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Australian Government

Offshore Carbon Capture and Storage Regulatory Approvals

In relation to the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*, the *Environment Protection (Sea Dumping) Act 1981*, the *Environment Protection and Biodiversity Conservation Act 1999*

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The Australian Government as represented by:

- the Department of Industry, Science and Resources (including the National Offshore Petroleum Titles Administrator)
- the Department of Climate Change, Energy, the Environment and Water, and
- the National Offshore Petroleum Safety and Environmental Management Authority

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About this document

There are multiple legislative frameworks to regulate offshore carbon capture and storage (CCS) projects in Commonwealth waters (more than 3 nautical miles from shore, extending to the boundary of Australia's exclusive economic zone).

This guidance has been developed to provide a high-level outline of the requirements and interactions between the permitting and environment approvals processes under the following legislation (and associated regulations):

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

A typical project phased process has been utilised to illustrate the recommended sequencing between the various regulatory approvals and typical project stages. It is recognised that each project proponent will have their own project management and approvals processes and may need to adapt this guidance accordingly.

Note: A number of links are provided in this document to guidance which has previously been developed for existing petroleum titleholders.

While particular situations and scenarios covered in these links may only be applicable to petroleum titleholders, the general regulatory guidance contained will apply to offshore CCS projects as well.

These links are signified by “**(developed for petroleum titleholders)**”.

Further detailed guidance on individual approvals is available from the different regulators.

Guidance material will be enhanced as part of an iterative process over time as the Australian Government identifies opportunities to streamline approval processes for CCS activities in Commonwealth waters.

Considerations when reading this guidance:

- This guidance has been developed based on a project commencing from a precursor permit (e.g. Greenhouse Gas Assessment Permit).
- Every project is unique and may require additional approvals to those outlined.
- It remains the responsibility of project proponents to ensure compliance with all legal requirements for a project.
- Due to the complexity of the legislative and regulatory frameworks, early and ongoing engagement with the relevant regulators is encouraged.
- Project proponents should ensure consistent information is provided to all regulators.
- Timings for approvals are indicative. Each project will differ depending on formal requests for information (RFIs) and other factors.
- This guidance note does not cover State/Territory approvals as each State/Territory may be different.

Note: Some projects may require relevant State and Territory approvals. Especially, for projects that occur across Commonwealth and State/Territory jurisdictions, additional considerations will apply. Proponents are encouraged to seek guidance from relevant regulatory bodies as applicable.

The legal framework & relevant entities

The relevant legislation and 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).

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

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

Note: Offshore CCS proponents are encouraged to engage with all four regulators early to discuss consistency, timing, and regulatory requirements. A summary of relevant regulatory approvals can be found in [Appendix A](#).

Offshore Petroleum and Greenhouse Gas Storage Act 2006

The *Offshore Petroleum and Greenhouse Gas Storage Act 2006* ([OPGGGS Act](#)) governs Australia's offshore petroleum and greenhouse gas (GHG) storage regulatory framework. It articulates the framework of rights, entitlements and responsibilities of government and industry.

An objective of the OPGGS Act is to provide an effective regulatory framework for GHG injection and storage in offshore Commonwealth waters. Commonwealth waters under the OPGGS Act start 3 nautical miles from the coastline and extend to the

boundary of Australia's exclusive economic zone.

The legislative framework creates a regime that enables progression from GHG storage assessment through to injection, site closing and decommissioning, and managing long-term liabilities.

The OPGGS Act is administered through the DISR portfolio. The Commonwealth Minister currently responsible for this legislation is the Minister for Resources and Northern Australia, generally referred to as the Responsible Commonwealth Minister (RCM) in the Act for most GHG related decisions. Certain ministerial approvals under the OPGGS Act (pipeline licence and infrastructure licence decisions) are made by the Joint Authority, which comprises the Commonwealth Minister and the relevant responsible state or territory Minister.

Note: While the OPGGS Act refers to a GHG substance, no substance other than carbon dioxide (CO₂) has been prescribed for this purpose.

NOPTA

NOPTA administers titles and data management for petroleum and GHG titles in Australian Commonwealth waters.

NOPTA supports the management of the offshore petroleum and GHG titles by providing expert advice to the RCM, administration, compliance monitoring and data management in accordance with the OPGGS Act. NOPTA's role is to assess applications and provide technical advice to the relevant decision maker.

NOPSEMA

NOPSEMA is Australia's independent expert regulator for health and safety, structural and well integrity and environmental management for offshore petroleum and GHG storage activities in Commonwealth waters, and in coastal waters where regulatory powers and functions have been conferred.

NOPSEMA's role is to assess risk and impact plans, inspect to monitor compliance, investigate to verify and learn from non-compliance, take enforcement action to correct and deter non-compliance and promote and advise with the objective of fostering continuous improvement in industry performance.

Environment Protection (Sea Dumping) Act 1981

Waters surrounding Australia's coastlines are protected from waste and pollution dumped at sea by the Sea Dumping Act.

The Sea Dumping Act regulates the loading and dumping of waste at sea and the creation of artificial reefs in Australian waters. Australian waters under the Sea Dumping Act stretch from the low-water mark of the Australian shoreline out to the edge of the continental shelf. It does not include waters within the limits of a state or territory.

The Sea Dumping Act gives effect to Australia's obligations under the [1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972](#) (the London Protocol) which aims to protect and preserve the marine environment from all human activities and take all practical steps to prevent pollution of the sea by the dumping of wastes and other matters.

Parties wishing to dispose of CO₂ in Australian waters by offshore CCS require a Sea Dumping Permit under the Sea Dumping Act.

To grant a permit for this purpose, the minister responsible for the Sea Dumping Act (or their delegate) must be satisfied that the material meets the criteria set out in the London Protocol and associated guidance for a CO₂ stream, including any contaminants.

The Sea Dumping Act is administered through the DCCEEW portfolio. The Commonwealth Minister currently responsible for this

legislation is the Minister for the Environment and Water.

Environment Protection and Biodiversity Conservation Act 1999

The EPBC Act and regulations are Australia's national environment legislation. They provide a way for Australia to protect and manage nationally and internationally important plants, animals, habitats, and places.

The EPBC Act is administered through the DCCEEW portfolio. The Commonwealth Minister currently responsible for this legislation is the Minister for the Environment and Water.

Referral, assessment and approval requirements under the EPBC Act apply if an action is likely to have an impact on one of the nine matters of national environmental significance (MNES). This includes proposals that occur in a Commonwealth Marine Area.

In this context, an action will require approval if:

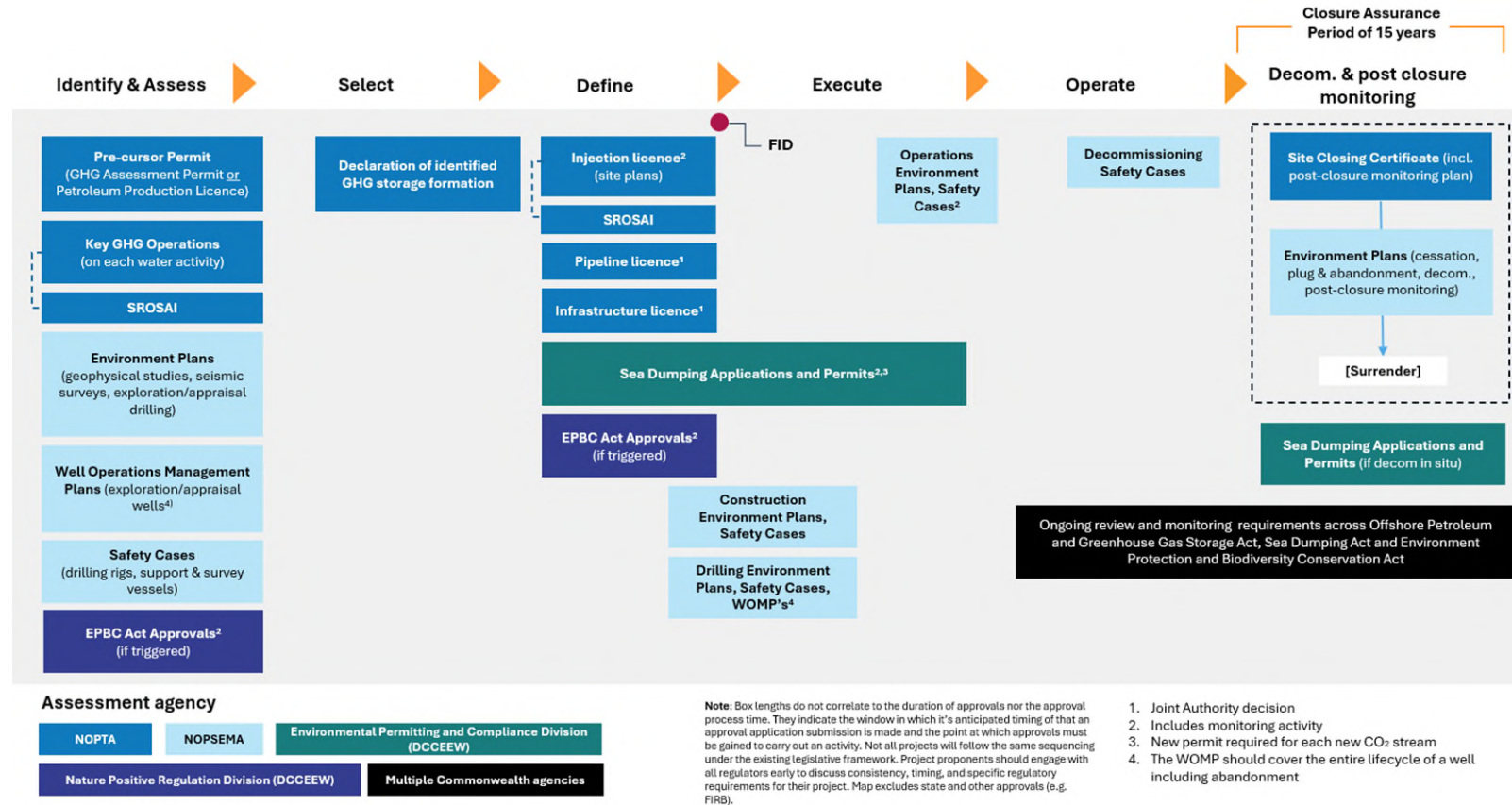
- the action is taken in a Commonwealth Marine Area and the action has, will have, or is likely to have a [significant impact](#) on the environment, or
- the action is taken outside a Commonwealth Marine Area and the action has, will have, or is likely to have a significant impact on the environment in a Commonwealth Marine Area.

In considering whether an action will have a significant impact on the environment in a Commonwealth Marine Area, DCCEEW needs to consider the whole of the environment.

The Minister for Environment has endorsed the NOPSEMA process to assess oil and gas activities and CCS exploration and appraisal under Part 10 of the EPBC Act, however this does not apply to CCS injection and storage activities.

Offshore CCS Commonwealth Regulatory Approvals Mapping

1. Due to the complexity of the legislative and regulatory frameworks, early and ongoing engagement with the relevant regulators is encouraged.
2. Applicants are strongly encouraged to ensure that they provide consistent information across all regulatory approvals



Note: Box lengths do not correlate to the duration of approvals nor the approval process time. They indicate the window in which it's anticipated that an application submission is made and the point at which approvals must be gained to carry out an activity. Not all projects will follow the same sequencing under the existing legislative framework. Project proponents should engage with all regulators early to discuss consistency, timing, and specific regulatory requirements for their project. Map excludes state and other approvals (e.g. FIRB). Ideally there would be an EPBC Act assessment completed before EP assessments / approvals for development drilling and installation take place.

Regulatory approvals information and details

Details of relevant regulatory approvals required have been listed below against the various phases of an offshore CCS project.



Identify & Assess

During these phases, project proponents acquire exploration rights over an area and aim to identify and assess depleted reservoirs or saline aquifers suitable for the injection and permanent storage of CO₂ and screen the technical and commercial viability of the opportunity.

Greenhouse Gas Assessment Permit

GHG assessment permits are granted by the RCM under the OPGGS Act, based on NOPTA advice, following a competitive bidding process in which applicants propose a program of work aimed at increasing the understanding of the storage potential of the area.

They provide a GHG assessment permit holder the right to explore in the permit area for potential GHG storage formations and injection sites in Commonwealth waters.

Approval for a GHG assessment permit can take approximately 6-12 months from submission of an application. This includes NOPTA assessment, RCM decision, offer and award.

Information on obtaining a GHG assessment permit can be found on the NOPTA website at: <https://www.nopta.gov.au/application-processes/greenhouse-gas/ghg-assessment-permit.html>

Key Greenhouse Gas Operations

A Key GHG Operation approval under the OPGGS Act is required from the RCM for each on-water activity under a GHG assessment permit or GHG holding lease.

During the identify and assess phases, relevant activities may include:

- drilling an appraisal well
- injecting and/or storing a GHG substance, air, petroleum, or water on an appraisal basis
- undertaking geophysical studies, a seismic survey or similar
- monitoring behaviour of an injected GHG substance, air, petroleum, or water
- baseline investigation
- taking a sample of the seabed or subsoil.

Approval of key GHG operations considers whether there is a significant risk of a significant adverse impact (SROSAI) from an operational activity on petroleum exploration or recovery operations that are being or could be carried on under an existing or future petroleum title.

Approval for a Key GHG Operation can take approximately 6 months. This includes NOPTA assessment and RCM (or their delegate) decision. RFIs may alter timeframes.

A factsheet has been created to assist applicants:

<https://www.nopta.gov.au/documents/factsheets/fact-sheet-key-GHG-operations.pdf>

Further information can be found on NOPTA's website:

<https://www.nopta.gov.au/application-processes/greenhouse-gas/key-ghg-operation.html>

Note: Approvals of activity-based environment plans, safety cases and well operations management plans are also necessary to carry out a key GHG operation. Applications can be undertaken concurrently with key GHG operation approvals.

Environment Plans

NOPSEMA assessment and acceptance of an Environment Plan (EP) under the OPGGS Regulations is required for any CCS related activities prior to the commencement of the activity.

An EP must meet the criteria outlined in the Offshore Petroleum and Greenhouse Gas Storage (Environment) Regulations 2009 (OPGGS Environment Regulations) prior to acceptance.

During the identify and assess phases this may include geophysical studies, seismic surveys and exploration or appraisal drilling activities that do not involve the injection of GHG.

EPs must demonstrate that a CCS activity carried out in an offshore area can be:

- carried out in a manner consistent with the principles of ecologically sustainable development set out in section 3A of the EPBC Act
- carried out in a manner by which the environmental impacts and risks of the activity will be reduced to as low as reasonably practicable (ALARP)
- carried out in a manner by which the environmental impacts and risks of the activity will be of an acceptable level.

Titleholders should note that EPs for seismic surveys and exploration drilling are subject to a public consultation period prior to NOPSEMA assessment. The titleholder must include a written statement on how public comments have been addressed including whether any modifications to the EP have been made in response to public comments.

Assessment and approval timeframes for an EP depend on the nature and scale of the proposed activity as well as the quality of the information presented in the submission.

Environment Plans and NOPSEMA's assessment decisions are published on their [Industry Environment Plans page](#).

More information can be found at:

<https://www.nopsema.gov.au/offshore-industry/environmental-management>

Guidance to assist applicants with EP content requirements (**developed for petroleum titleholders**) can be found at:

<https://www.nopsema.gov.au/sites/default/files/documents/2021-03/A339814.pdf>

NOPSEMA EP decision making guideline can be found at:

<https://www.nopsema.gov.au/sites/default/files/documents/Environment%20plan%20decision%20making%20guideline.pdf>

Guidance on EP consultation requirements can be found at: [Guideline: Consultation in the course of preparing an environment plan \(nopsema.gov.au\)](#)

Well Operations Management Plans

NOPSEMA assessment and acceptance of a well operations management plan (WOMP) under the OPGGS Act is required for any well activity prior to commencement.

WOMPs will need to demonstrate:

- that the plan is appropriate to the nature and scale of the well, and of the well activities relating to the well to which it applies
- performance outcomes, performance standards and measurement criteria included in the plan are appropriate
- that risks to well integrity will be reduced to as low as reasonably practicable (ALARP).

A WOMP may relate to more than one well if the integrity of each well is subject to similar risks. Although WOMPs may address one or more stages in the life of a well, for a new well, the WOMP should cover the entire lifecycle of a well including abandonment. WOMPs are updated every 5 years (or sooner if circumstances change) until the well is abandoned.

Assessment and approval timeframes for a WOMP will depend on the nature and scale of the proposed activity as well as the quality of the information presented in the submission.

More information can be found at:

<https://www.nopsema.gov.au/offshore-industry/well-integrity>

Guidance to assist applicants with WOMP content requirements (**developed for petroleum titleholders**) can be found at: <https://www.nopsema.gov.au/sites/default/files/documents/2021-03/A461074.pdf>

Safety Cases

NOPSEMA assessment and acceptance of a safety case (SC) under the OPGGS Act is required for all offshore facilities. For a key GHG operation, a facility includes the drilling rig or survey vessel used for the activity. SCs provide information relating to the management of health and safety, and the control of major accident hazards on offshore facilities.

Titleholders should be aware that SCs may be required through all stages in the life cycle of a facility. A SC may address one or more stage in the life of a facility and may relate to more than one facility.

Assessment and approval timeframes for an SC will depend on the nature and scale of the proposed activity as well as the quality of the information presented in the submission.

More information can be found at:

<https://www.nopsema.gov.au/offshore-industry/safety>

Guidance to assist applicants with safety case content requirements (**developed for petroleum titleholders**) can be found at: <https://www.nopsema.gov.au/sites/default/files/documents/A86485.pdf>

EPBC Referral and Assessment

If the project has the potential to significantly impact MNES in state or territory waters, proponent should strongly consider the need to refer under Part 7 of the EPBC Act to DCCEEW. However, a jurisdiction may have conferral of powers agreement with NOPSEMA and in that instance, the Part 7 referral would not be necessary.

Proponents undertaking projects in the Commonwealth Marine Area are encouraged to engage with DCCEEW early in the project's development to discuss requirements under the EPBC Act. Proponents can organise a pre-referral meeting with DCCEEW. Further information about pre-referral meetings can be found at:

<https://www.dcceew.gov.au/environment/epbc/publications/pre-referral-meeting-guidance>

Note: Project proponents should be aware that if seeking to inject CO₂ on an appraisal basis during the identify & assess phases, a Sea Dumping Permit is required. As CO₂ injection is not part of NOPSEMA class of actions, referral to DCCEEW for a Part 7 assessment is required.

Select

During the select phase, project proponents evaluate and select their preferred option for an injection site. This would generally include assessing commercial potential and preparing preliminary project schedules, plans for drilling, engineering, basis of design and funding approval for the define phase.

Approvals during this phase would generally be limited to approvals under the OPGGS Act unless a proponent proposes to inject and store CO₂ streams on an appraisal basis.

Declaration of Identified Storage Formation

Through a Declaration of Identified Storage Formation (DoSF) under the OPGGS Act, an applicant demonstrates to the RCM that an identified storage formation is suitable and capable of permanently storing a particular volume of an injected GHG substance.

The identified storage formation must be situated wholly within the individual GHG assessment permit area, petroleum retention lease area or petroleum production licence area.

The DoSF is a key requirement that needs to be met before the applicant can proceed to either an Injection Licence or Holding Lease.

NOPTA assessments of DoSFs can take approximately 15 weeks once all relevant information is received. NOPTA may also request NOPSEMA to provide advice on the suitability of proposed engineering enhancements and legacy wells that may be impacted by the storage project.

Guidelines to assist applicants can be found on NOPTA's website at:

<https://www.nopta.gov.au/documents/guidelines/GHG-Guideline-Declaration-of-Storage-Formation.pdf>

Note: Applicants and titleholders should note that the grant of a DoSF does not automatically guarantee the granting of an Injection Licence.

In certain instances, a Notification of Eligible Greenhouse Gas Storage Formation must be submitted prior to the DoSF. A factsheet has been created to assist applicants and can be found at:

<https://www.nopta.gov.au/documents/factsheets/fact-sheet-eligible-storage-formation-ghg.pdf>

Note: Titleholders may also apply for a holding lease after obtaining their DoSF. This must occur within 12 months for GHG assessment permit holders (or may be longer with RCM agreement) of the approval of a DoSF.

A holding lease has a 5 year term and is available to titleholders who can demonstrate they are 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. A Holding Lease can only be renewed once.

Appraisal activities (see 'GHG Assessment Permit' section under Identify & Assess for more details) may be performed if a titleholder is granted a Holding Lease.

Other OPGGS Act approvals

As project proponents continue to refine their preferred option for an injection site towards selection, additional approvals will continue to be required for each new on-water activity.

During the select phase, NOPTA assessment and RCM approval of key GHG operations for each new on-water activity will be required for greenhouse gas assessment permit and holding lease titleholders.

NOPSEMA assessment and acceptance of activity-based Eps, WOMPs and SCs where applicable will also be required.

Note: As also noted in the Identify & Assess phase of this document, project proponents should be aware that if seeking to inject CO₂ on an appraisal basis, a Sea Dumping Permit is required and referral to DCCEEW for a Part 7 assessment is also required.

Define

During the define phase, project proponents undertake front-end engineering and design (FEED), develop detailed drilling plans, finalise schedules, costs, contracting and procurement, project execution plans.

Proponents would also confirm commercial viability of the project and prepare for their final investment decision (FID). Typically, the FID will be undertaken at the end of this stage, prior to entering the execute phase.

During this phase proponents would generally submit the key intersecting approvals across regimes.

It would generally be anticipated that titleholders would commence applications for tenure approvals under the OPGGS Act first and subsequently seek environment approvals under the Sea Dumping Act and EPBC Act concurrently during this phase. This is because information in the DoSF and Injection Licence applications relating to:

- impacts and risks of potential loss of containment
- impacts and risks of construction, anticipated operations, and
- monitoring, measurement and verification (MMV) activities

will be highly relevant to the environmental assessment.

Note: Approvals required under the Sea Dumping Act and EPBC Act are independent of approvals required under the OPGGS Act, therefore, a titleholder may wish to seek these separately prior to commencement of the action.

Applications for approvals for execute phase, drilling and construction EPs, SCs and WOMPs would typically commence toward the end of the define phase to enable these activities to commence as soon as practicable once FID was taken (refer to 'Execute' phase below for further detail). Ideally the EPBC Act assessment would be completed before EP

assessments/approvals for development drilling and installation take place.

Injection Licence

GHG Injection Licences under the OPGGS Act authorise the licensee to carry out operations for the injection and permanent storage of GHG substances into an identified GHG storage formation located wholly within the licence area.

GHG Injection Licences are granted by the RCM, based on technical advice and assessments undertaken by NOPTA and advice provided upon request to NOPTA by NOPSEMA.

As part of the application process, applicants will submit a site plan for the licence area. The site plan will include information on:

- Part A: predictions about the behaviour of each GHG substance that is or will be stored in the formation covered by the licence
- Part B: other matters which incorporates:
 - Information on operations planning and management
 - An overview of proposed operations
 - Details on engineering enhancements included as part of the DoSF
 - Details on risks to containment
 - Monitoring plans for the behaviour of the GHG substance, leakage during transport and injection and from well bores, and
 - Site closure remediation and monitoring plans.

Site plans are subject to review requirements at least once every 5 years after the approval.

Note: Project proponents should ensure they provide consistent information for proposals to meet Injection Licence site plan monitoring requirements and Sea Dumping long-term management plans requirements.

Pipeline Licence

A pipeline licence under the OPGGS Act provides titleholders the right to construct and operate a pipeline in accordance with the route and specifications set out in the application.

The pipeline licence for a GHG titleholder may need to consider other factors that differ from a pipeline licence under a petroleum title.

NOPTA may request advice from NOPSEMA, typically in relation to considerations on pipeline re-use and life extension for CCS operations, the impact on decommissioning obligations and transitional arrangements as the project moves from petroleum to GHG operations if re-use is involved.

A pipeline licence will require Joint Authority decision by the relevant responsible state or territory Minister and the RCM.

Note: State approvals will be required for any pipeline infrastructure which crosses from state waters/onshore processing facilities

Infrastructure Licence

An infrastructure licence under the OPGGS Act provides titleholders the right to construct and operate an infrastructure facility in an offshore area.

Note: The definition of infrastructure facility for GHG activities does not include drilling or using an existing well for the purpose of injection and storage of GHG substances.

An infrastructure licence will also require Joint Authority decision by the relevant responsible state or territory Minister and the RCM. NOPTA may request advice from NOPSEMA, typically in relation to considerations on infrastructure re-use and life extension for CCS operations, the impact on decommissioning obligations and transitional arrangements as the project moves from petroleum to GHG operations if re-use is involved.

Information on infrastructure licences can be found at:

<https://www.nopta.gov.au/application-processes/development/infrastructure-licence.html>

Note: Sea Dumping Permit and EPBC Act approvals may have conditions that will inform other approvals. Applicants are strongly encouraged to ensure that they provide consistent information across all regulatory approvals.

Sea Dumping Permit

Parties wishing to undertake offshore CCS in Australian waters require a Sea Dumping Permit under the Sea Dumping Act.

A separate Sea Dumping Permit is required for the injection of each new stream of CO₂, or multiple streams can be applied for initially.

Sea Dumping Permits are necessary to ensure that CO₂ streams are loaded, transported, and sequestered at appropriate offshore sites and that no significant adverse impacts result to the marine environment or human health.

To grant a permit for offshore CCS, the minister responsible for the Sea Dumping Act must be satisfied that the material meets the criteria set out in the London Protocol and associated guidance for a CO₂ stream including any contaminants.

Annex 2 of the London Protocol and the International Maritime Organization issued [2012 specific guidelines for the assessment of carbon dioxide for disposal into sub-seabed geological formations](#), contain the permitting environmental impact assessment requirements for CCS permit applications. Assessments give consideration, but are not limited to:

- waste prevention audits
- waste management options
- chemical and physical properties
- site selection and characterisation
- assessment of potential effects
- monitoring and risk management.

To grant a sea dumping permit for CCS the Minister responsible for the Sea Dumping Act must be satisfied that the material meets the criteria set out in the CCS National Action List (NAL).

The NAL is required to meet our international obligations and allows to ensure the protection of the marine environment. The NAL serves as:

- a screening tool to assess suitability for disposal of CO₂ into sub-seabed geological formations and
- an outline of acceptable contaminant concentrations and upper thresholds, supporting assessment of potential effects on the marine environment and human health.

A granted Sea Dumping Permit cannot be significantly varied or transferred. Varying a Sea Dumping Permit does not include changing the permit holder's details or transferring a granted permit to a new permit holder.

Further information on Sea Dumping Permits for CO₂ sequestration can be found at: <https://www.dccew.gov.au/environment/marine/sea-dumping/dispose-co2>

Note: It is recommended that industry apply for EPBC Act approvals and Sea Dumping approvals in a similar timeframe where possible. This may provide an opportunity to align any approval conditions where appropriate.

EPBC Referral and Assessment

EPBC referral is required for any action that could impact a matter protected under Part 3 of the EPBC Act.

Proponents should consider proposed offshore CCS activities through the execute, operate and decommissioning phases of the project as part of the referral.

The referral process will determine whether an action is a controlled action due to likely significant impacts to the environment in a Commonwealth Marine Area, or on any other protected matter(s).

In considering whether an action will have a significant impact on the environment in a Commonwealth Marine Area, the Minister for the Environment (or their delegate) needs to consider impacts on the whole of the environment.

Where a proposed action is determined to be a controlled action, approval is required from the Minister for the Environment and Water under part 9 of the EPBC Act.

The assessment and approval pathway under the EPBC Act will depend on the complexity of the risks identified during the referral process and the level of public interest in the proposal.

In order to facilitate timely assessments, it is recommended that Proponents include their DoSF and site plans as part of the EPBC Act assessment process where this is possible.

If the proponent is unable to supply these documents, they will need to be mindful that the scope of an action cannot be varied after a Part 7 authorisation or Part 9 EPBC Act approval is granted.

Proponents who are unable to supply the DoSF and site plan are advised to refer the development at its broadest scope. This will avoid having to re-refer actions if the originally referred scope is proposed to be modified after an EPBC Act approval.

Note: Project proponents are responsible for referring a proposed offshore CCS project. CCS projects that occur in a Commonwealth Marine Area are likely to require assessment under the EPBC Act.

Further information on significant impacts can be found at:

https://www.dcceew.gov.au/sites/default/files/documents/nes-guidelines_1.pdf

Proponents are encouraged to request a pre-referral meeting with Environmental Assessments at DCCEEW early in the project design process to discuss approach and timing. Please see contact details on the last page.

Further information on the EPBC referral and assessment process can be found on DCCEEW's website at:

<https://www.dcceew.gov.au/environment/epbc/approvals>.

Execute

During the execute phase of a project, proponents undertake drilling, construction and commissioning activities to implement the project. Proponents may also be finalising necessary regulatory approvals for project construction and completing conditions subsequent to FID such as final construction, sales and purchase, processing, storage or transportation agreements.

It is generally anticipated that project proponents will have obtained or be in the process of finalising key regulatory approvals for their injection and storage proposal by this phase. Key approvals obtained during this phase would be operational approvals for injection and storage activities from NOPSEMA.

Environment Plans

NOPSEMA assessment and acceptance of an EP under the OPGGS Act is required for any GHG activity prior to the commencement of the activity.

During the execute phase, this may include baseline surveys, drilling, and construction activities.

Submission of EPs to NOPSEMA for commissioning and operations activities will generally be made later in the Execute phase following acceptance of drilling and construction EPs.

Further information on EPs is provided above at the identify and assess phase.

Note: Titleholders should be aware that NOPSEMA's endorsed EPBC Act program does not apply to CO₂ injection and storage projects.

Where the proponent determines an action is likely to have a significant impact on MNES, separate referral to DCCEEW is currently required under the EPBC Act.

These requirements are currently met through continued requirements to undertake EPBC referrals processes.

Safety Cases

During the execute phase, SCs under the OPGGS Act will need to be in place for drilling and construction works.

Applications for SCs applicable to commissioning and operations will generally be made later in the execute phase prior to the commencement of these activities.

Further information on SCs is provided above at the assess phase.

Well Operations Management Plan

All well activities need to be covered in an accepted WOMP under the OPGGS Act. The execute phase WOMP will contain information on all well activities during the drilling, operations and abandonment phases.

The WOMP is updated during the lifecycle of the wells in 5 yearly reviews or sooner if circumstances change. It is not normally expected that the proponent would submit a specialised abandonment WOMP unless the information in the last 5 yearly review needed updating.

Further information on WOMPs is provided above at the identify and assess phases.

Operate

During the operate phase, project proponents will undertake injection and storage activities, monitoring, and associated work to ensure the injected CO₂ is behaving as predicted. Project proponents are expected to review, update, and maintain current relevant approvals throughout the operational phase of the project.

Typically, application for EPs, SCs and any outstanding WOMPs under the OPGGS Act relating to the operate phase would commence during the execute phase to enable commissioning and operations to commence as soon as practicable after completion of the project construction.

Various regulatory approvals (such as site plans and EP assessments) will need to include the details of MMV programs and relevant reporting over the project lifecycle. Titleholders will need to discuss MMV component with relevant regulators.

Environment Plans

NOPSEMA assessment and acceptance of an EP under the OPGGS Act is required for any CCS related activities prior to the commencement of the activity, including commissioning and operations. EPBC Act approvals should also be obtained prior to submission of operate phase EPs as any requirement imposed by EPBC Act approvals will be relevant to the EP content.

An EP will need to describe and evaluate the impacts of activities required for MMV purposes, including any seismic surveys.

Titleholders are required to submit a proposed revision of long-term activity EPs every 5 years (e.g. operations activities). Titleholders may also be required to submit revisions to an EP where:

- there is a change or proposed change of circumstances or operations
- requested by NOPSEMA.

NOPSEMA's assessment and acceptance of EPs will continue to be required for new activities and works undertaken during the operate phase.

Further general information on EPs is provided above at the identify and assess phases.

Guidance to assist titleholders in the preparation of 5-year EP revisions (**developed for petroleum titleholders**) can be found at: <https://www.nopsema.gov.au/sites/default/files/documents/2021-03/A590072.pdf>

Safety cases

To commission and operate injection facilities, SCs under the OPGGS Act will be required prior to commencement of the activity.

SCs will also be required for any pipelines used as part of the project whether to join drilled wells to the facility or to transport CO₂. A vessel used to transport CO₂ for storage is considered a facility. Facility and pipeline SCs can be combined.

Titleholders are required to submit revisions to SCs every 5 years during the operation of the offshore facility.

The revision must focus on the ongoing integrity of the technical and other control measures identified by the formal safety assessment for major hazards and the management systems that relate to this.

As projects reach late-stage operations revisions will need to provide increased level of detail on decommissioning activities.

Titleholders may also be required to submit revisions to SCs where:

- triggered by the operator proposing a change of circumstances or operations
- there is a significant increase in risk
- requested by NOPSEMA.

Further information on managing SCs across the lifecycle (**developed for petroleum titleholders**) can be found at:

<https://www.nopsema.gov.au/sites/default/files/documents/2022-06/A86483.pdf>

Further general information on SCs is provided above at the identify and assess phases.

Well Operations Management Plan

Titleholders are required to submit revisions to WOMPs every 5 years after original WOMP acceptance.

Titleholder revisions should focus on the ongoing validity of technical and other control measures identified in previous risk assessments.

Titleholders may also be required to submit revisions to WOMPs when requested by NOPSEMA.

New well construction, well workover or intervention, production and abandonment activities may be covered by new WOMPs at the outset or may be progressively covered by revisions to an existing WOMP. In either case WOMPs must contemplate the full lifecycle of the well.

Further information on managing WOMPs across the lifecycle (**developed for petroleum titleholders**) can be found at:

<https://www.nopsema.gov.au/sites/default/files/documents/2021-03/A462131.pdf>

Further general information on WOMPs is provided above at the identify and assess phases.

Injection Licence variations (if required)

Titleholders may seek to vary the conditions of a GHG injection licence under the OPGGS Act during the operate phase.

Titleholders should note that a variation to a GHG injection licence may result in changes which will also require corresponding variations to both their DoSF (see Select phase) and their approved site plan (see 'Injection Licence' section in Define phase).

Titleholders should discuss this with NOPTA prior to seeking a variation to their GHG injection licence.

Site Plan modifications

Operators are required to review approved site plans at least once in every 5-year period to ensure they continue to reflect:

- experience gained about prediction of CO₂ behaviour in the formation
- outcomes of monitoring
- carrying out of operations authorised by the licence
- industry best practice.

Titleholders will be required to submit and seek approval of proposed changes to the site plan (whether identified through this review process or otherwise) in accordance with requirements under OPGGS Act regulations.

Early engagement with NOPTA and other regulators is advisable.

Sea Dumping permits (additional permits)

Additional Sea Dumping Permits will be required in circumstances where new sources of CO₂ are proposed for injection at the storage site to ensure the chemical properties of these sources are assessed and are compliant with requirements under the London Protocol as implemented domestically through the NAL.

EPBC Act approvals

DCCEEW is currently developing standard conditions/post-approval requirements for CCS projects in consultation with regulatory counterparts.

Decommissioning & post-closure period

When a CCS injection facility is reaching the end of its economic life and will no longer be used for injection and permanent storage, facility decommissioning must be undertaken.

The decommissioning and post-closure phase of a project requires proponents to execute decommissioning obligations and undertake site remediation. Proponents may also have post-closure monitoring obligations in addition to monitoring that will be undertaken by the Commonwealth to ensure that the injected CO₂ continues to behave as predicted.

Environment Plans (cessation, plug & abandonment, decommissioning, post-closure monitoring)

EPs under the OPGGS Act are required for decommissioning.

Planning for decommissioning should happen well ahead of project cessation and EPs for decommissioning should be submitted with adequate time for assessment and for titleholders to sequence their decommissioning activities with other end-of-life approvals.

Removal of all property and the plugging and abandonment of all wells is the base case for decommissioning under the OPGGS Act.

Exceptions to full removal may apply if titleholders can demonstrate that an alternative decommissioning approach delivers equal or better environmental outcomes compared to complete removal and meets all other application requirements under the OPGGS Act and regulations, including well integrity and safety-related matters, and other applicable laws.

NOPSEMA guidance on maintenance and removal of property can be found at: <https://www.nopsema.gov.au/sites/default/files/documents/N-00500-PL1903%20-%20S572%20Maintenance%20and%20Removal%20of%20property%20%28A720369%29.pdf>

Further information relating to EPs is provided above at the identify and assess phase.

Sea Dumping Permit (dumping and abandonment of offshore platforms and structures at sea)

The Sea Dumping Act regulates the dumping or abandonment of platforms or other man-made structures in Australian waters.

As party to the London Protocol, the Australian Government has a responsibility to meet Australia's obligations to protect our marine environment from pollution.

In circumstances where a project proponent seeks to dump or abandon infrastructure (such as platforms) in Commonwealth waters, they require a Sea Dumping permit for this action.

Further information on Sea Dumping Permits in these circumstances (**developed for petroleum titleholders**) can be found at: <https://www.dccew.gov.au/environment/marine/sea-dumping/dumping-abandonment-structures>

Site Closing Certificate

Under the OPGGS Act, offshore CCS project proponents are required to apply for a site closing certificate within 30 days (or 90 days if otherwise approved) of ceasing injection operations.

The RCM will consider the information provided by the project proponent in this application. If satisfied with this information, the RCM will issue a pre-certificate notice to the titleholder which will include details of:

- the Commonwealth's proposed program of monitoring for the site
- estimated costs of the program
- the security required to cover any reasonable costs or expenses incurred by the Commonwealth in undertaking its proposed monitoring program.

A site closing certificate will be issued once the security specified in the pre-certificate notice has been lodged.

A site closing certificate must be issued before the RCM will be able to consent to a surrender of the title.

Surrender of Injection Licence

Once a site closing certificate has been obtained, all outstanding obligations under the OPGGS Act met and all decommissioning completed, titleholders will be able to seek and obtain consent to surrender the injection licence.

Note: Titleholder should note that trailing liability provisions under the OPGGS Act apply to offshore CCS. As a last resort a former registered titleholder may be issued a remedial direction if issues arise in relation to previously decommissioned property.

Further information on trailing liability **(developed for petroleum titleholders)** can be found on the DISR website:

<https://www.industry.gov.au/publications/trailing-liability-decommissioning-offshore-petroleum-property-guidelines/trailing-liability>

Appendix A – Summary of regulatory approvals

Regulatory approval	Relevant legislation	Approved action
GHG Assessment Permit	OPGGS Act	Provides titleholder(s) the right to explore in the permit area for potential GHG storage formations and injection sites in Commonwealth waters.
Key GHG Operations	OPGGS Act	Provides titleholder(s) approval to undertake on-water activities under either a GHG assessment permit or a GHG holding lease. List of relevant activities can be found in identify & assess phase.
Environment Plans	OPGGS Act (Offshore Petroleum Greenhouse Gas Storage (Environment) Regulations 2009)	Provides titleholder(s) one of the activity-based approvals required to undertake GHG activities in Commonwealth waters and meet principles of ecologically sustainable development and ensure that environmental impact and risk is reduced to ALARP.
Well Operations Management Plans (WOMPs)	OPGGS Act (Offshore Petroleum and Greenhouse Gas Storage (Resource Management and Administration) Regulations 2011)	Provides titleholder(s) one of the activity-based approvals required to undertake well activities including drilling, production, injection and abandonment. WOMPs need to ensure that titleholder(s) meet a number of performance standards relating to well integrity and ensure residual risks are ALARP and acceptable levels.
Safety Cases	OPGGS Act	Provides titleholder(s) one of the activity-based approvals required to undertake GHG activities in Commonwealth waters. It provides information relating to the management of health and safety, and the control of major accident hazards on offshore facilities.
Declaration of identified GHG storage formation (DoSF)	OPGGS Act	Defines a storage formation that is suitable for the permanent storage of a particular amount of a GHG substance injected over a particular injection period/wells. Provides approval for titleholder(s) to transition from a GHG assessment permit (or petroleum retention lease or petroleum production licence) to a GHG injection licence or GHG holding lease.
Injection licence (site plans)	OPGGS Act	Provides titleholder(s) approval to inject and permanently store a particular amount of a GHG substance, with obligations around reporting and monitoring. The site plan as part of the injection licence sets out the detailed plans for a GHG injection site to inject, monitor and permanently store a particular amount of a GHG substance injected over a particular injection period/wells.

Pipeline licence	OPGGSA	Provides titleholder(s) provides a right to gain approval to construct and operate a pipeline for conveyance of a GHG substance.
Infrastructure licence	OPGGSA	Provides titleholder(s) provides a right to gain approval to construct and operate a facility for the purpose of monitoring/managing a GHG substance.
Sea Dumping Permit	Sea Dumping Act	Provides permit holder(s) approval to dispose of carbon dioxide via CCS at sea.
EPBC Act Approvals	EPBC Act	Provides titleholder(s) approval to operate in a Commonwealth Marine Area if the action, will have, or is likely to have a significant impact on the environment.
Site Closing Certificate	OPGGSA	Initiates the GHG title surrender process for titleholder(s) once they cease injection of GHG substance. A pre-certificate notice will be issued first (if the RCM is satisfied) with details outlined in the decommissioning & post-closure phase.
Sea Dumping Permit (if dumping or abandoning at decommissioning)	Sea Dumping Act	Provides titleholder(s) one of the approvals required to dump or abandon platforms or other man-made structures in Australian waters. Different types of sea dumping permits depend on the proposed actions (e.g. dumping, abandonment or artificial reef permit).

Glossary of terms

ALARP: as low as reasonably practicable

CCS: Carbon capture and storage

DISR: Department of Industry, Science and Resources

DCCEEW: Department of Climate Change, Energy, the Environment and Water

EPBC Act: *Environment Protection and Biodiversity Conservation Act 1999*

EP: Environment Plan

FEED: front-end engineering and design

FIRB: Foreign Investment Review Board

GHG: Greenhouse gas

MMV: Measurement, Monitoring and Verification

MNES: Matters of National Environmental Significance (terminology used in EPBC Act)

NAL: National action list (terminology used in the London Protocol)

NOPSEMA: National Offshore Petroleum Safety and Environment Management Authority

NOPTA: National Offshore Petroleum Titles Administrator

OPGGs Act: *Offshore Petroleum and Greenhouse Gas Storage Act 2006*

OPP: offshore project proposal

RCM: Responsible Commonwealth Minister (terminology used in OPGGS Act)

SC: Safety Case

Sea Dumping Act: *Environment Protection (Sea Dumping) Act 1981*

SROSAI: significant risk of significant adverse impact

WOMP: Well Operations Management Plan

Contact

For Acreage Release and General OPGGS Act policy inquiries:

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For NOPTA inquiries including OPGGS Act GHG titles administration inquiries:

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For general NOPSEMA inquiries including EP, WOMP and SC inquiries:

communications@nopsema.gov.au

For Sea Dumping Act inquiries:

seadumping@dcceew.gov.au

For EPBC Act inquiries including guidance on referrals processes:

EPBC.referrals@dcceew.gov.au