How methane could spark a revolution

· Quantities of high-quality gas found in south Wales
· Discovery could improve UK's energy security

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- Article history

Methane was once a threat to Rhondda's miners Photograph: Laister/Hulton Getty

The site does not look impressive: a fenced-off farmer's field next to an old barn in a quiet Welsh valley with a sign that warns parents to keep children away. There are no drills or rigs or gangs of workers. But if the experts have got it right, an energy revolution could be about to take place in coal-rich valleys across south Wales.

An Australian energy company announced last week that recently completed test drilling in a field in the Llynfi Valley near Bridgend and two further sites has revealed huge quantities of high-quality coalbed methane (CBM) gas, which it says could be piped out and used to help ease Britain's growing energy crisis.

In the area that Eden Energy has explored - a block of 230 square kilometres - it is believed there may be enough coalbed methane to meet 5% of the whole of the UK's energy need for a year. Eden, which is working with two British companies, says there may be four or five more blocks in Wales alone that could provide a similar amount of energy or even more.

The announcement has been welcomed by politicians, who are coming to see coalbed methane as one of the ways of making Britain's energy supply more secure, and some environmentalists who believe the use of coalbed methane could help provide a breathing space while green energy technologies are developed.

That means that a gas that was once the arch-enemy of mining communities because of the devastating underground explosions it caused could now create jobs in areas still blighted by the closure of the pits and provide local industry with a source of local, and hopefully cheaper, power. Greg Solomon, executive chairman of Eden Energy, said: "We are sitting on a major resource of methane at a time when prices for this commodity have never been higher. There is a significant quantity of energy that could be tapped here."

Huw Irranca-Davies, MP for Ogmore in south Wales, said: "It's very exciting. There's huge potential. I think people are going to be very supportive when they realise just what we have got here."

Previously the government has seemed sceptical about coalbed methane but yesterday the Department for Business, Enterprise and Regulatory Reform described the new efforts to tap the energy source in Wales and elsewhere as "encouraging". It said that one in three of the licences granted for onshore oil and gas exploration this year concerned coalbed methane.

CBM, which clings to the surface of coal in unmined beds, is an important energy source for the US, Canada and Australia. As well as exploring for gas in Wales, Eden Energy has the rights to areas including Somerset and Kent and other companies are exploring Scotland.

But Wales is proving particularly exciting because the coal is so "gassy", comparable in quantity and quality to that found in parts of Australia, according to Eden. Neil Crumpton, a Friends of the Earth energy expert, looked at Eden's figures for the Guardian and calculated that CBM from this first area could supply 5% or 6% of the UK for a whole year.

There have been complaints from some environmental groups in the US that drilling for CBM in the Rockies is having an impact on the wilderness, but those behind the exploration in south Wales say that drilling would be done from a series of rigs no bigger than a two-storey house. And rigs would not be needed every few hundred metres - instead engineers can drill down and then out to a kilometre horizontally.

In the Llynfi Valley there is excitement at the news. Wyn Davies, clerk to two local community councils, said: "We've been told that gas from just one seam would power 1,000 homes for 100 years."

Test drilling is complete in the Llynfi Valley and at two other sites near Port Talbot and Pencoed. Eden says that between six and 10 further test drillings are likely to take place in the next 12 months - after which the coalbed methane rush could begin.

Explainer

Methane is a **natural gas**, which arises out of the decay of **organic matter**. Over many centuries as coal deposits are formed, some methane is absorbed by the coal. Methane can continue to **seep out** of disused coalmines - bad news for the environment as it is a **greenhouse gas**. There are two main ways of exploiting methane from coal seams. A number of companies in the UK **capture** escaping coalmine methane and use it to generate electricity. Methane locked into unworked seams can also be **drilled for**.

http://www.guardian.co.uk/environment/2008/sep/08/fossilfuels.energy