



Tuesday, 28 May 2019: ASX ANNOUNCEMENT (ASX: LCK)

In-Depth Review of the Leigh Creek Energy Project PRMS

- LCK's maiden PRMS certification based on JORC Report
- The current PRMS 2P gas reserve only accounts for 31% of the available JORC compliant coal resource
- Potential for additional gas reserve upgrades anticipated in the future

Leigh Creek Energy Limited (ASX: LCK) ("LCK" or "Company") is seeking to provide additional information regarding the announcement on 27 March 2019 regarding its Society of Petroleum Engineers - Petroleum Resources Management System (PRMS) certification of 1,153 PJ 2P Reserve for the Leigh Creek Energy Project (LCEP). A 2P reserve is the estimated sum of proved and probable reserves of a hydrocarbon resource that is considered to be reasonably recovered under current economic and technical conditions. This is the key metric for oil & gas companies as well as investors and lending agencies to determine the economic resource.

PRMS requirement

A PRMS Reserve certification is based on 2 pre-conditions being met:

1. A successful production test; and
2. A JORC compliant Indicated Resource estimation. (see below)

LCK's PRMS certification of 1,153 PJ of 2P Reserves was based on these 2 conditions being met.

One of the key tests of any 2P reserve is to show that the resource can be successfully extracted at commercial rates. As verified by MHA, the specialist independent oil & gas engineering firm in Denver, USA, LCK's successful production test was one of the key results from LCK's Pre-Commercial Demonstration (PCD) – see ASX announcement 19 February 2019.

The PRMS is published in strict accordance with the Society of Petroleum Engineers (SPE), American Association of Petroleum Geologists (AAPG), World Petroleum Council (WPC) and Society of Petroleum Evaluation Engineers (SPEE) and is the fundamental internationally accepted methodology for providing " a consistent approach to estimating petroleum quantities, evaluating projects, and presenting results within a comprehensive classification framework."

Under those strict guidelines, "Reserves are those quantities of petroleum anticipated to be commercially recoverable by application of development projects to known accumulations from a given date forward under defined conditions." The SPE also states that "To be included in the Reserves class, there must be a high confidence in the commercial producibility of the reservoir as supported by actual production or formation tests." For the LCEP, the production test was the PCD.

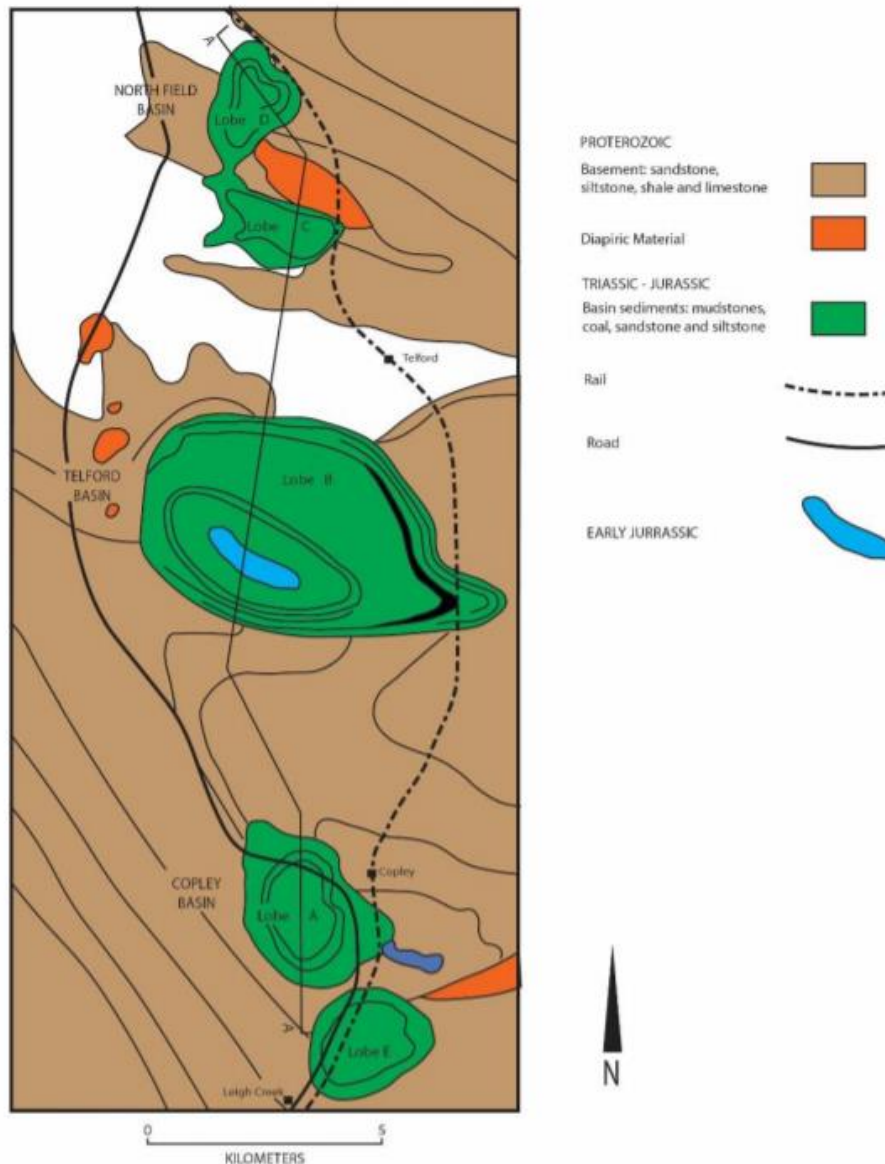
PRMS and JORC

A PRMS certification is based on several related reports and testing including the JORC report (a report complying with The Australasian Code for Reporting of exploration results, mineral resources and ore reserves ('the JORC Code'). In the case of LCK's PRMS certification, this report (Leigh Creek Energy Ltd PEL650 - Leigh Creek Energy Project - Geological and Modelling Report, JORC Resource Estimation Project Assessment; available at www.lcke.com.au/News) was prepared by Brisbane based GeoConsult Pty Ltd in March 2019. It must be remembered that the PRMS is the primary document that provides LCK with its 2P and 3P reserves.

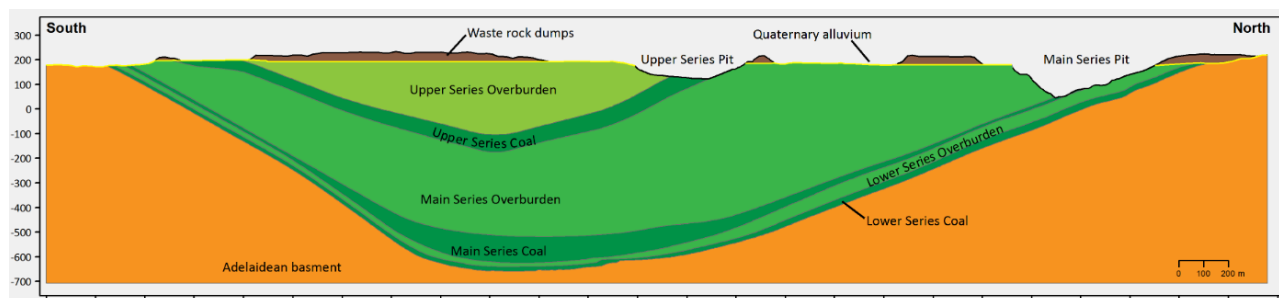
LCK's recent JORC compliant determination dated March 2019 contains an estimation for Indicated and Inferred resources. This is a considerable upgrade from LCK's initial JORC announcement (see ASX announcement dated 8 December 2015) that provided information for inferred resources only.

Five separate discrete basins make up the Leigh Creek Coalfield (see below). LCK's tenement area (Petroleum Exploration License 650) contains the Telford Basin Lobe B, Lobe C and Lobe D. It is important to note that the PRMS did not include any of the shallow coal, which was either previously mined from surface and would not have been suitable for in-situ gasification (ISG)

COAL BASINS OF THE LEIGH CREEK REGION



LCK's PRMS and JORC Report are based on the three distinct coal seams in the Telford Basin only - the **Upper**, **Main** and **Lower** Series formations.



JORC Report

A summary of LCK's LCEP JORC Report is below:

Seam	Indicated Tonnes (million tonnes – mt)	Inferred Tonnes (mt)	Total Tonnes (mt)
Upper	93.6	0	93.6
Main	93.	73.4	166.4
Lower	0	41.2	41.2
Totals	186.6	114.6	301.2

A total of 301.2mt of coal was the subject of LCK's JORC Report, of which 62% related to Indicated Resources, and 38% for Inferred Resources, all in the Telford Basin.

LCK's successful production test, the PCD, was undertaken only on the 93mt Main Series Indicated resource, hence, the company's PRMS certification of 1,153 PJ of 2P Reserve only relates to 31% of the coal available to the LCEP within the Telford Basin.

93.6mt (a further 50% more Indicated resource) in the Upper Series and a further 114.6mt of Inferred Resource (69% of the coal the subject of the JORC Report) in the Main and Lower Series were not subject to the PCD from where the 1,153PJ of 2P Reserves was derived.

These calculations indicate that there is further scope for the LCEP's gas reserves to be increased over time, as more exploration drilling and seismic work and Production Tests are undertaken on the Upper and Lower Series coal formations within the Telford Basin.

Monetising 1,153 PJ 2P Reserves

LCK's 1,153 PJ of 2P Reserves is significant as it represents East Coast Australia's **largest uncontracted gas reserve**. LCK's PCD confirmed that the gas produced was of a quality and volume to justify a substantial commercial project. It is estimated that a maximum of 50-80PJ per annum of gas is available to be converted into commercial product (see below), justifying a 20+ year project, based on the initial PRMS certification. As outlined above, there is further scope to increase this gas reserve volume.

LCK has multiple commercialisation paths for an asset of this size and quality. LCK has been studying two business options, both of which have significantly positive economic returns, namely:

1. The sale of synthetic **natural gas** into the Australian East Coast market; and/or
2. Using the gas to manufacture **ammonia-based fertiliser products**.

LCK is actively in discussions with both financial and strategic partners to execute these strategies.

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Resource Compliance Statement

The PRMS resources estimates stated herein are based on, and fairly represent, information and supporting documentation prepared by Timothy Hower of MHA Petroleum Consulting, Denver USA. Mr Hower is a member of the Society of Petroleum Engineers and has consented to the use of the Resource estimates and supporting information contained herein in the form and context in which it appears.

LCK has previously announced that it has an updated JORC Resource Estimation of the coal tonnes within the Telford Basin, based upon the latest information and data available. The updated Geological Model and JORC Resource Estimation report was prepared by Warwick Smyth & Lynne Banwell of GeoConsult Pty Ltd during March 2019 was used in this latest PRMS estimation. A copy of the GeoConsult report on the updated Geological Model and JORC Resource Estimation is available to view at <http://www.lcke.com.au/News/lcke-project-2019-geological-modelling-report-resource-statement> .