A SHORT HISTORY OF UNDERGROUND COAL GASIFICATION

Underground Coal Gasification (UCG) was initially established in the former Soviet Union in the 1930s. Since then there have been over 60 UCG projects around the world.

Advancements in the industry have made most progress in times of tougher economic conditions such as high fuel prices and concerns over energy security.

From the early 1970s to the mid-80s, as global oil prices reached new highs, the US Department of Energy conducted a series of trials to demonstrate advancements of UCG in the field.

In recent years, advances in directional drilling, increasing energy demand worldwide and a global focus on delivering more environmentally sound energy production, have reinvigorated UCG innovation.

The historical evolution of UCG designs include Linked Vertical Well, Steeply Dipping Bed, Tunnel and Controlled Retracting Injection Point (CRIP).

Carbon Energy’s proprietary UCG technology keyseam® was created following 10 years of research and development with Australia’s leading scientific research agency, the Commonwealth Scientific and Industrial Research Organisation (CSIRO).

keyseam was born out of the analysis of over 60 UCG projects around the world to identify the barriers to commercialising UCG. Through extensive research and field demonstration, Carbon Energy has overcome these barriers:

1. Site Selection and Characterisation Methodology - to assess resource and site suitability.
2. Advanced Geological and Hydrological Modelling – sophisticated, proprietary modelling tools developed for gasification, hydrology and geology to support a long term operation.
3. UCG Panel Design – to produce a consistent flow of high-quality gas, essential for downstream product markets.

Carbon Energy’s recent achievements in generating electricity from syngas confirm keyseam is at the cutting edge in advanced coal technology, leading the world in developing an alternative energy source from stranded, deep coal reserves.