

Clarke Energy

Engineer - Install - Maintain



Distributor & Service Provider
Gas Engines

Coal Gases

Coal Seam Methane
Coal Mine Methane
Abandoned Mine Methane

Coal Gases

Clarke Energy is the authorised distributor and service partner for GE Energy’s gas engine division in a growing number of countries across the world. In addition to providing high-efficiency, reliable gas engines we combine this with the expertise and resources to deliver unbeatable product support.

Whether your requirement is for the supply of a single gas engine generator or a complete turnkey power generation facility, we can meet that need. Our ability to add value by offering an end-to-end service, from initial proposal to reliable long-term maintenance, has led to us becoming a multi-national company with operations in ten countries across the globe. Our company prides itself on integrity, delivering only the highest quality products whilst providing a reliable accountable localised service.

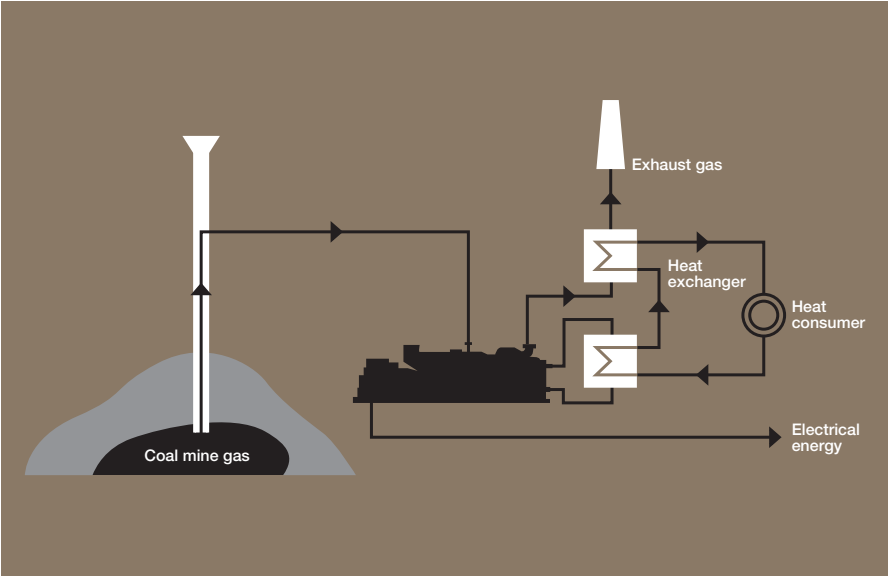
Benefits of working with Clarke Energy
Clarke Energy provides flexible solutions for your gas generation projects. Our services range from the supply of a gas engine generator, through to the complete turnkey installation of a gas powered generation facility. Clarke Energy has a dedicated, top-quality team of sales, engineering, project management, commissioning and maintenance staff to meet your needs. We also offer long-term maintenance contracts backed up by a strong balance sheet, giving peace of mind with respect to the long-term performance of your GE gas generation equipment.

Coal Gas	Coal Seam Gas (CSG)
Coal mine degasification was originally developed to improve worker safety. The methane, if not captured, is usually vented to the atmosphere through the use of exhaust fans. The potential danger to the environment through mines gas and its main constituent methane (CH ₄ , 25-60%) can be reduced significantly considering methane has a global warming potential (GWP) 21 times that of CO ₂ .	Coal Seam Gas (CSG) is the type of gas collected from un-mined coal beds. CSG consists of over 90% methane and can be harvested independently of coal mining in some locations. The gas composition is normally stable, meaning that the gas can be fed directly into the natural gas network or a gas engine.

Harworth Colliery, UK, closed mine, 5 x JGC420



Coal Gas Schematic



Coal Mine Methane (CMM)	Power Generation	Proven Solution	Advantages
<p>Coal Mine Methane (CMM) is the type of gas present in active mine sites. CMM is a mixture of methane & air that is released during the process of coal mining and must be vented for safety reasons. CMM typically has an oxygen content of 5-12%. The methane content ranges from 25-60%. However, the methane/air proportion can change suddenly, thus complicating its use in gas engines</p>	<p>The first Jenbacher systems for utilisation of coal gas were installed in Germany and England during the mid-1980's. Currently in excess of 183 units with a combined electrical output of over 398MW are in operation worldwide.</p> <p>Clarke Energy, an internationally recognised specialist in this technology has installed over 100 units producing in excess of 225MW of electrical power generation from coal seam gas and coal mine methane in Australia.</p> <p>On working mine applications the versatility of GE Jenbacher gas engines is further demonstrated under conditions where mining activity produces varying methane gas content.</p> <p>GE Jenbacher gas engines are able to cope with this constantly changing gas to reliably produce electrical power. At Australian sites it is not unusual to have methane content less than 30% while the gensets continues to maintain full power output.</p> <p>As well as varying methane content the mine gas invariably contains potentially damaging contaminants (eg dust/water). Clarke Energy has developed gas conditioning systems to cope with a wide variety of these contaminants to ensure reliable power generation without increasing maintenance requirements.</p>	<p>The Clarke Energy "pre-engineered" cookie cutter power station model has been designed from the onset to allow coal gas producers to begin generating power and hence early monetisation of this valuable resource. The design model features a modular design which facilitates the earliest possible generation given work can start immediately upon award saving critical design time at the front end. The proven model also then allows steady augmentation to coincide with the development of the gas reserves and drilling program. This means that the coal gas producers can begin generating with as little as 500kW and then grow this output to tens of megawatts as the gas wells come on line.</p> <p>During the operating life of the equipment Clarke Energy can maintain the generators with fully comprehensive operation, maintenance, and repair and overhaul services including remote monitoring and guaranteed availability. The overall installation, operation and maintenance of all GE Jenbacher gas engines installed in Australia is performed by factory trained dedicated local Clarke Energy commissioning and service engineers.</p>	<ul style="list-style-type: none"> — Supply the electrical requirements of the mine where no network connection exists — Supply the electrical requirements of upstream infrastructure such as; <ul style="list-style-type: none"> – Reverse osmosis plants – Gas compressor stations — Feed excess power into the local grid — Alternative disposal of a problem gas whilst simultaneously harnessing it as an energy source — Smooth operation despite fluctuations in gas pressure, methane content and impurities in the gas. — Depending on the gas composition, full output down to the lowest calorific values with 25% methane content — Avoid the liberation of methane into the atmosphere which has 21 times the global warming potential of CO₂

Daandine, Australia, coal seam gas, 11 x JMS620



Glennies Creek, Australia, active mine, 10 x JMS320



If you would like to find out more about how Clarke Energy can help you develop your coal gas project, please contact your local office for more details.

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