Australian Government
Department of Industry, Science and Resources

Review of the Offshore Carbon Capture and Storage Regime (ROCCSR)

Terms of Reference

November 2023

Contents

1. Context

1.1 Problem statement

The Australian Government is committed to reducing Australia's greenhouse gas emissions. In 2022, legislation was introduced to establish a net zero target for emissions by 2050. A 43% reduction below 2005 levels has been set for 2030.

Reforms to the Safeguard Mechanism require all major industrial facilities, including gas extraction and processing, to reduce their net emissions. New developments will be required to meet international best practice standards, which means that carbon capture and storage (CCS) will be increasingly important for new gas developments and other hard-to-abate industries.

Both domestic and international climate experts report on the importance of CCS in Australia's pursuit of net zero.

Fit-for-purpose regulatory regimes are required to mitigate environmental and safety risks, comply with existing international obligations and support timely deployment of offshore CCS projects. Failure to develop efficient regimes now may impact the achievement of meeting emissions reductions targets, particularly for those hard to abate heavy industries such as cement, iron, steel and chemical manufacturing.

Industry has highlighted CCS investment options are actively being considered by a broad range of proponents; including those looking to meet their Safeguard requirements to those looking to establish hubs to support decarbonisation efforts of hard to abate sectors. Without regulatory stability and certainty proposed projects may not come online and international investment will be redirected to more attractive investment markets. This could potentially affect Australia's ability to achieve its National Determined Contributions.

s33

Australia has significant potential for geological sequestration which may offer global decarbonisation solutions.

While Australia is one of the few countries with existing legislation in place to regulate offshore CCS projects, the regime is largely unused to date. Cumulative additions and amendments to the regulatory regime have ensued on an ad-hoc basis. There is a pressing need to assess and modernise the underlying policy to ensure a fit-for-purpose regime is in place to facilitate CCS project development.

1.2 Resolution approach

Clarifying and refining the government's policy position on offshore CCS projects, and removing barriers to deployment, would improve the investment environment for this emerging industry. Australia has a narrow window of opportunity to become a world leader in offshore CCS and a favoured investment destination. The development of offshore CCS projects could establish a new domestic industry, generate new businesses and commercial opportunities and create highly skilled jobs as well as assisting Australia in achieving net zero.

A review of the offshore carbon capture and storage regime (ROCCSR) will be undertaken which will consider existing regulatory settings, to ensure a modern, fit-for-purpose regime is in place to support and facilitate the development of future offshore CCS projects.

1.3 Authority

This review is part of the 2023-24 Budget Measure, *Working with the Australian Resources Industry on the Pathway to Net Zero,* which aims to:

- support the Australian resources industry to grow national prosperity; and
- continue the transition to net zero.

2. Objectives

This review will provide recommendations to Government addressing critical issues facing the sector, including:

- Ensuring the regulatory framework facilitates the emerging CCS industry and appropriately manages risk
- Identifying any regulatory duplication, areas of unnecessary administrative burden and opportunities to improve regulatory clarity, while facilitating consistent and transparent decision making across government
- Ensuring the regulatory regime is fit for purpose and reflects best practice.

3. Scope

The review team at the Department of Industry, Science and Resources (the Department) will inform its work and gather data through national and international government and industry level consultation to examine issues related to determining the best practice approach for regulating offshore CCS projects.

The review will be progressed over three years and involve public consultation, including on policy reform options. Noting both government's aim to reduce emissions by 43% by 2030 and recent reforms to the Safeguard Mechanism, the ROCCSR will provide iterative, ongoing recommendations over the review period to enable advancement on some issues while others are still being progressed.

The following items are out of scope for this review:

- The Department is undertaking a separate review of the environmental management regime for offshore petroleum and greenhouse gas storage activities, including consultation requirements with First Nations Australians. Review and implementation of any reforms will ensure the offshore petroleum and greenhouse gas storage environment management regime is consistent with the Government's Nature Positive Plan. Timing of these reforms will be dependent on the implementation of the Nature Positive Plan.
- Marine spatial planning and interactions with offshore renewable projects under the Offshore Electricity Infrastructure Act 2021 is outside the scope of ROCCSR.
- Development of operational guidelines and supporting documentation for titleholders will continue to be actioned by the Department however will fall outside the scope of this review.

- Any work associated with establishing a regulatory regime for the transboundary movement of C02 in Australia will be out of scope for this review however will be progressed by DCCEEW as required following any amendment to the *Environment Protection (Sea Dumping Act) 1981 (Sea Dumping Act)* being passed through the Australian Parliament.

3.1 Deliverables

Where possible, the review will consider, recommend and implement outcomes progressively.

Key deliverables include:

1. Ensure appropriate policy and regulatory settings throughout the lifecycle of offshore CCS activities, from exploration through to decommissioning of CCS project assets, to ensure risks are appropriately managed.
2. Examine applicable Australian Government legislation to identify areas of duplication in the assessment of CCS activities, with options for improvement, including investigating accreditation or streamlining provisions for National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) to become the environmental regulator under National Environmental law[1].

4. Governance

4.1 Ministerial arrangements

The Minister for Resources is the responsible Commonwealth Minister under *the Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGS Act) and will be responsible for considering and agreeing to adopting any proposed legislative, regulatory or policy recommendations from the review relating to the OPGGS Act.

The Minister for the Environment and Water is the responsible Commonwealth Minister under the *Environment Protection and Biodiversity Conservation Act 1999* and the *Environment Protection (Sea Dumping) Act* 1981 and will be responsible for considering and agreeing to adopting any proposed legislative, regulatory or policy recommendations from the review relating to those acts.

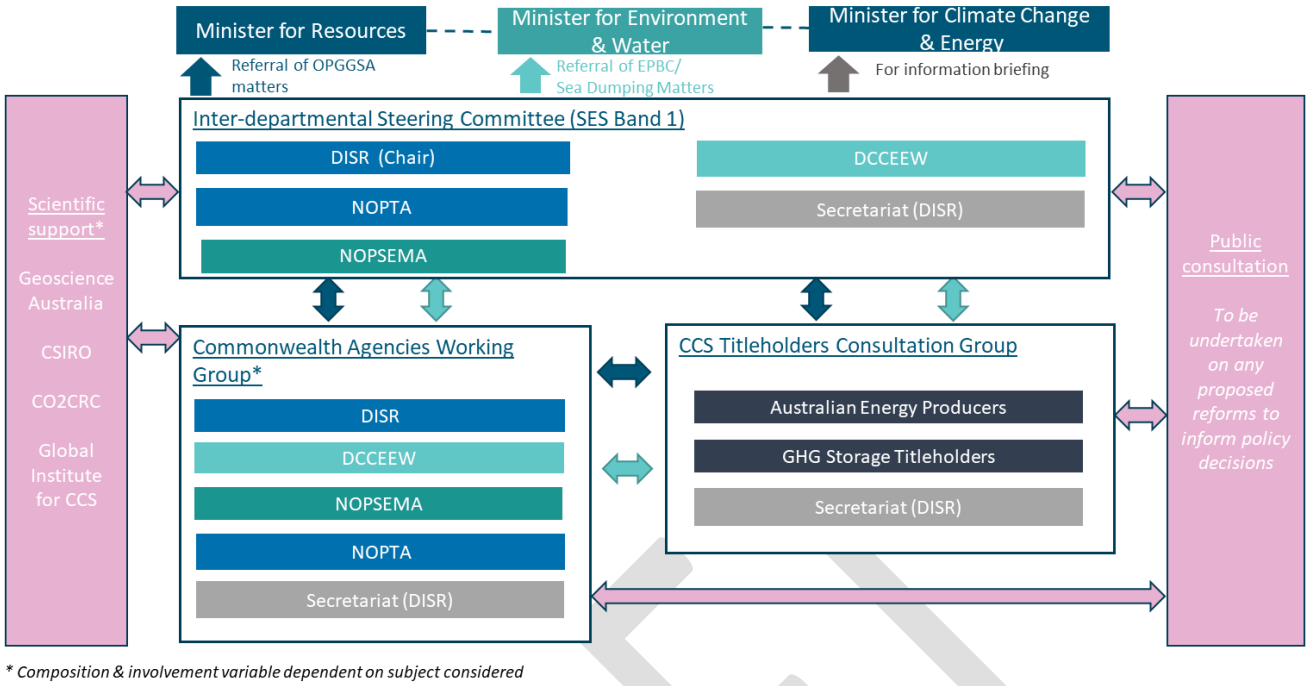
The Minister for Climate Change and Energy is the responsible Commonwealth Minister in relation to CCS policies and programs and as such will be informed of any proposed ROCCSR recommendations through appropriate briefing processes.

4.2 Steering Committee

This Review will be overseen by an Inter-departmental Steering Committee of senior officials and chaired by the Department (see **Figure 1**). The Steering Committee will provide strategic direction and leadership to develop recommendations and associated policy proposals for Ministerial consideration.

[1] Any reforms will be consistent with, and dependent on timing of the implementation of, the Government's Nature Positive Plan.

Figure 1: Governance structure



** Composition & involvement variable dependent on subject considered*

5. Resources & engagement

The review will be led and managed through policy teams in the Offshore Resources Branch and the Offshore Strategy Branch in the Oil and Gas Division at the Department. Support and advice will be provided by relevant areas at the Department of Climate Change, Energy, the Environment and Water (DCCEEW), NOPSEMA, and the National Offshore Petroleum Titles Administrator (NOPTA).

Scientific support and advice will be provided through engagement of subject matter experts at Geoscience Australia, CSIRO, the CO2CRC and the Global Institute for CCS.

Industry will be engaged and consulted throughout the entirety of the review process through a targeted industry engagement working group comprising of greenhouse gas titleholders and the sector's peak body, the Australian Energy Producers. All meetings involving industry representatives will be conducted in accordance with the *Competition and Consumer Act 2010*.

Broader public consultation, including with relevant NGOs and First Nations groups, will also occur at key stages throughout the review process to inform development of policy proposals. The timing and methodology of consultation will be detailed in a supporting Stakeholder Engagement Strategy for ROCCSR.

To maintain transparency, information relating to the review will also be published on the DISR website.

Any amendments to the relevant legislation or regulation will be approved and published in accordance with the Australian Government parliamentary process on the Federal Register of Legislation at www.legislation.gov.au.

s22

From: s22
Sent: Friday, 3 May 2024 3:54 PM
To: s22
Subject: Accepted: ROCCSR Titleholders Working Group Meeting [SEC=~~OFFICIAL~~]

Hi s22

I will be attending in person at the AEP office. thanks

~~OFFICIAL~~

s22

From: s22
Sent: Monday, 13 May 2024 11:22 AM
To: s22
Subject: Accepted: ***CHANGE IN MEETING LOCATION*** ROCCSR Titleholders Working Group Meeting [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

s22

From: CSSReview <CCSReview@industry.gov.au>
Sent: Wednesday, 24 July 2024 11:23 AM
To: s22 ; s22 ; s22 '; s22 (s22); s22 ; s22 ; s22 ; s22 ; s22 (DJSIR); s22 ; s 22 s22 ; s22 ; s22 ; s22 ; s 22 ; 's22 '; s22 ; s 22 '
Cc: s22 ; s22 ; s22 ; s22 ; s22 ; s22 s22 ; s22 ; s22 ; s22 ; s22 ; s22 ; s22 ; s22 ; s22 ; s22 ; s22 ; s22 ; s22 ; s22 ; s22 ; s22 s22 (s22); s22 ; s 22 ; s22 ; (DJSIR); s22 ; s22 @ecodev.vic.gov.au; s22 - NOPTA; s22 - NOPTA; RCA@energise-renewables.com; s22 ; s22 ; s22 ; s22 ; s22 ; (DJSIR); s22 ; s22 ; 's22 @dcceew.gov.au'
Subject: For action: Offshore CCS Review July Industry Meeting Presentation & Qs List [SEC=[redacted]]
Attachments: 20240716 CCS Industry Consultation Group Presentation.pdf; NOPTA Draft Fact Sheet Significant Risk of Significant Adverse Impact.pdf; NOPTA Draft Fact Sheet GHG Injection Licence and Site Plan Application.pdf; NOPTA Draft Fact Sheet Risk Assessment.pdf; NOPTA Draft Fact Sheet Monitoring Plan.pdf

Hi all,

Thanks for attending the last Offshore CCS Review Industry Consultation Group Meeting.

As discussed, please find the presentation attached for the relevant information.

We are hoping to get this round of feedback by **21/08/2024** .

Site Plan – slide 34 Qs
As with previous phases, welcome feedback in the same timeframe on the Site Plan questions and any other additional considerations for approvals at this phase.

NOPTA Factsheets
As discussed, welcome industry feedback on these factsheets (**attached**) and any other additional considerations they need to include. Please send your factsheet feedback to **both** CCSReview@industry.gov.au and ghg@nopta.gov.au

If you have any queries, please don't hesitate to reach out to the team at CCSReview@industry.gov.au 😊

Kind regards,

Review of the Offshore CCS Regime
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Supporting economic growth and job creation for all Australians | We are collaborative, innovative, respectful and strive for excellence

Acknowledgement of Country

Our department recognises the First Peoples of this Nation and their ongoing cultural and spiritual connections to the lands, waters, seas, skies, and communities.

We Acknowledge First Nations Peoples as the Traditional Custodians and Lore Keepers of the oldest living culture and pay respects to their Elders past and present. We extend that respect to all First Nations Peoples.

~~OFFICIAL~~

Australian Government
Department of Industry, Science and Resources

Offshore CCS Review - Industry Consultation Group Meeting

16 July 2024

Agenda

1. Welcome, introductions & apologies	2:30 pm – 2:35 pm AEST	s22
2. Review last meeting minutes and action list	2:35 pm – 2:40 pm AEST	s22
3. Update on Development of Injection Licence Guidelines	2:40 pm – 2:45 pm AEST	s22
4. Monitoring, Measurement and Verification (MMV) Workstream - update on feedback from last meeting	2:45 pm – 2:50 pm AEST	s22
5. NOPTA update on monitoring plan and risk assessment factsheets	2:50 pm - 3.10 pm AEST	NOPTA
6. 'Define' phase approvals under the OPGGSA – update on feedback from last meeting **7. Define/execute/operate phase - Site Plan approvals under the OPGGSA – for discussion**	3:10 – 3:50 pm AEST	s22 s22 /All
8. Financial Assurance team (Decom. Branch) update on GHG end-of-life issues	3:50 pm - 4:20pm AEST	s22 /s22
9. Any other business/next meeting/next steps	4:20 pm – 4:30 AEST	All
10. Close		s22

Australian Government
Department of Industry, Science and Resources

Update - Offshore CCS (Offshore Resources Branch)

Feedback from industry

Draft Guideline: Offshore Greenhouse Gas Storage Injection Licences

The Department thanks the industry members (and other departments) that took the time to provide feedback on the *Draft Guideline: Offshore Greenhouse Gas Storage Injection Licences*.

The feedback is highly valuable to DISR and we thank you for the time it has taken to carefully review and comment on the guidelines.

Review of feedback

Feedback has been compiled, reference to specific respondent removed, grouped into common areas

DISR considering appropriate response (3 main categories):

- Feedback relates to an area where case-by-case consideration with NOPTA/NOPSEMA remains best approach – engage early
- Some feedback being considered as part of the ongoing OCCS Review
- Where appropriate, update guidelines to reflect feedback (work ongoing)

Feedback examples - Discuss with NOPTA/NOPSEMA

Project maturity and consistency with original DoSF and injection licence:

- GHG injection and storage activities must be consistent with the parameters specified in the DoSF including the fundamental suitability determinants
- Development of understanding of the storage formation as project progresses, rendering the project “inconsistent” with the approved DoSF

Terminology – requests for more specificity:

- Commercialisation - definitions and flexibility in demonstrating
- Further quantification of ‘nature and scale, soundly based, relevant or other matters, serious situation, sufficient confidence, public interest’

For questions like source, intended use, public interest, provide a fulsome description of the project impacts and benefits.

Feedback examples – OCCS Review considering

Transition from petroleum to GHG lease or where overlapping

- More detail on key information needs for the injection licence assessment for transition from an oil field to GHG storage formation.

Defining GHG substance

- Questions on specificity of GHG substances to be stored, including origin (e.g. Some or all of GHG substance must be by-product of petroleum recovery activity)
- Scope to vary GHG substance within the licence
- Consideration given to projects with multiple origin GHG sources eg. aggregation, hubs

Feedback examples – more work required by DISR (with NOPTA/NOPSEMA)

Securities

- Dept working on securities and intends to consult with industry
- Considering the purpose of securities – ie. For a low likelihood, high consequence event and/or end-of-life decom, rehab, monitoring

Site plan

- Timing on when required vs conducting any “engineering enhancements” (e.g. if holding assessment permit)
- Level of detail required as not all commercial arrangements for GHG supply may be in place at preparation of site plan
- Can a draft be submitted for review prior to seeking approval?

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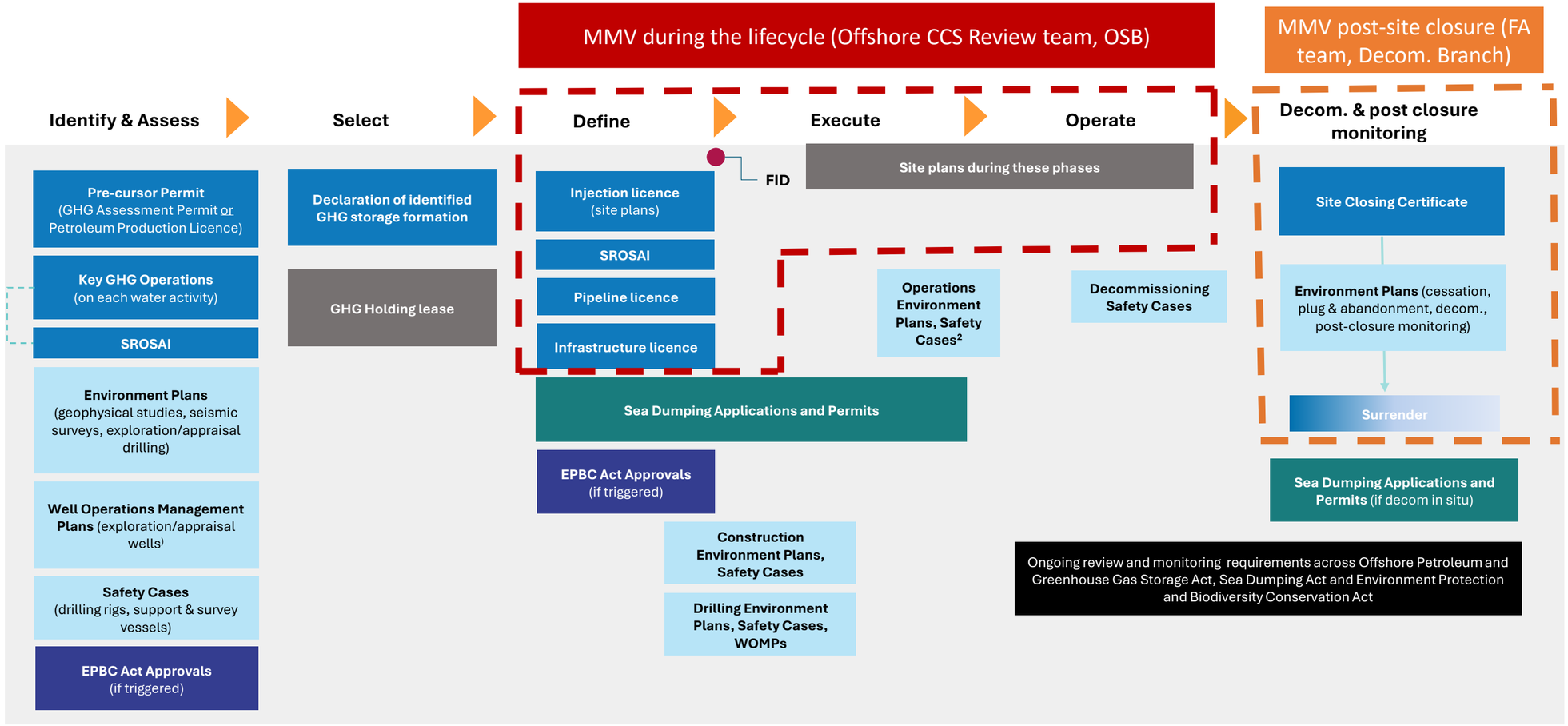
Department of Industry, Science and Resources

Monitoring, measurement and verification(MMV) - update on feedback

Focus of this workstream



Assessment agency

NOPTA | NOPSEMA | Environmental Permitting and Compliance Division (DCCEEW) | Nature Positive Regulation Division (DCCEEW) | Multiple Commonwealth agencies

In scope elements not covered in Offshore CCS Regulatory Approvals Guidance Note

May Meeting Questions

How can the Commonwealth ensure MMV policy (during the lifecycle) of offshore CCS projects demonstrate safe and secure storage of CO2 under the OPGGSA?

Complex considerations	Discussion questions for industry

• Technological progression since 2008
• Social licence – public perception and data transparency
• Considerations for monitoring activities across the lifecycle of a project
  • Ongoing reporting obligations
  • Considerations across all relevant approvals may inform overall MMV strategy
	• Does the current objectives/principles-based regime still apply?
	  • If yes, what do these objectives/principles look like?
	  • If no, what are the alternatives? What areas need to be prescriptive for MMV (during the lifecycle), if any?
	  • What additional elements need to be considered/included now as part of MMV, if any?
	• Is a case-by-case assessment the most practical approach to MMV?
	• How iterative and adaptive does the MMV approach need to be to reflect best practice at that time?
	  • What's needed in OPGGSA regulatory approvals to facilitate that (if required?)? (e.g. Injection Licence Site Plans currently needs to be reviewed at least every 5 years)

Overview of MMV feedback

Questions	Industry Feedback

• Does the current objectives/principles-based regime still apply?
  • If yes, what do these objectives/principles look like?
  • If no, what are the alternatives?
	• Preference for objectives-based regime
	• Existing principles of ALARP
	• Further guidance material on MMV is needed to support a non-prescriptive approach

• What areas need to be prescriptive for MMV (during the lifecycle), if any? • What additional elements need to be considered/included now as part of MMV, if any?	Non-prescriptive, principles-based as a preferred approach Guidance is needed on additional areas: • Contingencies appropriate to potential leakage • A risk-based approach to demonstrate conformance between monitoring and modeling • Significant event • The role of seismic in monitoring • Site closure certificate • What technology is acceptable for MMV • How MMV operations interact with other offshore infrastructure

Overview of MMV feedback

Questions	Industry Feedback
• Is a case-by-case assessment the most practical approach to MMV?	• Ongoing, case-by-case approach still most pragmatic given the evolving nature of projects and how unique each project is • Risk based and site-specific approach • MMV needs to be periodically reviewed every five years considering how risks have evolved, allowing programs to adopt changing best practice (where possible). o Clarification about the Site Plan review process is needed to avoid uncertainty in these reviews • Review of Site Plans (including MMV plans) should have principle triggers not time triggers • Potentially include high-level MMV plans as part of the DoSF application requirements as mechanism for early engagement
• How iterative and adaptive does the MMV approach need to be to reflect best practice at that time? o What's needed in OPGGSA regulatory approvals to facilitate that (if required?)? (e.g. Injection Licence Site Plans currently needs to be reviewed at least every 5 years)	

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NOPTA update on Monitoring Plan & Risk Assessment Factsheet

Presentation Overview

1. Context - Overview of the OPGGS Act requirements for site plans and injection licences
2. Fact sheets in development and for consultation
3. Overview of risk assessment fact sheet
4. Overview of monitoring fact sheet
5. Next Steps

Upcoming guidance

- **Fact sheets for consultation:**
  - Developing a GHG resource – GHG Injection Licence and Site Plan applications
  - Risk Assessment in Offshore Greenhouse Gas Injection Licences and Site Plans
  - Monitoring Plans in Offshore Greenhouse Gas Injection Licences and Site Plans

- **Others in development:**
  - Significant Risk of a Significant Adverse Impact (SROSAI)
  - Reporting Requirements for GHG Injection Licencees

Context

- The OPGGS Act requires a site plan to be approved by the responsible Commonwealth Minister before any operations in relation to an identified Greenhouse Gas (GHG) storage formation specified in a GHG Injection licence can commence. The licensee must comply with the approved site plan.

- The site plan must include an assessment of the risks relating to the containment of the GHG substance in the storage formation and the plans for monitoring the GHG substance through transport, injection and in the storage formation.

- **Current regime is risk-based, objective, and each project will require a site-specific approach (case-by-case basis approach)**

- The objectives of a monitoring plan are:
  - ❑ Monitoring the behaviour of GHG substances in the declared storage formations(s)
  - ❑ Detection and monitoring of leakage of GHG substances during transport, injection and well bores
  - ❑ Monitoring the behaviour of the GHG substance in the storage formation after injection operations cease
  - ❑ Satisfy the regulators that the key project risks are being monitored and addressed

- Program for measuring the quantities of the GHG substance injected into the declared storage formation and any fluids produced from the storage formation, and pressure/temperatures in well bores and the storage formation

- Regulators and operators will need to provide transparent and timely communication to effectively manage public expectations.

Risk Assessment Fact Sheet

Risk assessment analysis and techniques

Details of the risk assessment analysis used by the applicant should include the following for each risk:

- a description of the risk;
- the possible consequences of the risk;
- an assessment of the probability of occurrence of the risk;
- the strategies for the elimination or reducing the risk to ALARP; and
- if the risk has been reduced but not eliminated; that the remaining risk will be acceptable.

The risk assessment technique(s) selected should:

- be suitable for the type and complexity of the facility and nature of the hazards present;
- assist in understanding and selecting control measures; and
- be capable of assessing the potential effect of risk reduction measures.

Main risk areas that should be addressed in your application

Existing, new or increased levels of geological risks including:

- containment of GHG substances (top seal, base seal, faults, fractures);
- capacity of the formation to store GHG substances;
- injectivity (rate at which GHG substances can flow into the storage formation);
- maximum reservoir pressure and injection rate which could cause leakage;
- displacement of brine or residual fluids from the storage formation;
- chemical reactions between the GHG substance (including any incidental substances) and the minerals/fluids in the storage formation
- induced seismicity or the physical uplift of the seabed; and
- geomechanical fracturing and fault reactivation

Engineering enhancements:

- risks relating to the containment of GHG substances associated with any engineering enhancements to the storage formation

Monitorability risks:

- the system cannot be monitored to provide the required degree of assurance that the stored GHG substances are behaving as predicted

Other risks relating to containment of GHG substances including:

- leakage from a well bore;
- leakage during transport;
- leakage at the point of injection into the formation; and
- abandoned wells that could adversely affect the storage formation

Monitoring Plan Fact Sheet

Australian Government
Department of Industry, Science and Resources

Developing a monitoring plan

The monitoring plan should be comprehensive and dynamic and tailored to a site-specific risk assessment. Major risks will be project-specific, but are likely to include;

- unexpected CO_2 plume migration;
- reservoir uncertainty and the impact on injectivity and storage capacity;
- integrity of injection, monitoring and legacy wells; and
- loss of containment from the overall project.

When developing a monitoring plan the following should be considered:

- baseline monitoring prior to the injection of GHG substances;
- screening of existing, new or emerging monitoring technologies and justification for the monitoring technologies selected;
- resolution, accuracy, sampling frequency, reproducibility, spatial coverage, capability, response timing and detection limits of the technologies selected;
- link between the monitoring plan and identified project risks, and any risk elimination or control measures that may be undertaken;
- deviation from predicted behaviour and plan to recalibrate modelling undertaken as part the DoSF;
- additional data or monitoring if significant deviations occur; and
- plans for monitoring after the ceasing of operations.

What should be included in a monitoring plan?

Behaviour of GHG substances

- A proposed plan of activities that has sufficient scale and frequency, and uses appropriate techniques to be sufficient to:
  - detect any variations from the predictions set out in Part A of the site plan, and
  - allow detection of significant events in the formation in a timely manner to enable any necessary mitigation and remediation activities

Detecting and monitoring leakages

- program for detecting and monitoring leakage of GHG substances that could potentially occur during transport; at the point of injection into the formation and from the well bore.

Proposed substances for facilitating monitoring (if proposed)

- details of any substance that is proposed to be used to facilitate the monitoring of the behaviour of a GHG substance.

Measurement of GHG substances

- approaches for verifying the accuracy of the measurement of the quantities and composition of the GHG substance injected into the formation and the water that has been produced or injected;

Interaction between components of the Site Plan and review process

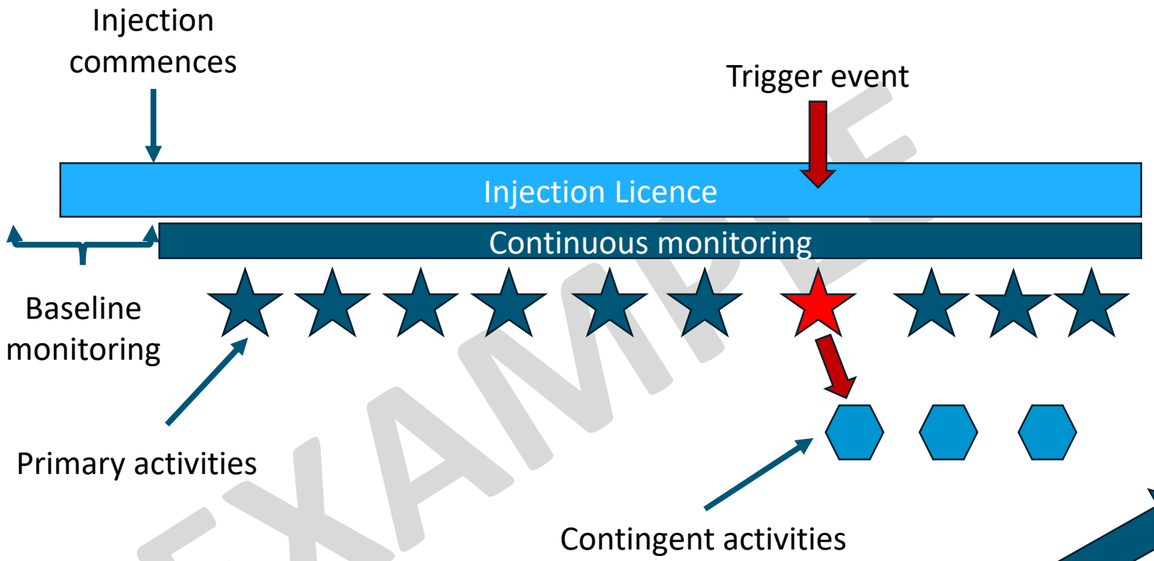
Site Plan

Part A

- Define the predicted behaviours of the GHG substance in the subsurface at specified times
- Times must be of sufficient number and frequency to ensure that predictions are soundly based and the detection of serious situations is timely
- Describe geological risks to containment
  - Including risks relating to any engineering enhancements

Part B

- Information about any other risks to containment of the GHG substance that wasn't included in the DoSF
- Monitoring behaviour of stored GHG substances
  - Detecting and monitoring leakage from the formation to the seabed
- Monitoring leakages during transport and injection
- Monitoring leakages from well bores



Reporting (RMA Regs)

- monthly/annual

Performance meetings with NOPTA

Site Plan reviews

- At least every 5 years
- Variations if required

Risk characterisation and assessment

Monitoring plan

- Baseline
- Primary
- Triggered/contingent
- Testing technology

What are the adverse events?

How can they be detected?

How will changes in monitoring technology be incorporated in future?

Do models need recalibrating with new information?

Mitigation or Remediation options?

Project closure?

Note: monitoring after cessation of injection is not covered on this slide

Next Steps

1. NOPTA and NOSPEMA have compiled the draft fact sheets on Injection Licence/Site plan application, risk assessment and monitoring.
2. CCS titleholder working group will be provided 4 weeks to review and provide feedback.
3. Finalised factsheets will be published on NOPTA's website with the injection licence guideline.

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Review of OPGGSA permitting : Define phase discussion

Work Program Plan 2024

Key ROCCSR workstreams under the Terms of Reference:

1. Ensure appropriate policy and regulatory settings throughout the lifecycle of offshore CCS activities, from exploration through to decommissioning of CCS project assets, to ensure risks are appropriately managed.

2. Examine applicable Australian Government legislation to identify areas of duplication in the assessment of CCS activities, with options for improvement, including investigating accreditation or streamlining provisions for National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) to become the environmental regulator under National Environmental law.
(Any reforms will be consistent with, and dependent on timing of the implementation of the Government's Nature Positive Plan.)

The ROCCSR process will occur over 3-years and is supported by best practice policy development principles. This includes having a clear policy intent, being evidence-based, iterative testing of options for practical implementation, and consultation with key stakeholders as required.

2024 Work Program Plan

There will be a suite of initiatives to support ROCCSR. There will be a combination of both near-term and long-term deliverables to cover the range of issues.
ROCCSR will provide iterative, ongoing recommendations over the review period to enable advancement on some issues while others are still being progressed.
The draft workstreams below are *indicative* at this stage:

Near-term initiatives & projects	Long-term initiatives & projects
Consider the intersections between the Offshore Petroleum and Greenhouse Gas Storage Act, Sea Dumping Act and Environment Protection and Biodiversity Conservation Act, with a view to reducing administrative burden and duplication, while facilitating consistent decision making across government.	Developing clear policy for financial assurance requirements for GHG titleholders under the OPGGS Act to ensure sufficient funding is in place to manage project operations. - Policy development on financial assurance will consider developments in petroleum regime work.
Developing policy position and guidance on monitoring, measurement, and verification (MMV) principles and standards in consideration of latest technology and risk management.	
Review and refine permitting cycle under the Offshore Petroleum and Greenhouse Gas Storage Act, including addressing challenges in the transition from petroleum regime to greenhouse gas title. - Will also include developing policy position and guidance to provide definitional clarity on a range of concepts under the Act.	Supporting accreditation process or streamlining provisions for NOPSEMA in assessing offshore CCS activities, in line with the implementation of the Government's EPBC Act reform and Nature Positive Plan. (Note: separate review on Offshore Environment Management Regime)

Overview of Define Phase feedback

Questions	Feedback
• Are there any changes in industry dynamics or regulatory drivers since 2008 which have a specific impact on approvals in this phase? • And how should these be factored into the OPGGS Act and regulations?	• Petroleum operators are increasingly transitioning to CCS and as such transitionary arrangements should be considered (taking into account geological understanding, operational capacity and performance standards). • SROSAI test may not always be relevant (particularly for Key GHG Operations). • Feedback on NOPSEMA accreditation and relevant persons consultation issues noted.
• Are the requirements of obtaining a GHG specific pipeline licence fit-for-purpose in 2024? o What changes, if any, do you consider would improve the pipeline framework?	• If requirements remain consistent with the existing frameworks there are no significant issues to prevent CCS development. • Variation process needs to be flexible to manage transition from petroleum to GHG operations. • Risks associated with highly prescriptive composition limits, it would be better for a time-averaged limits to avoid potential for venting non-compliant fluids. • The need to have GHG substance approved when applying for an offshore pipeline licence is duplicative and unnecessary. • Third party access to services provisions should remain to provide possible flexibility in future.
• Do you consider infrastructure licences may play a more significant role in developing GHG storage projects? o And if so are there any regulatory changes to the framework that are needed to facilitate this role?	• Not clear what role they will play in CCS activities but recognise that they could play a role in supporting MMV activities outside the boundaries of an Injection Licence. • Third party access to services provisions should remain to provide possible flexibility in future.

Overview of Define phase feedback

Injection licences Questions	Feedback
• Are the requirements of an injection licence fit-for-purpose in 2024?	• Not yet fully clear how requirements will be implemented and their flexibility in enabling hub models. • Guidance on level of information needed about the origins of a GHG substance and what are the triggers that require this information to be updated. • Flexibility in licence to accommodate changes in CO2 sources, injection location and plume shape. • Clarification on how repurposing of infrastructure will work is needed along with how Federal injection licences will interact with state jurisdiction requirements.
o If not, what elements (excluding the site plan) do you consider may need amendment? o What changes, *if any*, are needed to better facilitate the development of hub models, while ensuring risks continue to be appropriately managed?	

Initial feedback on site plans

Site plan requirements Questions	Feedback
• What are the pros and cons of the Site plan process and requirements as they currently stand?	• **Pros:** o Part A of Site Plans aligning with and building on information in the DoSF. o Facilities and decommissioning definitions being included to guide thinking at an early stage. • **Cons:** o Seeking equivalent level of guidance on content requirements to the table in the Appendix of the DoSF guidelines. o Opportunity to provide a pre-Site Plan for feedback (equivalent to pre-FDPs) would be beneficial. o Seeking opportunity to review Site Plan fact sheet before publication.
• What are the challenges you anticipate in addressing approval requirements at this phase?	• Early stage of operations planning and management at submission of site plans likely to lead to over-simplified submissions and the need for subsequent updates. • Potential challenges around submitting information on commercial agreements, due to confidentiality. • Site Closure Remediation and Monitoring need to be flexible to allow for further revision.
o What could be changed in the OPGGS Act and regulations to mitigate these challenges for future projects?	• Potential for Site Plan being a singular document with WOMP and SC included (but noting this could become unmanageable and difficult to review). o If current suite of approvals are retained greater clarity needed on scope of each. • Have an indication of level of details required at each phase of the project (at define vs execute and operate vs end-of-life).

Initial feedback on site plans

Site Plan Ongoing obligations Questions	Feedback
• Which elements of the site plan are duplicative of environment plan, well operations management plans and safety cases in your view?	• Preliminary view that main duplications are likely between EP and Site Plan are: Project infrastructure and operations, GHG storage formation, notional MMV plan and timeline. • Most duplication is considered to occur between EP, Site Plan and Sea Dumping regime.
o Which elements do you consider could be streamlined without comprising on the outlined rationale of site plans?	• Duplication with Sea Dumping application requirements could be streamlined. o At minimum review applications in parallel/enable information sharing between regulators.
• What operational challenges do you anticipate experiencing from the current requirements to review and vary site plans? o What changes do you think can be made to these requirements to reduce administrative burden without comprising on providing necessary information to regulators?	• Level of risk assessment is duplicative between, EP, WOMP and SC as inconsistent with FDPs in petroleum context. o Particular example of leaks form transport being managed through safety case and EP for relevant pipelines. • GHG injection Licence and Site Plan variation triggers could be reduced (consider alignment with FDP and simplifications to requirements for issues such as injection rates and locations). • 5 yearly revisions may be unnecessary when already required for EPs, WOMPs and SCs. o Smaller, more frequent engagement with regulators driven by MMV data timeframes may be more beneficial.

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Review of OPGGSA permitting: Site Plans

Site Plan approvals under OPGGSA – for discussion today

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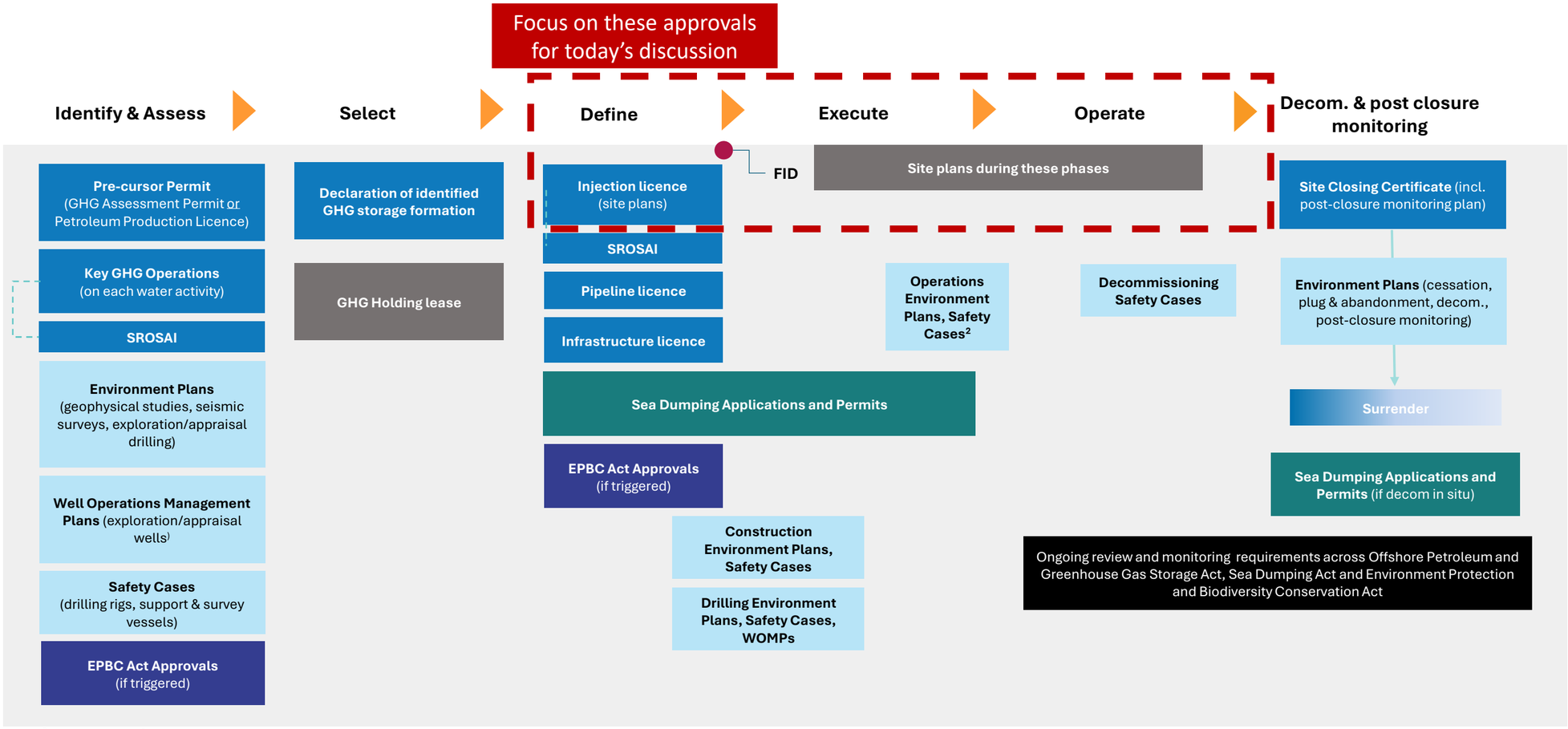
Department of Industry, Science and Resources



site plans – 2011 GHG regs context

Regulatory intent in explanatory statement

- Intended to build on and be consistent with **DoSF**
  - "*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*"

- **Part A** set out predictions for RCM to be satisfied are acceptable and soundly based
  - If not behaving as predicted serious situation powers "*will be triggered and may be exercised by the RCM*"

- **Part B** to cover risk assessment and monitoring of behaviour of the GHG substances as key parts of management of the site
  - Type of monitoring not specified (this will be highly site specific) but must detect significant events/variations from Part A predictions in a timely manner

- **Consultation -** summary site plans intended to support public acceptance of GHG operations and RCM to have regard to comments in site plan approval process

- **Surface factors** - intended to be covered by Environment Regulations and EPBC Act
  - "*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 environment 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*".

- **Decommissioning -** Noted as practice in EPBC approvals at the time.
  - Separate inclusion intended to "*contribute to streamlining regulatory requirements and help meet possible community concerns about what will be perceived as a new industry*"

Site plans - General requirement changes

	2011 Regulations coverage	2023 Regulations coverage	Issues being further examined
General criteria (s18)	Broad based criteria which included issues spanning both Part A and Part B of the site plan	Narrowing of risk concept to geological risks and removal of consultation elements with operations management and strategy shifted to Part B	Further consideration of refining/streamlining inconsistent risk requirements
Part A Criteria (s19)	Split coverage of these issues between Part A provisions and Part B provisions	Consolidated all requirements about plume migration modelling into s19	Further consideration of Act concepts to determine if any changes may be made which might influence these definitions
Part B Criteria (s20)	General requirement to provide the information outlined in the schedule	Modifications to include high level operations management and strategy details here rather than in the schedule	Consideration of whether s20 criteria are all required/clarifying the triggers for variations
Summary site plan	Requirement to provide (for a consultation process at this point) a summary of the project and proposed monitoring program	Requirement has been removed noting current EPBC referral requirements	Public consultation requirements to align with future requirements under Nature Positive
Provisional decommissioning plan	Requirements to include and review a plan to outline details of the proposed decommissioning of GHG injection sites	Requirement has been removed noting current management of this issue through EP framework for petroleum equivalent	N/A at this stage

Site plans – schedule 2 (Part B of the site plan) changes

	2011 regulations coverage	2023 regulations coverage	Issues being further examined
Project planning and management	Unclear duplicative details	Streamlined requirements	Analysing against activity plan requirements
Overview of operations	Provides summary of key project elements	Retained	Analysing against activity plan requirements
Storage Formation integrity	Duplicative requirement to attach DoSF	Removed - s20(2) consistency requirement	Examining engineering enhancements
Plume Migration modelling	Created part A and part B inconsistencies	S19(3) clarification on requirements	Further guidance on Part A requirements
Predictions of GHG behaviour	Created part A and part B inconsistencies	Consolidated into Part A	Further scope guidance
Risk assessment and control	Broad based risk assessment requirement	Narrowed to containment risks	Concept refinements
Monitoring in the formation	Broad based requirement for MMV plans	Retained	Further scope guidance/MMV workstream
Monitoring during transport and injection	Broad based requirement for MMV plans for these particular risks	Retained	Further scope guidance/MMV workstream
Monitoring well bore losses	Broad based requirement for MMV plans	Retained	Further scope guidance/MMV workstream
Monitoring effects on petroleum	Requirement to provide potential effects on petroleum sector	Removed – dealt with in SORSAI as applicable	N/A
Monitoring effects on other resources	Requirement to provide potential effects on other resources and interests	Removed – dealt with where applicable through activity approvals	N/A
Information about site closure	Requirement to signal end-of-life strategy	Retained	Further streamlining/scope guidance
Consultation information	Requirement to outline existing and future consultation approach	Removed in remake	N/A

Site plans - variation and review requirements

	2011 Regulations coverage	2023 Regulations coverage	Issues being further examined
Five yearly reviews (s36)	Contained in same provision as RCM requested reviews	Spelled out in a separate provision with variation lodgement period tripled to 180 days	Further consideration of processes and whether the factors to be examined in reviews are appropriate
Reviews requested by RCM (s37)	Contained in same provision as 5 yearly reviews	More detailed delineation of the review process and clearer timeframe of at least 60 days	Further consideration of processes and whether the factors to be examined in reviews are appropriate
Matters to consider in reviews (s38)	Included a range of factors which weren't clearly delineated to be part A or part B	Factors spelled out more clearly in separate provision with emphasis on reviewing MMV requirements for Part B	Providing further clarity on the factors to be considered in review processes and developing guidance on these issues
Variations to remove inconsistency with directions (s39)	Requirements to vary where certain directions have resulted in an obligation which would be inconsistent with an approved site plan	Retained but drafting of provision has been streamlined	Approach to these issues to be considered further by regulators collectively
Variations on specific circumstances (s40)	Spells out circumstances which are triggers for a variation of the site plan irrespective of a review period	Removed requirements to include variations to cover changes in the command structure	Considerations of clarifying the scope of any other relevant matter (item (1)(e)) and removing integrated operations components (item 3)

Site plans – further questions

Site plan criteria

- *Noting discussions today and feedback provided to date* – are there any other clarifications/improvements you consider could be made to site plan content requirements under the OPGGS (Injection and Storage) Regulations 2023?

Review and variation requirements

- *Noting discussions today and feedback provided to date* – are there any other clarification/improvements you consider could be made to site plan review and variation requirements under the OPGGS (Injection and Storage) Regulations 2023?

Other execute and operate considerations

- Are there any changes in industry dynamics or regulatory drivers since 2008 (*which have not already been canvassed*) which you anticipate will have a specific impact on project management during this phase? And how should these be factored into the OPGGS Act and regulations?

- Are there requirements on GHG titleholders under other OPGGS Act regulations (RMA, Environment, Safety) which you consider may require further examination and reform outside of the remake processes for these regulations?
  - If so, what are these changes?

- Are there other execute and operate issues not canvassed in these discussions or feedback on the GHG injection licence guidelines that you are seeking further guidance on?

Australian Government
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Financial Assurance team (Decom. Branch) update on GHG risk mitigation work

Overview

Australian Government
Department of Industry, Science and Resources

Issues addressed through this component of the ROCCSR

Reforms to offshore petroleum regime

Possible risk mitigation approaches

Key contextual differences impacting risk mitigation requirements

Principles for offshore CCS risk mitigation

What role could Financial Assurance play for the GHG regime?

Proposed principles for offshore CCS risk mitigation

Early thinking on an approach to offshore CCS risk mitigation

Questions

Issues addressed through this component of the Review

Long-term initiatives & projects

Developing clear policy for financial assurance requirements for GHG titleholders under the OPGGS Act to ensure sufficient funding is in place to manage project operations.
- Policy development on financial assurance will consider developments in petroleum regime work.

- Financial Assurance policy for during life of CCS project
- Financial Assurance policy for end-of-life of CCS project
- Policy for Monitoring Measurement and Valuation linked with Financial Assurance requirements post decommissioning of CCS projects
- Policy for long-term liability

Objectives of risk mitigation policy (FA):

→ by creating clear expectations for risk mitigation

→ not inhibit investment in offshore CCS

→ throughout the CCS project lifecycle

→ that support operators plan for and meet all costs, expenses and liabilities

→ in ways that meet the social expectations and environmental requirements for the Australian offshore regime.

Reforms to offshore petroleum regime

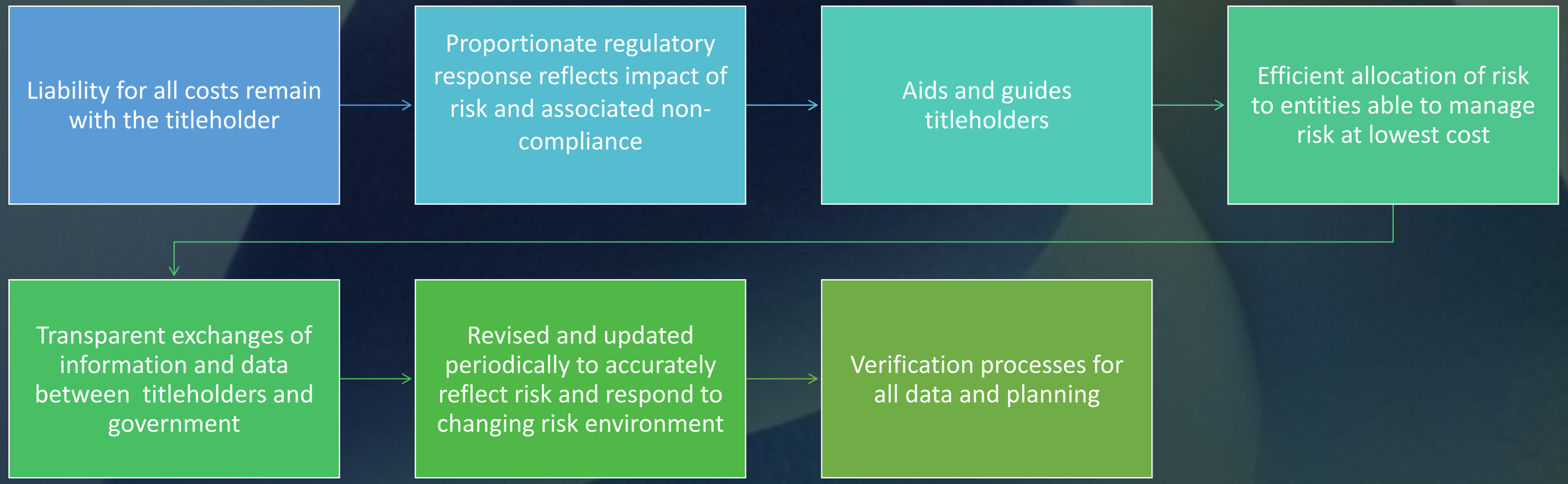
1. Risks and liabilities of petroleum activities remain the **responsibility of the petroleum industry**.
2. Companies must be able to **meet the costs and liabilities** associated with **undertaking planned and unplanned** petroleum activities,
3. **Reduce the risk** that the Commonwealth and Australian community bear the costs and responsibility of decommissioning and remediating a site.
4. **Encourage behavioural** and policy change that **promotes early planning for decommissioning** and active monitoring of financial assurance.

Possible risk mitigation approaches

Key contextual differences impacting risk mitigation requirements

	Petroleum and CCS comparison
Maturity	Petroleum is reaching peak production and yields. CCS is a new industry with as yet unmet demand for GHG sequestration and pricing in a carbon constrained world.
Risk type	Regulation for petroleum is responding to the risk of unmet decommissioning liabilities. Regulation for CCS is responding to whole of CCS project lifecycle, as well as end of life, and largely undetermined risk.
Capital availability	Regulatory objective for petroleum is ensuring capital is available for decommissioning before end of life. Regulation objective for CCS is to help ensure new projects can meet all risk types throughout the project lifecycle, while not unnecessarily diminishing capital available for investment and operational costs.

Principles for offshore CCS risk mitigation



What role could Financial Assurance play for the GHG regime?

Financial Assurance (FA) is a risk mitigation approach that can be used to form part of a systems approach to compliance for large enterprises.

FA promotes **confidence** in the ***capability, viability and intention*** of titleholders to meet financial liabilities through systems supporting **oversight, data exchange and analysis**.

FA enable regulators to **pre-emptively identify likelihood** for unfunded liabilities and insolvency through oversight of an operation's:

- financial capacity
- management
- project planning
- risk mitigation

FA **supports** remedial action to promote as well as enforce **compliance to meet risk mitigation objectives**.

FA involves **proportional use** of a range of appropriate compliance mechanisms on a **case-by-case basis,** as determined by regulators.

The approach may include requirement for a form(s) of financial security if regulators are not confident a project is meeting planning and reporting thresholds for ***capability, viability and intention***.

Early thinking on an approach to offshore CCS risk mitigation

Decisions on determining a suitable regulatory measure would:

- not be mechanical or overly-prescriptive
- be underpinned by a comprehensive understanding and consistent approach to titleholders' exposures to costs and risks, and their capabilities to manage them
- be proportionate and case-by-case
- be objectives driven to incentivise efficiency.

These outcomes would be achieved through development of:

- A system enabling accurate and regular data reporting and oversight.
- A qualitative assessment tool that supports informed judgement case-by-case.

- Questions

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Other business

Other business

- Next meeting
- Action items

Australian Government
National Offshore Petroleum Titles Administrator

Fact Sheet

Developing a GHG resource – GHG Injection Licence and Site Plan applications

All fact sheets should be read in conjunction with the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (**the OPGGS Act**), associated regulations, relevant guidelines and policies (available on NOPTA's website).

This fact sheet provides information about the application and assessment processes for a greenhouse gas (**GHG**) injection licence and site plan(s).

Please note: reviews and variations of the approved site plan are covered under the *Offshore Petroleum and Greenhouse Gas Storage (Greenhouse Gas Injection and Storage) Regulations 2023* (**GHG Regulations**) but are out of the scope of this fact sheet and will be covered under a future fact sheet.

This fact sheet should be read in conjunction with the OPGGS Act, the GHG Regulations and the following guidelines and fact sheets:

- Guideline: Offshore Greenhouse Gas Injection Licences (**Injection Licence Guideline**);
- Offshore GHG Guideline - Declaration of Identified GHG Storage Formation Guideline (**DoSF Guideline**);
- Significant Risk of Significant Adverse Impact Fact Sheet (**SROSAI Fact Sheet**);
- Risk Assessment in Offshore Greenhouse Gas Injection Licences and Site Plans Fact Sheet (**Risk Assessment Fact Sheet**); and
- Monitoring Plans in Offshore Greenhouse Gas Injection Licences and Site Plans Fact Sheet (**Monitoring Plans Fact Sheet**).

Index

This fact sheet provides information on:

What approvals are required?

Before operations to inject and permanently store GHG substance(s) can commence you must have:

- a GHG injection licence granted by the responsible Commonwealth Minister (**RCM**) or Cross-boundary Authority (**CBA**); and
- an approved site plan in force in relation to the storage formation which the licensee will be required to comply with in addition to any other regulatory requirements and approvals (regulation 22 of the GHG Regulations).

Applicants for a GHG injection licence under sections 361, 368A and 369 of the OPGGS Act must hold a:

- GHG assessment permit or cross-boundary assessment permit; or
- GHG holding lease or cross-boundary holding lease; or
- a petroleum production licence;

with at least one declared identified storage formation (DoSF) in place.

Note: please see the DoSF Guideline for further information on DoSFs and item 3.5 of the Injection Licence Guideline for further information on where a single GHG injection licence can contain multiple DoSFs.

When do I apply?

Due to the complexity and interrelationships of the legislative and regulatory frameworks, early and ongoing engagement with the relevant regulators is encouraged. Every project is unique and may require additional approvals to those outlined in this factsheet.

There are multiple legislative frameworks to regulate offshore carbon capture and storage (CCS) projects in Commonwealth waters including:

- *Offshore Petroleum and Greenhouse Gas Storage Act 2006*;

- *Environment Protection (Sea Dumping) Act 1981*; and
- *Environment Protection and Biodiversity Conservation Act 1999.*

The responsibilities for regulating offshore CCS projects are shared across the Commonwealth government's Department of Industry Science and Resources (**DISR**) and the Department of Climate Change, Energy, the Environment and Water (**DCCEEW**).

The four regulatory bodies that are relevant to offshore CCS projects are:

- National Offshore Petroleum Titles Administrator (**NOPTA**);
- National Offshore Petroleum Safety and Environmental Management Authority (**NOPSEMA**);
- Sea Dumping (within DCCEEW); and
- Nature Positive Regulation Division (within DCCEEW).

Further information on regulatory approvals can be found in: Offshore Carbon Capture and Storage Regulatory Approvals

Please see What is the application and assessment process? **below for further information on timing** and allow up to 6 months for a GHG injection licence and draft site plan (site plan) application to be considered. The indicative timeframe for NOPTA's assessment commences once all relevant information is received and will depend on the quality of the submissions.

Note: applicants should have a source of GHG substance available to commence injection within 5 years (paragraphs 358(3)(f), 358A(3)(f) and section 370 of the OPGGS Act). To grant a GHG injection licence or cross-boundary injection licence, the RCM or CBA must be satisfied the applicant will, within 5 years of the grant of a GHG injection licence, commence operations to inject and permanently store GHG substance(s) (see paragraphs 362(1)(b), 368B(1)(b) and 370(1)(b) of the OPGGS Act).

GHG injection licence operations are generally considered to be all actions required to safely and securely inject and permanently store GHG substances in accordance with the approved site plan. This includes actions in preparation for undertaking actual injection and storage such as:

- drilling wells for the purpose of injection;
- engineering enhancements for the purposes of permanent storage; and
- construction, or significant modifications of existing facilities for use in GHG injection and storage operations.

What is the application and assessment process?

Step 1 – Engage with NOPTA

Before a titleholder with a DoSF(s) submits an application for a GHG injection licence and site plan(s), the titleholder should engage with NOPTA to discuss the approvals timeframe and process, and to understand the information that is required to be included in an application (see below).

Step 2 – Preliminary site plan feedback

NOPTA offers to review the site plan in preliminary form before the titleholder submits an application. This is recommended but not required. Please note the following:

- there is no application form or application fee for a preliminary site plan review. It is not provided to the RCM;
- NOPTA will review the preliminary site plan and provide feedback in the form of a 'gap analysis' against the requirements in the GHG Regulations;
- it is expected that this process will take generally 6 to 8 weeks; and
- the applicant is expected to address NOPTA's feedback in preparing the final version of the draft site plan.

NOPTA will not provide in-principle approval or an indication of whether NOPTA will recommend to the RCM that the site plan should be approved or refused during this process. Further questions and clarification may be sought from the applicant once the draft site plan application is submitted for assessment.

Step 3 - GHG injection licence and draft site plan application

For an application to be validly submitted it must be:

- submitted in the approved manner (section 426 of the OPGGS Act); and
- accompanied by the applicable application fee.

Further information is available on NOPTA's website, please see the NOPTA Forms Guidance – Greenhouse Gas.

An application for a GHG injection licence must be accompanied by:

- draft site plan(s) (see paragraphs 361(10)(b), 368A(9)(b) and 369(9)(b) of the OPGGS Act); and
- any information or documents required by the form (paragraphs 361(10)(c), 368A(9)(c), 369(9)(c) and section 426 of the OPGGS Act). Please see Supporting information - GHG Injection Licence and Supporting Information - Site plan(s) below.

Supporting Information – GHG Injection Licence

An application for GHG injection licence must set out for each DoSF the matters the applicant seeks to have specified in the licence under paragraphs 358(3)(d) to (k) or 358A(3)(d) to (k) of the OPGGS Act, in relation to:

- the composition of the GHG substance to be injected and stored;
- the origin(s) (i.e. the source) of the GHG substance;
- the potential injection site or sites;
- the injection period;
- the total amount of GHG substance that is suitable to store in the DoSF (including the total amount that has already been injected and the total amount that is proposed to be injected);
- the rates (or range of rates) of injection; and
- details of any engineering enhancements described in the DoSF that are required before injection and permanent storage can commence.

The information provided on these matters must not be inconsistent with the fundamental suitability determinants of the identified storage formation to which the GHG injection licence application applies (see subsections 358(4) and 358A(4) of the OPGGS Act), and must be consistent with the site plan.

If inconsistencies exist between the information provided for the DoSF and the injection licence application, titleholders should engage with NOPTA early to discuss this matter, as this may necessitate applying to vary to the DoSF.

Applicants should be familiar with the content of the Injection Licence Guideline, and the requirement to consider SROSAI in relation to any petroleum exploration or recovery operations that could be impacted by the proposed GHG storage project (see also the SROSAI Fact Sheet).

The RCM, under section 429 of the OPGGS Act, or Titles Administrator, under section 429A of the OPGGS Act, may seek further information from the applicant by written notice.

If the further information requested under sections 429 or 492A of the OPGGS Act has not been submitted within the specified time, the RCM or CBA (as relevant) may, by written notice to the applicant, choose not to consider or take any further action in relation to the application (subsections 429(3) and 429A(3) of the OPGGS Act).

Note: under subsections 361(11) to (15), 368A(10) to (14) and 369(10) to (14) of the OPGGS Act the applicant may, at any time before an offer document (or a notice of refusal) relating to the GHG injection licence application, vary the application:

- by written notice given to the RCM or CBA; or
- at the request of the RCM or CBA.

The variation of an application must be made in the approved manner and may set out any additional matters that the applicant wishes to be considered.

Supporting Information – Site Plan(s) (see Appendix A)

The site plan should include sufficient information to demonstrate that the site plan is appropriate to the nature and scale of the proposed operations, and that the site plan will ensure that GHG injection and storage activities are undertaken in a way that ensures that the storage is:

- safe, secure and permanent; and
- occurs in accordance with the approved site plan.

The site plan must include the information about the geological risks that are associated with the proposed operations to demonstrate that the geological risks have been identified (and that any new geological risks or changes to the level of the geological risks can be identified), and that these risks can be eliminated or reduced to as low as reasonably practicable (see

regulation 18 of the GHG Regulations and the Risk Assessment Fact Sheet for further details).

There are two parts to the site plan, '*Part A -Behaviours predicted for the purposes of paragraphs 379(1)(e) and (f) of the OPGGS Act*', and '*Part B - Other Matters*'.

Part A of the site plan sets out predictions relating to the behaviour of each GHG substance that is, or is to be, stored in the storage formation and includes information relevant to the predictions (refer regulation 19 of the GHG Regulations).

Part B of the site plan deals with other matters including operational details, engineering enhancements, risk assessment and management, plans for monitoring the behaviour of the GHG substance in the storage formation, detecting and monitoring leaks during transport, injection and well bores, details of any remediation work required for site closure and a plan for post closure monitoring (refer regulation 20 and Schedule 2 of the GHG Regulations).

Part A and Part B of an approved site plan will:

- set out soundly-based predictions for the behaviour of GHG substance(s) at specified times;
- describe any current or proposed injection and storage operations;
- identify risks associated with the containment of the GHG substance, and those associated with engineering enhancements, and demonstrate that the risks have been eliminated or reduced (see risk assessment fact sheet);
- provide for the monitoring of the GHG plume in the subsurface and during the transport, injection and storage operations in a way which will identify any new or increased risks in a timely manner (see monitoring plan fact sheet);
- provide for any necessary risk elimination or control measures to be taken; and

The draft site plan(s) must not be inconsistent with the relevant information in the application for the GHG injection licence and the DoSF(s). Information included in the DoSF(s) such as the estimate of the spatial extent, fundamental suitability determinants and risks related to engineering enhancements will form the basis of the information included in the site plan application.

Step 4 - Assessment

When all relevant information has been provided by the applicant, NOPTA in consultation with NOPSEMA (as applicable) will assess the application against the relevant criteria and provide advice to the RCM (or CBA if relevant) for decision.

Assessment – GHG Injection Licence

For all injection licence applications this assessment will consider at a minimum:

- the ability of the applicant to commence operations to inject and permanently store a GHG substance into at least one identified GHG storage formation within 5 years if the licence were to be granted (refer paragraphs 362(1)(b) and (2)(b), 368B(1)(b), 368B(2)(b) and 370(b) of the OPGGS Act);
- whether the GHG injection and storage operations would pose a SROSAI on petroleum exploration or recovery operations, including consideration of any designated agreements with the titleholder (see the SROSAI Fact Sheet for further information);
- whether the technical advice and financial resources available to the applicant are sufficient to carry out the works that will be authorised by the licence and discharge the obligations that will be imposed under the Act in relation to the licence;
- whether the information provided is not inconsistent with the fundamental suitability determinants of the identified storage formation to which the GHG injection licence application applies (see subsections 358(4) and 358A(4) of the OPGGS Act);
- whether the draft site plan satisfies the criteria set out in the GHG Regulations (see item 3.3 of the Injection Licence Guideline); and
- whether a written notification under section 695YC of the OPGGS Act has occurred. For more information, refer to the Factsheet: Declaration of experience and disclosures.

Assessment – draft Site Plan(s)

The assessment of the draft site plan will be undertaken by NOPTA concurrently with the assessment of the material provided as part of the injection licence application.

To inform the assessment and provision of advice to the RCM for decision, NOPTA will seek advice from NOPSEMA on matters raised in the draft site plan which relate to well integrity and safety considerations.

In order to approve the draft site plan, the RCM, on advice provided by NOPTA, must be satisfied that the draft site plan meets all the requirements outlined in the GHG Regulations and summarised above under Supporting Information Site Plan(s) and in Appendix A. The key criteria for assessment of the site plan are set out by regulations 18, 19 and 20, and Schedules 1 and 2 of the GHG Regulations.

A key principle in the OPGGS Act and the associated regulations is that the injected GHG substance behaves as predicted. In assessing the site plan, the RCM must be satisfied that the predictions outlined in Part A of the site plan are soundly based and will result in outcomes that are acceptable. Once the site plan is approved, the predictions form one of the criteria for deciding whether a serious situation has arisen. The plans for monitoring the behaviour of the GHG substance must be of appropriate nature, scale and timing to be able to detect whether the behaviour is as predicted. If operational experience or updated technical knowledge shows that the predictions need to be revised, the site plan will need to be revised accordingly.

If the RCM considers that the draft site plan does not contain adequate information to demonstrate that the requirements of the OPGGS Act and the GHG Regulations have been met, the RCM (through NOPTA) will seek further information from the applicant or give the applicant an opportunity to amend the draft site plan in order to address the deficiencies in the draft plan (refer regulation 26 of the GHG Regulations).

The RCM is not required to make a decision on the plan until the applicant has provided sufficient information (regulation 26 of the GHG Regulations). The RCM cannot approve a site plan unless satisfied that the plan meets the requirements in the OPGGS Act and GHG Regulations. Regulation 30 of the GHG Regulations provides that, if the RCM approves a draft site plan, the approved site plan comes into force at the time of the approval and remains in force indefinitely, unless the RCM withdraws approval of the plan or issues a site closing certificate.

Note: as information in the site plan relates to the matters to be specified as conditions on the injection licence (paragraphs 358(3)(d) to (k) or 328A(3)(d) to (k) of the OPGGS Act, the timing of a decision to approve a site plan should co-incide with a decision to offer an injection licence.

Step 5 - Offer, acceptance and grant

An offer for an injection licence will be made to the applicant on the following basis:

- where an application is made under section 361 of the OPGGS Act by the holder of an applicable GHG title and the RCM is satisfied of the matters outlined in section 362 of the OPGGS Act, the RCM must provide an offer document to the applicant;
- where an application is made under section 368A of the OPGGS Act by the holder of an applicable cross-boundary title and the CBA or RCM (as applicable) is satisfied of the matters outlined in section 368B of the OPGGS Act, the CBA must provide an offer document to the applicant; and
- where an application is made under section 369 of the OPGGS Act by a petroleum production licence holder and the RCM is satisfied of the matters outlined in section 370 of the OPGGS Act, the RCM may provide an offer document to the applicant.

The offer document will specify that the RCM or CBA is prepared to grant the applicant a GHG injection licence over the block or blocks specified in the application on the basis of:

- in the case of an application under section 361 or 369 of the OPGGS Act, the GHG injection licence will be granted subject to the matters outlined in paragraphs 358(3)(d) to (k) of the OPGGS Act being specified as conditions consistent with the application; and
- in the case of an application under section 368A of the OPGGS Act, the GHG injection licence will be granted subject to the matters outlined in paragraphs 358A(3)(d) to (k) of the OPGGS Act being specified as conditions consistent with the application.

Note: The RCM or CBA may grant a GHG injection licence subject to whatever conditions are considered appropriate. Applicants for a GHG injection licence should also consider the general conditions in sections 358 and 358A of the OPGGS Act and item 6 of the Injection Licence Guideline when submitting a GHG injection licence application.

To accept the offer, the applicant must meet the following requirements:

- make a request for grant of the licence under section 431 or 431A of the OPGGS Act in the applicable timeframe. This period will be 90 days unless a longer period not exceeding 180 days has been requested and approved by the RCM or the Titles Administrator as applicable; and
- lodge any required security specified in the offer within the same timeframe applicable to accept the offer. (Note: under section 31 of the OPGGS Act a security may be required in response to any offer document (see section 5 of the Injection Licence Guideline).

If the applicant makes a request for grant of the licence and lodges any applicable security in the applicable timeframe, the RCM or CBA must grant a GHG injection licence to the applicant.

More Information

If you have any specific questions, please contact NOPTA via ghg@nopta.gov.au.

Please note: *this document is intended as a guide only. It is subject to, and does not replace or amend the requirements of, the Offshore Petroleum and Greenhouse Gas Storage Act 2006 and associated regulations, which should be read in conjunction with this guideline. It should not be relied on as legal advice or regarded as a substitute for legal advice in individual cases*

Version history

Version	Date	Comment
1.0	XX/XX/2024	New GHG fact sheet

Appendix A – Information that should be contained within a draft site plan

Part A (Regulation 19 and Schedule 1)	**Part B (**Regulations 18 and 20, and Schedule 2)			
	Strategy and operational planning	**Risk assessment**	**Monitoring plan**	**Site closure**
• set out predictions of expected behaviour of the injected and stored GHG substances at specified times in Part A of the site plan: o the specified times must be of sufficient number and frequency, and sufficient detail must be provided, to demonstrate that the predictions are soundly based; o predictions must describe each known or expected migration pathway and migration rate; o comparison of the predicted behaviours with actual behaviours (as demonstrated through the monitoring program) will enable timely detection of serious situations; and o the predictions must be consistent with the spatial extent in the DoSF; and be based on the same information set out in the DoSF.	• Information about the operational planning and project management to demonstrate adequate planning has occurred, including: o details of joint venture arrangements (in more than a single titleholder); o details of commercial agreements or negotiations with suppliers of GHG substances; o information regarding significant works and upgrades planned over the life of the proposed operations; and o project schedule outlining key milestones for all operations (including monitoring). • A description of the infrastructure facilities for engaging in the activities involved in the proposed operations, including o injection facilities; o pipelines; o monitoring facilities; o engineering enhancements to any infrastructure; and o measurement/metering equipment*. • For each GHG substance that is proposed to be injected into the formation: o the source, composition and any other relevant properties of the GHG substance; o the proposed rate, or range of rates, of injection of the GHG substance into the storage formation; o the number and location of wells at which the injection of the GHG substance is proposed; and o the proposed injection pressure, or range of pressures, for each well at which injection of the GHG substance is proposed.	**Engineering enhancements** • Information relating to the risk assessment conducted for any proposed engineering enhancements to the storage formation (must be consistent with information provided in the DoSF). **Risks to containment** • Information about geological risks associated with the proposed operations that was contained in the DoSF. • Information about any risks to containment of the GHG substance that weren't included in the DoSF, for example: o risk of leakage from well bores, during transport, injection facilities or abandoned wells. • For each risk, the assessment should include: o a description of the risk; o possible consequences; o probability of occurrence; o strategies for eliminating the risk or reducing to as low as reasonably practicable; and o if the risk has been reduced but not eliminated, information describing the acceptable risk determined by the applicant and demonstrating that the remaining risk will meet that level. • The risk assessment must demonstrate that new risks or increased risk levels will be identified as they arise.	• The monitoring plan should demonstrate that: o the technology and activities selected are fit-for-purpose and appropriate to the nature and scale of the project; and o appropriate consideration is given to incorporating new information and monitoring data into operational planning. **Behaviour of the stored GHG substance** • Information in sufficient detail to demonstrate the plan will identify significant events in the storage formation in a timely manner to enable mitigation/remediation. • Timing and nature of the activities will detect any variations from the predicted behaviours set out in Part A. • Details of composition and concentration of any substance that is proposed to be used to facilitate monitoring. • Description of each event that could be considered a serious situation to exist in the storage formation (i.e. will be a reportable incident); o for example a departure from the predicted migration pathway or rate. **Leakage of the GHG substance** • The monitoring plan must include plans for detection and monitoring of leakage from: o the storage formation to the seabed; o during transport for the purpose of injecting into the formation; o from the point of injection; or o from well bores.	• A plan for carrying out any work that is required to remediate the formation, including: o plugging and closing off wells; o stabilising the subsurface of the formation; and o remediating any abandoned wells or other features that may pose a risk of leakage. • A plan for monitoring the behaviour of the GHG substances stored in the storage formation after the cessation of injection operations. *NOTE: this information should be in sufficient detail to demonstrate that the plan is appropriate, but it is not a replacement of the approvals required from NOPSEMA that relate to well and facility abandonment and decommissioning.*

*the *Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011* have reporting requirements for injection licences that require measurement and verification of the quantities and composition of the GHG substances injected into the storage formation and any fluids produced from the storage formation.

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Significant Risk of Significant Adverse Impact (SROSAI)

All fact sheets should be read in conjunction with the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (the **OPGGS Act**), associated regulations, relevant guidelines and policies (available on NOPTA's website)

The OPGGS Act provides for the coexistence of the greenhouse gas (**GHG**) and petroleum industries, including in some circumstances where a GHG or petroleum operation could impact the other. To manage this, the responsible Commonwealth Minister (**RCM**) must have regard to certain matters, including whether there is a *significant risk of a significant adverse impact* (**SROSAI**), when making certain decisions under the OPGGS Act.

The purpose of this fact sheet is to provide an overview of SROSAI, how it is determined and when it should be considered by relevant applicants.

Note: this fact sheet focuses on SROSAI as it relates to the impact a GHG operation could have on petroleum exploration or recovery. Consideration of SROSAI for approval of key petroleum operations and grant of certain petroleum production licences (sections 25 and 26 of the OPPGS Act), are outside the scope of this SROSAI Fact Sheet.

This fact sheet should be read in conjunction with the OPGGS Act, the *Offshore Petroleum and Greenhouse Gas Storage (Greenhouse Gas Injection and Storage) Regulations 2023* (**GHG Regulations**) and the following guideline and fact sheets:

- Key Greenhouse Gas Operations Fact Sheet (**KGO Fact Sheet**);
- Guideline: Offshore Greenhouse Gas Injection Licences (**Injection Licence Guideline**); and
- Developing a GHG resource – GHG Injection Licence and Site Plan applications Fact Sheet (**Injection Licence and Site Plan Fact Sheet**).

What is SROSAI?

There are circumstances where a GHG or petroleum operation could impact the other. For the purpose of determining a SROSAI, 'impacts' are considered to be only those impacts that result in an *adverse impact*. If the operation could not impact, or will not have an *adverse impact* (see Adverse Impact below), then the RCM is not required to consider SROSAI further.

If the operation will have an *adverse impact* the RCM is required to consider whether there is a *significant risk* of a *significant adverse impact* when making certain decisions under the OPGGS Act.

SROSAI – relevant decisions

The OPGGS Act provides for the manner of determining whether there is a *significant risk* that a GHG operation will have a *significant adverse impact* on petroleum exploration or petroleum recovery operations that are being, or could be, carried on under an existing or future petroleum title, or the commercial viability of the recovery of petroleum, in sections 27, 27A, 28, 28A and 29 of the OPGGS Act for the purposes of the following decisions:

- approval of a key GHG operation (**KGO**) for holders of a GHG assessment permit (including a cross-boundary GHG assessment permit) or GHG holding lease (including a cross-boundary GHG holding lease) (sections 292, 292A, 321 and 321A of the OPGGS Act);
- grant of a GHG injection licence, including a cross-boundary GHG injection licence (sections 362, 368B and 370 of the OPGGS Act); and
- exercising powers to protect petroleum discovered in the title area of a pre-commencement petroleum title, that overlaps wholly or partly with the title area of a GHG injection licence (section 383 of the OPGGS Act).

Adverse Impact

For the purposes of determining whether there is a SROSAI, a GHG operation will have an *adverse impact* on petroleum exploration or petroleum recovery operations that are being or could be carried on under an existing or future petroleum title, or the commercial viability of the recovery of petroleum if, and only if, the relevant GHG operation will result in:

- an increase in the capital costs (other than costs prescribed in the GHG Regulations) of the petroleum exploration or petroleum recovery operations; or

- an increase in the operating costs (other than costs prescribed in the GHG Regulations) of the petroleum exploration or petroleum recovery operations; or
- a reduction in the rate of recovery of the petroleum; or
- a reduction in the quantity of the petroleum that will be able to be recovered;

as per subsections 27(5), 27A(5), 28(5), 28A(5) or 29(5) of the OPGGS Act.

How is SROSAI determined?

If there is an *adverse impact* from a GHG operation on petroleum exploration or petroleum recovery operations that are being or could be carried on under an existing or future petroleum title, or the commercial viability of the recovery of petroleum, (in accordance with subsections 27(5), 27A(5), 28(5), 28A(5) or 29(5) of the OPGGS Act), Part 2 of the GHG Regulations sets out the manner of determining whether there is a SROSAI.

There will not be a SROSAI if the amount that, under the GHG Regulations, is taken to be the probability-weighted impact cost of the relevant operation is less than the amount that, under the GHG Regulations, is taken to be the threshold amount (subsections 27(6), 27A(6), 28(6), 28A(6) and 29(6) of the OPGGS Act and regulation 11 of the GHG Regulations).

Further information on the steps taken to determine whether there is a SROSAI is provided below.

SROSAI Steps

1. Manner of determining whether there is a significant risk of a significant adverse impact

Subregulation 9(1) of the GHG Regulations: *compare the probability-weighted impact cost to potential economic value*

There is a SROSAI if the probability-weighted impact cost of the main operation is at least 0.15% of the potential economic value of the potentially affected operations that are being, or could be, carried on under an existing or future petroleum title (determined in accordance with subregulation 9(5) of the GHG Regulations).

Under subregulation 9(2) of the GHG Regulations, the probability-weighted impact cost of a *main operation* is determined by applying statistical techniques that are appropriate to risk assessment to the probability-weight impact costs of *events* (determined in accordance with subregulation 9(3) of the GHG Regulations) that could occur as a result of the main operation.

Note: see regulation 5 of the GHG Regulations for definitions including *main operation* and *potentially affected operations.*

Subregulation 9(3) of the GHG Regulations: *probability-weighted impact cost of events*

The probability-weighted impact cost of an event that could occur as a result of a main operation and, if it occurred, could have an adverse impact on potentially affected operations is determined by:

(a) estimating the probability of the event occurring and having an adverse impact; and

(b) estimating the loss of potential economic value in relation to the potentially affected operations if the event occurred and had an adverse impact; and

(c) multiplying the estimated probability by the estimated loss in potential economic value.

An estimate of the probability of having an adverse impact on potentially affected operations that are not currently being carried on must take into account the probability of the operations being carried on in the future (subregulation 9(4) of the GHG Regulations).

Example 1

If there is a 10% chance of a single event, as a result of the main operation, occurring and having an adverse impact which results in a loss of potential economic value of A$50 million (m), then the probability-weighed impact cost of this event will be A$5m.

The probability-weighted impact cost of the main operation will be equal to A$5m as there is only a single event.

If this amount is less than the threshold amount then there would be no SROSAI.

Subregulation 9(5) of the GHG Regulations: *potential economic value of potentially affected operations*

In relation to petroleum operations, the potential economic value of potentially affected operations is to be determined by estimating the net present value of future cashflows from a petroleum resource, taking into account:

- the amount of petroleum projected to be recoverable;
- the projected production profile;
- projected petroleum prices;
- projected costs of recovery; and
- any other relevant matters.

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Example 2

If there is a 10% chance of a single event, as a result of the main operation, occurring and having an adverse impact which results in a loss of potential economic value of A$100m, then the probability-weighted impact cost of this event will be **A$10m**.

The probability-weighted impact cost of the main operation will be equal to A$10m as there is only a single event.

If this amount is greater than the threshold amount (see below), refer to the following example:

Assume it is 2023 and an operation is expected to produce 50 Bcf of gas in 2028. The price of gas in 2023 is A$10/mcf. The inflation rate is 2% and the appropriate discount rate is 9% (see below). There are nominal costs of A$500m only in 2028.

Revenue = A$10/mcf *1.02^5 * 50 Bcf = A$552m

Costs = A$500m

Before Tax Cashflow = A$552m-A$500m = A$52m.

NPV(9) = A$52m/(1.09)^5 = AS$33.8m

Therefore, a probability-weighed impact cost of A$10m would represent A$10m/A$33.8m = 29.6% of the potential economic value (A$33.8m) of the potentially affected operation, which is greater than 0.15%.

Important Note:

If the probability-weighted impact cost of a main operation (determined in accordance with subregulation 9(2) of the GHG Regulations) is not equal to or greater than the threshold amount (per regulation 11 of the GHG Regulations – see below), it is not necessary to proceed.

When the probability-weighted impact cost of a main operation is equal to or greater than the threshold amount, then it is necessary to calculate if the probability-weighted impact cost is at least 00.15% of the potential economic value, as in Example 2.

Subregulation 9(6) of the GHG Regulations: *discounting rate for future value and losses in value*

Estimates of potential economic value under subregulation 9(5) of the GHG Regulations, and the loss of value under subregulation 9(3) of the GHG Regulations, are to be adjusted to present values using a discount rate equal to the long-term bond rate plus 5%.

The long-term bond rate is the average (expressed as a decimal rounded to 4 decimal places) of the capital market yields for the latest available 12 months on Commonwealth Government 10-year bonds (published by the Reserve Bank of Australia).

2. Calculate the threshold amount in accordance with regulation 11 of the GHG Regulations

The threshold amount on a day is:

$$\$7{,}000{,}000 \times \frac{\textit{most recent GDP deflator}}{\textit{commencement GDP deflator}}$$

Amounts are to be worked out:

(a) using the index numbers published in terms of the most recently published index reference period for the Implicit Price Deflator for Expenditure on Gross Domestic Product (published by the Australian Bureau of Statistics); and

(b) disregarding index numbers published in substitution for previously published index numbers.

Note: see regulation 11 of the GHG Regulations for definitions including *commencement GDP deflator*, *index number* and *most recent GDP deflator*.

There will not be a SROSAI if the probability-weighted impact cost of the main operation is less than the threshold amount.

Example: Threshold Calculation

The commencement GDP deflator (the sum of the 4 quarters to September 2023) is 428.6.

Assume that it is June 2025 and the most recent GDP deflator (over the 4 quarters to June 2025) is 445.9.

Therefore, the threshold amount should be calculated as follows:

A$7,000,000 x (445.9/428.6)

Which is equal to A$7,282,547.83

3. Notice of intended determination of SROSAI

In accordance with regulation 12 of the GHG Regulations the decision-maker must give notice in writing of the intended SROSAI determination to the applicant for a KGO or GHG injection licence, and each potentially affected petroleum titleholder, and invite written submissions. Any submissions made will be taken into consideration by the decision-maker in making a determination.

Note: for the grant of a GHG injection licence or cross-boundary GHG injection licence the RCM or Cross-

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boundary Authority (CBA)[1] may also take any submissions into consideration in determining any conditions the RCM or CBA thinks appropriate under subsections 358(1) or 358A(1) of the OPGGS Act.

Consideration of any agreements reached (if any) with potentially affected petroleum titleholders

If there is a SROSAI, the RCM will consider other factors as part of their decision, for example the public interest or any agreements with affected petroleum titleholders (sections 292, 321, 362, 368B and 370 of the OPGGS Act). Generally, if there is an agreement with affected petroleum titleholders the RCM must have regard to:

- whether the affected petroleum titleholder has agreed in writing to the relevant operations being carried out; and
- the particular terms of the agreement.

Note: the provisions in the OPGGS Act related to agreements with affected titleholders are complex and will be applied on a case-by case basis. In some cases approval may be granted without an agreement however, there are exceptions relating to affected petroleum titleholders with rights acquired before the relevant provisions commenced on 22 November 2008 and certain related rights.[2] In some situations, if the RCM is satisfied that there is a SROSAI the RCM must have regard to whether the affected petroleum titleholder has agreed in writing to the operation being carried out, and the terms of that agreement (sections 292, 321, 362, 368B and 370 of the OPGGS Act). Early engagement with NOPTA and underlying petroleum titleholder(s) is recommended.

Consideration of SROSAI when granting injection licences – blocks containing petroleum

The RCM or CBA cannot grant a GHG injection licence if there is a SROSAI in circumstances where blocks specified in the application contain petroleum for which recovery is commercially viable or is likely to become commercially viable within 15 years, and those blocks are within the area of a petroleum production licence, pre-commencement petroleum exploration permit or pre-commencement petroleum retention lease, even if there is an agreement between the petroleum and GHG titleholders (see sections 362(1)(f) and 362(2)(f) OPGGS Act).

When should SROSAI be considered?

Applicants for approval of a KGO[3] or grant of a GHG injection licence (including cross-boundary titleholders) should consider SROSAI early in the application process.

Please see the KGO Fact Sheet, GHG Injection Licence and Site Plan Guideline and GHG Injection Licence and Site Plan Fact Sheet for further information.

Early engagement with NOPTA and underlying petroleum titleholder(s) is recommended.

More information

If you have any specific questions, please contact NOPTA via ghg@nopta.gov.au.

Please note: *this document is intended as a guide only and should not be relied on as legal advice or regarded as a substitute for legal advice in individual cases.*

Version history

Version	Date	Comment
1.0	XX/XX/2024	New factsheet

[1] See Part 1.3A – Cross-boundary Authorities of the OPGGS Act, section 76D Decision-making.

[2] See section 7 of the OPPGS Act for definitions of pre and post-commencement titles.

[3] Applicants for a GHG Assessment Permit should also have regard to SROSAI in the proposed work program (see item 4.44 of the Guideline: Offshore Greenhouse Gas Assessment Permits – Work-bid and item 1.21 of the Offshore Greenhouse Gas Guideline for Consolidated Work-bid and Cross-boundary Greenhouse Gas Assessment Permits)

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Risk Assessment in Offshore Greenhouse Gas Injection Licences and Site Plans

All fact sheets should be read in conjunction with the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (**the OPGGS Act**), associated regulations, relevant guidelines and policies (available on NOPTA's website).

This fact sheet provides general information about risk assessment to be included as part of the application and assessment processes for a greenhouse gas (**GHG**) injection licence and site plan(s) and covers geological risks, risks to the containment of GHG substances and risks associated with engineering enhancements. Other risks, such as to infrastructure (eg. pipelines), safety and the environment are outside the scope of this fact sheet but will need to be considered by proponents. If proponents are unsure what risks are covered under site plans they should seek advice from NOPTA. For completeness, a fact sheet about Significant Risk of Significant Adverse Impact (**SROSAI**) is also referenced below, however SROSAI is outside the scope of this fact sheet.

It remains the responsibility of project proponents to ensure compliance with all legal requirements for a project. Project proponents should ensure consistent information is provided to all regulators.

There are multiple legislative frameworks to regulate offshore carbon capture and storage (**CCS**) projects in Commonwealth waters including:

- *Offshore Petroleum and Greenhouse Gas Storage Act 2006*;
- *Environment protection (Sea Dumping) Act 1981*; and
- *Environment Protection and Biodiversity Conservation Act 1999*

The responsibilities for regulating offshore CCS projects are shared across the Commonwealth government's Department of Industry Science and Resources (**DISR**) and the Department of Climate Change, Energy, the Environment and Water (**DCCEEW**).

The four regulatory bodies that are relevant to offshore CCS projects are:

- National Offshore Petroleum Titles Administrator (**NOPTA**);
- National Offshore Petroleum Safety and Environmental Management Authority (**NOPSEMA**);
- Sea Dumping (within DCCEEW); and
- Nature Positive Regulation Division (within DCCEEW).

This fact sheet covers NOPTA and NOPSEMA's expectations for appropriate risk assessment. Further information on regulatory approvals can be found in: Offshore Carbon Capture and Storage Regulatory Approvals

Due to the complexity and interrelationships of the legislative and regulatory frameworks, early and ongoing engagement with the relevant regulators is encouraged. Every project is unique and may require additional approvals to those outlined.

This fact sheet should be read in conjunction with the OPGGS Act and the following regulations, guidelines and fact sheets:

- *Offshore Petroleum and Greenhouse Gas Storage (Greenhouse Gas Injection and Storage) Regulations 2023* (**GHG Regulations**);
- Guideline: Offshore Greenhouse Gas Injection Licences (**Injection Licence Guideline**);
- Offshore GHG Guideline - Declaration of Identified GHG Storage Formation Guideline (**DoSF Guideline**);
- NOPSEMA Guidance Note: Risk Assessment;
- NOPSEMA Guidance Note: ALARP;
- NOPSEMA Guidance Note: Control Measures and Performance Standards;
- NOPSEMA Guidance Note: Offshore Carbon Capture and Storage Regulatory Approvals 2023;
- NOPSEMA Fact Sheet: ALARP and Acceptable;

- Fact Sheet: Developing a GHG resource - GHG Injection Licence and Site Plan applications;
- Fact Sheet: Significant Risk of Significant Adverse Impact (**SROSAI**); and
- Fact Sheet: Monitoring plans in Offshore Greenhouse Gas Injection Licences and Site Plans.

Where does risk assessment fit into a site plan?

A draft site plan (**site plan**) must accompany an application for a GHG injection licence with risk assessment forming part of the information required under the following provisions of the GHG Regulations:

- general criteria (regulation 18 of the GHG Regulations) covering geological risk;
- item 13 of Schedule 1[1] of the GHG Regulations covering risks associated with engineering enhancements; and
- item 5 of Schedule 2 of the GHG Regulations covering risks relating to the containment of GHG substances.

The site plan must be approved by the responsible Commonwealth Minister (**RCM**) before any operations in relation to an identified GHG storage formation specified in the licence can commence and the licensee must comply with the plan.

Aims of a risk assessment

Risk assessment is undertaken to assist with planning for safe, secure and permanent storage of GHG substances.

A risk assessment included as part of the application and assessment processes for a GHG injection licence and site plan must demonstrate that all risks associated with the geology, containment of GHG substances and engineering enhancements have been identified and that these will be eliminated or reduced to as low as is reasonably practicable (**ALARP**). If a risk is identified and is reduced but not eliminated, the remaining risk must be acceptable.

Details of the risk assessment analysis used by the applicant should include the following for each risk:

- a description of the risk;
- the possible consequences of the risk;
- an assessment of the probability of occurrence of the risk;
- the strategies for the elimination or reducing the risk to ALARP; and
- if the risk has been, or will be, reduced but not eliminated: information describing the acceptable level of risk determined by the applicant, and demonstrating that the remaining risk will meet that level.

A rigorous and comprehensive risk assessment of the entire project should identify the various risks, evaluate potential impact of these risks and develop mitigation plans for safe, secure and permanent storage. The identified risks should be collated in a risk register, ranked to identify the most significant risks to the containment of GHG substances and mapped to the proponent's risk matrix, with a clear rationale for the ranking provided under their risk management framework.

The outcome of this risk assessment, combined with regulatory requirements should support the design of the project and drive the development of a monitoring (Monitoring, Measurement and Verification (**MMV**)) plan. The frequency of data acquisition and reporting should also be justified having regard for the timeframes required to identify if the GHG plume is behaving as predicted and undertake remedial action if required.

The probability of occurrence and associated consequence of each identified risk will generally evolve throughout a project life cycle, as will MMV technology. Accordingly, the mitigation steps, monitoring and reporting plans will also evolve. The evolution of any identified risk and the associated mitigation steps and monitoring plans will be captured in the reviews of the approved site plan which must take place at least once in each period of 5 years during which it is in force (regulations 36 to 38 of the GHG

[1] Schedule 1 (*Information to be set out in applications for declaration of identified GHG storage formations…*) is relevant to the site plan, as s19 requires the information set out in the site plan to be consistent with the information provided in the application for declaration of identified GHG storage formation.

Regulations) or in response to any significant deviation from the modelled GHG plume migration.

Additional risks arising from GHG operations will continue to be regulated under other parts of the OPGGS Act and regulations, particularly through the requirements to prepare and have the following accepted by NOPSEMA:

- environment plans for environmental management of offshore GHG activities;
- well operations management plans for well activities, and
- safety cases to address occupational health and safety at offshore facilities.

For this reason, early engagement with both NOPTA and NOPSEMA on the site plan is encouraged to facilitate other OPGGS regulatory approvals.

Risk assessment techniques

The NOPSEMA guidance note on risk assessment includes descriptions of various risk assessment techniques and the main considerations that should be taken into account when selecting the appropriate technique.

The risk assessment technique(s) selected should:

- be suitable for the type and complexity of the facility and nature of the hazards present;
- assist in understanding and selecting control measures; and
- be capable of assessing the potential effect of risk reduction measures.

No single technique is able to meet all of the requirements of risk assessment as all techniques have their limitations and weaknesses. A tiered approach to risk assessment is recommended where simple techniques are used initially as part of a screening process before the areas of high risk or uncertainty are addressed by more detailed risk assessment.

The risk assessment should include details of the data available, the assumptions made and areas of uncertainty to undertake the risk assessment. Consideration should also be given to how the risk assessment could change based on any new data acquired.

Descriptions of some risk assessment techniques are provided in Appendix A of the NOPSEMA Guidance Note: Risk Assessment.

Risks to include in a site plan application

The following sections describe the type of risks the proponent should consider in an application for the grant of a GHG injection licence and approval of a site plan. The GHG Regulations cover geological risks, risks to the containment of GHG substances and risks associated with engineering enhancements. It should be noted that some of the containment risks are related to geology and where this is the case they have been included under the geological risk section below.

In addition to these risks, proponents should also consider risks associated with facility design and structural integrity, and monitorability risks where the system cannot be monitored to the degree required.

i) Geological risks

A geological risk assessment should consider all aspects of the geology to ensure the formation will be safe and secure for the permanent storage of the GHG substances. It should include the proposed strategies for the elimination or reduction and management of those risks. The risk assessment must demonstrate all of the following for the proposed operations for the injection or permanent storage of a GHG substance (regulation 18 of the GHG Regulations):

- that the geological risks associated with the operations have been identified;
- that new geological risks associated with the operations will be identified as they arise;
- that increases in the levels of existing geological risks associated with the operations will be identified as they arise;
- that the geological risks mentioned above will be eliminated or reduced to ALARP; and
- that if a geological risk mentioned above is reduced but not eliminated, the remaining risk will be acceptable.

Geological risks include the following categories:

- the containment of GHG substances;
- the capacity of the storage formation (the volume of GHG substances that can be stored);
- the injectivity of the storage formation (the rate at which GHG substances can flow into the formation); and

- the physical impacts of the injection of GHG substances on other domains including the storage formation, sealing units, any faults and the seabed.

Risks under these categories could include, but are not limited to the following:

- unexpected chemical/physical conditions during injection or within the storage formation;
- pressurization of the formation due to unexpected compartmentalization;
- injection intermittency and fracturing of the near well zone induced by drilling or injection operations.
- critical parameters affecting potential leakage (e.g. maximum reservoir pressure, maximum injection rate, temperature and sensitivity for varying assumptions in the geological models);
- secondary effects to the injection and storage of GHG substances including displaced formation fluids and new substances created by the storing of GHG substances in the formation;
- accidental exceedance of storage capacity;
- induced seismicity around well bores and in the storage formation;
- physical uplift of the seabed;
- disturbance of the GHG substance due to tectonic processes;
- unexpected changes in seal properties due to chemical/physical changes due to the injection of GHG substances;
- geomechanical fracturing and fault reactivation;
- migration of GHG substances through intact seal due to the capillary entry pressure being exceeded;
- displacement of brine or residual fluids from the storage formation: and
- unexpected (less than 10 per cent probability of occurring based on plume migration modelling) GHG substance plume migration.

ii) Other risks relating to the containment of GHG substances

The following are examples of non-geological factors that could pose risks to the containment of GHG substances (item 5 of Schedule 2 of the GHG Regulations):

- a leakage to the environment or into other geological strata of a GHG substance resulting from loss of integrity in a well bore;
- a leakage of a GHG substance during its transport for the purpose of injection into the formation;
- a leakage of a GHG substance at the point of injection into the formation;
- GHG substance leakage from injection, monitoring, pressure maintenance or legacy wells; and
- future exploration, development, production, and injection activities including activities on overlapping or nearby permits.

When identifying the geological and non-geological risks to the containment of GHG substances within the formation consideration should be given to:

- potential leakage routes;
- potential magnitude of leakage events;
- impact of any impurities that will be contained in the GHG substances on the predicted phase behaviour and corrosion potential on proposed transport, facility infrastructure and wells including the potential for escalation from corrosion; and
- any factors which could pose a risk to human health or the environment including the effects of exposure to elevated GHG substance concentrations in the biosphere and the effects of other substances, such as impurities or entrained hydrocarbons, that may be present in the leaked GHG substance.

The risk assessment also includes information about potential risks to the containment of GHG substances, that were not included in the DoSF, but have been identified as part of the site plan and proposed strategies for the elimination or reduction of those risks to ALARP.

This information is critical to demonstrate that the proposed approach to the design and implementation of

the project will manage risks to ALARP when compared to other development options. Applicants should show that they have undertaken preliminary major accident events and safety integrity level assessments and have identified control measures and performance standards to underpin this evaluation.

iii) Engineering enhancements

Engineering enhancements are any engineering solutions to change the current conditions of the storage formation to facilitate the injectivity and containment of GHG substances. If the fundamental suitability determinants set out in the declaration of identified GHG storage formation application (in sections 312 and 312A of the OPGGS Act) include engineering enhancements, the risk assessment will include a description of those engineering enhancements set out in sufficient detail to demonstrate that, taking into account those enhancements, the risks relating to the containment of the GHG substance to be stored in the part of the geological formation are likely to be acceptable.

iv) Facility Design and Structural Integrity

Facility risk assessment should demonstrate that the risks associated with the proposed concept have been considered and studied sufficiently to demonstrate that the risks have been reduced to ALARP and are of an acceptable level.

This should include, but not limited to:

- comparative risk assessment of the proposed concept and suitable alternatives;
- risks associated with reuse of infrastructure, informed by current condition, and life extension studies;
- risks of failure of key elements of structural integrity as defined in Part 1.2, Division 1, Section 7 of the OPGGS Act; and
- risks associated with transient conditions, including potential process upsets and normal integrity testing and intrusive maintenance.

v) Monitorability risks

Monitorability risk is where the system cannot be monitored to provide the required degree of assurance that the stored GHG substances are behaving as predicted.

Potential risks in this category may include:

- insufficient and/or uncertain baseline data leading to a risk not being able to make meaningful comparisons with post-injection data;
- failure of monitoring equipment or monitoring prevented due to external factors;
- monitoring inhibited by unexpected plume migration outside the monitored area;
- interaction with plume of injected GHG substances from a nearby CCS project that leads to uncertainty in the distribution of the injected GHG substances and its containment; and
- uncertainty in the composition of the GHG substance leading to an error in estimating the amount of GHG substances injected into the formation.

Key considerations

The risk assessment and associated monitoring plan should be developed to include the identification of any serious situations, any reportable incidents and any events that significantly alter the site plan and that may lead to a variation of the site plan.

Serious situations

The risk assessment will include the identification of any potential risks relating to any deviation from the predicted behaviour of GHG substances to be injected into and stored in the formation to allow the timely detection of serious situations (regulation 19 of the GHG Regulations). Serious situations need to be identified and managed to demonstrate the formation will be safe and secure for the permanent storage of GHG substances.

Reportable incidents

A reportable incident in relation to an identified GHG storage formation specified in a GHG injection licence will include the following (regulation 49 GHG Regulations):

- a departure from a predicted migration pathway or rate of a GHG substance that causes, or has the potential to cause, a serious situation to exist in relation to the storage formation;
- a GHG substance injected into the identified GHG storage formation that has, or has a significant risk of, being leaked or is leaking from the storage formation or a leakage of a GHG substance to the seabed; and

- a leakage of a GHG substance, from the bore of a well that forms part of the operations carried out under the licence, that causes or has the potential to cause a serious situation to exist in relation to the formation

Variations

Apart from the site plan review at least once in each five-year period, or reviews requested by the Minister, and draft variations of the approved site plan (regulations 36 and 37 of GHG Regulations), a variation of a site plan is required following the occurrence of certain circumstances (regulation 40 of GHG Regulations) including:

- the plan is no longer accurate and up to date because there is new information that significantly alters:
    - the fundamental suitability determinants;
    - expected migration pathways of the GHG substance; predictions set out in Part A of the plan;
    - interactions between the formation and the method by which the GHG substance is injected into the formation; and
    - any other matter relevant to the safe and secure storage of GHG substance in the formation.
- the licensee proposes to make a change, or a series of changes, to the way the operations authorised by the licence are carried out, that will affect prediction set out in Part A of the plan and the risks associated with those operations; and
- the licensee proposes to make a significant change to the way the operations authorised by the licence are managed that will affect the integrated operations management plan.

Site Closure and Remediation

Potential risks related to site closure and remediation (item 9 of Schedule 2 GHG Regulations) that could pose a risk of leakage of GHG substances stored in the formation after site closure need to be assessed before operations and any remediation strategy can commence.

Engagement with Regulators

Applicants should note that information included in the site plan to meet the risk assessment and strategy requirements will be a critical underpinning to future operational approvals including safety cases. Further information on risk assessment considerations can be found in the NOPSEMA guidance note on risk assessments.

Applicants should engage early with both NOPTA and NOPSEMA, including workshops in advance of submitting their draft site plan to discuss risk aspects of their project to ensure safety-by-design principles are appropriately being factored into their infrastructure proposals from an early stage of project design.

More information

If you have any specific questions, please contact ghg@nopta.gov.au.

Please note: *this document is intended as a guide only. It is subject to, and does not replace or amend the requirements of, the Offshore Petroleum and Greenhouse Gas Storage Act 2006 and associated regulations, which should be read in conjunction with this guideline. It should not be relied on as legal advice or regarded as a substitute for legal advice in individual cases.*

Version history

Version	Date	Comment
1.0	XX/XX/2024	New GHG fact sheet

Australian Government
National Offshore Petroleum Titles Administrator

Fact Sheet

Monitoring Plans in Offshore Greenhouse Gas Injection Licences and Site Plans

All fact sheets should be read in conjunction with the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (**the OPGGS Act**), associated regulations, relevant guidelines and policies (available on NOPTA's website).

This fact sheet provides general information about monitoring plans to be included as part of the application and assessment processes for a greenhouse gas (**GHG**) injection licence and site plan(s).

It remains the responsibility of project proponents to ensure compliance with all legal requirements for a project. Project proponents should ensure consistent information is provided to all regulators.

There are multiple legislative frameworks to regulate offshore carbon capture and storage (**CCS**) projects in Commonwealth waters including:

- *Offshore Petroleum and Greenhouse Gas Storage Act 2006*;
- *Environment protection (Sea Dumping) Act 1981*; and
- *Environment Protection and Biodiversity Conservation Act 1999*

The responsibilities for regulating offshore CCS projects are shared across the Commonwealth government's Department of Industry Science and Resources (**DISR**) and the Department of Climate Change, Energy, the Environment and Water (**DCCEEW**).

The four regulatory bodies that are relevant to offshore CCS projects are:

- National Offshore Petroleum Titles Administrator (**NOPTA**);
- National Offshore Petroleum Safety and Environmental Management Authority (**NOPSEMA**);
- Sea Dumping (within DCCEEW); and
- Nature Positive Regulation Division (within DCCEEW).

Further information on regulatory approvals can be found in: Offshore Carbon Capture and Storage Regulatory Approvals

Due to the complexity and interrelationships of the legislative and regulatory frameworks, early and ongoing engagement with the relevant regulators is encouraged. Every project is unique and may require additional approvals to those outlined.

This fact sheet should be read in conjunction with the OPGGS Act and the *Offshore Petroleum and Greenhouse Gas Storage (Greenhouse Gas Injection and Storage) Regulations 2023* (**GHG Regulations**) and the following guidelines:

- Guideline: Offshore Greenhouse Gas Injection Licences (**Injection Licence Guideline**) also covers site plan requirements; and
- Offshore GHG Guideline - Declaration of Identified GHG Storage Formation Guideline (**DoSF Guideline**)

The *Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011* (**RMA Regulations**) contain some explicit reporting requirements and applicants should be aware of these reporting requirements against the monitoring plan.

Risk assessment is also a key component of site plans and is interlinked with the development of monitoring plans. Further guidance on risk assessment is provided in a separate fact sheet, Risk Assessment in Offshore Greenhouse Gas Injection Licences and Site Plans.

Where does monitoring fit into a site plan?

A draft site plan (**site plan**) must accompany an application for a GHG injection licence, and must meet certain criteria including:

- general criteria (regulation 18 of the GHG Regulations);
- criteria for Part A (regulation 19 of the GHG Regulations); and

- criteria for Part B (regulation 20 of the GHG Regulations).

The monitoring plan forms part of the information required in Part B of the site plan, as outlined in regulation 20 and Schedule 2 of the GHG Regulations.

The site plan must be approved by the responsible Commonwealth Minister (**RCM**) before any operations in relation to an identified GHG storage formation specified in the licence can commence and the licensee must comply with the plan.

What should be included in a monitoring plan?

The monitoring plan (also known as a monitoring, measurement and verification (**MMV**) plan) is to be designed for:

- measuring or estimation of the quantities and composition of the GHG substance injected into the declared storage formation;
- monitoring the behaviour of stored GHG substances in the storage formation; and
- for the detection and monitoring of leakage of GHG substances from the overall project.

The monitoring plan should also be designed to satisfy the regulators that the key project risks are being monitored and addressed.

As part of the monitoring plan, applicants should include the following information to satisfy the monitoring requirements (item 6 of Schedule 2 of the GHG Regulations) and reporting requirements (refer to the RMA Regulations).

Measurement

The monitoring plan should include details on the measuring or estimation of the quantities and composition of the GHG substance injected into the formation(s). Regulations 9.19 to 9.22 of the RMA Regulations cover reporting requirements around the quantities and composition of GHG substances injected into the formation(s).

The following points on the measurement of GHG substances should be based on good oil field practice:

- proposed approaches for verifying the accuracy of the measurement or estimation of the quantities of the GHG substance injected into the formation and the water that has been produced or injected;
- standards or codes of practice for metering equipment;
- proposed procedures to be used for measuring the GHG substance for reporting or compliance monitoring purposes;
- measures to verify the composition of the GHG substance; and
- the injection pressure, temperature and flow rate at both the wellhead and at the base of the injection interval.

Monitoring plan – behaviour

A plan for monitoring the behaviour of greenhouse gas substances in the declared storage formation(s) set out in sufficient detail to demonstrate that:

- significant events in the reservoirs will be detected in a timely manner to enable any necessary mitigation and remediation activities to be initiated;
- the timing and nature of the monitoring will detect any variations from the predictions set out in Part A of the site plan; and
- the monitoring plan is sufficient to monitor the behaviour of the GHG substances after injection operations cease.

Proposed substances for facilitating monitoring

Details (including concentration) of any substance that is proposed to be used to facilitate the monitoring of the behaviour of a greenhouse gas substance.

Events that could be reportable incidents

A description of each event in the behaviour of a GHG substance in the formation that, if it causes, or has the potential to cause, a **serious situation** (refer to section 379 of the OPGGS Act) to exist in relation to the formation, will be a reportable incident in relation to the formation, being events such as the following:

- a departure from a predicted migration pathway of a GHG substance; and
- a departure from a predicted migration rate of a GHG substance.

If the monitoring plan detects a reportable incident (Regulation 49 of the GHG Regulations) it will trigger the need for the licensee to notify and provide a report to the RCM in relation to the reportable incident.

Detecting and monitoring leakages

A program for detecting and monitoring leakage of GHG substances that could potentially occur during transport to the proposed injection formation; at the point of injection into the formation; and from a well bore (items 7 and 8 of Schedule 2 of the GHG Regulations). The program should enable early detection of leakages to enable action to be taken to remedy or mitigate the leakage as soon as practicable.

Site closure – monitoring

A plan for monitoring the behaviour of the GHG substances stored in the formation after the ceasing of operations for the injection of GHG substances into the formation.

Developing a monitoring plan

The monitoring plan is developed to ensure that any necessary mitigation and remediation activities can be initiated as soon as practicable, so that the RCM can be advised, and so action can be taken to remedy the situation in the event that any variation in the behaviour of the GHG substances as set out in the site plan or leakage of GHG substance occurs.

The monitoring plan should be based on industry best practice and should be comprehensive and dynamic and tailored to a site-specific risk assessment.

This site-based risk assessment, using tools such as a risk assessment matrix or the bow-tie methodology, should identify the various risks, evaluate potential impact of these risks and develop mitigation plans for safe long-term storage of GHG substances. The outcome of this risk assessment should drive the strategy of the monitoring plan. Major risks may include;

- unexpected GHG substance plume migration;
- reservoir architecture uncertainty and the impact on injectivity and storage capacity;
- integrity of injection, monitoring and legacy wells; and
- loss of containment from the overall project.

It is also expected that monitoring plans will incorporate planning for the evolution of monitoring technologies and best practice. It is expected that the first phases of the monitoring program will use proven technologies and that later phases may incorporate new or emerging technologies.

Applicants should note that the information on the monitoring plan provided in Part B of the site plan will reflect their best understanding at the time of the application and may need to be varied during the injection phase (both through titleholder triggered variations and the outcomes of site plan reviews) due to learnings from carrying out operations.

When developing a monitoring plan the following should be considered:

- baseline monitoring, including a pre-injection baseline data collection program, to establish the subsurface and environmental conditions prior to the injection of GHG substances.
- a comprehensive screening of existing, new or emerging monitoring technologies and justification for the monitoring technologies selected;
- resolution, accuracy, sampling frequency, reproducibility, spatial coverage, capability, response timing and detection limits of monitoring technologies;
- demonstration of a sufficient link between the monitoring plan and identified project risks, and any risk elimination or control measures that may be undertaken;
- steps taken to understand potential reasons for deviation from predicted behaviour and adaptive management to consider a range of corrective actions including recalibration of pre-injection modelling undertaken as part of the DoSF and requirements for additional data or monitoring if significant deviations occur; and
- plans for monitoring the behaviour of GHG substances stored in the formation after the ceasing of operations for the injection of GHG substances.

The above points should be considered when developing each part of the monitoring plan to meet regulatory requirements as outlined in the previous section.

Early engagement with NOPTA and NOPSEMA is strongly encouraged when developing a monitoring plan.

When are monitoring plans reviewed?

The approved site plan, including the monitoring plan, must, at least once in each period of 5 years during which it is in force, be reviewed (regulations 36 to 38 of the GHG Regulations). The review cycle should be linked to the planned GHG plume migration with, where applicable, any significant deviation from the modelled behaviour triggering a review of the site plan. The review must take into account:

- the experience gained about the predictions of behaviour made in Part A of the Site Plan, experience from carrying out the operations authorised by the licence and the monitoring of migration pathways; and
- the following plans and programs set out in Part B of the site plan
    - the plan for monitoring the behaviour of greenhouse gas substances stored in the formation;
    - the program for detecting and monitoring leakages of greenhouse gas substances during transport and injection;
    - the program for detecting and monitoring leakages of greenhouse gas substances from well bores;
    - the plan for carrying out any work that is required to remediate the formation; and
    - the evolution of industry best practice;

New or emerging technologies that could be used as part of the monitoring plan should also be considered in the reviews.

Reviews can also be requested by the RCM if any of the following apply:

- the licensee applies, under section 313 of the OPGGS Act, for a variation of the declaration under section 312 or section 312A of the OPGGS Act (as applicable) in relation to the formation;
- the licensee applies, under section 374 or section 374A of the OPGGS Act (as applicable), for a variation of a matter specified in the licence;
- a reportable incident in relation to the formation occurs.

If the outcome of the review leads the licensee or the RCM to conclude the site plan (and/or monitoring plan) should be varied, a draft variation must be provided to the RCM within 180 days (or other period specified by the RCM).

More information

If you have any specific questions, please contact ghg@nopta.gov.au.

Please note: *this document is intended as a guide only. It is subject to, and does not replace or amend the requirements of, the Offshore Petroleum and Greenhouse Gas Storage Act 2006 and associated regulations, which should be read in conjunction with this guideline. It should not be relied on as legal advice or regarded as a substitute for legal advice in individual cases.*

Version history

Version	Date	Comment
1.0	XX/XX/2024	New GHG fact sheet

s22

From: CCSReview <CCSReview@industry.gov.au>
Sent: Wednesday, 7 August 2024 11:17 AM
To: s22
Subject: For action 13/08 Agenda for Offshore CCS Review Industry Working Group [SEC=~~OFFICIAL~~]

HI s22

The Offshore CCS Review Industry Working Group Meeting will be taking place on the 5th September in person, as per your suggestion.

I just wanted to check if there are any topics industry would like us to consider adding to the agenda for that meeting?
We have set aside an hour for the agenda but can be flexible with additional time if needed.

Happy to discuss.

Kind regards,

Review of the Offshore CCS Regime
Oil and Gas Division | Offshore Strategy Branch
Ngunnawal Country, Industry House, 10 Binara Street, Canberra ACT 2601 Australia
Department of Industry, Science and Resources
E s47E(d) @industry.gov.au

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We Acknowledge First Nations Peoples as the Traditional Custodians and Lore Keepers of the oldest living culture and pay respects to their Elders past and present. We extend that respect to all First Nations Peoples.

~~OFFICIAL~~

s22

From: CCSReview <CCSReview@industry.gov.au>
Sent: Tuesday, 13 August 2024 1:26 PM
To: s22
Cc: s22 ; s22
Subject: RE: Extension request - Offshore CCS Review July 2024 - Industry Meeting Presentation & Qs List [SEC=~~OFFICIAL~~]

Hi s22

Apologies for missing your email, s22 and s22 are on leave.

A week extension for a final cutoff date of **28/08** is fine. We can't extend any later than that as we will need time to analyse the feedback for the industry meeting.

Happy to discuss.

Kind regards,

s22 **(he/him)**

Oil and Gas Division | Offshore Carbon Capture and Storage Review
Ngunnawal Country, Industry House, 10 Binara Street, (GPO Box 2013) Canberra ACT 2601 Australia
Department of Industry, Science and Resources
P s22 | s22 | **E** s22 @industry.gov.au

| **industry.**gov.au ABN 74 599 608 295

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~~OFFICIAL~~

From: s22 <s22 @energyproducers.au>
Sent: Tuesday, August 13, 2024 12:21 PM

To: CCSReview <CCSReview@industry.gov.au>
Subject: RE: Extension request - Offshore CCS Review July 2024 - Industry Meeting Presentation & Qs List

Hello CCS Review team

Just chasing to see if someone on the team can support an extension request for the below.

Cheers
s22

s22
s 22
M +s22 **E** s 22
energyproducers.au

From: s22
Sent: Tuesday, August 13, 2024 10:18 AM
To: s22 @industry.gov.au; s22 <s22 @industry.gov.au>
Subject: Extension request - Offshore CCS Review July 2024 - Industry Meeting Presentation & Qs List

Hello s22 and s22

My name is s22 and I support s22 at Australian Energy Producers on the Offshore CCS Review Industry Working Group.

Our members are seeking additional time to submit their responses to the questions posed at the July meeting. They are having to coordinate across a few internal areas to provide comprehensive feedback.

Are we able to have a week extension?

Happy to discuss if it's easier.

Kind regards
s22

s22
s 22
M +s22 **E** s 22
energyproducers.au

nation and the continuation of cultural, spiritual and educational practices of Aboriginal and Torres Strait Islander peoples.

s22

From: CCSReview <CCSReview@industry.gov.au>
Sent: Wednesday, 14 August 2024 11:17 AM
To: CCSReview; s 22 ; s 22
s 22 s 22 ; s 22
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s 22 s 22 @ecodev.vic.gov.au;
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s22 @ecodev.vic.gov.au; s22 @dcceew.gov.au; s22 ;
s22 ; s22 ; s22 @ecodev.vic.gov.au;
s22 @dcceew.gov.au; s 22 ; s22 ; s22
; s22 ; s22 @nopsema.gov.au; s22 ;
s22 ; s22 @nopsema.gov.au; s 22
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s22 ; s22 ; s 22 s22 ;
s 22 ; s22 @dcceew.gov.au;
s22 @dcceew.gov.au; s22 ; s22 @dcceew.gov.au;
s 22
s22 @ecodev.vic.gov.au; s 22 ; s22
- NOPTA; s22 ; s22 - NOPTA; s22 ; s22
; s22 @dcceew.gov.au
Subject: RE: For action: Offshore CCS Review July Industry Meeting Presentation & Qs List [SEC=~~OFFICIAL~~]
Attachments: 20240716 CCS Industry Consultation Group Presentation.pdf; NOPTA Draft Fact Sheet Risk Assessment.pdf; NOPTA Draft Fact Sheet Significant Risk of Significant Adverse Impact.pdf; NOPTA Draft Fact Sheet Monitoring Plan.pdf; NOPTA Draft Fact Sheet GHG Injection Licence and Site Plan Application.pdf

Hi all,

Thanks for attending the last Offshore CCS Review Industry Consultation Group Meeting.

As a reminder can you please provide your feedback by no later than **28/08/2024**

Site Plan – slide 34 Qs
As with previous phases, welcome feedback in the same timeframe on the Site Plan questions and any other additional considerations for approvals at this phase.

NOPTA Factsheets
As discussed, welcome industry feedback on these factsheets (**attached**) and any other additional considerations they need to include. Please send your factsheet feedback to **both** CCSReview@industry.gov.au and ghg@nopta.gov.au

If you have any queries, please don't hesitate to reach out to the team at CCSReview@industry.gov.au 😊

Kind regards,

Review of the Offshore CCS Regime

Oil and Gas Division | Offshore Strategy Branch
Ngunnawal Country, Industry House, 10 Binara Street, Canberra ACT 2601 Australia
Department of Industry, Science and Resources
E s47E(d) @industry.gov.au

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From: CSSReview
Sent: Wednesday, July 24, 2024 11:23 AM
To: s22 s 22 s22 s 22 ; s22 ' s 22 ; s22 (s22 s 22 ; s22 s 22 s22 s 22 ; s22 s 22 s22 s 22 ; s22 (DJSIR) <s22 @ecodev.vic.gov.au>; s22 s 22 s 22 s22 s 22 >; s22 s 22 s 22 s 22
Cc: s22 <s22 @nopta.gov.au>; s22 <s22 @nopta.gov.au>; s22 <s22 @nopta.gov.au>; s22 <s22 @nopta.gov.au>; s22 <s22 @nopsema.gov.au>; s22 <s22 @nopsema.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @dcceew.gov.au>; s22 <s22 @dcceew.gov.au>; s22 <s22 @dcceew.gov.au>; s22 <s22 @dcceew.gov.au>; s22 <s22 @dcceew.gov.au>; s22 s 22 s22 (s22) s 22 s22 s 22 ; s 22 ; s22 <s22 @industry.gov.au>; s22 (DJSIR) <s22 @ecodev.vic.gov.au>; s22 <s22 @nopsema.gov.au>; s22 @ecodev.vic.gov.au; s22 - NOPTA <s22 @nopta.gov.au>; s22 - NOPTA <s22 @nopta.gov.au>; RCA@energise-renewables.com; s22 s 22 ; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 s 22 ; s22 (DJSIR) <s22 @ecodev.vic.gov.au>; s22 <s22 @dcceew.gov.au>; s22 <s22 @industry.gov.au>; s22 @dcceew.gov.au' <s22 @dcceew.gov.au>
Subject: For action: Offshore CCS Review July Industry Meeting Presentation & Qs List [SEC=~~OFFICIAL~~]

Hi all,

Thanks for attending the last Offshore CCS Review Industry Consultation Group Meeting.

As discussed, please find the presentation attached for the relevant information.

We are hoping to get this round of feedback by **21/08/2024** .

Site Plan – slide 34 Qs
As with previous phases, welcome feedback in the same timeframe on the Site Plan questions and any other additional considerations for approvals at this phase.

NOPTA Factsheets
As discussed, welcome industry feedback on these factsheets (**attached**) and any other additional considerations they need to include. Please send your factsheet feedback to **both** CCSReview@industry.gov.au and ghg@nopta.gov.au

If you have any queries, please don't hesitate to reach out to the team at CCSReview@industry.gov.au 😊

Kind regards,

Review of the Offshore CCS Regime
Oil and Gas Division | Offshore Strategy Branch
Ngunnawal Country, Industry House, 10 Binara Street, Canberra ACT 2601 Australia
Department of Industry, Science and Resources
E s47E(d) @industry.gov.au

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~~OFFICIAL~~

s22

From: s22 s 22
Sent: Tuesday, 16 January 2024 11:16 AM
To: s22
Cc: s22 ; s22 ; s22 ; s22 ; Offshore Environmental Management Review
Subject: RE: Proposed Meeting - DISR/Australian Energy Producers - Clarifying consultation requirements for offshore petroleum and greenhouse gas storage regulatory approvals [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Hi s22 that should be fine. s22 is on leave this week but I expect he will join me. I'll confirm attendees but most likely it will just be s22 and me.

From: s22 <s22 @industry.gov.au>
Sent: Tuesday, January 16, 2024 11:12 AM
To: s22 s 22
Cc: s22 s 22 s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; Offshore Environmental Management Review <EnvironmentalReview@industry.gov.au>
Subject: Proposed Meeting - DISR/Australian Energy Producers - Clarifying consultation requirements for offshore petroleum and greenhouse gas storage regulatory approvals [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Good Morning s22

I hope you are well and thank you for your time on the phone yesterday.

The government released a consultation paper on 12 January 2024 regarding clarifying the consultation requirements for offshore petroleum and greenhouse gas storage regulatory approvals. We are seeking feedback on the consultation process for offshore resources activities in Commonwealth waters and on your members experiences and feedback on consultation process.

As we discussed, DISR will have officials in Perth 29-31 January for meetings regarding the consultation paper, including our Head of Division, s22 . We would be very interested in meeting with you and your colleagues to discuss the paper further.

We currently have availability for a 45 minute meeting on Wednesday 31 January, 8.30-9.15am AWST, at our Perth office at Level 7, 12-14 The Esplanade, Perth, WA 6000.

If you could please confirm whether this time suits and if so advise the number of people and who will be attending. Once confirmed, we will send a diary invite through.

We look forward to meeting with you to discuss the paper and your feedback.

s22
Manager

Oil & Gas Division | Offshore Strategy Branch | Cross Government Policy
Ngunnawal Country, 10 Binara Street (GPO Box 2013) Canberra ACT 2601 Australia
Department of Industry, Science and Resources
P s22 | **M** s22 | **E** s22 @industry.gov.au

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~~OFFICIAL~~

s22

From: s22 s 22
Sent: Friday, 12 January 2024 3:36 PM
To: s22
Subject: RE: Consultation Paper - Clarifying consultation requirements for offshore petroleum and greenhouse gas storage regulatory approvals [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

CAUTION - This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Great. We should a have a court decision on the Barossa case by then, too.

From: s22 <s22 @industry.gov.au>
Sent: Friday, January 12, 2024 3:34 PM
To: s22 s 22
Cc: s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Subject: RE: Consultation Paper - Clarifying consultation requirements for offshore petroleum and greenhouse gas storage regulatory approvals [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Thanks s22 – 11-11.30am works for me. Will send a teams invite.

s22

s22
A/g General Manager
Oil and Gas Division | Offshore Strategy Branch
P s22 | **M** s22

~~OFFICIAL~~

From: s22 s 22
Sent: Friday, 12 January 2024 3:33 PM
To: s22 <s22 @industry.gov.au>
Cc: s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Subject: RE: Consultation Paper - Clarifying consultation requirements for offshore petroleum and greenhouse gas storage regulatory approvals [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

CAUTION - This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi s22, thanks for getting in touch, and I've just read the discussion paper. We have welcomed it with a media release we just issued – attached.

A catch up on Monday would be good – how does 11am work for you?

From: s22 <s22 @industry.gov.au>
Sent: Friday, January 12, 2024 3:30 PM
To: s22 s 22
Cc: s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Subject: Consultation Paper - Clarifying consultation requirements for offshore petroleum and greenhouse gas storage regulatory approvals [SEC~~=OFFICIAL~~]

~~OFFICIAL~~

Good Afternoon s22

I hope you had a good break.

The department has today released a consultation paper on clarifying the consultation requirements for offshore petroleum and greenhouse gas regulatory approvals.

The paper is seeking views from people, organisations, local communities, Traditional Owners, First Nations communities and the offshore resources industry on their experiences with consultation under the current Offshore Environment Regulations. We also invite ideas and suggestions to improve the clarity of the consultation requirements offshore petroleum and greenhouse gas storage activities.

This consultation paper is the first opportunity to provide comments on whether the current consultation process for offshore resources activities is working and whether it could be improved. We are accepting comments on this paper from 12 January 2024 to 23 February 2024.

This paper is part of a broader review of the offshore environmental management framework for offshore resources activities. Additional public consultation opportunities will be available over the course of the review, including on any proposed regulatory amendments.

We will be undertaking targeted stakeholder engagement as part of the consultation process, with meetings to be scheduled in Perth and Melbourne the week of 29 January 2024. If you have time on Monday, it would be good to meet and discuss the consultation sessions.

A copy of the paper is available at: https://consult.industry.gov.au/offshore-petroleum-consultation-requirements

Further information on the Offshore Environment Management Review is available at: https://www.industry.gov.au/mining-oil-and-gas/oil-and-gas/offshore-oil-and-gas/offshore-petroleum-and-greenhouse-gas-storage-environmental-management-review

s22
A/g General Manager

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Ngunnawal Country, 10 Binara Street (GPO Box 2013) Canberra ACT 2601 Australia
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To: s22
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s22

From: s22
Sent: Friday, 12 January 2024 3:34 PM
To: 's22 '
Cc: s22 ; s22 ; s22
Subject: RE: Consultation Paper - Clarifying consultation requirements for offshore petroleum and greenhouse gas storage regulatory approvals [SEC=~~OFFICIAL~~]

Thanks s22 – 11-11.30am works for me. s22 send a teams invite.

s22

s22
A/g General Manager
Oil and Gas Division | Offshore Strategy Branch
P s22 | **M** s22

~~OFFICIAL~~

From: s22 s 22
Sent: Friday, 12 January 2024 3:33 PM
To: s22 <s22 @industry.gov.au>
Cc: s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Subject: RE: Consultation Paper - Clarifying consultation requirements for offshore petroleum and greenhouse gas storage regulatory approvals [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Hi s22 thanks for getting in touch, and I've just read the discussion paper. We have welcomed it with a media release we just issued – attached.

A catch up on Monday would be good – how does 11am work for you?

From: s22 <s22 @industry.gov.au>
Sent: Friday, January 12, 2024 3:30 PM
To: s22 s 22
Cc: s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
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~~OFFICIAL~~

s22

From: s22
Sent: Tuesday, 16 January 2024 11:12 AM
To: 's22 '
Cc: 's22 '; s22 ; s22 ; s22 ; Offshore Environmental Management Review
Subject: Proposed Meeting - DISR/Australian Energy Producers - Clarifying consultation requirements for offshore petroleum and greenhouse gas storage regulatory approvals [SEC=~~OFFICIAL~~]

Good Morning s22

I hope you are well and thank you for your time on the phone yesterday.

The government released a consultation paper on 12 January 2024 regarding clarifying the consultation requirements for offshore petroleum and greenhouse gas storage regulatory approvals. We are seeking feedback on the consultation process for offshore resources activities in Commonwealth waters and on your members experiences and feedback on consultation process.

As we discussed, DISR will have officials in Perth 29-31 January for meetings regarding the consultation paper, including our Head of Division, Robert Jeremenko. We would be very interested in meeting with you and your colleagues to discuss the paper further.

We currently have availability for a 45 minute meeting on Wednesday 31 January, 8.30-9.15am AWST, at our Perth office at Level 7, 12-14 The Esplanade, Perth, WA 6000.

If you could please confirm whether this time suits and if so advise the number of people and who will be attending. Once confirmed, we will send a diary invite through.

We look forward to meeting with you to discuss the paper and your feedback.

s22
Manager

Oil & Gas Division | Offshore Strategy Branch | Cross Government Policy
Ngunnawal Country, 10 Binara Street (GPO Box 2013) Canberra ACT 2601 Australia
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s22

From: s22
Sent: Monday, 8 July 2024 2:54 PM
To: s22
Subject: FW: ROCCSR Titleholders Questions [SEC=~~OFFICIAL~~]
Attachments: 240515 AEP Feedback on Select considerations in 2024 - FINAL.pdf

~~OFFICIAL~~

~~OFFICIAL~~

From: s22 s 22
Sent: Wednesday, May 15, 2024 2:34 PM
To: s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Cc: ROCCSR <s47E(d) @industry.gov.au>
Subject: RE: ROCCSR Titleholders Questions [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

CAUTION - This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi s22 and s22

Please see attached feedback from the Australian Energy Producers on the 'Select' phase questions as well as additional feedback on the 'Identify & Assess' phase.

Sorry that this is late – there is a lot going on at the moment!

s22

From: s22 <s22 @industry.gov.au>
Sent: Monday, April 22, 2024 12:01 PM
To: s22 s 22 s22 <s22 @industry.gov.au>
Cc: ROCCSR <s47E(d) @industry.gov.au>
Subject: RE: ROCCSR Titleholders Questions [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Hi s22

Thanks for the email – more than happy for it to be 10th. I understand that there's a lot happening right now and as our process is more iterative, we will continue to refine our work as we work through it.

On another note, just checking in that AEP is happy to make the necessary arrangements for a meeting room booking etc for the next titleholders meeting at the conference? We will need VC facilities as not everyone will be there in person.

Thanks

s22

From: s22 s 22
Sent: Monday, April 22, 2024 10:08 AM
To: s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Cc: ROCCSR <s47E(d) @industry.gov.au>
Subject: FW: ROCCSR Titleholders Questions [SEC=~~OFFICIAL~~]

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Hi s22 and s22

With the GHG Injection Guidelines comments due on the 2 May (along with he Electricity & Energy Sector Plan around the same time), I think we will find it difficult to get back to you by the 3 May.

Could we instead aim for the 10 May? That is then still a week before conference.

Thanks,

s22

From: ROCCSR <s47E(d) @industry.gov.au>
Sent: Friday, April 19, 2024 1:59 PM
To: s22 s22 @dcceew.gov.au>; s22 s22 @dcceew.gov.au>; s22 s22 @dcceew.gov.au>; s22 @dcceew.gov.au; s22 s 22 ; s22 s 22 ; s22 s 22 ; s22 s 22 s22 s 22 ; s22 s 22 ; s22 <s22 @nopta.gov.au>; s22 s 22 s22 s 22 >; s22 <s22 @nopta.gov.au>; s22 <s22 @nopta.gov.au>; s22 <s22 @nopsema.gov.au>; s22 (DJSIR) <s22 @ecodev.vic.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 s 22
Cc: ROCCSR <s47E(d) @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @nopsema.gov.au>; s22 s 22 s22 s 22 ; s22 s 22 ; s22 s 22 s22 <s22 @industry.gov.au>; s 22 <s22 @santos.com>; s22 <s22 @nopsema.gov.au>; s22 @ecodev.vic.gov.au; s22 <s22 @dcceew.gov.au>; s22 <s22 @dcceew.gov.au>; s22 s 22 ; s22 <s22 @dcceew.gov.au>; s22 <s22 @dcceew.gov.au>; s22 s 22 s22 (s22 s 22 ; s22 s 22 >; s22 <s22 @dcceew.gov.au>; s22 s 22 ; s22 <s22 @industry.gov.au>; s22 (DJSIR) <s22 @ecodev.vic.gov.au>;

s22 @ecodev.vic.gov.au; s22 NOPTA <s22 @nopta.gov.au>; s22 - NOPTA <s22 @nopta.gov.au>; RCA@energise-renewables.com; s22 s 22 ; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 s 22 ; s22 (DJSIR) <s22 @ecodev.vic.gov.au>; s22 s22 @dcceew.gov.au>; s22 <s22 @nopta.gov.au>; Boonaroo <s47E(d) @nopta.gov.au>; s22 <s22 @industry.gov.au>

Subject: ROCCSR Titleholders Questions [SEC~~=OFFICIAL]~~

~~OFFICIAL~~

HI all,

Thank you for your continued participation and insights as part of the ROCCSR Titleholders Group.

As discussed, in the last Titleholders meeting we have follow up questions for the Identify and Assess phase as well as introductory questions for the Select phase, we would like your feedback on by **3/05.**

Your responses to these questions will enable us to better understand the industry perspective when it comes to the legislation.

The most recent Titleholder meeting presentation has also been attached as a helpful refresher for what was covered.

Kind regards,

Review of the Offshore CCS Regime (ROCCSR)
Oil and Gas Division | Offshore Strategy Branch
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Department of Industry, Science and Resources
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SELECT PHASE AND IDENTIFY & ASSESS PHASE | *FEEDBACK AND FOLLOW UP*

Australian Energy Producers | 15 May 2024

Australian Energy Producers welcomes the opportunity to input into the Select phase considerations in 2024, as well as to provide additional input into the Identify & Select phase follow up questions.

Select phase | *Feedback*

OVERALL QUESTIONS

Are there any changes in industry dynamics or regulatory drivers since 2008 which have a specific impact on approvals at this phase? And how should these be factored into the OPGGS Act and regulations?

The changes to the industry dynamics and regulatory drivers since 2008 that were outlined in response to the Identify & Select phase also apply to the Select phase. In particular, the importance of CCS is far better known and the roll-out of the technology has advanced significantly globally and in Australia. Further, policy drivers around emissions reductions have progressed significantly, including with the reforms to the Safeguard Mechanism. Policy support for CCS has increased significantly around the world, although less so in Australia. In line with these changes, we have also seen strengthening of the social expectations around emissions reductions.

To accommodate the increasing impetus for deep emissions reductions, increased consideration needs to be given to the regulation to transition petroleum assets into greenhouse gas (GHG) storage assets, as well as how the '*as low as reasonably practicable*' (ALARP) principles apply across the lifecycle of GHG facilities. In addition, regulatory approvals such as the Declaration of Storage Formation (DoSF), Greenhouse Gas Injection Licence (GHG IL) and Site plan need to support phasing/project growth and avoid being 'fixed' and unable to accommodate changes that can support corporate decarbonisation efforts and that of Australia and its trading partners.

DECLARATION OF STORAGE FORMATIONS

What are the pros and cons of the DoSF process and requirements?

'*Pros*' of the DoSF process and requirements include:

- Having a process is in place which supports commercial project development.
- The majority of the requirements for a DoSF application are clearly laid out in the DoSF Guidelines (particularly Appendix A).
- Pre-submission engagement with National Offshore Petroleum Titles Administrator (NOPTA) and National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) is helpful.

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contact@energyproducers.au
Australian Energy Producers Limited

- Flexibility to alter and revise the DoSF is appreciated, both during application, and in the Site Plan submission

'*Cons*' of the DoSF process and requirements include:

- There is currently uncertainty around how ALARP will be determined and implemented for GHG storage given limited precedence in the area. There is a risk of this potentially leading to a tendency towards excessive conservatism which could directly compromise commerciality/viability of projects.
- There is no pathway to consolidate DoSFs across boundaries of multiple Greenhouse Gas Injection Licences (GHG ILs) or Greenhouse Gas Assessment Permits (GHG AP) potentially resulting in underutilisation of assets. More specifically:
    - There is no pathway to consolidate adjacent GHG ILs or to provide for unitisation similar to what is seen in the petroleum context;
    - There is no pathway to apply for a DoSF and GHG IL across adjacent production licences;
    - There is no pathway for a holder of adjacent GHG IL and GHG AP to apply to extend the area of the storage formation covered by the GHG IL to include an area covered by the GHG AP;
    - Where a GHG IL has already been issued, there is no pathway to seek to extend licence area to include additional blocks from the GHG AP where such blocks could support an enlarged storage formation (in some cases the area covered by the vacant blocks may only be useable as a storage formation as part of an extension of the existing storage formation within the GHG IL area).
- There is limited scope for injection point flexibility across a DoSF, site plan and GHG IL potentially resulting in the requirement for excessive variations/revisions and in-turn the delaying of project development. For example, a base case injection plan, with clear path to alternative injection points should be acceptable provided that spatial extent of the plume is demonstrated to be very similar across the different scenarios.
- Clarification is required on a number of aspects related to Fundamental suitability determinants such as:
    - "the amount of GHG substance that may be stored" is difficult to plan for in Select phase, and may limit flexibility if source is tentative. Consider further defining it as maximum storage capacity for the subsurface formation.
    - Be clear on expectation around numerical ranges
    - Clarify if a phased approach is allowed and how this should be presented in the DoSF e.g., fundamental suitability determinants for each phase?
- Consider a CCS hub that is phased in terms of their injectivity capacity. Most hubs will start at smaller volumes e.g. 5 million tonnes CO_2 per annum (Mpta), and then may increase capacity over time e.g. 20 Mtpa.
    - DoSF is based on a footprint area.

- The first 1-2 wells may collect enough data to support a 5 Mpta development footprint with high confidence, but the data may also support a possible expansion up to 20Mtpa with much lower confidence.
- More appraisal over time will increase the confidence of the data and the expansion development potential.

How do we reconcile the need to submit a DoSF and GHG IL for the largest development case (20Mtpa) to secure the maximum footprint, with the uncertainty of the data and the possibility of phasing the development in smaller stages?

The ability to modify a DoSF as more data is collected would be useful and reduce the administrative burden of having to amend approvals on both the regulator and project proponent.

- Within the DoSF, in the context of engineering enhancements, it states that operator must "demonstrate that any risks to the integrity of the storage formation are likely to be acceptable" and "Must provide sufficient detail about any proposed engineering enhancements"
  - A definition of "likely" is required. Making a recommendation on engineering enhancements (i.e. sufficient detail) at the DoSF stage is difficult and could lead to additional costs or adjustments required an assessment of the risks and potential mitigation is a good outcome.
- Further clarification for later stage (GHG IL) assessment should consider:
  - Criteria for legacy wells risk needs to be specific. However, it must also leave room for understanding the magnitude of the risk as it pertains to actual leakage of CO_2. i.e. What is the real risk to the environment of CO_2 leaking? A loss of containment of CO_2 is not analogous to a hydrogen carbon loss of containment, with an expectation that the environmental impact of CO2 will be significantly lower.
  - Abandoned wells that have been signed off by the regulator should be considered in a more practical sense, based on whether there will be a 'true adverse environmental impact' if the two barrier standard is not in place for legacy wells.
  - There is a risk that setting a precedent that projects may require significant investment to remediate prior to injection risks potential to stopping projects, when a robust monitoring & contingency plan may be more relevant, effective, while allowing projects to proceed.
- There is limited/no consideration for transition of permissions for infrastructure covered under a GHG AP that subsequently becomes covered under a GHG IL which leaves uncertainty.

What are the challenges faced in addressing approval requirements at this phase?

See the '*Cons*' listed above.

Also, there needs to be additional clarity on terms and definitions, as well as on establishing precedence.

What could be improved in the OPGGS Act and regulations to address these challenges for future projects?

Areas where the OPGGS Act and regulations could be improved to address these challenges, includes:

- Defining "*permanent storage*" in a way that is practical and pragmatic, defining seeps that are below limits of detection/do not have meaningful impact as acceptable. Alternatively, "*leakage*" could be defined as is a detectable, meaningful amount.
- Identifying agreed methods for defining a high confidence basis (e.g. probability of occurrence >10%) for aspects such as migration pathways, etc.
- Enabling consolidation of DoSFs across GHG IL or GHG AP/GHG IL boundaries where this is in the public interest.
- Enabling flexibility in definition of "Spatial Extent of the Storage Formation" to ensure potential 'buffer' graticular blocks can be captured to avoid subsequent requirement for variation of DoSF.
- Enabling flexibility for injection points where it can be demonstrated that the spatial extent of the plume is similar across the different scenarios.
- Clarity on how when a variation to either a DoSF or GHG IL/ Site plan requires a variation of the other.

GHG HOLDING LEASES

What are the pros and cons of the GHG holding lease framework?

There are currently no guidelines for GHG holding leases. While a DoSF is required for a holding lease there should also be line of site (when converting from a retention licence) to how the overlying petroleum permit will be the primary input into the injection – a DoSF does not currently stipulate this.

The timeframe for assessment and decision for a GHG holding lease application is unclear.

What supporting information is required for GHG holding lease application, including work program against lease, is unclear.

Are the different categories of holding lease fit-for-purpose in 2024?

No comment at this stage.

Are there opportunities to streamline and simplify these categories?

No comment at this stage.

Are there particular issues and concepts which would need clarification in future guidance on Holding Leases?

Clarification of the process to relinquish unwanted blocks in GHG AP when moving to a holding lease.

Identify & Assess phase | *Follow up questions*

PRE-CURSOR PERMITS

Are there any aspects of international or domestic state mineral and resources tenement regimes for exploration permits that you think should be considered in the OPGGS Act framework for GHG assessment permits?

Australian Energy Producers is not familiar enough with these regimes to comment.

It would be of value to review if there are any aspects of mineral/resource exploration permits /acreage awards that enable appraisal activities to be undertaken even after a production licence has been issued i.e. establish precedent that could support appraisal activities as part of a GHG AP being undertaken even after the GHG IL has been issued.

Are there particular international models or different approaches which could be considered in clarifying GHG assessment permit criteria around the "most deserving" applicant?

There are some good points raised as part of the House of Representatives Standing Committee on Primary Industries and Resources Inquiry into the draft Offshore Petroleum Amendment (Greenhouse Gas Storage) Bill in 2008 (LINK).

There are some approaches under the Offshore Electricity Infrastructure Act 2021 (OEI Act), that could be applicable, such as.

- An applicant must demonstrate they satisfy prescribed suitability and merit criteria in order to be granted a licence. The matters the Minister will consider when deciding whether to grant a licence includes:
    - Technical and financial capability of the applicant.
    - Likelihood the project will be viable.
    - Suitability of the applicant to hold a licence.
    - National interest.

  To be satisfied that the project is in the national interest, the Minister may consider the project's impact on the Australian economy and local communities, including regional development, job creation, Australian industries and the use of Australian goods and services. The national interest requirement also includes consideration of national

security, whether the project will be delivered in a reasonable timeframe, efficient use of the area, and mitigation of conflicts with other users of the area.

The United Kingdom (UK) Cluster Sequencing for CCUS process (LINK) establishes a criteria for track process eligibility includes:

- The transport and storage system must be located within the UK.
- The transport and storage system must be able to credibly demonstrate that it has a clear pathway to rates of injection consistent with the at least 10 Mtpa ambition by 2030.
- The transport and storage system must be able to credibly demonstrate that it can connect via pipeline to at least two projects for an initial phase of capture and non-pipeline transport in future phases.

Under the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) framework in the UK, a financial assessment is applied to assign a risk classification to a company (assessing each field on its own merits). While this is in order to determine level of security required, it could also be a consideration in terms of suitability of applicant.

Examples from World Bank/International lending criteria may also be applicable.

From industry perspective, do you think changes are required (if yes, why and what)?

There are a range of options which could be considered further to increase the flexibility of transitioning from a petroleum production licence to a GHG IL (such as options to combine adjacent licences, options to add individual blocks (to seek extension of the footprint) and changing requirements on the source of the injected stream of CO_2). Within the current legislation switching from a petroleum production licence to a GHG injection licence still confines the footprint to the graticular blocks of the production licence (and source of GHG substances), which may restrict the injection capacity downdip of the structure and the use of residual trapping mechanisms and additional pore space. It also restricts the ability to inject into secondary reservoirs if required.

Also consider ability for more than one GHG IL to 'use' the same graticular block (if no overlap of plume). The current restriction does not enable closely-spaced storage formations to be effectively used in the case where storage formations have different levels of technical maturity and cannot be included in a single GHG IL application.

What are the potential pros of different options for project proponents?

Different options are in the national interest:

- It is a better outcome for Australia if pore space potential is maximised (not restricted/underutilised due to artificial petroleum boundaries which do not reflect reservoir boundaries).
- Significantly reduce complexity/permitting uncertainty and therefore reduce timing to deliver projects and emissions reductions.

See additional comments under the DoSF heading above.

What are the potential cons of these different options for other users of the marine environment?

There is an issue with regards to defining materiality/de minimus. However, this is managed via other processes e.g. SROSAI, risk assessments.

The SROSAI tests need to ensure the interests of CCS and petroleum projects are appropriately balanced.

SIGNIFICANT RISK OF SIGNIFICANT ADVERSE IMPACT (SROSAI)

Are their particular elements of the SROSAI test which should be reconsidered in ensuring the interests of petroleum and GHG titleholders are adequately balanced?

It is currently unclear where offshore wind sits in terms of priorities/national interest. It would be of value to draw this out for clarity going forward.

Giving a complete answer is however difficult as there are currently no examples of a relevant SROSAI.

It would be valuable to see a generic case study / worked example of SROSAI in action, perhaps in a guideline or fact sheet (especially in relation to the calculation required).

What particular matters do you think need to be considered in currently discretionary terms under the OPGGS Act such as "the public interest"?

There is a risk this clause could be misused (e.g. due to activist pressure, per GHG IL Guidelines feedback). The contribution of the project to overall GHG reduction (incl. rate/pace of deployment) could be a means of preventing this. Also adding in deployment of sources of hydrogen from 'fossil fuel' sources to include coal and gas, and commercialisation of low emissions fuels.

Definition of "the public interest" should include - global energy security, such as:

- Enabling reservoir emissions abatement from hydrocarbon production facilities
- Sequestration of emissions from industrial facilities

Need to understand if there is any consideration of assurances and applications already obtained through petroleum regime (e.g. Key Greenhouse Gas Operations (KGOs) and SROSAI)

There is a need to reconsider whether the current application of KGOs is fit for purpose in 2024

KEY GREENHOUSE GAS OPERATIONS (KGOS)

Are their activities other than "operations to make a well" which industry can see as having the potential for a SROSAI?

No comment at this stage.

What parameters do you think should be placed around the meaning of "an operation to make a well".

The definition should distinguish between new vs existing (workover, remediation) activities, as well as vicinity to sensitive areas.

s22

From: s22 s 22
Sent: Tuesday, 9 April 2024 3:28 PM
To: s22
Cc: s22 ; CCSReview; s22 ; s22 ; s22 ; s22 s22
Subject: RE: CCS Titleholders Consultation meeting | 18 April 2024 [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

CAUTION - This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi s22

Great minds…

Looks like we are very much aligned regarding the 18 April meeting. Happy with the reshuffled schedule and the additional agenda items.

Happy also with the Future meetings agenda items. We are really keen to agree a line-of-sight on topics we will be discussing so we can do some preparatory work and take some load off DISR and the team, where at all possible.

Regarding our 'Identify & Assess' feedback, this is a collective submission on behalf of the Australian Energy Producers' members of the CCS Titleholders Consultation Group.

Regards,

s22

From: s22 <s22 @industry.gov.au>
Sent: Tuesday, April 9, 2024 3:19 PM
To: s22 s 22 u>
Cc: s22 <s22 @industry.gov.au>; ROCCSR <s47E(d) @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Subject: RE: CCS Titleholders Consultation meeting | 18 April 2024 [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Hi s22

Thanks for your email – you must have read my mind as I was about to email you too to send out the proposed agenda!

We are very much aligned in our thinking already (see below).

1. Welcome, introductions & apologies	2pm – 2:05pm	s22
2. Review last meeting minutes and action list	2:05pm – 2:10pm	s22
3. Sea Dumping Permit Application and Interim National Action List – update	2:10pm – 2:30pm	s22 /s22
4. EPBC Act – accreditation of NOPSEMA for GHG activities – update	2:30pm – 2:40pm	s22 /s22
5. Intersections between OPGGSA and Sea Dumping Act: existing legislative barriers and status update for work underway – update	2:40pm – 2:50pm	s22
6. 'Identify & Assess' phase approvals under the OPGGSA (incl. GHG Assessment Permit, Key GHG Operations) – update on feedback from last meeting	2:25pm – 2:35pm	s22
7. 'Select' phase approvals under the OPGGSA (including Declaration of Storage Formation) – for discussion	2:35pm – 3:40pm	s22 / All
8. Future meeting topics – for discussion	3:40pm – 3:50pm	All
9. Any other business/next meeting/next steps	3:50pm – 4:00pm	All
10. Close	4:00pm	s22

The order is different however to allow DCCEEW colleagues the opportunity to leave the meeting after discussing their area of work.

I have also included an agenda item to discuss future meeting topics – noting that there will be a caveat on this as future meeting content will be dependent on where the policy work is currently at with the different work stream owners at that point in time.

I have also reduced the time for discussion in respect to feedback received on the 'identify and assess phase' as to date I have only received two submissions (one is confidential and one is from AEP) and government will need time to consider the appropriate policy position and formulate recommendations accordingly. Can you confirm whether AEP's submission is just AEP's consideration or whether it represents the intent and views of the broader CCS Titleholders membership group?

Many thanks

s22

~~OFFICIAL~~

From: s22 s 22
Sent: Tuesday, April 9, 2024 1:45 PM
To: s22 <s22 @industry.gov.au>
Cc: s22 <s22 @industry.gov.au>
Subject: CCS Titleholders Consultation meeting | 18 April 2024

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Hi s22

In preparation for the CCS Titleholders Consultation meeting next week, Australian Energy Producers have prepared the following proposed agenda:

1. Welcome, introductions & apologies	2pm – 2:05pm	s22
2. Review last meeting minutes and action list	2:05pm – 2:10pm	s22
3. Review of comments provided on Identify & Assess' phase	2:10pm – 2:50pm	AEP/All
4. 'Select' phase approvals under the OPGGSA	2:50pm – 3:20pm	TBA/All
5. Sea Dumping Act & National Action List	3:20pm – 3:40pm	DCCEEW/AEP
6. Map topics for discussion for 2024 ROCCSR meetings, to allow preparation of input e.g. MMV review	3:40pm – 3:55pm	s22 /All
7. Any other business/next meeting/next steps	3:55pm – 4:00pm	All
8. Close	4:00pm	s22

We have prepared the agenda in line with the plan to work through the approvals process in line with the project lifecyle, with the 'Select' phase next up (Item 4). We would however take your guidance on whether it is appropriate to start consideration of this phase at the next meeting or whether it would be best addressed at a future meeting.

Other than that, we hope the rest of the agenda makes sense. Happy to discuss though if you have any comments/amendments to what is proposed.

Regards,

s22

s22
s 22

M s22 E s 22
energyproducers.au

Australian Energy Producers acknowledges and pays respect to the past and present Traditional Custodians and Elders of this nation and the continuation of cultural, spiritual and educational practices of Aboriginal and Torres Strait Islander peoples.

s22

From: s22 s 22
Sent: Wednesday, 15 May 2024 2:34 PM
To: s22 ; s22
Cc: CCSReview
Subject: RE: ROCCSR Titleholders Questions [SEC=~~OFFICIAL~~]
Attachments: 240515 AEP Feedback on Select considerations in 2024 - FINAL.pdf

~~OFFICIAL~~

Hi s22 and s22

Please see attached feedback from the Australian Energy Producers on the 'Select' phase questions as well as additional feedback on the 'Identify & Assess' phase.

Sorry that this is late – there is a lot going on at the moment!

s22

From: s22 <s22 @industry.gov.au>
Sent: Monday, April 22, 2024 12:01 PM
To: s22 s 22 ; s22 <s22 @industry.gov.au>
Cc: ROCCSR <s47E(d) @industry.gov.au>
Subject: RE: ROCCSR Titleholders Questions [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Hi s22

Thanks for the email – more than happy for it to be 10th. I understand that there's a lot happening right now and as our process is more iterative, we will continue to refine our work as we work through it.

On another note, just checking in that AEP is happy to make the necessary arrangements for a meeting room booking etc for the next titleholders meeting at the conference? We will need VC facilities as not everyone will be there in person.

Thanks

s22

~~OFFICIAL~~

From: s22 s 22
Sent: Monday, April 22, 2024 10:08 AM
To: s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Cc: ROCCSR <s47E(d) @industry.gov.au>
Subject: FW: ROCCSR Titleholders Questions [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Hi s22 and s22

With the GHG Injection Guidelines comments due on the 2 May (along with he Electricity & Energy Sector Plan around the same time), I think we will find it difficult to get back to you by the 3 May.

Could we instead aim for the 10 May? That is then still a week before conference.

Thanks,

s22

From: ROCCSR <s47E(d) @industry.gov.au>
Sent: Friday, April 19, 2024 1:59 PM
To: s22 <s22 @dcceew.gov.au>; s22 <s22 @dcceew.gov.au>; s22 <s22 @dcceew.gov.au>; s22 @dcceew.gov.au; s22
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<s22 @ecodev.vic.gov.au>; s22 <s22 @industry.gov.au>; s22
<s22 @industry.gov.au>; s22 s 22
Cc: ROCCSR <s47E(d) @industry.gov.au>; s22 <s22 @industry.gov.au>; s22
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s22 @industry.gov.au>
Subject: ROCCSR Titleholders Questions [SEC~~=OFFICIAL~~]

~~OFFICIAL~~

HI all,

Thank you for your continued participation and insights as part of the ROCCSR Titleholders Group.

As discussed, in the last Titleholders meeting we have follow up questions for the Identify and Assess phase as well as introductory questions for the Select phase, we would like your feedback on by **3/05.**

Your responses to these questions will enable us to better understand the industry perspective when it comes to the legislation.

The most recent Titleholder meeting presentation has also been attached as a helpful refresher for what was covered.

Kind regards,

Review of the Offshore CCS Regime (ROCCSR)
Oil and Gas Division | Offshore Strategy Branch
Ngunnawal Country, Industry House, 10 Binara Street, Canberra ACT 2601 Australia
Department of Industry, Science and Resources
E s47E(d) @industry.gov.au

industry.gov.au ABN 74 599 608 295
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We Acknowledge First Nations Peoples as the Traditional Custodians and Lore Keepers of the oldest living culture and pay respects to their Elders past and present. We extend that respect to all First Nations Peoples.

~~OFFICIAL~~

s22

From: s22 s 22
Sent: Friday, 28 June 2024 5:34 PM
To: s22
Cc: s22 ; s22 ; CCSReview; s22
Subject: RE: For action: Offshore CCS Review May Industry Meeting Presentation & Qs List [SEC=~~OFFICIAL~~]
Attachments: 240628 AEP Feedback on MMV and Define phase considerations in 2024 - FINAL.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

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Hi s22 and team,

Please see attached Australian Energy Producers' feedback on the 'Define' stage and MMV.

Please let me know if you would like to discuss further or if you have any questions.

Regards,

s22

From: CSSReview <CCSReview@industry.gov.au>
Sent: Wednesday, June 12, 2024 8:49 AM
To: s22 s 22 s22 s 22 s22 '
s 22 s22 s 22 ;s22
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<s22 @ecodev.vic.gov.au>; s 22
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'RCA@energise-renewables.com' <RCA@energise-renewables.com>; s22 '
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<s22 @industry.gov.au>;s22 s 22 's22 (DJSIR)'
<s22 @ecodev.vic.gov.au>; s22 ' <s22 @dcceew.gov.au>
Subject: RE: For action: Offshore CCS Review May Industry Meeting Presentation & Qs List [SEC=OFFICIAL]

~~OFFICIAL~~

Hi all,

Just a reminder to please send through any feedback on the questions discussed at our May meeting by **Thursday June 20 COB:**

- **MMV (during lifecycle) – see slide 15**
- **Define phase approvals – slide 27 & 28**

If you would like to discuss any considerations from an individual project perspective, please feel free to reach out to us at **CCSReview@industry.gov.au** to set up a suitable time in the coming weeks 😊

Looking forward to meeting in July!

s22

~~OFFICIAL~~

From: ROCCSR
Sent: Tuesday, May 28, 2024 2:14 PM
To: s22 s 22 s22 s 22 s22 '
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<s22 @ecodev.vic.gov.au>;s 22
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Cc: s22 <s22 @nopta.gov.au>;s22 s22 @nopta.gov.au>; s22
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<s22 @ecodev.vic.gov.au>; s22 <s22 @nopsema.gov.au>;
s22 @ecodev.vic.gov.au; s22 - NOPTA <s22 @nopta.gov.au>; s22 - NOPTA
<s22 @nopta.gov.au>; RCA@energise-renewables.com; s22 s 22

s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; Michelle s 22 >; s22 (DJSIR) <s22 @ecodev.vic.gov.au>; s22 <s22 @dcceew.gov.au>

Subject: For action: Offshore CCS Review May Industry Meeting Presentation & Qs List [SEC~~- OFFICIAL~~]

Hi all,

Thanks for attending the last Offshore CCS Review Industry Consultation Group Meeting on Monday 20 May in Perth. This included an introduction to the MMV workstream and Define phase approvals.

Please find the presentation attached for the relevant information.

Noting industry comments to S 22 last week in seeking additional time for providing feedback – we are hoping to get this round of feedback by **Thursday June 20** (this provides a full month from the May meeting). A placeholder for the next meeting will be sent to you for the week starting July 15.

MMV – slide 15 Qs
The analysis pieces will continue to progress in the background as we invite feedback from industry concurrently. As mentioned, the questions for guiding feedback come from a first principles, fundamentals basis in examining the objectives-based regime under the OPGGSA.

Given the site-specific nature of MMV as a topic, we welcome individual proponent feedback on your key considerations. The team is also open to meeting with individual proponents if that is preferred to discuss MMV considerations.

Define phase approvals – slide 27 & 28 Qs
As with previous phases, welcome feedback in the same timeframe on the Define phase questions and any other additional considerations for approvals at this phase.

As discussed, Site Plans will continue as part of next meeting's discussion. We welcome any initial feedback on the slide 28 questions but also happy to be a prompt for the next discussion in July.

If you have any queries, please don't hesitate to reach out to myself, s22 or the team at s47E(d) @industry.gov.au 😊

Kind regards,

s22
Assistant Manager

Oil and Gas Division | Offshore CCS Review
Ngunnawal Country, Industry House, 10 Binara Street, Canberra ACT 2601 Australia
Department of Industry, Science and Resources
P s22 **E** s22 @industry.gov.au

~~OFFICIAL~~

s22

From: s22 s 22
Sent: Monday, 8 April 2024 9:50 AM
To: s22
Cc: s22
Subject: RE: For optional comment by COB 22 March 2024 - Identify & Assess approvals under the OPGGS Act [SEC=~~OFFICIAL~~]
Attachments: 240405 AEP Feedback on Identify & Assess considerations in 2024 - FINAL.pdf

~~OFFICIAL~~

Hi s22

Please see attached Australian Energy Producers' feedback on the Identify & Assess considerations in 2024. Apologies in the delay in providing this feedback.

Please let me know if you would like to discuss any of these items any further.

Regards,

s22

From: s22 <s22 @industry.gov.au>
Sent: Tuesday, March 5, 2024 3:33 PM
Subject: For optional comment by COB 22 March 2024 - Identify & Assess approvals under the OPGGS Act [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Good afternoon all,

Thank you to those of you who joined us for the meeting of the Titleholders Working Group for the Review of the Offshore Carbon Capture and Storage Regime last Thursday.

As promised at the meeting (and apologies for the couple day delay in getting this out to you), please find attached the presentation from that day.

Summary of OPGGS Act permitting workstream
As flagged at the bottom of slide 3 and as introduced on the day, one of the workstreams for the review is examining the opportunities to refine and improve approvals specifically in the OPGGS Act permitting cycle.

The in scope approvals shown on slide 5 are using a modified version of the approvals mapping contained in the now published Offshore CCS Regulatory Approvals Guidance Note, which we consulted with you on during drafting late last year.

The background slides that I presented against on the scope of this workstream, our approach, and considerations in structuring this work are at slides 5 to 9.

Requested response on Identify & Assess approvals
Slides 10 to 15 show the policy background on OPGGS Act approvals at the Identify & Assess stage (pre-cursor permits, SROSAI and key GHG operations) that I also presented to on the day.

As indicated last Thursday, we are interested in both:

1. A further discussion at the next Titleholders Working Group meeting on any issues titleholders would like to raise collectively with the group about the issues raised in the presentation and about OPGGS Act approvals at this project phase more broadly.
2. Any written comment titleholders would like to provide to the Review Team on the issues and challenges with the OPGGS Act approvals at this project phase to help inform our current internal analysis in reviewing approvals at this phase.
    -As flagged during the meeting, I have provided some high level questions at slide 15 which may help in informing your feedback and which we may use to assist with the conversation at the next Titleholders Working Group meeting.
    -Responses are of course entirely voluntary at this stage and there will be other opportunities to provide comments on Identify & Assess approval issues during public consultation on this workstream if preferred.

Noting the current indicative scheduling of the next Titleholders Working Group Meeting (on 28 March) appreciate any written comment titleholders would like to provide by **COB 22 March 2024.** Comments are of course welcome after this date but any responses received in advance of that timeframe will help to inform our approach to the discussion of these issues at the next Titleholders Working Group meeting and our further analysis in the interim.

Any written comment you would like to provide can be provided to myself at s22 @industry.gov.au and ghgacreage@industry.gov.au. Appreciate if you can also cc the other members of our review team (s22 s22 s22 s22 and s22 who have been cced into this email) into any responses provided.

Please reach out if any questions.

Kind regards

s22
Assistant Manager

Offshore Resources Branch | Offshore Carbon Capture and Storage Review
Naarm Country, 140 William Street, Melbourne VIC 3000
Department of Industry, Science and Resources
P s22 | **E** s22 @industry.gov.au

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s22

From: s22 s 22
Sent: Monday, 8 April 2024 9:50 AM
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Cc: s22
Subject: RE: For optional comment by COB 22 March 2024 - Identify & Assess approvals under the OPGGS Act [SEC=~~OFFICIAL~~]
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Please reach out if any questions.

Kind regards

s22
Assistant Manager

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Naarm Country, 140 William Street, Melbourne VIC 3000
Department of Industry, Science and Resources
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~~OFFICIAL~~

s22

From: s22 s 22
Sent: Wednesday, 15 May 2024 2:34 PM
To: s22 ; s22
Cc: CCSReview
Subject: RE: ROCCSR Titleholders Questions [SEC=
Attachments: 240515 AEP Feedback on Select considerations in 2024 - FINAL.pdf

~~OFFICIAL~~

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Hi s22 and s22

Please see attached feedback from the Australian Energy Producers on the 'Select' phase questions as well as additional feedback on the 'Identify & Assess' phase.

Sorry that this is late – there is a lot going on at the moment!

s22

From: s22 <s22 @industry.gov.au>
Sent: Monday, April 22, 2024 12:01 PM
To: s22 s 22 ; s22 <s22 @industry.gov.au>
Cc: ROCCSR <s47E(d) @industry.gov.au>
Subject: RE: ROCCSR Titleholders Questions [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Hi s22

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Thanks

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From: s22 s 22
Sent: Monday, April 22, 2024 10:08 AM
To: s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Cc: ROCCSR <s47E(d) @industry.gov.au>
Subject: FW: ROCCSR Titleholders Questions [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Hi s22 and s22

With the GHG Injection Guidelines comments due on the 2 May (along with he Electricity & Energy Sector Plan around the same time), I think we will find it difficult to get back to you by the 3 May.

Could we instead aim for the 10 May? That is then still a week before conference.

Thanks,

s22

From: ROCCSR <s47E(d) @industry.gov.au>
Sent: Friday, April 19, 2024 1:59 PM
To: s22 <s22 @dcceew.gov.au>; s22 <s22 @dcceew.gov.au>; s22 <s22 @dcceew.gov.au>; s22 s 22 s 22 s 22 s 22 <s22 @nopta.gov.au>; s22 <s22 @nopta.gov.au>; s22 <s22 @nopsema.gov.au>; s22 (DJSIR) <s22 @ecodev.vic.gov.au>;s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>;s 22
Cc: ROCCSR <s47E(d) @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @nopsema.gov.au>; s22 s 22 s 22 s 22 <s22 @industry.gov.au>;s 22 's 22 ; s22 <s22 @nopsema.gov.au>; s22 @ecodev.vic.gov.au; s22 <s22 @dcceew.gov.au>; s22 s 22 @dcceew.gov.au>; s22 s 22 ; s22 <s22 @dcceew.gov.au>; s22 <s22 @dcceew.gov.au>; s22 s 22 ; s22 (s22 s 22 <s22 @dcceew.gov.au>; s22 s 22 ; s22 <s22 @industry.gov.au>; s22 (DJSIR) <s22 @ecodev.vic.gov.au>; s22 @ecodev.vic.gov.au; s22 NOPTA <s22 @nopta.gov.au>; s22 - NOPTA <s22 @nopta.gov.au>; RCA@energise-renewables.com; s22 s 22 s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 s 22 ; s22 (DJSIR) <s22 @ecodev.vic.gov.au>; s22 <s22 @dcceew.gov.au>; s22 <s22 @nopta.gov.au>; s 47 E(d) @nopta.gov.au>; s22 <s22 @industry.gov.au>
Subject: ROCCSR Titleholders Questions [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

HI all,

Thank you for your continued participation and insights as part of the ROCCSR Titleholders Group.

As discussed, in the last Titleholders meeting we have follow up questions for the Identify and Assess phase as well as introductory questions for the Select phase, we would like your feedback on by **3/05.**

Your responses to these questions will enable us to better understand the industry perspective when it comes to the legislation.

The most recent Titleholder meeting presentation has also been attached as a helpful refresher for what was covered.

Kind regards,

Review of the Offshore CCS Regime (ROCCSR)
Oil and Gas Division | Offshore Strategy Branch
Ngunnawal Country, Industry House, 10 Binara Street, Canberra ACT 2601 Australia
Department of Industry, Science and Resources
E s47E(d) @industry.gov.au

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Acknowledgement of Country

Our department recognises the First Peoples of this Nation and their ongoing cultural and spiritual connections to the lands, waters, seas, skies, and communities.

We Acknowledge First Nations Peoples as the Traditional Custodians and Lore Keepers of the oldest living culture and pay respects to their Elders past and present. We extend that respect to all First Nations Peoples.

~~OFFICIAL~~

s22

From: s22
Sent: Tuesday, 5 March 2024 3:33 PM
To: s22 ; s22 ; s22 '; s22 (s22 's22 , s22 '; s22 s22 ; s22 ; s22 ; Js22 ; s22 ; s22 ; s22 (DJSIR); s22 ; s22 @dcceew.gov.au; s22 @dcceew.gov.au; s22 ; s22 s22 , s22 s22 ; s 22 '; s22 ; s22 @ecodev.vic; s22 ; s22 ; s22 (s22 s22 ; s22 ; s22 ; s22 (s22 s22 ;s22 ; s22 ; s22 (DJSIR); s22 ; s22 @ecodev.vic.gov.au; s22 @ecodev.vic.gov.au; s22 - NOPTA; s22 - NOPTA; RCA@energise-renewables.com; s22 ; s22 (DJSIR); s22 ; s22 ; s22 ; s22 ; s22 ; s22
Cc: GHG Acreage; s22 ; s22 ; s22 ; s22 ;s22 ; s22
Subject: For optional comment by COB 22 March 2024 - Identify & Assess approvals under the OPGGS Act [SEC=~~OFFICIAL~~]
Attachments: 20240229 CCS Titleholders Consultation Group Presentation.pdf

Good afternoon all,

Thank you to those of you who joined us for the meeting of the Titleholders Working Group for the Review of the Offshore Carbon Capture and Storage Regime last Thursday.

As promised at the meeting (and apologies for the couple day delay in getting this out to you), please find attached the presentation from that day.

Summary of OPGGS Act permitting workstream
As flagged at the bottom of slide 3 and as introduced on the day, one of the workstreams for the review is examining the opportunities to refine and improve approvals specifically in the OPGGS Act permitting cycle.

The in scope approvals shown on slide 5 are using a modified version of the approvals mapping contained in the now published Offshore CCS Regulatory Approvals Guidance Note, which we consulted with you on during drafting late last year.

The background slides that I presented against on the scope of this workstream, our approach, and considerations in structuring this work are at slides 5 to 9.

Requested response on Identify & Assess approvals
Slides 10 to 15 show the policy background on OPGGS Act approvals at the Identify & Assess stage (pre-cursor permits, SROSAI and key GHG operations) that I also presented to on the day.

As indicated last Thursday, we are interested in both:

1. A further discussion at the next Titleholders Working Group meeting on any issues titleholders would like to raise collectively with the group about the issues raised in the presentation and about OPGGS Act approvals at this project phase more broadly.

2. Any written comment titleholders would like to provide to the Review Team on the issues and challenges with the OPGGS Act approvals at this project phase to help inform our current internal analysis in reviewing approvals at this phase.

    -As flagged during the meeting, I have provided some high level questions at slide 15 which may help in informing your feedback and which we may use to assist with the conversation at the next Titleholders Working Group meeting.

    -Responses are of course entirely voluntary at this stage and there will be other opportunities to provide comments on Identify & Assess approval issues during public consultation on this workstream if preferred.

Noting the current indicative scheduling of the next Titleholders Working Group Meeting (on 28 March) appreciate any written comment titleholders would like to provide by **COB 22 March 2024.** Comments are of course welcome after this date but any responses received in advance of that timeframe will help to inform our approach to the discussion of these issues at the next Titleholders Working Group meeting and our further analysis in the interim.

Any written comment you would like to provide can be provided to myself at s22 @industry.gov.au and ghgacreage@industry.gov.au. Appreciate if you can also cc the other members of our review team (s22 s22 s22 s22 and s22 who have been cced into this email) into any responses provided.

Please reach out if any questions.

Kind regards

s22
Assistant Manager

Offshore Resources Branch | Offshore Carbon Capture and Storage Review
Naarm Country, 140 William Street, Melbourne VIC 3000
Department of Industry, Science and Resources
P s22 **E** s22 @industry.gov.au

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Acknowledgement of Country

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~~OFFICIAL~~

Australian Government
Department of Industry, Science and Resources

ROCCSR CCS Titleholders Consultation Group Meeting

Thursday 29 February 2024

Agenda

1. Welcome, introductions & apologies	2pm – 2:05pm	s22
2. Review last meeting minutes and action list	2:05pm – 2:10pm	s22
3. 2024 ROCCSR Work Program Plan	2:10pm – 2:20pm	s22
4. Injection Licence Guidelines – update	2:20pm – 2:25pm	s22
5A. Overview of OPGGS Act approvals workstream **5B. 'Identify & Assess' phase approvals under the OPGGSA (incl. GHG Assessment Permit, Key GHG Operations)**	2:25pm – 3:55pm	s22 All
6. Financial assurance (petroleum) – presentation	3:55pm – 4:25pm	s22 All
7. Any other business/next meeting/next steps	4:25pm – 4:30pm	All

Work Program Plan 2024

Australian Government
Department of Industry, Science and Resources

Key ROCCSR workstreams under the Terms of Reference:

1. Ensure appropriate policy and regulatory settings throughout the lifecycle of offshore CCS activities, from exploration through to decommissioning of CCS project assets, to ensure risks are appropriately managed.

2. Examine applicable Australian Government legislation to identify areas of duplication in the assessment of CCS activities, with options for improvement, including investigating accreditation or streamlining provisions for National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) to become the environmental regulator under National Environmental law.
(Any reforms will be consistent with, and dependent on timing of the implementation of the Government's Nature Positive Plan.)

The ROCCSR process will occur over 3-years and is supported by best practice policy development principles. This includes having a clear policy intent, being evidence-based, iterative testing of options for practical implementation, and consultation with key stakeholders as required.

2024 Work Program Plan

There will be a suite of initiatives to support ROCCSR. There will be a combination of both near-term and long-term deliverables to cover the range of issues.
ROCCSR will provide iterative, ongoing recommendations over the review period to enable advancement on some issues while others are still being progressed.
The draft workstreams below are *indicative* at this stage:

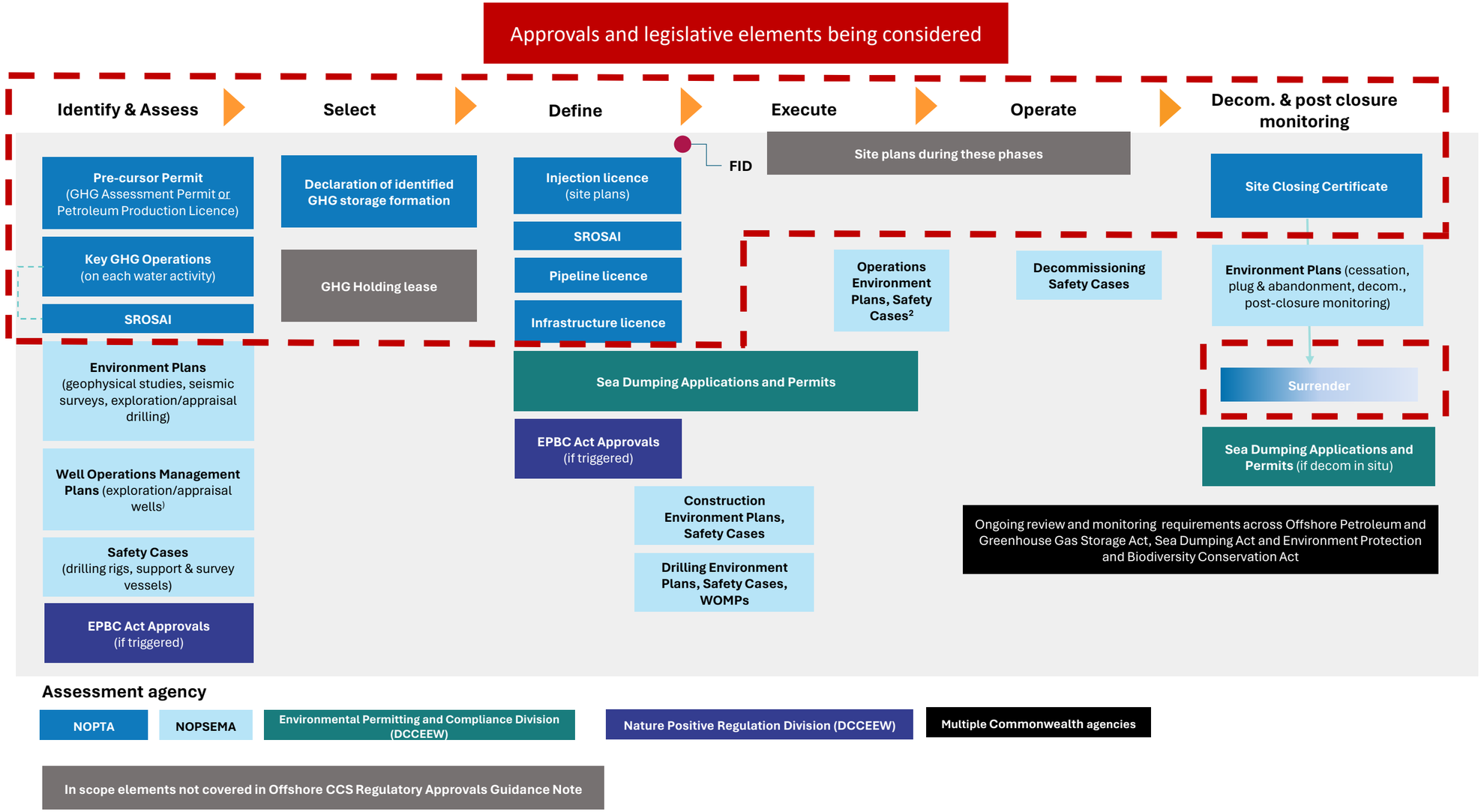
Near-term initiatives & projects	Long-term initiatives & projects
Consider the intersections between the Offshore Petroleum and Greenhouse Gas Storage Act, Sea Dumping Act and Environment Protection and Biodiversity Conservation Act, with a view to reducing administrative burden and duplication, while facilitating consistent decision making across government.	Developing clear policy for financial assurance requirements for GHG titleholders under the OPGGS Act to ensure sufficient funding is in place to manage project operations. - Policy development on financial assurance will consider developments in petroleum regime work.
Developing policy position and guidance on monitoring, measurement, and verification (MMV) principles and standards in consideration of latest technology and risk management.	
Review and refine permitting cycle under the Offshore Petroleum and Greenhouse Gas Storage Act, including addressing challenges in the transition from petroleum regime to greenhouse gas title. - Will also include developing policy position and guidance to provide definitional clarity on a range of concepts under the Act.	Supporting accreditation process or streamlining provisions for NOPSEMA in assessing offshore CCS activities, in line with the implementation of the Government's EPBC Act reform and Nature Positive Plan. (Note: separate review on Offshore Environment Management Regime)

Australian Government
Department of Industry, Science and Resources

Overview of OPGGS Act permitting workstream

Focus of this workstream

Australian Government
Department of Industry, Science and Resources



Overarching questions guiding this workstream

1. What are the policy outcomes the Government is seeking to achieve through OPGGS Act approvals at this project phase?

2. What is the historical context and rational for the approvals at each project phase?

3. Does the current OPGGS Act framework achieve the Government's policy outcomes?

   If no:

   a. What major legislative changes to the framework are needed to achieve these outcomes? OR

   b. What minor or technical changes are needed to ensure these outcomes are clearly achieved?

   If yes:

   a. Where can we improve OPGGS Act administrative practice and processes? AND

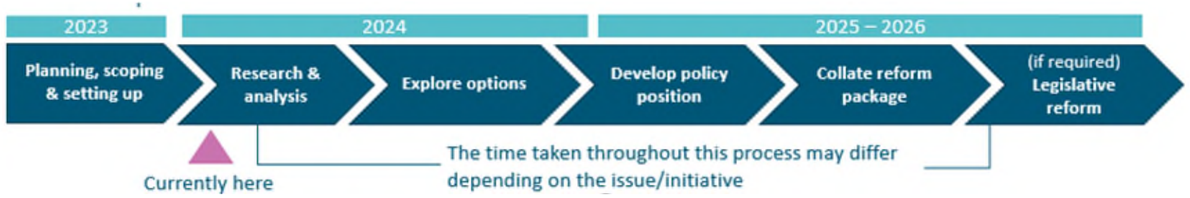
   b. What issues and themes can we improve public guidance on?

Approach to this workstream

1. **Background research** of policy context for each project phase
2. **Working group discussions** of each project phase
   - Discussion of policy background considerations for each approval
   - Open discussion for members to raise issues and recommendations about these approvals
3. **Internal analysis** (in conjunction with NOPTA and NOPSEMA)
4. **Develop discussion papers**
5. **Approvals for public consultation** for each discussion paper as developed
6. **Public consultation** on discussion papers
7. **Review consultation feedback** to inform policy recommendations
8. **Implement coordination approach** on possible reform measures
9. **Seek policy approvals** where major policy or legislation/regulation changes are required.

Considerations in project planning for this workstream

Interdependencies – intersections with other ROCCSR workstreams and other work across the OPGGS Act regime



Background research – deciphering what is and isn't a key input

Working group discussions – sequential approach informed by working group member priorities

Internal analysis –Finding synergies with other workstream

Develop discussion papers – Number and scope to be determined by earlier steps

Approvals for public consultation – key impact on timeliness of consultation

Public consultation – balancing considerations of adequacy vs consultation fatigue

Review consultation feedback – evaluating against guiding questions and underpinning concepts

Implement coordination approach – what buy in do we need across government and what level of further consultation is needed

Seek policy approvals where major policy or legislation/regulation changes are required.

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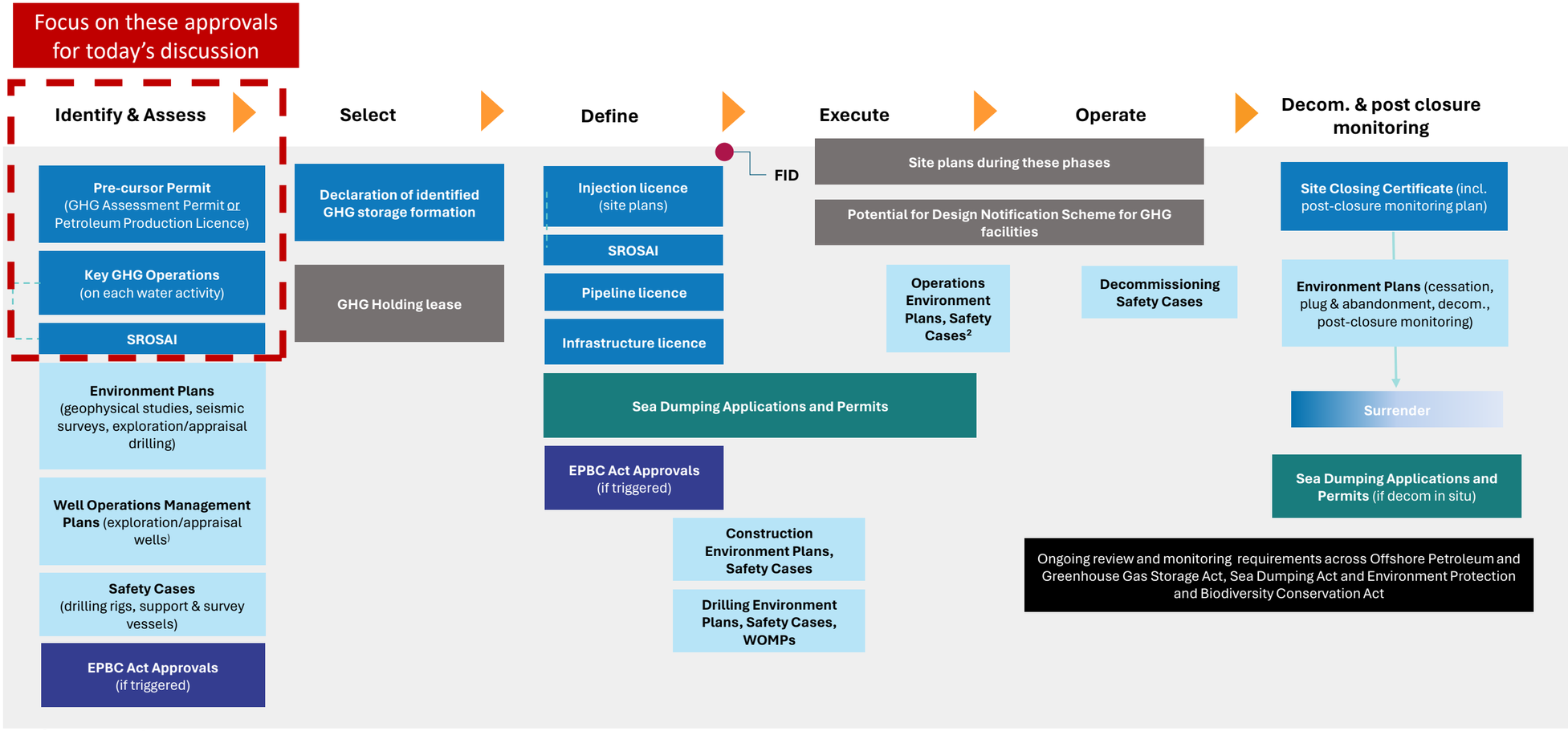
Identify & Assess Phase Approvals

Identify & Assess approvals under OPGGSA – for discussion today



Considerations for these sessions

To restate the questions from earlier

1. What are the policy outcomes the Government is seeking to achieve through OPGGS Act approvals at this project phase?

2. What is the historical context and rational for the approvals at each project phase?

3. Does the current OPGGS Act framework achieve the Government's policy outcomes?

   If no:

   a. What major legislative changes to the framework are needed to achieve these outcomes? OR

   b. What minor or technical changes are needed to ensure these outcomes are clearly achieved?

   If yes:

   a. Where can we improve OPGGS Act administrative practice and processes? AND

   b. What issues and themes can we improve public guidance on?

Pre-cursor pathways in 2008

GHG assessment permit pathway

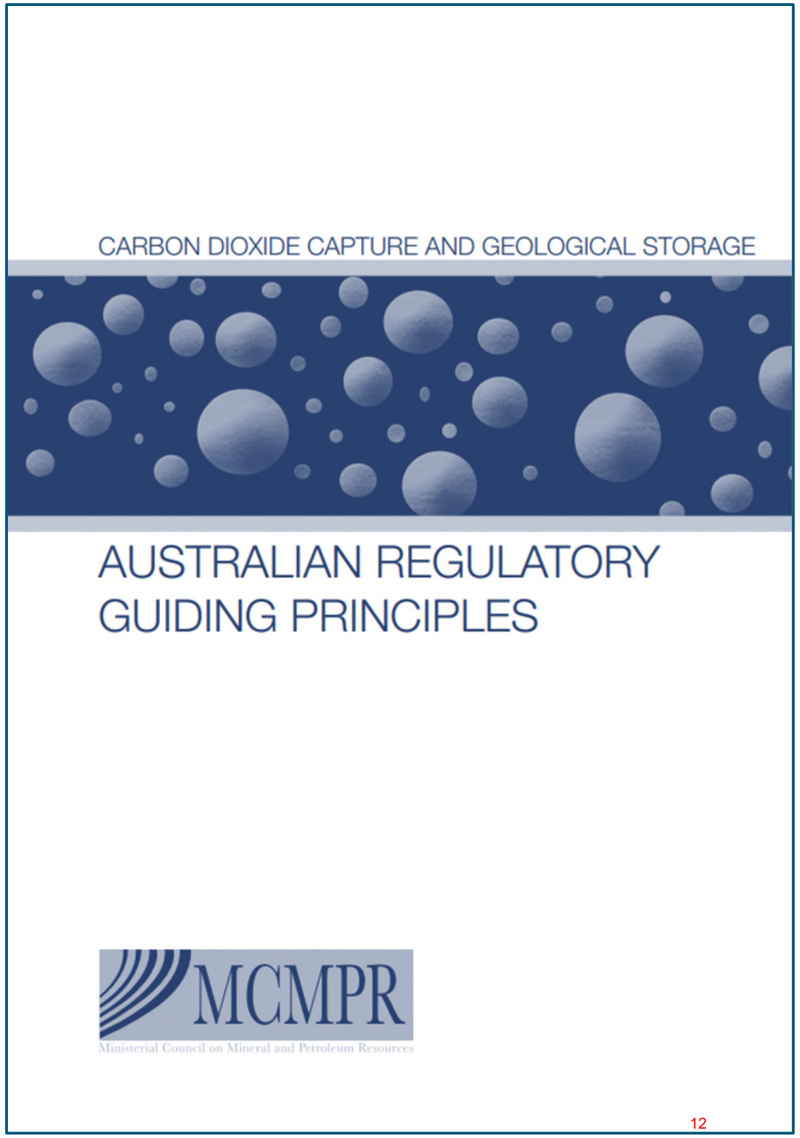
- Process mirrors key elements of the work-bid and cash-bid framework for petroleum
- *“Recommendation: That the release and award of areas for exploration for GHG storage sites use a competitive process similar to that used for petroleum” (RIS p.14).*

Production licence pathway

- Requirements on the origin of the injected GHG substance, where the licence is obtained on a non-competitive basis.
- *“This ensures that a petroleum production licensee’s concessional access to a GHG injection licence does not give an unfair competitive advantage to the petroleum industry when entering the GHG injection and storage industry” (EM p. 58).*

Tied title pathway

- GHG holding lease and any subsequent GHG title in the series is ‘tied’ to the petroleum retention lease and any subsequent petroleum titles in the series.
- *“[E]nsures that the holder of a greenhouse gas holding lease that was granted on a non-competitive basis … can only obtain an injection licence that is tied to a production licence held by the same title-holder. This ensures that the source(s) of greenhouse gas injected under the injection licence must be in the tied production licence area.” (EM p. 53 and 54)*



Significant Risk Of a Significant Adverse Impact (SROSAI) in 2008

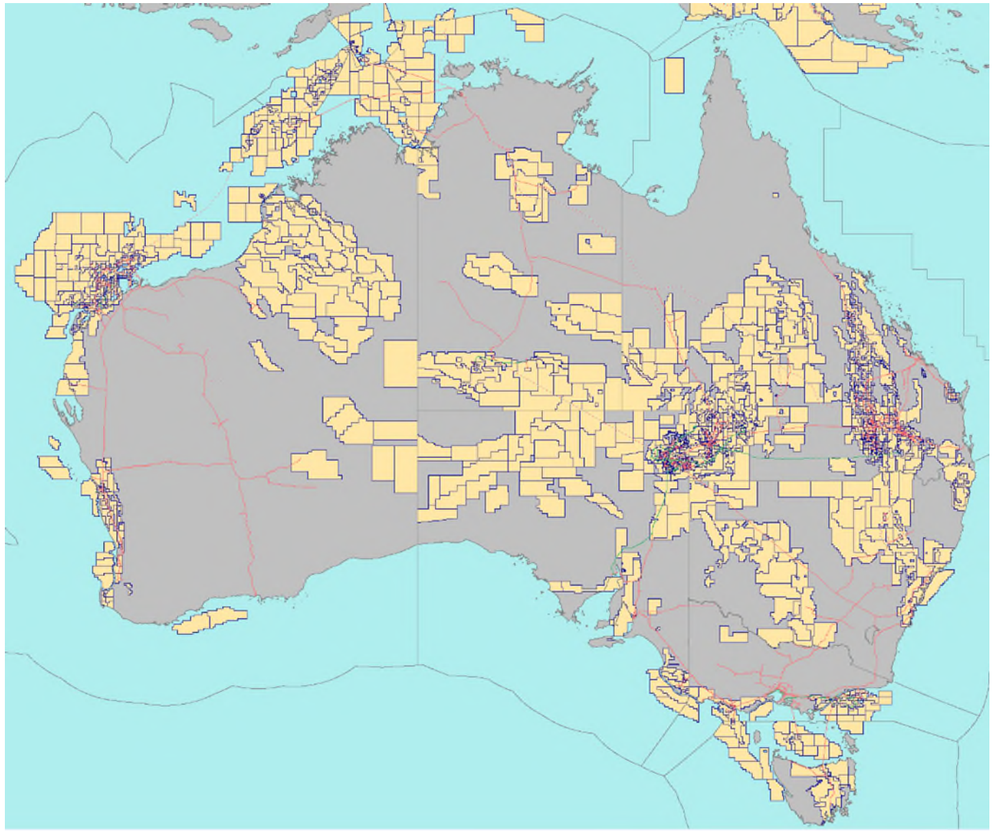
- Intended to recognise the potential for GHG operations and petroleum operations to adversely impact on one another while permitting co-existence.

- For existing petroleum industry (**pre-commencement petroleum titles**) SROSAI intended to provide investment certainty.

- *"In the event that a greenhouse gas proponent is unable to reach a commercial agreement with a petroleum title holder, they will face significant risks in their ability to operate. Prospective greenhouse gas title holders, however, will be in a position to evaluate these risks before making any investment decisions." (EM p. 33)*

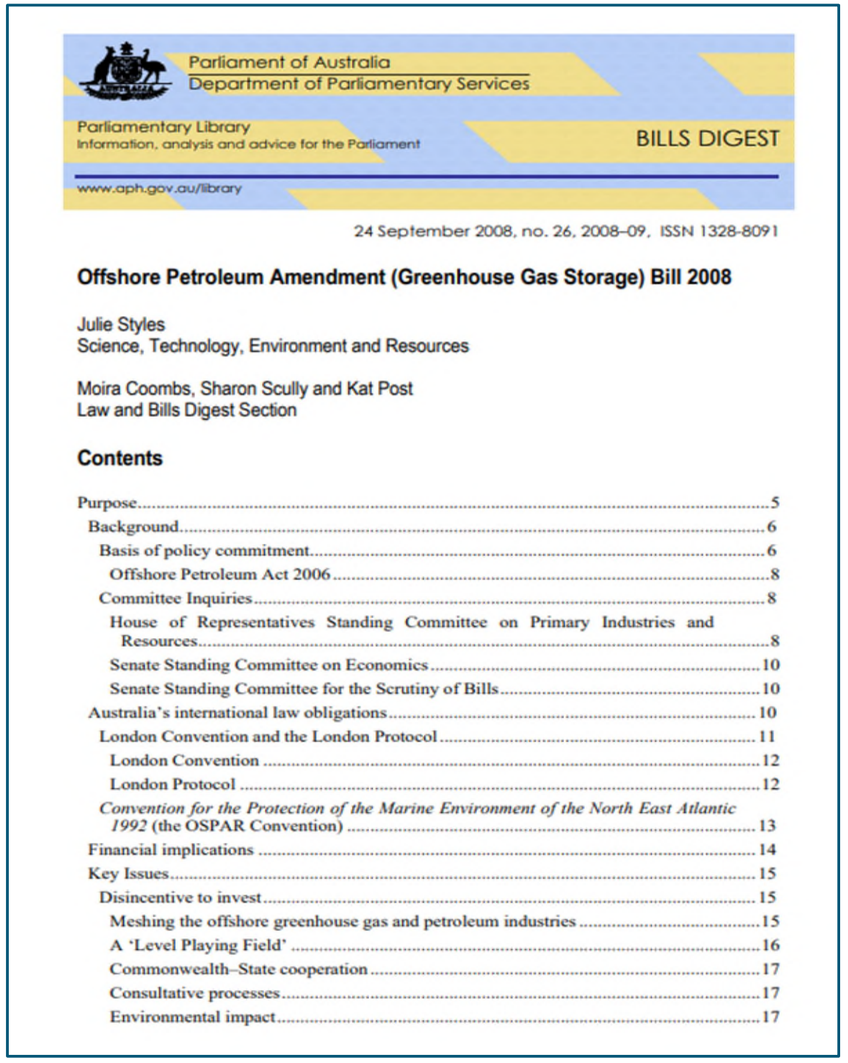
- For future petroleum industry (**post-commencement petroleum titles**) SROSAI intended to provide option to protect whichever was granted first between a petroleum production licence and a GHG injection licence. Would ensure major investment decisions in either category could be protected.

- "*Allowing the regulator (Commonwealth Minister) to make decisions on which industry should proceed in cases where they cannot co-exist allows the relative merits of the two competing opportunities to be taken into account (the 'public interest' model). It also allows for flexibility if the relative importance of petroleum and greenhouse gas operations changes*." (RIS p.35)



Key Greenhouse Gas Operations (KGOs) in 2008

- Intended to mean any GHG activities that it is considered "may have an impact of some kind on petroleum operations under a present or future petroleum title".
- Includes not only impacts on geological formations but also physical interference on the surface, for examples where vessels may be in close proximity.
- RCM must have regard to potential impact on petroleum exploration or recovery for both existing and future titles.
- "*An existing post-commencement production licence is given the same level of 'impacts' protection as a pre-commencement title. This is because of the level of investment required to develop a petroleum discovery to the production stage*" (EM p.27)
- Must have regards to designated agreements and the public interest
- *"For example, the Minister might consider that there was a public interest in enabling an onshore electricity generation plant to be constructed on a zero-greenhouse gas emissions basis. Or the Minister might consider that there was a public interest in ensuring that commerciality of a major new petroleum discovery was not compromised by drilling of greenhouse gas exploration wells*" (EM p.27)



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24 September 2008, no. 26, 2008–09, ISSN 1328-8091

Offshore Petroleum Amendment (Greenhouse Gas Storage) Bill 2008

Julie Styles
Science, Technology, Environment and Resources

Moira Coombs, Sharon Scully and Kat Post
Law and Bills Digest Section

Contents

Identify & Assess considerations in 2024

Overall questions

- What are the changes in industry dynamics since 2008? And how should these be factored into the OPGGS Act?
- What are the changes in other regulatory drivers since 2008? And how do they impact the OPGGS Act?

Pre-cursor permits

- What are the benefits of the competitive neutrality approach in 2024?
- What are the disadvantage of the competitive neutrality approach in 2024?

SROSAI

- Does SROSAI appropriately facilitate the emerging CCS industry while managing risk in 2024?
- Is SROSAI fit-for-purpose and does it achieve best practice in 2024?

Key GHG operations (KGOs)

- Do KGOs appropriately facilitate the emerging CCS industry while managing risk in 2024?
- Are KGOs fit-for-purpose and achieve best practice in 2024?

Australian Government
Department of Industry, Science and Resources

Financial Assurance

Financial assurance: overview

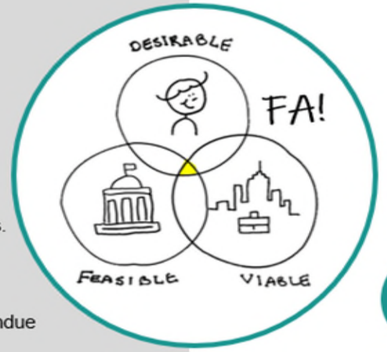
Australian Government
Department of Industry, Science and Resources

Policy aims

1. Risks and liabilities of petroleum activities remain the responsibility of the petroleum industry.
2. Companies must be able to meet the costs and liabilities associated with undertaking planned and unplanned petroleum activities.
3. Reduce the risk that the Commonwealth and Australian community bear the costs and responsibility of decommissioning and remediating a site.
4. Encourage behavioural and policy change that promotes early and proactive planning for decommissioning and active monitoring of financial assurance.

Key elements of a revised approach

- **All costs and liabilities.** Titleholders to demonstrate satisfactory financial assurance for *all* planned and unplanned costs and liabilities over the life of the project, including decommissioning activities.
- **Case by case, risk-based approach**, as each field, project & titleholders differ. One size will not fit all.
- **Acceptable forms** still include, but not limited to, insurance, self-insurance, bonds, cash, indemnities & sureties, letters of credit and mortgages.
- **Simple and frequent** risk assessments, early identification of potential issues.
- **Proactive monitoring, and engagement** with a focus on higher risk/sole titleholders.
- **Proportionate compliance response** to the level of non-compliance.
- **Commercially viable reforms** strengthen the regime while not causing companies undue financial stress. Australia remains attractive for investors. Phased implementation.
- **Efficient use of capital** avoids locking it up too early or duplicating of security arrangements industry enforce upon each other. Do not want to prevent mergers and acquisitions and entrance of smaller companies where risk can be managed.
- **Early and ongoing planning** demonstrated by titleholders for both decommissioning activities and the management of financial risk.



Policy considerations

- We want to make the Government's expectations clear, but also do not want to make them unreasonably onerous and cause financial strife
- There is a broad range of companies, with vastly different financial capacities, operating in Australia
- Some projects do not have much lead time to their expected dates of decommissioning
- Flexibility is needed to help manage any changes in circumstances
- Compliance options should not increase the risk to government
- Leverage existing information and administrative resources and expertise where possible
- Australia should remain a competitive location for investment
- Avoid government becoming last man standing on any given project.

Next steps

- Discuss approach with regulators and Minister's Office
- Policy approval for key elements
- Develop detailed proposal for government consideration
- Public consultation
- Develop detailed risk assessment framework, policies and templates
- Draft legislative and regulatory amendments
- Ongoing engagement with industry members via the FA working group
- Phased implementation so companies can adjust without facing undue financial distress and regulators can build capability

Financial assurance will not remedy all risks of default. It is one of several measures that will help ensure companies meet their obligations.

Financial assurance: policy aims

The reforms will strengthen the offshore regulatory regime so that risk of default on decommissioning liability is not passed to government and taxpayers but remain the responsibility of industry.

- increase government oversight on how all petroleum titleholders intend to pay, provision and undertake all offshore petroleum activities, including decommissioning
- ensure there is ongoing monitoring and early warning of changes in risk and visibility of what titleholders intend to do should circumstances change
- drive behavioural change in the industry's commercial management of risk, including ongoing maintenance regimes and late life transactions
- strengthen requirements for proactive and ongoing decommissioning planning.

Financial assurance: principles

All costs and liabilities. Titleholders to demonstrate satisfactory FA for all planned and unplanned costs and liabilities over the life of the project.

Case by case, risk-based approach, as each field, project & Titleholders differ. One size will not fit all.

Acceptable forms still include, but not limited to, insurance, self-insurance, bonds, cash, indemnities & sureties, letters of credit and mortgages.

Simple and frequent risk assessments, early identification of potential issues.

Proactive monitoring, and engagement with higher risk/sole titleholders.

Proportionate compliance response to the level of non-compliance.

Commercially viable reforms strengthen the regime while not causing companies undue financial stress. Australia remains attractive for investors. Phased implementation.

Efficient use of capital avoiding locking it up too early or duplicating of security arrangements industry enforce upon each other. Do not want to prevent mergers and acquisitions and the entrance of smaller companies, where the risk can be managed.

Ongoing planning for decommissioning activities and the management of financial assurance

Documented evidence and verification will be required of financial assurance, decommissioning liabilities and risk management.

Other business

- Next meeting
- Action items

s22

From: s22
Sent: Friday, 12 July 2024 11:04 AM
To: s22
Cc: s22 ; CCSReview
Subject: RE: The consultation group formally known as ROCCSR [SEC=~~OFFICIAL~~]

Hi s22

Agenda for the Industry Working Group meeting on Tuesday and minutes from the last meeting should hopefully be with all members shortly.

Let us know if any issues with receiving, otherwise see you online on Tuesday.

Cheers

s22
Assistant Manager

Offshore Strategy Branch | Offshore Carbon Capture and Storage Review
Naarm Country, 140 William Street, Melbourne VIC 3000
Department of Industry, Science and Resources
P s22 | **E** s22 @industry.gov.au AND CCSReview@industry.gov.au

~~OFFICIAL~~

From: s22 s 22
Sent: Friday, July 12, 2024 10:51 AM
To: s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Subject: FW: The consultation group formally known as ROCCSR

CAUTION - This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi s22 and s22

I see that S 22 is out of the office at the moment. Do either of you have any details about next week's Offshore CCS Review Industry Consultation Group meeting?

Let me know if there is anything we can assist with.

Regards,

s22

From: s22
Sent: Thursday, July 11, 2024 5:15 PM
To: s22 <s22 @industry.gov.au>
Subject: The consultation group formally known as ROCCSR

Hi s22

I hope you are well. I just wanted to check in on the Offshore CCS Review Industry Consultation Group meeting next week.

Let me know if we can assist with a draft agenda, etc.

Regards,

s22

s22
s 22

M +s22 E s 22
energyproducers.au

Australian Energy Producers acknowledges and pays respect to the past and present Traditional Custodians and Elders of this nation and the continuation of cultural, spiritual and educational practices of Aboriginal and Torres Strait Islander peoples.

s22

From: s22 s 22
Sent: Friday, 28 June 2024 5:34 PM
To: s22
Cc: s22 ; s22 ; CCSReview; s22
Subject: RE: For action: Offshore CCS Review May Industry Meeting Presentation & Qs List [SEC=~~OFFICIAL~~]
Attachments: 240628 AEP Feedback on MMV and Define phase considerations in 2024 - FINAL.pdf

~~OFFICIAL~~

Hi s22 and team,

Please see attached Australian Energy Producers' feedback on the 'Define' stage and MMV.

Please let me know if you would like to discuss further or if you have any questions.

Regards,

s22

From: CSSReview <CCSReview@industry.gov.au>
Sent: Wednesday, June 12, 2024 8:49 AM
To: s 22 '
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s22 <s22 @industry.gov.au>; 's22 (DJSIR)' s22 @ecodev.vic.gov.au>; 's22 ' <s22 @nopsema.gov.au>; s22 @ecodev.vic.gov.au' <s22 @ecodev.vic.gov.au>; s22 - NOPTA <s22 @nopta.gov.au>; s22 - NOPTA <s22 @nopta.gov.au>; 'RCA@energise-renewables.com' <RCA@energise-renewables.com>; 's22 s 22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 s 22 ; s22 (DJSIR)' <s22 @ecodev.vic.gov.au>; s22 ' <s22 @dcceew.gov.au>
Subject: RE: For action: Offshore CCS Review May Industry Meeting Presentation & Qs List [SEC~~=OFFICIAL~~]

~~OFFICIAL~~

Hi all,

Just a reminder to please send through any feedback on the questions discussed at our May meeting by **Thursday June 20 COB:**

- **MMV (during lifecycle) – see slide 15**
- **Define phase approvals – slide 27 & 28**

If you would like to discuss any considerations from an individual project perspective, please feel free to reach out to us at **CCSReview@industry.gov.au** to set up a suitable time in the coming weeks 😊

Looking forward to meeting in July!

s22

~~OFFICIAL~~

From: ROCCSR
Sent: Tuesday, May 28, 2024 2:14 PM
To: s 22 '
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s 22 s22 s 22 >; s22 (DJSIR)s <s22 @ecodev.vic.gov.au>; s22 s 22
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Cc: s22 <s22 @nopta.gov.au>; s22 <s22 @nopta.gov.au>; s22 s22 @nopta.gov.au>; s22 <s22 @nopta.gov.au>; s22 <s22 @nopsema.gov.au>; s22 <s22 @nopsema.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @dcceew.gov.au>; s22 <s22 @dcceew.gov.au>; s22 <s22 @dcceew.gov.au>; s22 <s22 @dcceew.gov.au>; s22 <s22 @dcceew.gov.au>; s22 s 22
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<s22 @dcceew.gov.au>
Subject: For action: Offshore CCS Review May Industry Meeting Presentation & Qs List [SEC=OFFICIAL]

Hi all,

Thanks for attending the last Offshore CCS Review Industry Consultation Group Meeting on Monday 20 May in Perth. This included an introduction to the MMV workstream and Define phase approvals.

Please find the presentation attached for the relevant information.

Noting industry comments to S 22 last week in seeking additional time for providing feedback – we are hoping to get this round of feedback by **Thursday June 20** (this provides a full month from the May meeting). A placeholder for the next meeting will be sent to you for the week starting July 15.

MMV – slide 15 Qs
The analysis pieces will continue to progress in the background as we invite feedback from industry concurrently. As mentioned, the questions for guiding feedback come from a first principles, fundamentals basis in examining the objectives-based regime under the OPGGSA.

Given the site-specific nature of MMV as a topic, we welcome individual proponent feedback on your key considerations. The team is also open to meeting with individual proponents if that is preferred to discuss MMV considerations.

Define phase approvals – slide 27 & 28 Qs
As with previous phases, welcome feedback in the same timeframe on the Define phase questions and any other additional considerations for approvals at this phase.

As discussed, Site Plans will continue as part of next meeting's discussion. We welcome any initial feedback on the slide 28 questions but also happy to be a prompt for the next discussion in July.

If you have any queries, please don't hesitate to reach out to myself, s22 or the team at s47E(d) @industry.gov.au 😊

Kind regards,

s22
Assistant Manager

Oil and Gas Division | Offshore CCS Review
Ngunnawal Country, Industry House, 10 Binara Street, Canberra ACT 2601 Australia
Department of Industry, Science and Resources
P s22 **E** s22 @industry.gov.au

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~~OFFICIAL~~

s22

From: s22 s 22
Sent: Monday, 19 February 2024 10:32 AM
To: s22
Cc: s22
Subject: RE: Australian Energy Producers CCUS Group | March, Perth meeting [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

CAUTION - This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi s22

No worries – I hope estimates went smoothly!

I will send a meeting invite for the in-person meeting on the 13th March. We can have a think about a virtual pre-meeting.

Regarding venue for the 13th – would it be easiest if we came to you? Alternatively, I am sure one of the members would be happy to host.

s22

From: s22 <s22 @industry.gov.au>
Sent: Monday, February 19, 2024 10:28 AM
To: s22 s 22
Cc: s22 <s22 @industry.gov.au>
Subject: RE: Australian Energy Producers CCUS Group | March, Perth meeting [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Hi s22 – sorry for the delay in responding – estimates week!!

That date/time suits me and a virtual catch up prior works as well

Cheers

s22

~~OFFICIAL~~

From: s22 s 22
Sent: Wednesday, 14 February 2024 9:49 AM
To: s22 <s22 @industry.gov.au>
Subject: Australian Energy Producers CCUS Group | March, Perth meeting

Hi s22

Following up on our discussion in Perth, I have spoken with our CCUS Group who have proposed catching up in person, in Perth following the GCCSI event in March. If so, it was suggested the afternoon of Wednesday 13 March might work best, say from 14:30 – 15:30?

I am not sure how the timing works for you and whether you think having a virtual catch up before then might be of value also? Just let me know.

Regards,

s22

s22
s 22

M +s22 **E** s 22
energyproducers.au

Australian Energy Producers acknowledges and pays respect to the past and present Traditional Custodians and Elders of this nation and the continuation of cultural, spiritual and educational practices of Aboriginal and Torres Strait Islander peoples.

s22

From: s22 s 22
Sent: Friday, 12 January 2024 3:33 PM
To: s22
Cc: s22 ; s22 ; s22
Subject: RE: Consultation Paper - Clarifying consultation requirements for offshore petroleum and greenhouse gas storage regulatory approvals [SEC=~~OFFICIAL~~]
Attachments: 240112 - MR - Offshore consultation .pdf

~~OFFICIAL~~

Hi s22 thanks for getting in touch, and I've just read the discussion paper. We have welcomed it with a media release we just issued – attached.

A catch up on Monday would be good – how does 11am work for you?

From: s22 <s22 @industry.gov.au>
Sent: Friday, January 12, 2024 3:30 PM
To: s22 s 22
Cc: s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Subject: Consultation Paper - Clarifying consultation requirements for offshore petroleum and greenhouse gas storage regulatory approvals [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Good Afternoon s22

I hope you had a good break.

The department has today released a consultation paper on clarifying the consultation requirements for offshore petroleum and greenhouse gas regulatory approvals.

The paper is seeking views from people, organisations, local communities, Traditional Owners, First Nations communities and the offshore resources industry on their experiences with consultation under the current Offshore Environment Regulations. We also invite ideas and suggestions to improve the clarity of the consultation requirements offshore petroleum and greenhouse gas storage activities.

This consultation paper is the first opportunity to provide comments on whether the current consultation process for offshore resources activities is working and whether it could be improved. We are accepting comments on this paper from 12 January 2024 to 23 February 2024.

This paper is part of a broader review of the offshore environmental management framework for offshore resources activities. Additional public consultation opportunities will be available over the course of the review, including on any proposed regulatory amendments.

We will be undertaking targeted stakeholder engagement as part of the consultation process, with meetings to be scheduled in Perth and Melbourne the week of 29 January 2024. If you have time on Monday, it would be good to meet and discuss the consultation sessions.

A copy of the paper is available at: https://consult.industry.gov.au/offshore-petroleum-consultation-requirements

Further information on the Offshore Environment Management Review is available at: https://www.industry.gov.au/mining-oil-and-gas/oil-and-gas/offshore-oil-and-gas/offshore-petroleum-and-greenhouse-gas-storage-environmental-management-review

s22
A/g General Manager

Oil & Gas Division | Offshore Strategy Branch
Ngunnawal Country, 10 Binara Street (GPO Box 2013) Canberra ACT 2601 Australia
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P s22 | **M** s22 | **E** s22 @industry.gov.au

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~~OFFICIAL~~

Media statement

12 January 2024

Gas industry welcomes offshore consultation process

The Australian Government's offshore regulation consultation paper highlights the urgent need for regulations that provide economic and energy security for Australia and its valued international partners.

Australian Energy Producers today said the release of the paper kick-started a long-overdue and important process to address uncertainty and complexity with the national offshore regulatory approvals system.

The paper highlights the importance of expediting a resolution to this issue that is delaying critical gas supply and follows repeated forecasts of gas shortfalls from Australian energy market authorities.

Australian Energy Producers Chief Executive Samantha McCulloch said urgent reforms were needed to address almost two years of regulatory uncertainty that is risking the energy security of Australia and its international trade partners.

"Timely and robust environmental approvals are critical for all energy projects to support Australia's energy security and the net zero transformation," she said.

"Regulations must provide clarity and certainty for industry, while maintaining comprehensive and meaningful consultation with Traditional Owners and stakeholders.

"We have been calling for the federal government to fast-track a solution to this broken offshore environmental approval system for months.

"The paper is a welcome step in the right direction at a time when Australian households and businesses require new gas supply to be developed to ensure reliable and affordable energy."

Ms McCulloch said the tens of billions of dollars of economic benefits and jobs our gas exports deliver for Australia were also at risk.

"We need the right policy and regulatory settings to underpin these major investments and ensure our industry can continue to deliver for Australia and the region," she said.

"Reliable, affordable and lower-carbon energy, such as gas, has never been more important to Australia in these times of geopolitical upheaval and cost of living pressures.

"We look forward to working with the government to progress a solution that provides the clarity and certainty required for industry and stakeholders."

Media Contact: Brad Thompson on 0401 839 227

About Australian Energy Producers

Australian Energy Producers is the peak body of the explorers, developers and producers of essential energy - oil, gas and lower-emission fuels.

We represent the businesses that are ensuring energy security and delivering substantial economic benefits to Australia while helping to deliver a cleaner energy future.

s22

From: s22 s 22
Sent: Thursday, 5 October 2023 1:42 PM
To: s22 ; s22 ; s22
Subject: RE: DISR-DCCEEW-Australian Energy Producers CCS Working Group [SEC=~~OFFICIAL~~]

Hi s22

This will work well for us, thanks. Would you be happy for me to send out calendar invites for all the agreed dates, or would DISR prefer to manage this? If you would like Australian Energy Producers to send out the invites, who would you like include from the DCCEEW team?

Also, would you have 10 minutes today or tomorrow for a very quick chat regarding:

- Canberra venue for 1 November
- Engagement with other titleholders
- CO2CRC roundtable coordination

Regards,

s22

From: s22 <s22 @industry.gov.au>
Sent: Wednesday, October 4, 2023 12:40 PM
To: s22 s 22 ; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Subject: RE: DISR-DCCEEW-Australian Energy Producers CCS Working Group [SEC=~~OFFICIAL~~]

Hi s22

Thank you for pulling this together. We agreed the session was really useful and look forward to our ongoing engagement.

s22 and I have included comments on our availability below. Happy to discuss alternative proposed dates if they are problematic for AEP and Titleholders.

Kind regards,

s22
General Manager

Oil and Gas Division | Offshore Strategy Branch
Ngunnawal Country, L5 Industry House, 10 Binara St (GPO Box 2013) Canberra ACT 2601 Australia
Department of Industry, Science and Resources
P s22 | s22 | **E** s22 @industry.gov.au
Pronouns: She/Her

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~~OFFICIAL~~

From: s22 s 22 >
Sent: Wednesday, 4 October 2023 9:03 AM
To: s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Subject: DISR-DCCEEW-Australian Energy Producers CCS Working Group

CAUTION - This email originated from outside of the organisation. Do not click links or open attachments unless you recognise the sender and know the content is safe.

Hi s22 s22 and s22

Thanks again for the meeting in Canberra on the 22nd. The Australian Energy Producers representatives were all in complete agreement regarding the value of the meeting and the ongoing engagement that was discussed. Following the discussions, we have put together the proposed schedule of meetings below, with input from the company representatives.

Generally, we are proposing the last Thursday of every month, with in-person meetings proposed to coincide with the 1 November roundtable in Canberra as well as early in the new year. We have proposed a short virtual meeting later this month, in preparation for the in-person meeting in November.

It would be great to get your thoughts and feedback on the proposed schedule below. We can then look to lock in dates and times in everyone's calendars.

Would you be available for a call later this week to discuss these dates and as well as to pick up some of the other administrative points we touched on in the meeting, such as the inclusion of DCCEEW and CarbonNet in the process. Let me know if **16:00 Canberra time on Thursday** would work or if an alternative time would suit better.

Regards,

s22

Date	Event
22 September	• *First **DISR-DCCEEW-Australian Energy Producers CCS Working Group** meeting*
Thursday 19 October	• Proposed virtual **DISR-DCCEEW-Australian Energy Producers CCS Working Group** meeting from 14:00 – 15:00 Canberra time ○ Discuss proposed schedule, meeting dates, introduction of DCCEEW and Carbon Net to the group

	DISR and DCCEEW are unable to attend at this time due to prior commitments with a sitting week and preparation for Senate Estimates. Suggest we keep the working group as proposed in two weeks from this date. DISR proposes to undertake actions noted above can partly done out of session.
Wednesday 1 November	• CCS Roundtable from 13:30 – 15:30 (CO2CRC) • Proposed in-person **DISR-DCCEEW-Australian Energy Producers CCS Working Group** meeting from 10:30 – 12:30 Agreed
Thursday 30 November	• Proposed virtual **DISR-DCCEEW-Australian Energy Producers CCS Working Group** meeting from 14:00 – 16:00 Agreed
Thursday 1 February	• Proposed virtual **DISR-DCCEEW-Australian Energy Producers CCS Working Group** meeting from 14:00 – 16:00 DISR unavailable on 1 February, propose the afternoon of Monday 5 February.
Thursday 29 February	• Proposed in-person **DISR-DCCEEW-Australian Energy Producers CCS Working Group** meeting from 10:30 – 12:30 Agreed
Last Thursday of the month from 14:00 – 16:00 when virtual and from 10:30 – 12:30 when in-person.	
Monday 20 May	• Proposed in-person meeting of the **DISR-DCCEEW-Australian Energy Producers CCS Working Group** meeting • In parallel with the Australian Energy Producers 2024 conference from 20-24 May, Perth (DISR to confirm closer to the date)

s22
s 22

M s22 **E**s 22
energyproducers.au

s22

From: s22
Sent: Tuesday, 2 April 2024 4:14 PM
To: s22
Cc: GHG Acreage; s22 s22 s22 s22
Subject: GHG Titleholders Working Group (Initial kick-off meeting) [SEC=~~OFFICIAL:Sensitive~~]
Attachments: DRAFT_GHG Guideline - Offshore GHG Injection Licence.docx

~~OFFICIAL: Sensitive~~

Good afternoon s22

As discussed last week, we would like to invite you and your relevant members to a joint government-industry working group meeting. I intend to keep the same participants across both working groups i.e., this one and the ROCCSR working group. However, the number will grow pending the offer/ grant of new titles from the 2023 GHG acreage release.

Please see the list below for disseminating this invite, and let me know if I have missed anyone:

s22	INPEX	s 22
s22	INPEX	s 22
s22	Woodside	s 22
s22	Woodside	s 22
s22	Santos	s 22
s22	ExxonMobil	s 22
s22	ExxonMobil	s 22
s22	ExxonMobil	s 22
s22	ExxonMobil	s 22
s22	Chevron	s 22
s22	Chevron	s 22
s22	Chevron	s 22

Furthermore, a draft version of the Guideline: Offshore Greenhouse Gas Storage Injection Licences is ready for circulation to industry for feedback. Please see it attached.

A minor request, if possible. Could AEP please consolidate feedback from the AEP members represented above. Happy to discuss. This allows us to expedite any reviews and turn around this feedback to enable publication sooner.

The department intends to hold this first kick-off meeting virtually on Thursday 11 April at 3 – 4.30 pm AEST. The department is open to using this as an opportunity to discuss any feedback on the Guideline.

Consolidated feedback on the Guideline would be appreciated by COB Monday 15 April.

The following messaging can be shared amongst the AEP representatives that participate in the ROCCSR Titleholders working group:

Good afternoon all,

As actively participating operators in the offshore CCS regime, we would like to invite you to a joint government-industry working group meeting.

For context, DISR now has two separate CCS functions, one working on ROCCSR (Review of the Offshore CCS Regime), managed by s22 , and another working on the current, operational aspects of active greenhouse gas titles, managed by s22 .

You would have participated in the ROCCSR Titleholders working group in November last year. This new working group aims to provide a channel as industry participants to discuss the current situation of your active greenhouse gas titles with the department.

The department will hold this first kick-off meeting virtually on **Thursday 11 April at 3 – 4 pm AEST**. This will provide an opportunity to discuss the aim of this working group and provide updates on the work of the department.

Following on from the initial kick-off meeting, DISR will organise individual meetings with each operator, to provide an opportunity to discuss your projects, titles, as well as any concerns you may have about them.

Furthermore, **a draft version of the Guideline: Offshore Greenhouse Gas Storage Injection Licences is ready for circulation to industry for feedback**. Please see it attached. We would welcome any discussions on the Guideline at the kick-off meeting on **Thursday 11 April**.

Feedback on the Guideline would be appreciated by **COB Monday 15 April.**

If you have any further questions, please do not hesitate to contact s22 , A/g Manager, Offshore CCS Section at s22 @industry.gov.au.

Kind regards

s22
– Offshore CCS Section
Offshore Resources Branch | Resources & Strategy Group
Department of Industry, Science and Resources

Australian Government
Department of Industry, Science and Resources

Naarm, Level 25, 140 William Street, Melbourne VIC 3000
GPO Box 4634, Melbourne VIC 3001
Ngunnawal Country, Industry House, 10 Binara Street, Canberra ACT 2601
GPO Box 2013, Canberra ACT 2601 Australia

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~~OFFICIAL: Sensitive~~

Australian Government
Department of Industry, Science and Resources

Guideline: Offshore Greenhouse Gas Injection Licences

In relation to the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*

Effective DAY MONTH 2024

This document has been developed as a general guide only. It is subject to, and does not replace or amend the requirements of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* and associated regulations .

This guideline is made available by the Australian Government for information only. Before relying on this material, users should carefully evaluate the accuracy, currency, completeness, and relevance of the information and obtain independent, legal, or other professional advice relevant to their particular circumstances.

This document has been prepared by the Department of Industry, Science and Resources (**the Department**). It will be reviewed and updated as required.

This guideline includes high level guidance on a number of policy settings and issues which remain under development as the offshore GHG injection and storage industry matures in Australia. A Review of the Offshore Carbon Capture and Storage Regime (ROCCSR) is currently underway which may introduce changes to the regulatory regime and issue future publications to guide industry.).

This document is available online at www.nopta.gov.au.

Contents

1. Purpose and legislative framework

1.1. The *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGS Act) governs Australia's offshore petroleum and greenhouse gas (GHG) storage regulatory framework. It articulates the framework of rights, entitlements and responsibilities of governments and industry. An object of the OPGGS Act is to provide an effective regulatory framework for the injection and storage of **GHG substances** in an offshore area.

Note: a range of terms are shown in **bold** throughout this guideline. These terms are defined in the glossary section of this guideline.

1.2. The purpose of this guideline is to:

- provide information on the grant, administration and management of offshore GHG injection licences under Part 3.4 of the OPGGS Act, including cross-boundary GHG injection licences; and
- assist applicants and licensees to understand the expectations of the **responsible Commonwealth Minister (RCM)** or the **Cross-boundary Authority (CBA)** (where relevant) when making decisions in relation to a GHG injection licence under the OPGGS Act and the Offshore Petroleum and Greenhouse Gas Storage (Greenhouse Gas Injection and Storage) Regulations 2023 (the GHG Regulations)

Note: All legislative references in this guideline are from the OPGGS Act unless otherwise stated. All references to 'GHG injection licence' or 'licence' in this guideline include cross-boundary GHG injection licences unless stated otherwise.

1.3. This guideline includes an overview of the requirements for all relevant applications including:

- the grant of a GHG injection licence (including **draft site plans**)
- variation of matters specified in a GHG injection licence or in a **site plan**
- **site closing certificates**
- surrender of GHG injection licences.

1.4. This guideline also provides high-level guidance on legislative provisions for administration matters including:

- **securities** and insurance provisions
- GHG injection licence conditions
- **Serious situations**, and
- The discovery of petroleum (whether in the GHG injection licence area or in the area of an overlapping pre-commencement petroleum title).

Note: As indicated in the general disclaimer, guidance on these requirements is based on the current requirements of the OPGGS Act and GHG Regulations. Policy settings for many of these issues remains under development. A Review of the Offshore Carbon Capture and Storage Regime is currently underway which may introduce changes to both general policy settings and the regulatory framework.

This Guideline should be read in conjunction with information available on the NOPTA website including:

- Fact Sheet: Developing a GHG resource - GHG Injection Licence and **Site plan [DRAFTING UNDERWAY]**
- Fact Sheet: Significant Risk of Significant Adverse Impact (**SROSAI) [DRAFTING UNDERWAY]**
- Fact Sheet: Declarations of Experience and Disclosures
- Guideline: Applicant Suitability
- Fact Sheet: Surrender of Offshore Greenhouse Gas Titles
- Fact Sheet: Expiry of Offshore Greenhouse Gas Titles
- Fact Sheet: Cancellation of Offshore Greenhouse Gas Titles
- Offshore Carbon Capture and Storage Regulatory Approvals: Guidance Note

1.6. Before an offshore GHG injection and storage project commences, environmental, well integrity and safety approvals from the National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) are required.

1.7. Applicants and licensees may be required to obtain regulatory approvals under a range of other Commonwealth and State and Territory regulatory frameworks before their offshore GHG storage project commences. It is the responsibility of applicants and licensees to understand their obligations under other legislation and to seek all necessary approvals.

Note: Applicants and licensees should particularly note their obligations under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) and the *Environment Protection (Sea Dumping) Act 1981* (Sea Dumping Act).

Further information on interactions between the OPGGS Act, the EPBC Act and the Sea Dumping Act can be found in the Offshore Carbon Capture and Storage Regulatory Approvals: Guidance Note available on the NOPTA website.

Applicants and licensees should ensure that consistent information is provided across all their regulatory approval applications.

Project proponents are encouraged to engage early with the:

- National Offshore Petroleum Titles Administrator (NOPTA) to understand GHG injection licence requirements under the OPGGS Act and regulations,
- National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA) to understand health and safety, well integrity and environmental management obligations under the OPGGS Act and regulations,
- Sea Dumping Section in the Department of Climate Change, Energy, the Environment and Water (**DCCEEW**) to understand obligations under the Sea Dumping Act,
- EPBC Referrals Gateway in **DCCEEW** to understand obligations under the EPBC Act.

2. Overview of a GHG injection licence

2.1. A GHG injection licence authorises the licensee to carry out operations for the injection and permanent storage of **GHG substances** into an identified GHG storage formation located within the licence area.

The process for having an identified GHG storage formation declared by the **RCM** is outlined in the *Greenhouse Gas Guideline: Declaration of an identified Greenhouse Gas Storage Formation*.

2.2. The **declaration of an identified storage formation (DoSF)** retains its significance over the whole life of the GHG storage project, as injection and storage activities to be carried out under a GHG injection licence need to be consistent with parameters specified in the **DoSF**, such as:

- the **fundamental suitability determinants** (see for instance ss 358(4), 358A(4), 361(9), 368A(9))
- integrity of the storage formation (see for instance s19(3) GHG Regulations)
- plume migration modelling (see for instance s19(2)(c) GHG Regulations).

2.3. The grant of a GHG injection licence authorises the licensee to undertake the actions outlined in s357(1) subject to any conditions specified in the licence and subject to the other requirements of the OPGGS Act and regulations s357(2). This includes the ability to continue to explore the licence area for potential GHG storage formations s357(1)(c) and injection sites s357(1)(d).

2.4. GHG injection licence operations are generally considered to be all actions required to inject and store GHG substances. This includes actions in preparation for undertaking actual injection and storage such as:

- Significant investment in capital
- Drilling wells for the purpose of injection
- **Engineering enhancements** for the purposes of permanent storage, and
- construction, or significant modifications of existing facilities for use in GHG injection and storage operations

2.5. An application for a GHG injection licence can be made by a :

- GHG assessment permittee (s361 and s368A),
- GHG holding lessee(s361 and s368A), or
- Petroleum production licensee (s369).

2.6. If an applicant is not in a position to inject and store a **GHG substance** in the declared storage formation at the time of the application but is likely to be able to do so within 15 years, they may apply for a **GHG holding lease** (ss 324, 325, 329A, 330, 331 and 335A).

Further information on application requirements for a **GHG holding lease** will be provided in a future guideline which will be made available on the NOPTA website.

2.7. Additional requirements apply during the assessment and approval process for a GHG injection licence where the applicant is a holder of a **GHG holding lease** granted under s345 or a petroleum production license. See paragraphs 3.12 and 3.13 of this Guideline on additional considerations for petroleum titleholders.

2.8. The definition of a GHG substance for the purposes of the OPGGS Act is included in s7. As no other greenhouse gases have currently been prescribed, a **GHG substance** proposed for injection must be composed overwhelmingly of carbon dioxide, whether in a gaseous or liquid state.

(i) Australia, as a party to the *1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and other Matters* (the London Protocol), is required to ensure carbon dioxide streams proposed for disposal into sub-seabed geological formations consist overwhelmingly of carbon dioxide

Note: Australia's obligations under the London Protocol are met under the Sea Dumping Act, this includes requirements for developing a National Action List to provide a mechanism for screening carbon dioxide streams and their constituents on the basis of their potential effects on human health and the marine environment. Further information on the National Action List and requirements for obtaining a sea dumping permit for offshore geological sequestration can be obtained from the Sea Dumping Section in **DCCEEW**.

2.9. The OPGGS Act and GHG regulations require a **site plan** to be in force in relation to an identified storage formation specified in a GHG injection licence before any operations can be undertaken in relation to that formation. See section 4 of this Guideline for further information on draft site plan requirements.

2.10. The grant of a GHG injection licence is also subject to a determination by the **RCM** of whether there is a **Significant Risk of a Significant Adverse Impact (SROSAI)** from an operational activity under the licence on petroleum exploration or recovery operations that are being or could be carried on under an existing or future petroleum title. Where a **SROSAI** is determined to exist, the **RCM** must be satisfied when issuing a licence offer document that, depending on the type of petroleum title, the activities are:

- in the **public interest (**See paragraphs 3.20 to 3.24 of this Guideline) and/or
- **designated agreements** are in place with titleholders whose operations are subject to the significant risk (see Fact Sheet: **SROSAI** for further information).

2.11. The **RCM** may at their discretion require the lodgement of securities such as a bond or guarantee from:

- a GHG injection licence applicant (s364, s368D or s372) prior to the grant of the licence (s364 for a GHG assessment permittee or GHG holding lessee, s368D for a cross-boundary GHG assessment permittee or cross-boundary GHG holding lessee, or s372 for a production licensee).
- A current GHG injection licensee (whether as an additional security under s454(1) or a new security under s454(2)).

in the interest of ensuring that sufficient funding is available to undertake key activities and meet certain obligations under the OPGGS Act (see section 5 of this Guideline for general information on securities).

2.12. The **RCM** may also at their discretion require a GHG injection licensee to maintain insurance against expenses and liabilities arising in connection with carrying out works under the GHG injection licence where this is a condition of the licence (see section 5 of this Guideline for general information on insurance).

2.13. The **RCM** will require a mandatory lodgement of a security by a GHG injection licensee following the issue of a pre-certificate notice before a site closing certificate can be issued (s391) to meet obligations associated with the program of operations proposed to be carried out by the

Commonwealth for the purposes of monitoring the behaviour of a GHG substance stored in the identified storage formation to be covered by the site closing certificate (see section 5 of this Guideline for general information on the mandatory security).

2.14. Once a GHG injection licence has been granted, licensees are subject to a number of obligations which differ from those applying to petroleum titleholders under the OPGGS Act. Applicants and licensees should note in particular:

- GHG injection licence condition requirements (see section 6 of this Guideline)
- Variation and review requirements for injection licences and **site plans** (see section 7 of this Guideline)
- **Reportable incident** obligations (see section 8 of this Guideline), and
- Specific restrictions if petroleum is found in their title area (see section 9 of this Guideline)

Applicants and licensees are reminded that they remain responsible for ensuring they comply with all other obligations under the OPGGS Act and regulations and should engage with NOPTA and NOPSEMA as applicable where uncertain about these obligations.

Applicants and licensees should also continue to consider the need to obtain independent, legal, or other professional advice relevant to their particular circumstances.

2.15. When GHG injection operations cease, GHG injection licence holders are also subject to end of life obligations to obtain a **site closing certificate** in addition to decommissioning and surrender processes that apply to petroleum titleholders (see section 10 of this Guideline).

2.16. Following site closure, GHG injection storage formations will continue to be monitored for a period of time to ensure they are behaving as predicted. Following this period, the **RCM** may declare a closure assurance period which would result in liability being assumed by the Commonwealth as outlined in ss400 and 401.Former titleholders will remain subject to the trailing liability provisions (see section 11 of this Guideline).

3. Application and assessment process

3.1. Before commencing the injection and permanent storage of a **GHG substance**, a titleholder must have:

- A GHG injection licence granted by the **RCM** or **CBA**, and
- An approved **site plan**

See Attachment 1 –GHG injection licence application process flowchart as an overview of the application and assessment process as described below.

3.2. Applications for a GHG injection licence will be assessed by NOPTA and NOPSEMA consistent with the requirements and objectives of the OPGGS Act and the associated regulations.

3.3. Division 2 of Part 3.4 of the OPGGS Act sets out the criteria that the **RCM** or **CBA** (where relevant) must consider when deciding whether to grant a GHG injection licence.

Further information on how to apply for a GHG injection licence and the assessment process can be found on the NOPTA website. Applicants should be familiar with the relevant forms and guidance including the:

- NOPTA Forms Guidance – Greenhouse Gas
- Fact Sheet: GHG Injection Licence and **Site plan**
- Fact Sheet: **SROSAI**
- Fact Sheet: Declarations of experience and disclosures
- Guideline: Applicant suitability

How to apply

3.4. A GHG injection licence application can be made in relation to one or more DoSFs wholly situated within the area of a:

- GHG assessment permit or GHG holding lease (s361(1))
- cross-boundary GHG assessment permit or cross-boundary GHG holding lease where there is a compatible cross-boundary law (s368A(1)), or
- production licence (s369(1)).

3.5. Where there are multiple DoSFs, a single GHG injection licence can be applied for if the DoSFs:

- extend to only one block and a vertical line would not pass through a common point;
- extend to one or more blocks and a vertical line would pass through a common point; and
- extend to more than one block and a vertical line would not pass through a common point if at least one of the blocks provided the blocks are adjoining (touching) or have a point in common.

In all other cases separate GHG injection licence applications will be required.

3.6. To be validly made, the application must be made in the approved manner including a correctly completed and executed application form and be accompanied by any information or documents required by the application form in accordance with ss 361(10), 368A(9), 369(9) and 426.

3.7. An application must provide details of the matters which the applicant seeks to have specified in the licence as mentioned in ss 358(3)(d)-(k) or 358A(3)(d)-(k) being:

- the **GHG substance** to be injected and stored
- the origins of the **GHG substance**
- the potential injection site or sites
- the injection period
- the total amount of GHG that has been injected (which would have occurred on an appraisal basis) and that is proposed to be injected
- the rates of injection, and
- details of any **engineering enhancements** made in line with the **fundamental suitability determinants** outlined in the declaration of storage formation.

3.8. The information provided on these matters must not be inconsistent with the fundamental suitability determinants of the identified storage formation to which the GHG injection licence application applies (see s358(4) and s358A(4)).

3.9. Where relevant to the proposed operations, the application should also provide details of all steps the applicant has undertaken to consider the potential for their operations to have a **SROSAI** on petroleum titleholders, by providing:

- Detailed assessment of significant risk and significant adverse impact in relation to their operations
- Detailed consideration of any **SROSAI** assessment made,
- Evidence of, and outcomes from consultation undertaken with relevant petroleum titleholders regarding impacts (if any) the operations under the GHG injection licence may have on their operations,
- any **designated agreements** with those petroleum titleholders, including whether they have agreed in writing to the applicant carrying out the GHG injection operations and the terms of any such agreement.

Applicant should review the guidance on these **SROSAI** steps available in the Fact Sheet: **SROSAI**.

3.10. Within 10 days of a GHG injection licence application being submitted, the applicant must also submit a **draft site plan** which addresses all the criteria outlined in the GHG Regulations (See section 4 of this Guideline for further information).

3.11. The applicant may vary the GHG injection licence application at any time prior to either an offer being made or notice of refusal being issued by the **RCM** or **CBA**, refer ss361(11), 368A(10) or 369(10).

Applicants are strongly encouraged to meet with NOPTA in advance of applying for a GHG injection licence or if they plan to vary a submitted application before a decision is reached by the **RCM** or **CBA**.

Additional considerations for petroleum titleholders

3.12. Where a petroleum retention lease holder has been granted a **GHG holding lease** under s345 the **GHG holding lease** will become a **tied** title as outlined in s13. Holders of a **tied** title should note the following requirements when seeking to apply for a GHG injection licence:

- The lessee is only entitled to apply for a GHG injection licence if the GHG holding lease is **tied** to a petroleum production licence and the lessee is the registered holder of the petroleum production licence. This means a petroleum production licence derived from the petroleum

retention lease must be in force before an application can be made for a GHG injection licence (refer to s361(7)(a)).

- the lessee must be the registered titleholder of that production licence (refer to s361(7)(b)).
- The **GHG substance** to be injected into the storage formation must, for the entire period of injection, come from the **tied** petroleum production licence area, refer s358(9).
- A transfer of the **tied** licence can only occur if the transfer of the **tied** petroleum retention lease or **tied** petroleum production licence to the same transferees has been approved and registered (refer ss529(3) and (4)).
- If the petroleum title to which the GHG injection licence is **tied** ceases for any reason, the licensee must apply for a **site closing certificate** within 30 days of cessation (or such longer period, not more than 90 days, as the **RCM** allows) (refer ss386(13) and (14)).

3.13. A petroleum production licence holder may apply for a GHG injection licence directly, once an identified GHG storage formation has been declared within the licence area. Holders of a petroleum production licence should note the following when seeking to apply for a GHG injection licence under s369:

- where there are multiple registered holders of the petroleum production licence, all of the registered holders of the production licence will be required to apply for the licence.
- the **RCM** will be required to refuse the application under s371 if they are not satisfied that per s370:
  - all the GHG substance to be injected will be obtained as a by-product of petroleum recovery operations under the applicant's production licence (s370(c)(i)), or
  - some or all of the GHG substance will be obtained as a by-product from petroleum recovery operations under any petroleum production licence (including licences held by titleholders other than the applicant) granted under the OPGGS Act, and the grant of the licence is in the **public interest** (s370(c)(ii))**.**
- The OPGGS Act does not prescribe a particular volume or other measure of a **GHG substance** necessary to fulfil the definition of "some". The appropriateness of the proposed amount of the **GHG substance** to be sourced as a by-product of petroleum recovery operations under any petroleum production licence may be considered on a case-by-case basis.
- If a GHG injection licence is granted, the licence instrument will specify an overall proportion or amount of the GHG substance that will need to be obtained from the source to be consistent with the requirements. The overall proportion or amount will be a cumulative requirement over the duration of the GHG injection licence and there may therefore be one or more periods during the injection phase where none of the **GHG substance** currently available for future injection into the licence site will be derived from petroleum recovery operations.

Assessment process

3.14. On receipt of the application, NOPTA will review the application to ensure it has met the requirements to be considered validly made under:

- s361 where the applicant is a GHG assessment permittee or GHG holding lessee
- s368A where the applicant is a cross-boundary GHG assessment permittee or cross-boundary GHG holding lessee

- s369 where the applicant is a petroleum production licensee.

Further information on the assessment process including a process flowchart is available in the Fact Sheet: Developing a GHG resource - GHG Injection Licence and **Site plan**.

3.15. NOPTA may, at any stage during their assessment, seek further information from the applicant by written notice under s429 (where delegations of the RCM's powers are in place) or 429A. NOPTA may also request a meeting with the applicant to discuss any outstanding issues.

3.16. If the further information requested under ss429 or 492A has not been submitted within the specified time, the **RCM** or **CBA** (as relevant) may, by written notice to the applicant, choose not to consider or take any further action in relation to the application (ss429(3) and 429A(3)).

3.17. When all relevant information has been provided by the applicant, NOPTA (in conjunction with NOPSEMA) will assess the application against the relevant criteria and advise the **RCM** whether the application is recommended to be approved or refused.

3.18. To support the decision of the **RCM** or the **CBA** on whether to make an offer of a GHG injection licence to the applicant, NOPTA's advice (in conjunction with NOPSEMA) will address the offer requirements in s362, s368B or s370 as applicable. This advice will provide information to inform the **RCM** or **CBA** determination as applicable on:

- Whether the application meets the application requirements under ss361, s368A or s369 as applicable.
- The ability of the applicant to commence operations to inject and permanently store a **GHG substance** into at least one identified GHG storage formation within 5 years if the licence were to be granted (refer ss362(1)(b) and (2)(b), 368B(1)(b) and (2)(b) and 370(b)).

Applicants and licensees should note that the failure to commence injection operations within 5 years is grounds for the **RCM** to terminate a licence under s360.

- Whether the GHG injection and storage operations would pose a **SROSAI** on petroleum exploration or recovery operations, including analysis of any **designated agreements** with the titleholder of an applicable:
  - **post-commencement** petroleum title (refer s362(1)(c) and 2(c), s368B(1)(c) and (2)(c) and 370(d)).
  - existing **pre-commencement** petroleum title or existing petroleum production licence (refer s362(1)(d) and 2(d), s368B(1)(d) and (2)(d) and 370(e) and 370(g)).
  - future **pre-commencement** petroleum title where a petroleum title is currently in force over any of the blocks (refer s362(1)(e) and 2(e), s368B(1)(f) and (2)(f) and 370(f)).
  - State/Territory title within the above categories in the case of an application for a cross-boundary GHG injection licence under s368A.
- Whether the GHG injection and storage operations (other than for an application by a petroleum production licence holder under s369) will not pose a **SROSAI** over any block or blocks included in the application area which:
  - Are known to contain petroleum (s362(1)(f)(i) and 2(f)(i), s368B (1)(h)(i) and 368B (2)(h)(i))

- Are also within the licence area of a petroleum production licence or title area of a **pre-commencement** exploration permit or retention lease (s362(1)(f)(ii) and 2(f)(ii), s368B (1)(h)(ii) and 368B (2)(h)(ii)), and
- The recovery of petroleum within passes the commercial viability test (of either being commercially viable to recover or likely to be commercially viable to recover within 15 years to the satisfaction of the **RCM**) (s362(1)(f)(iii) and 2(f)(ii), s368B (1)(h)(iii) and 368B (2)(h)(iii)),

Further information on the assessment of **SROSAI** requirements for GHG injection licence applications can be found in the Fact Sheet: **SROSAI**.

- Whether per s362(1)(g), s362(2)(g), or s370(h) the technical advice and financial resources available to the applicant are sufficient to:
  - Carry out the operations and works that will be authorised by the licence, and
  - Discharge the obligations that will be imposed under the OPGGS Act and regulations in relation the licence.

Further information on technical advice and financial resource requirements are outlined in the Guideline: Applicant Suitability.

- Whether the **draft site plan** satisfies the criteria set out in the GHG Regulations (as required by s362(1)(h), s362(2)(h), s368B(1)(j), s368B(2)(j) and s370(i) of the OPGGS Act). section 4 of this Guideline for further information.

3.19. When advice is received, the **RCM** may request that NOPTA seek additional information from the applicant before deciding whether to offer a GHG injection licence.

Public interest

3.20. As part of determining whether to offer the grant of a GHG injection licence, several of the offer criteria require the **RCM** to consider whether the grant would be in the **public interest:**

- In circumstance where the **RCM** is satisfied that operations that could be carried on under a GHG injection licence (applied for under any of s361, s368A and s369) will have a **SROSAI** on an existing **post-commencement** petroleum exploration permit or retention lease or a future **post-commencement** petroleum production licence over any of the blocks to which an existing **post-commencement** petroleum exploration permit or retention lease relates (refer s362(1)(c) and s362(2)(c), s368B(1)(c) and s368B(2)(c) and s370(d).
- In the case of an application for the grant of a cross-boundary GHG injection licence under s368A, where the **RCM** is satisfied that operations could have a SORSAI on a State/Territory petroleum title within the above definition (refer s368B(1)(c)(iv)-(vi) and s368B(2)(c)(iv)(vi)).
- In the case of an application by a petroleum production licence holder under s369 in circumstances where some or all of the identified **GHG substance** to be injected into the storage formation will be obtained as a by-product of petroleum of recovery operations carried on under any petroleum production licence (refer s370(c)(ii).

3.21. The **RCM** will consider whether the **public interest** grounds for the grant of a GHG injection licence exist on a case-by-case basis.

3.22. **Public interest** provisions under the OPGGS Act require that the **RCM**:

- Must have regard to any applicable **designated agreement** with the affected petroleum titleholder when the applicant is a GHG assessment permittee or GHG holding lessee (including an applicant for a cross-boundary GHG injection licence) (s362(3) and s368B(3)).
- Must be satisfied that either:
  - The grant of the GHG injection licence is in the **public interest** (s370(d)(iv)) or
  - There is any applicable **designated agreement** with the affected petroleum titleholder (s370(d)(v)).

  when the applicant is a production licence holder.

3.23. The above requirement does not limit the matters which the **RCM** may consider in determining the **public interest**. As part of exercising this discretion, the **RCM** may consider any matters which is reasonable and relevant to the object and purpose of the relevant provisions of the OPGGS Act.

3.24. When determining the public interest, any information provided as part of the application about the source of the **GHG substance** and intended uses before permanent injection and storage is undertaken may be considered. An applicant may choose to include proposals supporting any of the following aims as part of their application :

- addressing hard-to-abate emissions from industry sectors such as cement, iron, steel, and chemical production
- the development of sources of hydrogen produced from natural gas supported by Carbon Capture and Storage
- the commercialisation of Direct Air Capture Technology
- the commercialisation of Bioenergy with Carbon Capture and Storage
- the commercialisation of other Carbon Capture, Utilisation and Storage projects.

Offer, acceptance and grant

3.25. An offer will be made to the applicant:

- If an application is made under s361 by the holder of an applicable GHG title and the **RCM** is satisfied of the matters in s362, the **RCM** must provide an offer document to the applicant.
- If an application is made under s368A by the holder of an applicable cross-boundary title and the **CBA** or **RCM** (as applicable) is satisfied of the matters in s368B and the state or the Northern Territory has consented to the giving of the offer document where part of the licence area would be in coastal waters, the **CBA** must provide an offer document to the applicant.
- If an application is made under s369 by a petroleum production licence holder and the **RCM** is satisfied of the matters in s370, the **RCM** may provide an offer document to the applicant.

3.26. The offer document will specify that the **RCM** or **CBA** is prepared to grant the applicant a GHG injection licence over the block or blocks specified in the application of the basis of:

- In the case of an application under s361 or s369: the licence will be granted subject to the matters outlined in paragraphs 358(3)(d) to (k) being specified as conditions consistent with the application.
- In the case of an application under s368A: the licence will be granted subject to the matters outlined in paragraphs 358A(3)(d) to (k) being specified as conditions consistent with the application.

3.27. The offer document for a GHG injection licence may also specify the form and amount of a security required to be lodged by the applicant for the licence to be granted (refer ss 364, 368D, 372 and 430(4)). See section 5 of this Guideline for general information.

3.28. To accept the offer, the applicant must:

- Make a request for grant of a GHG injection licence under s431 (titles other than cross-boundary titles) or s431A (Cross-boundary titles) in the applicable timeframe. This will be 90 days unless a longer period not exceeding 180 days has been requested by the applicant and allowed by the **RCM** or the Titles Administrator as applicable.
- Lodge any required security specified in the offer within the same timeframe applicable to accept the offer.

3.29. If the applicant makes a request for grant of a GHG injection licence and lodges any required security in the applicable timeframe, the **RCM** or **CBA** must grant the licence to the applicant.

4. Draft site plan requirements

4.1. For any operation to be carried out in relation to an identified GHG storage formation specified in a GHG injection licence an approved **site plan** must be in force in relation to the formation, and the licensee will be required to comply with the plan in addition to other regulatory requirements and approvals (see s22 of the GHG Regulations).

4.2. The criteria for a **draft site plan**, approval processes and administration are primarily addressed in Part 4 and Schedule 2 of the GHG Regulations.

4.3. The **draft site plan** must provide sufficient information to satisfy the **RCM** that the proposed operations will ensure safe and secure permanent storage of the **GHG substance**.

4.4. The information that must be included in the **draft site plan** is broken into two parts:

- Part A sets out the predictions for the behaviour of a **GHG substance** stored in the identified GHG storage formation. Evidence that a **GHG substance** has behaved or is behaving, or that there is a significant risk that it will behave, otherwise than as predicted will constitute a **serious situation** under s379(1)(e) and (f)**,** which may trigger the **RCM**'s **serious situation** powers in s380.
- Part B will deal with other matters which includes operational details, risk management and assessments, proposed monitoring activities,

4.5. Information provided in the **draft site plan** must be consistent with the declaration of the identified GHG storage formation (see in particular s19(2)(c), s19(3) and s20(2) of the GHG Regulations).

Assessment of the applicant's draft site plan

Note: This section should be read in conjunction with the Fact Sheet: Developing a GHG resource – GHG Injection Licence and **Site plan** available on the NOPTA website.

Applicants are encouraged to engage early with NOPTA to ensure their **draft site plan** proposals will include adequate information to enable assessment against each criterion for the **site plan** outlined in the GHG regulations.

4.6. The assessment of the **draft site plan** will be undertaken by NOPTA concurrently with the assessment of the other materials provided as part of the GHG injection licence application.

4.7. To inform the assessment and provision of advice to the **RCM** for decision, NOPTA will seek input and analysis from NOPSEMA on matters raised in the **draft site plan** which relate to environmental management, well integrity, safety considerations and associated matters within NOPSEMA's remit.

4.8. The **RCM** or the Titles Administrator may, at any time during the assessment process, request further information from the applicant by written notice relating to any of the criteria set out in ss18 to 20 of the GHG Regulations. This request must specify per s26 of the GHG Regulations:

- Each criterion in relation to which the information is requested, and
- A reasonable period within which the information is to be provided.

General Criteria for the draft site plan

4.9. The general criteria for the approval of a **draft site plan** are set out in s18 of the GHG Regulations.

4.10. The general criteria will be considered across Part A and Part B and require the applicant to satisfy the **RCM** that the **draft site plan** overall:

- is appropriate to the nature and scale of the injection and storage operations

- demonstrates that if proposed injection and storage operations are undertaken in accordance with the plan, the formation will be safe and secure for the permanent storage of **GHG substance**s (both already stored and proposed to be injected), and
- That current, new and increased levels of geological risks associated with the operations can be identified and that these risks can be:
  - Eliminated, or
  - Reduced to as low as reasonably practicable with any remaining residual risk being to an acceptable level.

Note: Other risks arising from GHG operations will continue to be regulated under other parts of the OPGGS Act and regulations, particularly through the requirements to prepare and have accepted by NOPSEMA:

- An environment plan for environmental management of offshore GHG activities
- A well operations management plan for well activities, and
- A safety case to address occupation health and safety at offshore facilities.

Part A criteria for the draft site plan

4.11. The criteria for part A of the **draft site plan** are set out in s19 of the GHG Regulations. These criteria require that Part A is :

- Presented as "Part A – Behaviours predicted for the purposes of paragraphs 379(1)(e) and (f) of the Act (s19(1)(a) GHG Regulations)
- Set out the predictions for the behaviour, at specified times, of each **GHG substance** in the formation (both already stored and proposed to be injected and stored (s19(1)(b) GHG Regulations), and
- Include information relevant to the predictions (s19(1)(c) GHG Regulations).

4.12. More detailed requirements for the predictions under s19(1)(b) are outlined in s19(2). In meeting these requirements applicants and licensees should note that:

- It is expected that a range of predictions will be provided in the application (e.g. at P10/P50/P90 probability estimates).
- Their predictions should be explained with reference to the risk consequence framework that the applicant has used to identify and quantify risks and demonstrate that they have been reduced to as low as reasonably practicable (see further section 4.15)
- No set time intervals are provided as it is expected that the frequency of predictions will need to be considered on a site-specific basis taking into consideration factors such as the:
  - anticipated storage capacity and injection rate into the formation
  - point in the lifecycle of injection the predictions cover
  - sufficiency of proposed prediction intervals for enabling the timely detection of a **serious situation**
  - adequacy of post site closure intervals for allowing the **RCM** to determine that the **GHG substance** is continuing to behave as predicted.

4.13. The relevant information for the predictions under s19(1)(c) are outlined in s19(3). These requirements will assist the **RCM** to consider whether the predictions are soundly based and

consistent with the estimate of the spatial extent and integrity of the formation outlined in the **DoSF** application and any variations.

Applicants should note that the information provided in part A of the **draft site plan** will reflect their best understanding at the time of the application and may need to be varied during the injection phase (both through titleholder triggered variations and the outcomes of **site plan** reviews) due to learnings from carrying out operations authorised by the licence and the evolution of best practice (see section 7 of this Guideline).

Part B criteria for the draft site plan

4.14. The criteria for Part B of the **draft site plan** are outlined in s20 of the GHG Regulations. These criteria require that Part B:

- Is presented as "Part B – Other matters" (s20(1)(a) GHG Regulations)
- Sets out the information specified in schedule 2 (s20(1)(b) GHG Regulations)
- Sets out an integrated operations management plan, showing clear chains of command where appropriate (s20(1)(c) GHG Regulations)
- Include an appropriate strategy for the implementation of the **site plan** (s20(1)(d) GHG Regulations), and
- Include appropriate arrangements for monitoring, recording and reporting in relation to implementation and compliance with the **site plan** (s20(1)(e) GHG Regulations)**.**

4.15. As part of the information provided in outlining the monitoring, recording and reporting requirements, applicants should include a description of:

- proposed approaches for verifying the accuracy of the measurement or estimation of the quantities of the GHG substance injected into the formation
- standards or codes of practice for metering equipment
- proposed procedures to be used for measuring the GHG substance for reporting or compliance monitoring purposes.
  - This would include measures to verify the composition of the GHG substance (particularly at the point of injection) and the rate of injection.

4.16. Schedule 2 of the GHG Regulations provides the more detailed requirements for Part B of the **draft site plan** requiring:

- Operations planning and management information (Schedule 2 clause 2 GHG Regulations)
  - This information is provided to assure the **RCM** that adequate consideration has been given to the nature and manner of carrying out the proposed operations.
- An overview of proposed operations (Schedule 2 clause 3 GHG Regulations) including details on and joint venture arrangements between multiple titleholders, commercial agreements for the supply of **GHG substances,** details on infrastructure facilities, a schedule for proposed operations and planned significant works and upgrades.
  - This information is important to provide the **RCM** with an understanding of the potential sources of **GHG substances** and the potential feasibility of operations.

- Details should be included (where known) on any impurities that will be contained in a GHG substance to be injected, given this will inform predictions on phase behaviour and for its corrosion potential on proposed transport and facility infrastructure.

Applicants should note that where existing petroleum infrastructure is proposed to be re-used for GHG injection, the appropriateness of this re-use will need to be considered on a case-by-case basis. Consideration of whether this infrastructure is fit for purpose will be a core aspect of subsequent operational approvals from NOPSEMA including environment plans, safety cases and well operations management plans.

Guidance on issues associated with factors which may limit the ongoing fitness for purpose of existing infrastructure generally can be found in the NOPSEMA guidance note: Ageing assets and life extension.

Applicants should engage early with NOPSEMA, including in advance of submitting their draft site plan, to discuss their facility proposals in order to ensure safety-by-design principles are appropriately being factored into their infrastructure proposals from an early stage of project design.

- Information on any **engineering enhancements** outlined in the application for a **DoSF** in line with schedule 1 or variation under s313(3)(a) (schedule 2 clause 4 GHG Regulations)
- Information about potential risks to (and proposed strategies for the elimination or reduction to as low as reasonably practicable) the containment of **GHG substances** that have been identified but which were not part of the **DoSF** (schedule 2 clause 5 GHG Regulations).
    - This information is critical to demonstrate that the proposed approach to the design and implementation of the project will manage risks to as low as reasonably practicable when compared to other development options. Applicants should show that they have undertaken preliminary major accident events and safety integrity level assessments to underpin this evaluation.

Applicants should note that information included in the draft site plan to meet these risk assessment and strategy requirements will be a critical underpinning to future operational approvals including safety cases.

Further information on risk assessment considerations can be found in the NOPSEMA guidance note: risk assessments

Again, applicants should engage early with NOPSEMA, including in advance of submitting their draft site plan, to discuss risk aspects of their project to ensure safety-by-design principles are appropriately being factored into their infrastructure proposals from an early stage of project design.

- Information on the proposed monitoring of the behaviour of the stored **GHG substances** including a monitoring plan, proposed substances for facilitating monitoring, identification of potential **reportable incidents** and a plan for detecting and monitoring leakage of the stored **GHG substance** into the seabed (schedule 2 clause 6 GHG Regulations).
    - These plans are important to ensure that any necessary mitigation and remediation activities can be initiated as soon as practicable and so that the RCM can be advised and action can be taken to remedy the leakage.
- A program for detecting and monitoring leakage of GHG substances that could potentially occur during transport to the proposed injection formation and at the point of injection into the formation (schedule 2 clause 7 GHG Regulations).
    - The program should enable early detection of leakages to enable action to be taken to remedy or mitigate the leakage as soon as practicable.

- A program for detecting and monitoring leakages from the well bore (schedule 2 clause 8 GHG Regulations).
    - As above, the program should enable early detection of leakages to enable action to be taken to remedy or mitigate the leakage as soon as practicable.
- A plan for certain aspects of remediation work including the plugging and closing of wells, establishing the subsurface of the formation and remediating any feature that could pose a risk of leakage of a storage GHG storage formation after a site closing certificate has been issued in relation to the formation (schedule 2 clause 9(1) GHG Regulations).
    - This information will include high level given remediation works content which will be considered under environment plan acceptance by NOPSEMA under the Offshore Petroleum Greenhouse Gas Storage (Environment) Regulations 2023.
- A plan for monitoring the behaviour of GHG substance stored in the formation after ceasing injection operations into the formation (schedule 2 clause 9(2) GHG Regulations).

Applicants should note that the information provided in part B of the **draft site plan** will reflect their best understanding at the time of the application and may need to be varied during the injection phase (both through titleholder triggered variations and the outcomes of **site plan** reviews) due to learnings from carrying out operations authorised by the licence and the evolution of best practice (see section 7 of this Guideline).

Approval of the applicant's draft site plan

4.17. The **RCM** will be required to decide whether to approve or refuse to approve the **draft site plan** in addition to deciding on the grant of the GHG injection licence (s25 GHG Regulations).

4.18. If the **RCM** is not satisfied that the **draft site plan** meets the criteria in ss18 to 20 of the GHG Regulations but the **RCM** believes that they could vary the draft or provide additional information to the **RCM**'s satisfaction, the **RCM** must by written notice given to the applicant:

- Inform the applicant they are not satisfied and the reasons for this, and
- Give the applicant an opportunity to vary the **draft site plan** or provide the additional information (s27 GHG Regulations).

4.19. Any decision to refuse approval of the **draft site plan** must include the reasons for the refusal s28(3).

4.20. The **RCM** may approve the **draft site plan** if reasonably satisfied that the plan meets the criteria set out in ss17 to 20 of the GHG Regulations (s25(2) GHG Regulations) and may have regard to any matters they consider relevant in making the decision to approve the **draft site plan** (s25(3) GHG Regulations)

5. Securities and insurance

5.1. The OPGGS Act provides for the **RCM** (or **CBA** where applicable) to require a GHG injection licence holder to hold insurance or provide a security in a number of circumstances.

Securities

5.2. Discretionary securities may be requested from GHG injection licence applicants or licensees to ensure adequate funding is available for applicants and licensees to comply with and fulfil applicable statutory obligations under the OPGGS Act.

5.3. The offer document for a GHG injection licence may specify the form and amount of a security required to be lodged by the applicant for the licence to be granted (refer ss 364, 368D, 372 and 430(4)).

5.4. Whether a security is required in order for a GHG injection licence to be granted may be considered by the **RCM** or **CBA** on a case-by-case basis. Consideration may be given to the financial and technical capability of the applicant/titleholder and the scope and other specific circumstances of the proposed injection and storage activities.

5.5. Section 358(11) (or s358A(9) as applicable) provides that all GHG injection licences are subject to the condition that, if the **RCM** requires the holder of the licence to provide a security or an additional security for compliance with the applicable statutory obligations under s454, the licensee will comply with the requirement.

5.6. Where one or more securities is already in force in relation to a GHG injection licence, an additional security may be required to be lodged under s454 (1) where the **RCM** is satisfied that the total amount of any existing securities is insufficient in respect of compliance with the applicable statutory obligations.

5.7. Section 454(2)enables the **RCM** to require a new security to be lodged if satisfied that it would be appropriate in respect of compliance with the applicable statutory obligations.

5.8. Section 454(3) outlines the applicable statutory obligations as obligations to comply with:

(a) conditions of the licence

(b) directions given to the licensee by the **RCM**, NOPSEMA or NOPTA

(c) provisions of chapter 3, 5, 5A, 6 and 8.1 of the OPGGS Act - which could for instance include to ensure adequate funding is available to meet future decommissioning and site rehabilitation requirements (particularly in the event there may be an unplanned site closure)

(d) Provisions of the regulations – which could include to ensure adequate funding is available to meet ongoing commitments to undertake monitoring during the injection phase as specified in the site plan).

5.9. If a security is in place covering obligations under the pre-existing GHG permit or lease, then this will continue to apply to any unmet obligations over any remaining permit or lease blocks.

5.10. Once a security is in force, it will remain in force even though the title may be transferred after the security is lodged (refer s455). The interest of the transferor of the title in the security is transferred to the transferee.

5.11. A mandatory security will be required to be lodged by the titleholder in line with s392 in order to be issued a **site closing certificate.** See section 10 of this Guideline.

Insurance

5.12. In addition to securities, the conditions of a GHG injection licence may include that the registered titleholder maintain, as directed by the **RCM** from time to time, insurance against expenses or liabilities arising in connection with the carrying out of work or the doing of any other thing under the licence, refer s571A.

5.13. The requirement can include requiring GHG injection licensees to hold insurance against expenses of complying with directions from NOPSEMA or the **RCM** relating to clean up or other remediation of the effects of the escape of a **GHG substance** to the surface.

6. GHG injection licence conditions

6.1. When a GHG injection licence is granted, ss 358 and 358A outline the general conditions that apply respectively for GHG injection licences and cross-boundary GHG injection licences.

6.2. Key elements of the GHG injection licence application will become conditions of a GHG injection licence once granted. The conditions of a GHG injection licence require that the licensee must not inject or permanently store a GHG into an identified GHG storage formation that is wholly situated in the licence area, unless complying with the following:

- the identified GHG storage formation is specified in the licence
- the **GHG substance** is of a kind that is specified in the licence
- the **GHG substance** complies with such requirements (if any) as are specified in the licence
- the origin or origins of the **GHG substance** are as specified in the licence
- the **GHG substance** is injected at a potential GHG injection site or sites specified in the licence
- the **GHG substance** is injected during a period specified in the licence
- the sum of:
  - the total amount of GHG that has already been injected into the identified GHG formation; and
  - the total amount of **GHG substance** that is proposed to be injected into the identified GHG storage formation;

  does not exceed the amount specified in the licence
- the rate, or range of rates, of injection of the **GHG substance** is as specified in the licence;
- in a case where the fundamental suitability determinants of the identified GHG storage formation include particular **engineering enhancements**—those **engineering enhancements** have been made.

Note: The above matters must at all times remain consistent with the fundamental suitability determinants. Licensees should meet early with NOPTA if they anticipate needing to seek a variation of these conditions on their licence.

6.3. If two or more identified GHG storage formations are specified in a GHG injection licence, different matters may be specified as conditions in the licence for these different formations (refer s358(6) or s358A(6)).

6.4. The **RCM** or **CBA** may also grant a GHG injection licence subject to whatever conditions the **RCM** or **CBA** deems appropriate, in accordance with s358(1) or s358A(1) as applicable. These conditions, if any, must be specified in the licence.

6.5. The **RCM** or **CBA** may vary a licence by imposing one or more conditions, in accordance with s 358(14) or s358A(13), respectively. These conditions, if any, must be specified in the licence.

7. GHG injection licence variations and reviews

Variations to specified matters

7.1. Once a GHG injection licence has been granted, elements of the licence, including the approved **site plan** and its timing, and the underlying **DoSF** may need to change:

- between the initial approval and commencement of operations if the scope of the activities to be covered by the **site plan** changes, or
- as experience and geological knowledge is gained during injection operations.

7.2. A titleholder may apply to vary certain matters specified in a GHG injection licence, refer s374 or s374A. The application must set out the proposed variation and specify the reasons for the proposed variation.

7.3. The GHG injection licence holder can seek to vary the following matters specified in the injection licence:

- the identified GHG storage formation
- the **GHG substance**
- requirements (if any) specified for the **GHG substance**
- the origin or origins of the **GHG substance**
- the injection site or sites of the **GHG substance**
- the period during which the **GHG substance** is specified to be injected
- the sum of the **GHG substance** that:
  - has already been injected into the identified GHG storage formation
  - is proposed to be injected into the identified GHG storage formation
- the rate, or range of rates, of injection of the **GHG substance**
- particular **engineering enhancement**s which have been made as forming part of the fundamental suitability determinants.

7.4. In deciding whether to approve the variation, the **RCM** must consider (refer s374(3B) and s374A(3B) whether the technical advice and financial resources available to the applicant are sufficient to:

- Carry out the operations and works that will be authorised by the licence as varied
- Discharge the obligations that will be imposed by the OPGGS Act or associated legislative instruments in relation to the licence as varied.

7.5. The **RCM** may also have regard to any other matters they consider relevant when determining whether to approve the variation (s374(3A) and s374A(3A))

Applicants and licensees should note that a variation to a GHG injection licence may result in changes which will also require corresponding amendments to a range of their other approvals under the OPGGS Act.

Prior to seeking a variation to a licence, licensees should discuss:

- With NOPTA –whether amendments may be required to both their DoSF and their approved site plan

- With NOPSEMA –whether amendments may be required to their accepted environment plans, well operations management plans or safety cases.

7.6. Where a titleholder has applied for a variation of the GHG injection licence or the **DoSF**, the **RCM** may request that the applicant undertake a review of their approved **Site plan** (s37 of the GHG regulations).

Approved Site plan Reviews, Variations and Withdrawal

7.7. Section 36 of the GHG Regulations provides that an approved **site plan** must be reviewed by the GHG injection licensee at least once every 5 years during which the **site plan** is in force.

7.8. A review of an approved **site plan** must take into account the matters in s38 of the GHG Regulations:

- information in relation to the predictions set out in Part A regarding experience gained about the predictions, carrying out of operations authorised by the licence and monitoring or migrations pathways;
- information in relation to Part B including:
  - i) the plan for monitoring behaviour of **GHG substance**(s) stored in the formation;
  - ii) the program for detecting and monitoring leakages of **GHG substance**(s) during transport and injection;
  - iii) the program for detecting and monitoring leakages of **GHG substance**(s) from well bores;
  - iv) the plan for carrying out remediation work;
  - v) evolution of best practice; and
  - vi) carrying out of operations authorised by the licence.

7.9. If following a review the licensee identifies any inconsistences in the **site plan**, the licensee must submit a variation of the plan to the **RCM** (s36(3) GHG Regulations).

Licensees are strongly encouraged to engage early with NOPTA if inconsistencies are being identified during the review process.

7.10. The **RCM** may request a review of an approved **site plan** if:

- the licensee applies for a variation of the declaration of an identified GHG storage formation, refer s313
- the licensee applies for a variation of the GHG injection licence, refer s374 or s374A
- a **reportable incident** occurs, refer s 37 of the GHG Regulations
- the **RCM** believes that it is necessary to remove any inconsistencies in the approved **site plan** that may arise as a result of a direction by the **RCM**, refer ss376, 380 or 383.

GHG injection licence applicants and licensees should note that a variation to the **site plan** may also result in a requirement to vary the matters specified in the licence instrument and/or the underpinning declaration of an identified storage formation. Licensees should discuss these considerations with NOPTA.

Withdrawal of approval of site plans

7.11. A failure to:

- Review a **site plan**, or

- To submit a draft variation of the **site plan** to the **RCM** when required

are both among the grounds for the **RCM** to withdraw approval of the approved **site plan** under s32 of the GHG Regulations.

7.12. A GHG injection licensee commits an offence under s22(1) of the GHG Regulations if they carry on operations in relation to an identified GHG storage formation and do not have a **site plan** in force in relation to the formation.

7.13. Accordingly, a withdrawal of approval for the **site plan** would mean that operations would need to cease, which will in turn be a trigger for mandatory application for a **site closing certificate** under s386(4).

7.14. Before withdrawing approval of a **site plan** the **RCM** must under s33 of the GHG Regulations:

- Give the licensee at least 30 days' written notice of their intention to withdraw approval (and may optionally give this notice to other persons),
- Specify a day by which submissions may be made in response to the notice, outlining any matters for the **RCM** to take into account in deciding whether o withdraw the approval,
- Take into account any action taken by the licensee to remove the grounds for withdrawal or to prevent the recurrence of that ground, and
- Take into account any matter submitted within the timeframe specified in the notice.

7.15. If the **RCM** decides to withdraw approval of the **site plan**, they must give the licensee written notice of this decision, specifying the reasons for it and the day on which it takes effect (s34 GHG Regulations).

7.16. To mitigate the risks of inadvertent non-compliance, licensees should ensure they submit the outcomes of a **site plan** review to the **RCM** even if no changes are proposed, as evidence that the review has occurred.

Licensees are strongly encouraged to discuss any concerns about compliance with **site plan** requirements (including variation and review obligations) with NOPTA in the first instance.

8. Serious situation

8.1. Section 379 defines when a **serious situation** exists in relation to an identified GHG storage formation specified in a GHG injection licence. A **serious situation** exists if:

- a **GHG substance** injected into the identified storage formation has leaked or is leaking (s379(1)(a)) or there is a significant risk that this will occur (s379(1)(b))
- a leak has occurred, or is occurring during injection operations (s379(1)(c)) or there is a significant risk that this will occur (s379(1)(d))
- the **GHG substance** has not or is not behaving as predicted in the **site plan**, (s 379(1)(e)) or there is a significant risk that this will occur (s379(1)(f))
- the injection or storage of a **GHG substance** into the identified storage formation has had, or is having, a significant adverse impact on the geological integrity of the whole or part of a geological formation or geological structure (s379(1)(g)) or there is a significant risk that this will occur (s379(1)(h)).
- the identified storage formation is not suitable for the permanent storage of the **GHG substance** in line with the parameters of the licence (s379(1)(i))

Reportable incidents that are serious situations

8.2. Part 5 of the GHG Regulations (ss 47 to 52) impose obligations on GHG injection licensees to notify and provide reports to the **RCM** in relation to reportable incidents in relation to identified GHG storage formations.

Licensees should note that **reportable incident** obligations under the GHG Regulations are in addition to reportable incident obligations under both the:

Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2023 (Environment Regulations); and
Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011 (RMA Regulations)

Further information on these other forms of reportable incident is available on the NOPSEMA website: https://www.nopsema.gov.au/offshore-industry/report-incident

8.3. Section 49 of the GHG Regulations provides that each of the following is a reportable incident:

- Events which have been identified in Part B of the **Site plan** as events in the behaviour of a **GHG substance** (include due to departures from predicted migration pathways or rates of a **GHG substance**) that are causing or have the potential to cause a **serious situation**.
- A current or previous leakage of a **GHG substance** to the seabed which causes a **serious situation** (see s379(1)(a))
- The risk of a leakage to the seabed which causes a **serious situation** (see 379(1)(b))
- A leakage of a **GHG substance** from the bore of a well that forms parts of the licence operations that causes or has the potential to cause a **serious situation** to exist in relation to the formation.

8.4. A GHG injection licence holder must comply with requirements to give notification and subsequently to report to the **RCM** on reportable incidents in line with the timeframes outlined in s49(2) of the GHG Regulations.

8.5. The information which must be included in a notification to the **RCM** is set out in s51(1) of the GHG Regulations. A record of this notification must be given to the responsible State/Territory Minister within 3 days of the notification.

8.6. The information which must be included in a report to the **RCM** is set out in s52(1) of the GHG Regulations. A copy of this report must be given to the responsible State/Territory Minister within 3 days of the notification.

Dealing with serious situations

8.7. Section 380 provides the **RCM** with wide powers to deal with **serious situation**s. If the **RCM** is satisfied that a **serious situation** exists, the **RCM** may direct the GHG injection licensee to (among other things):

- take all reasonable steps to ensure that operations are carried on in a manner specified in the direction
- cease or suspend injection
- undertake such activities as are specified in the direction for the purpose of eliminating, mitigating, managing, or remediating the **serious situation**.

8.8. If a direction given by the **RCM** under s380 is inconsistent with anything in the approved **site plan**, the licensee must, within 60 days, prepare a variation of the **site plan** for the purposes of removing the inconsistency and give the variation to the **RCM**.

9. Discovery and Protection of Petroleum

Discovery of Petroleum

9.1. If a GHG injection licence holder discovers petroleum in the licence area, they must notify the **RCM** of this discovery before the end of the 30-day period beginning on the day of the completion of the well that resulted in the discovery (s452).

9.2. If petroleum is discovered as an incidental consequence of injection activities or exploration activities authorised by the GHG injection licence, the titleholder may seek the written consent of the **RCM** to recover petroleum for the sole purpose of appraising this discovery (s357(1)(i)).

9.3. Following the notification of the discovery, the GHG injection licence holder must also within 60 days of completion of the well that led to the discovery provide a report to the RCM which outlines:

- The location of the petroleum discovery in the title area, and
- If any production tests have been conducted on the discovered petroleum – the results of the tests (regulation 2.06 *Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011*).

9.4. Any petroleum recovered for the purpose of appraising a discovery does not become the property of the licensee (s357(3)).

Protection of petroleum in pre-commencement titles

9.5. In circumstances where petroleum is discovered in a **pre-commencement** petroleum title (a petroleum exploration permit granted before 22 November 2008 and any title renewed or derived from that title) area after the grant of an overlapping GHG injection licence and the licensees have not entered into a **designated agreement**, s383 provides the **RCM** with broad powers to protect that petroleum resource.

9.6. Section 29 provides for the **RCM** to assess whether operations under the GHG injection licence could result in a **SROSAI** on operations to recover the petroleum or the commercial viability of the recovery of petroleum in a **pre-commencement** petroleum title.

9.7. Depending on this assessment the **RCM** may determine that the **SROSAI** can be eliminated or that action can be undertaken to mitigate, manage or remediate the risk. In either circumstance the **RCM** must by written notice either:

- issue a direction to the GHG injection licence holder requiring actions to eliminate, mitigate, manage, or remediate the risk as applicable (s383(1)(g))
- suspend any or all of the rights conferred by the GHG injection licence for a specified period or indefinitely (s383(1)(h), or
- cancel the GHG injection licence (s383(1)(i).

9.8. Evaluating the commercial viability of petroleum recovery, may include consideration of prevailing market conditions and consideration of whether there is a meaningful technological and commercial pathway to develop the petroleum resource in the future.

10. Site Closure

10.1. GHG injection licence holders are subject to specific site closure processes, in addition to decommissioning and surrender requirements equivalent to those that apply to petroleum titleholders. The below information outlines these processes.

See Attachment 2 –Site closure process flowchart as an overview of the site closure process as described below.

Site closing certificate

10.2. A GHG injection licensee may at any time apply to the **RCM** for a **site closing certificate** in relation to a particular identified GHG storage formation specified in the licence.

10.3. However, there are certain circumstances in which it will be mandatory for a licensee to apply for a **site closing certificate** within the application period. These are where:

- the licensee has ceased operations for the injection of GHG into the storage formation (application period within 30 days of ceasing operations)
- there is a ground for cancellation of the licence and the **RCM** has given written notice to the licensee directing them to apply (application period as directed by the **RCM** but must not be less than 30 days)
- the GHG injection licence is **tied** to a petroleum retention lease or petroleum production licence which ceases to be in force as a result of being surrendered, cancelled, terminated, or wholly revoked (application period within 30 days of the petroleum title ceasing to be in force).

10.4. A longer period (up to 90 days) may be allowed by the **RCM** to lodge an application for a **site closing certificate** after ceasing operations or the cessation of the **tied** title. ss386(6) and 386(15) allow for an application for a longer period that must be made in writing within 30 days of cessation of injection operations or of the **tied title**.

10.5. The application for a **site closing certificate** must include a site closing report (refer s386(2)), setting out:

- the modelling conducted by the applicant of the behaviour of the **GHG substance** injected into the storage formation and relevant information and analysis, including methodology; types of models; injection and monitoring data and assumptions
- the applicant's assessment of the expected migration pathway(s) and short- and long-term consequences of the migration
- the applicant's suggestions for a post-site closing monitoring program of the stored **GHG substance** to be undertaken by the Commonwealth, after the issue of a **site closing certificate**, to monitor the behaviour of the stored **GHG substance**
- details of monitoring, measurement, and verification of the behaviour of the injected GHG in the storage formation to enable the **RCM** to achieve sufficient confidence about the likely fate of the injected **GHG substance** after the site closure
- such other information (if any) as is specified in the regulations.

10.6. At any time before a decision on the application is made by the **RCM**, the applicant may vary the application by written notice setting out the additional matters that the applicant wishes to be considered (refer s387).

10.7. Variation applications may also be made at the request of the **RCM**, which may for instance be requested in circumstances where the **RCM** considers modifications are necessary to the proposed post-site closing monitoring program and the details of the MMV of the behaviour of the injected **GHG substance** (s387(4)(b)).

The variation application must be made in the approved manner published on NOPTA's website.

10.8. The **RCM** must decide on the application for a **site closing certificate** within five years of the lodgement of the application. In deciding whether to grant a **site closing certificate**, the **RCM** must have regard under s388to:

- whether the **GHG substance** injected into the storage formation is behaving as predicted in Part A of the **site plan**.
- any **SROSAI** that the stored **GHG substance** will have on navigation, fishing, lawful pipeline construction and operations, or enjoyment of native title rights (meaning native title rights under the *Native Title Act 1993*)
- whether there is a significant risk that the stored **GHG substance** will have a significant adverse impact on:
  - the conservation or exploitation of natural resources
  - the geotechnical integrity of the whole or part of a geological formation or structure
  - the environment, human health, or safety
- whether relevant statutory requirements have been complied with.

10.9. While the **RCM** must consider whether there is a risk of a **SROSAI** to the groups identified in s388(2), the **RCM** may also consider whether this risk applies for other sectors such as titleholders under the *Offshore Electricity Infrastructure Act 2021* (s388(3)).

10.10. If not satisfied that all relevant statutory requirements have been complied with, the **RCM** may consider if there are otherwise sufficient grounds to warrant the issue of the **site closing certificate**.

10.11. Once the **RCM** has considered all relevant matters, the **RCM** may give the injection licensee a pre-certificate notice telling the licensee that the **RCM** is prepared to issue a **site closing certificate** in relation to the formation. The pre-certificate notice must specify:

- a program of operations that the Commonwealth proposes to carry out for the purpose of monitoring the behaviour of the stored **GHG substance** after the site closure, including an estimate of the costs of the program
- the form and amount of security to be lodged by the applicant, equal to the estimated costs of carrying out the monitoring program.

10.12. If the licensee has lodged the specified security within 60 days (or longer period not exceeding 180 days as allowed and agreed by the **RCM**) after the pre-certificate notice was given, the **RCM** will issue a **site closing certificate**. If the licensee does not lodge the security within 60 days (or an allowed longer period), the application for the **site closing certificate** will lapse.

10.13. Once issued, a **site closing certificate** in respect of the identified GHG storage formation remains in force indefinitely (refer s394). If the GHG injection licence is transferred, the **site closing certificate** will be transferred to the transferee for the licence (refer s395).

Decommissioning requirements

10.14. As the base case for decommissioning under s572, a GHG injection licensee is required to remove from the licence area all structures, equipment and other items of **property** that are neither used, nor to be used in connection with the operations authorised by the permit. This obligation is ongoing and covers both the removal of **property** at the end of Injection and the removal of disused **property** at appropriate points through the life of an offshore GHG activity.

Note: This section provides some interim guidance on specific issues associated with decommissioning for GHG injection licences. Further general guidance on decommissioning is available in the Guideline: Offshore petroleum decommissioning but applicants and licensees should note that this guidance has been developed primarily for petroleum titleholders so legislative references will not be correct for GHG titles.

Further specific guidance on decommissioning for GHG titles will be developed at a later date.

10.15. The surrender criteria in s442 for a GHG injection licence require a titleholder to have undertaken decommissioning (or made alternative arrangements to the satisfaction of the **RCM**).

10.16. In making decisions on the matters outlined in s442, the **RCM** will seek advice from NOPSEMA and take this advice into account prior to making any decisions on the decommissioning requirements for the relevant GHG injection licence.

10.17. In order for the **RCM** to consent to the surrender, the titleholder is required to have:

- removed all **property** in the surrender area or made other arrangements that are satisfactory to the **RCM** in relation to that **property** (refer s442(3)(c))
- plugged or closed off all wells made in the surrender area to the satisfaction of the **RCM** (refer s442(3)(d))
- provided for the conservation and protection of the natural resources in the surrender area to the satisfaction of the **RCM** (refer s442(3)(e))
- made good any damage to the seabed or subsoil in the surrender area to the satisfaction of the **RCM** (refer s442(3)(f)).

Accordingly, the titleholder of a GHG storage project must undertake decommissioning of structures and equipment and site remediation, including plugging and closing off all wells, prior to applying for consent to surrender the title.

10.18. In certain limited circumstances, the RCM may approve certain infrastructure to remain after decommissioning if it would be appropriate in the circumstances of the particular GHG injection licence. Any decision to allow this to occur will be made on a case-by-case basis and subject to necessary approvals being obtained from NOPSEMA and the Minister for the Environment prior to seeking consent to surrender the title.

Note: A proposal to dispose of **property** at sea, or to abandon **property** in situ, may also require a permit under the Sea Dumping Act. Licensees should ensure they engage early with the Sea Dumping Section in **DCCEEW** if they are considering these actions as part of their decommissioning proposals.

Surrender

10.19. s441 provides that GHG injection licence holders can seek to surrender some or all of the blocks in relation to which the licence is in force.

10.20. The **RCM** may only consent to the surrender if all of the criteria in s442(3) are met. Licensees should note in particular the requirement that a **site closing certificate** must be in force:

- In relation to each identified GHG storage formation specified in the licence if seeking to surrender all of the blocks in relation to which the licence is in force (s442(3)(g))
- In relation to each identified GHG storage formation that extends to the relevant blocks if seeking to surrender some of the blocks in relation to which the licence is in force (s442(3)(h)).

Further information on the surrender process and requirements can be found in the Fact Sheet: Surrender of Offshore Greenhouse Gas Titles available on the NOPTA website.

Cancellation

10.21. Licensees must meet all obligations under the OPGGS Act and all associated regulations and any directions or conditions imposed on their GHG injection licence. A failure to comply with these obligations is grounds for the **RCM** to cancel the licence under s446.

10.22. As noted at 10.3 above, if grounds for cancellation exist, the **RCM** may under s387(9) direct a licensee by written notice to apply for a **site closing certificate** within a specified period of at least 30 days.

10.23. A failure to comply with this direction is also an offence under s387(11).

Further information on the grounds for cancellation and the cancellation process can be found in the Fact Sheet: Cancellation of Offshore Greenhouse Gas Titles available on the NOPTA website.

Site closing directions

10.24. The **RCM** has the ability to issue site closing directions to the holder of a GHG injection licence where the **RCM** is satisfied that operations for the injection of a **GHG substance** have ceased (see s593). This enables the **RCM** to give a range of remedial and precautionary directions to the licensee during the site closing period, to ensure that the licensee undertakes decommissioning and remediation works, and that the stored **GHG substance** does not cause future damage to the environment or other resources, or loss to other users of the sea or risks to health or safety.

10.25. The **RCM** may issue a site closing direction if any of the following apply:

- the licensee has applied for a **site closing certificate**
- the licensee was required under s386(4) of the OPGGS Act to apply for a **site closing certificate** and has not done so
- the licensee was directed by the **RCM** under s386(9) of the OPGGS Act to apply for a **site closing certificate** and has not done so.

10.26. A site closing direction may require a GHG injection licensee to do any or all of the following things:

- remove **property** or make arrangements that are satisfactory to the **RCM** in relation to the **property**
- plug or close off wells
- provide for the conservation and protection of the natural resources in the licence area
- make good any damage to the seabed or subsoil
- carry out operations to monitor the behaviour of a **GHG substance** in the storage formation
- undertake activities to eliminate, mitigate, manage or remediate the risk that a stored **GHG substance** will have a significant adverse impact on matters including navigation, fishing,

construction or operation of a pipeline, native title rights, the environment, or human health and safety

- undertake activities to ensure or increase the likelihood that a stored **GHG substance** will behave as predicted in the **site plan**.

10.27. Section 594 establishes consultation processes the **RCM** must follow before issuing a site closing direction. The **RCM** will obtain advice from NOPSEMA as part of this process before exercising any powers under s593.

10.28. The **RCM** is required to specify the period for the licensee to comply with the direction in the notice giving the direction. The period for compliance with the direction must be reasonable.

10.29. The above section 594 requirements will not apply in circumstance where the RCM is satisfied that the direction is required to deal with an emergency.

11. Post Closure

Post Closure Monitoring

11.1. Following the issuing of the **site closing certificate** under s392, the Commonwealth will undertake the monitoring program as specified in the pre-certificate notice issued under s391 to ensure the **GHG substance** is continuing to behave as predicted in Part A of the **site plan**.

11.2. Outcomes of post closure monitoring may be factored into the **RCM**'s determination of whether to declare a Closure Assurance Period under s399.

Closure Assurance Period

11.3. s 399 provide the **RCM** with the discretion to declare a closure assurance period and if declared, the Commonwealth will assume long-term liability over identified GHG storage formations for which a **site closing certificate** is in force in the manner outlined in ss400 and 401.

11.4. Following a minimum period of 15 years from the issue of the **site closing certificate**, the **RCM** may declare a closure assurance period. The closure assurance period begins at the end of the day on which injection operations ceased, and ends on the day that the **RCM** decides that they are satisfied that:

- the stored **GHG substance** is behaving as predicted in Part A of the approved **site plan**
- there is no significant risk that the stored **GHG substance** will have a significant adverse impact on the integrity of the whole or part of a geological formation, the environment and human health or safety.

11.5. Where a closure assurance period has been declared the Commonwealth must indemnify the current or former titleholder against liabilities for damages. Where the titleholder ceases to exist, the liability will be taken to be a liability of the Commonwealth.

Trailing liability

11.6. Trailing liability refers to the provisions for a titleholder, former titleholder, a related body corporate of a current or former titleholder or a '**related person'** to be called back (through a remedial direction) to undertake decommissioning and remediation activities.

Note: This section provides some guidance on specific issues associated with trailing liability for GHG injection licences. Further general guidance on trailing liability is available in the Guideline: Trailing liability for decommissioning of offshore petroleum property but licensees should note that this guidance has been developed primarily for petroleum titleholders so legislative references in this guidance may not be the applicable provisions for GHG obligations.

11.7. Trailing liability ensures that the obligations and costs associated with GHG injection and storage activities remain the responsibility of those who hold or held the title, benefitted financially from operations under the title or had the ability to influence activities and compliance under the title. Trailing liability is used as a measure of last resort where all other regulatory options have been exhausted.

11.8. The remedial directions provisions of the OPGGS Act set out the decommissioning and/or remediation activities that NOPSEMA or the **RCM** may require a person to undertake and are used to implement trailing liability for GHG storage titles. These directions may be issued to a GHG injection licensee under:

- s591B by NOPSEMA and s592 by the **RCM** in circumstances where the GHG injection licence remains in force but no operations for the injection of a **GHG substance** have been undertaken into an identified GHG formation under the licence.
- s594A by NOPSEMA and s595 by the **RCM** in circumstances where the licence has wholly or partly ceased to be in force.

11.9. Remedial directions can compel a person to remove **property** or make arrangements that are satisfactory to NOPSEMA or the **RCM** in relation to the **property**, plug or close off wells, provide for the conservation and protection of natural resources in the area, as well as remediate the seabed.

11.10. The OPGGS Act provides for NOPSEMA or the **RCM** to issue remedial directions to a range of persons that are or were connected to a current or former title, or operations under a current or former title, on or after 1 January 2021, including:

- the current registered holder of the title
- a related body corporate (as defined in s50 of the *Corporation Act 2001*) of the current registered holder of the title
- a former registered holder of the current or former title
- a related body corporate of a former registered holder of the current or former title at the time the title was in force
- a **related person** in relation to operations under the current or former title.

11.11. The trailing liability provisions under the OPGGS Act can be applied at any time in relation to a current or former title. This includes:

- where a title has expired or been wholly or partly revoked, cancelled, terminated or surrendered.
- after a Closure Assurance Period has been declared.

11.12. A person could be issued with a remedial direction at any point, including after their involvement in the title has ceased.

11.13. Trailing liability is separate to long-term liability for damages attributable to an act done or omitted to be done in carrying out operations authorised by the title. This long-term liability may be assumed by the CommonwealthClosure Assurance Period. Despite declaration of a Closure Assurance Period, trailing liability provisions are enduring in relation to the persons to which they apply.

Glossary

Cross- Boundary Authority (CBA) – means the responsible State or Northern Territory Minister as applicable and the **RCM**, who are conferred with functions and powers including in relation to cross-boundary GHG injection licences under ss368A to 368H.

Declaration of Identified Storage Formation (DoSF)– means the declaration under s312 or s312A that one or more identified GHG storage formations are wholly within a relevant title area. This declaration is a pre-condition before an application for a **GHG holding lease** or GHG injection licence can be made.

Designated agreement – means an agreement referred to in s32 which for the purpose of this guideline is reached between a GHG titleholder and a petroleum titleholder in relation to the grant of a subsequent GHG injection licence or the carrying on of GHG injection licence operations. Depending on the type of petroleum title impacted the **RCM** must or may have regard to the existence and content of a designated agreement when granting a licence or considering whether to exercise powers to protect petroleum.

Draft site plan – means the draft version of the **site plan** referred to in s24, which has not yet been approved by the **RCM.**

Engineering enhancement – will refer to anything that is done by person (as opposed to natural features) to assist with GHG storage, primarily with regard to reducing risks of leakage, but also any measures to significantly enhancement reservoir properties. This may include, for example, remediating any existing wells from previous operations that penetrate into the storage formation, pressure management (such as injection and potential extraction of water, or increasing the injectivity potential via various methods.

Greenhouse Gas (GHG) holding lease – is a title which may be granted to a titleholder under part 3.3 of the OPGGS Act who has identified a GHG storage formation wholly situated in a lease area and which the applicant is not currently in a position to inject and permanently store a **GHG substance**, but is likely to be in such a position within 15 years.

Greenhouse Gas (GHG) substances – means under current prescribed regulations carbon dioxide (whether in a gaseous or liquid state) including in a mixture with one or more GHG related substances (whether in a gaseous or liquid state) provided the mixture consists overwhelmingly of carbon dioxide.

Post-commencement – in relation to a petroleum title means a title which was granted after t the commencement of the Offshore Petroleum Amendment (Greenhouse Gas Storage) Act 2008 on 22 November 2008.

Pre-commencement – in relation to a petroleum title means a title which was granted prior to the commencement of the Offshore Petroleum Amendment (Greenhouse Gas Storage) Act 2008 on 22 November 2008.

Property – refers to structures, equipment, wellheads and other property brought into the area under the authority of a title granted under the OPGGS Act, during any stage of operations.

Public interest – should be considered with reference to the guidance provided at 3.18 to 3.21

Related persons – are persons who are the subject of a determination made by the **RCM**, having regard to: whether the person is in a position to significantly benefit financially, or has significantly benefited financially, from operations authorised by the title; whether the person is or has been in a position to

influence compliance with obligations under the OPGGS Act; and/or whether the person acts or has acted jointly with a current or former holder of the title in relation to operations authorised by the title. See ss 591B(2B), 592(2B), 594A(2B)and 595(2B).

Reportable incident – for the purposes of this guideline means the form of incident defined in s49 of the GHG Regulations in relation to an identified GHG storage formation specified in a GHG injection licence.

RCM – means the Minister responsible for administering the OPGGS Act or another Minister acting for and on behalf of the Minister.

Serious situation – is any of the circumstances outlined in s379(1).

Significant Risk of a Significant Adverse Impact (SROSAI) – means for the purposes of this guideline the question determined in line with s28, s28A and s29 of whether there is a significant risk that the operations that could be or that are being carried on under a GHG injection licence could have a significant adverse impact on the operations carried on under relevant petroleum titles.

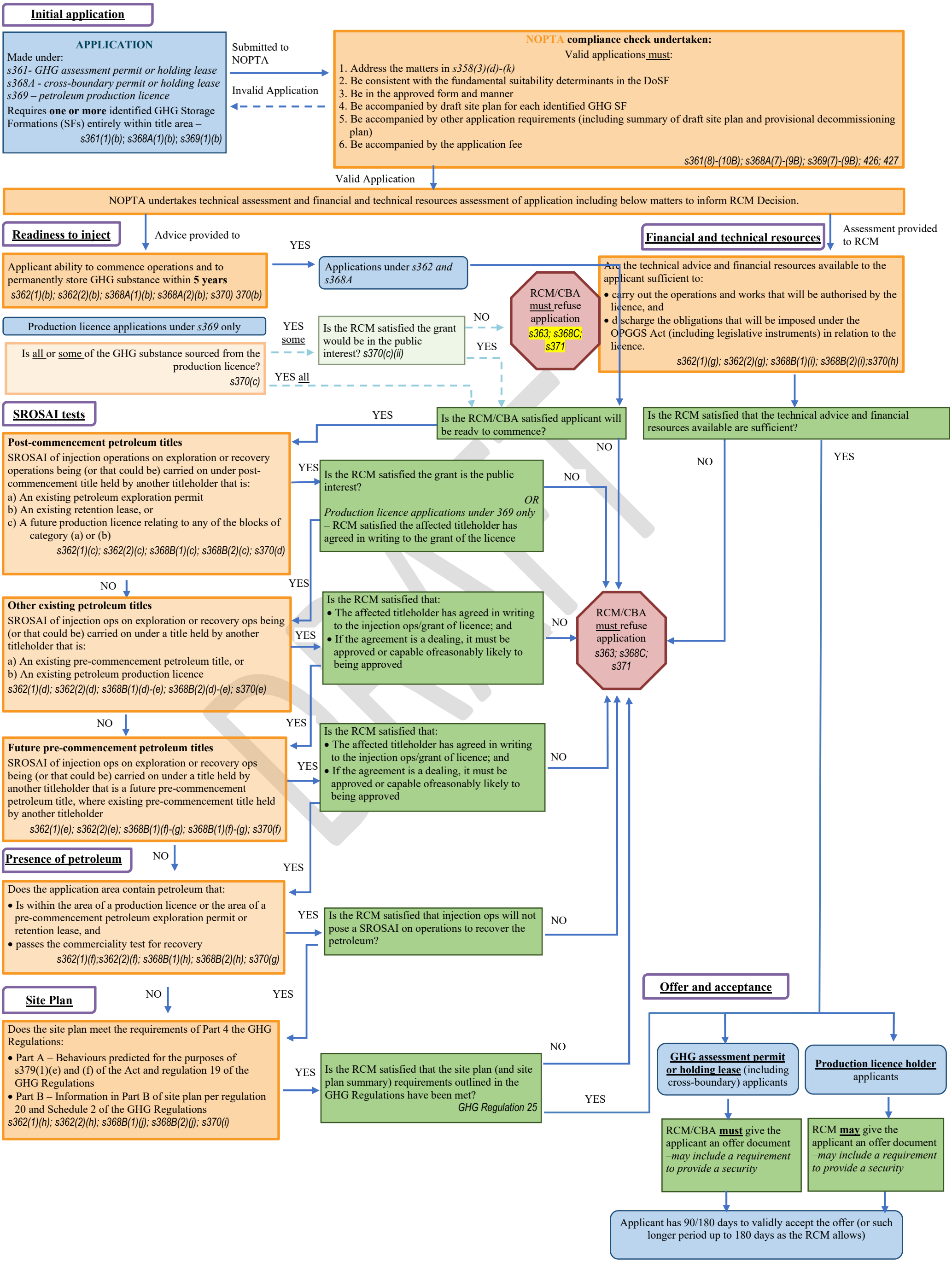
Site closing certificate – means the certificate issued by the **RCM** under s392 to a GHG injection licence holder following an application under s386 and consideration of the licensee's compliance as applicable with the matters outlined in s387 to s391.

Site plan – means per s24 a document in relation to an identified GHG storage formation which sets out predictions for **GHG substance**s stored in that formation and other matters prescribed in regulations.

Tied – has a meaning outlined in s13 in relation to a **GHG holding lease** granted under s345 to the registered holder of a petroleum retention lease.

Attachment 1 –GHG injection licence application process flowchart

Note that this specific page is formatted to A3 size.



Attachment 2 –Site closure process flowchart

Operational phase of a project

KEY
- RCM actions/decisions
- RCM considerations
- Licensee actions/obligations
- Licensee considerations
- Negative outcomes (applicant triggered processes may recommence)

Licensee complies with operational obligations under the OPGGS Act and regulations

Licensee considers if any triggers for mandatory applications for site closing certificate
a) *Cessation of injection operations - s386(4)*
Must be made within **30 days** (or up to **90 days** if approved by RCM)
b) *When required by RCM due to grounds for cancellation - s386(9)*
Must be made in the period specified by the RCM
c) *A **tied** petroleum title ceases to be in force - s386(13)*
Must be made in **30 days** (or up to **90 days** if approved by RCM)

Licensee does not meet mandatory application timeframes → Licensee commits strict liability offence

Site closing certificate (SCC)

Timeframe met or licensee applies in advance of any mandatory grounds

Licensee applies for site closing certificate - *s386*

Application must be accompanied by *s386(2)*:
a) Modelling of behaviour of GHG in formation and associated analysis
b) Assessment of behaviour, expected migration and consequences of migration
c) Suggestion for Commonwealth (Cth) approach to monitoring of GHG behaviour after issuing of certificate

RCM considers validly made application

RCM determines whether to issue pre-certificate notice within **5 years** of receipt of application for site closing certificate

Is RCM satisfied injection operations have ceased or did not occur - *s388(1)*
- No → RCM chooses to refuse
- Yes

Must consider SROSAI impacts on navigation, fishing, lawful pipeline construction and operations and native title rights - *s388(2)*
- Not satisfied → RCM chooses to refuse
- Satisfied

RCM may refuse if per *s388(4)*:
a) Not satisfied GHG substance is behaving as predicted in site plan
b) Satisfied of SROSAI on natural resource conservation or exploitation, geotechnical integrity, the environment or human health or safety
- RCM chooses to refuse
- N/A or RCM chooses not to refuse

RCM must refuse if per *s388(6)* the relevant statutory requirements have not complied with (licence conditions, chapters 3, 5, 5A and 6 and Part 8.1) *AND* there are not sufficient grounds to warrant issue of SCC
- Mandatory refusal grounds exist → **RCM** refuses to give pre-certificate notice - *s390*
- No mandatory refusal grounds

Pre-certificate notice may be issued to licence holder - *s388(1)*

Notice must specify per *s391*:
a) Cth proposed work program for monitoring GHG behaviour
b) estimate of costs and expenses for carrying out work program
c) form and amount of security to be lodged to meet SCC holder's cost and expense obligations in relation to the monitoring program
d) statement noting application will lapse if security not lodged in 60 days (or up to 180 days if approved by RCM)

- Licensee does not lodge security in applicable period → Application lapses - *s391(4)*
- Licensee lodges security in applicable period → RCM must issue site closing certificate - *s392*

Licensee undertakes decommissioning activities consistent with risk management plans accepted by NOPSEMA:
- Environment Plan
- Well Operations Management Plan (WOMP)
- Safety Case

All decommissioning must be completed before the RCM can consent to the surrender of the licence.

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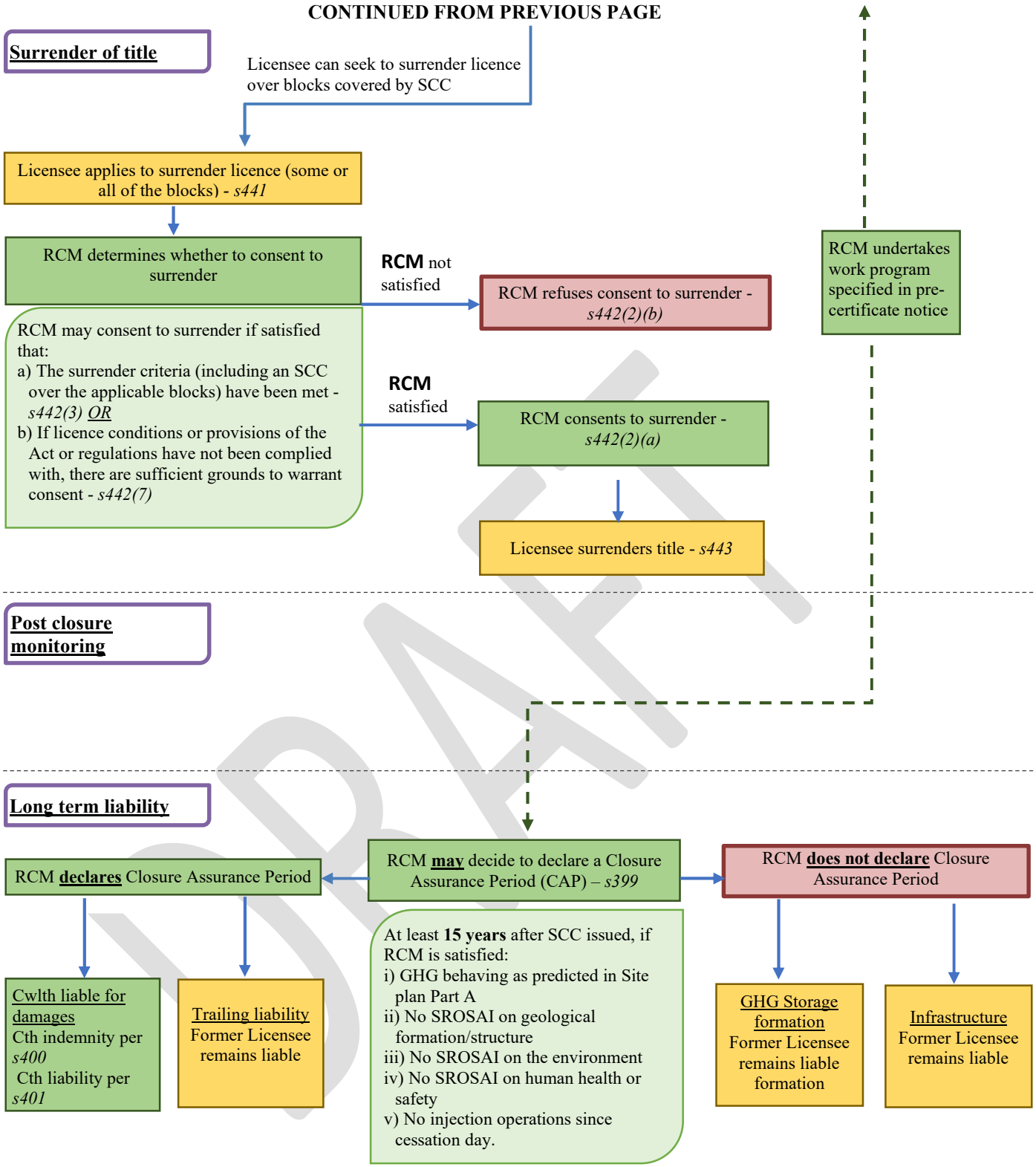
CONTINUED FROM PREVIOUS PAGE
Surrender of title
Licensee can seek to surrender licence over blocks covered by SCC
Licensee applies to surrender licence (some or all of the blocks) - s441
RCM determines whether to consent to surrender
RCM not satisfied
RCM refuses consent to surrender - s442(2)(b)
RCM may consent to surrender if satisfied that:
a) The surrender criteria (including an SCC over the applicable blocks) have been met - s442(3) OR
b) If licence conditions or provisions of the Act or regulations have not been complied with, there are sufficient grounds to warrant consent - s442(7)
RCM satisfied
RCM consents to surrender - s442(2)(a)
Licensee surrenders title - s443
RCM undertakes work program specified in pre-certificate notice
Post closure monitoring
Long term liability
RCM declares Closure Assurance Period
RCM may decide to declare a Closure Assurance Period (CAP) – s399
RCM does not declare Closure Assurance Period
At least 15 years after SCC issued, if RCM is satisfied:
i) GHG behaving as predicted in Site plan Part A
ii) No SROSAI on geological formation/structure
iii) No SROSAI on the environment
iv) No SROSAI on human health or safety
v) No injection operations since cessation day.
Cwlth liable for damages
Cth indemnity per s400
Cth liability per s401
Trailing liability
Former Licensee remains liable
GHG Storage formation
Former Licensee remains liable formation
Infrastructure
Former Licensee remains liable

s22

From: s22 s 22
Sent: Tuesday, 2 April 2024 8:37 PM
To: s22
Cc: GHG Acreage; s22 ; s22
Subject: RE: GHG Titleholders Working Group (Initial kick-off meeting) [SEC=~~OFFICIAL:Sensitive~~]

~~OFFICIAL: Sensitive~~

Hi s 22

Thanks for the update. Regarding the invite, the one change is that s22 from Chevron has been replaced in the group by s22 s 22

Great news also regarding the draft Offshore Greenhouse Gas Storage Injection Licences Guidelines. This will be very welcome by the group. Regarding comments, we would be happy to consolidate comments where possible, noting that some operators may have some feedback that they would prefer to raise with you directly. Also, the timeline provided looks tight to consolidate comments but we can do our best, assuming you will send the draft to members tomorrow.

Regards,

s22

From: s22 <s22 @industry.gov.au>
Sent: Tuesday, April 2, 2024 4:14 PM
To: s22 s 22
Cc: GHG Acreage <GHGAcreage@industry.gov.au>; s22 <s22 @industry.gov.au>; s22 s22 @industry.gov.au>
Subject: GHG Titleholders Working Group (Initial kick-off meeting) [SEC=~~OFFICIAL:Sensitive~~]

~~OFFICIAL: Sensitive~~

Good afternoon s22

As discussed last week, we would like to invite you and your relevant members to a joint government-industry working group meeting. I intend to keep the same participants across both working groups i.e., this one and the ROCCSR working group. However, the number will grow pending the offer/ grant of new titles from the 2023 GHG acreage release.

Please see the list below for disseminating this invite, and let me know if I have missed anyone:

s22	INPEX	s 22
s22	INPEX	s 22
s22	Woodside	s 22
s22	Woodside	s 22
s22	Santos	s 22
s22	ExxonMobil	s 22
s22	ExxonMobil	s 22
s22	ExxonMobil	s 22
s22	ExxonMobil	s 22
s22	Chevron	s 22
s22	Chevron	s 22
s22	Chevron	s 22

Furthermore, **a draft version of the Guideline: Offshore Greenhouse Gas Storage Injection Licences is ready for circulation to industry for feedback**. Please see it attached.

A minor request, if possible. Could AEP please consolidate feedback from the AEP members represented above. Happy to discuss. This allows us to expedite any reviews and turn around this feedback to enable publication sooner.

The department intends to hold this first kick-off meeting virtually on **Thursday 11 April at 3 – 4.30 pm AEST**. The department is open to using this as an opportunity to discuss any feedback on the Guideline.

Consolidated feedback on the Guideline would be appreciated by **COB Monday 15 April.**

The following messaging can be shared amongst the AEP representatives that participate in the ROCCSR Titleholders working group:

Good afternoon all,

As actively participating operators in the offshore CCS regime, we would like to invite you to a joint government-industry working group meeting.

For context, DISR now has two separate CCS functions, one working on ROCCSR (Review of the Offshore CCS Regime), managed by s22 , and another working on the current, operational aspects of active greenhouse gas titles, managed by s22 .

You would have participated in the ROCCSR Titleholders working group in November last year. This new working group aims to provide a channel as industry participants to discuss the current situation of your active greenhouse gas titles with the department.

The department will hold this first kick-off meeting virtually on **Thursday 11 April at 3 – 4 pm AEST**. This will provide an opportunity to discuss the aim of this working group and provide updates on the work of the department.

Following on from the initial kick-off meeting, DISR will organise individual meetings with each operator, to provide an opportunity to discuss your projects, titles, as well as any concerns you may have about them.

Furthermore, **a draft version of the Guideline: Offshore Greenhouse Gas Storage Injection Licences is ready for circulation to industry for feedback**. Please see it attached. We would welcome any discussions on the Guideline at the kick-off meeting on **Thursday 11 April**.

Feedback on the Guideline would be appreciated by **COB Monday 15 April.**

If you have any further questions, please do not hesitate to contact s22 A/g Manager, Offshore CCS Section at s22 @industry.gov.au.

Kind regards

s22
A/g Manager – Offshore CCS Section
Offshore Resources Branch | Resources & Strategy Group
Department of Industry, Science and Resources

Australian Government
Department of Industry, Science and Resources

Naarm, Level 25, 140 William Street, Melbourne VIC 3000
GPO Box 4634, Melbourne VIC 3001
Ngunnawal Country, Industry House, 10 Binara Street, Canberra ACT 2601
GPO Box 2013, Canberra ACT 2601 Australia

Phone: s22 | Extension: s22
Email: s22 @industry.gov.au
Web: www.industry.gov.au
ABN 74 599 608 295
Supporting economic growth and job creation for all Australians

Acknowledgement of Country

Our department recognises the First Peoples of this Nation and their ongoing cultural and spiritual connections to the lands, waters, seas, skies, and communities.

We Acknowledge First Nations Peoples as the Traditional Custodians and Lore Keepers of the oldest living culture and pay respects to their Elders past and present. We extend that respect to all First Nations Peoples.

~~OFFICIAL: Sensitive~~

s22

From: s22
Sent: Wednesday, 3 April 2024 8:15 AM
To: s 22 ; s 22
s 22
s 22
s 22
s 22
s 22 ;
Cc: s22 ; GHG Acreage; s22 ; s22
Subject: GHG Titleholders Working Group (Initial kick-off meeting) [SEC=~~OFFICIAL:Sensitive~~]
Attachments: DRAFT_GHG Guideline - Offshore GHG Injection Licence.docx

~~OFFICIAL: Sensitive~~

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Feedback on the Guideline would be appreciated by **COB Monday 15 April**. Please note that where possible, S 22 will seek your assistance to consolidate comments where possible. I would be happy to also receive individual operator feedback on the Guideline directly, if required i.e. as the operator you would prefer to discuss specific feedback directly with the department.

If you have any further questions, please do not hesitate to contact s22 , A/g Manager, Offshore CCS Section at s22 @industry.gov.au.

Kind regards

s22
A/g Manager – Offshore CCS Section
Offshore Resources Branch | Resources & Strategy Group
Department of Industry, Science and Resources

Australian Government
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Ngunnawal Country, Industry House, 10 Binara Street, Canberra ACT 2601
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~~OFFICIAL: Sensitive~~

s22

From: s22
Sent: Friday, 5 April 2024 9:37 AM
To: s22
Cc: GHG Acreage; s22 ; s22
Subject: RE: GHG Titleholders Working Group (Initial kick-off meeting) [SEC=~~OFFICIAL:Sensitive~~]

~~OFFICIAL: Sensitive~~

Thanks s22 – Noted, I've granted a more suitable timeframe to those involved

The feedback from industry will inform how much of a further review is required on the Guidelines – so timing is unfortunately still TBD.

Happy to have further discussions next Thursday

Kind regards

s22
A/g Manager – Offshore CCS Section
Offshore Resources Branch | Resources & Strategy Group
Phone: +s22 | Email: s22 @industry.gov.au
Department of Industry, Science and Resources

~~OFFICIAL: Sensitive~~

From: s22 s 22
Sent: Friday, April 5, 2024 8:55 AM
To: s22 <s22 @industry.gov.au>
Cc: GHG Acreage <GHGAcreage@industry.gov.au>; s22 s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Subject: RE: GHG Titleholders Working Group (Initial kick-off meeting) [SEC=~~OFFICIAL:Sensitive~~]

~~OFFICIAL: Sensitive~~

Hi s22

Thanks again for the draft GHG Injection Guidelines. Just a follow up, we have been asked by some members if it is possible to get an extension of say two weeks to comment on the document? They are really keen to provide as detailed feedback as possible, including where possible from their JV partners. As you would understand, this takes time.

Also, just to understand the process, once we provide comments, what are the expected next steps for the Guidelines. Do you have a target publishing date or are there other steps necessary before they are finalised?

Thanks a lot,

s22

From: s22 <s22 @industry.gov.au>
Sent: Wednesday, April 3, 2024 8:15 AM
To: s 22
s 22
s 22
s 22
s 22
Cc: s22 s 22 ; GHG Acreage <GHGAcreage@industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Subject: GHG Titleholders Working Group (Initial kick-off meeting) [SEC=~~OFFICIAL:Sensitive~~]

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Kind regards

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A/g Manager – Offshore CCS Section
Offshore Resources Branch | Resources & Strategy Group
Department of Industry, Science and Resources

Australian Government
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~~OFFICIAL: Sensitive~~

s22

From: s22 s 22
Sent: Friday, 5 April 2024 9:38 AM
To: s22
Cc: GHG Acreage; s22 ; s22
Subject: RE: GHG Titleholders Working Group (Initial kick-off meeting) [SEC=~~OFFICIAL:Sensitive~~]

~~OFFICIAL: Sensitive~~

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Hi s22

Thanks a lot for the extension. It is much appreciated.

s22

From: s22 <s22 @industry.gov.au>
Sent: Friday, April 5, 2024 9:35 AM
To: s 22
s 22
s 22
s 22
s 22
Cc: s22 s 22 GHG Acreage <GHGAcreage@industry.gov.au>; s22
<s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Subject: RE: GHG Titleholders Working Group (Initial kick-off meeting) [SEC=~~OFFICIAL:Sensitive~~]

~~OFFICIAL: Sensitive~~

Good morning all

To obtain a fulsome response from our identified key stakeholders, the department will extend the timeframes for comments on the guidelines to be due by COB Thursday 2 May.

We would be more than happy to receive comments earlier, as it will allow us the time to review the feedback sooner.

Kind regards

s22
A/g Manager – Offshore CCS Section
Offshore Resources Branch | Resources & Strategy Group
Phone: +s22 | Email: s22 @industry.gov.au
Department of Industry, Science and Resources

From: s22
Sent: Wednesday, April 3, 2024 8:15 AM

To: s 22 s 22

s 22
s 22

Cc: s22 s 22 GHG Acreage <GHGAcreage@industry.gov.au>; s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>

Subject: GHG Titleholders Working Group (Initial kick-off meeting) [SEC=~~OFFICIAL:Sensitive~~]

Good morning all,

As you would have seen from s22 , as actively participating operators in the offshore CCS regime, the department would like to invite you to a joint government-industry working group meeting.

For context, DISR now has two separate CCS functions, one working on ROCCSR (Review of the Offshore CCS Regime), managed by S 22 , and another working on the current, operational aspects of active greenhouse gas titles, managed by S 22

You would have participated in the ROCCSR Titleholders working group in November last year. This new working group aims to provide a channel as industry participants to discuss the current situation of your active greenhouse gas titles with the department.

The department will hold this first kick-off meeting virtually on **Thursday 11 April at 3 – 4 pm AEST**. This will provide an opportunity to discuss the aim of this working group and provide updates on the work of the department.

Following on from the initial kick-off meeting, DISR will organise individual meetings with each operator, to provide an opportunity to discuss your projects, titles, as well as any concerns you may have about them.

Furthermore, **a draft version of the Guideline: Offshore Greenhouse Gas Storage Injection Licences is ready for circulation to industry for feedback**. Please see it attached. We would welcome any discussions on the Guideline at the kick-off meeting on **Thursday 11 April**.

Feedback on the Guideline would be appreciated by **COB Monday 15 April**. Please note that where possible, s22 will seek your assistance to consolidate comments where possible. I would be happy to also receive individual operator feedback on the Guideline directly, if required i.e. as the operator you would prefer to discuss specific feedback directly with the department.

If you have any further questions, please do not hesitate to contact s22 , A/g Manager, Offshore CCS Section at s22 @industry.gov.au.

Kind regards

s22
A/g Manager – Offshore CCS Section
Offshore Resources Branch | Resources & Strategy Group
Department of Industry, Science and Resources

Australian Government
Department of Industry, Science and Resources

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ABN 74 599 608 295

Supporting economic growth and job creation for all Australians

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We Acknowledge First Nations Peoples as the Traditional Custodians and Lore Keepers of the oldest living culture and pay respects to their Elders past and present. We extend that respect to all First Nations Peoples.

~~OFFICIAL: Sensitive~~

~~OFFICIAL: Sensitive~~

3

s22

From: s22
Sent: Thursday, 11 April 2024 4:21 PM
To: s22
Cc: s22 ; GHG Acreage; s22
Subject: RE: GHG Injection Guidelines briefing call [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Hi s22

Agreed – I thought it would be easier to bring members together to discuss the intent I had in mind.

Happy to run something on Monday 15 April. I've sent through a meeting request for 11 am – midday AEST.

Monday would be preferable for my availability, with an alternative time being 2 – 3 pm AEST

Kind regards

s22
A/g Manager – Offshore CCS Section
Offshore Resources Branch | Resources & Strategy Group
Phone: +s22 | Email: s22 @industry.gov.au
Department of Industry, Science and Resources

~~OFFICIAL~~

From: s22 s 22
Sent: Thursday, April 11, 2024 3:40 PM
To: s22 <s22 @industry.gov.au>
Subject: GHG Injection Guidelines briefing call

Hi s22

Thanks a lot for the call. I think things are clearer following the discussion which is great.

Just following up on the idea of a briefing call on the GHG Injection Guidelines, is that something we could arrange for Monday/Tuesday next week? Just really to run the members through the Guidelines and to outline some of the thinking that went into the different parts. It would also allow for initial questions from the group that would help us prepare a more informed submission.

Cheers,

s22

s22
s 22

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energyproducers.au

Australian Energy Producers acknowledges and pays respect to the past and present Traditional Custodians and Elders of this nation and the continuation of cultural, spiritual and educational practices of Aboriginal and Torres Strait Islander peoples.

s22

From: s 22 >
Sent: Thursday, 2 May 2024 10:00 PM
To: s22
Cc: GHG Acreage; s22 s22 s22
Subject: AUSTRALIAN ENERGY PRODUCERS GUIDELINE: OFFSHORE GREENHOUSE GAS STORAGE INJECTION LICENCES FEEDBACK
Attachments: 240502 AEP GHG Injection Licence Guideline feedback - FINAL.pdf

Hi s22

Please see attached Australian Energy Producers' feedback on the draft *Guideline: Offshore Greenhouse Gas Storage Injection Licences*.

Please let us know if you would like to discuss any of the comments/questions further.

If you can confirm receipt of the submission, that would be much appreciated.

Regards,

s22

s22
s 22

M +s22 E s 22
energyproducers.au

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GUIDELINE: OFFSHORE GREENHOUSE GAS INJECTION LICENCES | *REVIEW*

Australian Energy Producers | 2 May 2024

Australian Energy Producers welcomes the opportunity to provide feedback on the draft *Guideline for Offshore Greenhouse Gas Injection Licences*. Australian Energy Producers have a number of overarching comments and questions as well as some relating to specific parts of the draft *Guideline*.

Recommended changes to the Greenhouse Gas Injection Licence (GHG IL) provisions of the Offshore Petroleum and Greenhouse Gas Storage Act (OPGGSA) have not been considered as part of this feedback.

Overarching comments/questions

It is recommended that the *Guideline* provides the clarifications necessary to accommodate carbon capture and storage (CCS) hubs, with potentially multiple sources of CO_2 connected to multiple storage formations | CCS hubs are widely seen as the most cost-effective way to develop CCS projects. Hubs provide economies of scale and allow for a greater range of CO_2 sources to access CCS opportunities, including smaller sources and hard-to-abate industries that are less able to develop source-specific CO_2 transport and storage infrastructure. Many of the offshore CCS projects under development in Australia are looking at hub designs, including the import of CO_2 from other sectors and countries. Should CCS hubs not be accommodated from the outset, it could significantly slow or prevent the development and scaling up of CCS in Australia. This includes cases where the addition of multiple sources occurs in later stages of a project, given in many instances project developers and investors will be looking for a clear 'line-of-sight' to all project stages before financial investment decision.

To accommodate CCS hubs, it is recommended that the *Guideline* should clarify that references to "*the source*" in the GHG IL refers to all sources associated with a project, and not just a single source.

It is recommended that the *Guideline* provides the clarifications necessary to accommodate changes in the CO_2 source and/or the addition of new CO_2 sources | A range of developments and project changes could occur over the 30+ year lifetime of a CCS project, including changes in CO_2 source and/or the addition of new CO_2 sources to a project. Such changes are particularly likely when considering collaboration with third party CO_2 sources in the project design, either from other sectors or potentially internationally. It is important that a change in CO_2 source or addition of a new CO_2 source, with the composition of the new stream remaining within the fundamental suitability determinants of the related declaration of an identified of storage formations (DoSF), should be able to be done under an existing GHG IL. Should such a change to a project require a resubmission/variation of a GHG IL application – and potentially DoSF and site plan - it could result in a significant pause in CO_2 injection as new approvals are sought.

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Australian Energy Producers Limited

It is therefore recommended that the *Guideline* explicitly provides the clarifications necessary to accommodate changes in the CO_2 source and/or the addition of new CO_2 sources under an existing GHG IL, while enabling injection activities to continue wherever practicable

It is recommended that the *Guideline* provides the clarifications necessary to accommodate changes in injection location and/or plume shape, within the GHG IL boundary, based on how the project evolves | As with changes in CO_2 source, sub-surface uncertainty means that there may be a need to change the location of CO_2 injection within a GHG IL over the course of a CCS project. Similarly, understanding of the spatial extent of the plume, within the GHG IL boundary, may evolve over time. Changes in injection location and/or plume shape within the GHG IL boundary can occur without any impact on the safe and secure geological storage of CO_2 and therefore should be able to be accommodated under an existing GHG IL.

Accordingly, it is recommended that the *Guideline* provides the clarifications necessary to accommodate changes in injection location and/or plume shape within the GHG IL boundary under an existing GHG IL.

It is recommended that the *Guideline* provides the clarifications necessary to accommodate the repurposing of existing infrastructure | Given the benefits of repurposing infrastructure, including reduced environmental impact, increased cost effectiveness and enhanced speed to market, it is important to include consideration of this in the *Guideline*, including how the transition from petroleum titles to greenhouse gas (GHG) titles is to be managed.

It is important to outline how the GHG IL interacts with state CO_2 storage frameworks | Given many CCS projects will span both Federal and state jurisdictions, it is important to understand how the GHG IL interacts with state CCS legal and regulatory frameworks. It is recommended that where possible alignment should be sought between state and Federal requirements.

Further overarching questions include:

- **GHG IL variations** | Is further guidance expected regarding how variation of GHG IL, brought about by other approvals outside the OPGGSA, will be treated? For example, should variations be required to the scope and operations of a CCS project as part of the application for a Sea Dumping Permit, after the granting of a GHG IL, how will these variations be accommodated under the approved GHG IL. Similarly, should variations be required to scope and operations of a CCS project as part of the application for a GHG IL or Sea Dumping Permit, after the granting of a DoSF, how will these variations be accommodated under the approved DoSF?
- **Threshold for GHG IL resubmission/update** | Is further guidance/clarification expected on what would trigger a full resubmission of a GHG IL compared with the update of a GHG IL update?

Specific comments/questions

Section 1

- **1.7** | Section 1.7 outlines the regulatory approvals required from the different regulatory frameworks. There is still some concern, even when presenting consistent information, that this information may be treated or interpreted differently by different agencies.

Section 2

- **2.10** | Section 2.10 outlines how Significant Risk of a Significant Adverse Impact (SROSAI) will be considered by the responsible Commonwealth Minister (RCM). Could this provision be used to unduly delay or prevent the development of CCS projects (e.g. due to activist/political pressure), particularly with reference to section 3.24 as part of the public interest test?

  Section 3.24, which states "*source of the GHG substance and intended uses before permanent injection and storage is undertaken*", could be at risk of challenge as to whether emitting activities should be occurring (e.g. where CO_2 is source from fossil fuel activities). Consequently, could this provision be leveraged to restrict the ability to use CCS to reduce fossil fuel related emissions?

  To address this risk, it is recommended that Section 3.24 be amended to read "*When determining the public interest, any information provided as part of the application about the source of the GHG substance and intended uses before permanent injection and storage is undertaken may be considered* ***along with the contribution of the project to overall GHG reduction***".

  Further, adding reference in Section 3.24 to "*development of hydrogen from fossil fuels, including natural gas and coal supported by Carbon Capture and Storage*" and "*commercialisation of low emissions fuels*" will ensure these additional applications are considered.

  Maximising the use of the pore space should also be considered in the public interest (as a Commonwealth resource). Potentially there should also be consideration of assurances and applications already obtained through petroleum regime.

  How would the co-existence with other industries (such as offshore wind) be navigated in the context of "*public interest*"? It is recommended the *Guideline* provides clarity here.

  Finally, how does SROSAI apply when petroleum facilities are being reused for GHG purposes?

Section 3

- **3.12** | Section 3.12 provides clarity around Petroleum Retention Lease (RL) pathway to GHG holding license (Tied License). How does this influence future nominations for GHG acreage as the alternative pathway. Could this provision be used to 'tie up' pore space by competitors currently holding RLs?
- **3.24** | *See comments on Section 2.10 above.*

- **3.25 |** Section 3.25 outlines when an offer will be made to the applicant. Under s361 the RCM *must* provide an offer. However, under s369 the RCM *may* provide an offer. Why is there a difference and why might the RCM not make an offer if the requirements outlined in s370 are satisfied?
- **3.5 |** Section 3.5 outlines where a single GHG injection licence can be applied for where there are multiple DoSFs. It is suggested that this section would benefit from a diagram to provide clarity and remove any ambiguity.

Section 4

- **4.14 |** Section 4.14 considers the criteria for Part B of the draft site plan. Regarding the inclusion of "*appropriate arrangements for monitoring, recording and reporting in relation to implementation and compliance with the site plan*", will there be a defined period for the monitoring, recording and reporting, or is this to be defined by the licence holder?
- **4.16 |** Section 4.16 considers the more detailed requirements for Part B of the draft site plan, as outlines in Schedule 2 of the GHG Regulations. With respect to "*Information about potential risks to (and proposed strategies for the elimination or reduction to as low as reasonably practicable) the containment of GHG substances that have been identified but which were not part of the DoSF (schedule 2 clause 5 GHG Regulations)*" there is concern that there is lack of precedent currently in industry to align on a pragmatic '*As low as reasonably practicable*' (ALARP) standard. This could potentially result in excessive conservatism being shown and in-turn an undue delay on project approvals and development.

  Further clarity is requested regarding:

  - "*Manage risks to as low as reasonably practicable when compared to other development options*". What is meant by "*other development options*"? Does this mean comparing GHG risk to oil and gas risk, or CCS risk compared to the climate risk from continuing to emit?
  - "*Applicants should show that they have undertaken preliminary major accident events and safety integrity level assessments to underpin evaluation*". What is a "*major accident event*" in relation to GHG storage? Any loss of containment? Likewise with safety. How does a major event compare to a "*serious situation*" (described in the regulations as departure from predicted migration pathway) or a "*significant event*" referenced in relation to monitoring?

  Regarding "*early detection of leakages*", there will be limitations on this based on the detection capability of monitoring technologies. This is relevant if the context of understanding what constitutes a "*leak*", "*acceptability*", "*permanent storage*", etc. and should be aligned to enable decision-making. In considering suitable definitions, it is also important that vendor claims are not used as the viable detection limit as there are not necessary representative of actual performance in the field.

  Regarding "*A plan for certain aspects of remediation work*", the section would benefit from revised wording to improve clarity.

It is stated that "*a program for detecting and monitoring leakage of GHG substances that could potentially occur during transport to the proposed injection formation…*". It would be beneficial for the *Guidelines* to clarify whether monitoring leakage during transport only applies to the area in the GHG IL boundary and along the pipeline, or in the case of a hub concept does this extend to the point of capture, along the shipping route or to the start of the pipeline?

Section 5

- **Securities |** Petroleum financial assurance/securities frameworks (e.g. the Offshore Petroleum Regulator for Environment and Decommissioning (OPRED) framework in the United Kingdom) apply financial assessment (FA) to assign a risk classification to a company (assessing each field on its own merits) in order to determine level of security required. The *Guideline* does not specify how security will be determined, and it is unclear how the petroleum process could be utilised (e.g. cannot use a reserves value). There is also no detail on how the scale of the security would be determined, or what form that security needs to take and at what minimum credit rating.

  It is understood that work is currently ongoing with respect to a petroleum FA framework, with DISR committing to implementing such a framework by 2027. It would be beneficial if GHG storage is also considered in this process. However, provisions will need to be made in the interim period.

  Further, does or should the FA development process relate to determining "*applicant suitability*" or "*most deserving applicant*"?

  Finally, it is important to understand if the FA process is for managing a *"serious incident*" or if it relates to the project overall?

Section 7

- Section 7 outlines the variations in GHG IL. However, more clarity is required around when a review and variation would be required, particularly when these might impact a DoSF or site plan.
- **7.7 |** Section 7.7 relates to the need to review a site plan once every 5 years. Such a review may trigger a variation of GHG IL and underlying DoSF. Is the expectation that these documents would also need to be reviewed with any variations reported? Alternatively, what would trigger broader review beyond the site plan?

Section 8

- Section 8 outlines "*serious situations*", that are defined as when a GHG substance that has been injected into the storage formation has leaked. Is there a threshold for what constitutes leakage?

Section 10

- **10.5 |** Section 10.5 outlines what an application for a site closing certificate should set out. There are concerns around how RCM discretion will be applied and what constitutes "*sufficient confidence about the likely fate of the of the injected GHG substance after the site closure*". When an operator suggests an approach for

monitoring following site closure, what will be the process for determining "*sufficient confidence about the likely fate of the of the injected GHG substance after the site closure*".

Attachments

- Attachment 1-3 are very useful. The effort to visualise the process flow, given the complexity, is much appreciated.

  It is noted that some of the factsheets referenced are not yet on the NOPTA website.

  It could be useful to include some frequently asked questions (FAQs) given the extensive requirements outlined.

- **Attachment 1** | The attachment would benefit from a 'Key'. Also there appears to be a missing 'no' path if applicant is deemed not able to commence within 5 years.

Australian Energy Producers and the CCS Titleholder Working Group would welcome further engagement on the finalisation of the *Guideline for Offshore Greenhouse Gas Injection Licences* and would be happy to provide additional feedback and clarity on any of the points raised.

s22

From: s22
Sent: Monday, 6 May 2024 4:25 PM
To: s22 ; s22
Cc: GHG Acreage; s22 ; s22
Subject: RE: AUSTRALIAN ENERGY PRODUCERS GUIDELINE: OFFSHORE GREENHOUSE GAS STORAGE INJECTION LICENCES FEEDBACK [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Hi s22

Many thanks for AEP's feedback on the draft GHG Injection Licence Guideline.

We will review your feedback over the coming weeks, and will return to you if there are any queries.

Thanks again,
s22

s22
Assistant Manager (A/g)
Offshore CCS Section | Offshore Resources Branch | Resources & Strategy Group
Gadigal Country, Level 18, Tower 3, Darling Park, 201 Sussex Street, Sydney NSW 2000
P: s22 | **E:** s22 @industry.gov.au

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Department of Industry, Science and Resources

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~~OFFICIAL~~

From: s22 s 22
Sent: Thursday, May 2, 2024 10:00 PM
To: s22 <s22 @industry.gov.au>
Cc: GHG Acreage <GHGAcreage@industry.gov.au>; s22 s 22 @industry.gov.au>; s22 <s22 @industry.gov.au>; s22 s 22
Subject: AUSTRALIAN ENERGY PRODUCERS GUIDELINE: OFFSHORE GREENHOUSE GAS STORAGE INJECTION LICENCES FEEDBACK

Hi s22

Please see attached Australian Energy Producers' feedback on the draft *Guideline: Offshore Greenhouse Gas Storage Injection Licences*.

Please let us know if you would like to discuss any of the comments/questions further.

If you can confirm receipt of the submission, that would be much appreciated.

Regards,

s22

s22
s 22

M +s22 E s 22
energyproducers.au

s22

From: s22
Sent: Wednesday, 15 May 2024 5:05 PM
To: s22
Cc: s22 ; s22
Subject: RE: ROCCSR Meeting Perth - 20 May [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Hi s22

Apologies, it appears that s22 has been asked to attend another meeting which is scheduled at the same time as the ROCCSR titleholders working group, so he'll be unable to present.

Would it be possible to fill the 20mins currently allocated to the injection licence guidelines, with another agenda item?

We could re-schedule our discussion regarding the injection licence guidelines for after AEP.

Thanks,

s22
A/g Assistant Manager – Offshore CCS Section
Offshore Resources Branch | Resources & Strategy Group
Phone: +s22 | Email: s22 @industry.gov.au
Department of Industry, Science and Resources

~~OFFICIAL~~

From: s22 s 22
Sent: Friday, May 10, 2024 4:14 PM
To: s22 <s22 @industry.gov.au>
Cc: s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Subject: RE: ROCCSR Meeting Perth - 20 May [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Great, thanks s22

From: s22 <s22 @industry.gov.au>
Sent: Friday, May 10, 2024 4:06 PM
To: s22 s 22
Cc: s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Subject: RE: ROCCSR Meeting Perth - 20 May [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Perfect, thanks s22

We'll get back to you on early next week, but I think it's safe to leave space on the agenda to discuss the feedback.

Thanks,

s22

~~OFFICIAL~~

From: s22 s 22
Sent: Friday, May 10, 2024 3:55 PM
To: s22 <s22 @industry.gov.au>
Cc: s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Subject: RE: ROCCSR Meeting Perth - 20 May [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

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Hi s22

That's great. No need for an answer today. We will leave a space on the agenda but can be flexible based on s 22 thoughts.

s22

From: s22 <s22 @industry.gov.au>
Sent: Friday, May 10, 2024 3:54 PM
To: s22 s 22
Cc: s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Subject: RE: ROCCSR Meeting Perth - 20 May [SEC=~~OFFICIAL~~]

~~OFFICIAL~~

Hi s22

s22 will be over in Perth the week of AEP conference and I'm sure would be happy to talk about the feedback from the GHG injection Licence Guidelines. I'll just confirm with him when he's back from leave this coming Monday.

We've been receiving feedback on the guidelines from various project proponents over the last week, so the ROCCSR meeting on the 20 May would be great opportunity to discuss it.

Did you need an answer by the end of today?

Thanks,

s22
A/g Manager – Offshore CCS Section
Offshore Resources Branch | Resources & Strategy Group
Phone: s22 | Email: s22 @industry.gov.au
Department of Industry, Science and Resources

~~OFFICIAL~~

From: s22 s 22
Sent: Friday, May 10, 2024 3:41 PM
To: s22 <s22 @industry.gov.au>
Cc: s22 <s22 @industry.gov.au>; s22 <s22 @industry.gov.au>
Subject: ROCCSR Meeting Perth - 20 May

Hi s22

I am looking at the agenda for the ROCCSR meeting in Perth on 20 May and was wondering if you and s22 wanted 20 minutes to talk about the feedback on the GHG Injection Licence Guidelines? It would be great to discuss any follow up questions you had as well as to hear next steps.

Cheers,

s22

s22
s 22

M +s22 E s 22
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Australian Energy Producers acknowledges and pays respect to the past and present Traditional Custodians and Elders of this nation and the continuation of cultural, spiritual and educational practices of Aboriginal and Torres Strait Islander peoples.