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A MINE OF USEFUL ENERGY

Manchester, UK (20/09/05) – ENER.G Natural Power, renewable energy specialist has launched a campaign to raise awareness of a free energy source hidden below many UK towns.

The quest for alternative sources of energy has never been more in demand. Soaring oil and gas prices are placing businesses and consumers in a strangle-hold, and the devastating effects of global climate change are all too evident.

The decline of the British coal industry has been well documented over the years. Although there are many sad tales to be told from those communities affected, a hidden asset has emerged, and is lying in wait at hundreds of abandoned sites throughout the UK.

When mining activities cease and a colliery is abandoned, methane gas continues to be released from the numerous exposed coal faces and collects in the old working voids, eventually escaping to the atmosphere. Methane is 21 times more effective than carbon dioxide at trapping heat into the atmosphere, thereby presenting a much larger risk to our natural environment from global warming.

Llay Main Colliery, North Wales

Located near to Wrexham, the Llay colliery can be traced back to around 1914 and during the 1950s it was the deepest coal winding shaft in the UK. Production ceased in 1966, and nearly 40 years on, methane gas is being extracted through a 1,965 feet deep well to produce enough electricity to power around 3,000 local homes.

Hugh Richmond, Managing Director of ENER.G Natural Power explained, "We are the largest independent generator of power from landfill gas, and have applied our expertise to the utilisation of coal mine methane.

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“It’s a natural step, as the majority of the viable sites for landfill gas generation have been completed. That combined with the drive to move waste away from landfill to recycling and composting makes coal mine methane the ideal choice for our technology”.

Nearly 12 months on, the well is still producing sufficient gas for the generators, however the pressure has dropped, and pumping equipment will eventually need to be added to ensure that the power production continues.

With the need to reduce the amount of damaging methane venting to atmosphere and the increasing cost of energy, ENER-G Natural Power sees a real opportunity in generation from Mines Gas. The company is actively looking for further opportunities to increase generation from this source of methane throughout the coal fields of the UK.

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Notes to Editors:

Coal mine methane is formed during the coalification process - in which coal is formed by the action of pressure and heat on buried plant material over a very long period of time. Being an organic material, coal is capable of storing methane as a layer absorbed on to the very large number of internal surfaces comprising its matrix. When the pressure is reduced, the gas starts to desorb from the coal.

Llay Main Colliery, North Wales

It was the last major mine opened on the southern part of the north Wales coalfield, and during the 1950s the No 1 pit was deepened to 923 metres, which at the time was the deepest coal winding shaft in the UK. A total of five seams were worked, and Llay main ceased production in March 1966, due to geological problems. The shafts were eventually filled and capped in 1978. In 2002, a 500mm diameter well was drilled into a mine roadway in the “Quaker seam” of the colliery – at a depth of 1,965 feet. Situated in open agricultural land, the well is adjacent to the western boundary of the Llay industrial estate, once the site of the former colliery.

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Power to the People

ENER-G Natural Power started to exploit the available gas at the Llay site in November 2004 at a time when the well was providing 1,400m³/hr of mines gas with a methane concentration of 77% at a positive pressure of 2bar.

Under a "Petroleum Exploration Licence" granted by the Department of Trade and Industry (DTI), the methane gas is used to generate some 3.3MWe of electricity - via three containerised Caterpillar engines. The resulting power is exported to the national grid, and would be sufficient to supply around 3,000 local homes.

Nearly 12 months on, and the well is still producing sufficient gas for the installed capacity, however the well pressure has dropped to 200mb and the methane concentration level has dropped slightly to 74%. With the positive pressure dropping it is anticipated that in the near future the company will have to start to pump the gas to continue generation. It is anticipated that in the initial stages this will be done using a two stage centrifugal pump. This is similar to that used in landfill gas applications, however in the long term, higher suction pressures will need to be employed in order to maintain gas flow.

An Unknown Quantity

One difficulty with mines gas utilisation plants is the unknown timescale for the ingress of water into the closed mines. As the water level increases the ability to extract the mines gas reduces.

Even with comprehensive records of the mine workings being made available, it was practically impossible to confidently predict what the actual void area within the workings was, and as such the rate of gas production. This said, coal mine methane still presents great opportunities, albeit for an unknown length of time.

The ENER-G Group

ENER-G is a privately owned international group of companies, and provides clients a range of technologies focused not only on Renewable Energy, but also Cogeneration, Energy Efficiency, and Energy from Waste.

Visit www.energ.co.uk for further details.

PRESS INFORMATION

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