



9 November 2016

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Australian Securities Exchange Limited

## Leigh Creek Energy Corporate Update

### Project Progress

- **Progress on Pre-Commercial Demonstration (PCD) project continues**
- **Market acceptance of and interest in LCK increasing**
- **Company reshaped to take advantage of existing and future opportunities**

LCK is pleased to provide the following update on its current status and the progress of the Leigh Creek Energy Project (LCEP) and in particular the pre-commercial demonstration project (PCD).

### Background

The last few months have been a time of significant change for LCK, both internally and externally. Internally we have conducted a major review of our organisation to deliver a structure that is aligned with the current and future needs of the Company. Externally the upheaval in the Australian energy markets was brought into sharp focus by the Condition Black event in South Australia on September 28 that left the entire state without power over an extended period and created significant cost to industry.

### Internal Restructure

The internal restructure is now complete with a management team and structure aligned to the goals of the company. Within this structure the roles and responsibilities of each team member are clear as are the corporate deliverables and project timeframes. Staff reductions of approximately 20% of headcount were implemented which will lead to annual savings in excess of \$1m.

The LCK team is very much focussed on delivery of the pre-commercial demonstration project.

### External Environment

LCK aims to be a syngas producer. This syngas can be used for power generation, pipeline quality synthetic natural gas, industrial explosives, agricultural fertiliser and other opportunities.

The domestic gas market is clearly supply constrained primarily resulting from the establishment of the three LNG projects at Gladstone. Gas demand continues to increase as further LNG trains come on line resulting in the tripling of east coast gas demand.

At the same time that demand is increasing, supply growth continues to be limited, largely due to various difficulties in, and restrictions on, development in the eastern states.

As a result of this increasing demand and falling supply, market forces have pushed gas prices higher. Prices have been rising for several years with the expectation that they will continue to do so in the future.

Since the closure of the Port Augusta power station, South Australia now has no coal fired power generation. The state is reliant on gas fired generation for peaking and grid stability.

Although South Australia already has significantly higher power prices than other mainland states, the major concern is now shifting to reliability of supply which is typically even more critical than the cost of supply.

The reliability of electricity supply is a critical ongoing issue for the state of South Australia.

### **Changing Perceptions**

LCK has become acutely aware in the recent past of a positive change in the external perception of LCK - particularly from large buyers and users of gas and electricity.

The ongoing progress towards the PCD project is bringing the LCEP closer to fruition whilst active investor relations and marketing efforts are bringing a broader understanding of the project. In the context of the current and forecast gas and electricity markets, LCK then becomes a more attractive potential business partner.

We are currently in discussions with a number of parties regarding the long term development of the LCEP. These discussions are broad ranging and cover both future gas and electricity sales as well as potential strategic partnering opportunities.

### **Pathways to Commercial Production**

The changes in the energy market have presented significant opportunities for LCK. In response to these opportunities, the scope of our commercial development option studies was broadened, to ensure that LCK lays a solid foundation and follows the pathway that has the most appropriate balance of practicality, achievability and return on capital.

In undertaking these studies, the company has taken a deliberate position to review its expected commercial risk profile. Timelines developed are consistent with that acceptable risk profile. Whilst this additional effort resulted in some delays to the project, it is very much a necessary part of our planning and ongoing risk management activities.

LCK has a number of potential pathways to commercialisation. Whilst the ultimate outcome may vary, each of these pathways has the same first phase – development of the PCD plant at the LCEP.

## Pre-Commercial Demonstration Progress

The LCEP is located at Leigh Creek in central South Australia, 550km north of Adelaide. The project sits within the existing Leigh Creek coalfield area, and will develop coal resources that are unable to be accessed by open-cut mining.

Energy will be produced from coal using the in-situ gasification (ISG) process, which converts coal from its solid state into a gaseous form, resulting in the production of synthesis gas (syngas) containing methane, hydrogen and other valuable components.

Three project phases have been defined for the LCEP: Site Characterisation, ISG Demonstration (PCD), and the ISG Commercial phase. Site characterisation is underway and includes the environmental baseline sampling and monitor well drilling.



Figure 1 LCK personnel conducting baseline monitoring at the Leigh Creek site



Figure 2 Environmental drilling at the Leigh Creek Demonstration site

LCK plans to build and operate the PCD facility to provide environmental and design data for the commercial plant. The PCD plant will operate a single linked vertical well gasifier, gas control and analysis plant. It is intended this will operate for between 30 and 60 days to produce syngas so the composition and performance of the process can be measured. The PCD site is expected to be around 200m long by 80m wide – about 2 football fields in total – although most of this area is buffer space around the plant

components. All syngas and associated condensate products will be disposed through a thermal oxidation process.

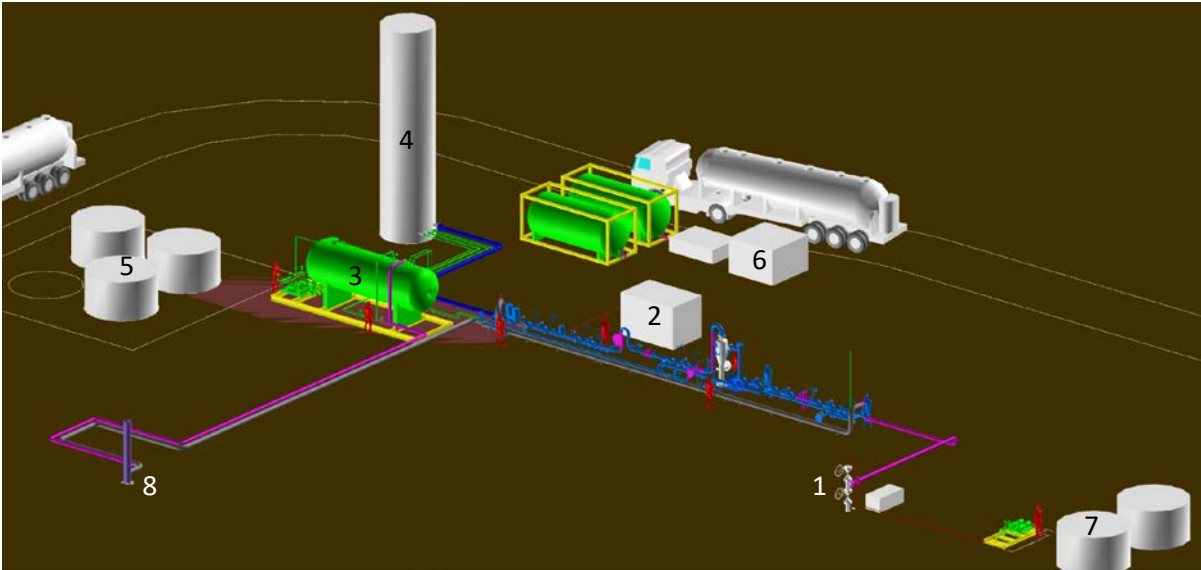


Figure 3 Indicative isometric view of the demonstration facility

PCD components (annotated above) include:

1. Production well
2. Gas analyser
3. Condensate separation tank
4. Thermal oxidiser
5. Condensate buffer tanks
6. Generators and diesel storage
7. Water injection facility
8. Safety vent

A rigorous process has been used to inform the PCD facility design and operating methodologies including external peer reviews, risk assessment and mitigation, and key learnings from past projects. The design

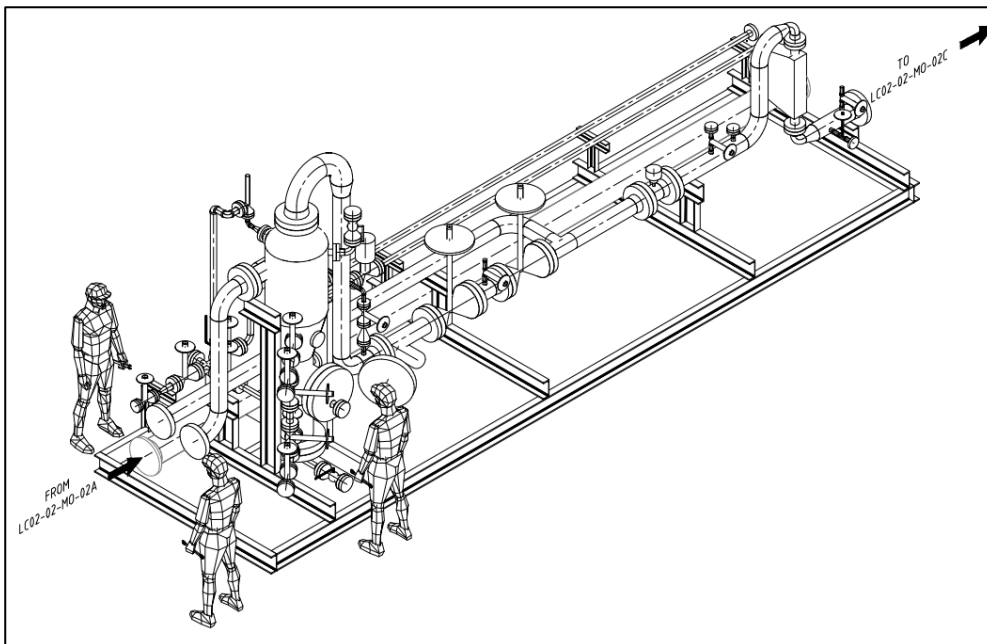


Figure 4 Section of the Demonstration plant design

process is 80% complete; finalisation will be dependent upon environmental data and regulatory review, risk assessment and approval scheduled for the current quarter. Future commercial studies (discussed above) will be informed by data collated during the PCD phase.

## Summary

LCK continues to move forward with the development of the PCD and the Leigh Creek Energy Project. Further announcements will be made as we move towards on-site construction.

Notwithstanding the continuing progress with the PCD, there have been delays onsite that have been previously reported. These delays have impacted on the Leigh Creek Energy Project timelines.

Of greater importance and impact are the changes we have made to our commercial risk profile and the effort directed towards the assessment of current opportunities.

All these factors have resulted in a revised project timeline. The key date of initiation (gas flaring) was formerly March 2017. Our latest project planning indicates an initiation in mid-2017. Whilst this delay is not desirable it is clearly advisable.

It is important to note that, whilst we are planning a delay in initiation, there have been no significant changes to the forecast capital costs of the PCD.

LCK remains committed to completing the PCD in a safe, timely and cost-efficient manner, whilst simultaneously developing the corporate relationships that will be necessary in order to deliver maximum value from the LCEP.

*Commenting on the announcement Mr Justyn Peters (Executive Chairman) said “The current environment of stressed markets for energy provides multiple opportunities for Leigh Creek Energy with its certified 2C resource of almost 3,000PJ. The operation of the PCD will show “proof of concept” and be a turning point for the Company. We fully expect interest in the Company and the LCEP to increase substantially with the operation of the PCD.*

*It is an exciting time for Leigh Creek Energy as we look forward to developing the LCEP to the benefit of all stakeholders and making the most of the opportunities presented.”*

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## Gas Resource Statement

*Gas Resources reported in this announcement were initially reported and released to the ASX on 8 January 2016. Leigh Creek Energy Limited is not aware of any new information or data that materially affects the information included in the 8 January 2016 announcement and that all the material assumptions and technical parameters underpinning the estimates in that announcement continue to apply and have not materially changed. All Estimates are based on the deterministic method for estimation of petroleum resources.*



### **About Leigh Creek Energy**

*Leigh Creek Energy Limited (LCK) is an emerging gas company focused on developing its Leigh Creek Energy Project (LCEP), located in South Australia. The LCEP will produce high value products such as methane, electricity and potentially fertiliser from the remnant coal resources at Leigh Creek utilising In Situ Gasification (ISG) technologies, and will provide long term growth and opportunities to the communities of the northern Flinders Ranges and South Australia.*

*The Company is committed to developing the LCEP using a best practice approach to mitigate the technical, environmental and financial project risks.*

***Leigh Creek Energy – bringing reliable energy to South Australia.***