

Planning for proactive decommissioning

Document No: N-00500-IP2002 A816565

Date: 16/12/2021

Key points

- It is imperative that risks associated with petroleum projects are managed proactively throughout the life of the project. Property should be progressively decommissioned to minimise inherent risks to people and the environment.
- Recent experience indicates that some titleholders do not develop appropriate decommissioning plans in a timely manner, potentially increasing risk exposure to people and the environment.
- The safe and environmentally responsible decommissioning of property is a key objective that titleholders should plan for over all stages of the life cycle of a petroleum project. Decommissioning life cycle planning is a requirement of a holistic asset management system as described by ISO 55001 (2014).
- Planning for decommissioning shall commence at the earliest stage of project development. This will ensure decommissioning obligations with respect to compliance with section 572, and satisfaction of 270(3)(c) to (f) of the OPGGS Act are factored into overall project economics and plans.
- Titleholders are expected to include appropriate information on decommissioning in permissioning documents at all stages of the life cycle of the petroleum project. New property not designed or intended to be removed must be identified during the earliest stage of project development. The intent with respect to this property must be included in permissioning documents and accepted by NOPSEMA prior to the property being brought into the title area.
- Decommissioning of property with no further use should occur during all stages of the project's lifecycle and should not be deferred to the end of the project's life.
- Property that is no longer in use or in a state of suspension must be preserved, inspected, and maintained in good condition and repair in accordance with section 572(2) of the OPGGS Act to enable decommissioning in the future.
- Early and regular engagement with regulatory agencies, industry, and other stakeholders to facilitate the review and acceptance of criteria and obligations in permissioning documents is expected throughout the decommissioning planning process.
- Environmental performance report(s) and well abandonment report(s) must be submitted at the conclusion of decommissioning activities to verify compliance with associated permissioning documents.

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1. Introduction

The safe and environmentally responsible decommissioning of property is a key objective that titleholders shall plan for over all stages of the life cycle of a petroleum project to ensure compliance with the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGs Act) and Regulations. The concept of integrated, life cycle planning is a requirement of a holistic asset management system and promoted by international standards such as ISO 55001 (2014). However, recent experience indicates that some titleholders do not develop appropriate or timely decommissioning plans which has potential to increase risk to people and the environment.

Titleholders are required under section 572(2) and (3) of the OPGGS Act to maintain property brought onto the area of a title and to remove that property when it is no longer in use. Consideration of alternative end state outcomes are subject to other provisions of the OPGGS Act and Regulations and provided for under section 572(7). Further, section 270(3)(c) to (f) requires titleholders to meet obligations with respect to property and the environment to the satisfaction of NOPSEMA in support of consent to surrender title.

Planning for proactive decommissioning should be focused upon the outcomes required to comply with section 572 and then satisfy NOPSEMA for the purpose of 270(3)(c) to (f) of the OPGGS Act. The criteria and obligations required in order to comply should be included in the final permissioning documents and accepted by NOPSEMA prior to the commencement of final decommissioning activities.

2. Purpose

In response to the Decommissioning section of the Ministerial statement of expectations, the purpose of this information paper is to encourage titleholders to adopt good practice when planning for proactive decommissioning and to improve the maturity of their plans throughout the life cycle of a petroleum project. It will also provide information to assist with the timing of regulatory submissions and outline the level of detail expected in permissioning documents to demonstrate compliance with the OPGGS Act.

This document should be read in conjunction with Section 572 maintenance and removal of property regulatory policy, NOPSEMA's guidance on the management of ageing assets, and the Australian Government Offshore Petroleum Decommissioning Guideline.

In accordance with NOPSEMA document hierarchy, an information paper is intended to provide information to foster good/best practice within industry. Information provided is consistent with the OPGGS Act and associated regulations, the concepts of an objective based regime and government policy. An information paper does not create new or specific requirements above those stated in the OPGGS Act and other approaches to those described in this document may be appropriate to deliver compliance.

3. Scope

This information paper applies to all petroleum structures, equipment, facilities, pipelines, wells (including those for exploration, appraisal, and production), and other property (collectively referred to hereafter as 'property') associated with a petroleum activity or brought onto the area of a title granted under the OPGGS Act. The term 'petroleum project' used throughout this document includes a petroleum activity or an offshore project as defined under regulation 4 of the OPGGS (Environment) Regulations.

The titleholder is the entity registered as the holder of a petroleum permit, lease or licence over a title area and is responsible for compliance with the OPGGS Act. The operator of a facility is the person who has been nominated by the titleholder to have day-to-day management and control of the facility and its operations.

The titleholder is ultimately responsible for the activities and outcomes of their nominated operator. Throughout this document, reference to titleholder includes their nominated operator.

Permissioning documents in the context of this document will encompass:

- Offshore project proposals
- Environment plans
- Safety cases
- Well operations management plans.

Whilst this information paper has been written for the purposes of a petroleum project, the principles of planning for proactive decommissioning can equally be applied to any greenhouse gas activity or project.

This document does not apply to the requirements of the Joint Authority regarding field development plans, or consent to surrender title after decommissioning activities are complete. However, NOPSEMA may be requested to provide advice in relation to section 270(3)(c) to (f) to NOPTA and the Joint Authority to inform their decision-making during title transactions. Titleholder demonstration of compliance with the criteria and obligations in accepted permissioning documents over the life of operations will form the basis of NOPSEMA's satisfaction for the purpose of section 270(3)(c) to (f).

This document may need to be amended depending on the outcomes of the proposed [Australian Government Decommissioning Framework review](#). This document continues to apply in the context of the existing legislative and administrative framework until changes come into force.

4. Decommissioning

For this document, 'decommissioning' is taken to mean the process of removing or otherwise satisfactorily dealing with offshore petroleum property (including wells) in a safe and environmentally responsible manner when it is neither used nor intended to be used. This includes permanently abandoning all exploration, appraisal, and production wells, remediating the site, and carrying out any necessary monitoring.

There is no one-size fits all approach to decommissioning. The nature and complexity of property varies considerably between projects and when combined with the safety, environment, economic, and technical considerations, mean that decommissioning each piece of property will have its own unique challenges. As such, decommissioning plans and programs should be developed to suit the specific circumstances of the petroleum project.

4.1. Deviation from removal requirements

Notwithstanding that complete removal of all property is the base case as outlined in the [Australian Government Offshore Petroleum Decommissioning Guideline](#), alternative end state options may be accepted by NOPSEMA through permissioning documents in accordance with other provisions of the OPPGS Act and Regulations as provided for under section 572(7).

Property proposed for a new petroleum project that is not designed to be removed, or not intended to be removed must be identified during the earliest stage of the project development. This property must be designed, constructed, and installed to ensure a safe and environmentally responsible outcome. For this property, the criteria and obligations required to comply with section 572(3) and then satisfy NOPSEMA for the purpose of section 270(3)(c) to (f) of the OPPGS Act should be included in permissioning documents and accepted by NOPSEMA prior to the commencement of the petroleum project and before the property is brought into the title area.

4.2. Decommissioning over the stages of a petroleum project

Figure 1 emphasises how decommissioning should be considered during all stages of a petroleum project. Key decommissioning focus areas and the relevant permissioning document(s) that relate to the stage of the project's life are shown below each stage. The intent is to simply illustrate how decommissioning should be incorporated into the relevant permissioning documents at each stage of the life cycle.

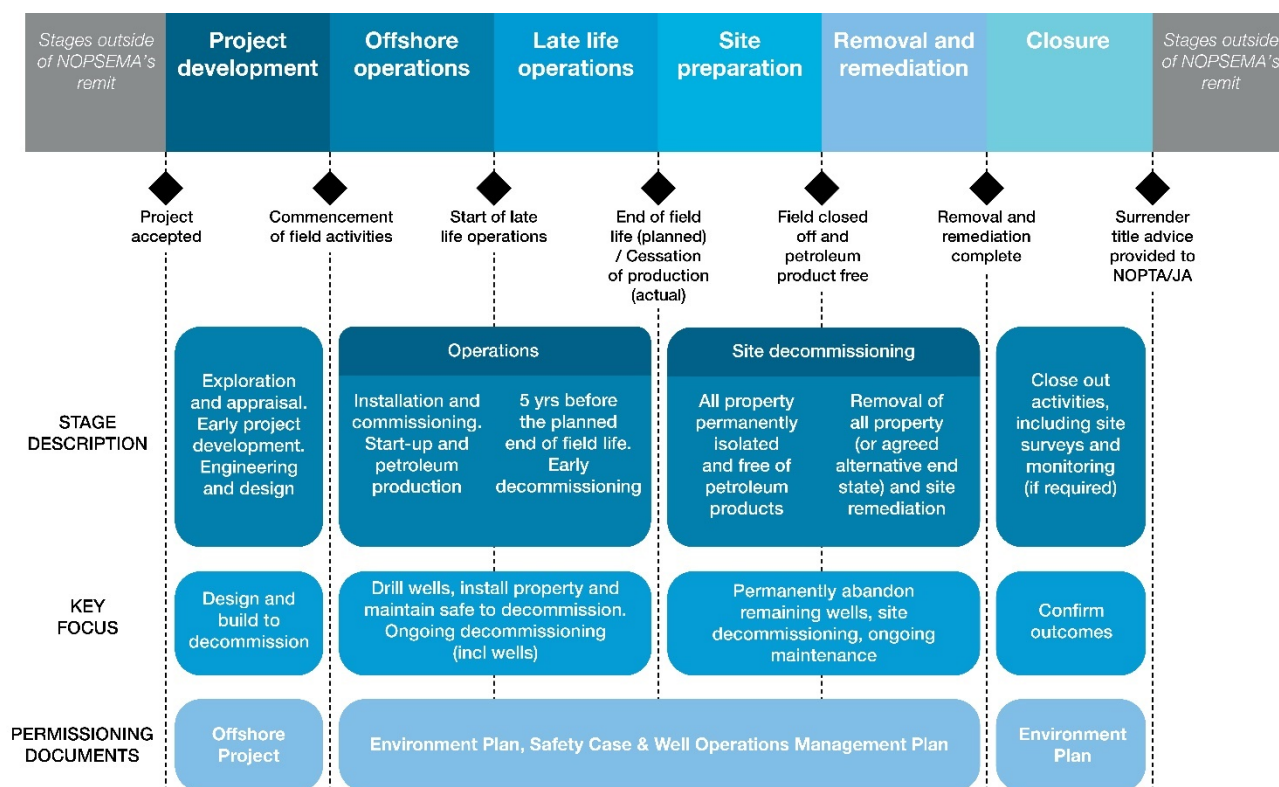


Figure 1 – The process of decommissioning over the life cycle of a petroleum project

Table 1 describes typical decommissioning activities to be considered at each stage of a petroleum project.

Table 1 – Examples of decommissioning activities at each stage of a petroleum project

Stage	Title	Description of decommissioning activity
1.	Project development	<ul style="list-style-type: none"> Decommissioning considered in early project development activities. Decommissioning strategy and objectives developed that demonstrate compliance with section 572 and how obligations will be met to the satisfaction of 270(3)(c) to (f). Equipment required to enable decommissioning is incorporated into the project design. Baseline environmental monitoring studies conducted. Permanent abandonment of exploration and appraisal wells with no further use.
2.	Offshore operations	<ul style="list-style-type: none"> Equipment required to enable decommissioning is installed and commissioned or the ability to include later is incorporated. Ongoing environmental monitoring studies are conducted to support decommissioning planning. All property, including any installed to enable decommissioning, is preserved and maintained in good condition. Permanent abandonment of exploration, appraisal, and production wells with no further use. Decommissioning of property with no further use.
3.	Late life operations	<ul style="list-style-type: none"> Continuation of permanently abandoning wells and ongoing decommissioning of property with no further use. Additional technical and environmental studies to inform decommissioning. Ongoing and potentially additional maintenance of property to enable decommissioning. Function testing of unused or preserved equipment installed to support decommissioning.
4.	Site preparation	<ul style="list-style-type: none"> Permanently abandon all remaining wells. Permanent isolation of facilities and pipelines. Ongoing maintenance of property in preparation for decommissioning. Making safe property including the flush and cleaning of hazardous inventories, including petroleum products, chemicals, contaminants, and waste products. Commencement of physical disconnection and dismantling of property in preparation for removal, repurposing and leaving in situ.

Stage	Title	Description of decommissioning activity
5.	Removal and remediation	<ul style="list-style-type: none"> • Final physical disconnection and dismantling of property. • Removal of property and/or setting of property not being removed. • Final clean up and remediation of the title area.
6.	Closure	<ul style="list-style-type: none"> • Comparative site surveys and monitoring against baselines. Expectations for ongoing monitoring will be greater where contaminants exist and/or property has been repurposed or left in situ. • Performance reporting and demonstration that decommissioning obligations have been satisfied.

5. Decommissioning planning

Through the integration of decommissioning into overall asset management plans, titleholders will be able to realise increased safety and environmental performance, efficiencies and economies of scale benefits through staged and campaign-based decommissioning, sharing of resources with other titleholders and the opportunistic contracting of specialist vessels, materials and equipment as occasions arise.

Effective planning for decommissioning will deliver benefits and an improved understanding of intended outcomes to all relevant stakeholders.

5.1. A model of decommissioning planning

Figure 2 provides an illustration of planning for proactive decommissioning over the life cycle of a petroleum project, specifically the requirement for early planning and the maturing of detail as end of field life approaches. It is intended to be a simple representation and may not portray more complex scenarios including multi facility projects, phased or campaign based decommissioning or collaboration with other petroleum projects. However, the fundamental principle of effective planning applies to all scenarios.

Similarly, the final decommissioning program may vary from that originally envisaged. Factors such as end of field life predictions, environmental conditions, technological advances, public expectations and regulatory amendments may change over the project life cycle. Decommissioning plans and programs should be developed to suit the specific circumstances of the petroleum project and reviewed regularly as assumptions change. Titleholders are encouraged to integrate decommissioning requirements as a key input to decision making throughout the life of a project.

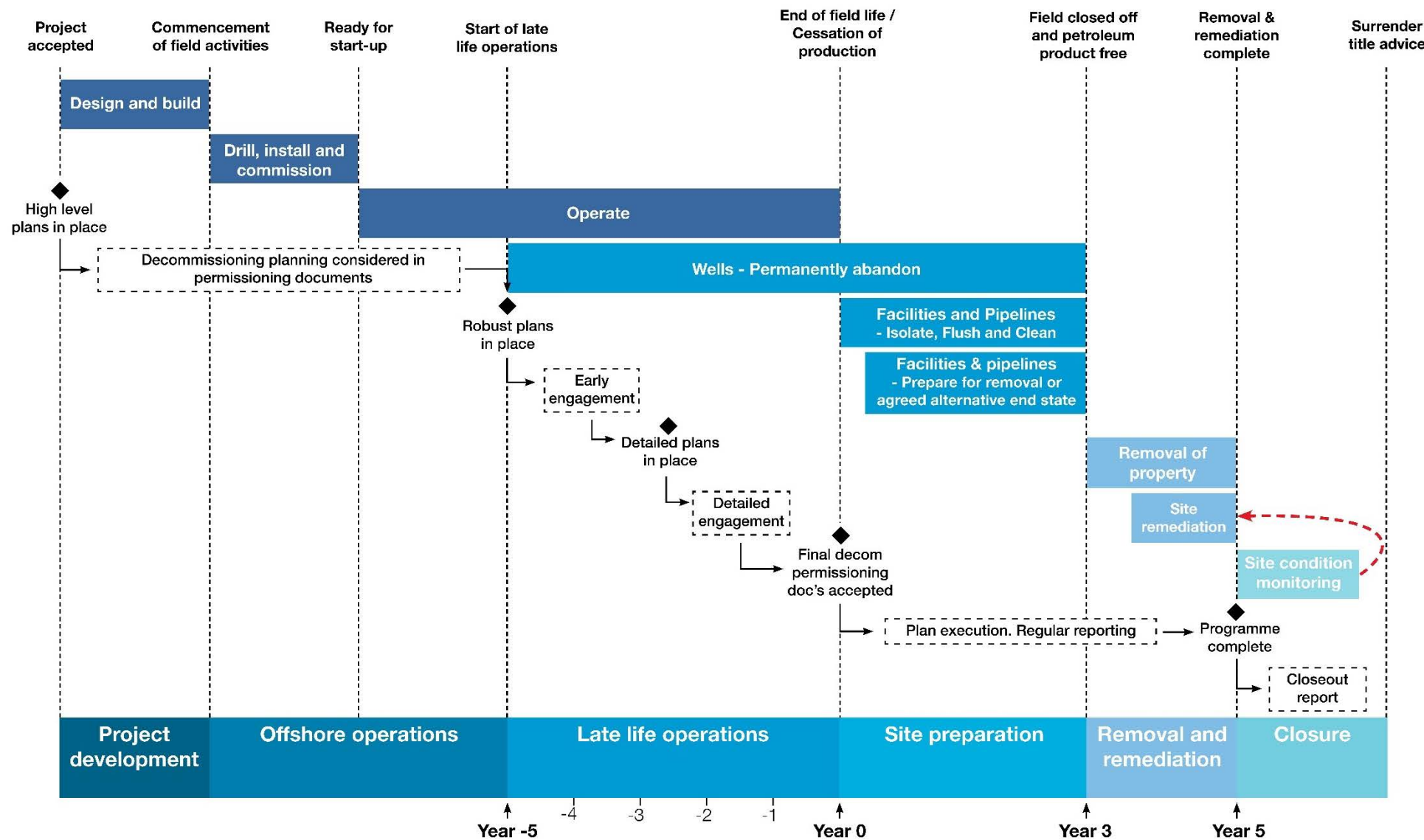


Figure 2 – Planning for proactive decommissioning over the life cycle of a petroleum project

5.2. Decommissioning planning basis

Decommissioning planning is expected to be based on removal of all property unless an alternative end state is agreed, and deviation accepted by NOPSEMA through permissioning documents.

NOPSEMA's [Decommissioning Compliance Strategy](#) sets the following targets:

- All wells have been permanently abandoned within three years of permanently ceasing production (or from when no longer used), and NOPSEMA is reasonably satisfied with the written report of the abandonment process.
- Moored or tethered buoyant property have been removed within 12 months from departure of permanently ceasing production.
- All other property is decommissioned to its approved end state within five years of permanently ceasing production.

Notwithstanding the targets above, actual timelines will be based upon sound decommissioning planning outcomes. Considerations that will inform decommissioning timelines (both accelerated and deferred) include:

- Risk assessments and actions required to reduce risks to as low as reasonably practicable and acceptable.
- Effective maintenance and preservation of property to ensure structural integrity until it is decommissioned.
- Outcomes of technical studies that support alternative timelines.
- Adjusting of timelines to enable phased or campaign based decommissioning.

5.3. Early planning for decommissioning

In accordance with the [Australian Government Offshore Petroleum Decommissioning Guideline](#) planning for decommissioning should commence at the early stages of project development. This will ensure decommissioning obligations required to comply with the OPGGS Act are factored into overall project economics and plans.

Decommissioning requirements should be considered at all stages of a petroleum project, including the earliest stage of **project development** as part of concept selection and design. Property that is inherently designed with decommissioning in mind may be decommissioned at lower cost, and in a way that delivers better safety, environmental and well integrity outcomes.

Planning for the permanent abandoning of wells must commence at the earliest phase and be revised during the lifetime of the well as conditions change as described in section 5.09(1)(i) of the RMA Regulations. Exploration wells with no further use should be permanently abandoned upon the completion of drilling, negating the requirement for later and additional well intervention activities. Appraisal wells that are not part of the Field Development Plan should be treated in a similar manner to exploration wells.

Particular attention should be given to permanently abandoning wells that are not operational to avoid unacceptable extended shut-in or suspension periods. NOPSEMA's [Guidance Note N-04600-GN1602 - Well Operations Management Plan - content and level of detail](#) provides advice on shut-in or suspended wells and an acceptable time frame for wells to remain in this state.

Early and regular engagement with NOPSEMA and other stakeholders throughout the decommissioning planning process is encouraged and is especially important if alternative end states to full property removal are being considered. Early engagement is critical to effective regulation and the delivery of safe and environmentally responsible outcomes and will ensure titleholder compliance with the requirements in the OPGGS Act.

5.4. Maturing level of detail of decommissioning planning

Figure 3 illustrates how the level of decommissioning detail provided in permissioning documents should mature over the project life cycle.

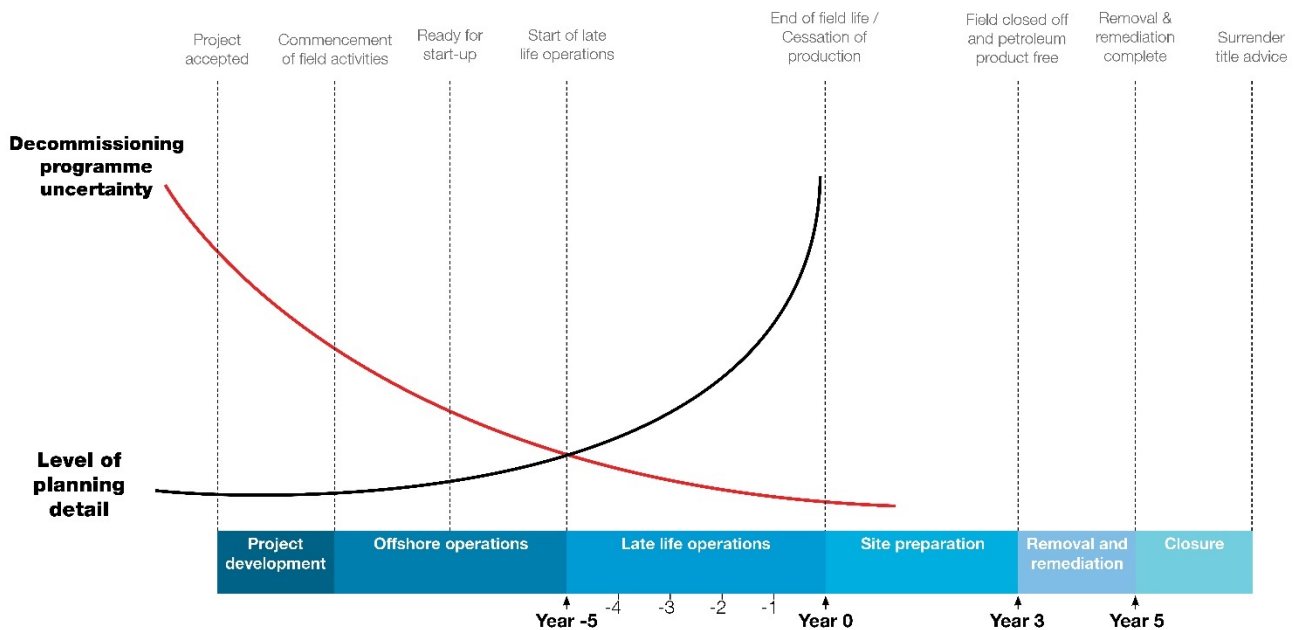


Figure 3 – Decommissioning program uncertainty vs planning detail

During the early **project development** stage, a lower level of detail in respect of decommissioning in permissioning documents is appropriate. At this stage in the project life cycle there will be a higher level of uncertainty in production outcomes and there could be many assumptions supporting the decommissioning program with a few end state options being carried forward.

During the **offshore operations** stage, titleholders will gain experience with the performance of the project, uncertainty will reduce, and assumptions resolved. As a result, the level of detail in permissioning documents regarding decommissioning is expected to increase and the number of options will reduce.

Titleholders are expected to commence detailed planning for decommissioning during the **late life operations** stage of the project and a higher level of engagement with NOPSEMA and other stakeholders is warranted at this point. Consideration of international decommissioning literature, additional environmental impact studies and technical maturation studies are likely to be required to enable the development of detailed plans and programs.

Based on the good practice experience of other international regimes, titleholders should commence this work nominally five years prior to the planned end of field life. However, studies should commence earlier if decommissioning considerations are complex, or if alternative end states to removal of all property are being considered.

5.5. Planning for long lead items

Preparation for decommissioning and the eventual removal of property usually requires specialist equipment and materials that will have long supply lead times. Actual lead times are dependent on many factors such as market demand, availability of supply and mobilisation circumstances. Supporting studies may also extend over several years if required to inform selection of specialist items. It is important that titleholders develop early strategies and plans to secure specialist long lead items.

Work plans and contracts should be developed and sourced during the **late life operations** stage to ensure that they do not cause delay to decommissioning activities and result in the titleholder being unable to comply with the commitments made in their accepted permissioning documents.

6. Content of permissioning documents

Section 5.1 of the Section 572 maintenance and removal of property regulatory policy details the purpose and content requirements for each permissioning document. In summary:

The environment plan is the document in which arrangements in relation to property decommissioning activities and management of associated environmental impacts and risks can be put forward by a titleholder and accepted by NOPSEMA. It is also the appropriate permissioning document for outlining deviations from the requirements of removal of all property including that associated with wells.

The well operations management plan must include a description of the arrangements that will be in place for the permanent abandonment of well(s), considering the eternal perspective of the process. An accepted well operations management plan must remain in place until the well has been permanently abandoned and NOPSEMA is reasonably satisfied with the written report of the abandonment process.

A facility must have a safety case in force at all times until decommissioning activities are completed, and the facility no longer exists. Any decommissioning related operations or works conducted at a facility must be described within the safety case.

6.1. Information expectations

Titleholders can develop decommissioning plans and programs in accordance with their own asset management system. However, titleholders will need to synchronise and align with the information expectations of permissioning documents. The content included in permissioning documents will likely be a synopsis of the titleholders overall decommissioning plan.

As illustrated in figures 2 and 3, the level of decommissioning information provided by titleholders in permissioning documents is expected to mature over the project life cycle.

In the early **project development** stage, high level information on the strategy and overall approach is appropriate. The intent is to demonstrate that:

- decommissioning has been considered
- high level plans exist
- a sound decommissioning strategy exists.

During the **offshore operations** stage, as operational experience is gained, the level of detail should progressively increase. By five years prior to the planned end of field life, it is expected that robust decommissioning plans will be available and reflected in permissioning document content. Titleholders should be able to demonstrate that:

- planning is well advanced with robust plans in place
- environmental impacts are understood and being managed
- uncertainty is being managed
- a firm basis for the intended end state exists.

Finally, during the **late life operations** stage, it is expected that detailed decommissioning plans and programs will be developed and engagement with NOPSEMA will focus on facilitating acceptance of the final permissioning documents. Content in the final documents will demonstrate that:

- detailed plans are in place and the decommissioning program is ready for execution
- a timely, safe and environmentally responsible decommissioning solution has been selected
- risks are understood and being managed
- the criteria and obligations required to satisfy NOPSEMA for the purpose of section 270(3)(c) to (f) of the OPGGS Act have been included and accepted in the final permissioning documents.

The maturity and availability of information will depend on the individual circumstances, complexities, and the stage the petroleum project is at in its life cycle. Titleholders are expected to assess and include the relevant elements and content into each permissioning document as required.

6.2. Progressive decommissioning

A titleholder can progressively decommission property over the life of a petroleum project under an in force environment plan that provides for ongoing activities. In this case, the titleholder should provide NOPSEMA with notification that the decommissioning activity, as a component of the broader environment plan, has been completed in accordance with the process outlined in environment regulation 29. The titleholder's inventory of property should record that this process has occurred and should be included in future environment plan revisions.

At the point of final decommissioning, the titleholder should provide NOPSEMA with an inventory of property that details all environment plans over the life of a petroleum project under which arrangements for property have been made and the corresponding regulation 29 notifications. This information will inform a final decision under regulation 25A.

6.3. Close out reporting of decommissioning activities

At the conclusion of decommissioning activities, titleholders must issue reports to verify compliance with associated permissioning documents. Environment regulation 26C describes the requirements of reporting environmental performance for the activity, and RMA regulation 5.17(b) describes the requirements of a written report associated with permanently abandoning a well or wells.

The intention of these reports is to provide a sound basis to support the titleholder's demonstration that obligations with respect to property and the environment have been met to the satisfaction of NOPSEMA for the purpose of section 270(3)(c) to (f).

The information contained in the environmental performance report(s) should typically include:

- The outcome of the decommissioning program confirming that work has been fully implemented, or description of any significant variances.
- Results of environmental sampling and site condition surveys and comparison with data and information available from activities conducted during earlier project stages.
- Commitments on any future work that may be required to manage the end state of residual debris, contaminants and property not removed.

7. Maintaining property to enable decommissioning

Property that is no longer in use and is being prepared for decommissioning must be maintained in good condition and repair to enable safe decommissioning in the future. The maintenance strategy for the project shall be designed to ensure the base case of full removal of all property can be achieved unless an alternative end state is agreed and deviation accepted.

If property is not removed at the appropriate time or adequately maintained, it will deteriorate over time increasing the risk of being unable to safely remove it from the title area, putting the titleholder in breach of their obligations, under section 572 of the OPGGS Act. Further, as petroleum projects approach the end of field life, titleholders should be careful to avoid reducing critical maintenance in response to economic considerations associated with declining production and/or commodity prices.

Experience has shown that poor maintenance practices can develop during the **late life operations** stage, or immediately after the cessation of production. The outcome is an accelerated deterioration of property, making decommissioning activities more costly and increasing safety, integrity, and environmental risks. Equipment most susceptible is typically reliant on fabric maintenance. This includes primary and secondary structures, cranes, and systems enabling safe access for personnel. This topic is described further in [NOPSEMA's guidance on the management of ageing assets](#).

During the **late life operations** stage, equipment required for decommissioning activities that are not required during normal operations should be confirmed as still able to perform their function. This may include equipment such as boundary isolation valves, buoyancy and floatation tanks, winches, towing and lifting equipment, well kill pumps, flowline circulation, and pressure testing pumps.

Titleholders must ensure that adequate preservation, inspection, maintenance, and repair activities continue to be performed and that property is maintained so it is safe to decommission.

8. Changes to risk profiles over the project life cycle

The risk profile of a petroleum project may change as it transitions through the life cycle stages and particularly after the cessation of production. For example, safety critical equipment associated with well isolation, inventory blowdown and flare systems may not be required once the wells, facilities, and pipelines are permanently isolated, flushed, and cleaned. However, systems enabling safe access for personnel will need to be maintained and repaired until such time as access to property is no longer required.

Alternatively, new risks associated with the **site preparation** and **removal and remediation** stage activities, such as structural cutting, heavy lifting, and towing operations, may introduce risks that were not present in earlier stages. In accordance with the revision cycle of permissioning documents, titleholders must review, identify, and demonstrate the management of risks associated with each stage.

9. Compliance monitoring

NOPSEMA will undertake inspections and other compliance monitoring activities to ensure that titleholders are taking steps to meet their obligations under the OPGGS Act and Regulations.

In accordance with the Ministerial statement of expectations, NOPSEMA will heighten focus to ensure that titleholders include sufficient detail on decommissioning and mature the level of detail over the lifecycle of a petroleum project in new or revised permissioning documents.

NOPSEMA proactively seeks to engage with its stakeholders to provide advice and promote continuous improvement. Further information on how compliance and enforcement activities are conducted is described in the [S572 maintenance and removal of property regulatory policy](#).

10. Related documents

Offshore Petroleum and Greenhouse Gas Storage Act 2006 (OPGGS Act)

OPGGS (Environment) Regulations 2009

OPGGS (Safety) Regulations 2009

OPGGS (Resource Management and Administration) Regulations 2011

N-00500-PL1903 A720369 – [S572 maintenance and removal of property regulatory policy](#)

N-04300-GN1975 A783718 – [Ageing assets and life extension](#)

N-04600-GN1602 A4610074 - [Well operations management plan - content and level of detail](#)

N-04750-GL1691 A492753 - [End of operation of an environment plan – Regulation 25A](#)

[Ministerial statement of expectations](#)

[Decommissioning Compliance Strategy](#)

[Decommissioning Compliance Plan](#)

[Australian Government Offshore Petroleum Decommissioning Guideline](#)

11. Glossary of key terms

Provided below are definitions of some of the key terms used throughout this document.

Facility or Facilities

As defined under clause 4 of Schedule 3 to the OPGGS Act.

Field closed off

All wells within the title area are permanently abandoned.

Petroleum project or Project

Collective term referring to a “petroleum activity”, or an “offshore project” as defined under regulation 4 of the OPGGS(Environment) Regulations. This includes all activities associated with the exploration, appraisal, or recovery of petroleum.

Petroleum

As defined under section 7 of the OPGGS Act.

Permanently abandoned

The outcome, as defined under ISO 16530 Section 11 Well Abandonment phase of “the final activity performed on the well, and includes the establishment of permanent barriers in the wellbore, such that integrity is retained with no intention of future well re-entry.”

NOPSEMA consider NORSOK D10 and the Oil & Gas UK – Well Decommissioning Guideline as acceptable standards defining how this is achieved.

Property

Collective term referring to any and all petroleum or greenhouse gas structures, equipment, facilities, pipelines, wells (including those for exploration, appraisal and production), and other property associated with a petroleum activity or brought onto the area of a title granted under the OPGGS Act.

Titleholder

As defined under section 572 of the OPGGS Act.