

DRAFT AUSTRALIAN LEGISLATION ON CARBON CAPTURE AND STORAGE: A CANADIAN PERSPECTIVE

Article by Nigel Bankes and Jenette Poschwatta ♦

Introduction

Canadian jurisdictions are actively considering the need to adopt a legal and regulatory framework for carbon capture and storage (CCS).¹ Over the last number of years the government of Australia has taken a leadership role in the development of a legal and regulatory framework for carbon capture and storage (CCS). As part of this leadership role, the state and Commonwealth governments collaborated in the development and publication of a set of Regulatory Guiding Principles for CCS operations.² To implement those Guidelines, the Commonwealth has long promised new legislation to deal with CCS in the offshore where the Commonwealth has clear jurisdiction. The Commonwealth government released its so called “exposure draft” of the proposed legislation on 16 May 2008.³

The draft legislation takes the form of a comprehensive set of amendments to the Commonwealth’s *Offshore Petroleum Act* and is designed to provide an enabling framework for objective-based regulation for CCS in offshore (Commonwealth) waters.⁴ Our focus in this paper is the Australian proposals but we will also make some reference to other initiatives including the draft Directive tabled by the EU⁵ in January 2008 and the Interstate Oil and Gas Compact Commission’s draft model legislation⁶ tabled in September 2007.

In earlier work on the legal and regulatory framework for CCS we have suggested that any such framework needs to deal with property

issues, regulatory issues and liability issues.⁷ The property issues include ownership of the pore space, the need for a disposition scheme to allow third parties to acquire storage rights, and surface rights questions. Pore ownership is a non-issue in the Australian offshore since there is no private ownership of petroleum or natural gas and all relevant rights are vested in the Commonwealth government.⁸ The draft legislation therefore concentrates on the disposition scheme.

The regulatory issues include the choice of regulator (an oil and gas authority or an environmental authority), the type of regulatory approval and monitoring and verification scheme that needs to be put in place and other miscellaneous issues such as the need to provide for third party access to CCS injection sites and facilities. The proposed legislation covers these issues although it also acknowledges the relevance and importance of other general environmental legislation.

Liability issues include Kyoto liability for emissions (in the event that storage fails), liability for harms caused to others, and liability for any necessary remedial work. There are both short-term and long-term liability concerns to consider. Short-term liability covers the period of active exploration and injection operations while long-term liability covers the extended period for which we expect carbon dioxide (CO₂) to be contained. The proposed legislation deals with both aspects but does not address liability for emissions.



RÉSUMÉ

Avec la publication d'un projet de loi relatif au captage et au stockage du carbone (CSC), le gouvernement australien reste à la pointe des efforts déployés pour développer un cadre législatif et réglementaire en matière de CSC. Cet article décrit et analyse les propositions australiennes et en offre une critique d'un point de vue canadien. Les auteurs examinent le régime d'émission de droits proposé, les questions réglementaires y compris l'approbation des plans de sites et de fermeture des sites, ainsi que les questions de responsabilité. Ils examinent aussi comment le projet de loi envisage de traiter des conflits potentiels entre les intérêts liés au CSC et ceux liés à l'exploration et à la production du pétrole.

The paper is divided into two Parts. Part One provides a description and analysis of the Australian proposals. Part Two offers a critique of the legislation from a Canadian perspective.

Part I: The Australian Draft Legislation

The proposed legislation will accomplish two main objectives. First, it will provide a disposition or tenure scheme for parties to acquire the right to store greenhouse gases (GHGs) in the offshore. Second, it will provide the regulatory framework for reviewing and approving CCS operations. In delivering on both of these objectives the legislation also provide a framework for deciding upon the competing claims of petroleum operations and storage operations. For a Canadian reader the closest analogy and reference point is likely the federal tenure scheme under the *Canada Petroleum Resources Act*⁹ with its three forms of tenure (exploration licence, significant discovery licence and production licence) and its two categories of discoveries (significant discoveries and commercial discoveries).

Tenure

The tenure scheme proposed for CCS activities is modelled on a similar scheme for petroleum tenure. The draft legislation creates three principal forms of tenure: (1) a GHG assessment permit; (2) a GHG holding lease; and (3) a GHG injection licence.¹⁰ The tenure scheme is underpinned by a series of prohibitions. The legislation prohibits the unauthorised exploration (s. 249AC) or injection and storage of

substances (s. 249CC) in an offshore area.

The GHG Assessment Permit

The GHG assessment permit deals with the exploration phase of GHG storage development. The process begins with the Minister inviting applications for selected areas. Permits may be granted on the basis of either a work-bid or cash-bid for designated block(s) (ss. 249AJ-249AO and 249AP-249AS). Initially permits will likely be offered on the basis of the work-bid approach.

An applicant for work-bid permit must describe the proposed work and expenditures, the technical qualifications and advice available to the applicant and its financial resources. In the case of a single applicant, the Minister has the discretion to offer the block on specified terms and conditions including security requirements (ss. 249AK, 249JE and 249JF). Where there are competing applications, the Minister may make the offer to the applicant that, in the Minister's opinion, is "most deserving" of the permit based on published criteria. The scheme for cash-bids tracks the above with the permit being offered to the highest bidder. Once granted, a permit is valid for six years (s. 249AH) subject to extension where the permittee applies for a declaration of an identified GHG storage formation, a GHG holding lease or a GHG injection licence (ss. 249AHA and 249AI).

The GHG assessment permit (s. 249AD) grants the permittee the right within the permit area: (a) to explore for a potential GHG storage formation; (b) to explore for a potential GHG injection site;¹¹ (c) to inject GHGs into a part of a geological formation for appraisal purposes; (d) to store GHGs on an appraisal



basis; (e) to inject, air, water or petroleum on an appraisal basis; (f) to store the same substances on an appraisal basis; and (g) with the written consent of the Minister recover petroleum in the permit area for appraisal purposes where such petroleum was discovered but such petroleum once recovered does not become the property of the permittee (s. 249AD(3)). The permittee requires prior approval before carrying out any “key GHG operations” (discussed below). The Minister may require the permittee to lodge security.

The next phase of the process is to obtain a declaration of an “identified GHG storage formation” (s. 249AU).¹² After a declaration has been obtained, the permittee has two options — to seek a GHG holding lease or a GHG injection licence. Each will be discussed in turn.

The GHG Holding Lease

The GHG holding lease is designed to protect the investor who makes the initial investment to identify a storage site but cannot secure a CO₂ source (ss. 249BH and 249BN). Once a holding lease is granted, it remains in force for 5 years and can be renewed once (ss. 249BF and 249BT).¹³

The draft legislation confers the same rights on a holder of a GHG holding lease as are conferred on the holder of a GHG assessment permit including all exploration rights (s. 249BB). This gives the holder the ability to continue to explore for additional storage formations which can be declared as new identified GHG storage formation. A GHG holding lease is also subject to similar conditions as those for an assessment permit.

The GHG Injection Licence

The final stage in the tenure scheme is the GHG injection licence. An injection licence authorizes the licensee to carry out operations for the injection and permanent storage of a GHG substance in an “identified GHG storage formation” located in the licence area.

An application can be made by a holder of a GHG assessment permit or holding lease or by holder of a petroleum production licence¹⁴ (ss. 249CH and 249CQ). The application must set out the items the licensee wants specified as conditions, *e.g.*, the type and origin of the GHG substance which must be consistent with the “fundamental suitability determinants”¹⁵ of the identified GHG storage formation. In addition, the application must be

accompanied by a draft site plan for each identified GHG storage formation, the details of the proposed work and expenditure by storage formation, and the technical qualifications and advice available to the applicant and its financial resources.

The GHG injection licence confers both exploration rights and storage rights. The licensee has the same exploration rights as those conferred on the assessment permittee and the holding lessee (s. 249CD). The additional and crucial rights conferred by the licence are the right: (a) to inject a GHG substance into an identified GHG storage formation; and (b) to permanently store a GHG substance in an identified GHG storage formation.

GHG injection licences are subject to several conditions including the kind and origin of GHG substance injected, the injection period, the total amount of GHG injected and the rate of injection (s. 249CE). None of the matters specified in the injection licence can be inconsistent with the fundamental suitability determinants of the identified GHG storage formation. A GHG injection licence has an indefinite duration (s. 249CF) but is subject to termination if there are no operations to inject a GHG substance for a continuous period of five years (s. 249CG).¹⁶

Storage Formations

Running parallel with the three forms of tenure are classifications of storage formations each associated with increased knowledge of the geological formation: (1) potential (s. 15A); (2) eligible (s. 15B); or (3) identified (s. 249AU). While a tenure holder may inject GHGs into potential and eligible formations for appraisal purposes, approval for injection for permanent storage requires that there be a declaration of an identified GHG storage site. It is the third of these classifications then that is of the greatest legal significance.

A declaration of an identified GHG storage formation is a core document that specifies the activities that can be carried out under a GHG injection licence (the activities are controlled through licence conditions that match the matters in the declaration) and the a real extent of such operations.¹⁷ The declaration will specify the fundamental suitability determinants and the spatial extent of the identified GHG storage formation. Because of its role in determining allowable injection activities and the integrity of the storage system, the declaration retains its significance over the life of the CCS project.¹⁸





Reconciling Petroleum and Storage Interests

The need to reconcile the potentially competing petroleum and storage interests is a significant feature of the Australian draft legislation. Essentially all of Australia's offshore potential CCS areas are subject to existing petroleum titles and a policy decision was made to give a high level of protection to petroleum titles in place at the commencement of the legislation.¹⁹ The reconciliation rules apply where there is a "significant risk of a significant adverse impact" on one of the interests by the operations of the other interest.²⁰

The overall approach offers firm protection to pre-commencement petroleum interests and existing production licences but takes a balancing approach for post-commencement petroleum interests and GHG interests. When the competing claims do not involve pre-commencement petroleum interests or existing production licences, the draft legislation uses a public interest test to determine which claim prevails.²¹ The minister must take account of any agreement between the parties with competing claims.²² The principal mechanisms that the legislation uses to resolve completing claims are:

(1) Prior Approval of Key GHG Operations

A GHG assessment permit or GHG holding lease does not itself authorize any particular operations so that approval is required before permittees and lessees carry out any "key GHG operations" (ss. 249AF and 249BD).²³ In the case of an existing or future pre-commencement title or an existing post-commencement licence the petroleum title-holder must agree to the GHG operation. Otherwise the Minister must have regard to the public interest in determining whether to grant the approval.

(2) Consideration of Petroleum Interests when Granting a GHG Injection Licence

The scheme protects pre-commencement and existing production interests by insisting that they must agree to the grant of an injection licence where significant risk has been identified (s. 249CI and 249CR) before the Minister can grant the licence. Post-commencement petroleum interests may not be protected if the Minister's assessment of the public interest puts CCS ahead of the petroleum interest.

(3) Consideration of GHG Interests when Granting a Petroleum Licence

If there is an existing GHG assessment permit, holding lease, or declaration of an identified GHG

storage formation, the Minister may grant a production licence if it is in the public interest (s. 145). If there is an existing GHG injection licensee the Minister may not grant a production licence in the absence of an agreement.

(4) A Scheme for the Prior Approval of Key Petroleum Operations

A petroleum interest may become a "declared interest" as part of setting the conditions for the interest (ss. 79, 114 and 138). Once this occurs, the holder of the declared interest must obtain approval before undertaking any "key petroleum operations"²⁴ on the same basis as above with respect to key GHG operations.

(5) Directions to Protect Petroleum Interests

The draft legislation gives the Minister the power to give a direction to a GHG licensee in order to protect geological formations containing petroleum (s. 249CXA), or petroleum discovered in areas of overlap with a pre-commencement title, provided the discovery is commercially viable (or is likely to become so) (s. 249CZC).

The Regulatory Elements of the Legislation

The Regulation Impact Statement suggests that Australia had little need to develop specific legislation for some regulatory aspects of the CCS industry such as general environmental approvals and occupational health and safety issues.²⁵ The Regulation Impact Statement did however identify a need for new legislation to regulate two things: (1) the selection and approval of storage sites; and (2) site closure. The proposed legislation therefore contains provisions that address each of these issues. Both are clearly of central importance and it is therefore perhaps a little surprising that, while addressed, the relevant provisions are relatively short. Some further content as well as the reasons for this can be gleaned from the discussion of the site selection and approval issue in the Regulation Impact Statement but it bears emphasising that the proposals are far less detailed and far less prescriptive than those proposed by either the IOGCC or the EU.

Site Plan

One risk associated with CCS is the potential for unanticipated migration of injected substances and leakage through pathways such as geological faults or improperly abandoned wells and each CCS storage site is unique. The IPCC and others have emphasised that these risks can be reduced if there is careful site



selection and regulatory oversight.²⁶ Consequently, the most critical element of the regulatory scheme is the approval of site plans for an injection operation. Such a site plan would have to demonstrate, to the satisfaction of the regulator, that the site and its management would result in 'safe and secure' storage.

An applicant for a GHG injection licence must present a draft site plan. The legislation itself has little to say about the content of the site plan other than that it must set out predictions for the behaviour of the GHG substance stored in the identified GHG storage formation. The Readers' Guide suggests that the matters to be addressed by the site plan will be prescribed by regulations modeled on existing petroleum regulations and will require the applicant to address such matters as: (1) the geological attributes or features of the storage formation; (2) current and proposed injection and storage operations; (3) the operations and techniques to be used by the licensee to monitor and verify the behaviour of the GHG over the life of the project; (4) operations management systems, including processes for identification, assessment and management of risks; and (5) predictions as to the short, medium and long-term behaviour and fate of the GHG in the identified storage formation and associated geological formation(s).²⁷

Site Closure

At some point injection and storage operations will cease and the injection licensee will need to close the site. The legislation suggests that there are six steps.

First, the injection licensee applies for a site closing certificate including a proposal for a monitoring and verification program to be conducted by the Commonwealth (s. 249CZE). An application must be accompanied by a written report that sets out the applicant's modelling of the GHG plume and an assessment of the behaviour of the plume including the expected migration pathway, the short- and long-term consequences of the migration, and the applicant's suggested approach for long-term monitoring of the plume to be undertaken by the Commonwealth once the closing certificate has been issued.

Second, the Minister may issue extensive site closing directions to the licensee (ss. 316-311A).²⁸ A licensee might be required to carry out remedial work (e.g., plugging abandoned wells) on the storage formation including remedial work outside the injection licence area in order to prevent escape of GHG substances.²⁹

Third, the Minister responds to the application by indicating that s/he is prepared to issue a site closing certificate. Other options include refusing to issue the certificate or deferring that decision (s. 249CZFA). Fourth, the licensee posts security to cover the costs of monitoring and verification program (s. 249CZGAA) and fifth, the Minister issues the site closing certificate (s. 249CZA). A site closing certificate remains in force indefinitely (s. 249CZJ) and is automatically transferred if the licence is transferred (s. 249CZJA). Nothing in the legislation suggests a closing certificate eliminates future liability of the licensee. The costs that Commonwealth incurs in carrying out the monitoring program are a debt due to the Commonwealth recoverable in a court of competent jurisdiction (s. 249CZM). The sixth and final step is surrender of the licence provided that the licensee has fulfilled all of its obligations including removal of property and plugging of wells.

Liability-Related Issues

Liability can be broken down into short-term and long-term liability. In the Australian system short-term liability covers the period of active exploration and injection and the period post-injection until site closure. Long-term liability refers to liability after this. In earlier work³⁰ we have stressed the importance of unbundling the liability issues so as to, at a minimum, separate out liability for emissions from a (failed) CSS project, liability for harm suffered by others and liability for remedial operations as well as the questions of short-term and long-term liability. There is no indication that the draft was intended to deal with liability for emissions from a (failed) CCS project. It is far more likely that this issue will be dealt with in any cap and trade legislation that the government eventually puts in place as the EU proposes in its scheme.³¹

Short-Term Liability

There is no indication that the legislation will create a special liability regime for those who suffer harm as a result of a CCS project. Liability therefore will continue to be governed by tort laws of general application.

The injection licensee will also be responsible for all of the activities associated with site closure and abandonment. This of course raises the question of whether there will be money on hand for these closure operations since by this time it can be expected that there will be no offsetting revenue stream. In the absence of offsetting revenue the traditional response of the regulator has been to demand security from





the licensee/operator to cover at least anticipated abandonment/closure costs. The draft legislation is structured to allow the Minister to require an applicant to lodge security before the Minister grants an assessment permit, holding lease or injection licence (ss. 249AM, 249AS, 249BK and 249CJA).

The liability of an operator to take remedial action is generally based on statute rather than general tort law. Examples here include the “directions” that the Minister can issue to the licensee as part of site closure. In addition the Minister can also issue a variety of “directions” where there is a “serious situation” to remediate the problem (s. 249CZ). A direction for a serious situation trumps and must be complied with despite anything in the regulations, previous directions, the approved site plan or anything in the licence.

Long-Term Liability

The Regulation Impact Statement considered four options for long-term liability: no new regulation; new regulation under which Government explicitly assumes long-term liability; new regulation where industry is required to assume long-term liability; and new regulation to share long-term liability between government and industry.³² The “no new regulation” scenario is the status quo for petroleum and assigns liability on the basis of general tort law. The Regulation Impact Statement reasoned that under this scenario, title-holders would not be immunized from their common law liability and that over time the risk “would, in a sense, pass to the community because project participants may cease to exist or because of some other time related factor such as availability of witnesses.”³³ The Regulation Impact Statement recommends this approach for CCS projects. As a result the draft legislation is completely silent on long-term liability. But this is a case where silence speaks volumes since silence will serve to leave liability with the licensee/operator.

Part II: Observations from a Canadian Perspective

This Part of the paper comments on the Australian legislation from a Canadian perspective. The comments fall into three main groups: the tenure scheme; the regulatory scheme; and liability related issues.

Tenure Scheme

Alberta has yet to develop a tenure scheme for “disposal rights” in Crown subsurface.³⁴ We think that there is a strong case for each province and the federal government (for federal lands) to develop disposition legislation for publicly owned storage rights. A more formal and competitive disposition scheme would provide security for investment and provide a level playing field for different actors to engage in CCS activities. It would also signal that storage and disposal into pore space is a valuable use of a publicly owned and limited resource. This conclusion raises the question of what form such a disposition scheme should take.

The Australian approach (and the EU proposal is similar) is that each jurisdiction should use and adapt its existing petroleum legislation (whatever it may be) to fit the challenges posed by CCS.³⁵ Adapting existing regulation draws on a well established framework for accessing and managing property rights, it reduces the need for new sets of regulation, it increases understanding and acceptance of the regulatory framework and it allows for integrated management of issues with other uses (in particular petroleum).

A version of the Australian approach adapted to Alberta’s tenure regime as described in the *Petroleum and Natural Gas Tenure Regulations* include: (1) industry nominations of land for CCS; (2) a new single form of tenure, a GHG storage licence, with a short initial exploration term followed by an intermediate term provided the licensee meets minimum work requirement; (3) disposition of interests by way of cash bidding or work bidding but with a single bidding variable; (4) a minimum work requirement of at least one exploratory well during the initial term of the licence; and (5) by the end of the intermediate term a requirement that the licensee identify an area within the licence area that is suitable for GHG storage purposes and file an application for approval of a site plan or plans with the ERCB. Parts of the GHG licence not subject to an ERCB approved site plan would revert to the Crown.

The Regulatory Scheme

As we have seen, Australia’s proposed regulatory scheme contains three main elements: (1) approval required for key GHG operations; (2) filing and approval of site plans; and (3) the site closure mechanism. The best analogies for each of these



regulatory elements within Alberta's current oil and gas regulatory system would seem to be: (1) the well licensing provisions of the *Oil and Gas Conservation Act (OGCA)*; (2) section 39 *OGCA* approvals for schemes including injection schemes; and (3) approvals for non-routine abandonments. But none of these analogies is entirely appropriate and each would have shortcomings if simply re-jigged to accommodate CCS.

Areas of Alberta's regulatory approach requiring adjustment would include the following: (1) the regulatory framework should require a geological formation approach that relies on the use of a site plan; (2) well licensing provisions should include a list of factors the applicant and the regulator must address as part of an application to address broader issues of public policy such as the priority to be accorded to different resources uses; (3) the legislation should, at a minimum, express both the objective of a site plan (assurance of safe and secure storage) and the issues and types of information that a site plan needs to address including monitoring and verification;³⁶ and (4) unlike current practice, no licensee should be allowed to abandon a CCS well without approval by the regulator to ensure the overall integrity of the CCS project.

It will also be necessary for Alberta to deal with the resource use conflict and priority issue as between CCS and oil and gas interests. Here Alberta should be able to draw upon experience with the gas-over-bitumen debates and as well as the regulatory rules developed by the ERCB and examined by the courts in that context.³⁷

Liability Issues

As we have observed elsewhere, most liability issues in Alberta's oil and gas sector are dealt with by the laws of general application.³⁸ Special rules exist for abandonment obligations and for remedial obligations. There is no transfer of liability to the state under any of these rules and to the extent that an operator becomes defunct the costs of abandonment operations are borne by the industry financed orphan well fund.

What are the implications of this and the Australian proposals for a liability scheme for CCS operations in Alberta? First, it will be hard to make the case that special rules are required for liability for harm suffered by others in the case of CCS operations if the general tort rules apply to conventional oil and

gas operations. But it may be necessary to create a separate orphan fund for CCS operations. Second, it will likely be necessary to be more prescriptive about requirements for posting security given that a pure CCS scheme (as opposed to an EOR scheme) will have no offsetting production revenue. Finally, existing provisions dealing with remedial liability will likely serve as an adequate basis for CCS operations although the triggers for requiring remedial action may require some adjustment. The Australian concept of a "serious situation" is more precautionary than existing provisions in the *OGCA*.

Conclusion

The proposed Australian legislation accomplishes several things. First, it will provide a disposition or tenure scheme for parties to acquire the right to store GHGs in the offshore. Second, it provides a regulatory framework for reviewing and approving CCS operations on a case by case basis with individual site plans and closure plans. Third, the legislation provides a framework for deciding upon the competing claims of petroleum operations and storage operations. And finally, the legislation proposes to leave both short term and long term liability with the operator/licensee largely on the basis of laws of general application.

The Australian approach informs a future Alberta approach in several ways. First, it suggests that it is important to build on existing regulation where possible. Second, the examples of both Australia and the EU suggest that we need to introduce a more formal, transparent and competitive disposition scheme. Third, Alberta's current regulatory regime is not adequate to deal with issues of CCS site approval and closure. The regulatory framework should require a geological formation approach that relies on the use of a site plan. Fourth, it is likely necessary to be more prescriptive about requirements for posting security. Fifth, existing provisions dealing with remedial liability will likely serve as an adequate basis for CCS operations although the triggers for requiring remedial action may require some adjustment. And sixth, the Australian proposals generally support an approach to long-term liability that, in common with Alberta's current scheme, leaves liability with the operator. But Alberta's scheme also provides a default liability for remedial issues where the operator is defunct, and that is the industry funded orphan fund. It would seem to be appropriate to retain this concept but to adapt it to the needs and challenges of CCS operations.





◆ Nigel Bankes, Professor of Law, University of Calgary, ndbankes@ucalgary.ca and Jenette Poschwatta, Research Associate, Canadian Institute of Resources Law, jposchw@ucalgary.ca. This article is an extended executive summary of the full report. The full report is available as a discussion paper on the ISEEE website: <http://www.iseee.ca/>. We acknowledge with appreciation funding from the Institute for Sustainable Energy, Environment and Economy of the University of Calgary to support Jenette's work on this paper. Sharon Mascher of the Faculty of Law, The University of Western Australia commented on a draft of the full version of this paper but we, of course, remain responsible for our (mis)interpretations of Australian law.

Notes

1. Report of the Eco Energy Task Force, *Canada's Fossil Energy Future, The Way Forward on Carbon Capture and Storage* (2008), online: <http://www.nrcan-rncan.gc.ca/com/resoress/publications/fosfos/fosfos-eng.pdf>. Subsequently, Alberta established the Carbon Capture and Storage Development Council to respond to that report, 24 April 2008, online: <http://www.energy.alberta.ca/Initiatives/1438.asp>.
2. Ministerial Council on Mineral and Petroleum Resources, *Carbon Dioxide Capture and Geological Storage: Australian Regulatory Guiding Principles* (2005), Department of Resources, Energy and Tourism, online: <http://www.ret.gov.au/General/Resources-CCS/Pages/GHGStorageLegislation.aspx>. The Australian Regulatory Guiding Principles proved to be very influential in international discussions of CCS. This suggests that there will also be significant international interest in the proposed implementing legislation.
3. The draft legislation was accompanied by two other documents, a Regulation Impact Statement and a Readers' Guide. All three documents are available online: <http://www.ret.gov.au/General/Resources-CCS/Pages/GHGStorageLegislation.aspx>. Further material including a powerpoint presentation from the Department of Resources, Energy and Tourism on the draft legislation is available on the website of Primary Industries and Resources Committee of the House of Representatives, online: <http://www.aph.gov.au/house/committee/pir/exposedraft/back/back04.pdf>. This Committee will conduct an inquiry into the draft with the intention of reporting out in August 2008.
4. Regulation Impact Statement, *ibid.* at 3. *Offshore Petroleum Act 2006* (Cht.).
5. Proposal for a Directive of the European Parliament and of the Council on the geological storage of carbon dioxide and amending Council Directives 85/337/EEC, 96/61/EC, Directives 2000/60/EC, 2001/80/EC, 2004/35/EC, 2006/12/EC and Regulation (EC) No 1013/2006 (hereinafter "EU Draft Directive"), online: <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=COM:2008:0018:FIN:EN:PDF>.
6. The Interstate Oil and Gas Compact Commission Task Force on Carbon Capture and Geologic Storage, *Storage of Carbon Dioxide in Geologic Structures A Legal and Regulatory Guide for States and Provinces* (25 September 2007) (hereinafter IOGCC), online: <http://iogcc.publishpath.com/Websites/iogcc/PDFS/2008-CO2-Storage-Legal-and-Regulatory-Guide-for-States-Full-Report.pdf>.
7. Nigel Bankes, Jenette Poschwatta & E. Mitchell Shier, "The Legal Framework for Carbon Capture and Storage in Alberta" (2008) 45 *Alta. L. Rev.* 585.
8. With the exception of possible aboriginal title claims. The draft legislation itself makes very little reference to aboriginal title issues. For more general discussion see Nigel Bankes, "Aboriginal Title to Petroleum: Some Comparative Observations on the Law of Canada, Australia and the United States" (2004) 7 *Yearbook of New Zealand Jurisprudence* 111-157. Surface rights are also irrelevant in the offshore situation.
9. R.S.C. 1985 (2d Supp.), c. 36.
10. In addition there are also three forms of authorizations to permit other exploratory operations on a non-exclusive basis: (1) a GHG search authority; (2) a GHG special authority; and (3) a GHG research consent.
11. A potential GHG injection site is defined as a suitable offshore place to make a well or wells to inject a GHG substance into a part of a geological formation, s. 15C.
12. The declaration of an identified GHG storage formation is discussed below.
13. A special holding lease is also available to either a holder of a GHG assessment permit or a GHG holding lease, with one or more identified GHG



- storage formations in the title area, that is refused a GHG injection licence on the basis that there is a significant risk that the operations that could be carried on under the injection licence will have a significant adverse impact on petroleum exploration or recovery operations (s. 249BSA). The special GHG holding lease has an indefinite duration (s. 249BF). The special holding lease is an example of how the draft legislation seeks to balance GHG storage interests and petroleum interests.
14. An injection licence granted to the holder of a petroleum production licence is only for the injection of CO₂ that is obtained through the production of natural gas.
 15. Fundamental suitability determinants are used in the determination of the spatial extent (the expected migration path or pathways of the GHG substance injected) of an eligible GHG storage formation. They include the particular GHG substance, amount of GHG substance injected, point or points of injection, period of injection, engineering enhancements (if applicable) and the effective sealing feature, attribute or mechanism that enable permanent storage (s. 15B). They become “locked-in” when finalized as part of a declared identified GHG storage formation.
 16. If during this five year period there are circumstances beyond the licensee’s control or if the licence is suspended under the Minister’s power to protect petroleum discovered in an area, that time is not counted in the five year period.
 17. Readers’ Guide, *supra* note 3 at 4.3.
 18. Under s. 249AUB, the Minister may only revoke a declaration of an identified GHG storage location, subject to consultation with the title-holder, if the Minister is satisfied the formation is no longer an eligible GHG storage formation.
 19. Regulation Impact Statement, *supra* note 3 at 30 and Readers’ Guide, *supra* note 3 at 1.7. Interests are divided into pre- and post-commencement interests. A pre-commencement petroleum title is an exploration permit, retention lease or production licence that is in force at the time when the amendments commence and includes any successor interest (s. 6[62]). A post-commencement petroleum title is a petroleum interest granted after the amendments commence and which is not a successor interest.
 20. This test is used to reconcile all competing interests. “Significant risk” is the equivalent of a “large adverse impact on other operations” and that the risk may be taken to be a significant risk “even if the probability is low” (s. 15F).
 21. In determining the public interest, the Minister must have regard to whether there is an agreement in place between the parties and the terms of that agreement (s. 249CI(5)) but the Minister is not limited by that agreement.
 22. The agreement must also comply with Part 3.6 of the *Offshore Petroleum Act 2006* or would likely be approved under Part 3A.6. Both parts concern approval of dealings (other than a transfer of a title) such as the creation or assignment of a right or interest. This qualifier applies to all agreements under this section.
 23. A key GHG operation includes making a well, injecting or storing, on an appraisal basis, a GHG or air, petroleum or water in a geological formation, carrying out a survey, monitoring the behaviour of a substance stored in a geological formation, carrying out baseline investigations, taking samples of the seabed or subsoil of an offshore area or any operation specified in the regulations (s. 6[44]).
 24. A key petroleum operation includes making a well, injecting or storing a substance into a geological formation, carrying out a survey, monitoring the behaviour of a substance stored in a geological formation, taking samples of the seabed or subsoil of an offshore area or any operation specified in the regulations (s. 6[45]).
 25. Regulation Impact Statement, *supra* note 3 at 14-16.
 26. Intergovernmental Panel on Climate Change (IPCC), *Special Report on Carbon Dioxide Capture and Storage*, Prepared by Working Group III of the Intergovernmental Panel on Climate Change, B. Metz *et al.*, eds. (Cambridge: Cambridge University Press, 2005) at 12, online: <http://www.ipcc.ch/ipccreports/srccs.htm>.
 27. Readers’ Guide, *supra* note 3 at 6.4.
 28. The Minister may also issue such directions where the licensee has failed to make such an application but should have done so.
 29. Readers’ Guide *supra* note 3 at 7.9.
 30. Bankes, Poschwatta & Shier, *supra* note 7 at 620.
 31. See the EU Draft Directive, *supra* note 5 at 2.
 32. Regulation Impact Statement, *supra* note 3 at 26.
 33. *Ibid.* at 27.
 34. Bankes, Poschwatta & Shier, *supra* note 7 at 604. To the extent that the Crown already authorizes subsurface disposal operations in Crown subsurface lands (such as for acid gas disposal (AGD)) it does so using a form of letter of consent or a licence issued under the authority of s. 56 of the *Mines and Minerals Act*, R.S.A. 2000, c. M-17 rather than a formal tenure.





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35. EU Draft Directive, *supra* note 5 at 2. The EU utilized existing regulation for pipelines and some environmental activities. It decided to develop a new framework for storage and management of a CCS site, *ibid.* at 5. The IOGCC came to a different conclusion (perhaps because it had to deal with the differing laws of its 30 member US states and four provinces). It concluded that while not necessary, it is advisable for states and provinces to enact a new regulatory framework governing CCS, IOGCC, *supra* note 6 at 13.
36. This is different than the current approach. All the details as to scheme approvals for gas storage, enhanced oil recovery (EOR) and AGD projects is found not in s. 39 of the *OGCA* or the regulations but in the relevant ERCB Guides and Directives (principally Directive 65).
37. *Giant Grosmont Petroleums Ltd. v. Gulf Canada Resources Ltd.*, [2001] 10 W.W.R. 99 (Alta. C.A.); Mike Wenig, "Valuing Energy Resources: Reflections on the EUB's Decision in the Surmount 'Gas Over Bitumen' Controversy" (2002) 80 *Resources* 1.
38. Bankes, Poschwatta & Shier, *supra* note 7 at 620.

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Canadian Institute of Resources Law
Institut canadien du droit des ressources

MFH 3353, University of Calgary, 2500 University Drive N.W., Calgary, AB T2N 1N4

Telephone: 403.220.3200 Facsimile: 403.282.6182 E-mail: cirl@ucalgary.ca

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