

# US to ride gas boom for decades to come

Research suggests the good times will roll on until at least 2040

RUSSELL GOLD

US natural gas production will accelerate over the next three decades, new research indicates, providing the strongest evidence yet that the energy boom remaking America will last for a generation.

The most exhaustive study to date of a key natural gas field in Texas, combined with related research in progress elsewhere, shows that US shale-rock formations will provide a growing source of moderately priced natural gas until 2040, and decline only slowly after that.

The research provides substantial evidence that there are large quantities of gas available that can be drilled profitably at a market price of \$US4 (\$3.9) per million British thermal units, a relatively small increase from its present price of about \$US3.43.

The study, funded by the non-partisan Alfred P. Sloan Foundation and performed by the University of Texas, examined 15,000 wells drilled in the Barnett Shale formation in northern Texas, mostly over the past decade. It is among the first to study the geology and economics of shale drilling, a relatively recent development made possible by hydraulic fracturing, or fracking, in which a mixture of water, sand and chemicals is pumped at high pressure into rocks to release gas.

Looking at data from actual wells rather than relying on estimates and extrapolations, the study confirms conclusions by the energy industry and the US government, which in December forecast rising gas production.

"We are looking at multi, multi decades of growth," said Scott Tinker, director of the Bureau of Economic Geology at the university and a leader of the study.

The shale gas boom has led to a reorientation of the US energy economy. This has led to a steep decline in coal consumption for



BLOOM

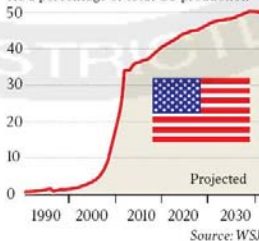
Latest research provides substantial evidence that there are large quantities of gas available that can be drilled profitably

electric generation and prompted companies to announce or consider multibillion-dollar investments to export gas and build chemical, steel and fertiliser plants that will consume enormous quantities of gas.

If these investments go forward, but gas production were to slip, higher prices for the fuel — which now accounts for 30 per cent of electricity production in the US and heats half of American homes — are likely. Art Berman, a petroleum geologist and consultant who has been a leading critic of what he says are overly optimistic projections of shale gas production, said the research "is

## Natural gas extracted from shale

As a percentage of total US production



probably the most comprehensive study of the Barnett shale that will ever be done". But he said

it bolsters his view that only a quarter of Barnett wells generate an economic return. The question for the industry, he said, is "why didn't they identify the sweet spots initially, before spending \$US40 billion on land and wells?"

The study does show that many of the wells drilled in the Barnett have been poor performers. And while the gas-bearing rock covers 20,720sq m in and around Fort Worth, Texas, the study suggests it can be economically developed in an area only half that size. Some of the energy companies that spent enormous sums to lease thousands of hectares in far-flung parts of the

Barnett may be sitting on acres of little value. Mr Tinker adds that the study shows the Barnett is highly variable, with some producing enough gas to be profitable and others generating duds.

Even so, the study concludes that 1.25 trillion cubic metres of natural gas will be recovered from the Barnett — more than three times what has been produced so far and about two years' worth of US consumption at current rates.

The Marcellus Shale in Pennsylvania and neighbouring states likely contains enough gas to support the drilling of tens of thousands more wells.