

All change as gas reserves soar

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With coal being too dirty and wind farms and nuclear power plants arriving late, it seems the world is left with a stark choice: keep on polluting or turn out the lights.

Unless, that is, someone comes up with an alternative.

Energy executive Rune Bjornson thinks he has the answer.

"Natural gas, more than any other fuel, is an option we have here and now," he tells the BBC in an interview.

And, he adds, there is plenty of it around - unlike scarcer resources such as oil and coal.

Given that Mr. Bjornson heads up the gas division at the Norwegian energy giant Statoil, it comes as no surprise that he should hail the virtues of gas.

“ We look at shale gas as a potential game changer ”

Rune Bjornson, head of gas division, Statoil

But he is not alone in his predictions.

In June this year, the Potential Gas Committee, which is connected with the Colorado School of Mines, raised its estimate of gas reserves in the US by 35% to 2,074 trillion cubic feet (58.74 trillion cubic meters), the highest reserves since the group started tracking the information 44 years ago.

The upgrade came after new technology made it easier and cheaper to extract gas from shale rock, and prehistoric clay, which has hitherto been deemed too expensive and tricky to recover.

The implications for global power balances could be enormous, in both the energy and the geopolitical sense.

What next?

Upgraded shale gas reserves are particularly relevant ahead of the Copenhagen summit, as it could help the world meet the Kyoto targets for carbon emission cuts, Mr. Bjornson insists.

"Gas has very low carbon emissions when compared with many other energy sources," he says.

Indeed, he insists, gas - whether offshore gas reserves or from shale rock - is "not competing with" tomorrow's technologies.

The need to reduce emissions from energy production means nuclear power, carbon capture and storage, as well as wind and other renewable energy sources, will become leading power suppliers in the future as current energy production becomes unsustainable, Mr. Bjornson predicts.

"It is no longer a question of whether climate change is real or not," he says. "That was yesterday's discussion. Now, it is a question of what we do next."

But while the world waits for wind farms, nuclear power plants and carbon storage facilities to be built, gas could deliver vast reductions in emissions, Mr. Bjornson says.

"If Europe was to convert all coal-fired power stations to gas they would reduce emissions by 40%," he claims, pointing to how gas power stations emit about a third less than modern coal-fired power stations and about two-thirds less than old ones.

Plenty of gas

Peter Dea, chief executive of Cirque Resources in Denver, Colorado, goes further.

"If you're not in on these plays, Wall Street says 'well, what's the matter with you guys?' "

Arthur Berman, Geological consultant

He believes gas could not only replace coal as the main source of electricity in the US, it could deliver fuel for America's cars as well.

His optimism is based on the Potential Gas Committee's estimate, which suggests the US has a 100-year supply of gas.

New techniques have been developed, where liquid, chemicals and sand is injected horizontally into shale rock to break open pathways for the gas to leak to the surface.

The shale gas reserves are expected to boost economic growth, help reduce carbon emissions and reduce US dependence on energy imports, Mr. Dea predicts.

"It is truly a win-win-win situation," he says.

'Game changer'

Eager to take part in this development, Statoil last autumn joined forces with Chesapeake Energy to extract shale gas from the North East, Marcellus foundation that stretches across Pennsylvania and New York State.

"As shale gas fields come on line in the next five years, it is likely that European prices will drop in half"

Paul Sterne, managing partner of mergers and acquisitions advisers Sterne & Co

"It has come as a surprise to the industry that the reserves were so good and that it was competitive in terms of cost," Mr. Bjornson says.

"We look at shale gas as a potential game changer."

And not only in the US. "We believe there are huge resources in others areas, including Europe," Mr. Bjornson says.

Shale reserves are believed to be vast in Poland, Germany, France and Sweden, and there could also be similarly enormous shale gas areas in India and China.

"But it hasn't gotten much attention," says Mr. Bjornson. "It is an industry that is still young."

Exaggerated hopes?

Skeptics say there are good reasons why.

Arthur Berman, who was speaking at a recent energy conference in Denver, is one of them.

The Texas-based geological consultant believes the latest estimates are vastly exaggerated and suggests the shale gas reserves are neither as large as nor as profitable as many in the industry predict.

But "in the midst of a boom or a bubble, it's hard to sit on the sidelines", he says.

"If you're not in on these plays, Wall Street says 'well, what's the matter with you guys?'"

Others point to how shale gas extraction can damage the environment as the chemicals used in the pressure-washer style drilling methods can leak into the ground water.

Energy security

Such skeptical voices do not ring loud in energy circles, however.

Advocates argue that the ability of shale gas to help curb carbon emissions makes it a worthy, and in macroeconomic terms worthwhile, risk to take.

But what is really exciting executives and policy makers alike is shale's potential to unseat leading natural gas suppliers such as Russia, Iran, Qatar and Algeria from their dominant positions, elevating the US, Europe, India and China into pole positions.

This could help improve energy security across the world, leaving few countries reliant on gas imports from countries often governed by unstable regimes.

It could also hit current energy exporters where it hurts, namely in their wallets, as new gas sources send energy supplies soaring thus depressing prices across the world.

Falling prices

Already, there are signs of such developments in the US, where natural gas is priced at up to \$4 per million British thermal units - equivalent to crude priced at about \$23 a barrel. (A barrel of crude contains on average \$5.80 MBTU).

That is a seasonal rise from an average spot price of \$2.50 during summer 2009, sharply down from 2008 when rising shale gas supplies pushed the average gas spot price down from almost \$14 to about £10 per MBTU.

"Longer-term, the cost of producing shale gas is estimated at about \$6 per MBTU, equivalent to crude priced at \$34.80 per barrel," observes Paul Sterne, managing partner of mergers and acquisitions advisers Sterne & Co, in an article published by Ground Report.

"Unconventional gas will exert downward pressure on energy prices for years to come," predicts Mr. Sterne - in the US, as well as elsewhere.

"As shale gas fields come on line in the next five years, it is likely that European prices will drop in half."

Winners and losers

Consumers might find that an appealing prospect, particularly in some of the world's poorest countries. Such sharp price falls should go a long way to relieve fuel poverty and indeed hunger.

But elsewhere, notably in Russia, many ordinary people could also see their lives transformed in less-than-desirable ways as it could lead to a painful reversal of the country's recent economic prosperity, which was based largely on highly-priced gas and oil exports.

The geopolitical implications are both obvious and enormous, so it is far from certain that a sharp and sudden rise in global gas supplies will be a blessing rather than a curse.

But if the gas is there, do not expect such concerns to prevent it from being extracted.

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