

Carbon Capture and Storage – Liability Issues

by James Plumb, Senior Associate

"Burying greenhouse gases underground is emerging as humanity's number one weapon to fight global warming, hailed by the oil and coal industry and even cautiously welcomed by environmentalists" Reuters News Headline, October 2006.

Carbon capture and storage (CCS) involves the capture of carbon dioxide (CO₂) from industrial processes, transportation of the CO₂ to a storage site, injection of the CO₂ into the site, and long term storage of the CO₂.

Interest in CCS has increased rapidly in recent years. However, it is generally acknowledged that the use of CCS technology will only go so far without an effective legal and regulatory framework.

In a previous newsletter (August 2007), we examined the discussion paper released by the Queensland Department of Mines & Energy which proposed a legislative model and possible tenure options for CCS in Queensland. This newsletter touches briefly on issues and then the potential regulatory options associated with liabilities connected with long term storage of injected CO₂.

Key Risks

"The greatest environmental risk concerns the potential for CO₂ leakage, which could have serious consequences for the environment and people's health" – Petro Georgiou MP, "Between a Rock and Hard Place – The Science of Geosequestration", Foreword.

For a CCS project to achieve its intended environmental benefit, captured CO₂ must be stored for an extremely long period of time. A key risk for any CCS project will be the possible leakage or unintended migration (i.e. movement rather than escape) of CO₂. Uncontrolled releases of stored CO₂ could result from a number of factors, including seismic or volcanic activity, lack of understanding of the storage site, accident, interference (eg. drilling into the site), design failures and even terrorism¹.

Consequences of leakage into the atmosphere or shallow subsurface could include suffocation of humans or animals, biological impact on plant life (both above and below ground), contamination of potable water sources, as well as the global environmental impact of releasing the CO₂ into the atmosphere.

In the event of CO₂ leakage or release, an issue may arise with respect to assigned credits for greenhouse gas emission reductions. In the advent of an emissions trading scheme, it is likely that CCS projects will be assigned credits to be determined by the benefit of storing the CO₂ and removing it from the atmosphere. Such credits may be traded against the national carbon emission allocation. If the CO₂ escaped, these liabilities and credits might need to be reassigned at huge expense.

Other risks associated with a CCS project include the potential effects of displacement impacts², such as ground heave, induced seismicity, contamination of drinking water by displaced brines, and damage to hydrocarbon or mineral resources.

Liability Principles

Liability for CCS projects can be divided into short-term and long-term timeframes. Generally speaking, short-term liability will cover the timeframe of the injection project. Long-term liability will extend for the storage period, and may be up to thousands of years.

It is clear that a robust and consistent framework for managing these long term risks will be required if CCS is to play a significant role in mitigating CO₂ emissions in Australia.

Steps to Address Liability

Queensland Department of Mines & Energy (QDME)

In 2007, the QDME released a discussion paper surrounding issues associated with tenure administration for CCS. The paper proposed that all arrangements applying to liability in relation to CCS projects "should not differ from those applying to any other industry".

Seemingly, this indicated a willingness on the part of the Queensland Government to treat CCS projects in a similar manner to traditional resource operations – that is, the operating entities would be liable for short-term liabilities (or any issues arising during

storage operations), with the government bearing liability for the storage period.

In the example of petroleum exploration and production, once the relevant statutory permit has expired, and following appropriate decommissioning and rehabilitation, liability for the site effectively transfers to the State government.

This approach seems to have been rejected at a Federal level.

Standing Committee of Science and Innovation

The House of Representatives' Standing Committee on Science and Innovation (Committee) released a report in August 2007 entitled "Between a Rock and A Hard Place – The Science of Geosequestration".

The report acknowledged that, given that CCS envisions the storage of CO₂ for potentially thousands of years, responsibility and timeframe for liability pose important regulatory issues.

In making submissions to the Committee, proponents such as Chevron³ have argued that operators should be responsible for site operations, but that responsibility should pass to the government once the site has been closed. Other organisations have contended that government and, by implication, taxpayers, should not bear the burden of this long-term risk.

Despite acknowledging the urgent need for regulatory guidance on issues associated with liability, the Committee's report does not shed any further light on the approach to be taken. The report recommends that financial liability and site responsibility consist of three phases:

1. Full financial liability and responsibility for site safety and monitoring should rest with industry operators during injection. Operators will also bear full liability for a period following closure of operations – such period to be determined on a site by site basis following government review.

In Brief

- § The key liabilities in starting a CCS regime are discussed.
- § The State and Federal governments need to provide the industry with greater clarity on this issue.

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- Following the post closure period (to be designated by the Australian government), liability will be shared equally between the operators and the State, Territory and Federal governments for another unspecified period. Again, this period will be determined by government review.
- Finally, full liability will transfer to the State and Federal governments in perpetuity.

Lack of Certainty

Despite the Committee's report, proponents of CCS projects in Australia are still without any definitive guidance on long-term liability issues.

If the governing legislative regime for CCS does not clearly establish the responsibilities and obligations of private operators, or it alternatively imposes obligations that are too far reaching, potential industry participants such as site operators, infrastructure owners, financiers and insurers may deem such projects too risky, and may look elsewhere to promote shareholder and company value.

Options

USA - Price-Anderson Act

The National Energy Technology Laboratory (NETL), an agency of the United States Government, examined the possibility of establishing a special fund and insurance scheme to cover liability in the event of a long-term leak⁴. As an example, the NETL discussed the caps set by the Price-Anderson Act which serves as the nuclear industry's limited liability policy in the United States:

The Act required nuclear plants to acquire insurance of \$200 million per plant, established a framework for plants to make payments to the public in the event of a nuclear accident, and required plant operators to contribute to an industry-wide fund. The Federal government assumes liability over a certain threshold.

While such an approach may be favoured by industry, insurance companies may not be willing to take on any risk associated with CCS projects in the absence of strict risk frameworks⁵.

Gorgon Project

The Gorgon Project involves the offshore production of natural gas, and the construction of gas processing and infrastructure facilities on Barrow Island in Western Australia. The joint venturers propose to convey and store CO₂

recovered during gas processing in underground reservoirs beneath Barrow Island.

Although the Western Australian government and project proponents have yet to finalise the basis on which long-term liability will be apportioned in respect of the CCS component, one proposal involves the creation of an industry fund whereby the producers of CO₂ are levied at the time of injection.

Any proposal to create an industry fund will need to correctly estimate future costs that may need to be met – such a task will be difficult in light of the long term nature of CCS, as well as the new technology and untried risks involved.

National Electricity Market

An example of a statutory limitation of liability scheme in Australia is the National Electricity Market (NEM) liability scheme. In response to concerns regarding unacceptable risks to service providers, the Federal government introduced a scheme whereby service providers are immune from civil liability for partial or total failure to supply electricity, except where they have acted negligently or in bad faith.

Way Forward

Recent commentary, such as the Interim Report issued by the Garnaut Climate Change Review committee, has called for Australia to act decisively and quickly in response to issues surrounding greenhouse gas emission and climate change.

The State and Federal governments in Australia must move to reduce the levels of uncertainty currently surrounding long-term liability in CCS projects. In doing so, the government bodies must be careful not to ask too much of industry participants, and must be willing to accept its share of the risk burden. Carter Newell will keep you updated on any developments in CCS and legislation.

¹ A report to the Australian Greenhouse Office on Property Rights and Associated Liability Issues, Section 9.4, 2005

² Wilson, Johnson & Keith, *Regulating the Ultimate Sink: Managing the Risks of Geologic CO₂ Storage*, Environmental Science & Technology, Vol 37, No. 16, 2003

³ Chevron Australia Pty Ltd, submission to Standing Committee on Science and Innovation

⁴ National Energy Technology Laboratory, "International Carbon Capture and Storage Projects – Overcoming Legal Barriers", 23 June 2006.

⁵ Ibid, at page 16

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