

The promised gas revolution can do the environment more good than harm

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THE story of America's shale-gas revolution offers hope in hard times. The ground was laid in the late 1990s, when a now-fabled Texan oilman, George Mitchell, developed an affordable way to extract natural gas locked up in shale rock and other geological formations. It involves blasting them with water, sand and chemicals—a technique known as hydraulic fracturing, or “fracking”. America's shale-gas industry has since drilled 20,000 wells, created hundreds of thousands of jobs, directly and indirectly, and provided lots of cheap gas. This is a huge advantage to American industry and a relief to those who fret about American energy security.

The revolution should continue, according to a report published this week by the International Energy Agency (IEA). At current production rates, America has over a century's supply of gas, half of it stored in shale and other “unconventional” formations. It should also spread, to China, Australia, Argentina and Europe. Global gas production could increase by 50% between 2010 and 2035, with unconventional sources supplying two-thirds of the growth (see [article](#)).

A number of things could prevent this, however. Many of the factors behind America's gas boom, including liberal regulation of pipelines (which encouraged wildcat exploration by small producers), a well-aimed subsidy and abundant drill-rigs, do not exist elsewhere. Its sheer rapidity is therefore unlikely to be matched. A greater threat stems from environmental protests, especially in some European countries, which could kill the shale-gas industry at birth. France

and Bulgaria have banned fracking. Greens in America and Australia (see [article](#)) are also rallying against the industry.

The anti-frackers have reasonable grounds for worry. Producing shale gas uses lots of energy and water, and can cause pollution in several ways. One concern is possible contamination of aquifers by methane, fracking fluids or the radioactive gunk they dislodge. This is not known to have happened; but it probably has, where well-shafts passing through aquifers have been poorly sealed.

Another worry is that fracking fluids regurgitated up well-shafts might percolate into groundwater. A graver fear is that large amounts of methane, a powerful greenhouse-gas, could be emitted during the entire process of exploration and production. Some also fret that fracking might induce earthquakes—especially after it was linked to 50 tiny tremors in northern England last year.

But the risks from shale gas can be managed. Properly concreted well-shafts do not leak; regurgitants can be collected and made safe; preventing gas venting and flaring would limit methane emissions to acceptable levels; and the risk of tremors, which commonly occur as a result of conventional oil-and-gas activities, can be contained by careful monitoring. The IEA estimates that such measures would add 7% to the cost of the average shale-gas well. That is a small price to pay for environmental protection and the health of a promising industry.

For as well as posing environmental risks, a gas boom would bring an important environmental benefit. Burning gas emits half as much carbon dioxide as coal; so where gas substitutes for coal, emissions will fall. America's emissions have fallen by 450m tonnes in the past five years, more than any other country's. Ironically, given its far greater effort to tackle climate change, the European Union has seen its emissions rise, partly because of an increase in coal-fired power generation in response to Europe's high gas price.

Cleaner, but not clean enough

By itself, switching to gas will not reduce emissions to anything like the levels required to avoid a high risk of serious climate change. This will take much crunchier policies to boost renewable-energy sources and other clean technologies—starting with a strong price on carbon emissions, through a market-based mechanism or, preferably, a carbon tax. Governments are understandably unwilling to take these steps in straitened times. Yet they should plan to do so; and in the coming years cheap gas could help free cash for more investment in low-carbon technologies. Otherwise the bonanza would be squandered.