

Legal issues in offshore geosequestration

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To combat the effects of climate change, governments and industry are turning to new technologies, including geosequestration – greenhouse gas (GHG) capture and storage in underground geological formations.

At the moment there are several geosequestration projects operating worldwide and, with the imminent commencement of projects in Australia, the legal issues surrounding geosequestration need to be addressed.

This article focuses on the final, and legally most contentious, stages of geosequestration – injection and storage— and the regulation of offshore geosequestration in Australia, particularly the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (Cth) (OPGGs Act).

International framework

Australia is a party to the international legal instruments that regulate offshore geosequestration:

- United Nations Convention on the Law of the Sea 1982 (UNCLOS)
- Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter 1972 (London Convention)
- Protocol to the London Convention 1996 (London Protocol).

Countries that are parties to UNCLOS are legally bound to adopt laws and regulations, and take other measures to control pollution by dumping, which are no less effective than the rules and standards set out in the London Convention and Protocol.

UNCLOS defines a country's territorial sea boundaries and the high seas. Under UNCLOS, the Commonwealth of Australia has authority over the sea from the coast of Australia out to 12 nautical miles. Under the Offshore Constitutional Settlement between the Commonwealth and the Australian States, the States have legislative authority over the territorial sea adjacent to the state to the three nautical mile limit.

The London Convention protects the marine environment by regulating the dumping of specific materials at sea. According to the International Maritime Organization the London Protocol is intended to replace the London Convention and extends the regime by regulating the storage of 'waste or other matter' in the sea bed.

Annex 1 to the London Protocol lists wastes or other substances that may be considered for dumping. An amendment to the London Protocol that came into force in February 2007 included 'carbon dioxide streams from carbon dioxide capture processes for sequestration' within the Annex 1 list of substances not prohibited by the London Protocol.

Australian legislation

The *Offshore Petroleum Amendment (GHG Storage) Act 2008* (Cth) (Amendment Act) amended and renamed the *Offshore Petroleum Act 2006* (Cth) from 22 November 2008.

We will consider the following legal issues, which the OPGGS Act addresses:

- access to land
- competing land uses
- long term liability.

The OPGGS Act also address other issues, such as the categories of storage formation, which are not considered here.

Access to land

The OPGGS Act provides that areas which may be explored and assessed for greenhouse gas (GHG) storage formation are released in a similar manner to petroleum acreage, by way of a gazette notice inviting application for a GHG assessment permit on either a work-bid or cash-bid basis.

It also sets out various authorities for GHG transportation and storage, of which some are similar to the current petroleum tenements.

GHG TITLES	
<i>GHG assessment permit</i>	Authorises exploration for, and assessment of, GHG storage sites in the permit area.
<i>GHG holding lease</i>	Authorises exploration for, and assessment of, GHG storage sites in the leased area.
<i>GHG injection licence</i>	Authorises the injection of GHG into, and its permanent storage in, an identified GHG storage formation situated in the licence area.
<i>GHG special authority</i>	Authorises the activities specified in the authority.
GHG AUTHORITIES	
<i>GHG search authority</i>	Authorises exploration for GHG storage formations in the area covered by the authority.
<i>GHG research consent</i>	Authorises exploration for GHG storage formations in the course of scientific research.
<i>GHG-related pipeline licence</i>	Authorises the construction and operation of a pipeline used to convey a GHG substance.

Recent amendments allow a GHG injection licence to be issued for injection of GHG from any petroleum production licence, not just the production licence area of the applicant for an injection licence.

Transfers of GHG titles must be approved by the Federal Minister for Resources, Energy and Tourism (Minister) and the transfer instrument must be entered on the register of GHG titles. Any dealings in a GHG title must be approved by the Minister, including the creation or assignment of an interest in an existing GHG title.

Competing land uses

The OPGGS Act sets out tests for determining whether overlapping GHG and petroleum titles may be granted or whether certain 'key' GHG operations or petroleum operations may be authorised. These tests require a determination as to whether granting the title or authority will have 'significant adverse impact' or 'adverse impact' on an existing title or operation.

The existence of 'a significant adverse impact' is determined in accordance with regulations made under the OPGGS Act. There are currently no regulations governing this matter.

The OPGGS Act specifies that there will be an 'adverse impact', only if:

- capital or operating costs (except those costs excluded by regulation) increase
- petroleum recovery rates or GHG injection rates (as relevant) are reduced, or
- the quantity of petroleum recovered or GHG that is able to be stored (as relevant) is reduced.

The Minister must reject an application for a GHG title or an authority to carry out key GHG operations if there is high risk of a significant adverse impact on an existing petroleum title or petroleum operations, and there is no agreement between the petroleum title holder and the applicant agreeing to the title or authority being granted.

Applications for petroleum titles or authority to undertake key petroleum operations must be similarly rejected if the title or operations would represent a high risk of a significant adverse impact on existing GHG operations. The Minister may refer the issue to an expert advisory committee constituted under the OPGGS Act.

Where petroleum is discovered in the area covered by a GHG injection licence — which overlaps with a petroleum exploration permit, petroleum retention lease or petroleum production licence issued prior to the commencement of the Amendment Act — the Minister can direct the holder of the greenhouse injection licence to eliminate or mitigate, manage or remediate (as relevant) the risk of a significant adverse impact on operations to recover the petroleum or the commercial viability of the recovery of the petroleum.

Long-term liability

Under the OPGGS Act, the Commonwealth of Australia accepts long term liability for stored GHG conditional on the provision of a site closing certificate and the declaration of a closure assurance period for the GHG storage formation.

The OPGGS Act provides for the granting of a site closing certificate to a GHG injection licensee. The application must be accompanied by prescribed information including the behaviour of the stored GHG and its expected migration pathways.

The Minister will declare a closure assurance period if, at least 15 years after a site closing certificate is issued, they are satisfied that:

- the GHG injected is behaving as predicted, and
- there is no significant risk that the GHG will have a significant adverse impact on the geological integrity of the formation, the environment, human health or safety.

The closure assurance period extends from the date on which the site closing certificate is granted to the date on which the closure assurance period is declared. If the closure assurance period is declared then the Commonwealth will (subject to conditions which may be specified in regulations) indemnify the GHG title holder for liability for damages for any act or omission done in the carrying out of operations authorised by the GHG title incurred or accrued after the end of the closure assurance period. The Commonwealth will also assume liability in similar circumstances if the GHG title holder has ceased to exist.

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