EXPLANATORY STATEMENT

Select Legislative Instrument 2011 No. 107

Offshore Petroleum and Greenhouse Gas Storage Act 2006
Offshore Petroleum and Greenhouse Gas Storage (Greenhouse Gas Injection and Storage) Regulations 2011

(Circulated by authority of the Minister for Resources and Energy,
the Honourable Martin Ferguson AM, MP)

The Regulations are made in accordance with Section 781 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (the Offshore Act).

The Offshore Act provides the legal framework for the exploration for and recovery of petroleum and for the injection and storage of greenhouse gas (GHG) substances in those parts of Australia's continental shelf and Exclusive Economic Zone which are under Commonwealth jurisdiction. The regulator for all GHG related activities under the Offshore Act is the responsible Commonwealth Minister (RCM) (currently, the Minister for Resources and Energy).

The purpose of the Regulations is to underpin the approval of GHG injection and storage activities under the Offshore Act and deal specifically with injection and safe storage into the reservoir plus provide the mechanism for dealing with interactions with other users.

Commercial GHG operations will essentially be climate change mitigation measures, which will involve the capture, injection and storage of GHG from emission sources for a range of industrial processes. Therefore it is essential that GHG injection and storage activities provide successful and long-term geological storage of greenhouse gases. This framework is provided for under the Offshore Act.

The Offshore Act provides that a GHG assessment permit titleholder, upon discovery of a geological formation within its title area, can apply to the RCM for the declaration of a part of the geological formation as 'an identified storage formation'. Once a declaration is in force a titleholder can proceed to apply for a GHG injection licence over the declared identified storage formation if there will be a source of a GHG substance available to commence injection within 5 years. An application for an injection licence must be accompanied by a draft site plan, which is the core regulatory document for the management of the GHG injection and storage operations.

In deciding whether to grant an injection licence the RCM must be satisfied that there is no significant risk that operations under the injection licence will have a significant adverse impact on the petroleum operations of an overlapping petroleum title. When injection and storage operations cease at the end of the project, the injection licensee must apply for a site closing certificate. This triggers the commencement of the site closing period, during which the licensee is required to decommission structures or remove property brought onto the site.

It is this regulatory element of long term geological storage that forms the basis of the regulations which cover six linked elements:- significant risk of a significant adverse impact test (dealing with potential impacts on existing GHG or petroleum titleholders); declaration of a storage formation; the site plan for GHG injection and storage; incident reporting; decommissioning and discharge of securities. An overview of the six linked elements is at Attachment A.

Details of the Regulations are set out in Attachment B.

The suite of greenhouse gas storage regulations have been the subject of extensive consultations and numerous workshops with stakeholders, including other Australian Government agencies, State and Territory governments, the potential storage industry, the petroleum industry, environmental none governmental organisation and interested individuals over an extended period of time from November 2008 to October 2009. The process commenced with the release of discussion papers which described the proposed overall regulatory structure (including dual purpose and petroleum-like regulations).

With respect to the greenhouse gas specific regulations the consultation engagement with stakeholders started at the early stages of the development of regulations through discussion papers outlining the framework and potential options for the proposed regulations. An exposure draft of the regulations was circulated to stakeholders in May 2010 for a six week comment period with follow-up meetings in September 2010. In November 2010 two workshops were conducted in Perth and Melbourne to further clarify and impart a greater understanding relating to comments received on the exposure draft. The regulations reflect the results of those consultations.

The Act specifies no conditions that need to be met before the power to make the proposed Regulations may be exercised. The Regulations are legislative instruments for the purposes of the *Legislative Instruments Act 2003*.

A comprehensive Regulation Impact Statement was prepared and accompanied the inclusion of the greenhouse gas provisions in the primary legislation in 2008. The Office of Best Practice Regulation was consulted in the preparation of these regulations and advised that a Regulating Impact Statement was not required (OBPR reference number 10295).

The Regulations commence on the day after they are registered.

The Minute recommends that Regulations be made in the form proposed.

Authority: Section 781 of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*

ATTACHMENT A

OVERVIEW OF SIX LINKED ELEMENTS RELATING TO THE OFFSHORE PETROLEUM AND GREENHOUSE GAS STORAGE (GREENHOUSE GAS INJECTION AND STORAGE) REGULATIONS

Six Linked Elements:

- Significant risk of a significant adverse impact test
- Declaration of a storage formation
- The site plan for greenhouse gas (GHG) injection and storage
- Incident reporting
- Decommissioning
- Discharge of securities.

Significant risk of a significant impact (SROSAI) test: The regulations relating to the SROSAI test set out the process the responsible Commonwealth Minister (RCM) must use in determining whether a particular activity in a petroleum/GHG title area will have a significant risk of a significant adverse impact on activities in existing petroleum/GHG title areas. The SROSAI test has been developed to protect the existing rights of the petroleum industry and to provide for investment certainty for GHG operators. It also provides a management system for overlapping titles which will allow both industries to co-exist.

The regulations require that probability weighted costs (ie, the probability of the occurrence of an event multiplied by the cost that would be incurred if the event were to occur) of adverse impacts must be less than a threshold. The test has to meet two thresholds, one is an absolute impact cost, and the other is a relative impact cost (ie, the size of the impact compared with the size of the project being impacted on). This latter is needed to protect small projects (which were originally large projects, but are now late in project life). During the consultation process, stakeholders indicated that the absolute and relative threshold values ($5 million and 0.0015 respectively) included in the draft regulations are acceptable.

The regulations set out the information that must be provided by the applicant to enable the RCM to apply the SROSAI test. The RCM may establish an expert advisory committee to provide advice in the decision making process. Following the application of the SROSAI test, the RCM will advise the applicant and the affected overlapping titleholder(s) of the outcome of the test. The applicant or the impacted titleholder will then have 60 days in which to provide any comments they wish to make on the outcome.

Declaration of a storage formation: The declaration of a storage formation is the first step in establishing the technical viability of a potential storage site for GHG injection and storage operations. A declaration must be in force before an application can be made for a GHG holding lease or GHG injection licence.

The regulations outline the information that must be provided to satisfy the RCM that the storage formation is suitable for the permanent storage of a given amount of a GHG substance injected at defined locations and injection rates. The required information comprises detailed geological information; modelling of the migration of the GHG substance to be stored in the storage formation; an estimate of the spatial extent of the formation; and any engineering enhancements (such as water injection/extraction wells) that are needed to ensure safe and secure storage.

The regulations also specify the process for applying for a declaration by a GHG titleholder, once the titleholder discovers an eligible storage formation in the title area.

Site Plan: The site plan is the core regulatory document for the management of GHG injection and storage operations. The regulations prohibit the carrying out of any activity under the authority of the injection licence unless a site plan is in force and unless the activity is carried out in accordance with the site plan. The site plan builds on the declaration and must be wholly consistent with it. Most of the material relating to the suitability of the reservoir should come directly from the declaration, which can simply be attached to the site plan.

The regulations outline the process for submission of a site plan, the contents of the site plan and the approval of the site plan by the RCM. One key element covered by the regulations is Part A of the site plan which sets out predictions relating to the behaviour of the GHG substance to be stored in the storage formation to satisfy the RCM that each prediction is acceptable and soundly based. The regulations provide that in the event of the stored GHG substance not behaving as predicted in Part A, then the serious situation powers of RCM in the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (the Offshore Act) will be triggered and may be exercised by the RCM.

The regulations also require Part B of the site plan to cover risk assessment and monitoring of the behaviour of the stored GHG substance, which are key parts of the management of a GHG storage site. The regulations do not specify what sort of monitoring should be undertaken (this will be highly site specific), but require that the RCM must be satisfied that the monitoring program will detect significant events in the storage formation in a timely manner. They also require that the timing and nature of monitoring must be designed to detect any variations from the predictions in Part A of the site plan. The proposed monitoring program must also establish the triggers for incident reporting (see below). The risk assessment must provide an analysis of identified risk factors to satisfy the RCM that residual risks, after taking into account proposed risk control and remediation strategies, are acceptable.

In recognition of the importance of public acceptance of GHG operations, the regulations require the RCM to make a summary of the site plan available on the departmental website, within 30 days after receiving it. Information that is commercial in confidence or would result in disclosure of intellectual property rights will not be included in the summary. The regulations also provide that in the site plan approval process, the RCM must have regard to any public comments received in relation to the summary of the site plan.

The regulations relating to the site plan do not deal with surface factors, such as management of the environment, which is a matter for the Environment Regulations under the Offshore Act (identical to those used for petroleum operations) and the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). In this context, it should be noted that the Environment Regulations are written in objective terms and require the applicant to identify risks and management strategies accordingly. Thus, for example, the environment plan under the Environment Regulations would draw on the risk analysis relating to leakage contained in the site plan and would address the environmental consequences of any such leak, and what (surface based) response actions might be required in respect of the environment; while the site plan would include any responses that might be made to control or limit the leakage.

Incident reporting: Incident reporting under the regulations requires a GHG titleholder to report incidents which have the potential to cause a serious situation under section 379 of the Offshore Act. Reportable incidents under the regulations include variations from the predictions included in part A of the site plan; leakage of the stored GHG substance to the seabed; and any leakage from any wells that form part of the project (leakage from old petroleum wells would be treated as leakage of the stored substance to the seabed). The regulations provide for different reportable incidents to have different reporting timeframes, depending on their nature.

The RCM may require actions to be taken to address reportable incidents, including revisions to the site plan. These powers are additional to the powers that the RCM has in relation to responses to serious situations as defined in the Offshore Act.

Decommissioning: The regulations require the submission of a provisional decommissioning plan at the time of applying for an injection licence and a final plan at least 12 months before the injection is expected to cease. The decommissioning plan is separate from the site plan because it does not deal with the management of the reservoir. Under the existing Environment Regulations, a decommissioning plan is not required until decommissioning is about to commence. However, in the case of petroleum projects approved under the EPBC Act it has been the normal practice to require a decommissioning plan as a condition of approval. Inclusion of a separate regulation requiring a provisional decommissioning plan at the outset will contribute to streamlining regulatory requirements and help meet possible community concerns about what will be perceived as a new industry.

Discharge of securities: The regulations will allow any securities to be discharged whenever the RCM is satisfied that the statutory obligation in respect of which the security was lodged has been met.

ATTACHMENT B

NOTES ON INDIVIDUAL CLAUSES

Part 1 - Introduction

Regulation 1.1 - Name of Regulations

Regulation 1.1 provides for the title of the Regulations to be the *Offshore Petroleum and Greenhouse Gas Storage (Greenhouse Gas Injection and Storage) Regulations 2011*.

Regulation 1.2 - Commencement

Regulation 1.2 provides for the Regulations to commence on the day following registration on the Federal Register of Legislative Instruments.

Regulation 1.3 - Definitions

Regulation 1.3 defines the terms used in the Regulations that are not already defined in the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (the Offshore Act) or have a different meaning in the Offshore Act. It also provide notes directing the reader to various sections of the Offshore Act for certain other definitions used in the Regulations.

Regulation 1.4 – Significant risk of a significant adverse impact (SROSAI) - information

Regulation 1.4 sets out the information requirements that must be provided that would enable the responsible Commonwealth Minister (RCM) to make a determination on the risk question relating to overlapping petroleum and GHG titles. The regulation also allows the RCM to request specified information and establish an expert advisory committee to consider whether there is a significant risk of a significant adverse impact.

Regulation 1.5 – Significant risk of a significant adverse impact – manner of determining risk

Regulation 1.5 outlines the manner in determining whether there would be a significant risk that an operation would have a significant adverse impact. To manage possible interactions between petroleum and GHG activities in overlapping titles the SROSAI test enables the RCM to consider whether one activity would impact on the other. In order to do this the RCM would need to take into account the probability and economic consequences of a potential adverse impact by applying the following formula:

Probability-weighted absolute impact = event probability x event absolute value

$$\text{Probability-weighted relative impact} = \frac{\text{event probability x event absolute value}}{\text{Total resource value}}$$

Regulation 1.6 – Significant risk of a significant adverse impact – threshold amounts

Regulation 1.6 outlines the two threshold amounts that would determine if there is a significant risk of a significant adverse impact. The absolute and relative threshold values would be set at $5 million and 0.0015 respectively. Quantifiable thresholds are needed to provide surety and consistency in these determinations and to provide an objective basis for the test. If thresholds are exceeded then a significant adverse impact would be deemed to exist.

Regulation 1.7 – Significant risk of a significant adverse impact – notification that there is a significant adverse impact

Regulation 1.7 provides, if there is a belief that there may be a significant risk that an operation may have an adverse impact on either key petroleum and/or greenhouse gas (GHG) operations or titles, for the RCM to notify the applicant and the affected overlapping titleholder(s) of the determination as soon as practicable. The RCM is required to provide the reasons for making the determination. The regulation also provides for the applicant, who has been given notification that an operation will have a significant adverse impact, to lodge an objection to that notification within 60 days. If an objection is received the RCM is required to notify the affected overlapping titleholder(s) in writing within 10 days after the objection notification, and provide detail of a proposed timetable for consideration of the objection.

Regulation 1.8 – Significant risk of a significant adverse impact – notification that there is no significant adverse impact

Regulation 1.8 provides, if it is determined that there is not a significant risk that an operation may have an adverse impact on either key petroleum and/or GHG operations or titles, for the RCM to notify the applicant and the affected overlapping titleholder(s) of the determination as soon as practicable. The RCM is required to provide the reasons for making the determination. The Regulation also provides for the affected overlapping titleholder(s), to lodge an objection to that notification within 60 days. If an objection is received the RCM is required to notify the applicant in writing within 10 days after the objection notification, and provide detail of a proposed timetable for consideration of the objection.

Part 2 – Declaration of identified greenhouse gas storage formation

Regulation 2.1 – Application for declaration of identified greenhouse gas storage formation

Regulation 2.1 guides the reader to Schedule 1 which specifies the information that an applicant must provide when applying for a declaration of an identified GHG storage formation. The declaration of a storage formation is the first step in establishing the viability of a potential storage site and is required before an application can be made for an injection licence.

Regulation 2.2 – Dealing with application for declaration of identified greenhouse gas storage formation

Regulation 2.2 provides that upon the receipt of an application for the declaration of a storage formation the RCM must provide the applicant within 20 days, with a notification outlining a proposed timetable for the consideration of the application. The RCM also has the ability to give the applicant an opportunity to amend the application if it is deemed that part of the geological formation is not suitable for the permanent storage of a GHG substance.

Part 3 – Site plans

Regulation 3.1 – Object of Part 3

Regulation 3.1 outlines that the object is to ensure that GHG injection and storage activities are undertaken in a manner that ensures storage is safe and secure and in accordance with an approved site plan.

Regulation 3.2 – Site plans - obligations

Regulation 3.2 outlines that it would be an offence for a GHG injection licensee to carry out any operational activity relating to the storage formation without an approved site plan. It also outlines that it is an offence if the licensee does not comply with that approved site plan. The regulation specifies that two hard copies and one electronic copy of the draft site plan must be submitted for approval.

Regulation 3.3 – Site plans – approval (general)

Regulation 3.3 outlines that the RCM must be satisfied that a proposed site plan complies with all regulatory requirements prior to approval. The proposed site plan would need to be appropriate for the scale of the project and provide sufficient information, including the ongoing monitoring of GHG operations, modelling of the expected behaviour of plume migration and risk assessment to satisfy the RCM that the operator's proposed operations management system will ensure safe and secure storage of the GHG substance over the life of the project and in the longer term.

Regulation 3.4 – Site plans – approval (Part A of plan)

Regulation 3.4 outlines that a requirement of Part A of a site plan, is the provision of information on the predictions of behaviours of the GHG substance to be stored in the formation over the life of the project on the basis of plume migration modelling. Predictions of plume migration paths would have to include expected migration pathways of the GHG substance and probabilities associated with the migration paths and their migration rates.

Provided that actual behaviour of the GHG substance meets the predictions set out in Part A, then no serious situations would have arisen. In the event that the stored GHG substance did not behave as predicted in Part A, then the serious situation powers of the RCM in the Offshore Act would be triggered. The serious situation powers enable the RCM to issue a direction to the injection licensee to undertake activities as specified in the direction for the purpose of eliminating, mitigating or remediating the serious situation.

Regulation 3.5 – Site plans – approval (Part B of plan)

Regulation 3.5 outlines that an application for approval of Part B of a site plan must contain detailed information on all matters relating to the management of the site and be consistent with the declaration document. The RCM has the ability to make information available to the public on the raw data and results of monitoring activities, particularly in relation to leakages of a GHG substance resulting from transportation or injection operations.

Regulation 3.6 – Site plans - summary of draft site plan

Regulation 3.6 provides for the summary information of a draft site plan being available to the public. Within 30 days of submission of a draft site plan to the RCM for consideration, a summary version of the plan must be placed on the website of the Commonwealth Department responsible for resources. Any information considered by the applicant to be propriety or confidential will not be made public.

The regulation also outlines that the summary site plan must be on the website for at least 30 days prior to a decision being made by the RCM. When making a decision whether to approve the site plan the RCM must have regard to any relevant comments received about the summary site plan.

Regulation 3.7 – Site plans - approval

Regulation 3.7 specifies that the RCM upon receipt of a draft site plan must within 20 days give the applicant a notice setting out a proposed timetable for its consideration.

Regulation 3.8 – Site plans – duration

Regulation 3.8 provides that an approved site plan would remain in force indefinitely unless the RCM either withdraws the approval for the site plan or issues a site closing certificate.

Regulation 3.9 – Site plans – withdrawal of approval

Regulation 3.9 outlines that a site plan approval could be withdrawn if a declaration has been revoked or the injection licensee has not complied, reviewed or submitted a variation to an approved site plan or complied with a direction given by the RCM. If the RCM intends to withdraw approval, then the titleholder must be informed in writing of this intention at least 30 days before the withdrawal takes effect.

Regulation 3.10 – Site plans – review of approved site plan

Regulation 3.10 outlines that it would be an offence if the titleholder did not review a site plan at least once in every 5 period after approval. The review must include updating of plume migration modelling, based on experienced gained, the actual operations (especially on the amounts and rates of injection) and the behaviour of the plume. The licensee must also consider whether relevant monitoring plans need to be revised in light of the evolution of industry best practice and the conduct of operations.

The regulation also enables the RCM to request the licensee to review an approved site plan if circumstances warrant. It would be an offence if the licensee did not perform a review upon request by the RCM.

Regulation 3.11 – Site plans - Variation of approved site plan

Regulation 3.11 outlines that a GHG injection licensee must within 60 days prepare a draft variation to an approved site plan in order to remove an inconsistency that may have arisen as a result of a direction issued under the Offshore Act. The regulation also outlines that it would be an offence if the licensee did not submit a variation to the approved site plan to the RCM after becoming aware of the situation.

Part 4- General

Division 1 Incident Reporting

Regulation 4.1 – Reportable incidents

Regulation 4.1 provides that a reportable incident is defined as an incident relating to an activity that has caused, or has potential to cause, moderate to significant environmental damage (that is incidents that are serious situations within the meaning of the Offshore Act, or have the potential to lead to serious situations).

Reportable incidents include variations of the behaviour of the GHG substance that are different to the projections outlined in Part A of site plan, other events described in Part B of the site plan, leakage of the stored GHG substance to the seabed, large scale venting of GHG from injection equipment and any leakage from any wells that form part of the project.

Regulation 4.2 – Notifying reportable incident

Regulation 4.2 outlines that it would be an offence if the titleholder did not notify the RCM of the occurrence of a reportable incident. The regulation also requires that the notification could either be oral or in writing and must contain all the relevant information about the incident and any mitigation actions that have been undertaken or any proposed preventative measures.

Regulation 4.3 – Written report of reportable incident

Regulation 4.3 outlines that it would be an offence if the titleholder did not give a written report of a reportable incident to the RCM. The regulation outlines that the report must contain all the relevant information about the incident and any mitigation actions that have been undertaken or any proposed preventative measures.

Regulation 4.4 – Additional requirements - behaviour of greenhouse gas substance in the storage formation

Regulation 4.4 provides that if a titleholder becomes aware that a GHG substance in a storage formation is not behaving as predicted, the titleholder must inform the RCM of the incident within 3 days and give a written report of the incident within 10 days.

Regulation 4.5 – Additional requirements - leakage of stored greenhouse gas substance to the seabed

Regulation 4.5 provides that if a titleholder becomes aware of a leakage of GHG substance to the seabed, the titleholder must inform the RCM of the incident within 2 hours after becoming aware of the occurrence and also provide a written report of the incident within 3 days. The regulation also outlines information requirements relating to the estimation of leakage that has occurred and is likely to occur.

Regulation 4.6 – Additional requirements - leakage from the bore of a well

Regulation 4.6 provides that if a titleholder becomes aware of a leakage from the well bore, the titleholder must inform the RCM of the incident within 24 hours after becoming aware of the occurrence and also provide a written report of the incident within 5 days.

Division 2 – Other Matters

Regulation 4.7 – Decommissioning of structures, equipment and other items of property

Regulation 4.7 requires a titleholder to submit a provisional decommissioning plan when applying for the grant of a GHG injection licence. A licensee is required to decommission structures, equipment and other items of property that have been brought into an offshore title area for the purposes of GHG injection and storage prior to surrendering the title in accordance with an approved decommissioning plan.

It is an offence if the licensee does not review a decommissioning plan at least once every 10 years during the injection phase and at least 5 years prior to cessation of injection.

Regulation 4.8 – Discharge of securities

Regulation 4.8 provides for the RCM to, upon application, discharge any securities in force, in whole or in part, held by a GHG titleholder if satisfied that the statutory obligation in respect of which the security was lodged has been met. If the security was used by the RCM to address a situation for which the security was lodged, then any excess amount would be discharged to the titleholder.

Regulation 4.9 – Estimate of total costs and expenses of carrying out program of operations

Regulation 4.9 outlines that the most recently published long-term bond rate as published by the Reserve Bank would be the annual rate at which costs and expenses could increase. This formula is consistently used by the industry and is consistent with that used in the *Petroleum Resource Rent Tax Assessment Act 1987* with a minor modification to reflect that the proposed regulations would deal only with projections and not historical data.

SCHEDULE 1 Information in application for declaration of a part of a formation as identified greenhouse gas storage formation

Schedule 1 sets out the detailed information requirements that would need to be addressed in a declaration for a storage formation. As a declaration would be the first step in establishing the technical viability of a potential storage site for GHG injection and storage operations, the declaration application would need to contain information relating to geology, fundamental suitability determinants, spatial extent of the storage formation and modelling of plume migration pathways.

SCHEDULE 2 Information in Part B of site plan

Schedule 2 sets out the detailed information requirements that would need to be covered in Part B of a site plan application. The application would have to address each of the matters specified in the licence and provide details on technical qualifications and work and experience proposals such as project planning and operations overview; integrity of the storage formation; proposed injection and storage operations; plume migration modelling, monitoring and verification programs; risk assessment; interactions with the petroleum industry; impact on other industries; preliminary plan for site closure and consultation.

SCHEDULE 3 Information in summary of site plan

Schedule 3 provides a detailed outline of the information requirements that would need to be included in a summary site plan.