

## The economics of natural gas

### Drowning in it

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#### What bigger estimates of America's reserves could mean

ROBERT HEFNER, a natural-gas magnate, feels vindicated. As the head of GHK Exploration in Oklahoma, he has been telling people for years that America abounds in gas. But as recently as two years ago the conventional wisdom was that America was running out of the stuff, and investors began considering building new terminals to import the liquefied form from abroad. All that has now changed. "I used to say we were awash in gas," says Mr Hefner. "Now I say we're drowning in it."

The big news is that in June the Potential Gas Committee, a semi-official body, revised its estimates of America's gas reserves, raising them 39% above its assessment in 2006. The biggest part of that boost comes from higher estimates of gas in shale formations, which were formerly difficult and expensive to reach. Advances in horizontal drilling and the hydraulic fracturing of rock have made it possible to get previously inaccessible gas out. Shale gas, according to the committee, accounts for two-thirds of America's technically recoverable reserves, enough to supply the country for 90 years.

This gas may not flow right away. Although oil prices have shot back up since last year's collapse, natural-gas prices, which fell with oil's, have stayed low. The average price in July of \$3.50 per thousand cubic feet would be equivalent to roughly \$21 per barrel of oil. (West Texas Intermediate oil now fetches \$70.) This is too low to sustain much exploration and drilling. But as the economy recovers, and with it demand for gas, prices should bounce back.

More surprisingly, in a season of bitter political argument support for natural gas has become bipartisan. It has hooked those on the right who like the fact that it is abundant in America (and in friendly Canada). But it has also attracted the centre-left. John Podesta, the head of the Centre for American Progress, a think-tank, and Tim Wirth, a former Democratic senator, came out strongly in favour of gas in a paper published this week.

Gas emits about half as much carbon dioxide as coal per unit of energy produced. Putting a price on carbon dioxide, as the cap-and-trade bill that passed the House in June would do, would make coal more expensive to burn and gas relatively cheaper. This could cut carbon emissions in two ways.

The biggest source of greenhouse-gas emissions is electricity generation. Coal, the cheapest fuel, currently produces America's baseload power: coal-fired plants run constantly to meet basic demand, with natural gas switched on when demand is higher. But gas could play a bigger role: there is a third more gas-powered than coal-fired capacity available. A reasonable carbon price would mean that gas plants would be switched on more often to replace coal. And in the longer run carbon prices will rise under Waxman-Markey, as the House bill is known. This could make gas the preferred fuel for baseload power—and make building old fashioned coal plants uneconomic.

There could also be good news for transport, the next biggest source of carbon emissions. Natural-gas boosters, unsurprisingly, support cars powered by compressed natural gas, noting that gas infrastructure (for stoves and heating) reaches millions of homes and businesses already. Many petrol stations are already hooked up to gas-lines for heating. Electric cars, however, have had more attention from carmakers, and they could be powered by electricity from relatively cleaner natural gas. The hurdles for electric cars are in the electrical grid—currently overloaded, and not ready for a big switch to electric cars—and still-developing battery technology. Some even dream of using natural gas to make hydrogen which would power fuel-cell cars, though advocates admit that these are still a long way off.

Some greens worry that natural gas could hamper the development of renewable energy. But the proponents of natural gas see harmony, not competition, with coal and oil the real enemies. Some foresee hybrid wind-gas and solar-gas plants, with gas producing electricity when sun and wind are weak. Gas has featured surprisingly little in the energy debate so far. But it may yet play a bigger role as the Senate, coming back from recess in September, takes up and modifies the bill.