# Fast Facts

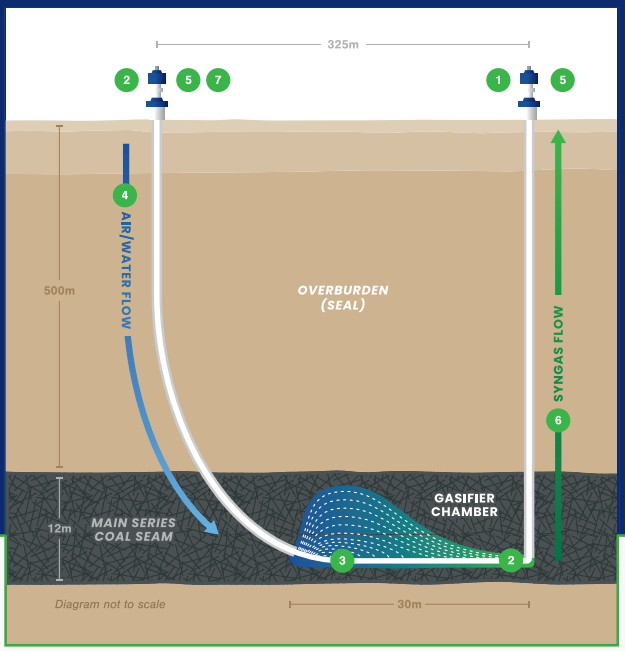
**1153 PJ syngas - largest uncontracted gas reserve available to eastern Australia**

## How does the ISG process work?

The In-Situ Gasification (ISG) process converts coal, through a series of chemical reactions, from its solid state into a gaseous form, resulting in the generation of syngas, or synthetic gas.

Syngas comprises energy gases, such as methane, hydrogen and carbon monoxide with variable amounts of inert gases, such as carbon dioxide and nitrogen.

1. Outlet well is drilled to intersect coal seam.
2. Inlet well is drilled and steered to link up with outlet well.
3. Initiation tool is placed down the inlet well to heat the coal and starts the gasification process.
4. Addition of air and water creates a series of chemical reactions transforming coal to syngas.
5. Process is controlled by using inlet well to manage the flow of air and water
6. Syngas will flow up through the outlet well and is analysed on the surface.
7. Process is stopped by turning off air and water supply from the inlet well.




The demonstration plant was located in the heavily modified Telford Basin in the former Leigh Creek Coalfield.

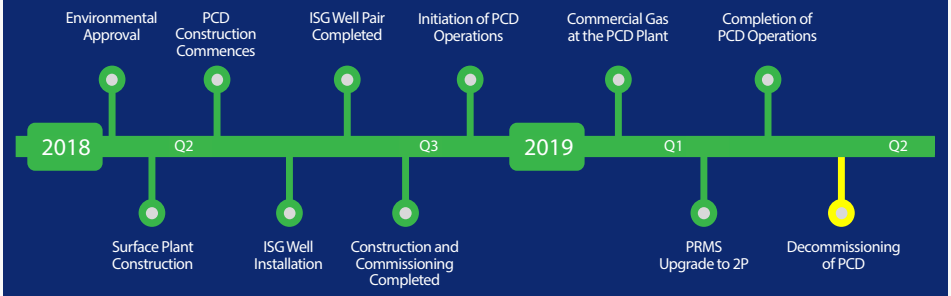
## What is the Leigh Creek Energy Project?

The project location at the now closed Leigh Creek Coalfield was initially identified as a highly favourable location for In-Situ Gasification using environmental, technical and commercial criteria.

The coal reserve is technically suitable for undertaking ISG in a safe manner minimising environmental impact, and the local area is well serviced by existing and useful infrastructure.

The State Government Regulator's Independent Assessment Report concluded that "... the Leigh Creek site represents one the strongest opportunities for low risk commercial UCG anywhere in the world."

## Leigh Creek Energy milestones




## What is LCK's Pre-Commercial Demonstration?

LCK's Pre-Commercial Demonstration (PCD) commenced Q4 2018 and concluded Q1 2019 and had five main objectives:

1. Produce syngas comprising Methane ($CH_4$), Hydrogen ($H_2$), Carbon Monoxide (CO) and Nitrogen ($N_2$).

2. Produce syngas at over 1 million cubic feet per day.

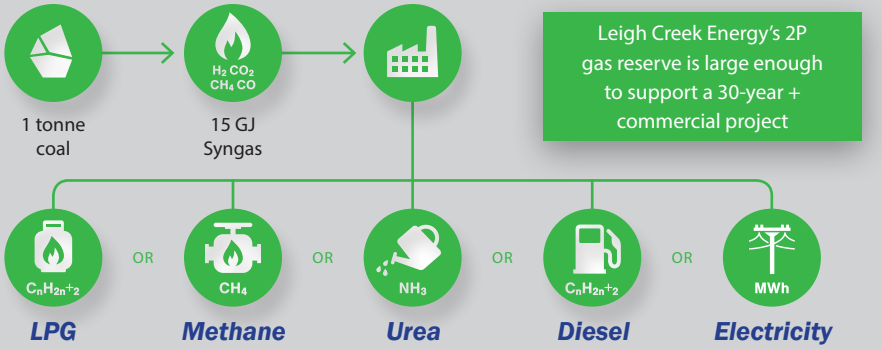
3. Capture information required to upgrade the existing Petroleum Resources Management System (PRMS) 2,964 PJ 2C resource to 2P reserve.

4. Demonstrate safe and environmentally responsible ISG operations.

5. Provide key data and information for commercial project development.

The PCD was deemed a success having met or exceeded all objectives, taking the company another step closer to commercial operations.

LCK's PCD facility.




**Leigh Creek Energy's 2P gas reserve is large enough to support a 30-year + commercial project**

## What is a 2P Reserve?

The project has a PRMS reserve of 2P 1,153 PJ, which is now the largest uncontracted gas reserve available to eastern Australia and larger than what is commercially available in the entire Cooper Basin (ACCC, 2018).

LCK's certification comes after having successfully extracted gas at economic flow rates at its PCD.

The size of the reserve indicates that LCK has multiple commercailisation paths, mainly the sale of synthetic natural gas in the Australian East Coast market and/or using the gas to manufacture ammonia-based fertiliser products.

LCK LEIGH CREEK ENERGY Limited