification cavity initiated. In this manner, precise control over the progress of the gasification is obtained which leads to a more consistent gas composition.[3]

Once brought to the surface via the production wells the syngas is first separated and processed and is then available for use either:

- as feedstock for power stations;
- for sale to gas customers (after separation of methane from the syngas);
- as ammonium nitrate (for the production of fertiliser and explosives); or
- to produce liquid fuels.

The method of processing the syngas will depend upon the composition of the gas and the end product that the Company ultimately aims to produce.

Brief history of ISG

ISG was first proposed in the 1800's. The most significant development experience has been gained in the former Soviet Union commencing in the 1920's (although interrupted by the Second World War).

Following the discovery of cheap oil and natural gas throughout Russia in the 1970's and 1980's, the ISG development operations were generally scaled back as being unnecessary and uneconomic[4] in comparison to the abundant cheap natural gas available at the time.

[3] AMC Report, page 25.
[4] DAME Report, page 9.

Following the break-up of the former Soviet Union only Kemerovo, in the Kuzbass region of Russia and the Yerostigaz station in Angren, Uzbekistan continued to operate, each producing up to 4 billion cubic metres of syngas per annum. The Kemerovo operation closed in 1996, leaving the Yerostigaz operation, located in Angren in Eastern Uzbekistan and which had commenced its operations in 1961, as the only commercially operating ISG operation.[5] Syngas produced at Angren is used to produce electricity for the city of Angren.

Current Status of ISG

In the past decade, there have been only two dominant proponents of ISG in Australia, Linc Energy Ltd (**Linc Energy**) and Carbon Energy Limited (**Carbon Energy**). Both of these proponents are based in Queensland with trial sites within 100km of one another and both trialled on the Macalister coal seam in the Surat Basin.[6]

The regulatory regime that applies to ISG differs greatly between South Australia and Queensland. In Queensland, ISG is regulated under the *Mineral Resources Act 1989* (Qld) (**Mineral Resources Act**) while coal seam gas (**CSG**) is regulated under the *Petroleum and Gas (Production and Safety) Act 2004* (Qld) (**Petroleum Act**).

In South Australia both ISG and CSG are regulated under the PGE Act.

This distinction is extremely important. In Queensland, the framework whereby CSG is regulated under the Petroleum Act and ISG is regulated under the Mineral Resources Act gives rise to the possibility of overlapping tenure and therefore competing interests. In fact, both Acts contemplate the possibility of tenement overlaps and provide for a regime of consultation and negotiation.

In South Australia, as both CSG and ISG are regulated under the one PGE Act, no such competing interest occurs. The potential for a dispute over the same resource does not apply to the LCEP.

Linc Energy

Linc Energy started its first ISG gasifier at Chinchilla in Queensland in 1999 using the traditional former USSR conventional ISG method. It was 8 years later that ISG Gasifier 2 (G2) was performed using a similar process in 2007, however this trial only operated for a short period of time (months).[7]

Linc Energy operated five gasifiers between 1999 and the closure of the last gasifier in 2013.

Over its two-year design life, Linc's final gasifier at Chinchilla produced 48 million Nm^3 (Normal cubic metres) of syngas. It demonstrated the implementation of commercial gasifier design to be employed in future commercial projects.

Linc cited the Queensland regulatory environment as being the primary reason for the decommissioning of the Chinchilla plant. Linc is now developing projects in the United States, Poland and southern Africa.

Carbon Energy

ASX-listed Carbon Energy was born out of the Commonwealth Scientific and Industrial Research Organisation (CSIRO) after 10 years of proof of concept around ISG. The ISG technology it developed

[5] DAME Report, page 9.
[6] DAME Report, page 12.
[7] DAME Report, page 12.

(known as Keyseam®) is the technology that has been tested at its trial site at Bloodwood Creek in Queensland.[8]

Carbon Energy has achieved proof of concept for its proprietary technology through the operational lifecycle from panel construction and gasification through to the export of electricity. It became the first Australian company to export power generated by syngas into a commercial grid.

Carbon Energy is currently working to receive Queensland Government approval to proceed with commercialisation, at which point it plans to develop the Blue Gum gas project to produce 25 petajoules per annum of pipeline quality natural gas by 2017 via ISG.

Overseas projects

In addition to the ongoing work in Australia, notable overseas projects include the Swan Hills project in Canada and the Majuba operation in South Africa which continues to make progress towards full commercial scale production.

Swan Hills Demonstration Plant

Swan Hills Synfuels is a developer of clean energy projects in Alberta, Canada. With funding support from 'Alberta Innovates', Swan Hills permitted, constructed and operated a successful ISG trial in Alberta, Canada from 2008 to 2011. The trial was conducted at depth of 1,400m.

It is worth noting several comments regarding the Swan Hills trial in Alberta, specifically the following:

- "The In Situ Coal Gasification ("ISCG") well pair used is a full commercial scale well pair";
- "There is no scale-up required of the well pair to move into commercial project development";
- "planned future commercial ISCG developments will involve simple replication of well pair (sic) to develop an ISCG well field of sufficient gas manufacture capacity to meet the volume needs of that commercial project"; and
- "Synfuels considers deep ISCG at Swan Hills ready for replication-based deployment in commercial project developments".

It is important to note that this trial utilised full commercial scale equipment – equipment that is already utilised in the oil and gas industry. Moving to full commercial production would not require any scaling up of equipment, merely replication to reach economically viable results.

Eskom Majuba

Eskom successfully operated a pilot ISG plant close to its Majuba power plant from 2007- 2011. The pilot plant produced 15,000 Nm^3h (Normal cubic metres per hour) and was decommissioned in 2011. A move to full commercial scale production is currently planned but awaiting permitting.

Summary of Current Status

The Company considers that the full-scale development of commercial ISG is feasible. ISG has not been commercially implemented in Australia at this stage due to the regulatory regime in Australia's

[8] DAME Report, page 17.

largest coal state, Queensland. The LCEP offers the opportunity to rapidly progress such a development.

5.2 Allied and ARP TriEnergy

Allied, the current major shareholder of ARP TriEnergy, was incorporated in 2011.

Allied identified the LCEP as having potential as an economic ISG project and, through a separate company known at the time as Nicavid Consulting & Design Pty Ltd (**Nicavid**), an application for a petroleum exploration licence was made. At the time of the application, Nicavid was a private company of which Mr David Kit Shearwood was a director and shareholder.

Allied subsequently acquired 100% of Nicavid and changed the name of the company from Nicavid to ARP TriEnergy to better reflect its business focus and new ownership. The South Australian government granted PEL 650 to ARP TriEnergy in November 2014.

In July – September 2014 ARP TriEnergy raised $1,777,600.00 from private investors in order to further fund the development of the LCEP. Following that capital raising, Allied remains the major shareholder of ARP TriEnergy with 75.75% of the issued capital. The new shareholders, being the Other Vendors to this Transaction, together hold the remaining 24.25% of ARP TriEnergy.

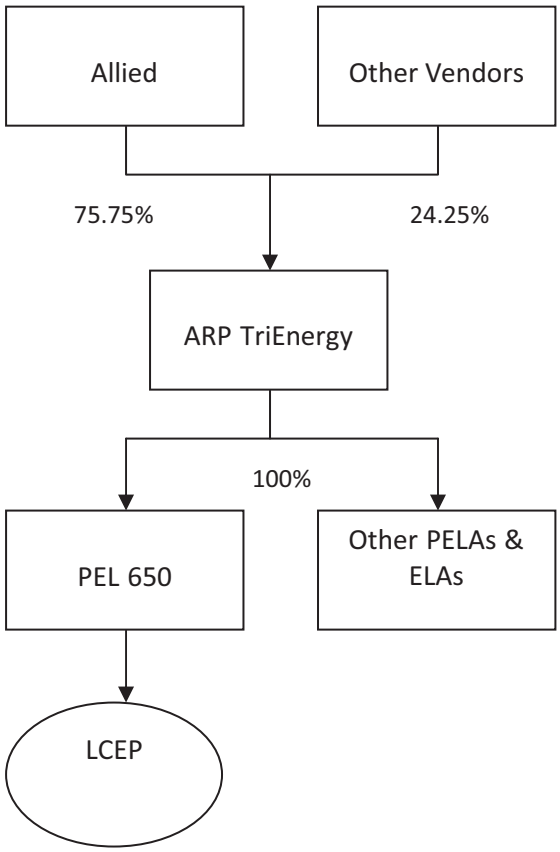
As noted previously, ARP TriEnergy is itself a major shareholder of the Company, having acquired 19.99% of the issued ordinary shares of the Company from Bentley Capital Pty Ltd in October 2014. As noted above, the ARP TriEnergy Holding is currently 16.27% of the Company's issued capital.

The directors of Allied are Mr Shearwood and Mr Daniel J D Peters. Mr Peters is currently a director of the Company. Mr Shearwood will become a director of the Company if Resolutions 1 to 3 (inclusive) and 5 are passed.

The directors of ARP TriEnergy are Mr Shearwood, Mr Peters, Mr Anthony Scott Lawry and Mr Jan-Per Hole. The recently signed Share Sale Agreement entered into in respect of the Transaction contemplates that Mr Lawry and Mr Hole will resign as directors of ARP TriEnergy upon Completion occurring. The Company may nominate additional directors to the board of ARP TriEnergy following Completion.

The current corporate structure of the ARP TriEnergy is presented in Figure 2 below.

Figure 2: Current Corporate Structure of ARP TriEnergy



Under the Transaction the Company will purchase all of the ARP TriEnergy Shares from the Vendors in return for the issue of the Marathon Consideration Shares. The Marathon Consideration Shares will be allotted pro rata to the Vendors who will then become Shareholders of the Company. Please see section 2.2 above for further details in relation to the Share Sale Agreement and Schedule 2 for details of the Vendors and the Marathon Consideration Shares to be issued to each of them.

The ARP TriEnergy Holding in the Company will be disposed of by a custodian within 12 months following Completion.

As outlined in the Independent Expert's Report, the only significant assets held by ARP TriEnergy at present are the Tenements referred to above, plus the ARP TriEnergy Holding in the Company. ARP TriEnergy has no identified material liabilities or commitments (other than the expenditure commitments in respect of PEL 650).

The Independent Expert has assessed the current fair value of ARP TriEnergy as being $20,000,000 (on a control basis).

5.3 ARP TriEnergy Exploration Licences and Licence Applications

ARP TriEnergy currently holds one granted petroleum exploration licence (**PEL**), PEL 650 and has submitted five other petroleum exploration licence applications (**PELAs**). They are PELA 643, PELA 582, PELA 644, PELA 649 and PELA 647. ARP TriEnergy also holds two mineral exploration licence applications (**ELAs**), ELA 232 and ELA 238. On 12 February 2015, the Department of State Development (**DSD**) made an offer to grant exploration licences in respect of the ELAs. Those offers were accepted by ARP TriEnergy on 6 March 2015. This triggers the commencement of a 30-day period during which DSD publishes an Intent to Grant Notification in the SA Government Gazette. It is expected that the two ELs near Leigh Creek will be granted around late April 2015.

A list of tenements and tenement applications and a Tenement Map is presented in Table 3 and Figure 3 respectively.

Table 3: ARP TriEnergy Tenements and Tenement Applications

Tenement/Tenement Application	Location	Surface area (sq. Km)	Surface area (ha)	Mineral Rights Holder	Status of Mineral Right
PEL 650	Leigh Creek	93.40	9,340	ARP Tri- Energy Pty Ltd 100%	Granted 18 November 2014
ELA 232	Leigh Creek	94.20	94,200	ARP Tri- Energy Pty Ltd 100%	Under Offer and Acceptance 4/3/15 awaiting grant 30 days
ELA 238	Leigh Creek	351.00	35,100	ARP Tri- Energy Pty Ltd 100%	Under Offer and Acceptance 4/3/15 awaiting grant 30 days
PELA 643	Callabonna	5,813.49	581,349	ARP Tri- Energy Pty Ltd 100%	Under application awaiting grant
PELA 582	Finniss Springs	5,677.12	567,712	ARP Tri- Energy Pty Ltd 100%	Under application awaiting grant
PELA 647	Leigh Creek	3,841.86	384,186	ARP Tri- Energy Pty Ltd 100%	Under application awaiting grant
PELA 644	Roxby Downs	8,932.98	893,298	ARP Tri- Energy Pty Ltd 100%	Under application awaiting grant
PELA 649	Oakdale	2,309.78	230,978	ARP Tri- Energy Pty Ltd 100%	Under application awaiting grant
TOTAL		**27,961.63**	**2,796,163**		

Source: AMC Report (updated 17 April 2015 with new information)

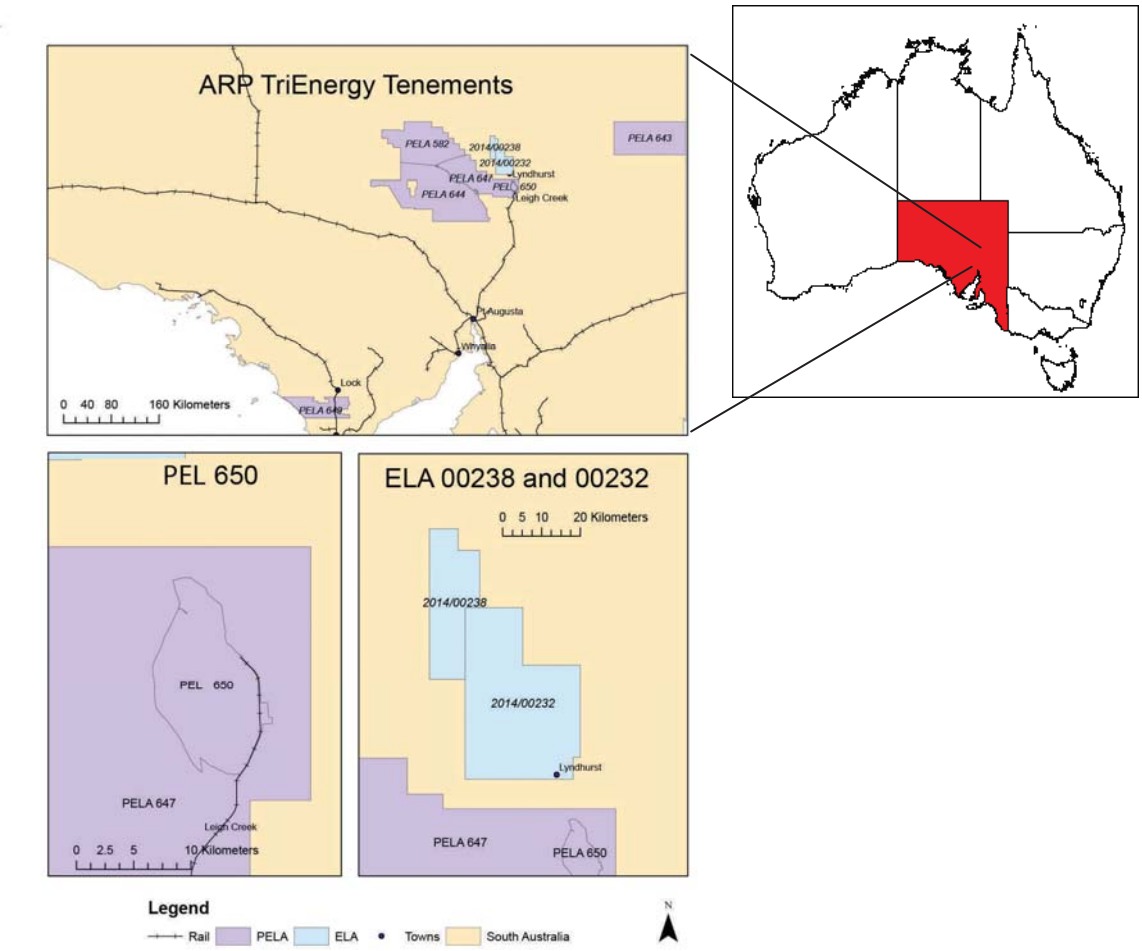


Figure 3: ARP TriEnergy Licence Areas
Source: AMC Report

PEL 650 was granted to ARP TriEnergy on 18 November 2014 for a period of five years. Minimum work commitments require geological and geophysical studies and appraisal drilling with an anticipated cost of $300,000 per annum in years 1 to 3, seismic acquisition and the design of an exploration program with an anticipated cost of $450,000 in year 4 and the drilling of 5 wells with an anticipated cost of $1,000,000 in year 5. Details of the planned preliminary appraisal drilling programme and budget are incorporated in section 5.4. If an offer to grant PELs in response to the existing PELAs is made by DSD, ARP TriEnergy will apply to convert the relevant PELAs to PELs.

If the Transaction is approved then the Company's initial focus will be on the LCEP (situated on PEL 650) given its more established exploration history, existing infrastructure, proximity to markets and development potential. The remaining tenement applications relate predominantly to greenfields exploration areas. The Company will look to develop projects on other tenements if granted in the future, subject to available capital and the Board's assessment of the prospects of those tenements at any given time.

Subject to the future assessments to be made of exploration potential on these tenements, further work may be required. To the extent that this work is not able to be funded from within the cash reserves of the business, it may be necessary to source funds externally. This external funding may be from joint venture partners, offtake agreements, other commercial arrangements or capital raisings. In each case the potential for successful future development will be diligently reviewed prior to any funding decision being made.

5.4 Leigh Creek Energy Project (LCEP)

The Company commissioned Australian Mineral Consultants (**AMC**) to provide a specialist technical report (the AMC Report), being a review of PEL 650 and the LCEP. The full AMC Report can be accessed at http://www.marathonresources.com.au/pdf/Review-Report-Leigh-Creek-Energy-Project-PEL-650-south-Australia-Australian-Mineral-Consultants.pdf. The AMC Report is referred to below as appropriate. The Independent Directors recommend that all Shareholders take the opportunity to consider the full AMC Report when determining how to vote in relation to the Resolutions.

Location

The LCEP is situated on PEL 650 in the area of the existing Leigh Creek open cut coal mine owned by Alinta Limited (**Alinta**). On 12 January 2015, ARP TriEnergy and Alinta entered into a non-binding Heads of Agreement setting out the parties' in principle agreement regarding ARP TriEnergy's proposed conduct of appraisal drilling activities on PEL 650 in the area of the Leigh Creek coal mine. ARP TriEnergy and Alinta have agreed details of a general drilling area in which appraisal drilling may be undertaken which would pose no interruption to the activities of Alinta. It is intended that the parties will enter into a formal agreement in relation to any appraisal drilling to be undertaken by ARP TriEnergy, which will also set out services that Alinta will provide to ARP TriEnergy (at a cost to be agreed).

The area of PEL 650 is outside of the Great Artesian Basin. The Leigh Creek coalfield, located 550km north of Adelaide, was discovered in 1888. Intermittent work took place on the site until the 1950's when, for security of supply reasons, it was decided to develop an open cut coal mine at Leigh Creek to supply all the coal requirements for the State's power stations. DSD has records of the drilling activities undertaken at Leigh Creek since the 1940's.

Development intentions and work programme

The objective of the LCEP is to produce syngas via ISG from the deep coal seams at Leigh Creek (please refer to section 5.1 for an explanation of syngas and ISG technology). The syngas will initially be cleaned and processed and it is proposed that it will be made available for sale to east coast gas customers via the existing Moomba to Adelaide Pipeline System (**MAPS**) pipeline infrastructure.

The initial work programme is an appraisal programme aimed at upgrading the current knowledge base to define a resource which is compliant with the 2012 JORC Code (see below).

It is intended that the ultimate development of the LCEP will be conducted in three stages, being:

- **Stage 1** – using a single ISG panel to demonstrate that gas of consistent quality can be produced safely, efficiently, economically and with minimal impact to the environment;

- **Stage 2** – replication of the single panel demonstration phase with multiple ISG panels using standard oilfield equipment and techniques. The resultant product, once processed, will then be sold into the market via the MAPS which is connected to the eastern Australian gas pipeline network; and

- **Stage 3** – may include increased gas sales, new electricity production and/or ammonium nitrate production for use in fertiliser and explosives production.

This stepped development methodology offers a low risk approach to developing the overall business as each development phase is proven up before committing funds to the next, larger stage.

The above proposed development methodology is dependent on the Company successfully completing further appraisal work on the LCEP and will be subject to detailed feasibility studies required to determine project economics. At this stage, it is not possible for the Company to determine the precise costs that may be involved in getting to and completing the development stages. Depending on the outcome of the proposed feasibility studies, the Company may be required to undertake further capital raising activities in order to fund the stepped development currently contemplated.

Coal Availability

The Leigh Creek coalfield is made up of five basins spread over some 20km.[9] Coal seams are present* in the Lower, Main and Upper Series, with the Main series comprising essentially a single seam 6-18 metres thick (but with some mudstone partings).

*The 2014 South Australian Fuel and Technology Report produced by the Australian Energy Market Operator (AEMO) in January 2014, states coal tonnage contained within PEL 650 included 150mt of measured and indicated coal and 350mt of inferred coal (Table 2.1 South Australian Coal Resources - reference Department of Manufacturing, Innovation, Trade, Resources & Energy (DMITRE) Coal Resources in South Australia - in situ tonnage & quality). AMC references this as indicative of the presence of an exploration target, and emphasises the coal tonnage reported by AEMO is not JORC (2012 edition) compliant.

The appraisal programme as referred to below has been designed with the objective of defining a resource that meets the requirements of the 2012 JORC Code.

As part of the AMC Report commissioned by the Company, AMC assessed the coal resources of the target ISG coal within the area of the LCEP known as 'Lobe B'. This assessment has identified an exploration target in the range of between 220 and 530 million total tonnes of coal in situ.[10] All of these potential resources are situated below the life of mine economic 200m open cut level. This assessment is not compliant with the 2012 JORC Code but has been prepared in reliance on previous resources reported in accordance with 2004 edition of the JORC Code as well as a detailed assessment of the PEL 650 resources undertaken by AMC in November 2014.[11] It is important that Shareholders be aware that the potential quantity of the exploration target is conceptual in nature, there has been insufficient exploration to estimate a Mineral Resource (as defined in the 2012 JORC Code) and it is uncertain whether further exploration will result in the estimation of a Mineral Resource.

This existing knowledge base significantly reduces the exploration risk and enhances the ability to more quickly define a 2012 JORC Code compliant resource.

Suitability for ISG

A significant body of work regarding the LCEP has been completed in the past including the Murray Report which identified the Telford Basin, Main Seam and Lower Seam as prospective for ISG. This was followed by the Golder Report which sought to cover the data gaps from the Murray Report and

[9] AMC Report, page 8.

[10] The information in this Notice that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Tim Jones, a Competent Person who is a Member of the Australian Institute of Geoscientists. Tim Jones is employed by Australian Mineral Consultants. Tim Jones has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Tim Jones consents to the inclusion in the Notice of the matters based on his information in the form and context in which it appears.

[11] AMC Report.

investigate roof stability and the influence of groundwater. These studies concluded that ISG was feasible but did not fully identify the extent of the coal resources or gas potential thereof.[12]

The Company commissioned the AMC Report to obtain a specialist technical report on the suitability for ISG of the deep coal assets forming the LCEP as a part of its due diligence investigations. The AMC Report concluded the following:[13]

- The estimated gas potential of ISG at the LCEP is in the range of 56 billion m^3 and 135 billion m^3. It is important to note that these potential volumes relate to gas-in-place and do not represent sales gas volumes. AMC noted in terms of context that Origin Energy's Darling Downs generator in Queensland is currently consuming 14.3 PJ per annum per 100MW.

- ISG is feasible for the main and lower seams where faulting or geological structure is absent.

- The structure of the Telford Basin is complex in some areas therefore additional seismic acquisition and drilling is required prior to panel design.

- Geotechnical testing of the roof and floor found medium strength competent rocks suitable for ISG chambers.

- The hydrogeology of the project area is suitable for ISG with hydraulic conductivity and permeability ideal, preventing either ISG panel extinguishment or unacceptable drawdown.

- The phreatic surface[14] of groundwater is relatively close to the surface providing a significant hydrostatic head above the ISG chamber.

- The LCEP site meets every selection criteria outlined by the Queensland Independent Scientific Panel on ISG.

- Significant existing infrastructure is in place, including rail, pipelines, township, airport with sealed runway, power from the grid and transmission lines.

Infrastructure

The LCEP is ideally located with ready access to existing infrastructure in the area. The existing infrastructure includes the following:

- a train line from Leigh Creek to Port Augusta allowing easier movement of goods to and from the site;

- the MAPS which is approximately 125km from the LCEP. Accessing the MAPS will require construction of a connecting pipeline to the existing infrastructure and agreements with third parties. Successful completion of these construction activities and conclusion of necessary third party agreements cannot be guaranteed;

- grid power is available;

- the township of Leigh Creek is 15 km from the LCEP, which provides benefits for development of the LCEP in terms of workforce and supplies to the site; and

[12] AMC Report, page 29.
[13] AMC Report, page 47.
[14] Phreatic surface means the location where the pore water pressure is under atmospheric conditions (i.e. the pressure head is zero).

- there is a sealed road to the LCEP site, allowing for easier access to and from the site.

Appraisal Drilling Work Programme and Budget

Appraisal drilling and geological and geophysical studies are required in year 1 of PEL 650 as part of the minimum work commitments. A minimum of $300,000 is required to be spent in relation to those activities. Such minimum work commitments are part of the conditions of PEL 650.

A preliminary appraisal drilling programme has been planned, which consists of 8 partially cored holes and 8 chip pilot holes. The pilot holes will all be geophysically logged in order to provide electronic measurement of relevant geological factors down each hole. Each hole will then be redrilled to a precise depth, which will be determined with reference to the pilot hole results, to collect the required roof, coal and floor material. Such activities meet the minimum requirements of PEL 650 for 'appraisal drilling'.

The drilling programme is intended to operate for approximately 8 weeks, operating 24 hours per day and 7 days per week (subject to operational conditions).

The total cost of the drilling programme is approximately $1,496,172. That sum goes above and beyond the minimum expenditure requirement contained in PEL 650 (i.e. $300,000). The main components of that sum include the cost of the chip and cored holes, being $840,160 and $228,000 respectively. Other costs included in the drilling programme budget consist of consumables, FIFOs and accommodation. A 20% contingency has also been incorporated into the drilling budget.

The drilling program is expected to commence on 25 May 2015, subject to final government approvals including the submission of an Environmental Impact Report and the approval of a Statement of Environmental Objectives plus approval of the work programme.

Under the non-binding Heads of Agreement referred to above, ARP TriEnergy has reached in-principle agreement with Alinta regarding a general drilling area in which appraisal drilling may be undertaken which would pose no interruption to the activities of Alinta. It is intended that ARP TriEnergy will enter into a more formal agreement with Alinta in relation to ARP TriEnergy's access for the purposes of undertaking the appraisal drilling programme, as well as certain services that Alinta will provide to ARP TriEnergy (at a cost to be agreed).

5.5 Other Tenement Applications

In addition to PEL 650, five PELAs and two ELAs are held by ARP TriEnergy as set out in section 5.3 above. The Company considers that any tenements that may be granted as a result of the applications will be in the nature of greenfields exploration projects due to the lack of historical exploration activity undertaken in the relevant areas and, as such, no value was ascribed to these by the Independent Expert.

5.6 Gas Markets in Australia

The Board considers that the LCEP is a promising project for the Company's Shareholders in light of its analysis of the current state of the gas market in Australia. As well as considering a range of publicly available information, to underpin its analysis the Board commissioned EnergyQuest Pty Ltd in November 2014 to provide a report in relation to Australia's east coast gas market in particular. A summary of the EnergyQuest Report is set out below and a full copy can be accessed at http://www.marathonresources.com.au/pdf/Available-East-Coast-Gas-Study-EnergyQuest.pdf. The Independent Directors recommend that all Shareholders take the opportunity to consider the full report when determining how to vote in relation to the Resolutions.

Gas Demand

The major influence on future gas demand in Australia will be the new LNG export facilities currently in production or nearing completion. There are three such facilities at Gladstone in Queensland owned by a range of global energy companies, being:

- Asia Pacific LNG (APLNG) (Conoco Phillips - USA, Origin Energy - Australia, Sinopec - China);
- Queensland Curtis LNG (QCLNG) (QGC – subsidiary of British Gas - UK, CNOOC - China, Tokyo Gas - Japan); and
- Gladstone LNG (GLNG) (Santos - Australia, KOGAS - Korea, PETRONAS - Malaysia, Total - French).

Total gas demand across the interconnected gas networks of South Australia, Victoria, New South Wales, Queensland and Tasmania was 740 PJ in 2012. The three committed projects, with six LNG trains (a liquefied natural gas plant's liquefaction and purification facility), will require a minimum of 1,518 PJ of gas per annum – a total demand representing a threefold increase over the 2012 demand on the east coast. The LNG plants, with their large increase in anticipated gas consumption volumes, are expected to become the driving force in the eastern Australian gas market for the foreseeable future.

Gas Supply

As a result of the large anticipated increase in demand, the supply situation is expected to become extremely tight, being further exacerbated by the ongoing depletion of easily recoverable conventional gas supplies in Australia. In an attempt to understand the outlook for the gas industry, a number of studies of the gas market have recently been completed by governmental departments and private industry. Whilst the outcomes vary depending on the base assumptions a few key points can be summarised below:

- from a macro perspective, with current proven plus probable (**2P**) conventional reserves limited to around 7,000PJ it is clear that unconventional gas will be the driving force of future expansions (note that currently CSG supplies approximately 80% of the Queensland market). The costs of unconventional gas are higher than conventional gas. The current cost of CSG is around $4.40 - $5.60/GJ and is expected to rise to a level of around $7/GJ at a 2P reserve level of 80,000PJ;
- insufficient new production is being developed to service the LNG projects, which will draw gas from the domestic market;[15]
- increasing cost of gas production due to the maturity of conventional fields, the move to higher cost CSG fields to meet LNG commitments and a move to shale and tight gas to meet future demand. Core Energy quantified the impact of this as a move from historical prices of $2-3/GJ towards a long-term marginal cost of $6-8/GJ; and
- some major industrial users of gas have reported they are unable to secure domestic gas supply contracts during this period (2015-2020) at any price.

[15] EnergyQuest Report, page 4.

Pricing

As costs rise, and demand rises, it is likely that prices will rise. The gas market in Australia seems to be set for a period where prices are pulled higher by increasing export sales opportunities in a larger (global) market characterised by higher prices, whilst at the same time being pushed higher by increasing costs.

The construction of the export LNG plants in Queensland effectively links the eastern Australian gas markets to global LNG markets. As a result, the majority of domestic gas pricing is expected to reflect the higher global pricing, leading to an increase in domestic gas pricing in Australia.

A common thread of the reports mentioned above is that, although the quantum may vary, all gas market reports reviewed, in all scenarios, forecast increasing gas prices.

The Australian gas market is already feeling the effects of these factors. Prices for new gas contracts have risen significantly with buyers experiencing difficulties in renewing contracts. Domestic gas buyers are making attempts to explore lower cost alternatives such as upstream equity in gas projects.[16] There are a number of new gas supply sources on the east coast but most of them have challenges in terms of cost, development time or risk.[17] Attempts to quantify the likely impacts include:

- IES Advisory reported in November 2013 that gas contract prices over the previous three years had risen from $3-4/GJ to $6-8/GJ for new contracts ex major supply hubs;

- major industrial users of gas are reporting being offered short term contracts at much higher prices than existing contracts;

- pricing increasing across eastern Australia. Approximate consensus pricing rising, by 2023, to around $11/GJ in Adelaide and Brisbane, $6/GJ in Melbourne and $7/GJ in Sydney under netback pricing[18] compared to historical pricing of around $3-4/GJ;

- under least cost supply[19] these numbers are around $5.40 in Sydney and Brisbane and $6/GJ in Adelaide and Melbourne; and

- Core Energy estimated new contract prices rising from a weighted average of $4/GJ ex-field up to $8.50/GJ ex-field in line with netback pricing.

Opportunity

The factors noted above add up to a gas market that is experiencing, and is likely to continue to experience, a supply shortfall and rising prices.

In its report to the Company, EnergyQuest Pty Ltd concluded that there is an opportunity for the LCEP to supply gas particularly in the southern states by backfilling Queensland and Cooper Basin gas that would otherwise have supplied the domestic gas market but which will now be supplied to the LNG market.[20] The opportunity is likely to be in meeting utility or industrial needs.[21] That is, in this

[16] EnergyQuest Report, page 4.
[17] EnergyQuest Report, page 4.
[18] Netback pricing is based on the effective price to the producer at a specific location or defined point. LNG netback prices may be determined by the market natural gas price at market destinations less the cost of pipeline transportation, regasification, waterborne shipping and liquefaction.
[19] Under least cost supply modelling, an efficient market is assumed and pricing is driven by production and transportation costs.
[20] EnergyQuest Report, page 4.

tight market it is likely that gas produced at the LCEP will be able to be sold, either directly to current market incumbents, or to major east coast gas users.[22]

5.7 Regulatory regime in South Australia

As the holder of PEL 650, ARP TriEnergy may apply under the PGE Act for a petroleum production licence (**PPL**) in relation to a regulated resource, being a regulated resource over which PEL 650 authorises exploration, which has been discovered in an area covered by PEL 650 and, consequently, the area over which the PPL is sought.

In order for a PPL to be granted, production must currently be commercially feasible or be more likely than not to become commercially feasible within the next 24 months. It is also important that the applicant adheres to all the conditions of the PEL, as failing to do so may result in the rejection of an application for a PPL.

A regulated resource includes petroleum. Further, 'petroleum' means 'a naturally occurring substance consisting of a hydrocarbon or mixture of hydrocarbons in gaseous, liquid or solid state but does not include coal or shale unless occurring in circumstances in which the use of techniques for coal seam methane production or in situ gasification would be appropriate or unless constituting a product of coal gasification (whether produced below or above the ground) for the purposes of the production of synthetic petroleum'.

PPL - Activities

A PPL, subject to the terms included in the licence instrument, authorises:

- operations for the recovery of petroleum or some other regulated substance, including:
  - operations involving the injection of petroleum or another substance into a natural reservoir for the recovery (or enhanced recovery) of petroleum or another regulated substance; and
  - where the licence so provides, the extraction of petroleum by an artificial means such as in situ gasification or the techniques used to recover coal seam methane;
- operations for the processing of petroleum; and
- operations for the storage or withdrawal of petroleum or some other regulated substance for the prudent supply or delivery of the petroleum or other regulated substance to the market.

Further Considerations/Requirements

<u>PGE Act</u>

There are several other issues which ARP TriEnergy (as the PEL holder) will have to consider in applying for a PPL pursuant to the PGE Act:

- a PPL holder is prohibited from conducting regulated activities (i.e. production activities) in relation to the PPL unless a statement of environmental objectives is in force; such a statement is prepared in accordance with the PGE Act following the preparation, by the PPL holder, of an environmental impact report and the classification of the regulated activities by the Minister;

[21] EnergyQuest Report, page 4.
[22] EnergyQuest Report, page 4.

- a work program may need to be prepared in relation to the development of the licence area and the production of petroleum or regulated substance(s);

- a PPL may be cancelled or otherwise altered if the PPL holder does not carry out production operations with due diligence and in accordance with the PPL instrument;

- a royalty must be paid to the Crown in relation to the production of petroleum;

- the PPL holder must have in place a right of entry concerning the land upon which the PPL is located; such a right includes a requirement that compensation be paid to the land owner (including a native title holder), generally, for the deprivation or impairment of the use and enjoyment of the land;

- a PPL holder must have adequate technical and financial resources to ensure compliance with its environmental obligations;

- a PPL holder is required to pay an annual fee to the Minister; and

- a PPL holder is subject to various record keeping and reporting requirements, including various testing obligations.

Other Legislative Requirements

Depending on the nature of the activities undertaken in relation to a PPL, there may be other authorisations which must be obtained before production activities can commence; such may be the case in spite of the fact that certain authorisations are already in place in relation to exploration activities. Other authorisations required may include:

- an environmental authorisation concerning certain activities which affect the environment under the *Environment Protection Act 1993* (SA);

- various water management authorisations concerning the allocation and use of water under the *Natural Resources Management Act 2004* (SA);

- various authorisations concerning the construction of infrastructure under the *Development Act 1993* (SA);

- various authorisations or consents concerning the clearance of native vegetation under the *Native Vegetation Act 1991* (SA);

- an authorisation concerning Aboriginal objects and sites under the *Aboriginal Heritage Act 1988* (SA);

- various authorisations concerning certain wastewater systems under the *South Australian Public Health Act 2011* (SA); and

- Ministerial approval concerning activities which affect certain matters prescribed under the *Environment Protection and Biodiversity Conservation Act 1999* (Cth).

There is no guarantee that ARP TriEnergy, as holder of PEL 650, will be granted a PPL in future, even if exploration activities on that tenement are successful and an economic project can be identified. The Company is aware of all the regulatory approvals required and believes it will obtain all the approvals by working through the appropriate processes with the South Australian Government and

regulatory authorities. The Company will need to invest significant management resources and capital to obtain a PPL and thereafter to establish, implement and manage processes and procedures to ensure compliance by ARP TriEnergy with the relevant regulatory requirements outlined above.

5.8 Recommendations and Interests of the Directors

Based on the information available, including in particular the advantages, disadvantages and key risks of the Transaction as detailed in this Explanatory Memorandum and the analysis set out in the Independent Expert's Report, all of the Independent Directors consider that the Transaction is in the best interests of the Company and its Shareholders and recommend that Shareholders vote in favour of Resolutions 1 to 6 (inclusive).

As set out in section 5.2 above, Mr Daniel J D Peters is a director of both Allied and ARP TriEnergy, and a minority shareholder in Allied. Accordingly, Mr Peters has a material personal interest in the Transaction and the outcome of Resolutions 1 to 6 (inclusive). As a result, Mr Peters has not participated in any discussions or resolutions of the Board in relation to the Transaction and declines to make any recommendation to Shareholders in relation to Resolutions 1 to 6 (inclusive).

Other than in respect of Resolution 7 (Director Options), no other Director has an interest in the outcome of the Resolutions other than as a Shareholder of the Company. The Shareholdings of the Directors are summarised on page 10 of this Notice. In relation to Resolution 7, no Director makes a recommendation to Shareholders, both in light of Mr Peter L William's material personal interests in the outcome of the Resolution, and because the Directors do not consider it appropriate (based on ASIC guidance) to make recommendations in relation to the remuneration of another Director. Other than where prohibited as a result of applicable voting exclusions, each Director who is a Shareholder intends to vote their Shares in favour of all of the Resolutions.

6. Key Risks

6.1 Specific Risk Factors

Geological & Geotechnical Risks

There are geological and geotechnical risks associated with the LCEP which are outlined in detail in the report of Global Resources & Infrastructure Pty Ltd (**GRI Report**). The GRI Report was requested by the Independent Expert and is annexed to the Independent Expert's Report set out in Annexure A of this Notice.

The following is a summary of the risks identified in the GRI Report in relation to the LCEP and the ISG process:

- whether there exists sufficient coal of a reasonable quality that will generate sufficient gas for a commercial development;
- whether the roof and floor structures for the seams are of sufficient strength to hold up under the gasification process;
- whether the drilling techniques to be used are capable of successfully linking the injection well with the production well;
- the risk that premature roof collapse may occur in the gasification cavity caused by water influx from potential aquifers associated with vertical subsidence;

- whether structural (faulting and folding) considerations may cause excessive water influx and promote premature roof collapse; and

- although no information indicates a problem may exist or may potentially occur, whether the ISG process risks potential groundwater pollution.

Gas Pricing

Future earnings from the LCEP will be significantly affected by eastern Australian gas prices. These prices, because of the dominance of demand volume, are expected to become essentially linked to the Gladstone LNG projects. In turn many global LNG projects have global LNG contracts that are related to global oil prices. It is not possible to accurately predict future movements in the gas price.

Production Risk

The Company expects the LCEP to reach significant production levels in the future. However, detailed operational planning along with the preparation of detailed engineering designs have not yet occurred. Gas sales contracts have not yet been secured although work on gas sales has already commenced. The levels of production anticipated have not previously been achieved on a continuous basis in Western economies. There are risks associated with unforeseen operating issues in the future.

Operating and development

The ability of the Company to achieve future development and production targets and to meet them on a timely basis cannot be assured. This could have an adverse effect on the Company's financial and operating performance.

Development Consents

There is a risk that additional consents will be required. There is also a risk that the Company will not be able to meet the terms of these consents or that the consents can only be obtained on onerous terms and conditions. The Company may also incur significant expenses and delays in achieving such consents.

Developments

Project development may incur costs not currently anticipated or may be delayed due to regulatory approvals or licences or due to problems with contractors or suppliers, financing issues or accidents.

Funding Risk

There is a risk that the Company will not achieve its operating goals due to inability to obtain funding on appropriate terms and conditions.

Cash Position

There is no guarantee that the Company will be able to maintain a sufficient cash and working capital position.

Regulatory and Legislative Risks

Any changes in the laws and regulations under which the Company operates may adversely impact the Company's activities, planned projects and financial results. These laws and regulations include

mining, exploration and petroleum-related laws, laws requiring permits and licences, environmental regulations and health and safety laws and regulations.

Tenements

ARP TriEnergy's existing PELAs are at application stage. There can be no certainty that those tenements will be granted on the terms applied for, or at all. The only tenement that has been granted to ARP TriEnergy to date is PEL 650, where the LCEP is located. However, there has been an offer by DSD to grant minerals exploration licences in respect of ARP TriEnergy's ELAs north of Leigh Creek (ELA 238 and ELA 232).

Occupational Health and Safety and Environment

The future activities of the Company will be regulated by environmental and government authorities. There is a risk that environmental regulation may impede or prevent the Company's activities.

Furthermore, ISG is a relatively new technology in Australia and the development of a commercial project will necessarily have associated with it potential environmental and occupational health and safety risks which it is difficult to identify at this stage. The occurrence of significant negative environmental impacts or occupational health and safety incidents may impede or prevent the Company's activities.

Native Title

Native title has been extinguished on PEL 650 and native title does not apply.

Any further exploration licence which may ultimately be granted pursuant to outstanding ELAs and PELAs, as well as other entitlements to property and resources, may be affected by Native Title claims, unregistered agreements, transfers or unknown defects in title. Native Title claims and Indigenous heritage issues may have a material adverse impact on the Company's future activities and may hinder or prevent its exploration and development activities.

Coal Availability

The Company has made estimates based on the relevant reporting codes and judgements based on knowledge, skills and industry experience. There is no guarantee that estimates will prove to be accurate. Actual results may differ materially from estimates due to further findings and results not previously known. Appraisal drilling at the LCEP is required to more accurately determine coal resources in compliance with the 2012 JORC Code.

Competition

Upon reaching production the Company will be subject to competition from other producers. The Company may be unable to successfully compete and may suffer adverse consequences such as loss of market share and customers.

Counterparty Risk

There is a risk that contracts and other arrangements will not be performed by the relevant counterparties if those counterparties become insolvent or are otherwise unable to perform their obligations.

6.2 General Risk factors

In addition to the specific risk factors noted above there are a number of general risk factors that may impact the Company's future performance:

- changes to government policy, legislation, regulations and other statutory requirements;
- the condition of the Australian and global economies;
- investor sentiment, local and global stock market conditions;
- adverse industry publicity; and
- global geo-political events, hostilities and acts of terrorism.

7. Action to be taken by Shareholders

7.1 Step 1 – Read this Notice and seek advice as appropriate

This is an important document. You should read this Notice, including the Explanatory Memorandum, Independent Expert's Report and Investigating Accountant's Report in full before deciding how to vote at the Meeting.

If you are in any doubt as to what action you should take, you should seek financial, tax or other professional advice before making any decision in relation to your Shares and how to vote at the Meeting.

7.2 Step 2 – Vote on the Resolutions at the Meeting

You may vote on the Resolutions to be considered at the Meeting if you are registered as a Shareholder on the Register at 7.00pm (Adelaide time) on 25 May 2015.

You may vote on the Resolutions by attending the Meeting in person, or by proxy, attorney or, in the case of a corporation which is a Shareholder, by corporate representative.

If you wish to vote in person, you should attend the Meeting at the premises of Marathon Resources Limited, Unit 8/53-57 Glen Osmond Road, Eastwood South Australia 5063 on 27 May 2015 commencing at 9.30am (Adelaide time).

If you wish to appoint a proxy for the Meeting, you must complete and lodge the enclosed applicable Proxy Form so that it is received no later than 9.30am (Adelaide time) on 25 May 2015.

Completed Proxy Forms must be lodged in accordance with the instructions set out in the enclosed Proxy Form.

Information on entitlements to vote, including if you are a joint holder of Shares, is contained on page 15 above.

8. Interdependence of Resolutions

Resolutions 1, 2 and 3 are interdependent. Unless all of Resolutions 1, 2 and 3 are passed, it will be deemed that none of those Resolutions has been passed.

Resolutions 1, 2 and 3 are not subject to or conditional upon the passing of Resolutions 4 to 7 (inclusive). That is, if Resolutions 1, 2 and 3 are passed but any or all of Resolutions 4 to 7 (inclusive) are not, the Company will proceed with the acquisition of ARP TriEnergy even if the appointment of Mr Daniel J D Peters and Mr David Kit Shearwood as Directors is not approved, the issue of Director Options is not approved, or the entry into of the Interim Funding Agreement is not approved.

However, Resolution 5 is subject to and conditional upon Resolutions 1, 2 and 3 being passed. If one or more of Resolutions 1, 2 or 3 are not passed, it will be deemed that Resolution 5 has not been passed. That is, Mr David Kit Shearwood will not be appointed as a Director unless the Transaction is approved.

Further, Resolution 6 is subject to and conditional upon Resolutions 1, 2 and 3 being passed. If one or more of Resolutions 1, 2 or 3 are not passed, it will be deemed that Resolution 6 has not been passed. That is, the Interim Funding Agreement will not proceed and will be terminated unless the Transaction is approved.

Resolution 4 in relation to the appointment of Mr Daniel J D Peters is not subject to or conditional upon the passing of any other Resolution. Similarly, Resolution 7 in relation to the grant of Options to Mr Peter L Williams (via his nominee) is not subject to or conditional upon the passing of any other Resolution and is entirely independent of the Transaction.

9. Independent Expert's Report

The Board of the Company appointed Mr Derek Ryan of DMR Corporate Pty Ltd as an independent expert and commissioned him to prepare a report to:

(a) opine as to whether the Transaction is fair and reasonable to the Shareholders not associated with ARP or ARP TriEnergy; and

(b) provide a valuation of the financial benefits to be provided to ARP and ARP TriEnergy in their capacity as related parties of the Company.

The preparation of the Independent Expert's Report is required in relation to:

(a) Chapter 2E of the Corporations Act regarding the issue of Marathon Consideration Shares to Allied, the entry into by the Company of the Interim Funding Agreement and the entry into by ARP TriEnergy of the Royalty Deed following Completion (as set out in ASIC Regulatory Guide 76: Related party transactions);

(b) item 7 of section 611 of the Corporations Act regarding the issue of Marathon Consideration Shares to Allied and the resultant acquisition by Mr David Kit Shearwood of a relevant interest in more than 20% of the issued capital of the Company (as set out in ASIC Regulatory Guide 74: Acquisitions approved by members); and

(c) ASX Listing Rule 10.1 regarding the acquisition of ARP TriEnergy Shares by the Company (as required by ASX Listing Rule 10.3).

The Independent Expert has concluded that the Transaction is fair and reasonable to the Non-Associated Shareholders.

The Board recommends that Shareholders read the Independent Expert's Report in full. A copy of the Independent Expert's Report is attached as Annexure A to this Explanatory Memorandum.

10. Resolution 1 - Change in Nature and Scale of the Company's Activities

Resolution 1 seeks Shareholder approval for the purposes of Listing Rule 11.1.2 for the significant change in the nature and scale of the Company's activities that will occur on the acquisition of ARP TriEnergy.

10.1 ASX Listing Rule 11.1

Under ASX Listing Rule 11.1, if a company proposes to make a significant change to the nature or scale of its activities, it must first consult with ASX about the proposed change.

If, following consultation with the company, ASX determines that shareholder approval is necessary, the company must first obtain such approval in accordance with ASX Listing Rule 11.1.2 before implementing the change.

In addition, if ASX is of the view that the change will fundamentally alter the company's business, such that shareholders will effectively be investing in a different entity, ASX may, pursuant to ASX Listing Rule 11.1.3, require the company to re-comply with the listing requirements in Chapters 1 and 2 of the ASX Listing Rules.

10.2 ASX In-Principle Advice

The Company has obtained in-principle advice from ASX that:

- for the reasons set out below, the acquisition by the Company of the ARP TriEnergy Shares would amount to a change in the nature and scale of its activities;
- Shareholder approval for this change in the nature and scale of the Company's activities is required for the purposes of Listing Rule 11.1.2; and
- the Company is required to re-comply with the admission requirements set out in Chapters 1 and 2 of the ASX Listing Rules under ASX Listing Rule 11.1.3 (subject to any relevant waivers or conditions that may be granted or imposed by ASX).

It is ASX's in-principle position that the acquisition of the ARP TriEnergy Shares will result in a significant change in the nature and scale of the Company's business on the following basis:

- As Shareholders would be aware based on the Company's disclosure to the market over the past 18 months, the Company's current business activities comprise the ongoing investigation of potential projects for investment (including both minerals and energy projects). During that time, the Company has undertaken initial exploratory and testing work on a number of those projects to better evaluate the prospects for a potential investment.
- By contrast, the Transaction will involve the Company acquiring an exploration project with tenements and tenement applications relating to both energy and minerals exploration. The Transaction accordingly involves a significant shift in the Company's primary business activity from investigating potential alternative projects for investment, to the acquisition of an interest in an ISG project, the exploration for ISG-related coal deposits and other mineral exploration interests.

10.3 Approval

As a result of the above analysis, the Company is required to obtain Shareholder approval for this significant change in the nature and scale of its activities before it can acquire ARP TriEnergy.

10.4 Re-compliance with Chapters 1 and 2 of the ASX Listing Rules

On the basis that approval pursuant to Resolution 1 is obtained, the Company will seek to re-comply with the requirements of Chapters 1 and 2 of the ASX Listing Rules.

The Company will request a trading halt on the day of the Meeting to approve the Transaction. If Shareholders approve the Transaction, trading in the Company's shares will be suspended until the Company satisfies the requirements of Chapters 1 and 2 of the ASX Listing Rules in accordance with ASX Listing Rule 11.1.3 (subject to any relevant waivers or conditions that may be granted or imposed by ASX). It is anticipated that the Company's shares will be reinstated to trading on ASX by no later than 27 August 2015; however, this is subject to change.

If Shareholders do not approve the Transaction pursuant to any or all of Resolutions 1 to 3 (inclusive), the Company's shares will not be suspended and will resume trading following the release of the results of the Meeting to the market.

Completion of the Transaction, including the issue of the Marathon Consideration Shares, is conditional on ASX confirming the Company has (or will have, subject only to Completion occurring) re-complied with Chapters 1 and 2 of the ASX Listing Rules.

11. Resolution 2 – Acquisition of ARP TriEnergy

Resolution 2 seeks Shareholder approval for the purposes of Chapter 2E of the Corporations Act, item 7 of section 611 of the Corporations Act, ASX Listing Rule 7.1 and ASX Listing Rule 10.1 for the acquisition of the ARP TriEnergy Shares by the Company and the issue of the Marathon Consideration Shares to the Vendors.

11.1 Chapter 2E of the Corporations Act

Under Chapter 2E of the Corporations Act, a public company must not 'give a financial benefit' to a 'related party', unless it has obtained shareholder approval for the giving of that benefit or one of the exceptions set out in sections 210 to 216 of the Corporations Act applies.

Under section 228 of the Corporations Act, a person or other entity will be a related party of a company in the following situations (amongst others):

- 228(1) - the person or entity controls the company;
- 228(2) - the person is a director of the company, a director of an entity that controls the company, or a spouse of such a director;
- 228(3) - the person is a parent or child of a director or spouse mentioned in section 228(2);
- 228(4) - the entity is controlled by a related party referred to in sections 228(1) to (3);
- 228(5) - the person or entity was a related party of the company under sections 228(1) to (4) at any time within the previous 6 months;

- 228(6) - the person or entity believes or has reasonable grounds to believe that it is likely to become a related party of the company of a kind referred to in sections 228(1) to (4) at any time in the future; and

- 228(7) - the person acts in concert with a related party of the public company on the understanding that the related party will receive a financial benefit if the public company gives the entity a financial benefit.

Section 229 of the Corporations Act defines 'giving a financial benefit' very broadly, and includes buying an asset from a related party and issuing securities to a related party.

The Board is of the view that Allied is a related party of the Company for the following reasons:

- If Completion occurs, Allied will hold approximately 45.45% of the Shares on issue in the Company, and will also have the ability to appoint 3 Directors to the Board. As a result, on balance the Board considers that Allied is likely to be in a position to exercise practical control of the Company following Completion.

- Although Allied would not obtain practical control until Completion occurs, such that it would only be a related party of the Company under section 228(1) at that time, the Board considers that Allied would currently have reasonable grounds to believe that it will become a related party of the Company in the future by virtue of section 228(1). Accordingly, Allied would be a related party of the Company at present under section 228(6).

- The Board also notes that although Mr Daniel J D Peters is a related party of the Company by virtue of section 228(2), the relationship between Mr Peters and Allied is itself insufficient to cause Allied to become a related party of the Company under section 228(4) as he does not control that entity. Mr Peters is only one of 2 directors of Allied and has a minority shareholding in Allied, which together do not give Mr Peters control of Allied.

- Furthermore, although it is intended that Mr David Kit Shearwood will be appointed a director of the Company immediately following the Meeting and is therefore arguably a related party of the Company under section 228(6), the relationship between Mr Shearwood and Allied is itself insufficient to cause Allied to become a related party of the Company under section 228(4) as he does not control that entity. Like Mr Peters, Mr Shearwood is only one of 2 directors of Allied and, despite having a direct and indirect interest totalling 22.47% in Allied's issued capital, as a result of the terms of a shareholders agreement in existence in relation to Allied, does not have a controlling shareholding in Allied.

- As outlined above, insofar as Allied can be characterised as a related party of the Company in any event under section 228(6), this analysis of the relationships between it and Mr Peters and Mr Shearwood has been provided by the Board for completeness only.

Shareholder approval is therefore sought for the purposes of Chapter 2E for the issue of Marathon Consideration Shares to Allied in consideration for the acquisition of Allied's ARP TriEnergy Shares (which amounts to the giving of a financial benefit to Allied).

11.2 ASX Listing Rule 10.1

Under ASX Listing Rule 10.1 a listed company must not acquire a substantial asset from a related party, a substantial holder or an associate of a related party or substantial holder without the approval of its shareholders.

ASX Listing Rule 10.1 does not apply to a transaction between the Company and a person who is a related party by reason only of the transaction and the application to it of section 228(6) of the Corporations Act (see ASX Listing Rule 10.3). As set out above, the Board considers that Allied is a related party of the Company by virtue only of section 228(6) of the Corporations Act.

However, ARP TriEnergy is a 'substantial holder' of the Company for the purposes of ASX Listing Rule 10.1 (having an interest in 16.27% of the Company's shares). It is also currently a subsidiary of Allied which holds 75.75% of the ARP TriEnergy Shares. As a result, for the purposes of ASX Listing Rule 10.1, Allied is an associate of a substantial holder of the Company.

An asset is a substantial asset if its value is 5% or more of the equity interests of the Company as set out in the latest accounts given to ASX. The ARP TriEnergy Shares to be acquired by the Company from Allied exceed this 5% threshold and are therefore a substantial asset for the purposes of ASX Listing Rule 10.1.

Accordingly, shareholder approval under ASX Listing Rule 10.1 is required before the Company can acquire ARP TriEnergy Shares from Allied.

The Board notes that shareholder approval is also ordinarily required under ASX Listing Rule 10.11 for the issue of shares to a related party.

However, exception 6 in ASX Listing Rule 10.12 provides that approval is not required for the issue of shares under ASX Listing Rule 10.11 if the issue is to a person who is a related party by reason only of the issue and the application to it of section 228(6) of the Corporations Act.

As section 228(6) is the only ground on which Allied is currently a related party of the Company, shareholder approval is not required under ASX Listing Rule 10.11.

11.3 Item 7 of Section 611

Takeover Prohibition

Pursuant to section 606(1) of the Corporations Act, a person must not acquire a relevant interest in issued voting shares in a listed company if the person acquiring the interest does so through a transaction in relation to securities entered into by or on behalf of the person and because of the transaction, that person's or someone else's voting power in the company increases:

- from 20% or below to more than 20%; or
- from a starting point that is above 20% and below 90%.

The voting power of a person in a body corporate is determined in accordance with section 610 of the Corporations Act. The calculation of a person's voting power in a company involves determining the voting shares in the company in which the person and the person's associates have a relevant interest.

Relevant Interest

Under section 608(1) of the Corporations Act, a person has a relevant interest in securities if they:

- are the holder of the securities;
- have the power to exercise, or control the exercise of, a right to vote attached to the securities; or

- have the power to dispose of, or control the exercise of a power to dispose of, the securities.

Further, under section 608(3) of the Corporations Act, a person is deemed to have a relevant interest in securities that a company has if their voting power in the company is above 20% or if they control the company.

Associates

Subject to specified exclusions, a person (**second person**) will be an associate of another person (**first person**) if:

- the first person is a body corporate and the second person is:
  - a body corporate that the first person controls;
  - a body corporate that controls the first person; or
  - a body corporate that is controlled by an entity that controls the first person; or
- the second person has entered or proposes to enter into a relevant agreement with the first person for the purposes of controlling or influencing the composition of the Company's board or the conduct of the Company's affairs; or
- the second person is a person with whom the first person is acting or proposing to act in concert in relation to the Company's affairs.

An entity controls another entity if it has the capacity to determine the outcome of decisions about the other entity's financial and operating activities (section 50AA of the Corporations Act).

Item 7 of Section 611 Exception

Item 7 of section 611 provides an exception to the prohibition in section 606(1) of the Corporations Act, whereby a person may acquire a relevant interest in a company's voting shares if the shareholders of that company approve the acquisition.

Acquisition in excess of threshold

ARP TriEnergy currently has a relevant interest in 16.27% of the issued voting shares in the Company. Allied currently holds 75.75% of the issued capital of ARP TriEnergy and, pursuant to the operation of section 608(3)(b) of the Corporations Act, also has a relevant interest in the 16.27% held by ARP TriEnergy in the Company. Under that section, Allied is deemed to have a relevant interest in any Shares in which ARP TriEnergy currently has a relevant interest due to the fact that it controls ARP TriEnergy.

Mr David Kit Shearwood holds (and therefore has a relevant interest in) 186,772 Shares, being 0.20% of the Company's issued capital. In addition, Mr Shearwood also has a relevant interest in the 16.27% held by ARP TriEnergy by virtue of the application of section 608(3)(a) of the Corporations Act. Under that section, Mr Shearwood is deemed to have a relevant interest in any Shares in which Allied currently has a relevant interest due to the fact that Mr Shearwood (through his personal shareholding in Allied as well as his indirect interest in Allied's issued capital) holds 22.47% of the voting power in Allied.

Mr Shearwood's voting power in Allied arises by virtue of his personal holding (0.99%), the holding of the David K. Shearwood DIY Superannuation Fund of which he is a trustee and beneficiary (20.42%) and the holdings of his children Mr Harry Christopher Shearwood (0.54%) and Miss Sarah Rose Shearwood (0.54%).

Further, Mr Shearwood and the Lawry Super Fund are associates of Allied in relation to the affairs of the Company by virtue of section 12(2)(c) of the Corporations Act. This section provides that a person (here, Mr Shearwood or the Lawry Super Fund) will be an 'associate' of another person (here, Allied) where they are acting in concert in relation to the affairs of the Company.

Together, Mr Shearwood and the Lawry Super Fund hold 1.43% of the Company's issued capital. Accordingly, Allied's voting power in the Company is currently 17.70%. Similarly, Mr Shearwood and the Lawry Super Fund's voting power in the Company is also 17.70%.

As set out in section 2.1 above, on Completion of the Transaction Allied will hold 45.45% of the issued Shares in the Company. Coupled with the interests held by Mr Shearwood and the Lawry Super Fund and which are aggregated with those held by Allied, Allied's voting power will increase to 46.02% as a result of the Transaction. As a result, Allied's voting power in the Company will increase from below 20% to more than 20% at Completion in contravention of section 606(1) of the Corporations Act.

Separately, Mr Shearwood's voting power in the Company's Shares will also increase from below 20% to more than 20% at Completion. By virtue of the application of section 608(3)(a) of the Corporations Act, Mr Shearwood will be deemed to have a relevant interest in the 45.45% of the Company's Shares that Allied will hold on and from Completion.

Mr Shearwood's voting power following Completion will therefore be determined by his own direct interest in the Company, his relevant interest in the Shares held by Allied, and the interest of his associate the Lawry Super Fund. Mr Shearwood's voting power would also increase to 46.02% of the Company's issued capital.

Finally, the voting power that is attributed to the Lawry Super Fund as a result of its associate relationships with Mr Shearwood and Allied, when aggregated with its own direct interest in the Company, will give the Lawry Super Fund a total voting power of 46.02%.

Accordingly, the Company seeks Shareholder approval under item 7 of section 611 of the Corporations Act for the issue of the Marathon Consideration Shares to Allied and the resulting acquisition of a relevant interest in the issued voting Shares of the Company by Allied and Mr David Kit Shearwood in excess of the threshold prescribed by section 606(1) of the Corporations Act by virtue of the issue of the Marathon Consideration Shares to Allied. It is noted that the increase in the voting power of the Lawry Super Fund described above does not, of itself, require approval for the purposes of item 7 of section 611 of the Corporations Act. This is on the basis that if the acquisition of a relevant interest by each of Allied and Mr Shearwood is approved, the resultant increase in the Lawry Super Fund's voting power is not prohibited by section 606(1).

Specific information required by item 7 of section 611 of the Corporations Act and ASIC Regulatory Guide 74: Acquisitions approved by members

The following information is required to be provided to Shareholders under item 7(b) of section 611 of the Corporations Act and ASIC Regulatory Guide 74: Acquisitions approved by members:

- **The identity of the acquirer and their associates and any person who will have a relevant interest in the Shares to be acquired.**

  Please see above in the section entitled *Acquisition in excess of threshold* for details of the identity of all persons to acquire a relevant interest in the Shares the subject of the item 7 approval and their associates.

- **The number and percentage of the Shares to which the acquirer is or will be entitled immediately before and after Completion as well as the maximum extent of the increase in the voting power of the acquirer and each of its associates in the Company as a result of the Transaction.**

  Please see section 2.1 and the section above entitled *Acquisition in excess of threshold* for details of the number and percentage of Marathon Consideration Shares to be issued to Allied as well as the increase in Allied, Mr Shearwood and the Lawry Super Fund's voting power resulting from the Transaction.

- **An explanation of the reasons for the Transaction.**

  Please see section 3 for a detailed explanation of the reasons for the Transaction.

- **When the proposed acquisition is expected to occur.**

  The Marathon Consideration Shares to be issued to Allied will be issued at the same time as Marathon Consideration Shares are issued to the Other Vendors. As set out in section 11.4 below, this will be no later than 3 months after the date of the Meeting (or such later date to the extent permitted by any ASX waiver or modification of the ASX Listing Rules).

- **The material terms of the proposed acquisition.**

  Please see section 2.2 for a summary of the Share Sale Agreement which contains the material terms of the issue of the Marathon Consideration Shares to Allied.

- **Details of the terms of any other relevant agreement between the acquirer and the Company (or any of their associates) that is conditional on or directly or indirectly depends on member's approval of the proposed acquisition.**

  The Company is not aware of any such relevant agreement.

- **A statement of the acquirer's intentions regarding the future of the Company if Shareholders approve the proposed acquisition.**

  Other than as disclosed elsewhere in this Notice, as at the date of this Notice the Company understands that Allied does **not** intend to:

  - make any significant changes to the business of the Company;
  - inject further capital into the Company;
  - make any changes to the future employment of the present employees of the Company;
  - make any proposal where any assets will be transferred between the Company and Allied or any person associated with them; or

- otherwise redeploy the fixed assets of the Company.

- **Any intention of the acquirer to significantly change the financial or dividend distribution policies of the Company.**

  As at the date of this Notice the Company understands that Allied does **not** intend to significantly change the financial or dividend distribution policies of the Company.

- **The interests that any Director has in the acquisition or any relevant agreement related to the acquisition.**

  Please see section 5.8 for details of the interests of the Directors.

- **Details of any person who is intended to become a director if members approve the acquisition.**

  Please see section 14 below for information in relation to Mr David Kit Shearwood who is to be appointed as a Director of the Company (subject to the passing of Resolutions 1 to 3 (inclusive)).

Further details of the Transaction are set out elsewhere in this Notice and in the Independent Expert's Report set out in Annexure A. In particular, Shareholders are referred to section 5 (Relevant considerations for Shareholders) for further details.

11.4 ASX Listing Rule 7.1

Placement Capacity

ASX Listing Rule 7.1 provides that a company must not, subject to specified exceptions, issue or agree to issue more equity securities during any 12 month period than that amount which represents 15% of the number of fully paid ordinary securities on issue at the commencement of that 12 month period.

ASX Listing Rule 7.1A allows certain small-to-medium sized companies to increase their annual placement capacity to 25% if approved by the company's shareholders at the most recent AGM.

The Company sought and obtained the approval of Shareholders at its 2014 AGM to increase its annual placement capacity to 25% pursuant to ASX Listing Rule 7.1A. However, if Resolution 1 is passed, it will have the effect that this approval will immediately expire (pursuant to ASX Listing Rule 7.1A.1(b)).

The effect of Resolution 2 will be to allow the Directors to issue the Marathon Consideration Shares to the Other Vendors without using the Company's 15% annual placement capacity.

Allied and Other Vendors

As set out above, approval is being sought for the issue of Marathon Consideration Shares to Allied for the purposes of item 7 of section 611 of the Corporations Act. Exception 16 in ASX Listing Rule 7.2 provides that ASX Listing Rule 7.1 does not apply to an issue of securities approved for the purposes of item 7 of section 611 of the Corporations Act. Accordingly, shareholder approval under ASX Listing Rule 7.1 is being sought in respect of the issue of Marathon Consideration Shares to the Other Vendors only and not in respect of the issue to Allied.

Specific Information required by ASX Listing Rule 7.3

The following information is provided in accordance with ASX Listing Rule 7.3:

- the maximum number of Marathon Consideration Shares to be issued to the Other Vendors is 33,544,493;

- those Marathon Consideration Shares will be issued no later than 3 months after the date of the Meeting (or such later date as may be permitted by any ASX waiver or modification of the ASX Listing Rules);

- as no cash consideration will flow from the issue of the Marathon Consideration Shares, for the purposes of ASX Listing Rule 7.3, the Company has attributed a notional issue price of 10.77 cents per Share, being the 30 day VWAP of the Company's Shares up to 17 April 2015;

- the Marathon Consideration Shares will be issued pursuant to the Share Sale Agreement as consideration for the acquisition of the ARP TriEnergy Shares from the Other Vendors and no funds will be raised by their issue; and

- the Marathon Consideration Shares will be fully paid ordinary shares in the capital of the Company issued on the same terms and conditions as the Company's existing Shares.

12. Resolution 3 - Royalty Deed

Resolution 3 seeks Shareholder approval for the purposes of Chapter 2E of the Corporations Act for the entry into, following Completion, by ARP TriEnergy of the Royalty Deed and the resultant payment of royalties under the Royalty Deed to Allied.

As detailed in section 11.1 above, Chapter 2E of the Corporations Act prohibits a public company or an entity controlled by a public company from giving a financial benefit to a related party of the pubic company unless it has obtained shareholder approval for the giving of that benefit, or one of the exceptions set out in sections 210 to 216 of the Corporations Act applies.

Relevantly for the purposes of Resolution 3, section 228(1) of the Corporations Act provides that a person or entity that controls a public company is a related party of that public company.

Section 229 of the Corporations Act defines 'giving a financial benefit' very broadly. Entering into an agreement under which cash sums would be payable, including where they are payable indirectly through an interposed entity (in this case the ISG Trust), would amount to the giving of a financial benefit.

As detailed elsewhere in this Notice, the Board is of the view that Allied is currently a related party of the Company by virtue of the application of section 228(6) of the Corporations Act. More relevantly for the purposes of Resolution 3, following Completion Allied will hold 45.45% of the Company's Shares and by virtue of its representation on the Board of the Company, will have practical control of the Company. As a result, from Completion Allied will also be a related party of the Company pursuant to the operation of section 228(1) of the Corporations Act.

Under the terms of the Share Sale Agreement, it is proposed that, following Completion, the Company will procure that ARP TriEnergy enter into the Royalty Deed. As detailed in section 2.3, the Royalty Deed provides for the payment of royalties to Murray Kenneth Chatfield, Jan-Per Hole, David Kit Sherwood and Jordan Eliza Mehrtens in their capacity as trustees of the ISG Trust. The trustees are required to distribute royalties to the beneficiaries of the ISG Trust in accordance with the relevant Trust Deed. The beneficiaries of the Trust are each of the Vendors in proportion to their current (pre-Transaction) shareholding in ARP TriEnergy.

Section 208(1) of the Corporations Act permits the giving of a financial benefit to a related party where the giving of that benefit has been approved by the public company's members and that benefit is given within 15 months after the approval. Section 208(2) goes on to provide that if:

- the giving of a financial benefit is required by a contract; and
- the making of the contract was approved by the public company's shareholders in accordance with the requirements of section 208(1)(a)(i) of the Corporations Act; and
- the contract was made within 15 months after that approval or before that approval if the contract was conditional upon approval being obtained,

then member approval for the giving of the benefit is taken to have been given and the benefit need not be given within 15 months.

Because it is anticipated that the payment of royalties to the Trust (and therefore the receipt of those payments by Allied as a beneficiary of the Trust) under the Royalty Deed will not commence until some time in the future once production has commenced in respect of the LCEP (likely more than 15 months from the date of the Meeting), Shareholder approval is being sought for the purposes of Chapter 2E for making of the Royalty Deed such that the payment of any royalty under the Royalty Deed is deemed to be approved to the extent that such payment would amount to the giving of a financial benefit to Allied.

13. Resolution 4 - Appointment of Mr Daniel J D Peters as Director

On 28 November 2014 the Board appointed Mr Daniel J D Peters as a Director pursuant to clause 44.3 of the Company's constitution. That provision gives the Directors the power to appoint any person to fill a casual vacancy or as an addition to the Board.

A Director appointed under sub-clause 44.3 is required to retire at the first annual general meeting following his or her appointment, and is not taken into account in determining the number of Directors who must retire by rotation at the annual general meeting.

Although not required to retire and stand for re-election until the Company's next annual general meeting, the Board has determined that it would be appropriate for the Company to exercise its power in general meeting under clause 45.1(a) of the constitution to appoint Mr Peters as a Director at the Meeting. If Mr Peters' appointment is approved by the Shareholders at the Meeting, he will not be required to retire at the Company's next annual general meeting as a Board appointee. However, he will be counted when determining the number of Directors who must retire by rotation at the next annual general meeting.

The Company provides the following information in relation to Mr Peters:

Mr Peters holds a BA (Politics), BA (jurisprudence), LLB, GDLP.

Mr Peters was a legal officer for the SA Department of Environment and Heritage. He held the positions of Manager Investigations and Compliance, A/Director Operations Central and Northern Region at the Queensland Environmental Protection Agency before becoming Environment Advisor to the Queensland Mining Council. Mr Peters was then Manager of Property and Environment for Airservices Australia, a Commonwealth Government authority. Of most importance is that Mr Peters was General Manager of Government and Environment, CEO of Linc Energy Global, General Manager Business Development and then Executive General Manager Investor Relations for Linc Energy Ltd, the world's largest ISG/UCG company.

Mr Peters has reported directly to the Board of Airservices Australia, was on the Airservices Australia Environment and Safety Committee and was Environment Advisor to the Queensland Mining Council.
Mr Peters is the Chairman of Allied and ARP TriEnergy, a director of Walloon Energy Pty Ltd and a director of Qingdao Asset Management Ltd.

Resolution 4 is not subject to the passing of any of the other Resolutions. If Resolution 4 is passed but the Transaction is not otherwise approved by Shareholders, Mr Peters will still be appointed as a Director.

If Resolution 4 is not approved, Mr Peters will be reappointed to the Board as a Board appointee until the Company's 2015 annual general meeting at which time he will retire and stand for re-election in accordance with clause 44.3 of the Company's constitution.

14. Resolution 5 - Appointment of Mr David Kit Shearwood as Director

Under the terms of the Share Sale Agreement, the Company has agreed to appoint Mr David Kit Shearwood as the Managing Director of the Company with effect from the day of shareholder approval for his appointment.

Pursuant to clause 45.1(a) of the Company's constitution, the Company may, by resolution passed in general meeting, appoint a person as Director.

The Company provides the following information in relation to Mr Shearwood:

Mr Shearwood hold a BE Mining (Honours) University of Sydney 1984, Australian Institute of Company Directors Diploma (with Order of Merit), ASIA Securities Institute of Australasia Diploma of Applied Finance and Professional Diploma Human Resources (Deakin University and Australian Human Resource Institute).

Mr Shearwood originally worked as a mining engineer in underground copper/gold (NT), underground coal (NSW) and then as an explosives engineer with Dupont based in the Hunter Valley of NSW.

Between 1986 and 2011 he worked within the finance industry with roles as a mining analyst and strategist within stockbroking firms (Deutsche Bank, Merrill Lynch), an analyst within investment banking (Macquarie Bank – Infrastructure and Specialised Funds Division) and as an analyst, portfolio manager and fund manager within funds management, both large and small cap (Westpac, QBE Insurance). He also founded Atom Funds Management – including its captive Indian research team. During this period he was recognised within various independent studies as a top-ranking analyst and fund manager.

Mr Shearwood has been involved in Director Education (via the AICD), helped establish Australia’s first ethical fund (when at Westpac), was on the Responsible Investment Association of Australasia’s advisory council and was an early signatory to the United Nations Principles for Responsible Investment. He has held a variety of board positions since 1999 across Australian (listed and unlisted) and overseas unlisted (Indian, Singaporean) entities.

Mr Shearwood brings a wealth of knowledge across the mining, energy and infrastructure industries. He has a high level of understanding of equity capital markets which should help the Company access capital when required.

Mr Shearwood, if Shareholders approve his appointment as a Director, will be classified as a non-independent executive Director, as:

- it is intended that Mr Shearwood will be appointed as the Managing Director of the Company;
- post-Completion of the Transaction, the voting power of Mr Shearwood and his associates will equate to 46.02% of the total Shares on issue;

- he is a founding shareholder, largest shareholder (including via his indirect interests) and director of Allied which will become the largest Shareholder of the Company as a result of the Transaction;

- he is a director of ARP TriEnergy;

- he is a trustee of the ISG Trust; and

- he is a trustee and beneficiary of the David K. Shearwood DIY Superannuation Fund which is a substantial shareholder of Allied.

In addition to ARP TriEnergy and Allied, Mr Shearwood is also currently a director of:

- ARP Corporate Services Pty Ltd (100% owned by Allied), and

- Coalandgas Pty Ltd (40% owned by Allied).

Resolution 5 is subject to the approval of Resolutions 1 to 3 (inclusive). If the Transaction is not otherwise approved by Shareholders, Mr Shearwood will not be appointed as a Director of the Company. If the Transaction is approved, but Resolution 5 is not passed, the Board intends to appoint Mr Shearwood as a Director pursuant to clause 44.3 of the Company's constitution, and in accordance with the terms of the Share Sale Agreement. If such an appointment is made, at the time of the Company's 2015 AGM, Mr Shearwood will retire and stand for re-election in accordance with clause 44.3 of the Company's constitution.

15. Resolution 6 - Interim Funding Agreement

Resolution 6 seeks Shareholder approval for the purposes of Chapter 2E of the Corporations Act for the entry into of the Interim Funding Agreement and the resultant payments to be made to ARP TriEnergy under that document.

Section 11.1 above provides details of the operation of Chapter 2E of the Corporations Act.

For the purposes of Resolution 6, section 228(7) of the Corporations Act provides that an entity is a related party of a public company if the entity acts in concert with a related party of the company on the understanding that the related party will receive a financial benefit if the public company gives the entity a financial benefit.

As detailed elsewhere in this Notice, the Board is of the view that Allied is a related party of the Company at present by virtue of the application of section 228(6) of the Corporations Act. The Board is of the view that, in entering into the Interim Funding Agreement which is also subject to the approval of the Transaction by Shareholders, and by agreeing to pay certain amounts to ARP TriEnergy to fund the continued progress of the LCEP, ARP TriEnergy and Allied (as its major shareholder) are acting in concert on the understanding that, as a result of the Company providing interim financial support to ARP TriEnergy, the Transaction will proceed and Allied will receive a financial benefit in the form of its relevant proportion of the Marathon Consideration Shares.

Shareholder approval is therefore being sought for the purposes of Chapter 2E for the giving of a financial benefit to ARP TriEnergy under the terms of the Interim Funding Agreement.

16. Resolution 7 - Director Options

Resolution 7 seeks Shareholder approval for the purposes of ASX Listing Rule 10.14 for the grant of Options to Mr Peter L Williams (via his nominee, Cluan Capital Management Pty Ltd) under the terms of the Company's employee incentive scheme known as the Marathon Resources Ltd Employee Share Option Plan (**ESOP**).

16.1 Background

The Company is proposing to grant the following Options to Mr Williams (via his nominee, Cluan Capital Management Pty Ltd) under the terms of the ESOP:

Option Type	Total No. of Options	Exercise Price	Last Exercise Date
'A' Options	1,000,000	The greater of: • $0.20; and • 10% premium to the 5 day VWAP up to 26 May 2015 (being the day before the General Meeting).	4 years from date of grant
'B' Options	1,000,000	The greater of: • $0.25; and • 20% premium to the 5 day VWAP up to 26 May 2015 (being the day before the General Meeting).	5 years from date of grant
Total	**2,000,000**		

Any Director who has been a director of the Company for at least 6 months is eligible to participate in the ESOP, subject to that Director receiving an invitation by the Board.

The Options, if approved for grant, will form part of Mr Williams' remuneration package. The Options will be in addition to the non-executive Director fees payable to Mr Williams.

The Board notes that the grant of the Options to Mr Williams (via his nominee) is within the guidelines on non-executive director remuneration in Recommendation 8.2 of the ASX's Corporate Governance Principles and Recommendations. Under the Corporate Governance Principles and Recommendations, equity-based remuneration such as the Options is generally acceptable for non-executive directors provided that the Options have no performance hurdles attached. The Options are immediately exercisable and not subject to any performance hurdles, although the exercise price will be at a premium to the Company's trading price. This is to align the interests of Mr Williams with those of Shareholders.

The Board considers the grant of the Options to Mr Williams (via his nominee) to be reasonable and appropriate in the circumstances for the following reasons:

- Mr Williams has expended and will continue to expend significant time on Company business in excess of that expected of him in his non-executive role, in particular as a result of the Transaction;

- The Board has received advice from an independent remuneration consultant that the current remuneration for Mr Williams is at the lower end of remuneration payable to non-executive chairmen of companies listed on the ASX and having a market capitalisation of less than $50 million;

- If the future Share price of the Company's Shares does not reach the premium exercise price set for the Options and the Options are not exercised then there will be no cash flow or dilutive impact on Shareholders;

- If the Company's Share price does reach the premium exercise price set for the Options and the Options are exercised, then Shareholders will receive a significant cash flow benefit in excess of the accounting cost of the benefit provided, and while there will be a dilutive impact on all Shareholders if the Options are exercised, the resultant growth in the Company's market capitalisation will significantly compensate Shareholders for any dilution;

- If cash were used to 'pay' Mr Williams for his time commitment, the cost and cash flow impact would not be in the interests of Shareholders. Compensating Mr Williams by way of the issue of Options enables the Company to preserve its cash resources to focus on completion of the Transaction and the subsequent development of the LCEP, as outlined elsewhere in this Notice; and

- Independent advice received by the Board on the proposed grant of Options to remunerate Mr Williams is that the value of Options proposed to be granted is 'fair and reasonable' in the context of both the market and other remuneration components due to the significant time commitment Mr Williams expends on Company business.

If Resolution 7 is approved, each Director will have a relevant interest in the following Shares and Options:

Director	Shares	Existing Options	New Options
Mr Peter L Williams	899,360	750,000	2,000,000
Dr John G (Shad) Linley	375,000	Nil	Nil
Mr Chris Schacht	61,050	Nil	Nil
Mr Daniel J D Peters	Nil	Nil	Nil

16.2 Key Details of the Options

The full terms and conditions of the Options are set out in Annexure C. The key terms of the Options are as follows:

Item	Details
Maximum number of Options to be issued	See section 16.1 above.
Issue dates	Each Option will be issued as soon as reasonably practicable following Shareholder approval and in any case, not more than 12 months after the approval of Shareholders is obtained.

Exercise Price of each Option	'A' Options	The greater of: • $0.20; and • 10% premium to the 5 day VWAP up to 26 May 2015 (being the day before the General Meeting).
	'B' Options	The greater of: • $0.25; and • 20% premium to the 5 day VWAP up to 26 May 2015 (being the day before the General Meeting).
Underlying Securities	Each Option is an Option to subscribe for 1 fully paid ordinary Share (subject to possible adjustment in accordance with the terms and conditions of the Options set out in Annexure C).	
Consideration	Each Option will be granted for no consideration.	
Terms of issue	The full terms and conditions of the Options are set out in Annexure C.	
Intended use of the funds raised	If any Options are exercised, the funds received on exercise will be used for general working capital purposes.	
First Exercise Date	'A' Options	Date of grant
	'B' Options	Date of grant
Last Exercise Date	'A' Options	4 years from date of grant
	'B' Options	5 years from date of grant

16.3 ASX Listing Rule 10.14

Under ASX Listing Rule 10.14, an entity must not permit a director or an associate of the director to acquire securities under an employee incentive scheme without the approval of ordinary shareholders.

Accordingly, Shareholder approval is sought for the grant of the Options to Cluan Capital Management Pty Ltd, being an associate of Mr Williams, for the purposes of ASX Listing Rule 10.14.

16.4 ASX Listing Rule 7.1

At the Company's 2013 Annual General Meeting, Shareholders approved the ESOP for the purposes of Exception 9 of ASX Listing Rule 7.2. As a result of that approval, any securities issued under the ESOP within the 3 year period ending 21 November 2016 will not be included when calculating the 15% cap for the purposes of ASX Listing Rule 7.1 (please see section 11.4 above regarding the operation of ASX Listing Rule 7.1).

Accordingly, approval pursuant to ASX Listing Rule 7.1 is not separately required for the grant of the Options.

Since the last approval of the ESOP at the Company's 2013 Annual General Meeting, no options have been granted under the ESOP.

16.5 Chapter 2E of the Corporations Act

As set out in section 11.1 above, Chapter 2E of the Corporations Act prohibits the Company from giving a financial benefit to a related party of the Company unless Shareholder approval is obtained for the giving of the benefit, or the giving of the benefit falls within one of the exceptions in sections 210 to 216 of the Corporations Act.

Each of the Directors is a related party of the Company under section 228(2) of the Corporations Act by virtue of being a Director. The grant of the Options to Mr Williams (via his nominee) would constitute the giving of a financial benefit to him. However, it is the view of the Board that the proposed grant of the Options falls under one of the exceptions in the Corporations Act.

The relevant exception is set out in section 211(1) of the Corporations Act and states that shareholder approval is not required in order to give a financial benefit to a related party if that benefit is reasonable remuneration given to an officer or employee of the company.

For the reasons outlined in section 16.1 above, the Board has formed the view that the financial benefit proposed to be given to Mr Williams (via his nominee) by way of the grant of Options amounts to reasonable remuneration given to him in his capacity as an officer of the Company. As a result, the Board is of the view that the exception in section 211(1) of the Corporations Act applies to the proposed grant of the Options and therefore the approval of Shareholders is not required for the giving of the benefit.

16.6 Recommendation of Directors

Mr Peter L Williams has a material personal interest in the outcome of Resolution 7 and declines to make any recommendation in relation to the Resolution.

Further, in accordance with ASIC guidance on the matter, each Director considers that it is not appropriate for him to make a recommendation in relation to the remuneration of another Director. Accordingly, all Directors decline to make any recommendation to Shareholders in relation to Resolution 7.

17. Glossary

In this Notice of General Meeting and Explanatory Memorandum, the following terms have the following unless the context otherwise requires:

"**Allied**" means Allied Resource Partners Pty Ltd ACN 151 264 014.

"**AMC Report**" means the report commissioned by the Company from Australian Mineral Consultants (ABN 85 989 040 917) dated 20 January 2015 (and updated on 17 April 2015) entitled "*Review Report ARP TriEnergy Pty Ltd - Leigh Creek Energy Project PEL 650 South Australia*".

"**Annual Report**" means the annual report of the Company for the year ended 30 June 2014.

"**ARP TriEnergy**" means ARP TriEnergy Pty Limited ACN 146 966 305.

"**ARP TriEnergy Holding**" means 15,000,000 Shares held in the Company by ARP TriEnergy as at the date of this Notice.

"**ARP TriEnergy Shares**" means all of the ordinary shares on issue in ARP TriEnergy.

"**ASIC**" means the Australian Securities and Investments Commission.

"**ASX**" means ASX Limited ACN 008 624 691.

"**ASX Listing Rules**" means the listing rules of ASX and any other rules of ASX which are applicable while the Company is admitted to the official list of ASX, each as amended or replaced from time to time, except to the extent of any express written waiver by ASX.

"**Board**" means the Board of Directors from time to time.

"**Chair**" or "**Chairman**" means the chairman of the Company who will chair the Meeting.

"**Company**" or "**Marathon**" means Marathon Resources Limited ABN 31 107 531 822.

"**Completion**" means completion of the Transaction in accordance with the terms of the Share Sale Agreement.

"**Completion Date**" means the date that is 2 business days after the date on which all conditions precedent to the Transaction (as set out in the Share Sale Agreement) are satisfied, which the Company currently expects to be no later than the date that is 3 months after the date of the Meeting.

"**Corporations Act**" means the *Corporations Act 2001* (Cth).

"**CRIP**" means Continuous Retraction Injection Point, a method for production of syngas from underground coal seams.

"**CSG**" means coal seam gas.

"**DAME Report**" means the report commissioned by the Company from DAME Consulting Pty Ltd ACN 152 094 712 dated 8 December 2014 entitled "*Independent Report on the Status and Progress of Underground Coal Gasification (UCG) Technology*".

"**Directors**" means the directors of the Company from time to time and "**Director**" means any one of them.

"**DSD**" means the South Australian Department of State Development.

"**ELA**" means a South Australian exploration licence application under the Mining Act.

"**EnergyQuest Report**" means the report commissioned by the Company from Energy Quest Pty Ltd ACN 010 155 058 dated 8 November 2014 entitled "*Available East Coast Gas Study*".

"**Explanatory Memorandum**" means this explanatory memorandum.

"**FIRB**" means the Foreign Investment Review Board.

"**GRI Report**" means the report commissioned by the Independent Expert from Global Resources & Infrastructure Pty Ltd ACN 132 038 861 dated 10 April 2015 entitled "*Valuation of the Leigh Creek Energy Project*".

"**Independent Directors**" means each of Mr Peter L Williams, Dr John G (Shad) Linley and Mr Chris Schacht, being each of the Directors of the Company who do not have a material personal interest in the Transaction.

"**Independent Expert**" means Mr Derek Ryan of DMR Corporate Pty Ltd ACN 063 564 045.

"**Interim Funding Agreement**" means the Interim Funding Agreement dated 9 April 2015 between the Company and ARP TriEnergy in relation to the provision of funds by the Company to ARP TriEnergy pending Completion of the Transaction.

"**Investigating Accountant**" means Deloitte Corporate Finance Pty Limited ACN 003 833 127.

"**ISG**" means in situ gasification.

"**ISG Trust**" means the South Australia ISG Trust No. 1, the trustees of which are parties to the Royalty Deed with ARP TriEnergy.

"**JORC Code**" means the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves.

"**KMP**" means the key management personnel of the Company (as that term is defined in the Corporations Act).

"**Lawry Super Fund**" means Lawry Super Nominees Pty Ltd as trustee for the Lawry Family Superannuation Fund.

"**LCEP**" means the Leigh Creek Energy Project situated on PEL 650 which is owned by ARP TriEnergy and summarised in section 5.4.

"**LNG**" means liquefied natural gas.

"**MAPS**" means the Moomba to Adelaide Pipeline System.

"**Marathon Consideration Shares**" means 138,311,683 Shares to be issued to the Vendors in proportion to their respective shareholdings in ARP TriEnergy as set out in Schedule 2.

"**Meeting**" or "**General Meeting**" means the general meeting of Shareholders of the Company or any adjournment thereof, convened by the Notice.

"**Mineral Resources Act**" means the *Mineral Resources Act 1989* (Qld).

"**Mining Act**" means the *Mining Act 1971* (SA).

"**Non-Associated Shareholders**" means the Shareholders other than ARP TriEnergy, the Vendors and any of their associates.

"**Notice**" or "**Notice of General Meeting**" means together the notice of general meeting and this Explanatory Memorandum.

"**Options**" means the options to be granted to Mr Peter L Williams (via his nominee, Cluan Capital Management Pty Ltd) pursuant to Resolution 7.

"**Other Vendors**" means all Vendors other than Allied.

"**PEL 650**" means South Australian petroleum exploration licence 650 issued to ARP TriEnergy on 18 November 2014 under the PGE Act and on which the LCEP is situated.

"**PELA**" means a South Australian petroleum exploration licence issued under the PGE Act.

"**Petroleum Act**" means the *Petroleum and Gas (Production and Safety) Act 2004* (Qld).

"**PGE Act**" means the *Petroleum and Geothermal Energy Act 2000* (SA).

"**PPL**" means a South Australian petroleum production licence issued under the PGE Act.

"**Proxy Form**" means the proxy form enclosed with the Notice in relation to the Meeting.

"**Registry**" means Computershare Investor Services Pty Limited ACN 078 279 277.

"**Resolution**" means a resolution referred to in the Notice.

"**Royalty Deed**" means the Royalty Deed to be entered into between ARP TriEnergy and the trustees of the ISG Trust as summarised in section 2.3.

“**Share**” means a fully paid ordinary share in the capital of the Company.

"**Share Sale Agreement**" means the Share Sale Agreement dated 3 March 2015 between the Company, ARP and each of the Vendors in relation to the Transaction.

“**Shareholder**” means a holder of Shares in the Company.

“**Tenements**” means each exploration licence and exploration licence application held by ARP TriEnergy.

“**Transaction**” means the acquisition of the ARP TriEnergy Shares by the Company in consideration for the issue of the Marathon Consideration Shares to the Vendors.

“**UCG**” means underground coal gasification.

"**Vendors**" means each of the parties listed in Schedule 2.

“**VWAP**” means Volume Weighted Average Price of the Company’s ASX-listed Shares trading under the code MTN.

Schedule 1 – Financial Information

1 Basis of Preparation

On 7 January 2015 Marathon Resources Limited (**Marathon**) announced the signing of a binding term sheet relating to the proposed acquisition of ARP TriEnergy Pty Ltd (**ARP TriEnergy**) by Marathon. On 3 March 2015, Marathon announced the signing of a share sale agreement in relation to that acquisition.

The proposed acquisition is to take place by means of scrip consideration; the key terms of this transaction are that:

- Marathon is offering 138,311,683 Marathon shares for all the shares in ARP TriEnergy;
- ARP TriEnergy will enter into an arrangement with a third party custodian pursuant to which the custodian will be authorised to dispose of ARP TriEnergy's holding of shares in Marathon within twelve months of completion of the acquisition of ARP TriEnergy.

This would result in the existing ARP TriEnergy shareholders holding 60% (post-disposal of ARP TriEnergy's holding of shares in Marathon) of the expanded issued share capital of Marathon.

To recognise the effects of this transaction, the Pro Forma Consolidated Financial Information included in this section has been prepared using “reverse acquisition accounting principles”.

This section contains Historical Financial Information for Marathon and ARP TriEnergy as at 31 December 2014. The Historical Financial Information has been prepared in accordance with the recognition and measurement requirements of Australian Accounting Standards and the accounting policies adopted by Marathon as detailed in section 3. The Pro Forma Consolidated Financial Information has been derived from the Historical Financial Information and assumes the completion of the Pro Forma adjustments as set out in section 4 as if those adjustments had occurred as at 31 December 2014.

The Pro Forma Consolidated Financial Information contained in this section of the Explanatory Memorandum is presented in an abbreviated form and does not contain all the disclosures that are provided in a financial report prepared in accordance with the Corporations Act and Australian Accounting Standards and Interpretations.

The Pro Forma Consolidated Financial Information comprises:

- the reviewed statement of financial position of Marathon as at 31 December 2014 (Marathon Historical Financial Information);
- the reviewed statement of financial position of ARP TriEnergy as at 31 December 2014 (ARP TriEnergy Historical Financial Information);
- the pro forma adjustments set out in section 4 (Pro Forma adjustments);
- the pro forma consolidated statement of financial position of the Company as at 31 December 2014, prepared on the basis that the Pro Forma adjustments detailed in section 4 had occurred on that date; and
- the notes to the pro forma financial information.

2 Historical and Pro Forma Statement of Financial Position

	Section/ Note	Marathon Historical as at 31 December 2014 $	ARP TriEnergy Historical as at 31 December 2014 $	Pro Forma Adjustments as at 31 December 2014 $	Pro Forma Consolidated Historical as at 31 December 2014 $
Current Assets					
Cash and cash equivalents		2,941,076	250,007	-	3,191,083
Trade and other receivables		32,036	11,855	-	43,891
Other financial assets		32,850	479,241	(479,241)	32,850
Other assets		-	76,527	(76,527)	-
Total current assets		3,005,962	817,630	(555,768)	3,267,824
Non-Current Assets					
Property, plant and equipment		102,403	-	-	102,403
Exploration and Evaluation assets		-	587,312	-	587,312
Total non-current assets		102,403	587,312	-	689,715
Total Assets		**3,108,365**	**1,404,942**	**(555,768)**	**3,957,539**
Current Liabilities					
Trade and other payables		35,909	10,425	-	46,334
Unsecured borrowings from a shareholder		-	13,000	-	13,000
Provisions		39,603	-	-	39,603
Total current liabilities		75,512	23,425	-	98,937
Total Liabilities		**75,512**	**23,425**	**-**	**98,937**
Net Assets		**3,032,853**	**1,381,517**	**(555,768)**	**3,858,602**
Equity					
Issued capital	5	44,033,982	1,606,804	(41,636,579)	4,004,207
Treasury stock	6	-	-	(479,241)	(479,241)
Reserves		162,150	-	(162,150)	-
Retained profits/(Accumulated losses)		(41,163,279)	(225,287)	41,722,202	333,636
Total Equity		**3,032,853**	**1,381,517**	**(555,768)**	**3,858,602**

This statement should be read in conjunction with the accompanying notes

3 Summary of Significant Accounting Policies

The significant accounting policies that have been adopted in the preparation of the Financial Information are:

Reporting Framework

The Pro Forma Financial Information has been prepared in accordance with the recognition and measurement, but not all the disclosure, requirements specified by all Australian Accounting Standards and Interpretations and the Corporations Act.

The Pro Forma Financial Information has been prepared on a historical cost basis, except for certain financial instruments that are measured at fair value, as explained in the accounting policies below.

The Pro Forma Financial Information is presented in Australian dollars, unless otherwise noted.

a) Principles of Consolidation

The consolidated financial statements incorporate the financial statements of the Company and entities (including structured entities) controlled by the Company and its subsidiaries. Control is achieved when the Company:

- has power over the investee;
- is exposed, or has rights, to variable returns from its involvement with the investee; and
- has the ability to use its power to affect its returns.

The Company reassesses whether or not it controls an investee if facts and circumstances indicate that there are changes to one or more of the three elements of control listed above.

When the Company has less than a majority of the voting rights of an investee, it has power over the investee when the voting rights are sufficient to give it the practical ability to direct the relevant activities of the investee unilaterally. The Company considers all relevant facts and circumstances in assessing whether or not the Company's voting rights in an investee are sufficient to give it power, including:

- the size of the Company’s holding of voting rights relative to the size and dispersion of holdings of the other vote holders;
- potential voting rights held by the Company, other vote holders or other parties;
- rights arising from other contractual arrangements; and any additional facts and circumstances that indicate that the Company has, or does not have, the current ability to direct the relevant activities at the time that decisions need to be made, including voting patterns at previous shareholders' meetings.

Consolidation of a subsidiary begins when the Company obtains control over the subsidiary and ceases when the Company loses control of the subsidiary. Specifically, income and expenses of a subsidiary acquired or disposed of during the year are included in the consolidated statement of profit or loss and other comprehensive income from the date the Company gains control until the date when the Company ceases to control the subsidiary.

Profit or loss and each component of other comprehensive income are attributed to the owners of the Company and to the non-controlling interests. Total comprehensive income of subsidiaries is attributed to

the owners of the Company and to the non-controlling interests even if this results in the non-controlling interests having a deficit balance.

When necessary, adjustments are made to the financial statements of subsidiaries to bring their accounting policies into line with the Group's accounting policies.

All intragroup assets and liabilities, equity, income, expenses and cash flows relating to transactions between members of the Group are eliminated in full on consolidation.

Changes in the Group's ownership interests in subsidiaries that do not result in the Group losing control over the subsidiaries are accounted for as equity transactions. The carrying amounts of the Group's interests and the non-controlling interests are adjusted to reflect the changes in their relative interests in the subsidiaries. Any difference between the amount by which the non-controlling interests are adjusted and the fair value of the consideration paid or received is recognised directly in equity and attributed to owners of the Company.

When the Group loses control of a subsidiary, a gain or loss is recognised in profit or loss and is calculated as the difference between the aggregate of the fair value of the consideration received and the fair value of any retained interest and the previous carrying amount of the assets (including goodwill), and liabilities of the subsidiary and any non-controlling interests. All amounts previously recognised in other comprehensive income in relation to that subsidiary are accounted for as if the Group had directly disposed of the related assets or liabilities of the subsidiary (i.e. reclassified to profit or loss or transferred to another category of equity as specified/permitted by applicable AASBs). The fair value of any investment retained in the former subsidiary at the date when control is lost is regarded as the fair value on initial recognition for subsequent accounting under AASB 139, when applicable, the cost on initial recognition of an investment in an associate or a joint venture.

Marathon's acquisition of ARP TriEnergy is accounted for using reverse acquisition accounting principles. Refer to section 4 below for further details.

b) Income Tax

Current tax

The charge for current income tax expense is based on the profit for the year adjusted for any non-assessable or disallowed items. It is calculated using the tax rates that have been enacted or are substantially enacted by the reporting date.

Deferred tax

Deferred tax is accounted for using the liability method in respect of temporary differences arising between the tax bases of assets and liabilities and their carrying amounts in the financial statements. No deferred income tax will be recognised from the initial recognition of an asset or liability, excluding a business combination, where there is no effect on accounting or taxable profit or loss.

Deferred tax is calculated at the tax rates that are expected to apply to the period when the asset is realised or liability is settled. Deferred tax is credited in the statement of profit or loss and other comprehensive income except where it relates to items that may be credited directly to equity, in which case the deferred tax is adjusted directly in comprehensive income against equity.

Deferred income tax assets are recognised to the extent that it is probable that future tax profits will be available against which deductible temporary differences can be utilised.

The amount of benefits brought to account or which may be realised in the future is based on the assumption that no adverse change will occur in income taxation legislation and the anticipation that the

economic entity will derive sufficient future assessable income to enable the benefit to be realised and comply with the condition of deductibility imposed by the law.

Tax consolidation

Marathon and its wholly-owned Australian subsidiary are part of a tax-consolidated group under Australian taxation law. Each entity in the group recognises its own current and deferred liabilities, except for any deferred tax liabilities resulting from unused tax losses and tax credits, which are immediately assumed by the parent entity. The current tax liability of each group entity is then subsequently assumed by the parent entity. The tax consolidated group has entered a tax sharing agreement whereby each company in the group contributes to the income tax payable in proportion to their contribution to the net profit before tax of the consolidated group.

c) Property, Plant and Equipment

Each class of property, plant and equipment is carried at cost, where applicable, any accumulated depreciation and impairment losses.

Plant and equipment

Plant and equipment are measured on the cost basis.

The carrying amount of plant and equipment is reviewed annually to ensure it is not in excess of the recoverable amount from these assets. The recoverable amount is assessed on the basis of the expected net cash flows that will be received from the asset's employment and subsequent disposal. The expected net cash flows have been discounted to their present values in determining recoverable amounts.

Assets acquired are recorded at the cost of acquisition being the purchase consideration determined as at the date of acquisition plus costs incidental to the acquisition.

Subsequent costs are included in the asset's carrying amount or recognised as a separate asset, as appropriate, only when it is probable that future economic benefits associated with the item will flow to the group and the cost of the item can be measured reliably. All other repairs and maintenance are charged to the statement of profit or loss and other comprehensive income during the financial period in which they are incurred.

Depreciation

The depreciable amount of all fixed assets is calculated on a straight-line basis over the useful life of those assets to the consolidated entity commencing from the time the asset is held ready for use. Leasehold improvements are depreciated over the shorter of the lease term and the assets useful lives.

The depreciation rates used for each class of depreciable assets are:

Class of Fixed Asset	Depreciation Rate
Plant and equipment	5-33%
Office equipment	10-20%
Motor vehicles	15%
Leasehold improvement	45%

The assets' residual values and useful lives are reviewed, and adjusted if appropriate, at each reporting date.

An asset's carrying amount is written down immediately to its recoverable amount if the asset's carrying amount is greater than its estimated recoverable amount.

Gains and losses on disposals are determined by comparing proceeds with the carrying amount. These gains and losses are included in the statement of profit or loss and other comprehensive income.

d) Exploration and Evaluation Expenditure

Exploration and evaluation expenditures in relation to each separate area of interest are recognised as an exploration and evaluation asset in the year in which they are incurred where the following conditions are satisfied:

- the rights to tenure of the area of interest are current; and
- at least one of the following conditions is also met:
  - the exploration and evaluation expenditures are expected to be recouped through successful development and exploration of the area of interest, or alternatively, by its sale; or
  - exploration and evaluation activities in the area of interest have not at the reporting date reached a stage which permits a reasonable assessment of the existence or otherwise of economically recoverable reserves, and active and significant operations in, or in relation to, the area of interest are continuing.

Exploration and evaluation assets are initially measured at cost and include acquisition of rights to explore, costs of studies, exploration drilling, trenching and sampling and associated activities. General and administrative costs are only included in the measurement of exploration and evaluation costs where they relate directly to operational activities in a particular area of interest.

Exploration and evaluation assets are assessed for impairment when facts and circumstances (as defined in AASB 6 "Exploration for and Evaluation of Mineral Resources") suggest that the carrying amount of exploration and evaluation assets may exceed their recoverable amount. The recoverable amount of the exploration and evaluation assets (or the cash-generating unit(s) to which they have been allocated, being no larger than the relevant area of interest) is estimated to determine the extent of the impairment loss (if any).

Where an impairment loss subsequently reverses, the carrying amount of the asset is increased to the revised estimate of its recoverable amount, but only to the extent that the increased carrying amount does not exceed the carrying amount that would have been determined had no impairment loss been recognised for the asset in previous years.

Where a decision is made to proceed with development in respect of a particular area of interest, the relevant exploration and evaluation asset is tested for impairment, reclassified to development properties, and then amortised over the life of the reserves associated with the area of interest once mining operations have commenced.

e) Financial Instruments

Recognition

Financial assets and financial liabilities are recognised when the Group becomes a party to the contractual provisions of the financial instrument, and are measured initially at fair value adjusted by transactions costs, except for those carried at fair value through profit or loss, which are measured initially at fair value. Subsequent measurement of financial assets and financial liabilities are described below.

Classification and subsequent measurement

Financial assets at fair value through profit and loss (FVTPL)

Financial assets at FVTPL include financial assets that are either classified as held for trading or that meet certain conditions and are designated at FVTPL upon initial recognition. Assets in this category are measured at fair value with gains or losses recognised in profit or loss. The fair values of financial assets in this category are determined by reference to active market transactions or using a valuation technique where no active market exists.

Loans and receivables

Loans and receivables are non-derivative financial assets with fixed or determinable payments that are not quoted in an active market and are stated at amortised cost using the effective interest rate method.

Available-for-sale financial assets

Available-for-sale financial assets include any financial assets not included in the above categories. Available-for-sale financial assets are reflected at fair value. Unrealised gains and losses arising from changes in fair value are taken directly to equity.

De-recognition

Financial assets are derecognised where the contractual rights to receipt of cash flows expires or the asset is transferred to another party whereby the entity no longer has any significant continuing involvement in the risks and benefits associated with the asset. Financial liabilities are derecognised where the related obligations are either discharged, cancelled or expire. The difference between the carrying value of the financial liability extinguished or transferred to another party and the fair value of consideration paid, including the transfer of non-cash assets or liabilities assumed, is recognised in profit or loss.

Impairment

At each reporting date, the group assess whether there is objective evidence that a financial instrument has been impaired. In the case of available-for-sale financial instruments, a prolonged decline in the value of the instrument is considered to determine whether impairment has arisen. Impairment losses are recognised in the statement of profit or loss and other comprehensive income.

f) Impairment of Assets

At each reporting date, the group reviews the carrying values of its assets to determine whether there is any indication that those assets have been impaired. If such an indication exists, the recoverable amount of the asset, being the higher of the asset's fair value less costs to sell and value in use, is compared to the asset's carrying value. Any excess of the asset's carrying value over its recoverable amount is expensed to the statement of profit or loss and other comprehensive income. Where it is not possible to estimate the recoverable amount of an individual asset, the group estimates the recoverable amount of the cash-generating unit to which the asset belongs.

g) Joint Ventures

Interests in jointly controlled operations are reported in the financial statements by including the consolidated entity's share of assets employed in the joint arrangements and the share of liabilities incurred in relation to the joint operations and the share of any expenses incurred in relation to the joint arrangements in their respective classification categories.

h) Employee Benefits

A liability is recognised for benefits accruing to employees in respect of wages and salaries, annual leave, long service leave, and sick leave when it is probable that settlement will be required and they are capable of being measured reliably.

Liabilities recognised in respect of employee benefits expected to be settled within 12 months, are measured at their nominal values using the remuneration rate expected to apply at the time of settlement.

Liabilities recognised in respect of employee benefits which are not expected to be settled within 12 months are measured at the present value of the estimated future cash outflows to be made by the Group in respect of services provided by employees up to reporting date.

Contributions to accumulated benefit superannuation plans are expensed when incurred.

i) Provisions

Provisions are recognised when the group has a legal or constructive obligation, as a result of past events, for which it is probable that an outflow of economic benefits will result and that outflow can be reliably measured.

j) Cash and Cash Equivalents

Cash and cash equivalents include cash on hand, deposits held at call with banks, other short-term highly liquid investments with original maturities of three months or less, and bank overdrafts. Bank overdrafts are shown within short-term borrowings in current liabilities on the statement of financial position where applicable.

k) Revenue

Interest revenue is recognised on a proportional basis taking into account the interest rates applicable to the financial assets.

l) Goods and Services Tax (GST)

Revenues, expenses and assets are recognised net of the amount of GST, except where the amount of GST incurred is not recoverable from the Australian Tax Office. In these circumstances the GST is recognised as part of the cost of acquisition of the asset or as part of an item of the expense. Receivables and payables in the statement of financial position are shown inclusive of GST.

Cash flows are presented in the cash flow statement on a gross basis, except for the GST component of investing and financial activities, which are disclosed as operating cash flows.

m) Share Based Payments

The company issues shares and options from time to time for no consideration. Equity-settled share based payments are measured at fair value at the date of grant. Fair value is determined by the use of a Black-Scholes pricing model. The fair value is fully expensed on a straight line basis over the vesting period.

n) Leases

Lease payments for operating leases, where substantially all the risks and benefits remain with the lessor, are charged as expenses in the periods in which they are incurred.

o) Critical Accounting Estimates and Judgments

In the application of the accounting policies the directors are required to make judgments, estimates and assumptions about carrying values of assets and liabilities that are not readily apparent from other sources. The estimates and associated assumptions are based on historical experience and various other factors that are believed to be reasonable under the circumstances, the results of which form the basis of making the judgments. Actual results may differ from these estimates.

The estimates and underlying assumptions are reviewed on an ongoing basis. Revisions to accounting estimates are recognised in the period in which the estimate is revised if the revision affects only that period or in the period of the revision and future periods if the revision affects both current and future periods.

Judgments made by the directors in the application of the accounting policies that have a significant effect on the Financial Information are disclosed, where applicable, in the relevant notes to the Financial Information.

4 Summary of Pro Forma Adjustments

Under "reverse acquisition accounting principles" Marathon is the legal parent, but ARP TriEnergy is the accounting parent for consolidation purposes. As a result of this accounting treatment, the consolidated financial statements effectively represent the continuation of ARP TriEnergy.

The following Pro Forma adjustments have been made to the Historical Financial Information:

- The issue of 138,311,683 Marathon shares for the acquisition of all the shares in ARP TriEnergy. These shares have been valued using the Marathon closing sale price on the ASX as at 31 December 2014 (2.6 cents) giving a value of $3,596,104.

- The elimination of Marathon's investment in ARP TriEnergy ($3,596,104).

- The elimination of Marathon's "total equity" ($3,032,853), which in substance, under the reverse acquisition accounting principles referred to above, are effectively treated as "pre-acquisition". Further, the existing Marathon shareholders are recognised as new equity in the Group at Marathon's closing sale price on the ASX as at 31 December 2014 ($2,397,403). Finally, Marathon's existing Director share options need to be recognised as new Director share options of the Group ($0). Details about these options are shown in 7 below. The net effect of these adjustments is to record a net gain on acquisition of subsidiary of $635,450.

- Recording of ARP TriEnergy investment in Marathon (as at 31 December 2014, 18,432,337 ordinary shares and recognised in ARP TriEnergy Historical Financial Statements at $479,241) as "treasury stock".

- Other assets represent pre-paid directors fees in respect of a current ARP TriEnergy director. As this director will cease to hold office upon completion of the Transaction, the amount has been expensed as a pro-forma adjustment.

The above pro forma adjustments have been determined using Marathon's closing share price on the ASX as at 31 December 2014. The statutory financial statements will be determined based upon Marathon's share price at the date of acquisition of ARP TriEnergy.

5 Share Capital

	Number	$
Balance as at 31 December 2014 (ARP TriEnergy)	4,952	1,606,804
Reconstruction of issued capital as a result of the issue of shares to ARP TriEnergy shareholders	138,306,731	-
	138,311,683	1,606,804
Recognising existing Marathon shareholders as new equity in the Group	92,207,789	2,397,403
Pro forma consolidated share capital as at 31 December 2014	230,519,472	4,004,207

6 Treasury Stock

	Number	$
Balance as at 31 December 2014	-	-
ARP TriEnergy holding in Marathon shares	(18,432,337)	(479,241)
Pro forma consolidated treasury stock as at 31 December 2014	(18,432,337)	(479,241)

Treasury stock represents ARP TriEnergy's holding in Marathon shares. ARP TriEnergy is to enter into an arrangement with a third party custodian pursuant to which the custodian will be authorised to dispose of ARP TriEnergy's holding during the twelve months commencing on the completion of the acquisition of ARP TriEnergy.

7 Share Options

As at 31 December 2014, Marathon has 750,000 Director share options that vested on 1 November 2014 and expire on 1 November 2015. These share options were issued to the Chairman of Marathon, Peter Williams, pursuant to shareholders' approval at the AGM on 16 November 2010. These share options have been valued as at 31 December 2014 using the Black-Scholes pricing model (giving a value per option of $0), using the following inputs:

Grant date share price	2.6 cents
Exercise price	$1.727
Expected volatility	107.2%
Risk free interest rate	2.81%
Expiry dated	1 November 2015

8 Commitments for Expenditure

Commitments for exploration expenditure are disclosed in the Explanatory Memorandum (section 5.3).

9 Related Parties

Transactions with Related Parties and Directors' Interests are disclosed in the Explanatory Memorandum (sections 11.1, 12, 15 and 16).

10 Contingent Liabilities

ARP TriEnergy has provided a bank guarantee of $50,000 as a security deposit as required under the PGE Act to the Department of State Development. At the date of this report there are no other material contingent liabilities.

11 Subsequent Events

On 16 March 2015 ARP TriEnergy sold 3,432,337 ordinary shares that it held in Marathon for $205,940.22. The remaining holding in Marathon (15,000,000 ordinary shares) will be transferred to a custodian for sale within twelve months after the completion of the acquisition of ARP TriEnergy.

Marathon and ARP TriEnergy have entered into an interim funding agreement, details of which are set out in section 2.4 of the Explanatory Memorandum.

Immediately following Completion of the acquisition of ARP TriEnergy, a Royalty Deed will be entered into by ARP TriEnergy, details of which are set out section 2.3 of the Explanatory Memorandum.

If approved at Marathon's general meeting to be held on 27 May 2015, the issue of 2,000,000 Director Options, details of which are set out section 16 of the Explanatory Memorandum.

Other than the Transaction in relation to the proposed acquisition of ARP TriEnergy, there are no other subsequent events which require disclosure since 31 December 2014.

Schedule 2 – Vendors and Marathon Consideration Shares

	Vendor	No. of Marathon Consideration Shares	% Holding in Company*
1.	Allied Resource Partners Pty Ltd (ACN 151 264 014)	104,767,190	45.45
2.	Nicholas James Redpath	1,815,480	0.79
3.	One Design & Skiff Sails Pty Ltd as trustee for the I W Brown Superannuation Fund (ABN 55 791 537 915)	5,167,137	2.24
4.	Murray Kenneth Chatfield	837,914	0.37
5.	Richard McGrath	13,965,235	6.06
6.	Simon Allsop	558,609	0.24
7.	Robert Clancy and Christine Clancy as trustees for the Clancy Superannuation Fund (ABN 37 496 021 187)	418,957	0.18
8.	Ben William Jarvis	977,566	0.42
9.	Lien Pty Ltd (ACN 002 280 195)	837,914	0.37
10.	Jimbzal Pty Ltd (ACN 143 868 179) as trustee for the Taylor Family Trust (ABN 50 756 228 691)	418,957	0.18
11.	Jonathan Irwin	837,914	0.37
12.	Michael Mishevski	418,957	0.18
13.	FGDG Super Pty Ltd as trustee for the F. G. Heppingstone Pty Ltd. Superannuation Fund (ABN 86 906 420 527)	418,957	0.18
14.	Graham Leslie Ascough and Patricia Lynn Ascough as trustees for the Ascough Family Trust (ABN 30 372 708 705)	418,957	0.18
15.	Andrew Wiltshire and Fiona Wiltshire as trustees for the Wiltshire Family Superannuation Fund (ABN 12 170 847 827)	418,957	0.18
16.	Romray Pty. Limited as trustee for the ABC Superannuation Fund (ABN 72 869 410 625)	418,957	0.18
17.	Glenn Paul Crichton and Dean Arthur Crichton as trustees for the Crichton Superannuation Fund (ABN 72 407 909 571)	698,262	0.30
18.	Jetan Pty Ltd (ACN 001 261 347)	3,491,309	1.51
19.	Telemark International Pty Ltd (ACN 601 394 656)	1,424,454	0.62
	TOTAL	**138,311,683**	**60.00%**

Annexure A – Independent Expert's Report

DMR
CORPORATE

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20 April 2015

Mr. P. Williams
Chairman
Marathon Resources Limited
Unit 8, 53-57 Glen Osmond Road
Eastwood, SA 5063

Dear Sirs,

1. Introduction

The directors of Marathon Resources Limited ("Marathon" or the "Company") have requested DMR Corporate Pty Ltd ("DMR Corporate") to prepare an independent expert's report in respect of a proposed corporate restructure whereby Marathon is to acquire a 100% interest in the Leigh Creek Energy Project ("LCEP").

The LCEP is currently owned by ARP TriEnergy Pty Ltd ("TriEnergy"), a privately owned Australian company focused on generating significant new energy sources by producing gas supplies from the vast Leigh Creek coal reserves via In-Situ Gasification ("ISG").

ISG is an existing technology that has been in commercial operation in Russia for over 50 years. ISG does not involve coal mining, handling or transportation and there are fewer impacts on the environment compared to coal mining, as the process includes pollutant capture and there is no landfill disposal required.

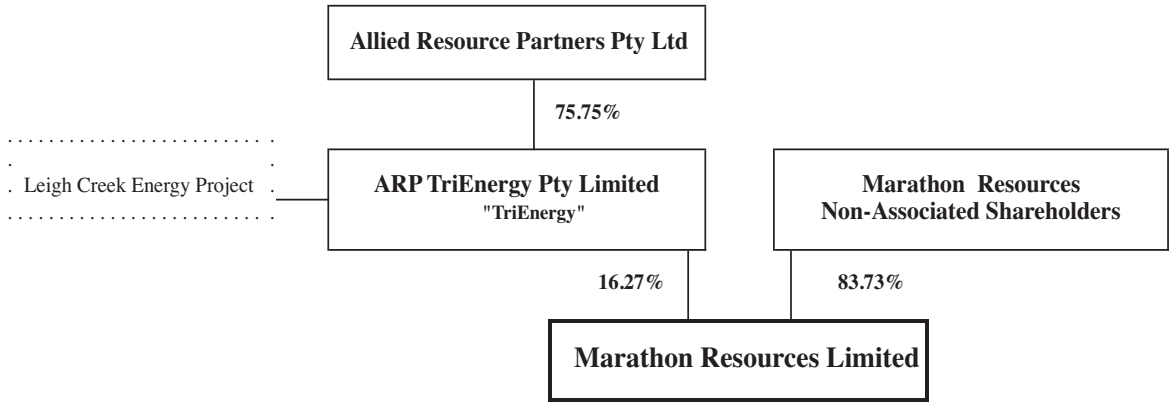
Leigh Creek has excellent infrastructure including a rail line, sealed main regional road access, high voltage power, water, airfield and other services associated with the adjoining townships of Leigh Creek and Copley.

TriEnergy currently holds South Australian Petroleum Exploration Licence (PEL 650) contained within the former Petroleum Exploration Licence application (PELA 647) known as LCEP. TriEnergy also holds PELA 582, PELA 643, PELA 644, PELA 647 and PELA 649 and Exploration Licence Application ("ELA") 2014/00238 and ELA 2014/00232 (hereinafter referred to as the "Tenements").

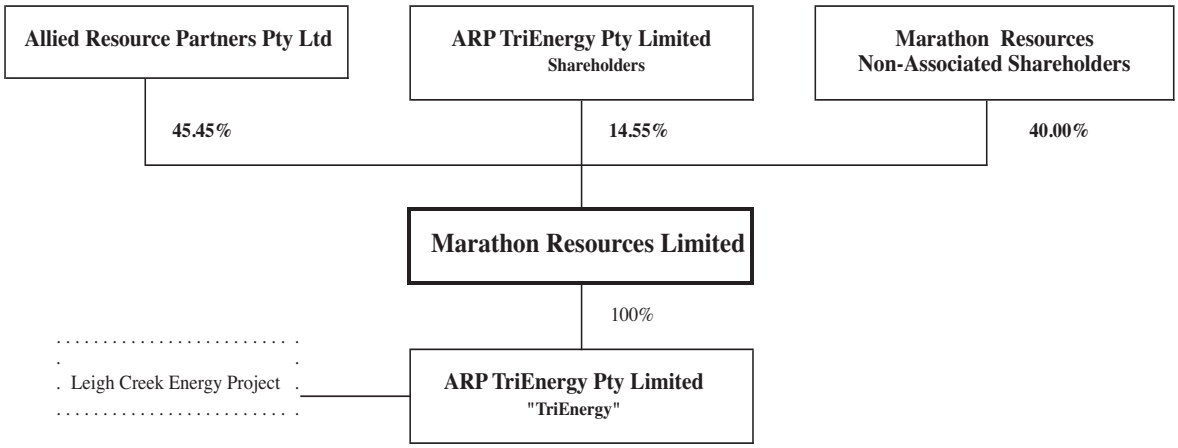
Allied Resource Partners Pty Ltd ("ARP") currently owns 75.75% of TriEnergy's issued capital.

TriEnergy is currently Marathon's second largest shareholder, holding 16.27% of Marathon's issued capital. The existing corporate structure is as follows:

DMR



Following the proposed corporate restructuring (described in Section 2 below), the corporate structure will become:



As can be seen from the above charts, the current Marathon Non-Associated Shareholders will have their interests diluted from 83.73% to 40.00% and the interest of ARP in Marathon becomes 45.45% and the other former shareholders of ARP TriEnergy will own 14.55% of Marathon.

The proposed corporate restructuring transaction is permitted by Section 611 of the Corporations Act 2001 ("the Act") and Chapter 2E of the Act, together with Rule 10.1 of the Listing Rules ("Listing Rule 10.1") of the Australian Securities Exchange ("ASX"), provided that the transaction is agreed to by shareholders, other than those involved in the proposed transaction or persons associated with such persons (i.e. the Marathon Non-Associated Shareholders).

2. The Proposed Transaction

2.1 The Notice of Meeting to which this report is attached proposes the following 7 resolutions be placed before shareholders for their approval:

Resolution 1	"That, subject to and conditional upon the passing of Resolutions 2 and 3, for the purposes of ASX Listing Rule 11.1.2 and for all other purposes, the proposed significant change to the nature and scale of the Company's activities as set out in the Explanatory Memorandum be approved."
Resolution 2	"That, subject to and conditional upon the passing of Resolutions 1 and 3, for the purposes of:

DMR

(a) ASX Listing Rule 10.1 and for all other purposes, the acquisition by the Company of ARP TriEnergy; and

(b) ASX Listing Rule 7.1, Chapter 2E and item 7 of section 611 of the Corporations Act and for all other purposes, the issue of 138,311,683 Shares to the Vendors as consideration for the acquisition of the ARP TriEnergy Shares,

on the terms and conditions set out in the Explanatory Memorandum be approved. ”

Resolution 3	"That, subject to and conditional upon the passing of Resolutions 1 and 2 and Completion occurring, for the purposes of Chapter 2E of the Corporations Act and for all other purposes, the entry into and performance by ARP TriEnergy of its obligations under the Royalty Deed on the terms and conditions set out in the Explanatory Memorandum be approved."
Resolution 4	"That, for the purposes of clause 45.1(a) of the Company's constitution and for all other purposes, Mr Daniel J D Peters be appointed as a Director of the Company with immediate effect."
Resolution 5	“That, subject to the passing of Resolutions 1 to 3 (inclusive) for the purposes of clause 45.1(a) of the Company's constitution and for all other purposes, Mr David Kit Shearwood be appointed as a Director of the Company with immediate effect."
Resolution 6	"That, subject to and conditional upon the passing of Resolutions 1 to 3 (inclusive), for the purposes of Chapter 2E of the Corporations Act and for all other purposes, the giving of a financial benefit to ARP TriEnergy on the terms and conditions set out in the Explanatory Memorandum be approved."
Resolution 7	“That, for the purposes of ASX Listing Rule 10.14 and for all other purposes, the issue of options to Mr Peter L Williams on the terms and conditions set out in the Explanatory Memorandum be approved."

The acquisition of TriEnergy in Resolution 2 is the only resolution on which we are required to opine and this resolution is referred to as the “Proposed Restructuring Transaction” throughout the remainder of this report.

We have also been asked to value the financial benefits, which may be payable to related parties as a result of, or associated with the Proposed Restructuring Transaction. These include financial benefits to be given to ARP under the Proposed Restructuring Transaction (see Resolution 2) and the Royalty Deed (see Resolution 3) and to TriEnergy under the Interim Funding Agreement (see Resolution 6).

2.2 Acquisition of TriEnergy

Marathon entered into a binding agreement with ARP and TriEnergy whereby:

(a) Marathon will acquire all of the issued share capital of TriEnergy from its existing shareholders (including ARP’s 75.75% interest) in return for the issue of 138,311,683 Marathon shares; and

(b) Upon completion of the Proposed Restructuring Transaction, TriEnergy's current 16.27% equity interest in Marathon will be transferred to a custodian to hold and sell during the 12-month period after Marathon obtains control of TriEnergy. The proceeds from the sales will revert to Marathon as working capital.

(c) Following completion of the Proposed Restructuring Transaction, TriEnergy will agree to pay royalties to the "South Australian ISG Trust No. 1" whose beneficiaries are the TriEnergy shareholders. The royalties are to be calculated as follows:

(i) 30c per gigajoule of CH_4 sold or 3% of the gross revenue, whichever is greater, with the exception that if the gas price falls below $6 per gigajoule, then the royalty will decrease to 15c per gigajoule of CH_4 sold; and

(ii) 2% of gross revenue for the sale of all other products.

2.3 The consideration payable by Marathon to the TriEnergy shareholders is to be satisfied by the issue of 138,311,683 fully paid Marathon shares.

2.4 The Directors of Marathon have requested DMR Corporate to prepare an independent expert's report in accordance with ASIC Regulatory Guide 111 – Content of expert reports. ASIC Regulatory Guide 111 requires the Independent Expert to advise shareholders whether the Proposed Restructuring Transaction is fair and reasonable. A copy of our report will accompany the Notice of Meeting and will be included as part of the Explanatory Statement to be sent by Marathon to its shareholders.

3. Summary Opinion

3.1 In our opinion, the Proposed Restructuring Transaction as set out in Section 2 above is **fair and reasonable** when considered in the context of the interests of the Marathon shareholders.

Our principal reasons for reaching the above opinion are:

Assessment of Fairness

In Section 7.8 we valued Marathon in a range of $3,000,000 to $3,400,000 before the Proposed Restructuring Transaction and the Marathon Non-Associated Shareholders' interests in a range of $2,470,000 to $2,800,000 on a control basis.

In Section 10 we assessed the control value of Marathon after the Proposed Restructuring Transaction to be $23,056,000 and as the Marathon Non-Associated Shareholders will have a 39.43% interest therein, they will be minority shareholders in Marathon after the Proposed Restructuring Transaction.

In Section 11 we determined that the Marathon Non-Associated Shareholders' minority interests in Marathon after the Proposed Restructuring Transaction will have a value in the range of $7,490,000 to $7,830,000 on a minority basis.

As the value of the Marathon Non-Associated Shareholders' interests after the completion of the Proposed Restructuring Transaction $7,490,000 to $7,830,000) is greater than the value of their interests before the Proposed Restructuring Transaction ($2,470,000 to $2,800,000), we have concluded that **the Proposed Restructuring Transaction is fair.**

DMR

Assessment of Reasonableness

The Proposed Restructuring Transaction **is considered to be reasonable** as the advantages of proceeding with the transaction outweigh the disadvantages of proceeding with the transaction – Section 13.

Overall Conclusion

After considering all of the information available to us in respect of the Proposed Restructuring Transaction, we consider that **the Proposed Restructuring Transaction is fair and reasonable.**

3.2 Related Party Financial Benefits

In Section 15 we assessed the value of the financial benefits that may be receivable by ARP arising from:

(1) The Proposed Restructuring Transaction as $10,776,719;

(2) The Royalty Agreement - as the LCEP is still at an advanced exploration stage of development there are no cash flow or revenue projections that we can use to value the future royalties if and when they become payable. For this reason, we cannot estimate the net present value of the financial benefits that may be given to ARP and therefore we cannot value this financial benefit; and

(3) Interim Funding Agreement as $400,000.

4. Structure of this Report

This report is divided into the following sections:

DMR

5. Purpose of the Report

5.1 This report has been prepared to meet the following regulatory requirements:

- **Corporations Act 2001**

Section 606 of the Act contains a general prohibition on the acquisition of shares in a company if, as a result of the acquisition, any person increases his or her voting power in the company:

(a) from 20% or below to more than 20%; or

(b) from a starting point that is above 20% and below 90%.

Section 611 of the Act contains various exceptions to the Section 606 prohibition. For an acquisition of shares to fall within the exception, the acquisition must be approved in advance by a resolution passed at a general meeting of the company in which the shares will be acquired.

Marathon is seeking shareholder approval for the Proposed Restructuring Transaction under Section 611 of the Act as ARP will increase its interests in Marathon from 16.27% (currently attributed to it by virtue of ARP's controlling interest in TriEnergy) to 45.45% if the Proposed Restructuring Transaction proceeds.

In addition as David Shearwood holds (both directly and indirectly) an interest in 22.47% of the issued capital of ARP, pursuant to Section 608(3)(a) of the Act he is deemed to have a relevant interest in any Marathon shares in which ARP has a relevant interest. As a result, his relevant direct and indirect interests in Marathon shares will increase from 17.70% prior to completion of the Proposed Restructuring Transaction to 45.53% following completion. Shareholder approval is therefore also being sought for this increase in the relevant interests of David Shearwood as a consequence of the Proposed Restructuring Transaction.

- **ASIC Regulatory Guides**

This report has been prepared in accordance with the ASIC Regulatory Guides and more particularly:

RG 111 – Content of Expert Reports ("RG111")

RG 111.24 An issue of shares by a company otherwise prohibited under S606 may be approved under item 7 of S611 and the effect on the company's shareholding is comparable to a takeover bid. Examples of such issues approved under item 7 of S611 that are comparable to takeover bids under Ch 6 include:

(a) a company issues securities to the vendor of another entity or to the vendor of a business and, as a consequence, the vendor acquires over 20% of the company incorporating the merged businesses. The vendor could have achieved the same or a similar outcome by launching a scrip takeover for the company.

RG111.27 There may be circumstances in which the allottee will acquire 20% or more of the voting power of the securities in the company following the allotment or increase an existing holding of 20% or more, but does not obtain a practical measure of control or increase its practical control over that company. If the expert believes that the allottee has not obtained or increased its control over the company as a practical matter, then the expert could take this outcome into account in assessing whether the issue price is 'reasonable' if it has assessed the issue price as being 'not fair' applying the test in RG111.11.

RG111.10 It has long been accepted in Australian mergers and acquisitions practice that the words 'fair and reasonable' in S640 established two distinct criteria for an expert analysing a control transaction:
(a) is the offer 'fair'; and
(b) is it 'reasonable'?

That is, 'fair and reasonable' is not regarded as a compound phrase.

RG111.11 Under this convention, an offer is 'fair' if the value of the offer price or consideration is equal to or greater than the value of the securities the subject of the offer. This comparison should be made:

(a) assuming a knowledgeable and willing, but not anxious, buyer and a knowledgeable and willing, but not anxious, seller acting at arm's length; and

(b) assuming 100% ownership of the 'target' and irrespective of whether the consideration is scrip or cash. The expert should not consider the percentage holding of the 'bidder' or its associates in the target when making this comparison. For example, in valuing securities in the target entity, it is inappropriate to apply a discount on the basis that the shares being acquired represent a minority or 'portfolio' parcel of shares.

RG111.12 An offer is 'reasonable' if it is fair. It might also be 'reasonable' if, despite being 'not fair', the expert believes that there are sufficient reasons for security holders to accept the offer in the absence of any higher bid before the close of the offer.

ASIC Regulatory Guide 111 requires that the Proposed Restructuring Transaction be assessed as if it was a takeover of Marathon. In assessing a takeover bid Regulatory Guide 111 states that the expert should consider whether the Proposed Restructuring Transaction is both "fair" and "reasonable".

- **Corporations Act 2001 – Chapter 2E**

Section 208 of the Act states that a public company must obtain approval from the company's members if it gives a financial benefit to a related party unless the benefit falls within the scope of an exception to the Act as set out in Section 210 to 216 of the Act.

Section 210 of the Act states that member approval is not needed to give a financial benefit on terms that:

(a) would be reasonable in the circumstances if the public company or entity and the related party were dealing at arm's length; or

(b) are less favourable to the related party than the terms referred to in paragraph (a) above.

Section 211 of the Act states that member approval is not needed to give a financial benefit if:

(a) the benefit is remuneration to a related party as an officer or employee;

(b) to give the remuneration would be reasonable.

Section 228 of the Act defines 'related parties' as:

(a) directors of the public company;

(b) directors (if any) of an entity that controls the public company;

(c) if the public company is controlled by an entity that is not a body corporate – each of the persons making up the controlling entity;

(d) spouses and de facto spouses of the persons referred to in paragraphs (a) to (c) above.

The issuance of the Marathon shares to ARP as part of the Proposed Restructuring Transaction, entering into the Royalty Agreement and the Interim Funding Agreement are all permitted by the Act, however Section 208 provides that prior shareholder approval is required before a public company can provide any financial benefits to a related party. The Act also states that the Shareholders must be provided with all the information that is reasonably required in order for them to decide whether or not it is in the company's interests to approve the giving of the financial benefits that may arise from the above 3 Agreements.

The ASIC media release issued on 10 August 2004 has expressed the view that the financial benefit must be adequately valued. ASIC has gone on to state:

> "An adequate valuation requires the basis of the valuation and the principal assumptions behind the valuation to be disclosed, and in some circumstances it may be necessary to provide a valuation by an independent expert."

The Directors of Marathon have requested DMR Corporate to independently assess the value of these financial benefits.

- **ASX - Listing Rules**

Listing Rule 10.1 requires that a company obtain shareholder approval at a general meeting when the sale or acquisition of a substantial asset is to be made to or from:

(i) a related party;

(ii) a subsidiary;

(iii) a substantial shareholder who is entitled to at least 10% of the voting securities, or a person who was a substantial shareholder entitled to at least 10% of the voting securities at any time in the 6 months before the transaction;

(iv) an associate of a person referred to in paragraphs (i), (ii) or (iii) above;

(v) a person whose relationship to the entity or a person referred to above is such that, in the ASX's opinion, the transaction should be approved by security holders.

Listing Rule 10.2 defines a substantial asset as being an asset whose value, or the value of the consideration for it is, or in ASX's opinion is, 5% or more of the equity interests of the entity as set out in the latest accounts given to the ASX under the listing rules. The value of the acquisition of TriEnergy exceeds 5% of the shareholders' funds of Marathon as set out in the 31 December 2014 Interim Financial Report and the acquisition may therefore be subject to Listing Rule 10.1 approval.

As ARP is an "associate" of TriEnergy (as it controls TriEnergy) the acquisition of TriEnergy shares from ARP requires the approval of the Marathon Non-Associated Shareholders' pursuant to Listing Rule 10.1.

The notice of any meeting of shareholders to approve any transaction referred to in Listing Rule 10.1 shall be accompanied by a report from an independent qualified person who shall state his opinion as to whether the Proposed Restructuring Transaction is fair and reasonable to the Non-Associated Shareholders.

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5.2 General

The terms "fair" and "reasonable" are not defined in the Act, however guidance as to the meaning of these terms is provided by ASIC in Regulatory Guide 111. For the purpose of this report, we have defined them as follows:

Fairness - the Proposed Restructuring Transaction is "fair" if the value of the Marathon Non-Associated Shareholders' minority interest in Marathon after the Proposed Restructuring Transaction is greater than the value of their controlling interests in Marathon before the Proposed Restructuring Transaction.

Reasonableness - the Proposed Restructuring Transaction is "reasonable" if it is fair. It may also be "reasonable" if, despite not being "fair" but after considering other significant factors, shareholders should vote in favour of the Proposed Restructuring Transaction in the absence of a superior proposal being received.

What is fair and reasonable for the Marathon shareholders should be judged in all the circumstances of the proposal.

The methodology that we have used to form an opinion as to whether the Proposed Restructuring Transaction is fair and reasonable, is summarised as:

(i) In determining whether the Proposed Restructuring Transaction is fair, we have:

- valued Marathon before the Proposed Restructuring Transaction and determined the control value of the Marathon Non-Associated Shareholders' interests in Marathon;
- valued TriEnergy and its 100% interest in the LCEP;
- valued Marathon on a pro-forma basis after the Proposed Restructuring Transaction is completed;
- compared the value of Marathon Non-Associated Shareholders' minority interests in Marathon after the Proposed Restructuring Transaction with the value of their controlling interests in Marathon before the Proposed Restructuring Transaction.

(ii) In determining whether the Proposed Restructuring Transaction is reasonable, we have analysed and compared the advantages and disadvantages of the Proposed Restructuring Transaction.

(iii) In determining whether the Proposed Restructuring Transaction is fair and reasonable to the Marathon Non-Associated Shareholders, we have considered and concluded upon the results of (i) and (ii) above.

DMR

6. Marathon - Key Information

6.1 Background

The principal activity of Marathon is mineral exploration. Since exploration ceased in the Northern Flinders region in 2012 and EL 4355 expired, Marathon has held its investment in fixed assets and cash reserves and during the 2013 and 2014 financial years new programs for mineral exploration in South Australia were investigated.

Marathon has been examining a large number of investment opportunities however most were rejected as the risk profiles were unacceptable. Several possible investments have been seriously considered however after minor financial commitments and due diligence these too were discontinued.

The current acquisition of the LCEP is the project that the Marathon Board has determined should be taken up and the Proposed Restructuring Transaction is now asking the Marathon Non-Associated Shareholders to ratify this investment decision.

6.2 Share Capital

At the date of this report Marathon had on issue 92,207,789 fully paid ordinary shares and there were 750,000 options outstanding. The options are exercisable at $1.727 per option and they expire on 1 November 2015.

The major shareholders of Marathon on 31 December 2014 were as follows:

Table 1 - Marathon 10 Largest Shareholders Name	Number of Shares Held	% of Capital Held
ARP TriEnergy Pty Ltd	18,432,337	19.99%
Citic Australia Pty Ltd	17,242,855	18.70%
HSBC Custody Nominees (Australia) Limited	1,752,927	1.90%
FMS Pty Ltd <SM Appleyard S/F A/C>	1,611,379	1.75%
James St Equities Pty Ltd	1,600,000	1.74%
Citicorp Nominees Pty Ltd	1,348,736	1.46%
ABN AMBRO Clearing Sydney Nominees Pty Ltd <Custodian A/C>	1,207,959	1.31%
L P Raynor Nominees Pty Ltd	1,200,000	1.30%
Mr. Chor Leng Tan	1,169,615	1.27%
Monex Boom Securities (HK) Ltd	1,120,166	1.21%
	46,685,974	50.63%

Note 1 – TriEnergy sold 3,432,337 shares in March 2015. This reduced the TriEnergy interests in Marathon to 16.27%.

As at 31 December 2014 the top 10 shareholders held 50.63% of the issued ordinary capital of Marathon.

6.3 Cash Flow Statements

Marathon's audited cash flow statements for the financial years ended 30 June 2013 and 2014 and reviewed cash flow statement for the six months ended 31 December 2014 were as follows:

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Table 2 - Statement of Cash Flows

	Financial Year Ended		Six Months Ended
	30/06/13	30/06/14	31/12/14
	$	$	$
Cash flows from operating activities			
Interest and sundry income received	275,445	155,308	64,764
Payments to suppliers and employees	(2,133,482)	(1,519,257)	(715,695)
Net cash (used in) operating activities	(1,858,037)	(1,363,949)	(650,931)
Cash flows from investing activities			
Proceeds on disposal of plant and equipment	10,300	24,100	10,091
Purchase of plant and equipment	(2,792)	-	-
Net cash provided by investing activities	7,508	24,100	10,091
Net (decrease) in cash held	(1,850,529)	(1,339,849)	(640,840)
Cash at beginning of financial period	6,772,294	4,921,765	3,581,916
Cash at end of financial period	4,921,765	3,581,916	2,941,076

Source: Marathon Annual Report - 30 June 2014 and reviewed half yearly report as at 31 December 2014

6.4 Operating Performance

Marathon's audited consolidated statements of profit or loss and other comprehensive income for the financial years ended 30 June 2013 and 2014 and reviewed consolidated half yearly statement for the six months ended 31 December 2014 were as follows:

DMR

Table 3 - Statement of Profit or Loss and Other Comprehensive Income

	Financial Year Ended		Six Months Ended
	30/06/13	30/06/14	31/12/14
	$	$	$
Revenue	275,445	155,308	64,764
Exploration expenditure written off	(79,876)	(132,692)	(138,960)
Share based payment expense	(116,734)	(59,909)	(13,873)
Depreciation	(27,785)	(41,202)	(18,145)
Impairment of available for sale assets	-	(138,000)	-
Impairment of fixed assets	(48,129)	-	-
Loss on disposal of fixed assets	(66,160)	(1,443)	-
Financial assets fair value adjustment	(33,350)	(4,830)	-
Employee benefits expense	(900,319)	(431,816)	(198,114)
Occupancy expense	(128,854)	(124,409)	(61,979)
Consulting and legal expense	(496,761)	(346,511)	(85,027)
Travel expense	(43,380)	(38,374)	(21,786)
ASX listing and registry expense	(52,797)	(40,775)	(24,353)
Corporate administration	(258,557)	(269,808)	(169,796)
Takeover defence costs	-	(88,217)	(14,924)
Fair value gain on held for trading financial assets	-	-	13,030
Loss on disposal of fixed assets	(77,828)	-	(14,016)
Loss before income tax	(2,055,085)	(1,562,678)	(683,179)
Income tax benefit	-	-	-
Loss for the year after income tax	(2,055,085)	(1,562,678)	(683,179)
Items that may be reclassified subsequently to profit or loss			
Changes in fair value of available for-sale financial assets	(34,500)	117,000	-
Reclassification of available for sale financial asset to profit and loss on disposal	77,828	-	-
Total other comprehensive (expense) / income	43,328	117,000	-
Total comprehensive (loss) for the year	(2,011,757)	(1,445,678)	(683,179)

Source: Marathon Annual Report - 30 June 2014 and reviewed half yearly report as at 31 December 2014

6.5 Statements of Financial Position

Marathon's audited statements of financial position as at 30 June 2013 and 2014 and reviewed statement of financial position as at 31 December 2014 were as follows:

Table 4 - Statement of Financial Position	30/06/13 $	30/06/14 $	31/12/14 $
Current Assets			
Cash and cash equivalents	4,921,765	3,581,916	2,941,076
Trade and other receivables	38,467	15,167	32,036
Financial assets	45,650	19,820	32,850
Total Current Assets	5,005,882	3,616,903	3,005,962
Non-Current Assets			
Property, plant and equipment	211,400	144,655	102,403
Total Non-Current Assets	211,400	144,655	102,403
Total Assets	5,217,282	3,761,558	3,108,365
Current Liabilities			
Trade and other payables	82,006	23,006	35,909
Short term provisions	47,348	36,393	39,603
Total Current Liabilities	129,354	59,399	75,512
Net Assets	**5,087,928**	**3,702,159**	**3,032,853**
Equity			
Issued capital	44,033,982	44,033,982	44,033,982
Reserves	665,601	551,727	162,150
Retained losses	(39,611,655)	(40,883,550)	(41,163,279)
Total Equity	**5,087,928**	**3,702,159**	**3,032,853**

Source: Marathon Annual Report - 30 June 2014 and reviewed half yearly report as at 31 December 2014

7. Valuation of Marathon – Before the Proposed Restructuring Transaction

7.1 Value Definition

DMR Corporate's valuation of Marathon has been made on the basis of fair market value, defined as the price that could be realized in an open market over a reasonable period of time given the current market conditions and currently available information, assuming that potential buyers have full information, in a transaction between a willing, but not anxious seller and a willing, but not anxious, buyer acting at arm's length.

7.2 Valuation Methodologies

In selecting appropriate valuation methodologies, we considered the applicability of a range of generally accepted valuation methodologies. These included:

- asset based methods;
- share price history;
- capitalisation of future maintainable earnings;
- net present value of future cash flows; and
- comparable market transactions.

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7.3 Asset Based Methods

7.3.1 These methodologies are based on the realisable value of a company's identifiable net assets. Asset based valuation methodologies include:

(a) Net Assets

The net asset valuation methodology involves deriving the value of a company or business by reference to the value of its assets. This methodology is likely to be appropriate for a business whose value derives mainly from the underlying value of its assets rather than its earnings, such as property holding companies and investment businesses. The net assets on a going concern basis does not take account of realisation costs.

(b) Orderly Realisation of Assets

The orderly realisation of assets method estimates the fair market value by determining the amount that would be distributed to shareholders, after payment of all liabilities including realisation costs and taxation charges that arise, assuming the company is wound up in an orderly manner.

(c) Liquidation of Assets

The liquidation method is similar to the orderly realisation of assets method except the liquidation method assumes that the assets are sold in a short time frame.

7.3.2 Net Assets

The total net assets of Marathon as at 31 December 2014, per the reviewed financial statements, were $3,032,853 – say $3,000,000

On this basis Marathon is valued at $3,000,000.

7.3.3 Orderly Realisation of Net Assets

In an orderly realisation the Marathon shareholders would be left with cash and a listed corporate shell, which could be used to acquire a new business. In our experience listed shells in the current market have a value between $300,000 to $450,000 and we have added this value to the net asset values.

We do not consider that there will be substantial realisation costs to account for in completing this valuation methodology as the Marathon assets are predominately in cash or have been received since balance date. We have allowed for costs in a range of $75,000 to $100,000.

We have assessed the value of Marathon as at 31 December 2014 on an orderly realisation basis as follows:

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Table 5 - Orderly Realisation of Assets

	Note	31/12/14 Reviewed $	Estimated Realisable Values Low $	Estimated Realisable Values High $
Current Assets				
Cash and cash equivalents		2,941,076	2,941,076	2,941,076
Trade and other receivables	1	32,036	32,036	32,036
Financial assets	2	32,850	32,850	32,850
Total Current Assets		3,005,962	3,005,962	3,005,962
Non-Current Assets				
Property, plant and equipment	3	102,403	82,000	92,000
Total Non-Current Assets		102,403	82,000	92,000
Total Assets		**3,108,365**	**3,087,962**	**3,097,962**
Current Liabilities				
Trade and other payables		35,909	35,909	35,909
Short term provisions		39,603	39,603	39,603
Total Current Liabilities		75,512	75,512	75,512
Net Assets		**3,032,853**	**3,012,450**	**3,022,450**
Add: Estimated value of a listed shell			300,000	450,000
Less: Estimated realisation costs			(100,000)	(75,000)
			3,212,450	3,397,450
		Say:	3,212,000	3,397,000

Source: Marathon - Reviewed half yearly report as at 31 December 2014

Note 1 – Trade and other receivables – GST recoverable – assume 100% recovery.

Note 2 – Financial assets – Shares in 2 small listed companies valued at market value as at 31/12/2014 - assume 100% recovery.

Note 3 - Property, plant and equipment – Chairman has advised that this asset represents mining equipment in good order and is being properly maintained – assumed an 80% to 90% recoverable value.

Based on the above analysis, we have valued Marathon in a range of $3,212,000 to $3,397,000.

7.4 Share Price History

The share price history valuation methodology values a company based on the past trading in its shares. We normally analyse the share prices up to a date immediately prior to the date when a takeover, merger or other significant transaction is announced to remove any price speculation or price escalations that may have occurred subsequent to the announcement of a Proposed Restructuring Transaction.

Over the period from 1 February 2014 to 7 January 2015 (the date the proposed LCEP project was announced) there were 30,995,115 shares traded and this represents approximately 33.6% of the Company's current issued capital. In this period we noted that on 8 October 2014 there was one trade for 18,432,337 shares at $0.037 per share and these

shares were acquired by TriEnergy. If these shares were excluded from the trading volumes then the liquidity would have been 13.6%. On this basis we consider that the market in Marathon shares were illiquid.

Throughout the remainder of this section we have determined that the TriEnergy share trade should be excluded from the ASX market data as it distorts the reality of the trading statistics in respect of minority trading information.

7.4.1 Announcements by Marathon to the ASX made in the period from 1 February 2014 to 7 January 2015 that may have had an impact on the market price and trading volumes of the Marathon shares include:

Table 6

Date	Headline
7/01/15	Marathon announces Leigh Creek Energy Project Acquisition
1/12/14	Marathon announces Farm In to Leigh Creek Energy Project
1/12/14	Trading Halt
20/11/14	AGM Results
20/11/14	Revised Chairmans Address to Shareholders
20/11/14	Chairman's Address to Shareholders
4/11/14	Change of Director's Interest Notice
31/10/14	Quarterly Activities and Cashflow Reports
21/10/14	Notice of Annual General Meeting/Proxy Form
15/10/14	Form 603 Initial Substantial Holder Notice
29/09/14	Annual Report 2014
31/07/14	Quarterly Activities and Cashflow Reports
20/05/14	Revised Appendix 3X C Ryan
30/04/14	Quarterly Activities and Cashflow Reports
11/03/14	Half Year Accounts
26/02/14	Appendix 3X Initial Director's Interest Notice
26/02/14	Director Appointment
31/01/14	Final Director's Interest Notice
31/01/14	Quarterly Activities & Cashflow Reports

7.4.2 A table of the volume and value of the Marathon shares traded in the period from 1 February 2014 to 6 January 2015 is as follows:

Table 7

Month	Share Price High $	Low $	Average $	Volume	Value $
2014					
February	0.032	0.021	0.026	573,484	15,122
March	0.033	0.025	0.027	637,791	17,531
April	0.028	0.022	0.024	361,557	8,825
May	0.026	0.019	0.021	520,441	10,952
June	0.027	0.020	0.023	1,566,915	35,396
July	0.032	0.023	0.029	623,548	18,191
August	0.029	0.024	0.026	732,223	19,113
September	0.025	0.023	0.025	596,436	14,663
October	0.030	0.024	0.036	20,696,899	751,653
November	0.030	0.025	0.028	1,123,041	31,870
December	0.031	0.025	0.030	3,404,188	102,885
2015					
January 1 - 6	0.027	0.026	0.026	158,592	4,123
				30,995,115	1,030,325
Excluding TriEnergy trade on 8 October 2014				12,562,778	348,328

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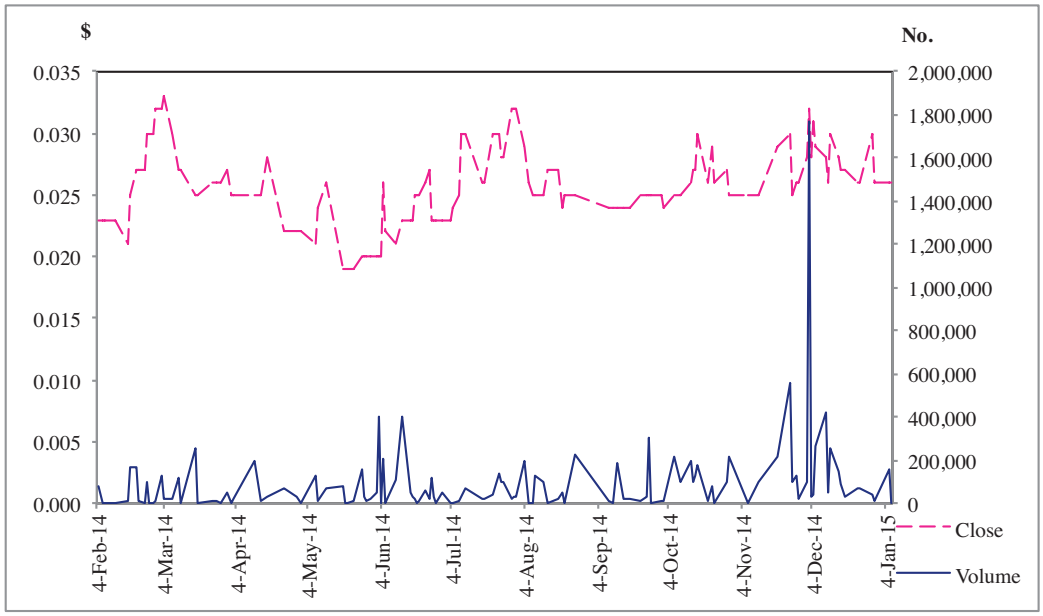
7.4.3 Graphically the daily closing prices and volumes of the Marathon shares traded in the period from 1 February 2014 to 6 January 2015 (excluding the TriEnergy trade on 8 October 2014) are as follows:



Source: DMR Corporate – The above graph excludes the 18,432,337 shares traded to TriEnergy at $0.037 per share on 8 October 2014 due to the distortion it produces on the share volume and value graph.

Over the12-month period the shares traded from a low of $0.019 on 19 May 2014 to a high of $0.036 on 2 December 2014. The daily VWAP (volume weighted average price – based on daily closing volumes and daily closing prices) over this period was $0.028 per share.

Up to 7 January 2015 the 30-day VWAP is $0.028, the 60-day VWAP is $0.030 and the 90-day VWAP is $0.028.

Options

The outstanding 750,000 unlisted employee options are exercisable at $1.727 per option and they expire on 1 November 2015. As these options are out of the money we have not taken them into account in our calculations, as we consider that they will most likely lapse on 1 November 2015.

7.4.4 Takeover Bid

On 25 October 2013 Bentley Capital Limited ("Bentley Capital") made an unconditional on-market takeover offer for all the issued ordinary shares of Marathon that it does not already own, at a price of $0.025 per share valuing Marathon at approximately $2.3 million.

The 31 December 2013 half-year annual report disclosed net assets of approximately $4.3 million including $4.092 million of cash.

The takeover bid was not successful and Bentley disposed of its holdings in October 2014.

We do not consider that this takeover offer is relevant to determining the value of the Marathon shares at the date of this report.

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7.4.5 Summary - Share Price Valuation

In our opinion trading volumes are low, however the prices appear to be fairly steady over the last 12 months. Based on the above analysis we consider that the Marathon shares are valued in a range of $0.028 to $0.030 per share, on a minority basis (i.e. excluding a premium for control). These values extrapolate to a total value range of $2,566,221 to $2,732,937 on a minority basis – say $2,570,000 to $2,730,000.

Control Premium

The ASX share prices upon which the above values are based represent the prices at which minority parcels of shares trade on a daily basis, so when we use ASX share prices as a valuation methodology we normally consider adjusting the valuation to include a control premium.

A control premium represents the difference between the price that would have to be paid for a share to which a controlling interest attaches and the price at which a share which does not carry with it control of the company could be acquired. Control premiums are normally in a range of 25% to 30%[1] above the value of a minority share. The actual control premium paid is transaction specific and depends on a range of factors, such as the level of synergies available to the purchaser, the level of competition for the assets and strategic importance of the assets. In this instance there are no synergies to be gained by gaining control of Marathon. The RSM Bird Cameron study analyses control premiums on an industry basis as well as the market capitalisation of the company. In this instance we consider that the average premium for all takeovers in Australian listed companies is too high so we have selected the premium range of 16.1% to 21.4%, which was determined for smaller ASX companies with a market capitalisation of less than $500 million.

Table 8 Control Premium

	Low $	High $
Value per share price history - minority values	2,570,000	2,730,000
Control Premium	16.10%	21.40%
Share price value adjusted for a control premium	2,983,770	3,314,220
Say:	**2,980,000**	**3,310,000**

7.5 Capitalization of Future Maintainable Earnings

This methodology involves capitalising the estimated future maintainable earnings of a business at a multiple which reflects the risks of the business and its ability to earn future profits.

There are different definitions of earnings to which a multiple can be applied. The traditional method is to use net profit after tax – Price Earnings or PE. Another common method is to use Earnings Before Interest and Tax, or EBIT. One advantage of using EBIT is that it enables a valuation to be determined which is independent of the financing and tax structure of the business. Different owners of the same business may have different funding strategies and these strategies should not alter the fundamental value of the business.

1 RSM Bird Cameron Control Premium Study –2013.

Other variations to EBIT include 'Earnings Before Interest, Tax, Depreciation and Amortization' – EBITDA and 'Earnings Before Interest, Tax, and Amortization' – EBITA.

We have concluded that the capitalisation of future maintainable earnings methodology cannot be applied in valuing Marathon as it currently has no operating business activities.

7.6 Net Present Value of Future Cash Flows

An analysis of the net present value of the projected cash flows of a business (or discounted cash flow technique) is based on the premise that the value of the business is the net present value of its future cash flows. This methodology requires an analysis of future cash flows, the capital structure, the costs of capital and an assessment of the residual value of the business remaining at the end of the projection period.

As Marathon does not have an operating business generating cash flows, we consider that the capitalisation of future cash flows is not an appropriate methodology to use to value Marathon.

7.7 Comparable Market Transactions

Marathon is basically an investment company and its few assets could be liquidated and the cash could be distributed to shareholders. We do not consider that this valuation methodology can be applied in valuing the Marathon shares.

7.8 Conclusion

7.8.1 The valuation methodologies that we have considered are summarised as:

Table 9 VALUATION METHODOLOGY	Section	Low $	High $
Net assets	7.3.2	3,000,000	3,000,000
Orderly realisation of net assets	7.3.3	3,212,000	3,397,000
Share price history	7.4.5	2,980,000	3,310,000

Based on the above analysis we consider that the valuation range for Marathon should be $3,000,000 to $3,400,000.

7.8.2 The Marathon Non-Associated Shareholders presently hold 82.30%[2] of Marathon, so their interests are valued in a range of $2,470,000 to $2,800,000 on a control basis.

[2] The 82.30% has been determined by eliminating the present Marathon shares held by TriEnergy (15,000,000) and the Marathon shares sold by TriEnergy to 2 of its associates (being directors and executives of TriEnergy) (1,324,499) in March 2015 during which TriEnergy disposed of 3,324,499 Marathon shares to raise additional funds to continue exploration and development work on the LCEP.

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8. TriEnergy – Key Information

8.1 Background

TriEnergy has acquired Petroleum Exploration Licence PEL 650 and has made applications for several other exploration properties. A summary of these interests is to be found in the table below:

Table 10 - Tenements and Tenement Applications

Tenement	Location	Surface Area (sp km)	Tenement Holder/Applicant	Status
PEL 650	Leigh Creek	93	ARP TriEnergy Pty Ltd 100%	Granted 18 November 2014
Applications Pending				
ELA 232	Leigh Creek	942	ARP TriEnergy Pty Ltd 100%	Under applicatiuon awaiting grant
ELA 238	Leigh Creek	351	ARP TriEnergy Pty Ltd 100%	Under applicatiuon awaiting grant
PELA 643	Callabonna	5,813	ARP TriEnergy Pty Ltd 100%	Under applicatiuon awaiting grant
PELA 582	Finnis Springs	5,677	ARP TriEnergy Pty Ltd 100%	Under applicatiuon awaiting grant
PELA 647	Leigh Creek	3,842	ARP TriEnergy Pty Ltd 100%	Under applicatiuon awaiting grant
PELA 644	Roxby Downs	8,933	ARP TriEnergy Pty Ltd 100%	Under applicatiuon awaiting grant
PELA 649	Oakdale	2,310	ARP TriEnergy Pty Ltd 100%	Under applicatiuon awaiting grant
		27,962		

TriEnergy's LCEP lies within PEL 650 which encompasses the Leigh Creek coal mine and its' deeper coal potential for ISG below the life of the mines economic 200m open cut level. The LCEP has an exploration target range of between 130 and 400 million total tonnes in situ ("TTIS") within the main seam and an additional 90 million to 130 million TTIS within the lower series coal seam. Combining these coal seams provides an exploration target range of 220 million to 530 million TTIS.

Utilising a coal to gas conversion formula of 14Gj/t, an estimate of gas-in-place volumes at the Leigh Creek Energy Project could range from 33,000 MMm^3 to 102,000 MMm^3 for the Main seam with a further 23,000 MMm^3 to 33,000 MMm^3 for the lower seam. The combined total gas-in-place could range from 56,000 MMm^3 to 135,000 MMm^3. It is important to recognize that these are potential volumes of gas-in-place and do not represent sales gas volumes.

8.2 Share Capital

As at 31 December 2014 TriEnergy had 4,952 fully paid ordinary shares on issue and if the Proposed Restructuring Transaction is approved by the Non-Associated Marathon Shareholders then Marathon's issued capital will be controlled by the following shareholders:

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Table 11 - TriEnergy Shareholders	TriEnergy Interests		Interests in Marathon	
	Number	Percent	Number	Percent
ARP	3,751	75.7%	104,767,190	45.45%
Richard McGrath	500	10.1%	13,965,235	6.06%
One Design and Skiff Sails Pty Ltd ATF I W Brown Superannuation Fund	185	3.7%	5,167,137	2.24%
Jetan Pty Ltd	125	2.5%	3,491,309	1.51%
Nicholas James Redpath	65	1.3%	1,815,480	0.79%
Telemark International Pty Ltd	51	1.0%	1,424,454	0.62%
Ben William Jarvis	35	0.7%	977,566	0.42%
Murray Kenneth Chatfield	30	0.6%	837,914	0.36%
Lien Pty Ltd	30	0.6%	837,914	0.36%
Jonathan Irwin	30	0.6%	837,914	0.36%
Glenn Paul Crichton and Dean Arthur Crichton ATF <Crichton Superannuation Fund>	25	0.5%	698,262	0.30%
Simon John Allsop	20	0.4%	558,609	0.24%
Robert Clancy & Christine Clancy ATF Clancy Superannuation Fund	15	0.3%	418,957	0.18%
Jimbzal Pty Ltd ATF <Taylor Family Account>	15	0.3%	418,957	0.18%
Michael Mishevski	15	0.3%	418,957	0.18%
FGDG Super Pty Ltd ATF F.G. Heppingstone Pty Ltd Superannuation Fund	15	0.3%	418,957	0.18%
Graham Leslie Ascough & Patricis Lynn Ascough ATF Ascough Family Trust	15	0.3%	418,957	0.18%
Andrew Wiltshire & Fiona Wiltshire ATF Wiltshire Family Superannuation Fund	15	0.3%	418,957	0.18%
Romray Pty Ltd ATF ABC Superannuation Fund	15	0.3%	418,957	0.18%
Total	4,952	100.0%	138,311,683	60.00%
Marathon Shareholders - Note 1			92,207,789	40.00%
Total Issued Capital After Proposed Restructure			230,519,472	100.00%

Note 1 –TriEnergy presently holds 15,000,000 Marathon shares. As an integral part of the restructuring transaction these shares will be transferred to a custodian to hold and sell on market over the 12 month period following the date of completion of the restructuring transaction. All proceeds from the sale of these shares will revert to Marathon to fund its working capital over the ensuing 12 months.

The current Marathon Non-Associated Shareholder interests fall from 40% as above to 39.43% following the sale of 1,324,499 Marathon shares previously held by TriEnergy to associates (directors and executives) of ARP/TriEnergy during the broker sell down of TriEnergy's original interest of 18,432,337 Marathon shares to 15,000,000 Marathon shares. The balance of 2,107,838 were placed with Non-Associated parties.

8.3 Profit and Loss Statements

TriEnergy's audited special purpose financial statements include the statement of profit or loss for the financial year ended 30 June 2014 and audited half yearly statement for the six months ended 31 December 2014 as follows:

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Table 12 - Detailed Profit and Loss Statement	Audited 30/06/14 $	Reviewed 31/12/14 $
Income		
Interest received	-	2,319
Other fees	350	373
Total Income	350	2,692
Expenses		
Accountancy	-	4,380
Amortisation expense	222	-
Bank fees and charges	120	-
Bookkeeping	-	3,870
Filing fees	-	243
Interest expense	30	-
Licence fees		8,170
Loss of market value of investment	-	205,761
	372	222,424
Profit/(Loss) from Oedinary Activities Before Income Tax	(22)	(219,732)

Source: TriEnergy Accounts - 30 June 2014 and half yearly report as at 31 December 2014

8.4 Net Assets

TriEnergy's audited financial statements include statements of net assets as at 30 June 2014 and reviewed balance sheet as at 31 December 2014 as follows:

Table 13 - Net Assets	Audited 30/06/14 $	Reviewed 31/12/14 $
Current Assets		
Cash and cash equivalents	6	250,007
Other assets	-	76,527
Shares in Marathon Resources	-	479,241
GST Receivable	-	11,855
Total Current Assets	6	817,630
Non-Current Assets		
Exploration and evaluation expenditure - PEL 650	-	587,312
Total Non-Current Assets	-	587,312
Total Assets	-	**1,404,942**
Current Liabilities		
Financial liabilities	1,720	13,000
Employee payroll liabilities	-	10,425
Total Current Liabilities	1,720	23,425
Net Assets	**(1,714)**	**1,381,517**
Equity		
Issued capital	3,841	1,781,441
Capital raising costs	-	(174,637)
Retained losses	(5,555)	(225,287)
Total Equity	**(1,714)**	**1,381,517**

Source: TriEnergy Accounts - 30 June 2014 and half yearly report as at 31 December 2014

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9. Valuation of TriEnergy

9.1 The definition of value and the valuation methodologies considered in this Section are the same as stated in Sections 7.1 and 7.2.

9.2 Net Assets

The statement of financial position as at 31 December 2014 disclosed net assets of $1,381,517 – say $1,380,000. The main assets of TriEnergy are its interests in the tenements as described in Section 8.1 above and in particular its interest in the LCEP. As the current fair value of the LCEP is not recorded in the accounting records of TriEnergy, we have concluded that the net asset backing valuation methodology is not an appropriate valuation methodology to use to value TriEnergy.

9.3 Orderly Realisation of Net Assets

This is a similar methodology to net assets however estimates for the market values or realisable values of the assets would be taken into account together with the realisation costs. The value of the LCEP can then be incorporated into TriEnergy's balance sheet to derive a fair market value of TriEnergy's net assets and therefore the fair market value of TriEnergy's equity.

Marathon appointed Australian Mineral Consultants ("AMC") to prepare a Specialist Technical Report on the Leigh Creek coal deposit and the LCEP. A copy of the AMC Specialist Technical Report can be accessed at http://www. marathonresources.com.au .

We appointed Global Resources & Infrastructure Pty Ltd ("GRI")[3] to assist us in interpreting the AMC technical report and other data supplied in relation to LCEP and GRI prepared a valuation report dated 13 February 2015, which is attached to this report as Attachment 1.

GRI used the LCEP base data as determined by AMC as the basis for their assessment of the value that an alternate acquirer may be prepared to pay to acquire TriEnergy's LCEP at the current date. GRI reviewed the risk profile of the LCEP and the fact that there is still a considerable amount of further exploration and evaluation work to be completed, ISG testing, capital to be raised to complete the project and finally marketing contracts entered into. GRI used a price for "in-ground" gas of $0.18 per Gigajoule ("GJ").

GRI determined a risk matrix for the LCEP and they concluded that Expected Values on a properly risk weighted basis would be a low of $27.2 million with the high estimated to be $113.1 million. The GRI valuation has a Preferred Value of $27.2 million and we have accepted this figure for the purposes of evaluating the Proposed Restructuring Transaction in Table 14 below:

[3] GRI is a management consulting company that specialises in providing its services to the resources and infrastructure industries. Ian Buckingham, Managing Director and lead consultant of GRI has worked on over three hundred valuation assignments involving gold, silver, diamonds, iron ore, base metals, coal, potassium, phosphate, lithium, petroleum and other resources commodities.

Table 14 - TriEnergy Net Assets	Reviewed 31/12/14 $	Pro-Forma Low $	Pro-Forma High $	Preferred Value $
Current Assets				
Cash and cash equivalents	250,007	250,007	250,007	250,007
Other loans	76,527	76,527	76,527	76,527
Shares in Marathon Resources	479,241	479,241	479,241	479,241
GST Receivable	11,855	11,855	11,855	11,855
Total Current Assets	817,630	817,630	817,630	817,630
Non-Current Assets				
Exploration and evaluation expenditure - PEL 650	587,312	27,200,000	113,100,000	27,200,000
Less: Estimated tax on disposal of the LCEP - Note 1		(7,983,806)	(33,753,806)	(7,983,806)
Total Non-Current Assets	587,312	19,216,194	79,346,194	19,216,194
Total Assets	**1,404,942**	**20,033,824**	**80,163,824**	**20,033,824**
Current Liabilities				
Employee payroll liabilities	10,425	10,425	10,425	10,425
Financial liabilities	13,000	13,000	13,000	13,000
Total Current Liabilities	23,425	23,425	23,425	23,425
Net Assets	**1,381,517**	**20,010,399**	**80,140,399**	**20,010,399**

Note 1 Costs capitalised at 31/12/2014 are assumed to be the cost base and tax is based on the estimated realisable values, less the cost base, times the tax rate of 30%.

Based on the Preferred Values we have valued TriEnergy at $20,010,399 – Say $20,000,000 based on the orderly realisation of assets valuation methodology.

9.4 Share Price History

The share price history valuation methodology values a company based on the past trading in its shares. We normally analyse the share prices up to a date immediately prior to the date when a takeover, merger or other significant transaction is announced to remove any price speculation or price escalations that may have occurred subsequent to the announcement of a Proposed Restructuring Transaction.

TriEnergy is an unlisted private company with only 19 shareholders. On 7 January 2015 Marathon signed a Binding Term Sheet for the Proposed Restructuring Transaction and if the Marathon Non-Associated Shareholders approve this proposed transaction then TriEnergy will become a wholly owned subsidiary of Marathon.

Whilst there have been virtually no sales of shares (90 shares were transferred at $1,600 per share on 15/9/2014), the following is the history of the issue and transfer of shares for cash or services:

Table 15 Date	Description	Shares Number	Value Per Share $
21/10/10	On incorporation to D Shearwood and associates - then transferred to ARP	3,841	1
15/09/14	Issue of new shares to 15 shareholders and transfer of 90 shares from ARP	910	1,600
9/10/14	One shareholder	25	1,600
22/10/14	One shareholder	125	1,600
12/11/14	One shareholder (Note 1)	51	1,600
		4,952	

Note 1 Issued in lieu of payment of fees.

If all of the shares on issue were valued at $1,600 per share then the capitalisation of TriEnergy would be $7,923,200.

Based on the placement of 1,060 shares at $1,600 per share to raise $1,696,000 of new capital, we consider that the market value of 100% of the TriEnergy issued capital is $7,923,200.

In our opinion this valuation methodology does not properly account for the appropriate 'market value' of the LCEP and we consider that this valuation methodology should be used as a cross check rather than as a primary valuation methodology – refer to Table 20 in Section 13 below.

9.5 Net Present Value of Future Cash Flows

An analysis of the net present value of the projected cash flows of a business (or discounted cash flow technique) is based on the premise that the value of the business is the net present value of its future cash flows. This methodology requires an analysis of future cash flows, the capital structure and costs of capital and an assessment of the residual value of the business remaining at the end of the projection period.

At the date of this report no cash flow forecasts have been prepared as there is still a considerable number of preliminary steps to be taken and milestones achieved prior to determining that there is an economically feasible project and then obtaining the necessary funding from financiers and shareholders to commercialise the LCEP. For these reasons we do not consider that the net present value of future cash flows is an appropriate valuation methodology to use to value TriEnergy.

9.6 Capitalization of Future Maintainable Earnings

Capitalisation of future maintainable earnings is a methodology commonly used for valuing manufacturing and service companies and, in our experience, is the method most widely used by purchasers of such businesses. This method involves capitalising the earnings of a business at a multiple which reflects the risks of the business and its ability to earn future profits. There are different definitions of earnings to which a multiple can be applied. The traditional method is to use net profit after tax. Another common method is to use EBIT. One advantage of using EBIT is that it enables a valuation to be determined which is independent of the financing and tax structure of the business. Different owners of the same business may have different funding strategies and these strategies should not alter the fundamental value of the business.

An alternative to the use of EBIT is to capitalise EBITDA. The argument in favour of using EBITDA is that it is a proxy for operating cash flows.

Since its incorporation in October 2010, TriEnergy has acquired its tenements and continued to conduct studies of past geological reports and exploration works. It has also commissioned new technological reports and developed the LCEP to its current status. All of this work has involved the expenditure of capital and no income, nor profits, have been earned in the last 4 years by TriEnergy.

We have concluded that the capitalisation of future maintainable earnings valuation methodology is not an appropriate valuation methodology to use to value TriEnergy.

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9.7 Conclusion

The applicable valuation methodologies that we have considered are summarised as:

Table 16

VALUATION METHODOLOGY	Section	Low	High
Orderly realisation of assets	9.3	$20,000,000	$20,000,000
Share Price History	9.4	$7,923,200	$7,923,200

We have concluded that TriEnergy should be valued using the orderly realisation valuation methodology, which places a significant value on the LCEP and on this basis we have valued TriEnergy at $20,000,000 on a control basis.

10. Valuation of Marathon After the Proposed Restructuring Transaction

If the Proposed Restructuring Transaction is approved by the Marathon Non-Associated Shareholders then the restructure will proceed and the merged net assets of Marathon will be as follows:

Table 17 - Pro-Forma Net Assets	Marathon 31/12/14 $	TriEnergy 31/12/14 $	Note	Pro Forma $
Current Assets				
Cash and cash equivalents	2,941,076	250,007		3,191,083
Trade and other receivables	32,036	76,527		108,563
GST receivable	-	11,855		11,855
Financial assets	32,850	479,241	1	512,091
Total Current Assets	3,005,962	817,630		3,823,592
Non-Current Assets				
Property, plant and equipment	102,403	-		102,403
Exploration and evaluation expenditure	-	27,200,000		27,200,000
Less: Estimated tax on disposal of LCEP		(7,983,806)		(7,983,806)
Total Non-Current Assets	102,403	19,216,194		19,318,597
Total Assets	**3,108,365**	**20,033,824**		**23,142,189**
Current Liabilities				
Trade and other payables	35,909	13,000		35,909
Short term provisions	39,603	10,425		50,028
Total Current Liabilities	75,512	23,425		85,937
Net Assets	**3,032,853**	**20,010,399**		**23,056,252**

Source: DMR Corporate

Note 1 The shares TriEnergy held in Marathon were valued at $479,241 as at 31 December 2014. In March 2015 3,432,337 shares held by TriEnergy were sold on behalf of TriEnergy by a broker to various clients (including 2 associates of TriEnergy) for total consideration of $205,940 ($0.06 per share) and the 15,000,000 shares remaining will be transferred to a custodian for sale in the twelve months after completion of the transaction. We have excluded the proceeds from the initial sale in our calculations above as they assume post completion of the restructuring transaction.

We have concluded that the value of Marathon after the Proposed Restructuring Transaction will be $23,056,252 and this equates to a net asset backing of $0.10 per share on a control basis – say $23,056,000.

11. Control Premium

If the Proposed Restructuring Transaction is approved by the Marathon Non-Associated Shareholders, then the TriEnergy/ARP shareholders will control in aggregate 138,311,683 Marathon shares or 60.00% of Marathon's voting power.

TriEnergy currently holds 15,000,000 Marathon shares and if the Proposed Restructuring Transaction is implemented, these shares will be transferred to a custodian for sale in the twelve months after completion of the transaction.

The Non-Associated Marathon Shareholders interests in the restructured Marathon will decrease to a 40% interest in Marathon's voting power following the restructure.

In Section 10 above, we determined the control value of Marathon after the Proposed Restructuring Transaction to be $23,056,252 and as this is a control value we have to eliminate the control premium to determine the value of the Marathon shareholders minority interests (40.00%) if the Proposed Restructuring Transaction is approved.

In Section 7.4.5 we determined that control premiums in a range of 16.1% to 21.4% should be used for a small ASX listed mining entity and we have therefore eliminated these control premiums from the above valuations as follows:

Table 18	**Low** **$**	**High** **$**
Value of the restructured Marathon	23,056,252	23,056,252
Minority discount (Note 1)	17.65%	13.85%
Value of shareholder interests on a minority basis	18,986,824	19,862,961
The Marathon shareholders interests will be:	39.43%	39.43%
Value of Marathon shareholder interests after the Proposed Restructure on a minority basis	7,485,637	7,831,058
Say	**7,490,000**	**7,830,000**

Note 1 Minority discount is the reciprocal of the control premiums of 21.4% and 16.1% - refer Section 7.4.5.

In Section 7.8.2 we valued the Marathon Non-Associated Shareholders 82.30% interest in Marathon in a range of $2,470,000 to $2,800,000 on a control basis.

As can be seen from Table 18 above, the Marathon Non-Associated Shareholders' 39.43% interest in Marathon after the acquisition of TriEnergy, is valued in a range of $7,490,000 to $7,830,000.

A substantial premium ($5,020,000 to $5,030,000) is therefore being transferred to the Marathon Non-Associated Shareholders for relinquishing their control of Marathon in the Proposed Restructuring Transaction.

12. Assessment as to Fairness of the Proposed Restructuring Transaction

In Section 7.8 we valued Marathon in a range of $3,000,000 to $3,400,000 before the Proposed Restructuring Transaction and the Marathon Non-Associated Shareholders interests in a range of $2,470,000 to $2,800,000 on a control basis.

In Section 10 we assessed the control value of Marathon after the Proposed Restructuring Transaction to be $23,056,252 and as the Marathon Non-Associated Shareholders will have a 39.43% interest therein they will be minority shareholders in Marathon after the Proposed Restructuring Transaction.

In Section 11 we determined that the Marathon shareholders minority interests in Marathon after the Proposed Restructuring Transaction will have a value in the range of $7,490,000 to $7,830,000 on a minority basis.

As the value of the Marathon shareholders' interests after the completion of the Proposed Restructuring Transaction ($7,490,000 to $7,830,000) is greater than the value of their interests before the Proposed Restructuring Transaction ($2,470,000 to $2,800,000), we have concluded that **the Proposed Restructuring Transaction is fair.**

13. Other Considerations in Relation to the Proposed Restructuring Transaction

Prior to deciding whether to approve or reject the Proposed Restructuring Transaction the Marathon shareholders should also consider the following factors:

- In Section 12 above we concluded that the Proposed Restructuring Transaction is fair.
- As the Proposed Restructuring Transaction is fair it is also considered to be reasonable, however we consider that the Marathon shareholders should also take into consideration the following matters:

Advantages

- The Proposed Restructuring Transaction was negotiated in the second half of the 2014 calendar year on the basis that the TriEnergy/ARP shareholders would receive 138,311,683 Marathon shares or hold a 60.00% interest in Marathon's voting power if the restructuring was approved by the Marathon shareholders.
- Marathon investigated in excess of 200 investment opportunities in Australia and overseas over the last 3 years. Some farm-in arrangements have been undertaken in respect of the most prospective investments but none of these have been considered sufficiently viable to make a further commitment to fund further exploration and evaluation activities and consequently these interests lapsed. During this period Marathon's cash reserves have reduced from $6.7 million to $3 million. Without a significant commitment into a new venture the Marathon shareholders could continue to see its remaining cash resources dwindle away with administration costs and it would soon become a delisted entity with the ASX.

- The Marathon shareholders are receiving a control premium in a range of $5,080,000 to $5,100,000. We believe that this is a very high premium and therefore of substantial benefit to the Marathon shareholders.

- We also conducted a cross check of the above valuations using the information from the capital raised by TriEnergy during the last 3 months of calendar 2014 and we determined that in valuing TriEnergy on this basis, the Marathon Non-Associated shareholders receive a gain in a range of approximately $1,325,000 to $1,519,000 from the Proposed Restructuring Transaction. These calculations are as follows:

Table 19 Cross Check of Valuations

	Section	Low	High
Valuation of TriEnergy			
Share price valuation on a minority basis (4,952 shares x $1,600)	9.4	$ 7,923,200	$ 7,923,200
Add: Control Premium	7.4.5	16.10%	21.40%
Valuation of TriEnergy on a control basis		$ 9,198,835	$ 9,618,765
Valuation of Marathon Before Proposed Transaction			
Valuation of Marathon on a control basis	7.8.1	$ 3,000,000	$ 3,400,000
Valuation of Marathon After Proposed Restructuring Transaction		**$ 12,198,835**	**$13,018,765**
Less: Minority discount - reciprocal of the control premium	7.4.5	17.65%	13.85%
Minority value of merged entity		$ 10,045,741	$11,215,666
Marathon Non-Associated Shareholders interests will be:		39.43%	39.43%
Value of Non-Associated Shareholder interests in merged entity on a minority basis		**$ 3,960,576**	**$ 4,421,824**
Present value of the Non-Associated Shareholders interests in Marathon	7.8.2	$ 2,470,000	$ 2,800,000
Premium/gain for Non-Associated Shareholders		**$ 1,490,576**	**$ 1,621,824**

Disadvantages

- The Marathon shareholders will lose control of Marathon and their equity interests will be substantially diluted.

- Marathon shareholders will be exposed to the risks associated with the implementation of a process of gas extraction from coal not previously used in Australia.

  As far as we are aware these are the only 2 companies currently evaluating and testing the ISG or UCG extraction processes in Australia:

  Carbon Energy ASX:CNX – capitalised at $38.8 million.

  Carbon Energy Limited operates as an energy technology provider and services company worldwide. It is involved in the extraction of unconventional syngas through its proprietary key seam underground coal gasification (UCG) technology; and construction and commissioning of a UCG project in Queensland, Australia. The company was formerly known as Metex Resources Limited and changed its name to Carbon Energy Limited in June 2008. Carbon Energy Limited was founded in 2006 and is headquartered in Brisbane, Australia.

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Linc Energy DB:L7E – capitalised at $273.6 million.

Linc Energy has successfully combined two known technologies, Underground Coal Gasification (UCG) and Gas to Liquids (GTL) and has demonstrated its vision of being a leading supplier of a new source of cleaner liquid transport fuels for the future. UCG technology provides access to coal, deep underground and by in-situ gasification produces a high quality synthesis gas (syngas) containing carbon monoxide and hydrogen. Aboveground, in the GTL process, syngas is processed via Fischer-Tropsch technology to produce high quality, sulphur free synthetic hydrocarbons.

Linc Energy plans to combine its UCG and GTL technologies commercially at sites in Australia and around the globe as it realises its vision of becoming the world's leader in providing cleaner synthetic diesel and jet fuels from stranded coal resources. UCG produced syngas can also be used as a feedstock to generate gas turbine combined cycle power, resulting in reduced greenhouse gas emissions. [4]

- The risk factors identified by GRI include: failed drilling and/or unexpected drilling problems, issues with horizontal or splay drilling problems and costs, failure to secure ignition of the coal panel, too much water or too little water in the coal, faulting and/or other developments, which may penetrate through overlying aquifers, costs associated with disposal of production water, cost of handling extraneous products that may or may not have any commercial value, additional capital investments may also occur, plus expense items that will have to be written off as well—expenditures that were needed to determine the viability of the project, such as several completed wells, equipment, materials, and supplies, lease costs, initial field testing costs, and some geology and geophysics costs.

- Funding risks – whilst the restructured Marathon may presently have $3 million in cash resources, the Company will need considerably more cash resources to implement its drilling and evaluation programs to prepare a Bankable Feasibility Study of LCEP.

14. Conclusion as to Fairness and Reasonableness of the Proposed Restructuring Transaction

After reviewing the results of our assessment of the fairness of the Proposed Restructuring Transaction set out in Section 12 and after considering the 'other considerations' set out in Section 13, we consider that **the Proposed Restructuring Transaction is both fair and reasonable.**

15. Related Party – Financial Benefits

15.1 Marathon Shares

15.1.1 The Proposed Restructuring Transaction is seeking shareholder approval for the purposes of Chapter 2E of the Act, item 7 of section 611 of the Corporations Act, ASX Listing Rule 7.1 and ASX Listing Rule 10.1 for the acquisition of the ARP TriEnergy shares by the Company and the issue of the Marathon consideration shares to the vendors.

[4] Linc Energy 2009 Annual Report http://www.lincenergy.com/data/annual_reports/LNC-AnnualReport-2009.pdf

Pursuant to Chapter 2E of the Act, ARP is a related party of Marathon and therefore the 107,767,190 Marathon shares that it will receive if the Proposed Restructuring Transaction is approved, may be deemed a 'financial benefit' and we have been requested to value this benefit.
In Section 10 above, we valued the Marathon shares on a control basis at $0.10 per share and this equates to $0.082 to $0.086 on a minority basis – mid point is $0.084 per share.

As ARP will control 45.45% of the issued capital after the proposed restructuring (refer to Table 11 in Section 8.2 above), we consider that the financial benefit should be valued on a control basis or at $0.10 per share. Based on the 107,767,190 Marathon shares that ARP will receive, this values the financial benefit at $10,776,719.

15.2 Royalty Agreement

15.2.1 Under the terms of the Share Sale Agreement, it is proposed that, following completion, the Company will procure that TriEnergy enter into the Royalty Deed. The Royalty Deed provides for the payment of royalties to Murray Kenneth Chatfield, Jan-Per Hole, David Kit Sherwood and Jordan Eliza Mehrtens in their capacity as trustees of the South Australia ISG Trust No. 1. The beneficiaries of the Trust are each of the vendors in proportion to their current (pre-Transaction) shareholding in ARP TriEnergy.

15.2.2 The royalties are to be calculated as follows:

(i) 30c per gigajoule of CH_4 sold or 3% of the gross revenue, whichever is greater, with the exception that if the gas price falls below $6 per gigajoule, then the royalty will decrease to 15c per gigajoule of CH_4 sold; and

(ii) 2% of gross revenue for the sale of all other products.

15.2.3 The Marathon board is of the view that ARP is a related party of the Company at present by virtue of the application of section 228(6) of the Act. More relevantly, ARP will hold 45.45% of the Company's shares if the Proposed Restructuring Transaction is approved and by virtue of its representation on the board of the Company, will have practical control of the Company. As a result, from completion, ARP will be a related party of the Company as a result of the operation of section 228(1) of the Act.

15.2.4 Pursuant to Chapter 2E of the Act, ARP is a related party of Marathon and therefore the royalty payments that it may receive if the LCEP is commercialised may be deemed to be a 'financial benefit' and we have been requested to value this benefit.

15.2.5 The LCEP is at an advanced exploration stage and is yet to undertake any Phase 1 test analysis (refer to the GRI report – Attachment 1). Consequently there are a considerable number of milestones and hurdles to be overcome prior to the commencement of commercial production. It may take 2 to 5 years before commercial production commences and until the LCEP is more advanced there is no basis to project future sales or revenues streams upon which the above royalty payments could be calculated.

15.2.6 Based on the above we are unable to determine the value that ARP may receive pursuant to this Royalty Deed.

15.3 Interim Funding Agreement

15.3.1 Resolution 6 seeks shareholder approval for the purposes of Chapter 2E of the Act for the entering into of the Interim Funding Agreement and the resultant payments to be made to ARP TriEnergy under that document.

15.3.2 The Marathon board is of the view that, in entering into the Interim Funding Agreement and by agreeing to provide ARP TriEnergy with funding for working capital purposes and to facilitate the conduct of the planned preliminary appraisal drilling program on the LCEP in the short term while the broader transaction with the Company is consummated, TriEnergy and ARP are acting in concert and therefore TriEnergy is characterised as a related party of the Company for the purposes of section 228(7) of the Corporations Act in relation to the Interim Funding Agreement.

15.3.3 Pursuant to Chapter 2E of the Act, the interim funding payments may be deemed to be a 'financial benefit' and we have been requested to value this benefit.

15.3.4 In the period prior to completion occurring in respect of the Transaction (and subject to receipt of relevant approvals from Marathon shareholders), it is proposed that Marathon will provide ARP TriEnergy with funding to undertake certain exploration activities on or related to PEL 650.

15.3.5 The maximum amount that will be advanced by Marathon is $400,000.

15.3.6 Our understanding is that no monies have presently been paid and that the monies can only be drawn down in the period between the date of shareholder approval of the Proposed Restructuring Transaction and the date of Completion.

15.3.7 Based on the above we consider that the financial benefit that ARP may receive pursuant to this interim funding agreement is $400,000.

16. Financial Services Guide

16.1 Financial Services Guide

This Financial Services Guide provides information to assist retail and wholesale investors in making a decision as to their use of the general financial product advice included in the above report.

16.2 DMR Corporate

DMR Corporate holds Australian Financial Services Licence No. 222050, authorizing it to provide general financial product advice in respect of securities to retail and wholesale investors.

16.3 Financial Services Offered by DMR Corporate

DMR Corporate prepares reports commissioned by a company or other entity ("Entity"). The reports prepared by DMR Corporate are provided by the Entity to its members.

All reports prepared by DMR Corporate include a description of the circumstances of the engagement and of DMR Corporate's independence of the Entity commissioning the report and other parties to the transactions.

DMR Corporate does not accept instructions from retail investors. DMR Corporate provides no financial services directly to retail investors and receives no remuneration from retail investors for financial services. DMR Corporate does not provide any personal retail financial product advice directly to retail investors nor does it provide market-related advice to retail investors.

16.4 General Financial Product Advice

In the reports, DMR Corporate provides general financial product advice. This advice does not take into account the personal objectives, financial situation or needs of individual retail investors.

Investors should consider the appropriateness of a report having regard to their own objectives, financial situation and needs before acting on the advice in a report. Where the advice relates to the acquisition or possible acquisition of a financial product, an investor should also obtain a product disclosure statement relating to the financial product and consider that statement before making any decision about whether to acquire the financial product.

16.5 Independence

At the date of this report, none of DMR Corporate, Derek M Ryan nor Mr Paul Lom has any interest in the outcome of the Proposed Transaction, nor any relationship with Marathon, ARP and TriEnergy or any of their directors.

Drafts of this report were provided to and discussed with the Directors of Marathon and its advisers. Certain changes were made to factual statements in this report as a result of the reviews of the draft reports. There were no alterations to the methodology, valuations or conclusions that have been formed by DMR Corporate.

DMR Corporate and its related entities do not have any shareholding in or other relationship with Marathon, ARP or TriEnergy that could reasonably be regarded as capable of affecting its ability to provide an unbiased opinion in relation to the Proposed Restructuring Transactions.

DMR Corporate had no part in the formulation of the Proposed Restructuring Transactions. Its only role has been the preparation of this report.

DMR Corporate considers itself to be independent in terms of Regulatory Guide 112 issued by ASIC on 30 March 2011.

16.6 Remuneration

DMR Corporate is entitled to receive a fee of approximately $40,000 for the preparation of this report. With the exception of the above, DMR Corporate will not receive any other benefits, whether directly or indirectly, for or in connection with the making of this report.

16.7 Complaints Process

As the holder of an Australian Financial Services Licence, DMR Corporate is required to have suitable compensation arrangements in place. In order to satisfy this requirement DMR Corporate holds a professional indemnity insurance policy that is compliant with the requirements of Section 912B of the Act.

DMR

DMR Corporate is also required to have a system for handling complaints from persons to whom DMR Corporate provides financial services. All complaints must be in writing and sent to DMR Corporate at the above address.

DMR Corporate will make every effort to resolve a complaint within 30 days of receiving the complaint. If the complaint has not been satisfactorily dealt with, the complaint can be referred to the Financial Ombudsman Service Limited – GPO Box 3, Melbourne Vic 3000.

Yours faithfully

DMR Corporate Pty Ltd

Paul Lom
Director

Derek Ryan
Director

DMR

Appendix A

Marathon Resources Limited

Sources of Information

- Draft Notice of General Meeting and draft Explanatory Memorandum which this report accompanies;
- Audited financial statements of Marathon for the financial years ended 30 June 2013 and 2014;
- Reviewed half yearly financial report for Marathon as at 31 December 2014;
- Marathon's announcements to the ASX since 1 January 2013;
- ASIC historical extracts for Marathon, ARP and TriEnergy;
- Listing of Marathon's top 20 shareholders as at 31 December 2014;
- Signed Terms Sheet between Marathon, ARP and TriEnergy dated 7 January 2015;
- Reviewed financial statements for TriEnergy for the six months ended 31 December 2014 and audited financial statements for the financial year ended 30 June 2014;
- Share registers for Marathon, ARP and TriEnergy as at 31 December 2014;
- Draft Royalty Deed;
- Draft Interim Funding Agreement;
- Share Sale Agreement dated 3 March 2015;
- Golder Associates report on Field Investigation and Geotechnical studies for U.C.G. feasibility Study – Leigh Creek dated May1985;
- Energy Quest Available East Coast Gas Study dated November 2014;
- DAME Consulting Pty Ltd report on the Status and Progress of Underground Coal Gasification (UCG) Technology dated December 2014;
- Gas Tech Inc – Viability of UCG in Deep Coals of the Powder River Basin UCG – June 2007;
- National Energy Technology Laboratory - Powder River Basin, Wyoming – June 2009;
- Swan Hills In-Situ Coal Gasification Technology Development – Final Outcomes Report – May 2012;
- AMC Specialist Technical report on the LCEP dated November 2014;
- Grant of Petroleum Exploration Licence – PEL 650 dated 18 November 2014; and
- GRI valuation Report dated 10 April 2015.

DMR

Appendix B

Declarations, Qualifications and Consents

1. Declarations

This report has been prepared at the request of the directors of Marathon pursuant to Section 611 and Chapter 2E of the Act together with Chapter 10 of ASX listing rules to accompany the notice of meeting of shareholders to approve the Proposed Restructuring Transactions. It is not intended that this report should serve any purpose other than as an expression of our opinion as to whether or not the Proposed Restructuring Transactions are fair and reasonable.

This report has also been prepared in accordance with the Accounting Professional and Ethical Standards Board professional standard APES 225 – Valuation Services.

The procedures that we performed and the enquiries that we made in the course of the preparation of this report do not include verification work nor constitute an audit in accordance with Australian Auditing Standards.

GRI is to be paid a total fee of $18,000 for the preparation of its specialist valuation report. GRI consented to the inclusion of statements made by it, or based on statements made by it, or statements or information extracted or derived from its report titled "Valuation of the Leigh Creek Energy Project" dated 13 February 2015:

(a) in the form and context in which they are included; and

(b) to all references to that information in the form and context in which it appears.

2. Qualifications

Mr Derek M Ryan and Mr Paul Lom, directors of DMR Corporate prepared this report. They have been responsible for the preparation of many expert reports and are involved in the provision of advice in respect of valuations, takeovers and capital reconstructions and reporting on all aspects thereof.

Mr Ryan has had over 40 years experience in the accounting profession and he is a Fellow of the Institute of Chartered Accountants in Australia. He has been responsible for the preparation of many expert reports and is involved in the provision of advice in respect of valuations, takeovers and capital reconstructions and reporting on all aspects thereof.

Mr Lom is a Chartered Accountant and a Registered Company Auditor with more than 35 years experience in the accounting profession. He was a partner of KPMG and Touche Ross between 1989 and 1996, specialising in audit. He has extensive experience in business acquisitions, business valuations and privatisations in Australia and Europe.

DMR Corporate has been assisted with technical support from GRI.

3. Consent

DMR Corporate consents to the inclusion of this report in the form and context in which it is included in the Explanatory Memorandum.

DMR

Attachment 1

GLOBAL RESOURCES & INFRASTRUCTURE

Tel: +61 3 9620 2923 Mob: +61 (0) 417 335 462 Email: ianb@globalresources.com.au

ABN 45 132 038 861

10 April 2015

Mr Derek Ryan,
DMR Corporate Pty Ltd,
Level 7, 470 Collins Street,
Melbourne, Vic 3000

Dear Sir,

Re: Evaluation of Marathon Resources Valuation Report

1. Introduction

DMR Corporate Pty Ltd asked Global Resources & Infrastructure Pty Ltd ("GRI") to prepare an Independent Valuation Report on the ISG project at the Leigh Creek Coal Field that is the subject of a transaction between Marathon Resources Limited ("Marathon") (ASX: MTN) and ARP TriEnergy Pty Ltd. The tenement that forms part of the transaction is PEL 650 and Marathon is considering using the Main and Lower Coal Seams in Lobe B to develop an In Situ Gasification process to exploit the deeper coals with the view to produce gas and associated by-products for commercial exploitation. An Independent Technical Report has been prepared by Tim Jones of Australian Minerals Consultants Pty Ltd ("AMC") and GRI has been asked to provide its valuation report in the light of the information contained in AMC's report.

GRI acknowledges that while the ISG technology has been known and in use for many years there is in general a lack of published literature regarding the valuation of potential ISG projects and as GRI regards the Leigh Creek ISG Project as being an advanced exploration to pre-development stage project we have been unable to identify any projects within Australia or internationally that would or could be regarded as being of a comparable nature. Those few projects that have been undergoing pilot plant testing and those that are already in production should have accumulated sufficient data to enable a valuation to be undertaken with a reasonable degree of confidence however, much of the information required to undertake a valuation is of a proprietary or government nature and is not within the public domain.

With regard to this project, apart from some previous drilling work undertaken nearly thirty years ago, no recent work has been undertaken. As a result, all assumptions leading to the estimation of its value in this report have been based on data and information from this coal deposit, other coal deposits, remembering that no two coals are exactly the same, and under varying geological, engineering, political, economic and environmental regimes. As such, we are of the opinion that the comparisons that have been used and the observations made, should not be regarded as a direct reflection of the parameters applicable to other coal deposits but should be regarded as being indicative only, accepting that variations will occur and recognising that risks associated with the coals and the technology must be considered and recognised in estimating a value for this project.

The Leigh Creek open cut mine is located about 560km north of Adelaide. It produces a sub-bituminous C (Lignite) coal and is part of Alinta Energy's Flinders Operations Division. Coal occurs in five small discrete basins spread over a length of 20 km, which collectively make up the Coalfield. A full description of coal resources is presented in the AMC Technical Report.

The AMC Technical Report advises that in its opinion there is a deeper coal potential for "In Situ Gasification" (ISG) below the current Life of Mine economic 200m open cut level. AMC has identified an

exploration target[5] range between 220 to 530 million tonnes of coal may be available for exploitation, which would be sufficient to ensure the development of a suitable ISG facility. Based on this exploration target AMC has estimated that potential gas-in-place volumes could range from a combined total is 56,000 MMm3 to 135,000 MMm3. Again we emphasise that these are potential volumes of gas-in-place and do not represent sales gas volumes.

We accepted that these potential gas-in-place volumes could be available for future production and on that basis we undertook an analysis of the geological risks associated with the project and established low and high risk factors. These risk factors were applied to the volumes of gas-in-place and values were determined on a fully risked basis.

The Expected Value range was estimated to be between $27.2 million and $113.1 million. Our preferred value for the project, on a fully risked basis, is $27.2 million.

2. Overview of Project Valuation Considerations

As a result of our observations regarding the nature and status of the project, we believe that while the initial feedstock used to generate the synthetic gas and by-products is a solid fuel and as such, should be subject to the requirements of JORC (2012) we also note that the products derived from this process are either of a gaseous or liquid nature and as such should be defined in terms of the Petroleum Resources Management System (2007). While these definitions may seem a little puerile they are significant in terms of developing resources and reserves to comply with current legislative requirements and which will impact on the development of, and costs associated with, future exploration and development drilling programs.

Based on these issues, it is our contention that the In Situ gasification process, while consuming a solid fuel actually produces gases and liquids, suggesting that it should be regarded as a petroleum project rather than a mining project. Therefore, in considering it to be a petroleum project we determined that its valuation must be carried out on the assumption that the project will be successful, with "success" being expressed as one of several levels of profitability based on the various ranges in **geotechnical** and **economic** parameters that impact the project's commerciality. However, projects do not always succeed, in which case the consequences of such failure must be considered in appraising the economic merit of the proposed development project.

In exploratory and development projects, cost of failure can include many factors. In the case of this ISG project these could include:

- failed drilling and/or unexpected drilling problems,
- issues with horizontal or splay drilling problems and costs,
- failure to secure ignition of the coal panel,
- too much water or too little water in the coal,
- faulting and/or other developments, which may penetrate through overlying aquifers,
- costs associated with disposal of production water,
- cost of handling extraneous products that may or may not have any commercial value,
- additional capital investments may also occur, plus
- expense items that will have to be written off as well—expenditures that were needed to determine the viability of the project, such as several completed wells, equipment, materials, and supplies, lease costs, initial field testing costs, and some geology and geophysical costs.

Every expression in the Expected Value (EV) of the project requires a responsible geotechnical estimate. There will always be uncertainties that impact on coal tonnages, on revenues and costs. Each of these elements impacts the profit of the project - coal tonnages, initial and sustainable production rates, general and overhead costs, sales gas prices and contracts and interest rates – and is a prediction made under uncertainty.

The problem is how to express our technical uncertainties realistically and in a form by which they can be utilised in economic equations and formulae. The most common convention used in the petroleum industry today involves the formulation of a range of anticipated values for a given set of parameters, with probabilities assigned to the values that comprise that range. For example, the geologist may think there is only a 10% chance that the anticipated coal seam will be less than 2m thick, 50% sure that it will be less

[5] The potential coal quantity is conceptual in nature as there has been insufficient exploration to date to define a Coal Resource and it is uncertain if further exploration will result in the determination of a Coal Resource.

than 4 m thick, and 90% sure that it will be less than 6m thick. The same procedure can be applied to any parameter, including coal seam panel area, production rate, decline rate, energy conversion rates and pipeline prices.

However, it is important to understand that such estimates cannot be "pulled out of the air"! They must rely on objective considerations of all relevant data, especially maps, cross-sections, geophysical data, borehole log interpretations, analogous producing patterns, and other factors. Moreover, the geotechnical professional must arrive at a final distribution by "shaping it," that is, making trial estimates, examining the implications of various values in the distribution, comparing it with analog data, and adjusting it repeatedly until finally becoming comfortable with the estimates.

In considering this proposed project at Lobe B of the Leigh Creek Coal Field, it should be understood that GRI has categorised it as an advanced exploration to pre-development stage project, in that coal seams have been previously identified, some evaluation work has been undertaken on the coal quality, an understanding of the coal floor and roof structures has been gained as a result of mapping road-cuttings in the general area and historic drilling data indicates that the overlying aquifer is approximately three hundred metres above the coal seam and the water is saline. Accordingly, while advanced geochemical studies relative to ISG potential have not been conducted on the coals, significant geological studies have been undertaken on the project area. An estimation of its prospective value at this stage will require a critical examination of the available data and a proficient understanding of coal geology.

3. Project Descriptions and Location

ARP TriEnergy Pty Ltd currently holds one granted Petroleum Exploration Licence, PEL650, which was granted under the Petroleum and Geothermal Energy Act 2000.

This valuation report focuses on the Leigh Creek Energy Project, which is located within PEL 650 and encompasses the Leigh Creek coal mine and its' deeper coal potential for "In Situ Gasification" (ISG) below the Life of Mine economic 200m open cut level.

The Petroleum (Miscellaneous) Amendment Act 2009 introduced the provision regarding mining tenements to allow holders of coal mining licences (pursuant to the Mining Act) to be granted a PPL for the purpose of producing CSM and for ISG. While this provision does not affect the Leigh Creek Energy Project in any way, as the Leigh Creek Coal Mine does not operate under the Mining Act 1971' it is worth noting for any future tenements held under the Mining Act or the Petroleum Act as rights to in situ gasification can be obtained through both Acts. Section 35 (d) is likely to be a crucial factor for overlying tenements if both wanted to undertake in situ gasification in the same area. Section 35 does not prioritise the right to a production licence for those holding an exploration licence or mining tenement.

The Leigh Creek open cut mine is located about 560km north of Adelaide and produces a low- grade sub-bituminous (Lignite) coal.

Table 1. ARP TriEnergy PEL650 tenement *(Source: AMC ITR)*

TENEMENT	LOCATION	AREA (sq km)	MINERAL RIGHTS HOLDER	STATUS OF MINERAL RIGHT
PEL 650	Leigh Creek	93.4	ARP Tri- Energy Pty Ltd 100%	Granted 18 November 2014
TOTAL		93.4		

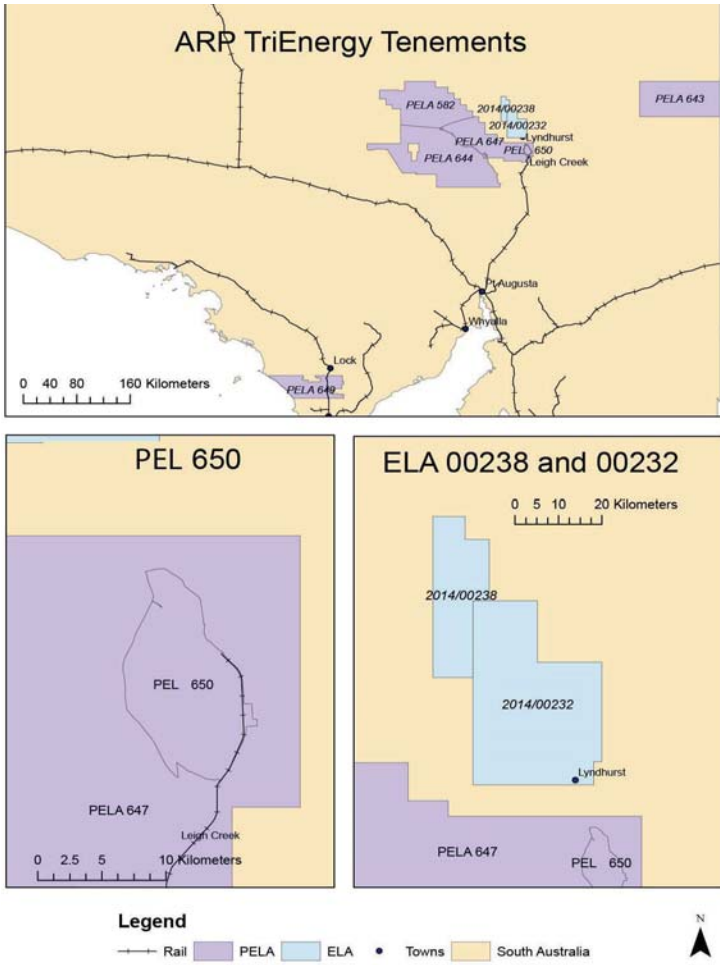


Figure 1 – ARP TriEnergy Tenements

4. History of Leigh Creek Coalfield

Coal-bearing shale was discovered in 1888 during the sinking of a railway dam in the Leigh Creek area. Government geological examinations followed and some experimental developments followed until 1894. In 1940, when coal supplies became critically low because of the Second World War that Leigh Creek coal was considered again. The deposits seemed extensive and extracting the coal by open cut methods was considered feasible. Excavation started in 1943 control of the coalfield was transferred to the Electricity Trust of South Australia (ETSA) in 1948. ETSA ordered boilers capable of burning Leigh Creek coal for the Osborne Power Station near Port Adelaide and, after thorough investigations, decided to establish a new power station at Port Augusta to burn Leigh Creek coal exclusively. In the mid 1970s it was decided to build a 500 megawatt station at Port Augusta, called the Northern Power Station. That decision meant enlarging the coalfield using new methods to extract deeper coal, increasing production, building a retention dam to prevent possible flooding of the field and diverting the main highway around the coalfield. The Northern Power Station, alongside the two earlier power stations was commissioned in 1985. Because the existing town was located within the coal basin, a new Leigh Creek town was built south of the coalfield, becoming occupied in 1980. The use of large excavating machines and efficient mining equipment at Leigh Creek, together with the rebuilding of a railway line between Leigh Creek and Port Augusta by the Commonwealth Railways (later Australian National, now Pacific National), resulted in economic production and delivery of coal to the power station. Pacific National currently provides the coal freight service to Flinders Power. After ETSA was privatised in 1999, the power stations changed hands several times. They became affiliated with Alinta Energy in 2007 when former owners, Babcock & Brown Power, acquired Alinta. The name officially changed in 2010. The coalfield at Leigh Creek currently produces approximately 1.5 – 2.0 million tonnes a year of coal, which is entirely consumed by the power stations at Port Augusta, which produce up to 40 per cent of the electricity generated in South Australia.

5. Geological Setting for Leigh Creek Project

Five small discrete basins spread over 20 km make up the Leigh Creek Coalfield. The main basins are known as Copley Basin, Telford Basin, Lobe C and Lobe D. These are remnants of a broader sedimentary sequence containing Late Triassic age coal seams (220 million years). In the early to mid 1980's the University of Adelaide, Department of Mines SA, Electricity Trust SA, Golder Associates *et al* completed investigations into the viability of In Situ Gasification (ISG) within the main and lower seams of the Telford Basin Lobe B.

The Telford Basin is an asymmetrically shaped synclinal basin of Upper Triass-Jurassic age. It is an example of a large-scale gentle fold. The basin covers an area of approximately 25km^2. The asymmetry of the basin is likely to be controlled by a major fault, which strikes along the southern perimeter. Deformation appears to have been predominantly brittle with minor ductile deformation being observed at only one locality in the mine. A series of normal faults, randomly oriented, are also observed. The faults often give rise to mesoscopic graben and horst structures, with displacement equal to or greater than seam thickness. In these localities the lateral continuity of the coal seams is greatly reduced and thus would present a problem for ISG. It is possible, however, that these fault bounded blocks occur on a larger scale at greater depths and thus blocks of coal suitable for ISG may yet be delineated by future studies, when more accurate data are available.

6. Lobe B Coal Seams

Lobe B is the largest of the areas currently being mined to an economic cut off of 200m utilising open cut methods. A significant coal exploration target has been identified below that level and the coals contained have been determined to be feasible for ISG. GRI has been advised that ARP TriEnergy is currently going through the permitting stages to obtain approval for an ISG stage 1 (single generator) production.

The Lower Series Coal unit comprises a succession of thin coal seams (up to 8 m individual thickness) intercalated with carbonaceous shales, and separated by beds and mudstone. Siltstone as well as occasional lenses of sandstone frequently inter-digitate and numerous 'hardbars' occur within this unit.

The Main Series Coal generally consists of a thick seam of coal and carbonaceous shale with minor shale partings. Coal seam thickness varies from 6 to 18 m. No hardbars are identified in this unit. Seams may not be laterally persistent due to minor faulting post dating deposition, growth faulting and occasional facies changes. Moreover, as demonstrated by the 1978 drilling, the Main Seam frequently splits into two or more beds separated by mudstone, siltstone and carbonaceous shale partings. These partings where they exist tend to be minor and would not affect ISG of the Main Series.

The Upper Series Coal measures consist of 25 m of coal in approximately 10 seams in 80 m of carbonaceous mudstones and siltstones, which are essentially free of hardbars. Although these coals were considered unfaulted, AMC suggests that low angle thrust faults parallel to bedding may be present. An assessment was made of faulting, and AMC concluded that only the southern area of the seam was likely to be affected by faulting to an extent, which would significantly interrupt the gasification of coal to depths of about 600m.

Coal intersections of 15.9m (L3966), 11.5m (L3967) and 18.8m (L3964) were obtained from the three boreholes drilled by Golders. There was no evidence of intermediate partings over these intervals. These intersections are consistent with the data inferred from previous reports, and from interpretations of the seismic traversing. The results give considerable confidence to the maintenance of seam thickness to depths of around 500m.

Based on this information AMC has advised that good correlation exists between the boreholes and seismic traverse, confirming the good continuity of the seam down to the major inferred fault adding that there is substantial evidence of the suitability of the Main Series coal seam for gasification.

7. AMC's Technical Analysis of Gasification - Summary

AMC also commented on the Golder (1983) report that produced a simplified analysis of the effects of the gasification process on groundwater levels. The computer model was developed to simulate the progressive gasification of a 600m working face at a rate of 100 m/year. This analysis used

permeability values provided in a previous report by Coffey and Partners, which AMC commented were considered at the time to be unrealistically high.

AMC further noted that permeabilities in the roof and floor rocks obtained during the field programme are relatively uniform, however a wide range of values was obtained for the coal. Detailed analysis would therefore require a range of permeability values to be used to determine the sensitivity of water inflow and water table drawdown to variations in permeability of the various layers. Other factors to be considered in the analysis are the gas pressure in the cavity and the increased permeability, which will result in the caved zone above the cavity.

In its 1983 report, ETSA made a preliminary evaluation of roof stability, using experience derived from the U.K. involving overburden, which were typically well-bedded sedimentary strata. AMC commented, "It was estimated that the expected maximum possible settlement might be in the range 0.7 to 0.9 of the seam thickness." Therefore, for the average coal thickness of 10m used by AMC in its exploration target "Block", this implies a ground settlement in the range 10-13m. The drill core and strength testing showed a mudstone of relatively uniform medium strength, which is consistent with the U.K. rock types from which the data were derived. AMC considers the projections of maximum ground settlement to be realistic.

8. Implications of the gasification process

Sub-bituminous coal resources have traditionally been preferred for ISG processing as these coals shrink on heating, which is considered a desirable characteristic. This feature however, is even more pronounced in lignites. On drying these coals develop a strongly jointed, highly permeable zone behind the heated face, offering a very large surface of highly reactive char for the reduction reactions. Moreover they are easier to ignite and do not form a hard coke residue. Thus as Leigh Creek coal is of sub-bituminous/lignite rank, it is suitable for ISG.

In its review of the Golder field investigation programme, AMC remarked that this work enabled a better definition of rock strength and permeability characteristics, and of groundwater levels and that these parameters enabled more relevant analyses to be made of groundwater response to creation of the gasified cavity, and of roof stability and surface settlement.

Furthermore, AMC noted that "despite the significant assumptions required to be made for the preliminary analysis undertaken, the results suggest that both groundwater inflow and groundwater drawdown will be acceptable. With respect to groundwater table drawdown, the analyses suggest that with the most unfavourable assumptions, a groundwater cover should be maintained above the coal seam to prevent gas leakage except perhaps at the end of mine life. Given the limited accuracy of all parameters, it can sensibly be concluded that a significant pressure head over the cavity is likely for most of the mine life, and that the long-term situation can only realistically be assessed after data from the early years of operation are obtained.

AMC concluded that calculations of roof stability suggest that "complete closure will not occur until the full seam length updip has been gasified. The caved zone will extend perhaps 25 to 50m above the cavity but should have a limited effect on the gasification process because of its development late in the gasification of a particular generator (panel).

9. Valuation Process

Identification of Critical Geological Parameters

In order to determine the critical geological parameters that need to be evaluated so that we can determine the range of *Probabilities of Success* we reviewed in detail the technical report prepared by AMC on the project. AMC noted that Carbon Energy was mentioned as recording geological success factors in the 85% to 95% range for its project. For the Leigh Creek Energy Project, which as we have previously stated, is still regarded as being an advanced exploration to pre-development stage project, yet to undertake any pilot test analyses, we determined that a Geological Probability of Success would need to be extremely conservative to reflect the level of risk surrounding what is in reality a Research and Development project.

In considering projects such as this, the usual procedure is for the geotechnical professional to express their confidence independently for several critical geological aspects of any project. For this ISG project we consider that the following geological issues are critical to the success and should be considered. They are

as follows:

1. What is the probability (or confidence) that the coal seams are present, of sufficient quality to be productive, and of some minimal thickness and extent sufficient to enable gas and by-products to be produced, which would justify an attempt for a completion? In this instance we are looking for a level of confidence in the existence of sufficient coal of a reasonable quality that will generate sufficient gas for a commercial development. AMC has used a "gasification intensity" of 14 GJ/t to determine how much gas should be produced for each tonne of coal consumed during the process. This energy conversion value was determined using several examples from various lignite coals around the world. We noted for the valuation that examples of Russian published data indicate that the gasification intensities are variable and very dependent on water influx.

2. What is the probability (or confidence) that the roof and floor structures for the seams are of sufficient strength to hold up under the gasification process? Surface subsidence can occur over and extend beyond the void. Subsidence, can create surface disruptions, cause excessive water influx into the gasification area, provide for groundwater contamination and disrupt surface features. The process is described as being analogous to longwall mining. AMC have considered this aspect and are satisfied that complete closure will not occur until much later in the gasification process.

3. What is the probability (or confidence) that the drilling techniques used are capable of successfully linking the injection well with the production well? The gasification process will utilise the Continuous Retraction Injection Point ("CRIP") method. This method has been successfully proven at several ISG trial sites and is considered the best method. AMC has provided a more detailed description of the method in its report. In this method the production well is drilled vertically and the injection well is drilled using directional drilling techniques to connect with the production well. The cavity between these two wells is the gasification reactor and gas composition consistency can be controlled once the process is operating.

4. What is the probability (or confidence) that there are no high performance aquifers within the expected vertical subsidence volume? Water influx into the gasification cavity can substantially reduce gasification activity. AMC has advised that no data is available regarding relative aquifer pressures throughout the sediments and that very few detailed hydrogeological investigations have been conducted, accordingly data concerning aquifer recharge capacities are currently not available. AMC also commented on the Golder (1983) report that produced a simplified analysis of the effects of the gasification process on groundwater levels.

5. Structural (faulting and folding) considerations are also important as they can cause problems with linking, cause excessive water influx and promote premature roof collapse. AMC noted that the observed faults often give rise to mesoscopic graben and horst structures, with displacement equal to or greater than seam thickness. In these localities the lateral continuity of the coal seams is greatly reduced and thus would present a problem for ISG. It is possible, however, that these fault bound blocks occur on a larger scale at greater depths and AMC has commented that blocks of coal suitable for ISG may yet be delineated by future studies, when more accurate data are available. AMC concluded that further studies associated with faults and joints within the open pits are warranted.

6. Ground water. AMC has addressed this issue in its report and GRI has included this in our list of geological issues that need to be considered as part of the initial evaluations of the project.

Having identified what we regard as the six major geological issues associated with the project we then applied probability values against each of the criteria. We adopted a range of probabilities of geological success based on a subjective determination for low, preferred and high levels of success. Within a class of probabilities i.e., Low and High, we multiplied each of the probabilities determined for the six geological issues to each other, this produced the overall probability of geological success, or P_{sg} for that class.

Table 1 below illustrates the six geological chance factors that GRI has identified for the Leigh Creek Energy Project along with our estimated probabilities of geological success (P_{sg}). As we have previously stated we regard this project as an advanced exploration or pre-development stage project. No pilot testing has been undertaken and we are reliant on historical drilling data and pilot test data from other projects that have targeted coal seams other than those at Leigh Creek. As such have relied on the geological descriptions and information contained in the Technical Report provided by AMC and used our judgment based on our experience in working with many different coal deposits around the world.

Table 1 – Geological Chance Factors

Geological Chance Factor	Low Probability (%)	High Probability (%)
1. Presence of quality coal	50	80
2. Integrity of roof & floor	60	75
3. Appropriate drilling techniques	75	80
4. Probability of aquifers	55	70
5. Structural faulting	55	70
6. Groundwater pollution	60	75
	4.1%	**16.6%**

10. Conceptual Exploration Target

In its assessment of the project, AMC has reviewed all the available data and in doing so has attempted to determine the total exploration potential available as feedstock to the ISG process. In developing its evaluation process, AMC considered as reasonable adopting the known range of coal seam thicknesses of between a minimum of 6m to max of 18m with an an average of 10m in the Main Series and a total of 4m to 6m in the Lower Series with an average of 5m.

A seam length of 3,500m and a width of about 4,500m was determined as representing the total panel of coal available for ISG production. This panel size was based on current knowledge of the basin geology, geometry and coal quality. Furthermore, AMC has proposed exploration drilling to depths of 600m should be undertaken to provide greater control of panel model parameters and provide significantly greater control for estimation purposes.

Based on the measured data and its estimated panel size (3500m x 4500m) AMC determined that an exploration target in the following range might be available for ISG production. In compliance with JORC (2012) we advise that the potential coal quantity is conceptual in nature as there has been insufficient exploration to date to define a Coal Resource and it is uncertain if further exploration will result in the determination of a Coal Resource.

Table 2 – Conceptual Exploration Target

Coal Seam	Exploration Target (Mt)
Main Series	130 – 400
Lower Series	90 – 130
Total	**220 - 530**

In order to develop our valuation of the project GRI has used AMC's conceptual exploration target as shown in Table 2.

As no definitive testing of coal to energy conversion rates has been undertaken for PEL650 and in order to provide an assessment of the gas potential of the Leigh Creek Energy Project coal/gas exploration target, AMC assumed that the energy conversion factors identified by a number of other researchers could be appropriate in assessing this ISG project.

AMC compared a number of energy conversion values from other projects and sources of information relating to lignite coal to gas volumes to determine a reasonable conversion rate from a lignite coal to a

syngas approximating natural gas. South Australian lignites were found to have a conversion ratio of 15.2 GJ/t and Victorian lignites a value of 9.8 GJ/T (ABARE; Geoscience Australia, 2012). MIT Energy Club published lignite energy conversion values to lie in the range 10 – 19 GJ/t. These values all appear to be of similar magnitude however, AMC cautioned that it should be understood that these energy conversion values will vary from project to project. AMC adopted a value of 14 GJ/t, a value that GRI agrees with and also adopted a coal shrinkage factor of 30% to account for ineffective burning/ignition of coal and also to account for ash contents. These coal tonnages were then converted to cubic metres of potential gas-in-place (GIP). Table 3 illustrates the potential GIP based on the parameters identified above. All GIP values have been rounded to the nearest '000 MMm^3.

Table 3 –Coal to gas conversion calculation for GIP

Coal Seam	Seam Thickness (m)	Million Tonnes	GIP (MMm^3)
Main (min)	6	130	33,000
Main (max)	18	400	102,000
Lower (min)	4	90	23,000
Lower (max)	6	130	33,000
Total (min)	10	220	56,000
Total (max)	24	530	135,000

NOTE: *The conversion calculation is based on published material (Carbon Energy Limited, Linc Energy Limited, ABARE, Geoscience Australia, MIT Energy Club) but its application to the proposed ISG for the LCEP is conceptual in nature as there has been insufficient test work to date to define an appropriate conversion factor and it is uncertain if further processing following exploration will result in a similar conversion factor.*

1 MMm^3 GIP = 26.853 x 1,000,000 Gj

Energy Conversion factor GJ/t = 14

Based on a coal shrinkage factor of 30%

Specific Gravity of coal = 1.4

ISG area 3,500m x 4,500m

Seam thickness is between known values

11. Estimation of Risked In Situ gas volumes

Table 4 illustrates the Leigh Creek Energy Project's conceptual "in-ground" gas volumes calculated on a fully risked basis.

Table 4 – Risked "in-ground" gas volumes

Coal Seam	Unrisked Volumes GIP(MMm^3)	Risked Volumes (MMm^3)	
		Low Probability (4.1%)	High Probability (16.6%)
Main (min)	33,000	1,350	5,470
Main (max)	102,000	4,180	16,900
Lower (min)	23,000	940	3,810
Lower (max)	33,000	1,350	5,470
Total (min)	56,000	2,290	9300
Total (max)	135,000	5,540	22,400

DMR

12. Valuation

We reviewed the price of in situ natural gas, i.e., the price paid to acquire gas assets in the ground and where sufficient drilling had been undertaken to establish gas resources but little if any gas production assets had been installed. We supplemented our recent evaluations on other unconventional "in-situ" gas prices and to these we added one US petroleum industry gas transaction where we could determine a representative price for "in-ground" gas. We determined that in situ gas for an undeveloped gas project was $0.18 per GJ or $0.00704 per cubic metre based on an exchange rate of AU$1.00 = US$0.75. We have used this price in our valuation.

Accordingly, the *Expected Value* (EV) of this project can be expressed as follows:

Table 5 – Matrix of Expected Value of ISG project on a fully risked basis

Coal Seam	Values on Risked Basis ($m)	
	Low	High
Main (min)	9.6	29.2
Main (max)	29.8	90.4
Lower (min)	6.7	20.4
Lower (max)	9.6	29.2
Total (min)	16.1	66.3
Total (max)	38.7	159.8
Total (average)	27.2	113.1

The matrix of values contained in Table 5, sets out the GIP values on a fully risked basis for the project, based on the criteria and parameters that we have identified. The actual value of the project, being as it is a Research and Development process, may never be fully identified and many changes to the various production parameters could impact on its ultimate value. In so far as this valuation exercise is concerned GRI has accepted the Total (average) values for both coal seams as representing the value range for the project on a fully risked basis.

Therefore, the low value is estimated to be $27.2 million with the high end estimated to be $113.1 million. Our preferred value for the project, on a fully risked basis, is $27.2 million.

13. Identified Areas of Risk

We have reviewed the risks associated with the project and comment as follows:

- The project represents an advanced exploration stage project, and is inherently exposed to normal operational risks associated with exploration and development projects;
- No resource or reserve has been established in compliance with any industry recognised codes of practice;
- Test program work needs to be undertaken, which would provide comfort as the potential success of the coal gasification process and no "gasification value" has been determined which will assist in estimating potential gas reserves;
- The success of the project depends largely on the successful implementation of the ISG process;
- Profitability and asset values can be affected by unforeseen changes in operating circumstances and technical issues;
- We have assumed that sufficient working capital will be obtained to meet the liabilities and commitments as they become due.

In our opinion each of these areas of risk will need to be worked on and resolved before a commercial ISG project can be developed at Leigh Creek Coal Field. Based on these reasons we have selected the Total (average) low value that was estimated to also represent our preferred value as at the date of this report.

DMR

14. General

Qualifications

Global Resources & Infrastructure Pty Ltd ("GRI") is a management consulting and advisory company that specialises in providing its services to the resources and infrastructure industries. Ian Buckingham, Managing Director of GR&I is the lead consultant in preparation of this opinion for DMR Corporate Pty Ltd. Mr. Buckingham has worked on over three hundred due diligence and valuation assignments, including: providing Specialist's advice to Grant Samuel and to KPMG Corporate Finance when both of those organisations provided the Independent Expert's Reports on the takeover offer by Rio Tinto for North Limited and Ashton Mining Limited respectively; in the role of Project Director, he managed the project team that undertook a review of the mining, environmental, legal and economic issues associated with the Ok Tedi Mine, PNG; reviewed and valued the coal assets of PT Kideco, a 12 million tonne per annum Indonesian based coal mining and exporting company, reviewed and valued the minerals assets and Stuart Oil Shale Project of Southern Pacific Petroleum; prepared the "Competent Person's" Report for the listing of Zeehan Zinc Limited, an Australian base metals company on the Alternative Investment Market (AIM) of the London Stock Exchange; the Specialist's report on the value of the assets of Enterprise Energy and Bandanna Coal Company. Mr. Buckingham has also undertaken a number of strategic development assignments evaluating various minerals commodities on behalf of global mining groups.

Ian Buckingham holds a B.App.Sc.(Applied Geology) from the Victorian Institute of Colleges and Fellowship and Associateship Diplomas in Geology (RMIT) with extra studies in mining engineering and primary metallurgy and an MBA from RMIT University. Mr. Buckingham is a Member PESA and AAPG and a Fellow, FAusIMM. Ian was a member of the committee that re-wrote the VALMIN Code (2005).

Fees

GRI will be paid a professional fee of $18,000 exclusive of GST plus reasonable expenses for the preparation of this report. The fee is not contingent on the conclusions set out in the report.

Declaration

GRI does not have any business relationship with Marathon or with any companies associated with that company that could reasonably be regarded as being prejudicial to its ability to give an unbiased and independent assessment. There is no present agreement, arrangement or understanding that GRI will at any time in the future undertake any assignment for Marathon or any company or organisation associated with Marathon. Other than as set out herein, neither GRI nor Ian Buckingham has any interest in the companies that are the subjects of this report.

Indemnity

GRI and Ian Buckingham have been indemnified by DMR Corporate as to damages, losses and liabilities relating to or arising out of their engagement that do not arise from the fault of GRI, or Ian Buckingham or their associates.

Consent

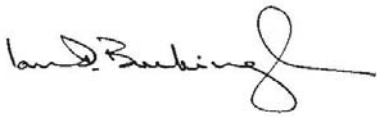
GRI has given its written consent to the inclusion of this report in DMR Corporate Pty Ltd's advice to be provided to Marathon's directors, management or shareholders, pursuant to Australian regulatory requirements. As of this date, GRI has not withdrawn its consent. GRI has not been involved in the preparation of or authorised or caused the issue of any other part of the documentation to be provided to Marathon's shareholders, other than this report.

Neither the whole, nor any part of this report, nor any reference thereto, may be included in or with, or attached to any document or used for any other purpose without the prior written consent of GRI to the form and context in which it appears and the purpose of its use.

All of the persons involved in the preparation of this report have consented to the use of this assessment report, for the purpose stated above and in the form and context in which it appears.

DMR

GLOBAL RESOURCES & INFRASTRUCTURE PTY LTD



IAN BUCKINGHAM
Managing Director

References

ARP TriEnergy Pty Ltd (2014) "*Legislation Governing the Mining and Petroleum Operations at Leigh Creek*" Confidential Memo 24 September 2014.

Australian Mineral Consultants (AMC) *2015 "Review Report ARP TriEnergy Pty Ltd Leigh Creek Energy Project PEL 650, South Australia"* Company Report to Marathon Resources 2015.

Geoscience Australia and ABARE, 2012, Australian Gas Resource Assessment 2012

Government of British Colombia, Canada, 2013, Ministry of Finance, Tax Information Sheet, Conversion factors for Fuel, Revised May 2013

Government of Canada, National Energy Board, Energy Conversion Tables

Massachusetts Institute of Technology, MIT Energy Club: Units & Conversions Fact Sheet http://web.mit.edu/mit_energy

Annexure B – Investigating Accountant's Report

Deloitte.

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The Directors
Marathon Resources Limited
Unit 8
53-57 Glen Osmond Road
EASTWOOD SA 5063

20 April 2015

Dear Sirs

Investigating Accountant's Report on Pro Forma Financial Information and Financial Services Guide

Introduction

This report has been prepared at the request of the Directors of Marathon Resources Limited (the Company) for inclusion in an Explanatory Memorandum to be issued by the Company in respect of the proposed acquisition of ARP TriEnergy Pty Ltd (ARP TriEnergy) by the offering of shares in the Company.

Deloitte Corporate Finance Pty Limited is wholly owned by Deloitte Touche Tohmatsu and holds the appropriate Australian Financial Services licence under the *Corporations Act 2001* for the issue of this report.

References to the Company and other terminology used in this report have the same meaning as defined in the Glossary of the Explanatory Memorandum.

Scope

Deloitte Corporate Finance Pty Limited has been engaged by the Directors of the Company to review:

- the historical Statement of Financial Position of the Company and ARP TriEnergy as at 31 December 2014 (Historical Financial Information);
- the pro forma Statement of Financial Position of the Company as at 31 December 2014, prepared on the basis that the pro forma adjustments detailed in Section 4 of Schedule 1 to the Explanatory Memorandum had occurred on that date;
- the pro forma adjustments set out in Section 4 of Schedule 1 to the Explanatory Memorandum (pro forma adjustments); and
- accompanying notes.

(the Pro Forma Financial Information).

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The Pro Forma Financial Information has been derived from the Statements of Financial Position of the Company and ARP TriEnergy as at 31 December 2014 (Historical Financial Information), after adjusting for the effects of the pro forma adjustments described in Section 4 of Schedule 1 to the Explanatory Memorandum.

The Historical Financial Information has been extracted from annual financial reports of the Company and ARP TriEnergy for the half-year ended 31 December 2014, which have been reviewed by other accounting firms in accordance with Australian Auditing Standards. The other accounting firms issued an unmodified review conclusion for the Company and an unmodified review conclusion with an emphasis of matter for ARP TriEnergy in relation to the basis of accounting and restriction on distribution and use as their financial statements were 'special purpose financial statements' prepared to meet the needs of their directors.

The Pro Forma Financial Information is presented in the Explanatory Memorandum in an abbreviated form, insofar as it does not include all of the presentation and disclosures required by Australian Accounting Standards and other mandatory professional reporting requirements applicable to general purpose financial reports prepared in accordance with the *Corporations Act 2001*.

The stated basis of preparation is the recognition and measurement principles contained in Australian Accounting Standards and Interpretations applied to the Historical Financial Information and the event(s) or transaction(s) to which the pro forma adjustments relate, as described Sections3 and 4 of Schedule 1 to the Explanatory Memorandum, as if those event(s) or transaction(s) had occurred as at the date of the Historical Financial Information. Due to its nature, the Pro Forma Financial Information does not represent the Company's actual or prospective financial position.

Directors' Responsibility

The Directors are responsible for:

- the preparation and presentation of the Pro Forma Financial Information, including the selection and determination of pro forma adjustments made to the Historical Financial Information and included in the Pro Forma Financial Information; and
- the information contained within the Explanatory Memorandum.

This responsibility includes the operation of such internal controls as the Directors determine are necessary to enable the preparation of the Historical Financial Information and the Pro Forma Financial Information that is free from material misstatement, whether due to fraud or error.

Our Responsibility

Our responsibility is to express a limited assurance conclusion on the Pro Forma Financial Information based on the procedures performed and the evidence we have obtained. We have conducted our engagement in accordance with Australian Standard on Assurance Engagement (ASAE) 3450 *Assurance Engagements involving Corporate Fundraisings and/or Prospective Financial Information.*

A review consists of making enquiries, primarily of persons responsible for financial and accounting matters, and applying analytical and other review procedures. A review is substantially less in scope than an audit conducted in accordance with Australian Auditing Standards and consequently does not enable us to obtain reasonable assurance that we would become aware of all significant matters that might be identified in a reasonable assurance engagement. Accordingly we will not express an audit opinion.

Our engagement did not involve updating or re-issuing any previously issued audit or review report on any financial information used as a source of the financial information.

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Conclusion

Pro Forma Financial Information

Based on our review, which is not an audit, nothing has come to our attention that causes us to believe that the Pro Forma Financial Information is not presented fairly, in all material respects, in accordance with the stated basis of preparation as described in Section 4 of Schedule 1 to the Explanatory Memorandum.

Restrictions on Use

Without modifying our conclusion, we draw attention to the fact that our Investigating Accountant's Report on the Pro Forma Financial Information, has been prepared for inclusion in the Explanatory Memorandum. As a result, the Investigating Accountant's Report may not be suitable for use for another purpose.

Consent

Deloitte Corporate Finance Pty Limited has consented to the inclusion of this limited assurance report in the Explanatory Memorandum in the form and context in which it is included.

Disclosure of Interest

Deloitte Corporate Finance Pty Limited does not have any interest in the outcome of the Explanatory Memorandum other than the preparation of this report for which normal professional fees will be received.

Yours faithfully

Darren Hall
Authorised Representative of Deloitte Corporate Finance Pty Limited
(AR number 241457)

Annexure C – Option Terms and Conditions

OPTION TERMS AND CONDITIONS

The TERMS AND CONDITIONS appearing below are an abridged form of the rules applying under the Marathon Resources Limited Employee Share Option Plan (as amended from time to time) (**ESOP**), a complete copy of which will be provided to an Option holder. To the extent of any inconsistency between the ESOP and the Terms and Conditions the ESOP will prevail and the Terms and Conditions modified to the extent of the inconsistency.

1. The Option holder is entitled on payment of the applicable exercise price for the relevant Option to be allotted one ordinary fully paid share for each Option exercised. The exercise price for the (A or B) Options are as follows:

   A Options: The greater of $0.20 and 10% premium to the 5 day VWAP up to 26 May 2015 (being the day before the General Meeting); and

   B Options: The great of $0.25 and 10% premium to the 5 day VWAP up to 26 May 2015 (being the day before the General Meeting),

   (respectively the **Exercise Price**).

2. Options held by the Option holder are exercisable from the First Exercise Date up to and including the Last Exercise Date for the relevant class of Options as set out below (the **Exercise Period**). Reminder notices will be forwarded to the Option holder prior to the Last Exercise Date for each Option.

	First Exercise Date	**Last Exercise Date**
A Options	On grant of Option	4 years from Grant
B Options	On grant of Option	5 years from Grant

3. Each Option that is not exercised on or before the Last Exercise Date for that Option will lapse. Unexercised Options will also lapse if the Option holder ceases to be a Director of the Company during the relevant Exercise Period for those Options unless the Option holder ceases to be a Director by reason of permanent disability, death or retirement, in which case the Option holder will have 1 month or such longer period as the Board may determine to exercise any remaining unexercised Options. Any longer period granted by the Board to exercise an Option must not exceed the relevant Last Exercise Date for that Option.

4. An Option is exercisable by notice in writing to the Company lodged at the office of the Company's share registry together with payment of the Exercise Price for each Option exercised. The minimum number of Options which may be exercised at any time is a marketable parcel except where less than that number is held in which case all Options held by one holder must be exercised.

5. The Company will not apply for official quotation of Options on the ASX. The Company will make application for official quotation on the ASX of new shares allotted on exercise of Options. Shares allotted on exercise of Options will participate equally in all respects with existing issued ordinary shares. In particular, shares allotted on exercise of Options will qualify for dividends declared after the date of allotment.

6. Options carry no right (without exercising the Options) to participate in rights issues which may be offered by the Company to its shareholders after the date of issue of the Options or in bonus issues or dividends. However the Company must give prior notice to Option holders of any new issue before the record date for determining entitlements to the issue in accordance with the ASX Listing Rules and Option holders have the right to exercise the Options prior to the record date for determining entitlements.

7. If during the currency of the Options the issued capital of the Company is reorganised, the rights of the Option holder in respect of those Options may be varied to comply with the ASX Listing Rules which apply to the reorganisation.

8. If the Company makes a rights issue (other than a bonus issue), the exercise price of Options on issue will be reduced according to this formula:

$$A = O - \frac{E\,[P - (S + D)]}{(N + 1)}$$

   Where:

   A = the new exercise price of the Option;

   O = the old exercise price of the Option;

   E = the number of underlying ordinary shares into which one Option is exercisable

P = the average closing sale price per ordinary share (weighted by reference to volume) recorded on the stock market of ASX during the 5 trading days ending on the day before the ex rights date or ex entitlements date (excluding special crossings and overnight sales);

S = the subscription price for an ordinary share under the pro rata issue;

D = the dividend due but not yet paid on each ordinary share at the relevant time (except those to be issued under the pro rata issue); and

N = the number of ordinary shares that must be held to entitle holders to receive a right to one new ordinary share in the pro rata issue.

9. If there is a bonus issue to the holders of ordinary shares in the capital of the Company, the number of ordinary shares over which the Option is exercisable will be increased by the number of ordinary shares which the holder of the Option would have received if the Option had been exercised before the record date for the bonus issue.

10. Options may, with the prior approval of the Board, be transferred at any time prior to their expiry by completing a standard form of transfer.

11. Option holders appearing on the Company's Register of Option holders at the relevant date will be entitled to receive and will be sent all reports and accounts required to be laid before shareholders in general meetings and all notices of general meetings and will have the right to attend but shall have no right to vote at such meetings.

marathon
RESOURCES LIMITED
ACN 107 531 822

Lodge your vote:

Online:
www.investorvote.com.au

By Mail:
Computershare Investor Services Pty Limited
GPO Box 242 Melbourne
Victoria 3001 Australia

Alternatively you can fax your form to
(within Australia) 1800 783 447
(outside Australia) +61 3 9473 2555

For Intermediary Online subscribers only
(custodians) www.intermediaryonline.com

For all enquiries call:
(within Australia) 1300 556 161
(outside Australia) +61 3 9415 4000

Proxy Form

Vote online

- Go to www.investorvote.com.au **or** scan the QR Code with your mobile device.
- Follow the instructions on the secure website to vote.

Your access information that you will need to vote:

PLEASE NOTE: For security reasons it is important that you keep your SRN/HIN confidential.

For your vote to be effective it must be received by 9:30am (Adelaide time) Monday 25 May 2015

How to Vote on Items of Business

All your securities will be voted in accordance with your directions.

Appointment of Proxy

Voting 100% of your holding: Direct your proxy how to vote by marking one of the boxes opposite each item of business. If you do not mark a box your proxy may vote or abstain as they choose (to the extent permitted by law). If you mark more than one box on an item your vote will be invalid on that item.

Voting a portion of your holding: Indicate a portion of your voting rights by inserting the percentage or number of securities you wish to vote in the For, Against or Abstain box or boxes. The sum of the votes cast must not exceed your voting entitlement or 100%.

Appointing a second proxy: You are entitled to appoint up to two proxies to attend the meeting and vote on a poll. If you appoint two proxies you must specify the percentage of votes or number of securities for each proxy, otherwise each proxy may exercise half of the votes. When appointing a second proxy write both names and the percentage of votes or number of securities for each in Step 1 overleaf.

A proxy need not be a securityholder of the Company.

Signing Instructions for Postal Forms

Individual: Where the holding is in one name, the securityholder must sign.

Joint Holding: Where the holding is in more than one name, all of the securityholders should sign.

Power of Attorney: If you have not already lodged the Power of Attorney with the registry, please attach a certified photocopy of the Power of Attorney to this form when you return it.

Companies: Where the company has a Sole Director who is also the Sole Company Secretary, this form must be signed by that person. If the company (pursuant to section 204A of the Corporations Act 2001) does not have a Company Secretary, a Sole Director can also sign alone. Otherwise this form must be signed by a Director jointly with either another Director or a Company Secretary. Please sign in the appropriate place to indicate the office held. Delete titles as applicable.

Attending the Meeting

Bring this form to assist registration. If a representative of a corporate securityholder or proxy is to attend the meeting you will need to provide the appropriate "Certificate of Appointment of Corporate Representative" prior to admission. A form of the certificate may be obtained from Computershare or online at www.investorcentre.com under the help tab, "Printable Forms".

Comments & Questions: If you have any comments or questions for the company, please write them on a separate sheet of paper and return with this form.

GO ONLINE TO VOTE,
or turn over to complete the form ➔

☐ **Change of address.** If incorrect, mark this box and make the correction in the space to the left. Securityholders sponsored by a broker (reference number commences with '**X**') should advise your broker of any changes.

Proxy Form

Please mark ☒ to indicate your directions

STEP 1 Appoint a Proxy to Vote on Your Behalf

I/We being a member/s of Marathon Resources Limited hereby appoint

☐ **the Chairman of the Meeting** **OR** _____

PLEASE NOTE: Leave this box blank if you have selected the Chairman of the Meeting. Do not insert your own name(s).

or failing the individual or body corporate named, or if no individual or body corporate is named, the Chairman of the Meeting, as my/our proxy to act generally at the Meeting on my/our behalf and to vote in accordance with the following directions (or if no directions have been given, and to the extent permitted by law, as the proxy sees fit) at the General Meeting of Marathon Resources Limited to be held at the offices of Marathon Resources Limited, Unit 8/53-57 Glen Osmond Road, Eastwood SA 5063 on Wednesday, 27 May 2015 at 9:30am (Adelaide time) and at any adjournment or postponement of that Meeting.

Chairman authorised to exercise undirected proxies on remuneration related resolutions: Where I/we have appointed the Chairman of the Meeting as my/our proxy (or the Chairman becomes my/our proxy by default), I/we expressly authorise the Chairman to exercise my/our proxy on **Item 7** (except where I/we have indicated a different voting intention below) even though **Item 7** is connected directly or indirectly with the remuneration of a member of key management personnel, which includes the Chairman.

Important Note: If the Chairman of the Meeting is (or becomes) your proxy you can direct the Chairman to vote for or against or abstain from voting on **Item 7** by marking the appropriate box in step 2 below.

STEP 2 Items of Business

PLEASE NOTE: If you mark the **Abstain** box for an item, you are directing your proxy not to vote on your behalf on a show of hands or a poll and your votes will not be counted in computing the required majority.

		For	Against	Abstain
1	Change to Nature and Scale of the Company's Activities	☐	☐	☐
2	Acquisition of ARP TriEnergy	☐	☐	☐
3	Royalty Deed	☐	☐	☐
4	Appointment of Mr Daniel J D Peters as Director	☐	☐	☐
5	Appointment of Mr David Kit Shearwood as Director	☐	☐	☐
6	Interim Funding of ARP TriEnergy	☐	☐	☐
7	Grant of Options to Cluan Capital Management Pty Ltd as nominee for Mr Peter L Williams	☐	☐	☐

The Chairman of the Meeting intends to vote undirected proxies in favour of each item of business. In exceptional circumstances, the Chairman of the Meeting may change his/her voting intention on any resolution, in which case an ASX announcement will be made.

SIGN Signature of Securityholder(s) *This section must be completed.*

Individual or Securityholder 1	**Securityholder 2**	**Securityholder 3**
Sole Director and Sole Company Secretary	**Director**	**Director/Company Secretary**

Contact Name _____ **Contact Daytime Telephone** _____ **Date** / /

Australian Mineral Consultants

Marathon Resources Limited Unit 8, 53-57 Glen Osmond Road Eastwood SA 5063 AUSTRALIA

REVIEW REPORT
ARP TriEnergy Pty Ltd
LEIGH CREEK ENERGY PROJECT
PEL 650 South Australia

Australian Mineral Consultants (AMC)

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P: (08) 8132 9105

ABN: 85 989 040 917

20 JAN 2015

Australian Mineral Consultants

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Statement of Risk

The accuracy of reserves and economic evaluations is always subject to uncertainty. The magnitude of this uncertainty is generally proportional to the quantity and quality of data available for analysis. As a project matures and new information becomes available, revisions may be required which may either increase or decrease the previous reserve assignments. Sometimes these revisions may result not only in a significant change to the reserves and value assigned to a property, but also may impact the total company reserve and economic status. The reserves estimates contained in this report were based upon a technical analysis of the available data using accepted engineering principles. However, they must be accepted with the understanding that further information and future performance subsequent to the date of the estimate may justify their revision. It is AMC's opinion that the estimated resources and other reserve information as specified in this report are reasonable, and have been prepared in accordance with generally accepted geological engineering and evaluation principles. Notwithstanding the aforementioned opinion, AMC makes no warranties concerning the data and interpretations of such data. In no event shall AMC be liable for any special or consequential damages arising from Marathon Resources use of AMC's interpretation, reports, or services produced as a result of its work for Marathon Resources.

Neither AMC, nor any of our employees have any interest in the subject properties and neither the employment to do this work, nor the compensation, is contingent on our estimates of reserves for the properties in this report.

Competent Persons Statement

The Information in this report that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Tim Jones, a Competent Person who is a Member of the Australian Institute of Geoscientist. Tim Jones is employed by Australian Mineral Consultants. Tim Jones has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the "Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Tim Jones consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

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Summary

Australian Mineral Consultants was instructed by Marathon Resources Limited (Marathon), an Australian listed company (ASX code MTN), to prepare a Specialist Technical Report on deep coal assets which form the Leigh Creek Energy Project (LCEP) held by ARP TriEnergy Pty Ltd within Petroleum Exploration Licence (PEL 650), South Australia.

Australian Mineral Consultants understands that Marathon will use this Specialist Technical Report in relation to a proposed merger with ARP TriEnergy Pty Ltd.

Various feasibility studies have been undertaken for the suitability of In-Situ Gasification (ISG) at Leigh Creek for gas feedstock to power generation. The studies focused upon site selection with field components providing quantitative data on the strength and permeability characteristics of the geological profile of the Main Series coal seam in Lobe B. The principal concerns for development of a gasified system relate to the potential drawdown of the water table, and resulting groundwater inflow into the burn cavity, and the stability of roof rocks as the cavity expands.

These studies concluded that ISG was feasible, but did not fully identify the extent of the coal available nor their gas potential.

This report provides a historical review of mining and datasets, hydrogeology, geotechnical assessment along with structural and resource geology of the site and its compatibility for ISG. A costed exploration plan will seek to prove up an *exploration target range of **130 million to 400 million TTIS (Total Tonnes In Situ)** within the main seam and an additional **90 million to 130 million TTIS** within the Lower Series coal seam is provided. Combining the main seam and Lower Series coal seam together obtains a range of **220 million to 530 million TTIS** (Total Tonnes in Situ).

***The potential coal quantity is conceptual in nature as there has been insufficient exploration to date to define a Coal Resource and it is uncertain if further exploration will result in the determination of a Coal Resource*

The coal currently mined from Lobe B at Leigh Creek exhibits the following specifications;

- moisture 18% to 31%;
- ash 7% to 13%;
- volatile matter 21% to 33%;
- fixed carbon 30% to 35%;
- total sulphur 0.5% to 0.7%;
- calorific value around 3,600 to 5,400 kcal/kg.

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The coal quality of the Lobe B Leigh Creek coal is similar to the two previous successful ISG trials completed by Carbon Energy Pty Ltd and Linc Energy Pty Ltd in Queensland. The two important parameters for ISG in those trials being moisture (14%) and volatile matter (33%) match Leigh Creek coal.

Utilising a coal to gas conversion formula of 14Gj/t, see Section 3.6.5, an estimate of gas-in-place volumes at the Leigh Creek Energy Project could range from **33,000 MMm^3** to **102,000 MMm^3** for the Main seam with a further **23,000 MMm^3** to **33,000 MMm^3** for the lower seam. The combined total gas-in-place could range from **56,000 MMm^3** to **135,000 MMm^3**. It is important to recognize that these are potential volumes of gas-in-place and do not represent sales gas volumes.

Based on the available information, data, pilot project studies undertaken in Queensland and examples of projects that have produced syngas from coal deposits, AMC has concluded that the production of syngas utilising the ISG technology is feasible and that the remaining coal seams at Leigh Creek Lobe B may represent a potential source for the production of syngas. In order to evaluate the potential to produce syngas from these coal seams we recommend that Marathon continue it's planning and approval processes for an ISG stage 1 operation (single generator) at Leigh Creek.

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1.0. Scope

Marathon Resources Limited (MTN) engaged Australian Mineral Consultants to provide an independent review of the proposed Leigh Creek Energy Project (LCEP) within Petroleum Exploration Lease (PEL 650) held by ARP TriEnergy Pty Ltd. The Scope of review was to include:

- Historical Review of Mining and Datasets;
- Review Geology, Hydrogeology and Structure;
- Compatibility for ISG;
- Exploration; and
- Resource Modelling and Estimation.

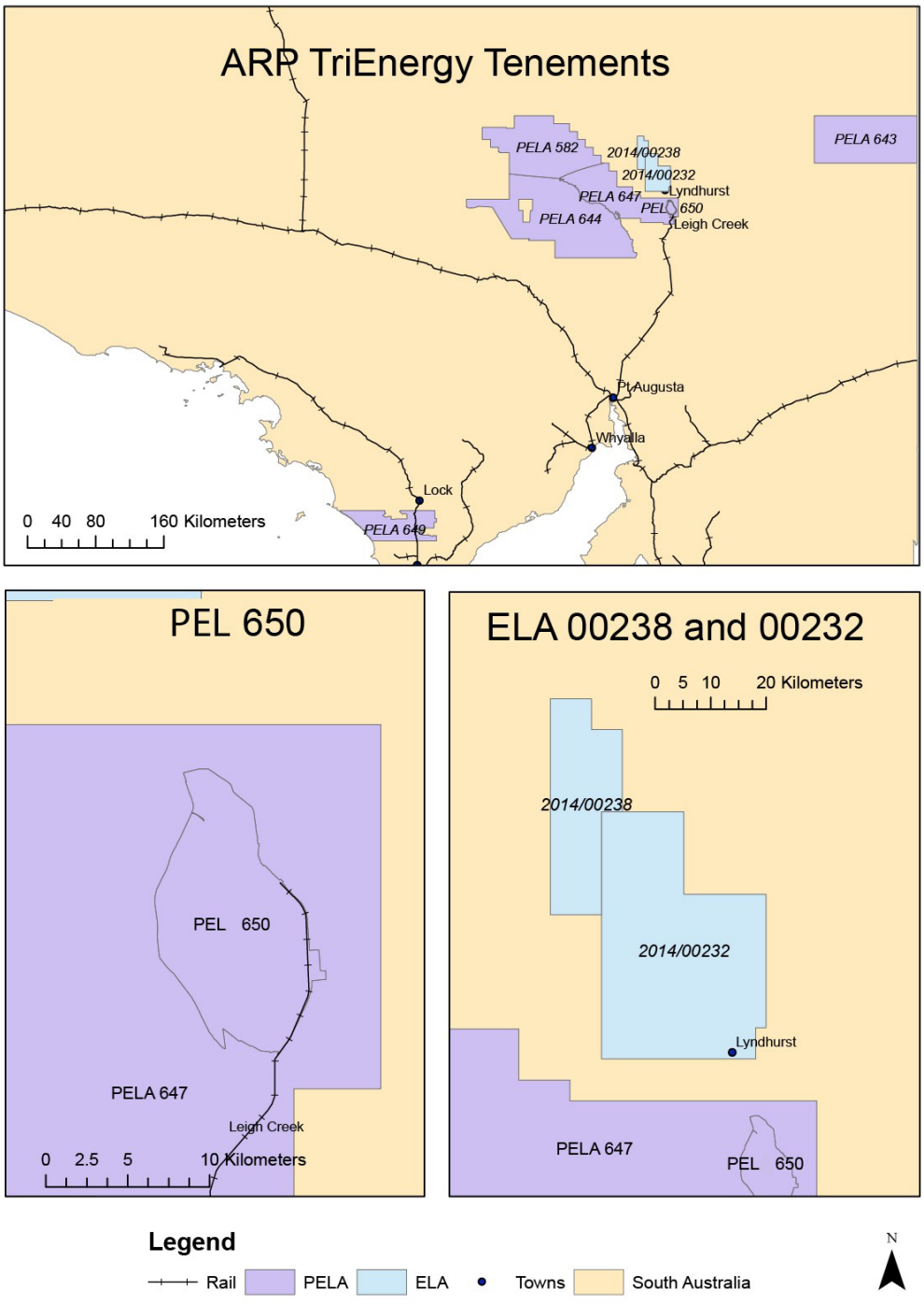
1.1. Description and Location of Leigh Creek Energy Project

ARP TriEnergy Pty Ltd currently has one granted PEL, five PEL's and two EL's under application, Table 1, Figure 1. They are; PEL650, PELA643, PELA582, PEL644, PELA649, PELA647, ELA232 and ELA238. These licences are to be included in the merger with Marathon and will remain in ARP Tri Energy's name which in turn will become a wholly owned subsidiary of Marathon. In accordance to the VALMIN code clause 67 a detailed status table for each licence is in Appendix 4. The tenements to be included in the merger are;

Table 1. ARP TriEnergy Tenements

TENEMENT	LOCATION	SURFACE AREA (sq km)	SURFACE AREA (ha)	MINERAL RIGHTS HOLDER	STATUS OF MINERAL RIGHT
PEL 650	LEIGH CREEK	93.4	9340	ARP Tri- Energy Pty Ltd 100%	Granted 18 November 2014
ELA 232	LEIGH CREEK	942	94200	ARP Tri- Energy Pty Ltd 100%	Under application awaiting grant
ELA 238	LEIGH CREEK	351	35100	ARP Tri- Energy Pty Ltd 100%	Under application awaiting grant
PELA 643	CALLABONNA	5,813.49	581,349	ARP Tri- Energy Pty Ltd 100%	Under application awaiting grant
PELA 582	FINNISS SPRINGS	5,677.12	567,712	ARP Tri- Energy Pty Ltd 100%	Under application awaiting grant
PELA 647	LEIGH CREEK	3,841.86	384,186	ARP Tri- Energy Pty Ltd 100%	Under application awaiting grant
PELA 644	ROXBY DOWNS	8,932.98	893,298	ARP Tri- Energy Pty Ltd 100%	Under application awaiting grant
PELA 649	OAKDALE	2,309.78	230,978	ARP Tri- Energy Pty Ltd 100%	Under application awaiting grant
TOTAL		27,961.63	2,796,163		

Figure 1. ARP TriEnergy Pty Ltd PELA's



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PELA 582 was originally applied for in October 2011 by Nicavid Consulting and Design Pty Ltd, which was acquired by ARP in January 2012 in a 'friendly' related party transaction. Nicavid subsequently changed its company name on the 22 February 2012 to ARP TriEnergy Pty Ltd. On 28 May 2014 the size of PELA 582 was increased almost 8 fold from 1,137km2 to 8,688km2, to the west and north up to the Arckaringa Basin. On the 4 September 2014 this PELA was divided to make up PELA 582 (NW portion) and PELA 647 (E portion). The LCEP was within PELA 647 prior to the granting of PEL 650.

The remaining PELA 582 is situated to the north of PELA 647 and its northern extent is in the Arckaringa Basin, which has the potential for shale oil plays. The southern area of PELA 582 is in the Arrowie Basin, which has the potential for shale gas plays and the possibility of deep coal.

The ground is located over the Arrowie Basin, which shares the same geology as PELA 582 and PELA 647 and has the prospect of deep coal.

PELA 644 was acquired because of its proximity to PELA 582 Olympic Dam and Prominent Hill. The ground is located over the Arrowie Basin, which shares the same geology as PELA 582 and PELA 647, and has the prospect of deep coal.

PELA 643 is located on the southern extent of the Cooper basin, with the prospect of deep Permian Coal extending south from the Cooper.

PELA 649 is located over the southern extent of the Polda Basin on the Eyre Peninsula. The Polda Basin is known to contain deep coal in the Lock coal deposit. This PELA was acquired for because of the possibility of the deep coal extending further to the south.

ELA 232 and 238 are located to the north of the Leigh Creek Coalfield. The EL's have exploration potential to expand the current resource of coal. Analysis of magnetic and gravity data against drilling data has highlighted exploration targets to the south of Farina.

This report focuses upon ARP Tri Energy's Leigh Creek Energy Project within PEL 650 which encompasses the Leigh Creek coal mine and its' deeper coal potential for "In Situ Gasification" (ISG) below the life of mine economic 200m open cut level. An exploration target range has been determined from analysis of drill hole data held on the South Australian Resources Information Geoserver (SARIG). Over 1000 drill exploration holes have been completed in and around the open cut mine since its operation. Planned appraisal drilling will provide deep coal seam data for a JORC compliant resource which in turn can be converted into an estimated in-situ gas volume.

The Leigh Creek open cut mine is located about 560km north of Adelaide. It produces a low grade black coal and is part of Alinta Energy's Flinders Operations division. Coal occurs within five small discrete basins spread over 20 km which make up the Coalfield. These five basins are the remnants of a broader sedimentary sequence containing Late Triassic age coal seams (220 million years). A full description of coal resources is presented in Section 2.

Leigh Creek is responsible for supplying coal exclusively to Alinta Energy's Port Augusta power stations. The mine produces approximately 1.5 to 2.5 Million tonnes per annum. The coal is transported 250km south by train to Port Augusta. The train service is provided under contract by Pacific National.

1.2. Topography and Climate

The Leigh Creek area is relatively flat and is situated between Lake Torrens (salt lake) 40km to the west and the Flinders Ranges to the southeast. The environment is arid with ephemeral creeks (only flow during rain events), which run westwards. The surrounding land has few tall trees and is only suitable for low-density grazing, on native scrub. The Aroona Dam located south west of the Leigh Creek township captures storm runoff for drinking water and other potable water needs of the town. Located between the township of Leigh Creek and the coal mine is the township of Copley. The coalmine has large areas of land covered in waste dumps from the removal of overburden.

Climate data for Leigh Creek, Table 2 shows summer temperatures ranging low to mid 30's with recorded highs above 40 Celsius between October and March. Minimum average temperatures during winter are between 17 and 19 degrees Celsius, however recorded lows of below zero temperatures occur between May and August. Rainfall is considered sporadic and relatively evenly spread on a monthly basis, normally a result of isolated thunder storms rather than wide spread frontal systems. The average precipitation for a year is 49.7 days for a total annual rainfall of 228.5mm.

Table 2 - Climate data for Leigh Creek Airport

Month	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Record high °C (°F)	46.3 (115.3)	45.4 (113.7)	41.5 (106.7)	37.3 (99.1)	30.3 (86.5)	27.7 (81.9)	26.3 (79.3)	32.0 (89.6)	37.7 (99.9)	41.1 (106)	45.2 (113.4)	45.4 (113.7)	46.3 (115.3)
Average high °C (°F)	35.5 (95.9)	34.5 (94.1)	31.1 (88)	26.2 (79.2)	20.9 (69.6)	17.0 (62.6)	16.6 (61.9)	19.1 (66.4)	23.2 (73.8)	26.7 (80.1)	30.5 (86.9)	33.0 (91.4)	26.2 (79.2)
Average low °C (°F)	20.7 (69.3)	20.4 (68.7)	17.3 (63.1)	12.9 (55.2)	8.7 (47.7)	5.4 (41.7)	4.7 (40.5)	6.1 (43)	9.3 (48.7)	12.4 (54.3)	16.1 (61)	18.6 (65.5)	12.7 (54.9)
Record low °C (°F)	11.0 (51.8)	10.5 (50.9)	6.7 (44.1)	2.2 (36)	−0.7 (30.7)	−1.7 (28.9)	−2.4 (27.7)	−1.2 (29.8)	0.9 (33.6)	2.5 (36.5)	6.1 (43)	8.6 (47.5)	−2.4 (27.7)
Precipitation mm (inches)	20.2 (0.795)	28.7 (1.13)	20.3 (0.799)	13.1 (0.516)	16.1 (0.634)	17.2 (0.677)	17.4 (0.685)	15.6 (0.614)	18.3 (0.72)	18.6 (0.732)	19.0 (0.748)	24.2 (0.953)	228.5 (8.996)
Avg. precipitation days	3.4	3.0	2.7	2.6	4.0	5.1	6.6	4.8	4.8	4.4	4.7	4.1	49.7

Source: Wikipedia and Bureau of Meteorology 2014

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1.3. History of Leigh Creek Coal

John Henry Reid discovered coal-bearing shale in 1888 during the sinking of a railway dam in the Leigh Creek area (Henry Brown, Government Geologist confirmed the find in his visit to Leigh's Creek in February 1889 - Rob C Wilton, Manager, NRG Flinders). This discovery led to a geological examination of the area by a government geologist and the establishment of underground workings. No 1 shaft, sunk by the Leigh Creek Coal Mining Company, was abandoned on striking a heavy flow of water. A new shaft was sunk in 1892 but only small quantities of coal were extracted for experimental purposes and operations ceased in 1894.

It was not until 1940 when coal supplies became critically low because of the Second World War that Leigh Creek coal was considered again. The deposits seemed extensive and extracting the coal by open cut methods was considered feasible. Exploratory boring started in 1941 and plans were made to develop the first open cut mine. Excavation started in 1943 under the control of the Engineering & Water Supply Department. It was apparent that the electricity supply industry would be the largest user of Leigh Creek coal so control of the coalfield was transferred to the Electricity Trust of South Australia (ETSA) in 1948.

ETSA ordered boilers capable of burning Leigh Creek coal for the Osborne Power Station near Port Adelaide and, after thorough investigations, decided to establish a new power station at Port Augusta to burn Leigh Creek coal exclusively. The combined A and B plants, with a total generating capacity of 330 megawatts, was named the Thomas Playford Station in recognition of the then South Australian Premier, Sir Thomas Playford.

In the mid 1970s it was decided to build a 500 megawatt station at Port Augusta, called the Northern Power Station. That decision meant enlarging the coalfield using new methods to extract deeper coal, increasing production, building a retention dam to prevent possible flooding of the field and diverting the main highway around the coalfield. The Northern Power Station, alongside Playford A and B, was commissioned in 1985. Because the existing town was located within the coal basin, a new Leigh Creek town was built south of the coalfield, becoming occupied in 1980.

The use of large excavating machines and efficient mining equipment at Leigh Creek, together with the rebuilding of a railway line between Leigh Creek and Port Augusta by the Commonwealth Railways (later Australian National, now Pacific National), resulted in economic production and delivery of coal to the power station. Pacific National currently provides the coal freight service to Flinders Power.

After ETSA was privatised in 1999, the power stations changed hands several times. They became affiliated with Alinta Energy in 2007 when former owners, Babcock & Brown Power, acquired Alinta. The name officially changed in 2010. The coalfield at Leigh Creek currently produces approximately 1.5 to 2.0 million tonnes a year of coal which is entirely consumed by the power stations at Port Augusta which produce up to 40 per cent of the electricity generated in South Australia.

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1.4. Current Operating Legislation

The Leigh Creek mine was established in 1946 under a Crown Agreement issued by the South Australian Government to the then ETSA, rather than under a conventional Mining Lease issued under the Mining Act. That Special Agreement covering the mine development stipulated that a production royalty would be paid to the State of South Australia at a rate of one shilling per ton.

The royalty remained at a low rate for a number of decades, but as ETSA was a State Government-owned entity, there was little incentive to amend the rate. By June 1981 when it was clear that the historic low fixed rate no longer produced an adequate return to the community, ETSA and the State Government mutually agreed to assess the royalty liability on production from Leigh Creek "as if the royalty provisions in the Mining Act, in fact, applied". From July 1981 until the end of June 1988, royalty payable by the Leigh Creek mine on coal was assessed at a rate of 2.5% of value of production, which equated to forty cents per tonne.

Alinta are operating within an exemption from the Mining Act 1971. ARP TriEnergy will be operating under the Petroleum and Geothermal Energy Act 2000 and has a Petroleum Exploration Licence Application, PELA 647 that extends over the entire Leigh Creek coal area and surrounds PEL 650. ARP TriEnergy Pty Ltd's explanation governing legislation is presented in Appendix 1.

2.0. Geological Setting for the LCEP

Five small discrete basins spread over 20 km make up the Leigh Creek Coalfield, Figure 2. The main basins are known as Copley Basin, Telford Basin, Lobe C and Lobe D. These are remnants of a broader sedimentary sequence containing Late Triassic age coal seams (220 million years). In the early to mid 1980's the University of Adelaide, Department of Mines SA, Electricity Trust SA, Golder Associates *et al* completed investigations into the viability of In Situ Gasification (ISG) within the main and lower seams of the Telford Basin Lobe B.

Lobe B is the largest of the areas currently being mined to an economic cut off of 200m utilising open cut methods. A significant resource below that level has been determined to be feasible for ISG. ARP TriEnergy is currently going through the permitting stages to obtain approval for an ISG stage 1 (single generator) production.

2.1. Geological Setting

The geological setting, sedimentology and stratigraphy is best described by Murray-Wallace (1983). He said accumulation of the Leigh Creek coal measures occurred within a relatively shallow intramontane basin during the Upper Triassic (Parkin 1953, Johns 1973, Townsend 1975). According to Johns (1973) the separate lobes may represent remnants of a more ubiquitous sedimentary sequence deposited in a freshwater fluvio-lacustrine environment.

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Evidence for a freshwater depositional environment is supported by the presence of Unio eyrensis, a freshwater mussel occurring in some of the more lithified, ferruginous-rich sandy-shale beds within the Lower Series overburden. Leighiscus hillsi, a comparatively rare species of fish, is also documented to occur within these sediments (Coats, 1973). Preliminary analysis of plant spores (Playford and Dettmann, 1965) has delimited an Upper Triassic age (Rhaetic) for the basin sediments, although later work (Hos, 1977, 1978) showed that the uppermost part may be Jurassic.

The Triass-Jurassic sequence is preserved within folded Adelaidean rocks resulting from a predominantly brittle deformational event. This comparatively localized example of brittle with associated ductile deformation is likely to have occurred during Early Jurassic times. This is elaborated in further in Section 2.4.

Adelaidean sediments locally representing basement to the unconformably overlying Triassic sequence were deposited within the Adelaide 'Geosyncline'.

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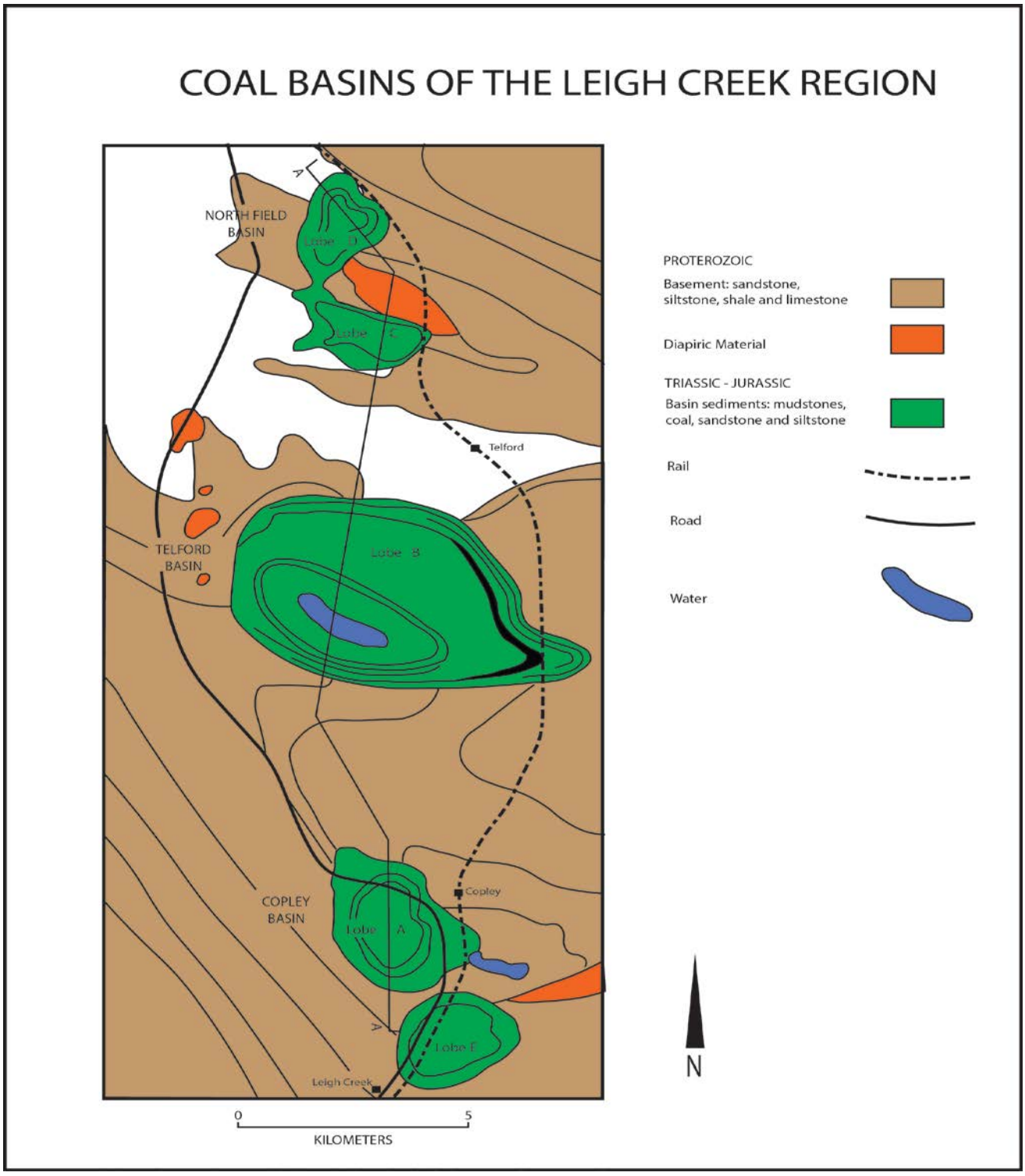

Figure 2: Coal Basins of the Leigh Creek Region

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2.2. Sedimentology

Deposition of the Triass-Jurassic sequence in Telford Basin occurred under freshwater conditions within an intramontane basin. The presence of the coal seams and Unio eyrensis indicates that the region was non-marine.

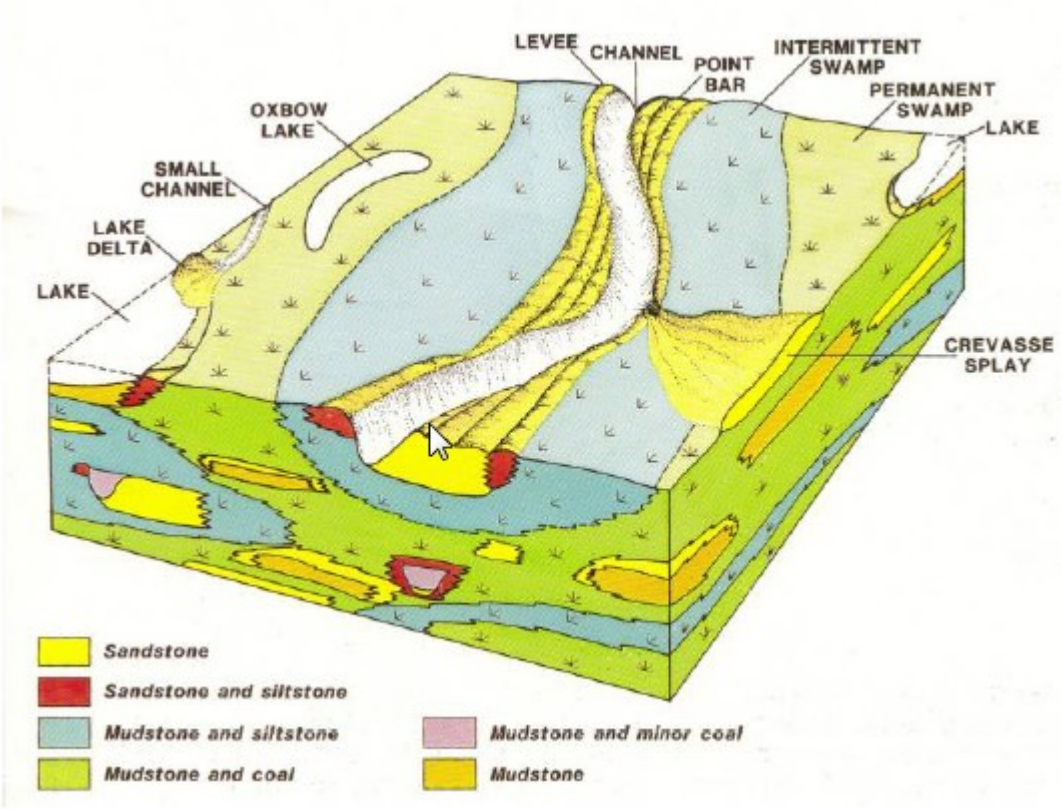
During Upper Triassic times the basin was a fluvio-lacustrine environment (Parkin, 1953; Johns, 1972, 1973; Johns and Townsend, 1975; Townsend, 1978). In this environment meandering streams flowed across broad swampy floodplains which from time to time were the sites of temporary shallow lakes. The shifting of the stream (and hence deposition and erosion by the stream) across the floodplain, adds to the complexity of lithofacies distribution. Thus a clear understanding of the sedimentary features that characterize this type of complex environment is invaluable in establishing the feasibility for ISG.

One approach to developing an understanding of the sedimentary environment is to consider it in the context of a geological model. Geological models are "idealized simplifications set up to aid our understanding of complex natural phenomena and processes" (Reading (ed.). 1978 p. 9). A model describing a fluvio-lacustrine environment should be able to account for its variability, and to be equally well applied to a similar depositional environment elsewhere.

In connection with lacustrine environments, however, it should be stressed that such descriptions at best are generalizations. This is due to the highly variable character of the resultant deposits and because contemporary research on ancient lake sediments is in its infancy.

In fluvio-lacustrine environments coal forms in the poorly drained swamps and shallow lakes occurring on the floodplains bordering the river (Figure 2).

Figure 2. Typical Palaeo-Channel Illustrating Patterns of Sedimentation and Coal Formation



Proximal sands occur within the meander belt preserved as overbank deposits and crevasse splays and above the basal conglomerate of the point bar deposits. Crevasse splays develop when coarser channel sediment is introduced to the floodplain by rupture (crevassing) of a levee during flood. These deposits form fans or tongues of sand elongated away from a crevasse cut in the river levee. The sands thin distally from the crevasse and have cross-lamination directions divergent from the adjacent channel sands. All the courser sediments can later give rise to aquifers. In contrast, silts and clays deposited beyond the crevasse splays may eventually transgress the swamps producing confining materials to the underlying coals.

The meander belt shifts its position on the flood plain through time, thus eventually leading to a complex suite of sediments that are highly variable both laterally and vertically. In humid settings the floodplain may never fully dry out and remain a back swamp or even a lake. Under these conditions vegetation dominates the flood plain and leads to the development of peats.

Given time, heat and pressure, the peats will be transformed to coal. This change is not sudden and involves some tens of millions of years. Coal, an organic substance primarily containing carbon and

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varying proportions of hydrogen, oxygen, nitrogen and sulphur, represents the fossilized remains of land vegetation.

The first stage of coalification is the formation of peat. This forms as a result of the compression and gradual decomposition of vegetative material, under additional layers of plant life. This change is represented by;

$6C_6H_{10}O_5$	=	$7C0_2$	+	$3CH_4$	+	$14H_20$	+	$C_{26}H_{20}O_2$
(cellulose)				(methane)				(peat)

Peat, the most primitive form of coal, contains approximately 90 percent water and decayed plant material.

The quality and usefulness of coal is largely determined by the pressure and heat exerted upon it. Thus neither the age nor the depth of a coal necessarily indicates its rank in terms of utility. As the higher the proportion of carbon to moisture in coal determines its heat value, a coal that has experienced greatest compression and condensation is ranked the highest. The various grades of coal listed in order of increasing rank include lignite, sub-bituminous, bituminous and anthracite.

The implications to ISG of such a model include:

- in any one stratum, permeability is highest near the palaeochannel (point bar and levee bank) deposits and decreases away from these;
- thinnest coal is found in the palaeochannel area and separated from permeable aquifers by strata having poor confinement. Water ingress in this zone has a high probability of being detrimental to successful ISG; and
- further away from the palaeochannels, the coal thickens and the confining sediments exhibit progressively lower permeability. Here water influx problems are minimized due to more effective confinement and isolation of coal seams and thus the surrounding materials are less capable of transmitting significant quantities of water or product gas. This is the most favourable site for ISG.

The majority of sediments in Telford Basin are finely laminated but appear massive (non-bedded) in outcrop. The relatively undisturbed nature of these sediments and the presence of clam shells and fish skeletons, indicates they were deposited below wave base, in shallow lakes, on floodplains that were regularly inundated with water. The relatively thick bedded and laterally persistent coal measures lend support to this contention. Occasional thin lenses of symmetrically ripple marked medium-fine grained sandstones occurring in the Main Series overburden, however, and polygonal mudcracks and gypsum in hardbars indicates shallowing in water depth with episodic exposure to subaerial conditions. Since the majority of the sediments are massive and laterally persistent, the problems resulting from rapid lensing or facies changes would not likely arise during ISG at Leigh Creek.

Although the origin of the sediments is not entirely clear, Townsend (1978, pers, comm., 1983) suggests that a likely provenance for the sequence in Telford Basin is from the southwest, where Adelaidean sediments formerly provided the higher relief. This contention is based on the thinning of sandstones distally from the suggested source area. Proximal sands are suggested to be represented by thicker units.

It should be pointed out, however, that during Upper Triassic times, higher relief also occurred to the northwest and this could equally represent a source area. This would be expected as the Telford Basin is suggested to represent an intramontane basin. Moreover thinning of sands distally does not provide compelling evidence for a source area. Furthermore, the argument is circular as Cainozoic denudation has removed most of the sedimentary evidence upon which confident understanding of provenance may be based.

2.2.1. 'Hardbars': Siderite Rich Siltstone

'Hardbar' is a generic term used locally to describe any lithology intercepted during drilling or in mine faces that are significantly harder than adjacent strata. The hardbars observed in the Telford Basin assume a variety of habits and their formation remains problematic.

Within the Lower Series overburden hardbars crop out as concretionary nodules, and continue along strike over considerable distances (> 1 km). Marked variability in the size of concretions is apparent with the largest observed attaining the dimensions of 1400 x 700 x 350 mm. The majority of the concretions however, are smaller with long axes in the order of 150 - 250 mm. The hardbars predominantly occur in discrete layers regularly intercalated with shales and occasional sands within the Lower and Main series overburden.

In the southern portion of the Telford Basin the concretionary nodules crop out at regular intervals (every 2- 4 m). Their resistance to denudation has resulted in the higher relief in parts of the basin, as evidenced by the hogbacks and cuestas they form.

Exposed at depth within the mining pits of the Main Series overburden, the hardbars are massive. Here they assume a characteristic rectangular shape and contain fine grained pyrite (iron sulphide) and siderite (iron oxide) within a silty matrix.

Coffey et al. (1978) suggest that the hardbars represent palaeosols, but a two-stage mechanism involving the interaction of primary sedimentary features with epidiagenetic activity is preferred. In this context subsurface initiation of weathering within a vadose zone can account for the concretionary features. The concretions are likely to form by similar processes responsible for spheroidally weathered granite tors.

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The first stage in their formation involves the initiation of weathering along joints, resulting in the transition from an essentially rectangular to a spheroidal shape. The second stage involves their exposure to subaerial conditions by denudation. Although this is termed a two stage process, in reality the processes occur concurrently.

Although concern is later expressed regarding the competence of the overburden lithologies, the 'hardbars' may counteract this problem. This will be largely dependent however, on the lateral persistence of hardbars.

2.3. Stratigraphy

The general stratigraphy of the Telford Basin is outlined by Parkin (1953), Playford and Dettmann (1965), Johns (1972, 1973), Johns and Townsend (1975), Townsend (1978), Coffey (1978) and Kwitko et al. (1995), Figure 3.

The Triassic sequence unconformably overlies Precambrian siltstones and limestones. These were deposited during Adelaidean times within the Adelaide Geosyncline, and represent the Umberatana Group (Figure 3). This represents basement to the Triassic sequence and is usually encountered in the deeper boreholes.

The upper part of the folded basement siltstones and limestones are strongly weathered. The depth to the weathering front ranges between 10 and 30 metres below the unconformity surface (Coffey et al. 1978). The siltstones display a pronounced fissility and have a characteristic pale grey-green colour, and consist predominantly of silt-sized particles. However, numerous sand-sized particles with occasional well lithified nodules of silica or dolomite occur within the sequence.

The limestones are generally grey, laminated and contain silt-sized impurities. Below the weathering front the samples tested by Coffey have high strength ranges.

Resting directly above the unconformity is a succession of shales and mudstones followed by the Lower Series Coal seam (LC).

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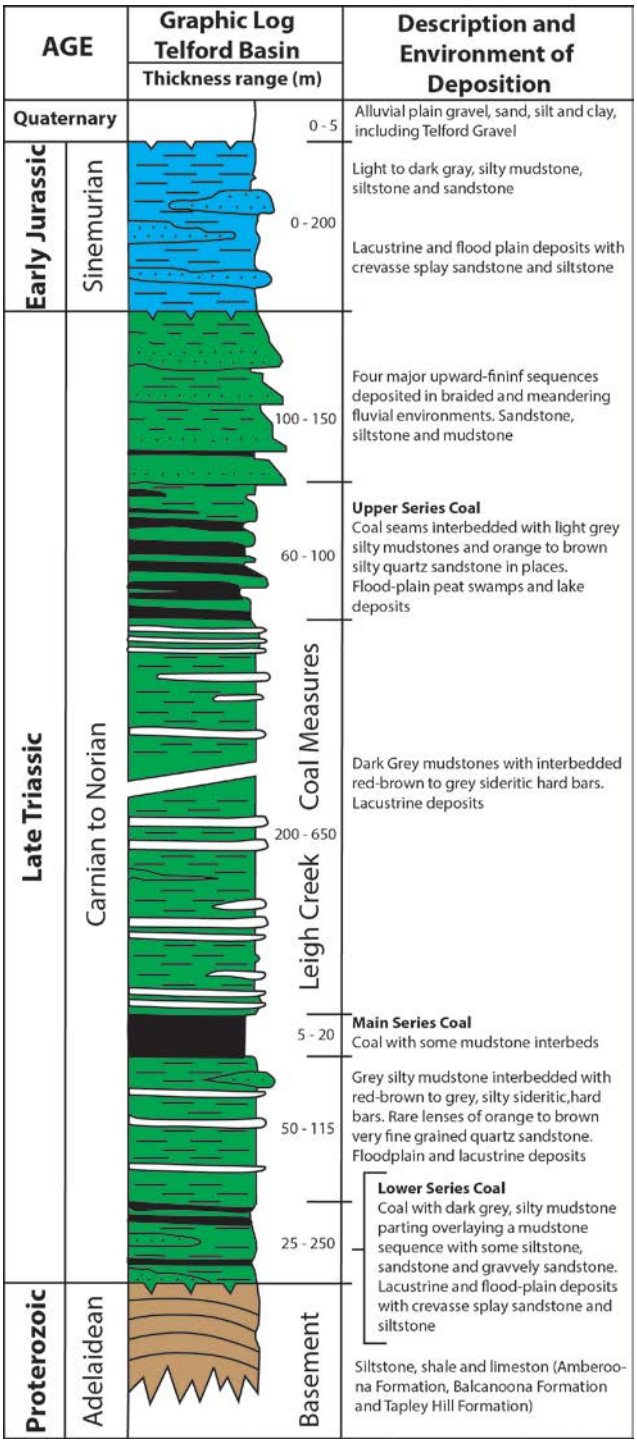

Figure 3. Stratigraphy of the Leigh Creek Region (after G. Kwitco 2014)

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2.3.1. Lower Series Coal (LC)

This unit comprises a succession of thin coal seams (up to 8 m individual thickness) intercalated with carbonaceous shales, and separated by beds and mudstone. Siltstone as well as occasional lenses of sandstone frequently interdigitate. Numerous 'hardbars' occur within this unit.

2.3.2. Lower Series Overburden (LO)

Overlying the Lower Series is a succession of dark grey to black mudstones and siltstones, containing a persistent sequence of 'hardbars'. These shales and siltstones are slightly more fissile than those in the Main and Upper Series overburden. This enables the rock to cleave, revealing a variety of flora and fauna viz., broad leaf plants including Classopteris sp., Dicroidium sp. and freshwater mussels Unio eyrenis. Rare fish Leighiscus hi11si has also been identified in LO (Playford and Dettmann, 1965).

2.3.3. Main Series Coal (MC)

The Main Series generally consist of a thick seam of coal and carbonaceous shale with minor shale partings. Coal seam thickness varies from 6 to 18 m. No hardbars are identified in this unit.

Seams may not be laterally persistent due to minor faulting post dating deposition, growth faulting and occasional facies changes. Moreover, as demonstrated by the 1978 drilling, the Main Seam frequently splits into two or more beds separated by mudstone, siltstone and carbonaceous shale partings. These partings where they exist tend to be minor and would not affect ISG of the Main Series.

2.3.4. Main Series Overburden (MO)

Resting above the Main Series Coal is a succession of dark grey mudstones and siltstones, characterized by lenses of rectangular shaped massive hardbars containing finely disseminated pyrite and its weathering products haematite and limonite as well as siderite. They are ubiquitous and frequently lens out. Sometimes they resemble boudinage structures. Their average thickness is in the order of 150 - 200 mm.

Thin (200 x 2,000 mm) lenses of symmetrically ripple marked fine-medium grained sandstones are identified in the Main Series overburden. This, in association with polygonally mudcracked 'hardbars' (G. Kwitko pers. comm., 1983), suggests subaqueous - subaerial deposition, and lends support to the notion of a fluvio-lacustrine environment. Gypsum within some of the hardbars indicates episodic exposure to subaerial conditions.

In the northern half of the basin the Main Series overburden attains a thickness of approximately 600 metres. Progressive thinning however, occurs and overburden thickness of only 120 m is observed on the southern limb of the basin. This characterises the asymmetry of the basin.

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2.3.5. Upper Series Coals (UC)

Next in the succession are the Upper Series Coals with basal clays.

The Upper Series coal measures consist of 25 m of coal in approximately 10 seams in 80 m of carbonaceous mudstones and siltstones, which are essentially free of hardbars. Although these coals were considered unfaulted, recent work (K. Slee pers comm., 1983) suggests that low angle thrust faults parallel to bedding may be present. According to Coffey et al. (1978) defect spacing is wide to extremely wide. The most common defects are bedding plane joints.

2.3.6. Upper Series Overburden (UO)

Resting directly above the Upper Series coals is a sequence of poorly lithified sandstones interbedded with siltstones. The sandstones are sufficiently charged with groundwater to present a problem in ISG of part of the Upper Series and ARP TriEnergy is not intending to contemplate ISG of the Upper Series coal seams. Few hardbars occur in this sequence. Coffey et al (1978) term this Sand unit Upper Series Overburden 1 (UOl). Directly above the sands is a sequence of siltstones and mudstones with occasional sandstones. This sub-unit is described as Upper Series Overburden 2 (U02).

2.3.7. Quaternary Surface Cover (QSC)

The Mesozoic sequence is unconformably overlain by a thin mantle of Cainozoic sediments. This surface cover includes:

(a) unconsolidated aeolian surface silts and fine, well sorted sands;

(b) alluvial sands and gravel;

(c) an occasionally well lithified poorly sorted conglomerate, locally termed Telford Gravel;

(d) extremely weathered rocks including shale and coal derived from the underlying Triassic sequence, and;

(e) a resistant gypsum at some localities. The gypsum predominantly occurs directly beneath the conglomerate, although a genetic relationship is not inferred. According to Coffey et al (1978) in view of the generally shallow depth of Quaternary cover (i.e., generally less than 10 m) in relation to proposed depths of mining, no systematic study has been conducted to ascertain its spatial distribution, nature, or precise depth throughout the basin. However an inferred distribution of the Telford Gravels is described by Johns and Townsend (1975), and numerous unpublished ETSA studies.

The surface soils are characterised by their high permeability and often contain groundwater. The Triassic age for the series of coals and associated overburden is also based on the occurrence of a Jurassic outlier preserved in the form of two isolated mesas near Copley. Here, Triassic strata are unconformably overlain by an outlier of essentially flat lying Upper Jurassic tabular cross-stratified sandstones (Parkin 1953, Johns 1973, 1978).

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2.4. Structure

The Telford Basin is an asymmetrically shaped synclinal basin of Upper Triass-Jurassic age, Figure 4. It is an example of a large scale gentle fold, as the interlimb angle falls between 120° and 180°. The basin covers an area of approximately 25 km^2. The asymmetry of the basin is likely to be controlled by a major fault which strikes along the southern perimeter.

Deformation appears to have been predominantly brittle with minor ductile deformation being observed at only one locality in the mine. For convenience two successive deformations are recognized: Dl and D2. The first post-dates deposition of Lower (LC) and Main (MC) Series coals and associated overburden (Townsend, 1978). During this event a series of normal faults, now commonly arranged in an en echelon pattern, were formed although a variety of other orientations are also found. Many of the fault planes are sub-parallel to bedding, whilst others truncate bedding at angles greater than 80°. This series of faults have the greatest displacement.

Associated with the series of normal faults are smaller scale, randomly oriented, parasitic faults. The parasitic faults also vary greatly in style, and reverse, low angle thrust, conjugate and occasional pivotal faults are recognised. The faults often give rise to mesocopic graben and horst structures, with displacement equal to or greater than seam thickness. In these localities the lateral continuity of the coal seams is greatly reduced and thus would present a problem for ISG. It is possible, however, that these fault bounded blocks occur on a larger scale at greater depths and thus blocks of coal suitable for ISG may yet be delineated by future studies, when more accurate data are available.

The first deformation D1 involving heterogeneous simple shear is most probably a response to localised downwarping of the underlying Precambrian strata.

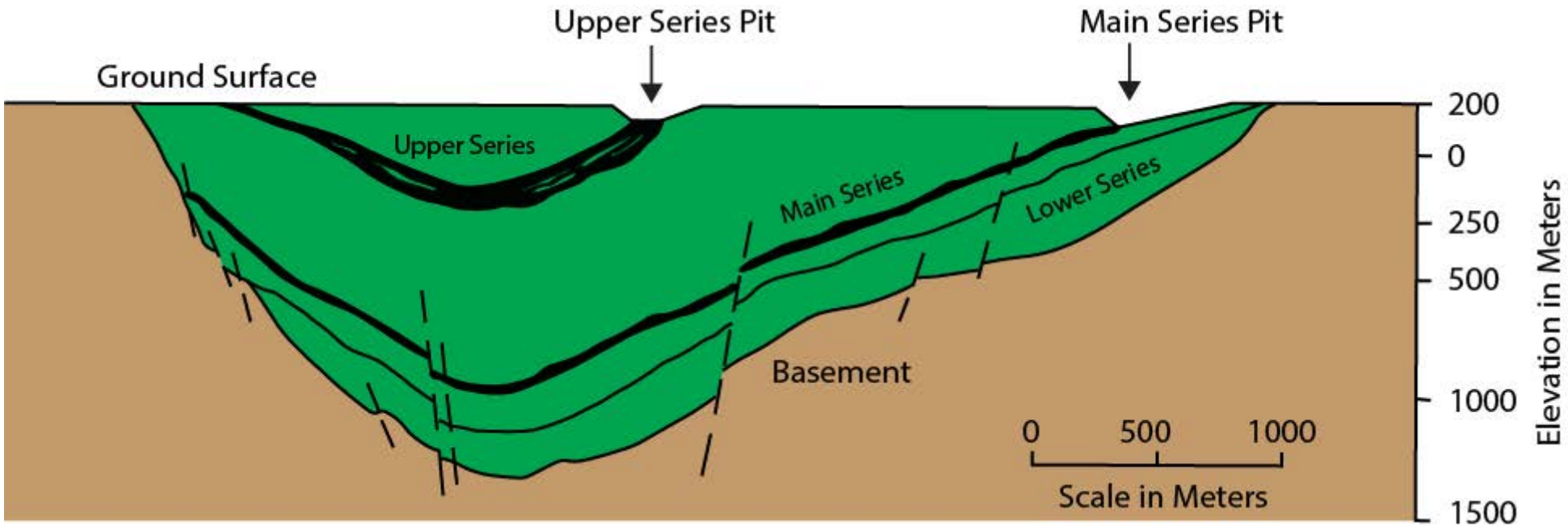

Figure 4: Cross Section of Leigh Creek Coal Seams

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A second deformation D2 involved the downwarping of the Upper Series (UC) coals and overburden (UO). Whether D2 is a syn-sedimentary feature or post-dates deposition of (UC) remains unknown. The Upper Series is free of faults, although recent work (K. Sleepers. comm., 1983) indicates that low angle thrusts which are essentially parallel to bedding may be present.

The nature of existing data presents problems in interpreting the details of structure of coal seam continuity at depths below 200 - 300 m. This is due to most previous drilling activity being restricted to the margin of the basin where more accessible coals occur. Previous investigations, however, suggested that the margin of the basin is more faulted than the deeper parts (Johns, 1972; Johns and Townsend, 1975; Townsend, 1978). Although this would be expected as a natural response of strain distribution within folded strata (compression in the troughs of synclines and tension at the crests anticlines), caution must be exercised in stating that the trough of Telford Basin is relatively free of faults.

This is especially so in view of the problems encountered with data collection. The 1978 seismic traverses are a case in point. Problems in transmission of shock waves through the mantle of Cainozoic sediments and regolith of Triassic strata resulted in reduced resolution at depth. Thus fault delineation became difficult at depths below 800 m. Modern day geophysics, particularly regarding 3D seismic (vs older 2D), should support greater accuracy of fault delineation.

Slickensided surfaces on the footwall of fault planes are well preserved in the open pits. Few joints have been identified with confidence that result from unloading of overburden in physically homogeneous rocks.

The presence of faults and joints has several implications for ISG viz.,

- preventing continuation of gasification if, faults have throws greater than half seam thickness
- collapse of roof materials owing to renewed movement along fault planes during burn
- escape of gases along faults and joints, and the possibility of contamination of groundwaters
- the translocation of meteoric and ground waters along fractures, extinguishing the flame front.

Further studies of the above in connection with Telford Basin are necessary (see Recommendations).

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3.0. In-Situ Coal Gasification (ISG)

3.1. ISG Background

The overall chemistry underlying coal gasification processes is well understood. Table 3 summarizes the important overall reactions participating in the coal gasification process.

The most important reaction is the gasification reaction (Reaction 1). This is the reaction that produces the syngas comprising H_2 and CO. However, as shown in the Table, this reaction is endothermic, and needs external heat input to proceed to any significant extent. This heat is provided by the two oxidation reaction, (Reactions 5 and 6). A part of the coal is combusted by these two reactions to sustain Reaction 1. In addition, a number of side reactions also take place, such as methane formation (Reactions 3 and 4) and the Boudouard reaction (Reaction 7). Additional hydrogen can be made from the syngas by Reaction 2, wherein the available steam reacts with the CO in the syngas to generate more H_2 and CO_2.

Table 3: Fundamental reactions for coal gasification (adapted from Ruprecht, et al., 1988)

Reaction		Enthalpy
(1)	Heterogeneous water-gas shift reaction $C + H_2O = H_2 + CO$	$\Delta H = +118.5$ kJ mol-1
(2)	Shift conversion $CO + H_2O = H_2 + CO_2$	$\Delta H = -42.3$ kJ mol-1
(3)	Methanation $CO + 3H_2 = CH_4 + H_2O$	$\Delta H = -206.0$ kJ mol-1
(4)	Hydrogenating gasification $C + 2H_2 = CH_4$	$\Delta H = -87.5$ kJ mol-1
(5)	Partial oxidation $C + 1/2O_2 = CO$	$\Delta H = -123.1$ kJ mol-1
(6)	Oxidation $C + O_2 = CO_2$	$\Delta H = -406.0$ kJ mol-1
(7)	Boudouard reaction $C + CO_2 = 2CO$	$\Delta H = +159.9$ kJ mol-1

3.2. Well Characteristics and Flow Path Enhancement

To facilitate flow through the injection well, combustion zone and production wells, a “link” must be created to enhance in-situ permeability of the coal seam; this is usually achieved by directional drilling. The technology of directional underground drilling advanced considerably in the 1990's as a result of developments in the oil and gas industries. The same technology is being used regularly for the de-gassing of coal seams in Australia, South Africa and the United States. For the first time, in-seam coal wells can be constructed reliably and accurately, with much less risk of failure. Furthermore, the option of constructing

gasification wells in much deeper coal seams, at over 1000 m depth, has become possible. Access to deeper coal brings advantages in terms of cavity growth, power output and environmental benefits, and the possibility of maintaining supercritical conditions for CO_2 sequestration (whereby CO_2 can remain as a liquid).

ISG operating conditions require injection well construction and materials to withstand the extreme thermal and mechanical stresses associated with ISG: high pressures and temperatures (up to 1500^{o}C), sulphidation and oxidation reactions, and subsidence of the cavity roof. Wells are usually cased with carbon or high-strength stainless steel.

Cementing of wells is done above the reaction zone to facilitate the controlled introduction of air and to prevent loss through the wellbore of gases to the surface or into overlying strata. If ISG infrastructure is subsequently used for carbon capture and sequestration (CCS) operations, well materials must also withstand the corrosion associated with carbon dioxide.

The pilot-scale operations in the U.S. and other parts of the world did not last long enough to require mechanical integrity testing (MIT) of wells. However, the Soviet experience at the commercial scale indicates that injection well life is about two to four years.

3.3. Injection Process (CRIP)

One of the most important considerations in ISG is the method used to establish a channel between the injection well and the production well. However, in many cases, the coal seam has low permeability, and other means of establishing the connection between the wells is necessary.

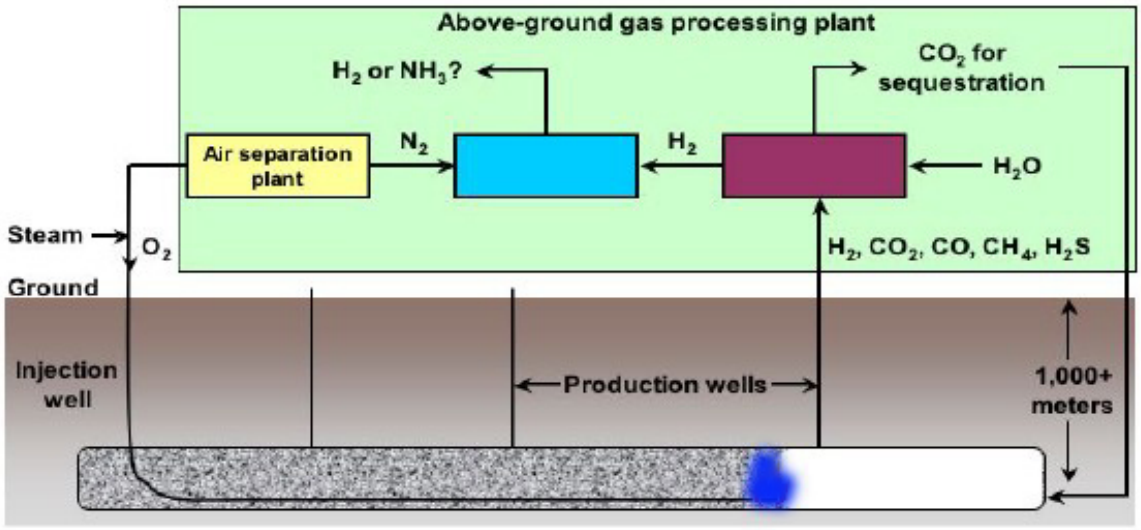
The method to be utilised at the LCEP is the Continuous Retraction Injection Point (CRIP). Successfully proven at several ISG trial sites and considered the best method for efficient production of synthetic gas from underground coal seams (Hill et al., 1983; Hill, 1986).

In the CRIP process, the production well is drilled vertically, and the injection well is drilled using directional drilling techniques so as to connect to the production well, as shown in Figure 3.1. Once the channel is established, a gasification cavity is initiated at the end of the injection well in the horizontal section of the coal seam. Once the coal near the cavity is used up, the injection point is retracted (preferably by gasifying a section of the liner) and a new gasification cavity is initiated. In this manner, a precise control over the progress of gasification is obtained, which leads to a more consistent gas composition.

The CRIP process retracts the combined steam and oxygen injection point to control the location of the combustion front. The syngas, which was more than a third hydrogen in many of the early ISG pilots, (remainder is predominately CO_2, CO, CH_4 and higher hydrocarbons) is brought to the surface and

processed to remove particulates (dust being ash and soot), CO_2, and H_2S and to convert the CO, CH_4 and higher hydrocarbons to more hydrogen.

Figure 3-1: Schematic of the CRIP Process.



Source: *Burton et al*

3.4. Surface Facilities

The product gas from ISG can be used in a variety of ways, including:

- Combustion of CH_4, CO and H_2 to create electricity.
- Extract CH_4 and manufacture H_2 into additional CH_4 for sales into natural gas pipelines.
- Extract H_2 and combine with N_2 (extracted when producing oxygen from air) to create ammonia and ammonium nitrate (fertiliser and explosives).
- Direct feed to a fuel cell that can tolerate carbon monoxide to generate low voltage electrical current, which can be stepped up and fed to a power grid;
- The gas can be "shifted" to make a mixture of hydrogen and carbon dioxide, with very low levels of carbon monoxide, and then fed to a low-temperature fuel cell to generate low voltage current;
- Used as a chemical feedstock to produce methanol or synthetic liquid fuels and a variety of other chemicals via Fischer-Tropsch processes.

Regardless of what the end use is, the gas needs to be cleaned up to make it usable. The main impurities commonly encountered in the product gas are particulates (ash and soot) and tars, and sulphur compounds, such as H_2S/COS.

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3.4.1. Removal of Particulates and Tars

ISG tends to produce fewer particulates in the production gas (Blinderman, 2002) than would be produced by burning coal, because much of the dust remains underground. For the particulates that do exit the production well at the surface, technologies for the removal of particulates are well-established. They include cyclones, bag-house filters, and electrostatic precipitators.

Tars are a mixture of larger hydrocarbon molecules which are liquids or solids at room temperature. The science of removing these is also well understood. These become a valuable by-product, all be it in small quantities.

3.4.2. Removal of Sulphur Compounds, Such as H_2S and COS

Technologies for the removal of sulphur compounds from syngas (or producer gas) are well-established. Collectively known as AGR (acid gas removal) technologies, they include absorption of the sulphur-containing compounds (mainly H_2S and COS) by solvents such as methyldiethanolamine (MDEA process), dimethylethers of polyethylene glycol (Selexol process) and methanol (Rectisol process) (Kohl and Riesenfeld, 1979). Essentially gasses containing sulphur-containing molecules are passed through a bed of substances which capture sulphur bearing molecules.

In addition, catalyst-based technologies are available for the removal of sulphur compounds using zinc oxide catalysts (Kohl and Riesenfeld, 1979).

3.4.3. Removal of Mercury and Other Volatile Metals

Coals and water in coal can contain a variety of metals in minute quantities. However these also require removal in ISG operations. There is a possibility of volatile electronegative metals, such as arsenic, mercury, and lead, present essentially in the ash, being reduced and entrained in the product gas in vapor form or as finely divided liquid droplets. If present the concentrations are likely to be extremely small (Sury, 2004). However, in the unlikely event that unacceptable concentrations of mercury and other volatile metals are encountered in the syngas exiting the production well, well-established techniques for their removal are available (Western Research Institute, 2006). It was found that activated carbon (activated charcoal) was the best medium for adsorbing mercury from the syngas. Since the scope of the investigation cited here was to remove mercury from a fluidized bed gasifier, the method used in the study was the injection of carbon particles into a stream of syngas. However, for other gasifiers, including ISG, well-established technology of fixed bed adsorption is readily available (Lund, 1971). As with sulphur removal, gasses with heavy metals (in small concentration) are passed through a filter bed, which captures and traps heavy metals for their safe removal.

3.4.4. Auxiliary Surface Facilities

A number of auxiliary surface facilities may be needed in order to make the syngas suitable for its final use. Among them are:

- gas coolers to cool the syngas down to the temperatures suitable for filters;

- filters to remove ash and tar particles.
    - As mentioned earlier, the amount of ash and tar particulates out of an ISG-production well is significantly smaller than that for a surface gasifier, however, it is unlikely to be zero, hence the need for filters. A number of standard filter technologies may be used, including baghouse filters and electrostatic precipitators;
- CO_2 removal: If the CO_2 is to be captured and sequestered, it may be advantageous to remove it from the syngas, rather than the flue gas. In this case, a number of technologies to remove the CO_2 from the syngas are available (Halmann and Steinberg, 1999).
    - CO_2 can also be used as a raw material for the manufacture of urea (fertiliser) or methanol (a chemical feedstock).

3.5. Site Selection

In Queensland 2013 the Independent Scientific Review Panel on ISG handed down its findings to Government which expanded upon Burton's et al 2010 Best Practices in ISG. It is now regarded globally with regulators that selection of an appropriate site for ISG is the single most important risk mitigation strategy and is therefore crucial to the economic and environmental viability of any ISG proponent. The site selection process should follow a structured approach that progressively analyses the characteristics of the site with the effort and expense escalating with each subsequent phase. Therefore, effort and development cost scale appropriately to reflect a site's potential. Selection of a suitable site for the operation of an ISG facility involves the investigation and consideration of the factors below:

- Target resource,
- Regulatory Environment,
- Social and community context,
- Local land use context,
- Receiving Environment,
- Geological, geomorphological and hydrological parameters, and
- Risk.

The particulars of the target resource that must be accurately assessed as part of the site selection procedure should include quality, size, geological and hydrological setting, and commercial viability of the resource. The efficiency of the combustion process and the quality of the product is partly governed by the water saturation level and hydrostatic pressure within the coal seam. The deeper the seam the less probability there will be for operational problems e.g. uncontrolled ingress of air to the combustion chamber.

As a general guide an ISG site should operate under a rigorous risk-based approach and include, at least, the following attributes:

- Coal seam at sufficient depth to ensure that any potential environmental contamination can be demonstrated to have minimal environmental consequences. With deeper coal, there are

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fewer useable aquifers and, if appropriate sealing horizons are present above the gasification depth, there is a much lower probability of materials (gas or liquid) moving to the surface.

- Deeper coal also often sits within saline (salty) water which negates any risk to fresh water resources.
- Coal seam sufficiently thick to sustain gasification with reasonable likelihood of economic viability. Thin coal gasification will result in excessive heat loss to surrounding rock strata.
- Rank of coal should be lignite to non-swelling bituminous coal.
- Hydraulic head sufficient to contain efficient gasification (depth below water table).
- Coal seam capped by impermeable and competent rock.
- Target coal located so that there is sufficient thickness between the target coal seam/measure and any valuable aquifer higher up the geological succession.
- Sufficiently distant from rivers, lakes, springs and seeps to avoid contamination should gas molecules escape the cavity.
- Absence of major faulting or intrusions in the vicinity of the site. This is dependent on the size of the cavity.
- Sufficient distance from the nearest town and/or intensive surface infrastructure, e.g. irrigation or feedlots, and areas of significant environmental value, e.g., world heritage forests or wetlands, to avoid contamination should molecules escape the cavity and to minimise impacts of odours (if any).

Murray et al (1983) identified the Telford Basin, Main Seam and Lower Seam as highly prospective for ISG. He identified knowledge gaps and recommended an extensive drilling programme be made in the areas considered potential for ISG, involving:

- geophysically logged holes with deviation surveys;
- fully and partially cored holes;
- seismic surveys;
- more detailed analysis of fault geometry and style;
- geotechnical investigations to determine the strength of roof rocks, and
- influence of groundwater.

Golder Associates et al (1985) set out to fill those data gaps by completing a geotechnical study and field investigation involving;

- Coal seam characteristics (reserves, thickness and continuity);
- Roof stability, and
- Influence of groundwater.

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3.5.1. Existing Information on Site Selection

The South Australian Department of Mines and Energy has records of the drilling at Leigh Creek since the mine's inception. Available data includes borehole logs obtained between 1950 and 2014. The early drill hole data was incomplete as it had no down hole geophysics and focused upon the shallow coal for box cut mining. The drilling in many cases was for coal assay purposes where coal was cored and sent to a laboratory for proximate analysis. South Australian Resources Information Geoserver (SARIG) holds thousands of drill holes. Proximate analyses of coal appear on many of the borehole logs, and are often used to distinguish coal from carbonaceous shale (in general being the rock layer above the Main Series coal seam.

Several seismic traverses (2D) of the basin conducted in 1978 have been reviewed. Golder Associates 1985 conducted field drilling for geotechnical and hydrological assessment. That data is also available. Golder's reported good correlation between drill holes and seismic data.

Fault plans for the Leigh Creek coal basins are also available from ETSA and the S.A. Department of Mines and Energy.

At the time of writing, no data were available regarding relative aquifer pressures throughout the sediments. Likewise very little detailed hydrogeological investigations have been conducted. Thus, data concerning aquifer recharge capacities are currently not available.

Strength tests on core or joints are documented in several geotechnical investigations (Coffey et at. 1975, 1977a, b, c, d, e. 1978a, b. 1979a, b).

The area of interest focused upon within this report and relative to site selection is based upon the field work completed by Golder Associates 1985, Figure 3.2.

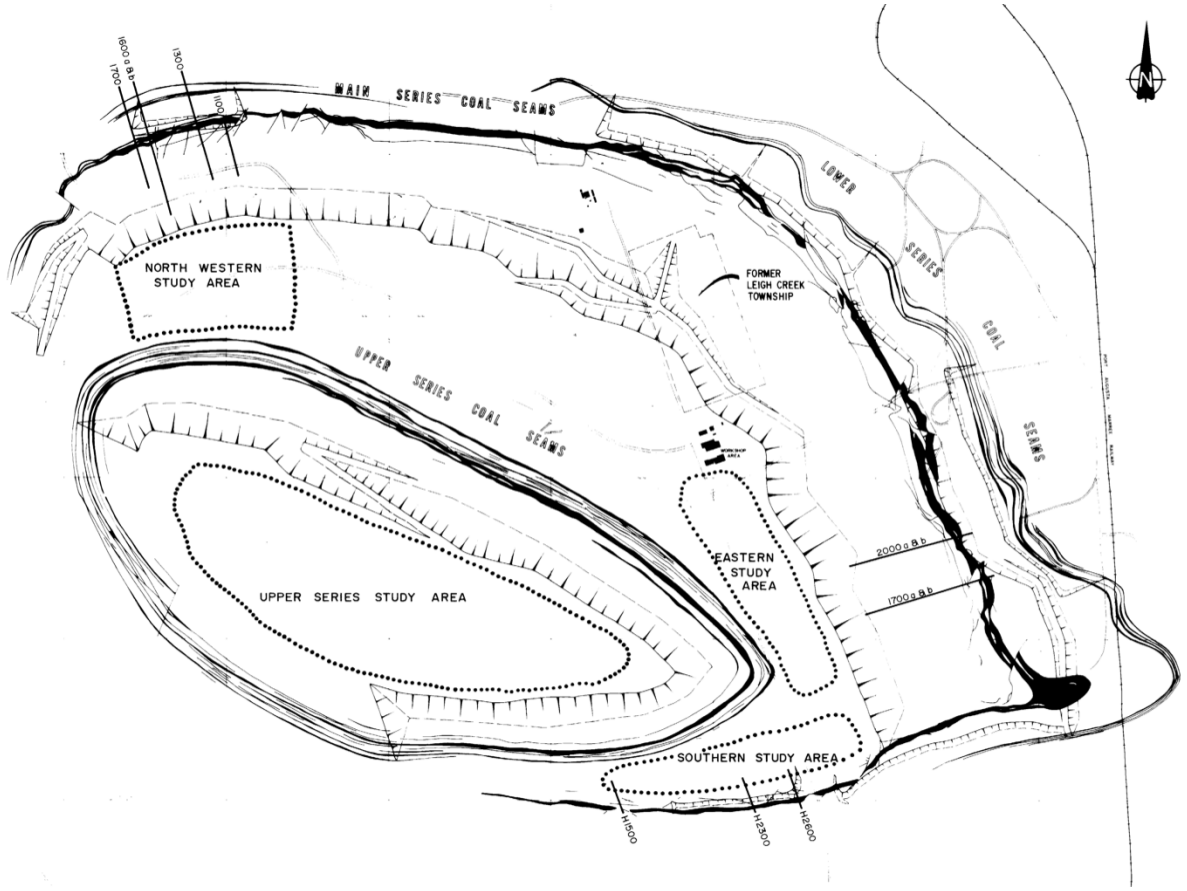

Figure 3.2 Golder Associates 1985 Study areas

The location plan for Lobe B is presented as Figure 3.2, showing the outcrop of the Main, Lower Series and Upper Series coal seams. Also shown on the plan are locations of previous boreholes and seismic traverses. This data consists of:

- a seismic traverse line AA with three correlation boreholes (BHL3027, 3382 and 1576);
- a seismic traverse line BB with two correlation boreholes (BHL914 and BHL3218) plus one borehole entirely in rock (BHL2349);
- one additional borehole (BHL3630); and
- available cross-sections within open cut region of Main Series.

Cross-sections along the seismic traverse lines have been drawn up to show the inferred continuity of the Main Series coal seam. These sections indicate that the coal seam maintains its thickness and continuity to the maximum interpreted depth of about 450m-500m. Although the seismic traverses picked up minor faults at shallower depths, the coal seam displacements appear to be less than half the seam thickness and should therefore have little effect on the continuity of the gasification process.

Existing drill hole results show a reasonable correlation of the intersected coal seam updip of the fault with that inferred from the traverses.

Normal gasification procedure would involve the progress of gasification updip in panels. Collapse of the roof would occur progressively as the panel was extracted. Investigation work concentrated on coal within an area updip of faulting governed by:

- the inferred fault location, and
- the long-term high wall for the open cut (updip).

An existing fully cored stratigraphic drill hole Leigh Creek 3218C drilled in 1978 to over 625.25m is housed at the Department of State Development Core Library, Glenside in Adelaide. This is a crucial core as it is central to the LCEP project area.

A core log and Plates of the core are presented in Appendix B.

The author completed an investigation of the drill core on 31 October 2014. The main seam drill core of interest is stored in trays 94 to 99. The lower V seam is stored in trays 131 to 133.

The core was found to be in excellent condition to allow comprehensive analysis. The roof over the main seam is a clean competent medium strength mudstone. The Main Seam was 18m thick from 379.9m – 398.85m to a floor rock of medium strength mudstone.

The Lower V Seam was 9m thick from 520.6m – 529.3m with a minor siltstone split at 525.25 to 526.1m. The Lower W Seam was 5m thick between 595.7m and 601.2m with several mudstone splits.

The Main and Lower V seam are suitable competence and thickness for gasification at that location.

3.5.2. Field Programme Results

Golder 1985 completed three partly cored deep boreholes (numbered L3964, L3966 and L3967), with shallow holes being drilled alongside the first two holes for installation of near-surface piezometers. Borehole L3964 was drilled on Section AA, while L3966 and L3967 were drilled on Section BB to the north-west of the site.

Boreholes L3964 and L3967 were drilled by open hole methods to a predetermined level, and then lined with steel casing prior to commencement of coring. Rising head permeability testing was performed using a Wireline pneumatic double packer system. Upon completion of coring, boreholes were geophysically logged for a range of nuclear, electrical and acoustic properties using equipment supplied and operated by S.A.D.M.E.

After geophysical logging, a piezometer was installed within the coal seam interval in these two boreholes. The interval between the upper grout seal and the base of the steel casing may also be

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regarded as providing a means of measuring piezometric head at this level. Details of the piezometer installations are shown on Figure 4. A supplementary shallow observation bore (L3965) was completed adjacent to L3964.

Borehole L3966 was intended only to correlate with the seismic data and was drilled open-hole into the coal before coring. No in-situ testing was performed, however the upper section of the borehole can be used to monitor groundwater levels. A shallow observation bore (L3968) was completed adjacent to L3966.

Table 4 summarizes the detailed information for each hole - its depth, cored interval, coal intersection, and location of permeability test intervals. Core recovered over the indicated depths was photographed, and then logged in detail for geotechnical purposes, including:

- rock type
- estimated strength
- bedding dip
- joint dip
- fractures per metre.

Table 4. Summary of Borehole Details

Borehole No.	Depth (m)	Cored Interval (m)	Coal Intersection (m)	Thickness (m)
L3964	403.7	349.1 - 403.7	371.1 - 389.9	18.8
L3965		Observation Borehole		
L3966	260.2	241.0 - 260.2	227.0 - 242.9	15.9
L3967	396.8	312.4 - 396.8	373.2 - 384.7	11.5
L3968		Observation Borehole		

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Table 5 Summary of Permeability Testing

Borehole No.	Permeability Test Interval (m)	Permeability (m/s)	Strata
L3964	350.0 - 368.1	1 X 10^{-9}	Roof
	368.4 - 389.9	2 x 10^{-9}	Coal
	389.7 - 403.7	1 X 10^{-9}	Floor
L3967	315.0 - 335.8		Roof
	315.0 - 359.4	4 X 10^{-9}	Roof
	372.0 - 396.8	100 x 10^{-9}	Roof
	384.0 - 396.8	2 x 10^{-9}	Coal

3.5.3. Materials Testing

The strength of roof and floor rocks was determined in the field using Point Load Index testing and Rock Hardness Indentor testing. The Point Load Index (Is) is obtained by testing pieces of core 50mm long, and correlations between Unconfined Compressive Strength (UCS) in MPa and Is have been established, viz.

u.c.s. ~ 25 IS.

For low strength rocks, it is often difficult to obtain suitable specimens for laboratory testing, and under these conditions the Indentor, which simulates the loading of a small circular footing, can be used to obtain an estimate of unconfined compressive strength. For low strength rocks (¢ = 250) a correlation exists between u.c.s. and indentor reading which is linear. As rock strength increases, the relationship becomes non-linear.

The rock strength test data shows:

- the correlation curve between Indentor reading and u.c.s.
- the correlation between Point Load Index and u.c.s.

It can be concluded from the results that the Leigh Creek rocks are generally of medium strength (i.e. outside the linear range of the Indentor correlation curve), and are uniform with a relatively small scatter in test data.

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3.5.4. Permeability Test Data

The six rising head permeability tests were undertaken after completion of borehole drilling, and were run for approximately one hour. Water level recoveries over this period varied from 0.06 to 4.5m, with five of the tests producing rises of less than 0.6m due to the relatively low rock permeabilities. While the changes in level for most of these tests are small, a result of time limitations on site, the permeabilities calculated are considered to give a reasonable estimate of the in-situ value for the purposes of the feasibility study. Variations in the static water level, as shown by the measurements reported in Table 4, do not have a significant effect on the calculated permeability. Permeabilities for each of the six tests undertaken are listed on Table 5.

3.5.5. Coal Seam Characteristics

Geology

The general geology of the Main Series coal seam in Lobe B was summarized in section 2. Detailed examination of geophysical logs resulted in the separation of the seam into upper and lower splits separated by a middle parting of 1-2m thickness comprised of mudstones, often carbonaceous. Some improvement in coal quality down-dip was anticipated.

Average coal thicknesses were assessed in different areas as follows:

- N-W area, dip 15°-20°, 13.3m coal in 15.8m seam
- E area, dip 10°-15°, 13.4m coal in 15.2m seam
- S area, dip 30°-40°, 8.2m coal in 10.7m seam.

An assessment was made of faulting, and it was concluded that only the southern area of the seam was likely to be affected by faulting to an extent, which would significantly interrupt the gasification of coal to depths of about 600m.

Seam Thickness and Continuity

Coal intersections of 15.9m (L3966), 11.5m (L3967) and 18.8m (L3964) were obtained from the three boreholes drilled by Golders. There was no evidence of intermediate partings over these intervals. These intersections are consistent with the data inferred from previous reports, and from interpretations of the seismic traversing. The results give considerable confidence to the maintenance of seam thickness to depths of around 500m.

These intersections enable a reassessment of seam continuity to be made. It is evident that good correlation exists between the boreholes and seismic traverse, confirming the good continuity of the seam down to the major inferred fault. The strata dip at an angle of about 160 at borehole 3964 on Section BB, increasing to 220 at 3967 on Section AA.

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With respect both to seam thickness and continuity, the additional data obtained for the report gives substantial additional evidence of the suitability of the Main Series coal seam for gasification.

An inspection of drill core Leigh Creek 3218C cored to 624m, adjacent to the Golder investigation site, provides further confirmation of seam continuity.

3.6. Technical Analysis of Gasification

3.6.1. Groundwater Analysis

In the April 1983 report, a simplified analysis of the effects of the gasification process on groundwater levels was made using a finite element groundwater computer package developed by Golder Associates. A computer model was developed to simulate the progressive gasification of a 600m working face at a rate of 100 m/year. This analysis used permeability values provided in a previous report by Coffey and Partners, which were considered at the time to be unrealistically high.

Although permeabilities in the roof and floor rocks obtained in the field programme are relatively uniform, a wide range of values was obtained for the coal. A detailed analysis would thus require a range of permeability values to be used to determine the sensitivity of water inflow and water table drawdown to variations in permeability of the various layers. Other factors to be considered in the analysis are the gas pressure in the cavity and the increased permeability which will result in the caved zone above the cavity.

Given the limited scope of the Golder study, a preliminary analysis has been undertaken using the following parameters:

- roof permeability 2 X 10-9 m/s
- coal permeability 3 x 10-9 m/s
- floor permeability 1 x 10-9 m/s
- cavity pressure 15 atmospheres
- effect of caving ignored.

The finite element analysis was used to predict the response of groundwater for the case of a 500m wide gasification excavation progressively introduced over a 20 year period. The coal seam (15m thick) treated in the analysis was restricted to 100m updip of faulting and 200m from the toe of the open cut. The two-dimensional model assumed an extensive gasification area along strike (i.e. >2000m).

The analysis for the open cut mining phase indicates an average groundwater inflow rate of 23 ML/year for 1 km face length of the pit, with the phreatic surface after 20 years.

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The effect of underground coal gasification (years 20 to 40) was simulated by applying a constant mine inflow rate from nodes within the excavated area. The inflow rate was selected by trial and error to be compatible with initial and final pressure states in the cavity, given that progressive mining will occur updip. An average inflow rate of 45 ML/year for a 1 km face length was adopted, and five time increments in the gasification of the seam were adopted.

The distribution of water pressure head across the gasified section at the completion of gasification. The uniform fluid pressure of about 150m water head in the excavation results from the assumed cavity gas pressure of 15 atmospheres. The water table, which was lowered about 25m at the updip end of the seam during open pit mining, is lowered to 40m after completion of gasification, i.e. about 200m above the seam.

A lower cavity gas pressure would increase groundwater inflow rates during excavation. It is estimated that zero fluid pressure at the end of gasification would cause an average inflow of 90ML/year per 1 km length. Lowering of the water table is estimated to increase from 40m to 100m, which would still leave a minimum groundwater cover of about 140m over the top end of the excavation area.

If a higher permeability dislocation zone was introduced over the gasified area in the latter stages of excavation, this would cause a marginal increase in groundwater inflow rates, but a significant increase in groundwater table lowering, particularly for the low fluid pressure case. In the extreme case of zero fluid pressure in the cavity, the groundwater cover at the updip end might be close to zero in the latter part of the gasification period.

The coal seam permeability used in the analysis is at the low end of the range measured. If a significantly higher value was adopted, this would result in slight increases in groundwater inflows and water table lowering.

3.6.2. Roof Stability

A preliminary evaluation of roof stability was made in the ETSA 1983 report, using experience derived from the U.K. involving overburden, which was typically well-bedded sedimentary strata. It was estimated that the expected maximum possible settlement might be in the range 0.7 to 0.9 of the seam thickness. For the average coal thickness of 10m used in the ore reserve calculation, this implies a ground settlement in the range 10-13m. The drill core and **strength testing showed a mudstone of relatively uniform medium strength**, which is consistent with the U.K. rock types from which the data were derived. The projections of maximum ground settlement are therefore considered realistic.

With respect to caving of the coal seam roof, observations of subsidence suggest that the mining width at which closure occurs is about 1.4h (where h is the mining depth below ground surface). For an average mining depth of about 350m, the mining width for closure is thus 490m, i.e. the full width of gasification.

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The height of caving above the gasified zone is estimated from experience at about 0.07 to 0.14h, i.e. between 25m and 50m, or about 1.7 to 3.3 times the seam thickness. It should be noted that the height of the caved zone is restricted by the bulking of the caved material. With a bulking factor of between 1.2 and 1.3, the extent of bulking is limited to between 3 and 5 times the seam thickness before roof support is achieved.

Beyond the caving height, a zone of lesser dislocation will exist within which there will be an increase in rock permeability to a height estimated at up to 10 times the mining height. This effect will of course reduce with distance above the cavity.

3.6.3. Implications of Gasification Process

Sub-bituminous coal resources have traditionally been preferred as such coal shrinks upon heating, this being considered a desirable characteristic. This feature however, is even more pronounced in lignites. Such coals shrink on drying and develop a strongly jointed, highly permeable zone behind the heated face, offering a very large surface of highly reactive char for the reduction reactions. Moreover they are easier to ignite and do not form a hard coke residue. Thus as Leigh Creek coal is of sub-bituminous/lignite rank, it is suitable for ISG.

The Golder field investigation programme enabled a better definition of rock strength and permeability characteristics, and of groundwater levels. These parameters have enabled more relevant analyses to be made of groundwater response to creation of the gasified cavity, and of roof stability and surface settlement.

Despite the significant assumptions required to be made for the preliminary analysis undertaken, the results suggest that both groundwater inflow and groundwater drawdown will be acceptable. With respect to groundwater table drawdown, the analyses suggest that with the most unfavourable assumptions, a groundwater cover should be maintained above the coal seam to prevent gas leakage except perhaps at the end of mine life. Given the limited accuracy of all parameters, it can sensibly be concluded that a significant pressure head over the cavity is likely for most of the mine life, and that the long-term situation can only realistically be assessed after data from the early years of operation are obtained.

If mitigation of this issue is required then shallower coal can be extracted by ISG methods ahead of deeper coal.

Conclusions as to roof stability are not significantly changed from those presented in the ETSA 1983 report. The calculations of roof stability suggest that complete closure will not occur until the full seam length updip has been gasified. The caved zone will extend perhaps 25 to 50m above the cavity but should have a limited effect on the gasification process because of its development late in the gasification of a particular generator (panel).

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3.6.4. Overview of Lobe B Coal Seams

The Leigh Creek Coalfields have been actively mined for over 70 years. In that time over 1000 drill holes have been completed. Much of that data is held on the SARIG database operated by the Department of State Development (DSD). A review has been completed of all available drill data, seismic lines, technical and coal quality reports.

Coal seams are present* in the Lower, Main and Upper Series, with the Main series comprising essentially a single seam 6-18 metres thick (but with some mudstone partings). *The 2014 South Australian Fuel and Technology Report produced by the Australian Energy Market Operator (AEMO) in January 2014, states coal tonnage contained within PEL 650 included 150mt of measured and indicated coal and 350mt of inferred coal. (Table 2.1 South Australian Coal Resources - reference Department of Manufacturing, Innovation, Trade, Resources & Energy (DMITRE) Coal Resources in South Australia - in situ tonnage & quality). AMC references this as indicative of the presence of an exploration target, and emphasises the coal tonnage reported by AEMO is not JORC (2012 edition) compliant.

The relative positions of the three coal seams are shown on Figure 4. With the relatively shallow depth of the Upper Series, and the possibility of developing the open cut to at least 200m, it is probably realistic to ignore the possibility of recovering coal from these seams by gasification. The obvious possibility involves recovery from the Main and Lower Series over the full seam length.

Both of these seams appear to terminate in the south-west area of the basin, possibly along a major inferred fault structure. The vertical separation between the seams, to the extent that it is defined, appears to be roughly constant at about 150m-200m.

Based on a very preliminary assessment of deep seismic survey data, the Main Series seam down dip of the area proposed for gasification appears to maintain its thickness and continuity.

Drill hole Leigh Creek 3218C cored the deepest section to date with the main seam roof contact at 379.9m and a coal seam of 18m thickness. The lower Series coal seam was contacted at 520m and it was of 9.3m in thickness with a 1m split. A core log and photographs are presented in Appendix 3.

The composition of the Lower Series seam is relatively complex, being made up of variably interbedded coal and mudstone according to the limited data available. . The coal bearing interval is comprised typically of an upper and lower split separated by 10m to 20m of mudstone.

The overall coal content exhibits considerable range in both splits, as does the thickness of the major coal bands, which range from 2.5m to 8.0m in the north-eastern area and from 1.7m to 3.6m in the southern areas. The upper split contains several coal bands in excess of 3m thickness, but those in the lower split rarely exceed 1.5m.

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In attempting to achieve a realistic assessment of total exploration potential, it would appear reasonable and perhaps conservative to adopt the known range of seam thickness of between a minimum of 6m to max of 18m adopting an average of 10m in the Main Series and a total of 4m to 6m in the Lower Series with an average of 5m.

A seam length of 3,500m and a width of about 4,500m was determined as representing the total panel of coal available for ISG production. This panel size was based on current knowledge of the basin geology, geometry and coal quality. Proposed exploration drilling to depths of 600m will be undertaken to provide greater control of panel model parameters and provide significantly greater control for estimation purposes. Leigh Creek coal is of sub-bituminous/lignite rank, it is suitable for ISG.

Based on the measured data and our estimated panel size (3500m x 4500m) we have determined that an *exploration target in the following range may be available for ISG production:

Main Series	-	130 to 400 million tonnes	Average	-	220 million tonnes
Lower Series	-	90 to 130 million tonnes	Average	-	110 million tonnes
Total	**-**	**220 to 530 million tonnes**	**Average**	**-**	**330 million tonnes**

The limited accuracy of these estimates should be evident from previous discussion.

> ***The potential coal quantity is conceptual in nature as there has been insufficient exploration to date to define a Coal Resource and it is uncertain if further exploration will result in the determination of a Coal Resource*

The coal currently mined from Lobe B at Leigh Creek exhibits the following specifications;

- moisture 18% to 31%;
- ash 7% to 13%;
- volatile matter 21% to 33%;
- fixed carbon 30% to 35%;
- total sulphur 0.5% to 0.7%;
- calorific value around 3,600 to 5,400 kcal/kg.

By ASTM standards, Leigh Creek Lobe B coal is classified as sub-bituminous C, (Drexel and Preiss, 1995).

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Two major factors requiring consideration in determining the best method of developing the complete resource are:

- the need to define reserves at depth (>500m), and
- difficulties in developing the Lower Series seam if the Main Series is gasified first.

The latter point results from the problems of drilling through caved ground within and above the Main Series seam in order to install ignition holes at lower levels. This issue was identified by Golders however advances in drilling techniques such as horizontal drilling will likely mitigate problems of access into the Lower Series coal seam.

The problem of adequately defining coal seam thickness, reserves, and continuity at depth is obviously of great significance in determining the maximum potential of Lobe B for gasification. This is particularly true for the Lower Series, due to the variable thickness of the seam in the splits.

There is little doubt that an initial programme of seismic investigation and limited deep drilling would be necessary to support any long-term plan to gasify both Main and Lower Series seams to maximum depth.

3.6.5. Coal to Gas Conversion Ratio

The coal quality tests from Leigh Creek are surprisingly similar to the Juanda and Macalister coal measures (Surat Basin, QLD). These were the seams that Carbon Energy Pty Ltd and Linc Energy Pty Ltd gasified in their previous successful Queensland ISG trials where moisture (13%) and volatile matter (33%), (Linc 2008) were almost identical and most important in ISG trial. This would result in the Leigh Creek coal seam gasification product syngas having a similar chemical composition to the Queensland trials, and gasification rates being within the previous trial consumption/production rates given similar inputs. That is maintaining similar gasification chamber pressure and production well injection rates.

Carbon Energy Limited (ASX:CNX) in its ASX release in 2013 described converting an in-situ coal resource to 1P, 2P and 3P gas reserves as defined in the definitions and guidelines set forth in the 2007 Petroleum Resources Management System ("PRMS") and the 2011 Guidelines for Application of the PRMS, approved by the Society of Petroleum Engineers. The In Situ Gasification conversion rates from coal to syngas in that case were calculated by Tim Hower, MHA, Petroleum Engineer, Colorado USA for Carbon Energy Limited (Carbon Energy Report ASX Release 7/11/13).

The approach used by MHA to estimate the reserves was as follows:

1. Coal in place (Mt) Resource estimate.

2. A gross volume of syngas in place was calculated using a syngas yield of 16.73 GJ per tonne of in-situ coal. This value was calculated from the data collected from pilot ISG panels at Bloodwood Creek, Queensland Australia. The energy production from the pilot averaged 413 GJ/day. The amount of in-situ

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coal gasified during the pilot test was 24.7 tonnes/day, which yields a value of 16.73 GJ per tonne of in-situ coal.

3. Recoverable syngas volumes were determined by applying a process recovery efficiency value and a geologic risk factor to the gross syngas volumes. The process recovery efficiency was assumed to be 85% based on proof of concept reviews commissioned by Carbon Energy. In addition, a geologic risk factor was assumed to be 95%.

Linc Energy's (2009 Annual Report) Chinchilla trial produced syngas at similar consumption rates to Carbon. They claim 95% recovery of coal with 75% energy efficiency.

As no definitive testing of coal to energy conversion rates has been undertaken by the current owners of PEL650 and in order to make an assessment of the gas potential of the Leigh Creek Energy Project coal/gas exploration target AMC has assumed that the energy conversion factors identified by a number of other researchers are appropriate in assessing this ISG project.

We accept that Carbon Energy's conversion metrics, developed as a result of its pilot testing are considered useful in our estimations. We have compared this value along with a number of other energy content values from other projects and sources of information in order to determine what we regard as a reasonable conversion rate from a lignite coal to a syngas approximating natural gas.

We identified that South Australian lignites have a conversion ratio of 15.2 Gj/t whereas Victorian lignites have a value of 9.8 Gj/T (ABARE; Geoscience Australia, 2012) and MIT Energy Club has published lignite as being in the range 10 – 19 Gj/t. While these values are all of a similar order of magnitude we caution that it should be understood that these energy conversion values will vary from project to project. For our estimations we used a value of 14 Gj/t, a coal shrinkage factor of 30% to account for ineffective burning/ignition of coal and to account for ash contents and then converted these to cubic metres of potential gas in place. Table 6 illustrates the potential gas in place based on the parameters identified above. All GIP values have been rounded to the nearest '000 MMm3.

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Table 6 Coal to Gas Conversion Calculation

Coal Seam	Seam Thickness (m)	Million Tonnes	GIP (MMm^3)[1]
Main (min)	6	130	33,000
Main (max)	18	400	102,000
Lower (min)	4	90	23,000
Lower (max)	6	130	33,000
Total (min)	10	220	56,000
Total (max)	24	530	135,000

NOTE: The conversion calculation is based on published material (Carbon Energy Limited, Linc Energy Limited, ABARE, Geoscience Australia, MIT Energy Club) but its application to the proposed ISG for the LCEP is conceptual in nature as there has been insufficient test work to date to define an appropriate conversion factor and it is uncertain if further processing following exploration will result in a similar conversion factor.

- 1 MMm^3 GIP = 26.853 x 1,000,000 Gj
- Energy Conversion factor GJ/t = 14
- Based on a coal shrinkage factor of 30%
- Specific Gravity of coal = 1.4
- ISG area 3,500m x 4,500m
- Seam thickness is between known values

4.0. Planned AppraisalDrilling

The target area is to the east of the north western study area between two known fault structures. The area under investigation is approximately 4,000m x 3,000m, Figure 4.

The Objectives of the programme are to enhance existing data and drill the holes to meet with the requirement of the The Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves ('the JORC Code'). JORC is a professional code of practice that sets minimum standards for Public Reporting of minerals Exploration Results, Mineral Resources and Ore Reserves.

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The JORC Code provides a mandatory system for the classification of minerals Exploration Results, Mineral Resources and Ore Reserves according to the levels of confidence in geological knowledge and technical and economic considerations in Public Reports.

Watson Drilling has been retained to commence drilling at the LCEP site early into 2015 (Quote 2 Table 7) 2). Commencement is dependent upon stakeholder consultation, weather and government permitting.

4.1. Scope of Planned Work Programme

Prior to drilling a surveyor will be required to set up a control point for drill collar survey. The drilling coordinates can then be placed on the ground accurately.

A preliminary 16 drillhole programme has been planned. These consist of 8 partially cored holes and 8 chip pilot holes. In order to save drilling costs and maximise time on site an initial 8 pilot drill holes will be chipped to 600m utilising mud drilling techniques. The eight pilot holes will all be geophysically logged by Coal Seam Wireline Services with a downhole gamma, deviation and density tool.

At each drill location the rig will step back across strike a few meters and redrill the now logged hole by chipping back down to a few meters above the target seams and commence HQ diameter coring through the roof, coal and floor. Depths will be decided by the geophysical logs on site.

Drill core will be laid out and geologically logged, measured and photographed in detail. Coal roof and floor samples will be sent to Bureau Veritas, Brendale QLD laboratory for proximate analysis.

All drill holes will be backfilled with cement grout and drill collars surveyed.

Following drilling in the field the geology, geophysics, survey, laboratory and modelling will all provide the necessary data for a 2012 compliant JORC Statement.

A further six drill holes have been planned to test the extent of the lower seam and geological structure. These are not costed yet as awaiting a decision on to include in this round of drilling.

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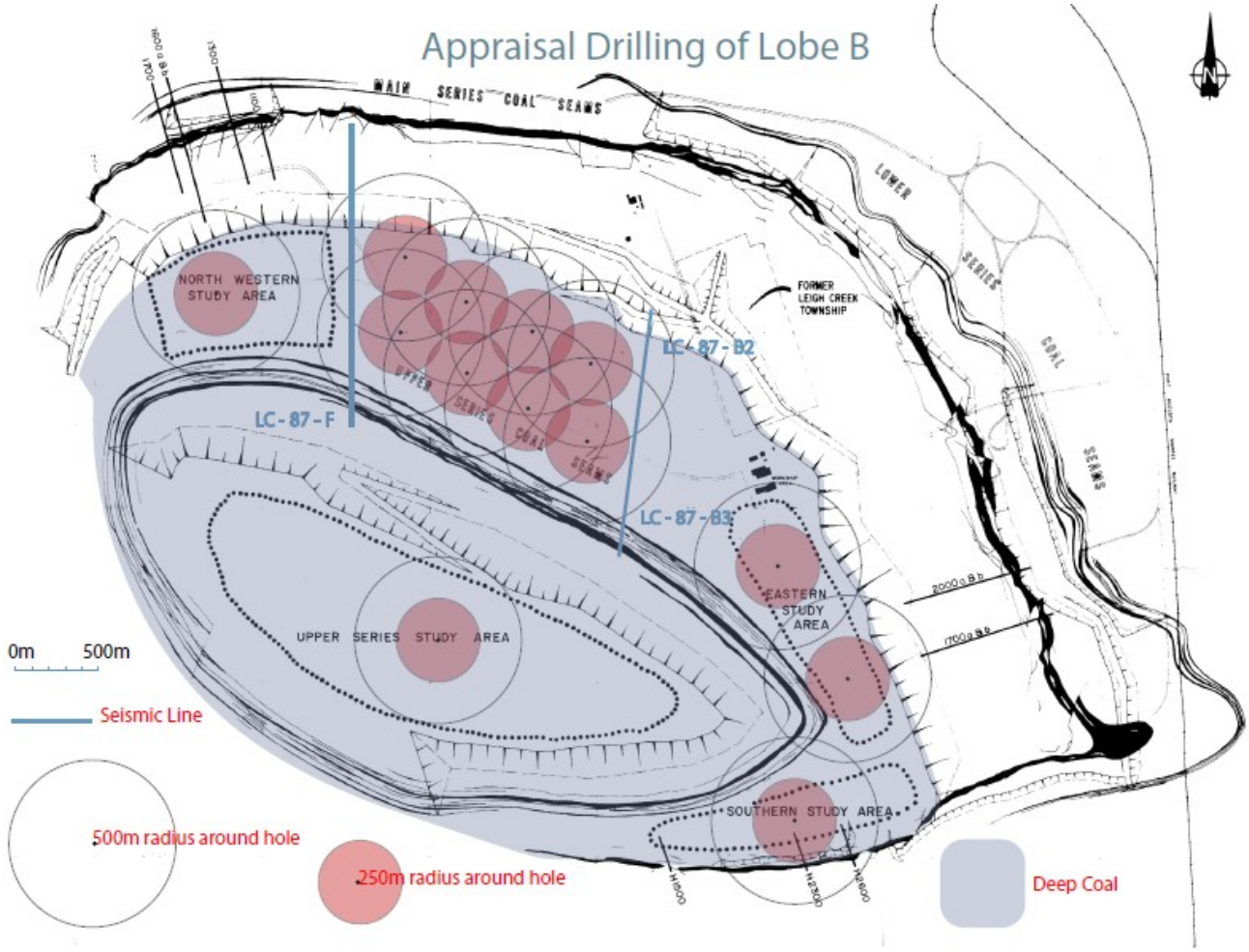
Figure 4 Location of Appraisal Drilling Lobe B



4.2. Appraisal Drilling Expenditure

The drilling programme is designed to take approximately eight weeks 24/7 if possible, as deep holes may be lost if not circulating mud overnight. This means approximately three hitches of two weeks on and one off. The drilling crew consists of three and ARP TriEnergy staff of two. Drill rig and staff will all stand down for the break and return to their respective bases in Adelaide or Interstate. Flights have been calculated on a maximum fully flexible fare from Adelaide to Brisbane. The crew will drive to site from Adelaide airport. Accommodation and meals will be provided by the Leigh Creek Hotel. A summary of appraisal expenditure is presented in Table 7.

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Table 7 Appraisal Drilling Costings

Item	Assumption	Quote 1	Quote 2
Mobilisation	To/from site	5,000	30,000
Chip holes (m)	9,440m	896,800	840,160
Cored holes (M)	1,200m	320,400	228,000
Work rate	$500 hr Assume 5hrs a hole	45,000	45,000
Consumables	Mud casing bits	18,000	18,000
FIFO	$850 E/W	7,650	7,650
Accom	$150/pn	42,000	42,000
Meals	$100/d	28,000	28,000
Crew Travel	$250/h drive time	8,000	8,000
Sub total		1,370,850	1,246,810
Contingency 20%	Covers overruns, lost rods, bits, weather delays	274,170	249,362
Total Drilling		**$1,645,020**	**$1,496,172**

Logging Truck allow $2,000/d plus accommodation and meals x 1 man

Surveyor TBA

Laboratory Analysis TBA

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5.0. Conclusions

Geological Conclusions

This report has completed a historical review of mining and datasets, hydrogeology, geotechnical assessment along with structural and resource geology of the site and its compatibility for ISG. It has reviewed data and reports, which span a significant timeframe back to the early 1950's. The conclusions derived from this investigation are based firstly upon the findings from previous investigations specifically the work completed by Murray *et al* 1983 and Golder Associates *et al* 1985. Secondly the seismic data review and field logging of stratigraphic drill core held by DSD.

The following geological conclusions are made:

1. The sediments in Telford Basin are of Upper Triass-Jurassic age and were deposited in shallow water conditions within an intramontane basin. Sedimentation occurred within a fluvio-lacustrine environment.

2. The provenance of the sediments cannot be stated with confidence.

3. Two deformational events are recognised. The first (Dl), post dates depositional phase 1 and involves brittle fracture of the Lower and Main Series coal measures, a response to tectonic downwarping of the underlying basement. The second deformation (D2) involved the downwarping of the Upper Series coal measures and associated overburden, and is an example of ductile deformation.

4. Coal seam discontinuity is mainly attributed to faulting. Considerable variation in fault geometry and style is evident on the flanks yet at depth seems less variable.

5. The Main and Lower Series coal measures are pervasively faulted, although the Upper Series appear unfaulted. Fault displacement in the former is commonly equal to or greater than half seam thickness.

6. Whether the magnitude of faulting at the margin of the basin is higher than at the centre cannot be determined with confidence although seismic data suggest less structure.

7. Geological modelling has confirmed that the main seam averages 10m and ranges from 6m to 18m in drill logs. The lower seam ranges from 4m to 6m with a 5m average.

8. Preliminary evaluation of existing data indicates that a coal *exploration target in the range of **130 million to 400 million TTIS (Total Tonnes In Situ)** may be available within the main seam and an additional **90 million to 130 million TTIS** within the lower seam. This provides a total target estimation for the Main and Lower series seams of **220 million to 530 million TTIS (Total Tonnes In Situ).**

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***** *The potential coal quantity is conceptual in nature as there has been insufficient exploration to date to define a Coal Resource and it is uncertain if further exploration will result in the determination of a Coal Resource*

General Conclusions Concerning ISG

Feasibility of LCEP the following conclusions are made:

1. Based on the parameters identified we have determined that within the two series of coal seams identified at the Leigh Creek Energy Project that gas volumes in place could range from **33,000 MMm^3 to 102,000 MMm^3** for the Main seam with a further **23,000 MMm^3 to 33,000 MMm^3** for the lower seam. The combined total is **56,000 MMm^3 to 135,000 MMm^3**. It is important to recognize that these are potential volumes of gas-in-place and do not represent sales gas volumes.

2. The coal currently mined from Lobe B at Leigh Creek exhibits the following specifications;· moisture 18% to 31%; ash 7% to 13%; volatile matter 21% to 33%; fixed carbon 30% to 35%; total sulphur 0.5% to 0.7%; calorific value around 3600 to 5400 kcal/kg. By ASTM standards, Leigh Creek Lobe B coal is classified as sub-bituminous C.

3. Coal quality tests from Leigh Creek are similar to the Juanda and Macalister coal measures (Surat Basin, QLD). These were the seams that Carbon Energy Pty Ltd and Linc Energy Pty Ltd gasified in their previous successful Queensland ISG trials where moisture (13%) and volatile matter (33%), (Linc 2008) were almost identical and most important in an ISG trial.

4. It is reasonable to assume that Leigh Creek coal seam gasification product syngas having a similar chemical composition to the Queensland trials, and gasification rates being within the previous trial consumption/production rates given similar inputs. That is maintaining similar gasification chamber pressure and production well injection rates.

5. In Situ Gasification is regarded as being feasible for the Main and Lower Series where faulting or geological structure is absent (which can make panel design and gasification problematic).

6. The structure of the Telford Basin is complex in areas namely the southern area and on the flanks of the basin margin therefore, additional seismic acquisition and drilling is required prior to ISG panel design.

7. Geotechnical testing of roof and floor of the coal seams found medium strength competent rocks suitable for ISG chambers.

8. The hydrogeology of the project area is suitable for ISG with hydraulic conductivity and permeability ideal, preventing either panel extinguishment or unacceptable drawdown.

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9. The Phreatic surface of groundwater is relatively close to the surface providing a significant hydrostatic head above the ISG chamber.

10. The LCEP site meets every selection criteria outlined by the Queensland Independent Scientific Panel on ISG.

11. Significant existing infrastructure is in place, including rail, pipelines, township, airport with sealed runway, fresh water dam, power from the grid and transmission lines.

6.0. Recommendations

The recommendations derived from this investigation are to provide a greater level of geological certainty towards the LCEP, complete a JORC Resource Statement to a minimum Indicated Resource standard and where possible convert In-Situ resources to PRMS P1, P2 and P3 gas reserves.

A preliminary appraisal drilling programme should be made in the areas considered having potential for ISG, involving:

- geophysically logged holes with deviation surveys;
- seismic 3D data acquisition for fault geometry;
- fully and partially cored holes;
- geological block modelling;
- more detailed analysis of fault geometry and style, and
- laboratory analysis of coal.

An estimated 2 million dollars is required to complete 16 exploration holes with data to be compiled for inclusion into a JORC 2012 compliant resource statement to the ASX.

Design and cost a seismic acquisition and interpretation program to identify faulting and seam continuity below 800m.

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7.0. References

7.1. Geological

Adelaide Observer (1888) "*Coal Discovered in SA*", 30 April 1892 p. 27 - Rob C Wilton, Manager NRG Flinders.

Adrian C. 2009Hutton Geological Setting of Australasian Coal Deposits University of Wollongong, ahutton@uow.edu.au.

ARP TriEnergy Pty Ltd (2014) "*Legislation Governing the Mining and Petroleum Operations at Leigh Creek*" Confidential Memo 24 September 2014.

Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves, (JORC Code) 2012 Edition

Australian Energy Market Operator Limited (AEMO) "*2014 South Australian Fuel and Technology Report" The report is based on information from Dept of Primary Industries and Resources SA, available as at 1 July 2013. P5.* 2014 Australian Energy Market Operator Limited.

Australian Mineral Consultants (AMC) *2015 "Independent Specialist Valuation Report for Marathon Resources Ltd on the Deep Coal Assets of ARP Tri Energy Pty Ltd Leigh Creek Energy Project within PEL 650, South Australia"* Company Report to Marathon Resources 2015.

Beaumont, E.A. (1979): "Depositional Environment of Fort Union Sediments (Tertiary, Northwest Colorado) and their Relation to Coal". American Assoc. Pet. Geol. Bull. 63 (2); 194- 217.

www.bom.gov.au/climate/averages/tables/cw_017110_All.shtml accessed 20/10/14

Brick, G; Odermatt, B and Ainslie, R (1997) Leigh Creek Coalfield rehabilitation programs MESA Journal 5, April 1997, Department of Mines and Energy Resources South Australia, pp19-21.

Brown, D.A., Campbell, K.S.W., and Crook, K.A.W. (1969): "*The Geological Evolution of Australia and New Zealand*". Pergamon Press, Oxford.

Bureau of Resource Sciences, Australia (1997) Australia's Identified Mineral Resources, BRS, Canberra 1997.

Caplygin, S and Brennan, S (1996) Leigh Creek coal mine - State of the Art MESA Journal 1, March 1996, Department of Mines and Energy South Australia, pp17-19.

Coats, R.P. and Forbes, B.G. (1976): Precambrian Geology of the Adelaide Geosyncline in, LATE PRECAMBRIAN AND CAMBRIAN GEOLOGY OF THE ADELAIDE 'GEOSYNCLINE' AND STUART SHELF, SOUTH AUSTRALIA. 25th International Geological Congress Excursion Guide No. 33A p. 11-15.

Code for the Technical Assessment and Valuation of Mineral and Petroleum Assets and Securities for

Independent Expert Reports (The VALMIN Code) 2005 Edition

Daily, B., Coats, R.P., and Forbes, B.G. (1976): LATE PRECAMBRIAN AND CAMBRIAN GEOLOGY OF THE ADELAIDE 'GEOSYNCLINE' AND STUART SHELF, SOUTH AUSTRALIA 25th International Geological Congress Excursion Guide No. 33A.

Daily, B., Firman, J.B., Forbes, B.G., Lindsay, J.M. (1976): Geology" in, Twidale, C.R., Tyler, M.J., Webb, B.P. (Eds.). Natural History of the Adelaide Region Roy. Soc. of South Australia.

Drexel, JF and Preiss, WV (Eds) 1995, "*The Geology of South Australia*", Vol. 2, the Phanerozoic. South Australian Geological Survey, Bulletin 54.

ETSA Corporation (1997) ETSA Corporation Annual Report, Adelaide 1997.

Evans, Simon (1997) "*South Australia turns off Electricity Asset Sale*", The Australian Financial Review, Friday 7 November 1997 p 16.

Geoscience Australia and ABARE, 2012, Australian Gas Resource Assessment 2012

Hansen, E. (1971): "*Strain Facies*" in, Minerals, Rocks and Inorganic Materials Monograph Series of Theoretical and Experimental Studies. 2; 208 pp.

Harland, W.B., Smith, A.G., and Wilkock, B. (1964): "*The Phanerozoic Time Scale*". Geol. Soc. Lon. London. 458 pp.

Industry Commission Inquiry into the Australian Black Coal Industry (1997) The South Australian Black Coal Industry Submission by The Department Of Primary Industries and Resources South Australia.

Johns, R.K. (1972): The Leigh Creek Coal Measures Mineral Resour. Rev., S. Aust. 132; 145-154. (1973): "*A Summary of South Australian Coal Deposits*" S.A. Department of Mines and Energy Rept. Bk. No. 73/249; pp. 23-33. and Townsend, I.J. (1975): "*Geology of the Leigh Creek Coalfield*" Paper presented to, Aust. I.M.M. Conf. South Australia, June.

Leigh Creek Coal Train Beckhaus, John Australian Railway Historical Society Bulletin, March, 2000 pp99-101.

Mines and Energy South Australia, (1990-1997) Annual Reports and Mineral Production Statistics, Adelaide.

Optima Energy (1997) Optima Energy Annual Report, Adelaide 1997.

"*The South Australian Coal Industry*" submission by Department of Primary Industries and Resources, South Australia, Industry Commission Inquiry into the Australian Black Coal Industry (1997) accessed at Productivity Commission website 13 Jan 2014.Wikipedia "*Leigh Creek South Australia*" accessed;

Wikipedia "*Leigh Creek South Australia*" Wikipedia website 03/10/14.

wikipedia.org/wiki/Leigh Creek, South Australia Environment accessed 20/10/14

Wilson, R.G. (1976): "*Estimating the Potential of a Coal Basin*" in, Muir, W.L.G. (Ed.) Coal Exploration: Proc. of the first International Coal Exploration Symposium; London, England. May 18-21, 1976.

7.2. In-Situ Gasification (ISG)

Bartel, L.C., Dobecki, T.L. and Stone, R. (1980): "Characterization of a Potential Underground Coal Gasification Site in the State of Washington: Proceedings of the 15th Intersociety Energy Conversion Engineering Conference, Seattle, Washington pp. 1315- 1320.

Beyond Zero Emissions (accessed 13 Jan 2014) talks of "Replacing the emissions intensive Northern and Playford B brown coal power plants at Port Augusta with renewable energy".

Blinderman, M.S. and Friedmann, S.J., 2006, underground coal gasification and carbon capture and storage: Technologies and synergies for low-cost, low-carbon syngas and secure storage. Lawrence Livermore National Laboratory, Livermore, CA. UCRL-ABS-218560.

Blinderman, M.S., and Jones, R.M., 2002, The Chinchilla IGCC Project to Date: UCG and Environment, 2002 Gasification Technologies Conference, San Francisco, USA, October 27-30, 2002.

Burton, E., J. Friedmann, and R. Upadhye, *Best Practices in Underground Coal Gasification*. Lawrence Livermore National Laboratory, USA.

C. Energy, Editor. *The Kingaroy Power Station Project*

Clayton, J.M. (1980): "*In-Situ Coal Gasification (Revised)*". AMDEL REPORT NO. 1328. Adelaide.

Dalton, S., 2004, Cost Comparison IGCC and Advanced Coal, July 2004.

Drexel, J.F. and Preiss, W.V. (Eds), 1995. The geology of South Australia. Vol. 2, The Phanerozoic. *South Australia. Geological Survey. Bulletin,* 54.

Edgar, T.F., Humenick, M.J., Kaiser, W.E., Carbeneau, R.J. (1981): "*Environmental Effect of In-Situ Gasification of Texas Lignite*". E.P.A., May.

Fire in The Hole Science & Technology Review

Ghose, M.K. and B. Paul, *Underground Coal Gasification: a Neglected Option.* International Journal of Environmental Studies, 2007. **64:6**: p. 777-783.

Green, M. *Underground Coal Gasification, State of the Art*. in *Clean Coal Conferance'2008*. 2008. Bedewo, Poland.

Grupping, A.W. and Pieterson, R. (1970): "*Underground Gasification of Coal: The Filling of Dipping Underground Cavities*". (Source unknown).

Halmann, M.M. and Steinberg, M., 1999, Greenhouse Gas Carbon Dioxide Mitigation. Lewis Publishers.

Hower T 2013, Carbon Energy Report 8/12/09, "Carbon Energy Poised to Become a Major Gas Player Following an 83% Increase in 2P UCG Gas Reserves" Report 7/11/13, (www.carbonenergy.com.au) asx announcements 7/11/13 report attached to announ.

Humenick, M.J., Edgar, T.F., and Charbeneau, R.J, (1982): "*Environmental Effects of In-Situ Coal Gasification*" pp. 38. (Source unknown).

Kohl, A. and F. Riesenfeld, 1979, Gas Purification, Third Edition, Gulf Publishing Company.

Klimenko, A.Y., *Early Ideas in Underground Coal Gasification and Their Evolution.* Energies, 2009. **2**: p. 456-476.

Krantz, W.B., and Gunn, R.D. (1981): *"An Overview of Underground Coal Gasification - A Comparison of Modelling Studies with Field Test Data"*. (Source unknown).

Ledent. P. (1981): *"From Classical Mining to the Underground Gasification of Coal".* Instelling Voor de Ontwikkeling Van de Ondergrondse Vergassing and Beckervordersandforth Chr. P., (1979): "Joint Belgium-German U.C.G. - Field Test in Deep-lying Coal Deposits. 5th Underground Coal Gasification Symposium Alexandria, Virginia, pp. 119-126. (1980): *"Linking Study at Great Depth"*. 6th Underground Coal Gasification Symposium. Afton, Oklahoma, PP. 10.

Levie, B.E., Krantz, W.B., Camp, D.W., Gunn, R.D. and Youngberg, A.D., (1981*): "Application of the Spalling- Enhanced Drying Model in Predicting Cavity Geometry and Operating Strategy for the Hanna 2, Phase 2 U.C.G. Field Test"*. 7th Underground Coal Gasification Symposium. Fallen Leaf Lake, California pp. 236-245.

Linc Energy, 2008, JORC Report Chinchilla Project, Xenith Consulting Pty Ltd.

McKee, C.R., Way, S.C. and Gunn, R. (1980): "Hydrologic Site Characterization for In-Situ Coal Gasification: 6th Underground Coal Conversion Symposium. July 13-17, 1980 Afton, Oklahoma.

Moran, P.C., P.J.d. Costa, and E.P.C. Cuff, *Independent Scientific Panel Report on Underground Coal Gasification Pilot Trials*. 2013, Queensland Independent Scientific Panel for Underground Coal Gasification (ISP): Queensland, Australia.

Murray-Wallace C.V et al (1983) Underground Gasification of Inaccessible Leigh Creek Coal Measures – A Preliminary Evaluation of the Geological Structure of the Telford Basin, Rept. Bk. No.83/34

Nadkarni, R.M., Bliss, C., Watson, W.I. and Little, A.D., (1975): *"Underground Gasification of Coal"*. Clean Fuels from Coal. Symposium II, Chicago, Illinois, pp. 611-637.

Riet, M.V.D. *Underground Coal Gasification* 2008.
Schmidt, R.A. (1979): Coal in America. - An Encyclopedia of Reserves, Production and Use. McGraw-Hill Productions Co.

Schrider, L.A., and Wasson, J.A. (1981): *"Eastern In-Situ Coal Gasification Field Trial".* A.I.A.A. Vol. 5., No.4.

Simeons, C. (1978): Coal - Its Role in Tomorrow's Technology Pergamon Press.

Stephens, D.R., Brandenburg, C.F. and Burwell, E.L. (1980): *"Underground Coal Gasification"*. C.E.P., April.

Sury, M., 2004, Review of Environmental Issues of Underground Coal Gasification, Report No. COAL R272 DTI/Pub URN 04/1880, November 2004

Thomspon, P.N., Mann, J.R., and Williams, F., (1976): Underground gasification of coal. - A National Board reappraisal N.C.B. Harrow.

Walker, L. *Underground Coal gasification: A Clean Coal Technology Ready for Development*. The Australian Coal Review 1999.

Ward, C.R., Harrington, H.J., Mallett, C.W. and Beeston, J.W. (Eds), 1995. Geology of Australian coal basins. *Geological Society of Australia. Coal Geology Group. Special Publication,* 1.

Westmoreland, P.R., Forrester, R.C., and Sikri, A.P. (1978):

"In-Situ Gasification: Recovery of Inaccessible Coal (1977e): "Report on Geotechnical Studies - Phase 3 Additional Stability Studies". Report No. A183/2-5. 30 November, 1977. (1978a): "Drainage Planning Study". Report No. A183/4A, 20 June, 1978. (1978b): "Spoil Dump Stability Studies II. Report Now 183/4C, 18 July, 1978. (1979a): *"Electricity Trust of South Australia".* Leigh Creek Coalfield, Lobe B - Results of Geotechnical Investigation (1978)". Report No. A183/4E, 30 March, 1979. Reserves". Alternative Energy Sources. Vol. 7 Hydrocarbon Conversion Technology. (Ed.) Verziroglu. McGraw-Hill PP. 3113-3132.

Western Research Institute (WRI), 2006, Removal of Mercury from Coal-derived Synthesis Gas, Final Report for Base Task 1.i, WRI-06-R013, March 2006.

Zvyaghintsev, K.N. (1977): *"Underground Gasification of Coal in the U.S.S.R."* in, M. Grenon (Ed.): Future Coal Supply for the World Energy Balance. Third ASA Conference on Energy Resources November 28-December 2, 1977. pp. 239- 244.

7.3. Geotechnical Reports: Telford Basin, Lobe B, Leigh Creek

Reports by Coffey and Partners Pty. Ltd. to ETSA on the Leigh Creek coalfields, with particular reference to Lobe B, pertinent to this and subsequent studies include;

Coffey et ale (1975): *"South-eastern margin - Report on Geotechnical Studies for Slope Design".* Report No. A183/1-1; 31 October, 1975.

(1977a): *"Report on Geotechnical Studies, Phase 3 - Field and Laboratory Studies"*. Report No. A183/2-1, 4 April, 1977.

(1977b): *"Report on Geotechnical Studies - Proposed Diversion of Leigh Creek"*. Report No. A183/2- 2, 18 May, 1977.

(1977c): *"Report on Geotechnical Studies Phase 3 Stability Analyses"*. Report No. A183/2- 3, 27 July, 1977.

(1977d): *"Report on Geotechnical Studies - Mine Dewatering Studies".* Report No. A183/2-4. 11 October, 1977.

(1979b): *"Stability Studies based On 1978 Geotechnical Investigation"*. (Report released during 1979).

Lund, H. F., 1971, Industrial Pollution Control Handbook, McGraw-Hill.

Mawson, D. and Sprigg, R.C. (1950): *"Subdivision of the Adelaide System"* Aust. J. Sci 13: 69-72.

Murray-Wallace, C.V. (1982): "The Adelaide Geosyncline: Stratigraphy and General Geology: (unpubl.).

Parkin, L.W. (1953): *"The Leigh Creek Coalfield"* Geol. Surv. of St. Department of Mines. Bull. 31; pp. 74. (Ed.) (1969): Handbook of South Australian Geology. Geol. Surv. of S. Aust.

Phillips, F.C. (1979): The use of Stereographic Projection in Structural Geology. (Third Edition). Edward Arnold, London.

Playford, G. and Dettmann, M.E. (1965): *"Rhaeto-Liassic plant micro-fossils from the Leigh Creek Coal Measures, South Australia"* Senkenberg, letha 46 (2/3); 127-181.

Ramsay, J.G. (1967): Folding and Fracturing of rocks. McGrawHill Book Company, New York.

Reading, H.G. (1978): Sedimentary Environments and Facies. Blackwell Scientific Publications, Oxford.

Townsend, I.J. (1978): *"The Correlation and Depositional History of the Leigh Creek Coal Measures"*. S.A. Department of Mines and Energy. Rept. Bk. No. 78/140; pp. 10.

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Appendix 1.

ARP TriEnergy Pty Ltd

Legislation Governing the Mining and Petroleum Operations at Leigh Creek

1. Alinta: Exemption from the Mining Act 1971

The right to mine at Leigh Creek was established under the Electricity Trust of South Australia Act 1946, and gave the Electricity Trust the right to mine any seams of coal vested in the Crown or the Trust at or near Leigh Creek. This was later repealed by the Electricity Corporations Act 1994 which now states that:

‘‘48—Mining at Leigh Creek

A sale or lease of any seam of coal vested in the Crown at or near Leigh Creek or a contract for any such sale or lease or a right to mine any such seam of coal cannot be made or granted by or on behalf of the Crown except as authorised by or under regulations made under the Electricity Corporations (Restructuring and Disposal) Act 1999.

Without limiting SAGC's powers, SAGC may—

(a) mine (by open or closed working) any seams of coal, vested in the Crown or SAGC, at or near Leigh Creek; and

(b) mine (by open or closed working) any substance, vested in the Crown or SAGC, discovered in the course of operations for the mining of coal; and

(c) treat, grade, or otherwise prepare for sale, and use, sell or otherwise dispose of any coal or other substance so mined.

SAGC may authorise another body to exercise all or any of the powers conferred on SAGC under this section.

In this section—

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SAGC means SA Generation Corporation established under Part 3 before the repeal of that Part, as converted into a company under the Corporations Law (whether or not its shares remain in Crown ownership).''

After the Mining Act 1971 came into effect to regulate mining in the state, the Leigh Creek area was then reserved from the Mining Act.

Section 8 (1)(c) of the Mining Act 1971 states that 'the Governor may, by proclamation, reserve from the operation of this Act, or any provisions of this Act, any land specified in the proclamation, and the proclamation shall have effect according to its terms'. Section 8 (2) states that 'the Governor may, by subsequent proclamation, vary or revoke any proclamation made pursuant to this section'.

Under the powers allowed by the Mining Act 1971-1973, on the 14th of February 1974 the town of Leigh Creek was reserved from the operation of the Act through publication in the South Australian Government Gazette.

Under the powers allowed by the Mining Act 1971-1978, on the 22nd June 1978 the new town site was reserved from the operation of the Act through publication in the South Australian Government Gazette.

Under the Mining Act 1971: Section 8, on the 25th of October 1984 the original 1974 town proclamation was revoked and a new proclamation was made for the Leigh Creek Coal Field to reserve the area defined in the Gazette from the operation of section 17, and parts 4, 5, 6A, 7 & 8 of the Mining Act 1971. These sections are outline below (as of 1984 when the proclamation was made):

-Section 17: Obligation to pay a royalty to the state

-Part 4: Prospecting for Minerals

-Part 5: Exploration Licence

-Part 6: Mining Leases

-Part 6a: Retention Leases

-Part 7: Prospecting and Mining for Previous Stones

-Part 8: Miscellaneous Purpose Licence

This left the following sections at the time that the area was still subject to:

-Part 1: Preliminary

-Part 2: Administration

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-Part 3: Reservation of Minerals and Royalty (except for s 17)

-Part 9: Entry upon land, compensation and restoration

-Part 9a: Access to subsurface strata

-Part 10: Wardens court and forfeiture of mining tenements

-Part 11: Assistance to Mining

-Part 11a: Caveats

-Part 12: Miscellaneous

Since 1984 there have been a number of amendments to the Act however, the substance remains the same, being that the Leigh Creek Coal Mine is not subject to licencing under the Mining Act.

The reservation of the area from the Act has the effect that none of the licencing sections applied to that area of land. Tenements cannot be granted on land reserved from the Mining Act.

2. ARP TriEnergy Pty Ltd: PEL 650

ARP TriEnergy will be operating under the Petroleum and Geothermal Energy Act 2000 and has a Petroleum Exploration Licence.

There are 3 stages to the application process before a PEL can be granted. Stage 1 requires a licence to explore and undertake other preliminary activities, such as discussions with indigenous landowners. Stage 2 requires an environmental assessment and approval of environmental objectives to be obtained. Stage 3 outlines the specific details of the planned petroleum operations. These stages are outlined in the document attached.

In considering the grant of a Petroleum Exploration Licence, section 23 of the Act states that the Minister must have regard to the suitability of applicant's proposed work program for evaluating the prospectivity of the licence area and discovering regulated resources, the adequacy of the applicants technical and financial resources, and if applications have been invited for the licence by public advertisement, the stated criteria for evaluation of the applications.

Petroleum Exploration Licence:

Section 21 of the Act outlines our rights if the Petroleum Exploration Licence is granted. This section states that 'an exploration licence authorises subject to its terms the licensee to carry out in the licence area- (a) exploratory operations for regulated resources of the kind relevant to the category of licence;

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and (b) with respect to regulated resources of the kind relevant to the category of licence- operations- (i) to establish the nature and extent of a discovery of regulated resources; (ii) to establish the feasibility of production and appropriate production techniques'. It also states that 'a licensee who holds an exploration licence is entitled, subject to this Act, to the grant of a corresponding retention licence or a corresponding production licence for a regulated resource discovered in the licence area'.

A regulated resource includes 'a naturally occurring underground accumulation of a regulated substance'. A regulated substance includes 'petroleum'.

Petroleum is defined in section 4 of the act: 'petroleum means a naturally occurring substance consisting of a hydrocarbon or mixture of hydrocarbons in gaseous, liquid or solid state but does not include coal or shale unless occurring in circumstances in which the use of techniques for coal seam methane production or in situ gasification would be appropriate or unless constituting a product of coal gasification (whether produced below or above the ground) for the purposes of the production of synthetic petroleum'.

Petroleum Production Licence:

Section 35

(1) Subject to this Act, a person is, on application, entitled to the grant of a production licence for the production of a regulated resource of a particular kind if—

(a) A regulated resource exists in the area for which the production licence is to be granted; and

(b) The person holds, or held at the time of the application for the production

licence—

(i) An exploration licence or a retention licence over the area for which

the production licence is to be granted; or

(ii) A mining tenement under the Mining Act 1971 over the area for

which the production licence is to be granted; and

(c) —

(i) in a case where paragraph (b)(i) applies—the exploration licence

authorised exploration for a regulated resource of the relevant kind or

the retention licence was granted for a regulated resource of the

relevant kind;

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(ii) in a case where paragraph (b)(ii) applies—the mining tenement authorised operations for exploration for or the recovery of coal and the production licence is to be granted for in situ gasification or coal seam methane production (and other related activities as the Minister considers appropriate); and

(d) production is currently commercially feasible or is more likely than not to become commercially feasible within the next 24 months.''

The Petroleum (Miscellaneous) Amendment Act 2009 introduced the provision regarding mining tenements to allow holders of coal mining licences (pursuant to the Mining Act) to be granted a PPL for the purpose of producing CSM and for ISG. This was due to a problem at the time stated in the 'PIRSA Petroleum Group Discussion Draft- Petroleum Act 2000 Implementation Issues' that '' A number of PEL applications (stated as targeting CSM or ISG) have been received that cover areas already under Mining Act 1971 exploration licences (ELs). Significant sums have been spent in exploration and assessment activities on a number of these ELs, and in some instanced development options are currently under consideration (the majority of coal deposits within South Australia are under EL where the coal is at mineable depth).

This provision does not affect the Leigh Creek Energy Project in any way, as the Leigh Creek Coal Mine does not operate under the Mining Act 1971. However, it is worth noting for any future tenements held under the Mining Act or the Petroleum Act as rights to in situ gasification can be obtained through both Acts. Section 35 (d) is likely to be a crucial factor for overlying tenements if both wanted to undertake in situ gasification in the same area. Section 35 does not prioritise the right to a production licence for those holding an exploration licence or mining tenement.

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Appendix 2.

Geological Log

L3218C

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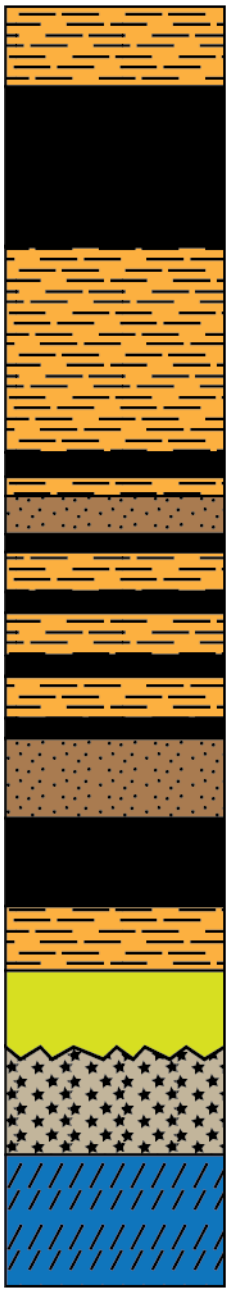
Drill Core Leigh Creek LC3218C
377.85m to 625.25m



377.8 - 379.9 Mudstone - Main Series overburden (MO)

379.9 - 398.85 Main Series Coal (MC)

398.85 - 486.8 Mudstone - Lower Series overburden (LO)

486.8 - 488.45 Coal Lower Series (LC)
488.45 - 489.75 Mudstone (LO)
489.75 - 494.5 Siltstone
494.5 - 495.5 Coal Lower Series (LC)
495.5 - 495.7 Mudstone
495.7 - 496.3 Coal Lower Series (LC)
496.3 - 497.3 Mudstone
497.3 - 498.3 Coal Lower Series (LC)
498.3 - 499.8 Mudstone
499.8 - 501.2 Coal Lower Series (LC)

501.2 - 520.6 Siltstone

520.6 - 529.3 Coal Lower series (LC)

529.3 - 570.5 Mudstone Siltstone

570.5 - 610.5 Calcareous Shale

610.5 - 613.9 Cream Fault Breccia with possible Uncomformity

613.9 - 625.25 Siltstone and Limestone Basement (B) Pre Cambrian

Log is not to scale and is intended for representitive purposes only

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Core Photo of Main Seam Roof Contact (379.9m)

Core Photo of Main Seam Floor contact (398.55m)

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Core Photo's of Lower V Seam (Box 519m to 522m)

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Core Photo of Lower V Seam (522 – 525m)

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Core Photo of Lower V Seam (526 – 528m)

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Appendix 3.

JORC 2012 Table 1

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JORC Code, 2012 Edition – Table 1

Section 1 Sampling Techniques and Data

(Criteria in this section apply to all succeeding sections.)

Criteria	Commentary
Sampling techniques	• Most of the drilling data used to assess the leigh creek coal seams was historic, up to 50 years. Triangulation of seams based on geological and geophysical logs. The accuracy of the seam depths and thicknesses have been determined by AMC as of sufficient accuracy for an Exploration Target estimate. Coal quality data assessed in various reports refer to reference list.
Drilling techniques	• Drilling described as diamond drilling and stratigraphic fully cored holes.
Drill sample recovery	• Core recovery not critical for many of the holes since geophysical logs confirm depths and seam widths. Since coal qualities have been modelled the core recoveries at the seam contacts are critical. There are no records of the core recoveries in the older holes.
Logging	• All the holes used in the exploration target modelling have lithological and/or stratigraphic logs. The DSD SARIG web based drillhole database was utilised.
Sub-sampling techniques and sample preparation	• Coal qualities were not modelled so sub-sampling not relevant. Where core qualities were tested in the most recent holes the entire drill core was sampled. • Coal qualities mentioned in this report are for general guidance only and not part of any resource estimate. They are however widely published – refer reference list.
Quality of assay data and laboratory tests	• Coal qualities were not modelled so the quality of the laboratory test results are not relevant. • Where proximate core qualities from the most recent holes are mentioned in the report, the laboratory that conducted the tests is industry certified and followed industry standard testing procedures.
Verification of sampling and assaying	• No verification samples were collected.
Location of data points	• The accuracy of the surveying has not been determined by AMC but is considered accurate enough for an Exploration Target estimate. • All coordinates are in GDA54 grid. • The project area is generally flat with limited topographic variation.
Data spacing	• The data points are on an approximate 500m x 2500m grid in part in-

Criteria	Commentary
and distribution	filled to 400m apart.
Orientation of data in relation to geological structure	• The grid spacing is appropriate for the orientation of the seams after regional structural displacement.
Sample security	• N/A
Audits or reviews	• No audits or reviews of the sampling or data have been carried out.

Section 2 Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	Commentary
Mineral tenement and land tenure status	• ARP TriEnergy have 100% tenure over the project area under Petroleum Exploration Licence (PEL) under the Petroleum and Geothermal Act 2000. Alinta have tenure under an exemption proclamation. See appendix 1. • Native Title is extinguished within PEL650.
Exploration done by other parties	• A full list of references are included as part of the report.
Geology	• Permian coal seams within the Leigh Creek Coal Fields South Australia.
Drill hole Information	• Approximately 50 years were used in the asessment.
Data aggregation methods	• All seam thicknesses calculated from logged top and bottom of the seams using geologist logs or geophysical logs where available. • Stone partings were included in seam thicknesses. • "Visual" estimates of coal contents of seams (i.e. excluding stone partings) based on inspection of logs and drill core at the Department of the State Development Library, Glenside Adelaide.
Relationship	• Since all the holes are drilled vertical, with only small deviations down the hole, and the coal seams are generally flat (no more than +/- 20

Criteria	Commentary
between mineralisation widths and intercept lengths	degrees) the seam intercepts are only marginally greater than true seam widths.
Diagrams	• Appropriate plans and sections included in report.
Balanced reporting	• No data was excluded or included to bias results.
Other substantive exploration data	• No other meaningful or material data that could affect the results is known to AMC..
Further work	• Further drilling, logging, laboratory and processing tests recommended to produce a resource estimate.

Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	Commentary
Database integrity	• Most of the data used in the coal seam tonnage estimates is from historic drilling. Where possible copies of original sources used to source data is identified in Reference section.
Site visits	• Site visit undertaken by the authors of this report on 7th January 2015. • LCEP is over an operating open cut mine, coal seams can be mapped at the surface.
Geological interpretation	• The overall geological model fairly represents the geology of the seams. Due to the wide drill hole spacing and some difficulties in interpreting historical logs minor errors may have resulted in the interpretation but these errors would not significantly affect the tonnage estimates or affect the JORC Code category assigned.
Dimensions	• The Telford Lobe is approximately 7 x 5 km and is the largest of five discrete basins.
Estimation and modelling techniques	• The modelling technique used to estimate the seam coal tonnages is appropriate for the quality and density of the available data. • Two methods were used to estimate areas of each of the seams as a check and the areas calculated by both methods corresponded well. • Only tonnages were estimated by AMC. Proximate analyses and

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Criteria	Commentary
	processing test results mentioned in the report are provided as a general guide only.
Moisture	• All coal tonnages are based on assumed bulk densities that represent coal "air dried".
Cut-off parameters	• The seam thicknesses are based on geological and geophysical logs of coal seams.
Mining factors or assumptions	• No mining factors or assumptions are made. • Most of the modelled coal, because of its depth below the current topographic surface, would need to be mined using underground mining methods.
Metallurgical factors or assumptions	• No metallurgical or recovery factors have been assumed.
Environmen-tal factors or assumptions	• No environmental factors were considered for the reported tonnage estimates. • Current environmental restrictions noted in the report require approvals for drilling sites. • Given that this an existing coal mine and since most of the coal would need to be mined using underground mining methods it can be reasonable assumed that the best economic recovery for deep stranded coal would be ISG with a minimal environmental footprint.
Bulk density	• All coal tonnages are based on assumed bulk densities that represent coal "air dried". The assumed bulk densities are based on similar coals in the region.
Classification	• Due to the wide drill hole spacing and some difficulties in interpreting historical logs the tonnage estimates have been assigned a JORC Code category of Exploration Target which is not a resource. These estimates are only conceptual in nature and future exploration may or may not eventually convert all or part of these estimates to resources.
Audits or reviews	• There have been a reviews of the reported coal tonnages by the author based on prior reports from DSD and other government departments. Continous drilling further maintains the current estimates published.
Discussion of relative accuracy/ confidence	• The tonnage estimates have been assigned a JORC Code category of Exploration Target which is not a resource. These estimates are only conceptual in nature and reported as ranges to reflect the uncertainties and future exploration may or may not eventually convert all or part of these estimates to resources.

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Appendix 4.

Tenement licence Status Report

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PEL 650

Tenement Type	Petroleum Exploration Licence (Petroleum and Geothermal Energy Act 2000)
Tenement Number	650
Area	93.4 Km^2
Status	Granted (instrument publically available on South Australian Department of State Development website)
Date	18 November 2014
Expiry Date	17 November 2019
Application Fee	$4,085
Renewal Fee (5 years after grant)	$2,043
Ongoing Annual Fee	$3,456
Ongoing Exploration Expenditure	$1,200,000 per annum
Ownership	100% ARP TriEnergy Pty Ltd
Overlying Tenure	No
Native Title	No

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PELA 649

Tenement Type	Petroleum Exploration Licence Application (Petroleum and Geothermal Energy Act 2000)
Tenement Number	649
Area	2,308 Km^2
Status	Under Application
Date	24 September 2014
Expiry Date	5 years after date of licence grant
Application Fee	$4,085
Renewal Fee (5 years after grant)	$2,043 (when granted)
Ongoing Annual Fee	$3,456 (when granted)
Ongoing Exploration Expenditure	$2,500,000 over 5 years from licence grant date
Ownership	100% ARP TriEnergy Pty Ltd
Overlying Tenure	Multiple tenements under the (Mining Act 1971), which are excluded from extracting petroleum products
Native Title	Native Title Determination Applications: Barngarla Native Title Claim Tribunal reference Number: SC 1996/004 Date registered: 4/4/1996 Nauo Native Title Claim Tribunal reference Number: SC 1997/008 Date registered 18/11/1997

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PELA 644

Tenement Type	Petroleum Exploration Licence Application (Petroleum and Geothermal Energy Act 2000)
Tenement Number	644
Area	8,932 Km^2
Status	Under Application
Date	15 July 2014
Expiry Date	5 years after date of licence grant
Application Fee	$4,085
Renewal Fee (5 years after grant)	$2,043 (when granted)
Ongoing Annual Fee	$3,456 (when granted)
Ongoing Exploration Expenditure	$2,500,000 over 5 years from licence grant date
Ownership	100% ARP TriEnergy Pty Ltd
Overlying Tenure	Multiple tenements under the Mining Act 1971, which are excluded from extracting petroleum products
Native Title	Determinations of Native Title in the Federal Court of Australia Kokatha People (Part A) Tribunal Reference Number: SCD 2014/004, Determination date: 1/09/2014 Native Title Determination Applications: Kokatha Native Title Claim Tribunal reference Number: SC 2014/002 Date registered: 17/11/14 Adnyamathanha #5 Native Title Claim Tribunal reference Number: SC 2012/004 Date lodged: 8/11/12 (not accepted for registration)

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PELA 647

Tenement Type	Petroleum Exploration Licence Application (Petroleum and Geothermal Energy Act 2000)
Tenement Number	647
Area	8,932 Km^2
Status	Under Application
Date	15 July 2014
Expiry Date	5 years after date of licence grant
Application Fee	$4,085
Renewal Fee (5 years after grant)	$2,043 (when granted)
Ongoing Annual Fee	$3,456 (when granted)
Ongoing Exploration Expenditure	$2,500,000 over 5 years from licence grant date
Ownership	100% ARP TriEnergy Pty Ltd
Overlying Tenure	Multiple tenements under the Mining Act 1971, which are excluded from extracting petroleum products
Native Title	Determinations of Native Title in the Federal Court of Australia Adnyamathanha No. 1 Tribunal reference number: SCD 2009/003 Determination date: 30/03/2009 Adnyamathanha No. 1 – Stage 2 Tribunal Reference Number: SCD 2014/001 Determination date: 25/02/2014

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PELA 643

Tenement Type	Petroleum Exploration Licence Application (Petroleum and Geothermal Energy Act 2000)
Tenement Number	643
Area	5,813 Km^2
Status	Under Application
Date	15 July 2014
Expiry Date	5 years after date of licence grant
Application Fee	$4,085
Renewal Fee (5 years after grant)	$2,043 (when granted)
Ongoing Annual Fee	$3,456 (when granted)
Ongoing Exploration Expenditure	$2,500,000 over 5 years from licence grant date
Ownership	100% ARP TriEnergy Pty Ltd
Overlying Tenure	Multiple tenements under the Mining Act 1971, which are excluded from extracting petroleum products
Native Title	Determinations of Native Title by the Federal Court of Australia Adnyamathanha No. 1- Stage 1 Tribunal Reference Number: SCD 2009/003 Determination Date: 30/03/2009) Adnyamathanha No. 1 – Stage 2 Tribunal Reference Number: SCD 2014/001 Determination date: 25/02/2014 Adnyamathanha No. 1 –Stage 3 Tribunal Reference Number: SCD 2014/002 Determination date: 25/02/2014

	Native Title Determination Applications Adnyamathanha No. 1 Tribunal Reference Number: SC 1999/001 Date registered: 31/03/1999 Malyangapa Peoples Tribunal Reference Number: SC 2013/004 Date lodged 28/08/2013, (not accepted for registration)

PELA 582

Tenement Type	Petroleum Exploration Licence Application (Petroleum and Geothermal Energy Act 2000)
Tenement Number	582
Area	5,677 Km^2
Status	Under Application
Date	15 July 2014
Expiry Date	5 years after date of licence grant
Application Fee	$4,085
Renewal Fee (5 years after grant)	$2,043 (when granted)
Ongoing Annual Fee	$3,456 (when granted)
Ongoing Exploration Expenditure	$2,500,000 over 5 years from licence grant date
Ownership	100% ARP TriEnergy Pty Ltd
Overlying Tenure	Multiple tenements under the Mining Act 1971, which are excluded from extracting petroleum products
Native Title	Determinations of Native Title in the Federal Court of Australia Arabana People

	Tribunal Application number: SCD 2012/002 Determination date: 24/05/2012

ELA 2014/00232

Tenement Type	Exploration Licence Application (Mining Act 1971)
Tenement Number	2014/00232
Area	942 Km^2
Status	Exploration Licence offered 12 February 2015
Date	Accepted 3 March 2015
Expiry Date	1 year after date of licence grant
Application Fee	$750
Acceptance Fee	$10,738
Ongoing Annual Fee	$10,888
Ongoing Exploration Expenditure	$130,000 per annum
Ownership	100% ARP TriEnergy Pty Ltd
Overlying Tenure	Overlying Petroleum Exploration Licence Application
Native Title	Determinations of Native Title in the Federal Court of Australia Adnyamathanha People No 1 Tribunal reference Number: SCD 2009/003 Determination date: 30/3/2009

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ELA 2014/00238

Tenement Type	Exploration Licence Application (Mining Act 1971)
Tenement Number	2014/00238
Area	351 Km^2
Status	Exploration Licence offered 12 February 2015
Date	Accepted 3 March 2015
Expiry Date	1 year after date of licence grant
Application Fee	$750
Acceptance Fee	$4,001
Ongoing Annual Fee	$4,151
Ongoing Exploration Expenditure	$65,000 per annum
Ownership	100% ARP TriEnergy Pty Ltd
Overlying Tenure	Overlying Petroleum Exploration Licence Application
Native Title	Determinations of Native Title in the Federal Court of Australia Arabana People Tribunal Application number: SCD 2012/002 Determination date: 24/05/2012 Adnyamathanha People No 1 – Stage 1 Tribunal reference Number: SCD2009/003 Determination date: 30/3/2009 Registered Native Title Determination Applications Arabana People No 2 Tribunal reference Number: SCD2013/001 Registration date: 10/5/2013