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**).

What approvals are required?

Before operations to inject and permanently store GHG substance(s) can commence the following must be obtained:

- a GHG injection licence granted by the responsible Commonwealth Minister (**RCM**) or Cross-boundary Authority (**CBA**); and
- an approved site plan in force for the storage formation which the licensee will be required to comply with in addition to any other regulatory requirements and approvals (section 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
- 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 interactions between the OPGGS Act and associated regulations with other 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 application to be assessed by NOPTA. The indicative timeframe for NOPTA's assessment commences once all relevant information is received and will depend on the quality of the submissions.

Note: subsections 361(8), 368A(7) and 369(7) require applicants to set out the origins of the GHG substance in the application as one of the matters that must be specified in the licence by paragraphs 358(3)(f) or 358A(3)(f) 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:

- significant investment in capital;
- drilling wells for the purpose of injection;
- engineering enhancements for the purposes of permanent storage (where these enhancements are not permitted to be made under an earlier title); 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 one or more DoSFs submits an application for a GHG injection licence and approval of a draft site plan or site plans, 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 draft site plan feedback

NOPTA offers to review the draft 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 draft site plan review. It is not provided to the RCM;
- NOPTA will review the preliminary draft site plan and provide feedback in the form of a 'gap analysis' against the requirements in the GHG Regulations to provide guidance on whether adequate information has been included to allow future assessment of the draft site plan;
- 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 draft site plan should be approved or refused during this process.

The intention is for NOPTA to provide feedback regarding a draft site plan that is at an advance stage of preparation, rather than in its early stages. NOPTA intends to provide feedback in this form only once per project.

Further questions and clarification may be sought from the applicant once the draft site plan 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) in the approved form (paragraphs 361(10)(a), 368A(9)(a) and 369(9)(a) of the OPGGS Act); and
- accompanied by the applicable application fee (section 427 of the OPGGS Act).

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);
- any information or documents required by the application form (paragraphs 361(10)(c), 368A(9)(c) and 369(9)(c) of the OPGGS Act); and
- the information provided must not be inconsistent with the fundamental suitability determinants of the identified storage formation concerned (subsections 361(9), 368A(8) and 369(8) 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 (see section 22 of the OPGGS Act) that is a suitable place to make a well or wells to inject a GHG substance into a part of a geological formation;
- 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, in particular information about the fundamental suitability determinants, the integrity of the storage formation and spatial extent, titleholders should engage with NOPTA early to discuss this matter, as this may necessitate applying to vary 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 operations (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 429A 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) is provided 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 – Draft Site Plan(s) (see Appendix A)

Sufficient information should be included to demonstrate that the draft site plan is appropriate to the nature and scale of the proposed operations and that, if the proposed activities are undertaken in accordance with plan, the formation will be safe and secure for the permanent storage of GHG substances to be injected, or that are already stored, in the formation.

The draft site plan must include sufficient information about the geological risks that are associated with the proposed operations, including new risks or changes to the level of existing geological risks, to demonstrate that these risks have and can be identified and that these risks can be eliminated or reduced to as low as is reasonably practicable (see section 18 of the GHG Regulations and the Risk Assessment Fact Sheet for further details).

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

Part A of the draft 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 section 19 of the GHG Regulations).

Part B of the draft site plan addresses 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 from well bores, details of any remediation work required for site closure and a plan for post closure monitoring (refer section 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); and
- provide for any necessary risk elimination or control measures to be taken.

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 draft site plan.

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) and (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 OPGGS Act in relation to the licence;

- 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 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. NOPTA will provide advice to support the RCM's considerations. The key criteria for assessment of the draft site plan are set out by sections 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 draft site plan, the RCM must be satisfied that the predictions outlined in Part A of the draft site plan are soundly based and will result in outcomes that are acceptable. Once the draft site plan is approved, the predictions form one of the criteria for deciding whether a serious situation has arisen (refer to paragraph 379(1)(e)-(f) of the OPGGS Act). 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.

The RCM or NOPTA may ask the applicant to provide further information. For example, 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 site plan (refer to sections 26 and 27 of the GHG Regulations).

The RCM is not required to make a decision on the draft site plan until the applicant has provided the required information under section 26 or 27 of the GHG Regulations. The RCM cannot approve a draft site plan unless reasonably satisfied that the draft site plan meets the requirements outlined in the GHG Regulations and summarised above under Supporting Information Site Plan(s) and in Appendix A. Section 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, or until the RCM withdraws approval of the site plan under section 32 of the GHG Regulations.

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 coincide 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 that:

- 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; or
- 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 subsection 430(4) of the OPGGS Act a security may be required in response to any offer document (see section 3 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 (refer to sections 364, 368D and 372 of the OPGGS Act).

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	02/01/2025	New GHG fact sheet

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

Part A (Section 19 and Schedule 1)	**Part B (**Sections 18 and 20, and Schedule 2)			
	Strategy and operational planning	**Risk assessment**	**Monitoring plan**	**Site closure**
• set out predictions of expected behaviour at specified times of each GHG substance to be, or already, injected and stored in the formation: ○ the specified times must be of sufficient number and frequency, and sufficient detail must be provided, to demonstrate that the predictions are soundly based; ○ predictions must describe each known or expected migration pathway and migration rate; ○ comparison of the predicted behaviours with actual behaviours (as demonstrated through the monitoring program) will enable timely detection of serious situations; and ○ 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: ○ details of joint venture arrangements (if more than a single titleholder); ○ details of commercial agreements or negotiations with suppliers of GHG substances; ○ information regarding significant works and upgrades planned over the life of the proposed operations; and ○ 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 ○ injection facilities; ○ pipelines; ○ monitoring facilities; ○ engineering enhancements to any infrastructure; and ○ measurement/metering equipment*. • For each GHG substance that is proposed to be injected into the formation: ○ the source, composition and any other relevant properties of the GHG substance; ○ the proposed rate, or range of rates, of injection of the GHG substance into the storage formation; ○ the number and location of wells at which the injection of the GHG substance is proposed; and ○ 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: ○ risk of leakage from well bores, injection facilities or abandoned wells, or during transport. • For each risk, the assessment should include: ○ a description of the risk; ○ possible consequences; ○ probability of occurrence; ○ strategies for eliminating the risk or reducing to as low as reasonably practicable; and ○ if the risk has been reduced but not eliminated, information demonstrating that the remaining risk will be acceptable. • The risk assessment must demonstrate that new risks or increased risk levels will be identified as they arise.	• The monitoring plan should demonstrate that: ○ the technology and activities selected are fit-for-purpose and appropriate to the nature and scale of the project; and ○ 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 significant events will be detected 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, or has the potential to, cause a serious situation to exist in the storage formation (i.e. will be a reportable incident); ○ 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: ○ the storage formation to the seabed; ○ during transport for the purpose of injecting into the formation; ○ from the point of injection; or ○ from well bores.	• A plan for carrying out any work that is required to remediate the formation, including: ○ plugging and closing off wells; ○ stabilising the subsurface of the formation; and ○ remediating any abandoned wells or other features that may pose a risk of leakage after site closure. • 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.