

# Outlook for energy has a coal face

‘Halfway house’ technologies based on hydrocarbons are going to be with us for a while, writes **James Dunn**

**W**ITH the scheduled Renewable Energy Certificates legislation set to be put to parliament in conjunction with the Carbon Pollution Reduction Scheme legislation, the federal Government’s target of 20 per cent renewable energy by 2020 will be set in stone.

Given that renewable sources provided about 7 per cent of the power supply in 2007, a rise to 20 per cent represents a substantial increase.

The REC/CPRS legislation will “change the economics” of all the renewable energy players, says Ross Paul, chief investment officer and managing director of specialist alternative energy research firm Bakers Investment Group.

But he says anyone expecting a quick shift to non-hydrocarbon renewable energy sources, such as wind and solar, is being overly idealistic.

“There are a group of technologies that you could call a ‘halfway house’ between hydrocarbons and non-hydrocarbons. In this group are things such as coal seam methane, underground coal gasification and gas to liquids.

“These halfway house technologies are going to be with us for a while. Realistically we’re looking at a diversified energy source future, but in the short term, we’re not going to move to wholly renewable sources anytime soon. In the meantime, it’s going to be very hard to move away from coal,” says Paul.

“The government-mandated push is in areas such as solar, but you’d have to say that, on the stock market, investors are following the big private investment, which has been seen mostly in CSM, and is expected to move also into the other halfway house technologies.”

CSM now supplies about 25 per cent of the eastern Australian gas market, from collecting the methane gas present in coal mines. This gas was until recently an unwanted and dangerous byproduct, but is now being tapped as a particularly “clean” form of natural gas,

with very low carbon dioxide levels. As well as producing clean-burning gas and water that can be treated to potable standard, CSM collection leaves the coal seam intact for future extraction.

Queensland’s coalfields have attracted an investment bonanza in recent years as companies including Origin Energy, BG (the former British Gas, which took over Queensland Gas Company), Santos, AGL, Malaysia’s Petronas and US giant ConocoPhillips have eyed the potential for a massive new LNG export industry based on CSM, as well as local power generation.

Underground coal gasification and gas to liquids are entirely different technologies. UCG burns coal deep underground to extract a gas — known as “syngas” — while GTL takes that gas and liquefies it in a reactor to produce diesel and aviation fuel. Used together, the process is called coal to liquids.

Other end products from the CTL process include synthetic diesel, synthetic petroleum, synthetic waxes and lubricants and various chemical feedstocks. Also, UCG syngas can be used in gas turbine generators to produce electricity.

Jeremy Tobias, renewable energy analyst at broking firm BBY, says the UCG/GTL process has the potential to find a use for the millions of tonnes of “stranded” coal in Australia. “The term stranded coal refers to coal that is too deep or too remote to mine economically and doesn’t have the properties of thermal or coking coal, so it’s not suitable for use in power generation or steelmaking. These deposits were thought to be useless, but UCG and GTL makes them a valuable future source of energy.”

Tobias says Linc Energy is the leading player in the CTL industry. Linc has built a pilot CTL facility in Chinchilla, Queensland, and plans a 20,000 barrels a day commercial plant, a \$900 million to \$1 billion project. To help fund the project, Tobias says, Linc needs to complete the sale of its coking coal

Emerald tenement located in Queensland.

“Successful completion of the sale would go a long way to helping the company commercialise its CTL aspirations. Further out, Linc has plans to export the UCG technology to China and Vietnam.”

With the combination of the decline in the oil price, the uncertainty regarding carbon trading — and exactly when it will come in — and tight credit markets, Tobias says projects in the clean technology sector are finding it difficult to obtain significant amounts of capital.

The other major players in the UCG/GTL sector are Carbon Energy, the former Metex Resources, which is developing what it calls the “world’s first commercial-scale, oxygen-injected UCG facility”, at Bloodwood Creek in southwest Queensland; and Cougar Energy, which is building a pilot plant at Kingaroy in Queensland, a base for what it hopes will be a 400 MW power plant. Cougar

is also seeking JV partners in Victoria, where there are very large “stranded” brown coal deposits.

Bakers cautions that UCG/GTL companies are exposed to the environmental risks associated with carbon dioxide emissions. Linc says that because its gasification process occurs underground, it produces only 8 per cent more emissions than regular diesel production. The Government’s view is that the future of CTL fuel is “absolutely inter-related with the successful development of carbon capture and storage (CCS) technology over the next five to 10 years”.

Paul says Bakers has “buy” recommendations on Linc and Carbon Energy, and is currently researching Cougar. He says a fourth Surat Basin UCG/GTL stock is about to join the ASX, with Metallica Minerals about to spin off its coal interests into MetroCoal Limited.