

Offshore oil and gas asset decommissioning



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Executive summary	1
Questions investors should be asking management	3
Recommendations for listed companies	3
Key issues and risks for industry	4
Australian inexperience	4
Costs are uncertain	5
Environmental risks and unknowns	6
Repurposing equipment to defer expenditure	7
Climate change transition risks	9
Social license and reputational risk	10
Regulatory change and scrutiny	11
New legislation	11
Changing regulatory focus	12
Disclosure risks	15
The scope of the task is unclear	15
Timelines are uncertain	16
Company disclosure is inconsistent, and often limited	18
Conclusion	22

Executive summary

As Australia's offshore petroleum industry matures, decommissioning obligations and associated liabilities are increasing. In 2020 the Australian government Department of Industry, Innovation and Science (DISER) wrote that, in Australia, **'a substantial number of the approximately 136 fixed facilities (including pipelines) are likely to commence decommissioning activities in the coming decade'**.¹

The National Offshore Petroleum Safety and Environmental Management Authority (NOPSEMA), Australia's regulator for safety, well integrity and environmental management for offshore petroleum activities, warns that the upcoming decommissioning challenge for Australia is significant, particularly given Australia's remote location, the fact that many structures are nearing the end of their operational lives, and because Australian industry is relatively inexperienced in this space. As a result, **'decommissioning in Australia is expected to be 'complex, expensive, span many years and introduce many new and significant safety, environmental and well integrity risks'**.²

Some high-level liability assessments have been conducted in order to understand just how 'expensive' the task may be. An industry-funded body National Energy Resources Australia (NERA) forecast decommissioning over the next 50 years for the nationwide offshore oil and gas industry to be USD\$40.5 billion (\$56 billion), with almost half of this work due to occur in the North Carnarvon basin off the coast of Western Australia.³

The Northern Endeavour case has emphasised decommissioning as an imminent challenge for Australian operators, carrying serious regulatory, reputational and financial risks. Three years after Woodside and joint venture partner Talisman Energy's 2016 sale of the late-life Laminaria-Corallina oil venture to the small, privately-owned Northern Oil & Gas Australia (NOGA), NOGA entered voluntary administration and then liquidation. Initially, the task of decommissioning - and a hefty bill to cover costs - was passed by default to Australian taxpayers. Government inquiries followed,⁴ leading to the introduction of a new industry levy to cover cleanup costs, which is expected to raise \$3.4 billion over a decade. **'Suddenly, a once 'materially insignificant deal' had transformed into 'a major financial, regulatory and ESG headache' for Woodside's shareholders, as well as 25 other offshore petroleum producers who are party to the levy'**.⁵ ACCR publicly supported the introduction of a levy for this purpose, describing it as 'an excellent opportunity to set a strong standard for future decommissioning activities in Australia, and to ensure best practices are enforced to create jobs and ensure excellent safety and environmental outcomes'.⁶

In anticipation of Australia's significant offshore decommissioning challenge, and partly influenced by the Northern Endeavour case and subsequent Walker Review,⁷ **'the national legislative and regulatory framework for decommissioning has been strengthened'**.⁸ The federal government has implemented an 'enhanced' offshore decommissioning framework which is intended to be 'fit for purpose' and able to withstand increased activity.⁹ This new framework, the result of a 2018-2021 review, includes: strengthened trailing liability provisions; increased oversight of changes in company control; increased requirements for financial assurance; enhanced decommissioning planning rules; strengthened remedial directions powers; and improved public engagement and transparency measures.

¹ DISER, 2020, [Enhancing Australia's decommissioning framework: for offshore oil and activities](#), Consultation paper, Canberra, p. 2.

² NOPSEMA, 2021, [Decommissioning Compliance Strategy, 2021-2025](#).

³ Centre for Decommissioning Australia (Advisian study), 2021, [A Baseline Assessment of Australia's Offshore Oil and Gas Decommissioning Liability](#). N.B. This liability (capital cost estimate) targets AACE Class 5 (-50% / +100%) accuracy. More broadly, Wood Mackenzie has estimated the current cost of Australia's decommissioning (onshore and offshore infrastructure/assets, assuming no extensions to the productive life of any existing infrastructure) to be over US\$49 billion (approx A\$60 billion). See: 2020, [Australia Oil & Gas Industry Outlook Report](#).

⁴ See: *Offshore Petroleum (Laminaria and Corallina Decommissioning Cost Recovery Levy) Bill 2021 and Treasury Laws Amendment (Laminaria and Corallina Decommissioning Cost Recovery Levy)* consultation; Steve Walker, June 2020, [Review of the circumstances that led to the administration of the Northern Oil and Gas Australia \(NOGA\) Group of Companies](#).

⁵ Australian Financial Review, 2022, ['Dud deal costs industry \\$3.4 bill'](#).

⁶ ACCR, 2021, [Submission: Offshore Petroleum \(Laminaria and Corallina Decommissioning Cost Recovery Levy\) Bill 2021 and Treasury Laws Amendment \(Laminaria and Corallina Decommissioning Cost Recovery Levy\)](#).

⁷ Steve Walker, 2020, [Review of the circumstances that led to the administration of the Northern Oil and Gas Australia \(NOGA\) Group of Companies](#).

⁸ DISER, 2020, [Enhancing Australia's decommissioning framework: for offshore oil and activities](#), Consultation paper, Canberra, p. 2.

⁹ Hon Keith Pitt MP, Minister for Resources and Water, 2021, ['Enhancing the offshore oil and gas decommissioning framework'](#).

At the same time, regulatory pressure is increasing. NOPSEMA has warned that currently, 'some titleholders (are) not develop(ing) appropriate decommissioning plans in a timely manner, potentially increasing risk exposure to people and the environment'.¹⁰ NOPSEMA has taken up a more assertive approach to decommissioning, introducing a suite of new policies and announcing its intentions to prosecute tardy company behaviour.

Offshore operators also face greater financial scrutiny around decommissioning provisioning. In February 2022 the Australian Securities and Investments Commission (ASIC), Australia's corporate regulator, revealed that it was conducting ongoing investigations into Woodside Petroleum Ltd's reporting of restoration provisions for offshore infrastructure assets, which did not allow for the full removal of certain infrastructure assets.¹¹ Full removal of infrastructure is the 'base case' in Australia, and while deviations may be pursued in particular circumstances and with regulatory approvals in place, NOPSEMA has questioned if operators are properly valuing offshore assets on the basis of full removal.¹²

The decommissioning of offshore assets is a material, complex, and immediate challenge for many Australian oil and gas companies. Despite this, there is a significant gap in investor knowledge regarding the exposure of oil and gas companies operating in Australian waters to decommissioning liabilities, their preparedness for a rapidly changing legislative and regulatory environment, and their ability to effectively manage the safe and timely removal of infrastructure. Operators' short, medium and long term plans for decommissioning are often unclear, and information about how liabilities have been calculated is minimal.

In the context of growing regulatory pressure, tighter legislative requirements and increased climate change transition risks, and given the considerable scale, cost and technical and legal complexity of Australia's decommissioning task, shareholders need further information from operators about how they are adapting to new conditions and preparing for the future.

This report summarises some of the main issues and risks associated with Australia's current and upcoming decommissioning exercise, reviews how decommissioning obligations are currently being accounted for by Australia's listed offshore oil and gas operators, and makes recommendations for future reporting and action by companies.

¹⁰ NOPSEMA, 2021, [Planning for proactive decommissioning](#), p. 1.

¹¹ ASIC, 2022, [22-027MR Woodside Petroleum increases restoration provision and enhances associated disclosure](#).

¹² NOPSEMA advisory board, 2020, [NOPSEMA advisory board meeting minutes](#).

Questions investors should be asking management

In ACCR's view, it is in investors' interests to seek to understand the following:

1. All major assumptions underpinning a company's decommissioning estimates, in particular those regarding:
 - a. The ability to leave offshore infrastructure 'in-situ', noting that regulatory approval to do so is required;
 - b. The timing of decommissioning works, noting that the regulator now requires infrastructure to be decommissioned to approved end-state within 5 years of permanently ceasing production (and all wells to be plugged within 3 years);
 - c. The level of planning in place, and whether this is commensurate with the scale of decommissioning required;
 - d. Where companies have plans to repurpose facilities, such as for carbon capture and storage (CCS) or offshore wind, further detail on the technical viability and the probability of regulator approval, along with how these plans influence the costs and timing of decommissioning activities.

Different infrastructure removal options - for instance, leaving in-situ, partial removal or full removal and disposal - will carry different risks and costs. These should be disclosed. If a company is reliant on gaining regulatory approval to leave infrastructure at sea, it should also disclose the additional cost if this approval is not granted.

2. How firm these assumptions are, and if they are consistent with current regulatory guidelines.
3. The age and stage of Australian offshore assets, and the cost/timing of decommissioning (especially within JVs, this will allow investors to analyse whether consistent assumptions are applied across the industry).
4. How a company's current decommissioning costs are represented in, or can be reconciled with, recent industry-wide estimates (i.e., those published by NERA of US\$40.5bn).
5. Sensitivities to the timeline of decommissioning/restoration around the useful life of assets using different oil and gas demand scenarios, including the IEA Net Zero by 2050 scenario.

Recommendations for listed companies

It is crucial that shareholders are given a full view of a company's decommissioning activities. ASX-listed companies with offshore infrastructure should:

1. Be transparent with shareholders about their oil and gas infrastructure due for decommissioning over the short, medium and long term.
2. Carefully comply with existing law, and in particular the principle of 'equal or better environmental outcomes' when deviating from removal requirements.
3. Provide timely updates to shareholders around the progress of plans to repurpose infrastructure for CCS or other.
4. Open all Environmental Plans for decommissioning filed with NOPSEMA for public comment.
5. Explain the major assumptions underpinning their provisioning, including in terms of the timing of planned activities, in the Notes to audited Financial Statements.

Key issues and risks for industry

A 2020 Deloitte review for the Department of Industry, Science, Energy and Resources (DISER) noted that Australia's offshore petroleum industry is at a 'critical juncture',¹³ as it prepares to face multiple challenges and threats including 'declining fields, increasing asset transition activity, ageing assets, decommissioning and intensifying pressure to reduce emissions.'¹⁴ Australian inexperience, uncertain costs and timelines, environmental and energy transition risks, and social license issues are all matters which the industry will have to contend with.

Australian inexperience

Decommissioning necessitates skills and equipment that vary from standard construction activities, and Australia's decommissioning 'industry' is still in its infancy. To date, there has been very little decommissioning of infrastructure in Australian Commonwealth waters.¹⁵ While some smaller projects have been decommissioned under the current regulatory framework in Australia, as DISER states, 'the framework has not yet been tested on larger rigorous decommissioning projects'.¹⁶ For instance, Esso's decommissioning of its non-operational Bass Strait operations is 'the first time decommissioning on this scale has been undertaken in Australia'.¹⁷

A recent report commissioned by industry noted that the preparedness of operators ('of all sizes') is a 'key (issue) surrounding Australia's upcoming decommissioning exercise'.¹⁸ The recent NOGA experience, and subsequent Walker Review, addressed this issue of operator ill-preparedness:

*'Under Australia's goal setting offshore safety and environmental legislation, ageing assets can be managed well into extended late-life. However, this relies upon the operator and owner having a detailed knowledge of the condition of the whole asset, the consequences of any shortfalls (whether from its actual physical conditions or from other layers of protection such as overdue safety critical maintenance and inspection), a systematic approach to identify remaining risks, and then an effective, rigorous and consistent approach to managing them. As the asset gets older those challenges increase with complex interactions.'*¹⁹

The possibility of a lack of technical expertise in the industry has been raised elsewhere. NOPSEMA Board minutes, released under Freedom Of Information (FOI), revealed the Board has concerns that many technical roles have been made redundant in the oil and gas industry.²⁰ Elsewhere, the regulator has stressed the importance of companies retaining 'key competencies, skills, knowledge and experience relating to ALE (ageing and life extension) management'.²¹

The Australian industry's infancy also presents the challenge of there being a lack of relevant literature and data. While there is a body of literature examining the effects of decommissioning in other regions of the world, such as the North Sea and the Gulf of Mexico, much of this is not readily applicable in Australia.²²

¹³ Deloitte Touche Tohmatsu for DISER, 2020, [2020 Review of activities of the National Offshore Petroleum Titles Administrator: report for the Minister for Resources, Water and Northern Australia](#), p. 8.

¹⁴ Ibid, p. 7.

¹⁵ Melbourne-Thomas et al., 2021, 'Decommissioning Research Needs for Offshore Oil and Gas Infrastructure in Australia', *Frontiers in Marine Science*. <https://doi.org/10.3389/fmars.2021.711151>.

¹⁶ DISER, 2020, [Enhancing Australia's decommissioning framework: for offshore oil and activities](#), Consultation paper, Canberra, p. 5.

¹⁷ NOPSEMA, 2021, [NOPSEMA accepts Esso's revised operations environment plan for Bass Strait operations](#).

¹⁸ APPEA, 2020, [Australia Oil and Gas Industry Outlook Report](#), p. 15, (Figure 12).

¹⁹ Steve Walker, 2020, [Review of the circumstances that led to the administration of the Northern Oil and Gas Australia \(NOGA\) Group of Companies](#), p. 21.

²⁰ NOPSEMA advisory board, 2020, [NOPSEMA advisory board meeting minutes](#).

²¹ NOPSEMA, 2021, [Ageing assets and life extension](#), p. 13.

²² Paul F. Shaw, 2017, 'Decommissioning and Remediation Challenges for the Petroleum Industry', *The APPEA Journal*, 57 (2): 546-48. <https://doi.org/10.1071/AJ16228>.

Costs are uncertain

The process of decommissioning offshore oil and gas infrastructure is very costly at a project level, and to the oil and gas industry more broadly.²³ While a handful of high-level liability estimates have been conducted, due to the infancy of Australia's decommissioning industry, these have not been benchmarked to actual costs yet.²⁴

Tan et al. (2021) note that, in relation to decommissioning costs of offshore oil and gas platforms, there has often been a 'big discrepancy between the estimated and actual situations.' For instance, decommissioning costs in the UK and Gulf of Mexico have been higher than planned.²⁵ Recent analysis of selected offshore oil and gas platform decommissioning projects in the North Sea found that the average actual cost was about 76% more than the estimated cost (see Table 1 below).

TABLE 1. Cost summary of selected offshore oil and gas platform decommissioning projects in the North Sea

Source: Tan et al. (2021)

OOGP Decommissioning Project	Estimated cost (£M)	Actual cost (£M)	Over budget (%)
Fife, Fergus, Flora and Angus Fields	220.5	265.9	21%
Frigg Field	171.7	207.2	21%
Indefatigable Field - platforms and pipelines	61.3	154.8	153%
Kittiwake SAL Export System	5.8	8.5	47%
MCP-01 Installation	68	196.25	189%
North West Hutton	160	246	54%
Tristan NW Field	7.9	11.8	49%
	Average		76.01%

²³ J. L. Shaw, P. Seares, & S. J. Newman, 2018, '[Decommissioning offshore infrastructure: A review of stakeholder views and science priorities](#)', WAMSI.

²⁴ Centre of Decommissioning Australia, 2021, '[A Baseline Assessment of Australia's Offshore Oil and Gas Decommissioning Liability](#)', p. 10.

²⁵ Yi Tan et al., 2021, 'Cost and Environmental Impact Estimation Methodology and Potential Impact Factors in Offshore Oil and Gas Platform Decommissioning: A Review.', *Environmental Impact Assessment Review*, 87(March): 106536. <https://doi.org/10.1016/j.eiar.2020.106536>.

Environmental risks and unknowns

The environmental costs and benefits of decommissioning are understudied, particularly in the Australian context. Ecological and environmental risks associated with decommissioning, including potential metal and NORM (naturally occurring radioactive materials) contaminants released during decommissioning, are not fully understood.²⁶ However, it is known that marine ecosystems are at risk from both physical damage and the release of scale contaminants during the decommissioning process.²⁷

Experts at the CSIRO and Tasmania's Centre for Marine Socioecology argue that 'the ecological value of decommissioned oil and gas infrastructure from other well studied regions may manifest differently in Australian waters', for four key reasons.²⁸ Firstly, the Australian continent is home to a significant number of different temperate and tropical marine habitats. Secondly, Australia is home to species assemblages which are distinct from those in northern hemisphere regions which have been the subject of decommissioning research.²⁹ Third, there is a relatively low rate of sedimentation in the Australian marine environment, which 'may affect the persistence of environmental contaminants around offshore infrastructure'. Finally, circumstances for social licence in the context of decommissioning differ in Australia.

While some discussion has emerged around the possible benefits of a 'rigs-to-reef' strategy for Australia, the potential negative impacts of 'in-situ decommissioning' strategies, including the ecological risk of residual contaminants, are still poorly understood.³⁰ The ecological risks from residual contaminants in decommissioned infrastructure has been raised often in the scientific literature (see for example: Tan et al., 2021³¹), and warrants further investigation. Koppel et al. (2022) note that 'research into the impacts of contaminants from oil and gas infrastructure to marine ecosystems is limited to contaminants arising from the operational life of this infrastructure', and therefore, they 'may not measure or be predictive of effects from future exposure to contaminants if they were decommissioned *in situ*'.³² A recent systematic review by MacIntosh et al. (2021)³³ found that there are limited studies exploring the ecological impacts of decommissioned oil and gas structures, particularly in relation to NORM contaminants.

Hydrocarbon gas emissions from decommissioned wells is another concern. This leakage may occur as a consequence of well integrity issues, such as corroded well casings. A recent study of 43 marine decommissioned wells in the Central North Sea found that gas release from decommissioned hydrocarbon wells is a major source of methane there, and concluded that the large number of hydrocarbon wells in the North Sea 'likely constitute a major source of methane'.³⁴

Case study: recent regulatory notices issued to Australian offshore operators

²⁶ Amy MacIntosh et al, 2021, Ecotoxicological effects of decommissioning offshore petroleum infrastructure: A systematic review. *Critical Reviews in Environmental Science and Technology*, 0(0): 1-39. <https://doi.org/10.1080/10643389.2021.1917949>; Darren J. Koppel et al., 2022, Current understanding and research needs for ecological risk assessments of NORM in subsea oil and gas pipelines. *Journal of Environmental Radioactivity*, 241: 106774. <https://doi.org/10.1016/j.jenvrad.2021.106774>.

²⁷ Daryl Burdon et al., 2018, Oil and gas infrastructure decommissioning in marine protected areas: System complexity, analysis and challenges. *Marine Pollution Bulletin*, 135: 739-758. <https://doi.org/10.1016/j.marpolbul.2018.07.077>.

²⁸ Jess Melbourne-Thomas et al., 2021, Decommissioning Research Needs for Offshore Oil and Gas Infrastructure in Australia. *Frontiers in Marine Science*, 8. <https://www.frontiersin.org/articles/10.3389/fmars.2021.711151>.

²⁹ For example, the Gulf of Mexico, California, the North Sea, and the Adriatic Sea.

³⁰ Darren J. Koppel et al., 2022, 'Current Understanding and Research Needs for Ecological Risk Assessments of Naturally Occurring Radioactive Materials (NORM) in Subsea Oil and Gas Pipelines.' *Journal of Environmental Radioactivity* 241 (January): 106774. <https://doi.org/10.1016/j.jenvrad.2021.106774>.

³¹ Yi Tan et al., 2021, 'Cost and Environmental Impact Estimation Methodology and Potential Impact Factors in Offshore Oil and Gas Platform Decommissioning: A Review.' *Environmental Impact Assessment Review* 87 (March): <https://doi.org/10.1016/j.eiar.2020.106536>.

³² Darren J. Koppel et al., 2022, 'Current Understanding and Research Needs for Ecological Risk Assessments of Naturally Occurring Radioactive Materials (NORM) in Subsea Oil and Gas Pipelines.' *Journal of Environmental Radioactivity* 241 (January): 106774. <https://doi.org/10.1016/j.jenvrad.2021.106774>.

³³ Amy MacIntosh et al., 2021, 'Ecotoxicological Effects of Decommissioning Offshore Petroleum Infrastructure: A Systematic Review.' *Critical Reviews in Environmental Science and Technology* 0 (0): 1-39. <https://doi.org/10.1080/10643389.2021.1917949>.

³⁴ Christoph Böttner et al., 2020, 'Greenhouse Gas Emissions from Marine Decommissioned Hydrocarbon Wells: Leakage Detection, Monitoring and Mitigation Strategies.' *International Journal of Greenhouse Gas Control* 100 (September): 103119. <https://doi.org/10.1016/j.ijggc.2020.103119>.

Recent Environmental Improvement Notices issued by NOPSEMA indicate that some offshore Australian operations are posing serious threats to the environment due to oil and gas leakage, including as a result of operator failures. For instance:

- The joint titleholders of the Yolla facility, including Beach Energy Limited, were issued with an Environmental Improvement Notice for consistently exceeding hydrocarbon concentration limits in produced water discharges, resulting in unacceptable risks to marine life.³⁵
- Woodside was issued with an Environmental Improvement Notice for its continual failure to preserve and then remove infrastructure, leading to navigation hazards, vehicle collision, and hydrocarbon leakage which could 'expose multiple environmental values and sensitivities to concentrations of hydrocarbons that may have a widespread and long term impact'.³⁶
- Esso Australia was issued with an Environmental Improvement Notices for repeatedly failing to properly prepare for an 'oiled wildlife' incident, as promised in its Environmental Plan.³⁷

³⁵ NOPSEMA, 2019, [Environmental Improvement Notice, No: 761](#).

³⁶ NOPSEMA, 2019, [Environmental Improvement Notice, No: 775](#).

³⁷ NOPSEMA, 2019, [Environmental Improvement Notice, No: 738](#).

Repurposing equipment to defer expenditure

The repurposing of offshore pipelines, wells and facilities may be an attractive option for deferring or avoiding decommissioning expenditure. NERA's *Decommissioning Strategy* seeks to ensure that 'all viable options' for the ongoing use of existing offshore infrastructure are 'exhausted' before being decommissioned.³⁸ However, repurposing is not a guaranteed solution for all offshore infrastructure due to technical and safety barriers.

Offshore Carbon Capture and Storage (CCS) developments are a common option pursued to repurpose end-of-life assets. Santos Chairman Keith Spence recently stated that Santos' pursuit of CCS developments 'at scale' is viewed by the company as an 'opportunity to defer decommissioning expenditure at mature assets'.³⁹ Santos had previously submitted plans for decommissioning the Bayu-Undan to Darwin Gas Export Pipeline,⁴⁰ but has since withdrawn these, presumably due to the current CCS feasibility study it is preparing for Bayu-Undan. A final investment decision on this CCS project is yet to be made; however there are third party reports questioning the probability of the project being technically and commercially viable.⁴¹

Similarly, repurposing platforms to support offshore wind projects in Australia has been proposed.⁴² However, there are safety considerations associated with the use of end-of-life infrastructure for new build projects, considering the 'harsh metocean conditions, as well as the long-term exposure of the legs in the marine environment'.⁴³ The North Sea Transition Authority has developed a screening tool for assessing the potential to repurpose offshore infrastructure and it has determined that 'opportunities for repurposing platform topsides, jackets and subsea systems for decarbonisation projects are likely to be limited'.⁴⁴

³⁸ NERA, 2022, '[Decommissioning](#)'.

³⁹ Oil Search Limited, 2011, '[Scheme Booklet](#)', p. 10.

⁴⁰ See now-cancelled EP at: NOPSEMA, '[Bayu-Undan to Darwin Gas Export Pipeline Decommissioning & Preservation](#)'.

⁴¹ ABC, 2022, '[Santos' Bayu-Undan carbon capture and storage plans may not stackup, report says](#)'; Boiling Cold, 2021, '[Santos internal analysis: \\$US1.6B Bayu-Undan carbon storage is low return and high complexity](#)'.

⁴² AFR, 2021, '[Offshore wind farms ready to harness fossil fuel workers](#)'.

⁴³ Lloyd's Register, 2021, '[Repurposing offshore assets to support offshore's transition to zero-carbon](#)'.

⁴⁴ North Sea Transition Authority, 2022, '[New tool to maximise infrastructure repurposing](#)'.

Climate change transition risks

This challenging operator environment is occurring in the context of decarbonisation and energy transition pressures.⁴⁵ These pressures are increasingly reflected in regulatory standards and growing investor expectations around climate risk disclosure.

A recent Australian Accounting Standards Board (AASB) Practice Statement advises that climate-related risk may cause an increase of provisions recognised for decommissioning due to regulatory changes or shortened project lives.⁴⁶ For this reason it suggests that, in disclosing the major assumptions about future events, companies 'may need to include an explanation of how climate-related risk has been factored into the best estimate of (a) provision'.⁴⁷

Climate Action 100+ (CA100+) has developed a new Climate Accounting and Audit Indicator for the Net Zero Company Benchmark, which requires companies and auditors to ensure visibility of how accelerating decarbonisation in alignment with the Paris goal of limiting warming to 1.5C will impact companies' financial positions and profitability.⁴⁸

CA100+ expects companies and their auditors to publish evidence that they have comprehensively considered climate in audited financial statements and notes, and to incorporate the impacts of net-zero by 2050 (or sooner). However, CA100+'s application of this benchmark in 2022 found that companies are failing to integrate climate risk into accounting and audit practices - not a single company had incorporated the impacts of net-zero by 2050.⁴⁹ This assessment included 14 ASX-listed companies, with only BHP and Rio Tinto meeting the requirements for one of seven sub indicators.

Carbon Tracker (2021) has recently warned that, despite recent urgencies of global accounting and auditing standard-setters, material climate-related risks are not being adequately considered in financial reporting, and that the exclusion of climate impacts from financial accounts can lead to 'overstated profits and asset values, and understated liabilities'.⁵⁰

In a review of 107 companies, including 35 oil and gas companies, Carbon Tracker found that decommissioning obligations were only covered in 11% of audit reports, and that 72% of companies had not incorporated climate matters into financial reporting 'in any meaningful way'.⁵¹ Carbon Tracker noted that it was unclear in the financial reports how issues including regulatory change, declining demand for companies' products, and emissions reductions targets were expected to affect '...cash flows used in impairment testing, the useful lives of productive assets, the timing of decommissioning obligations or the existence of onerous contracts that could have plausibly resulted from changed assumptions and estimates'.⁵²

⁴⁵ Deloitte Touche Tohmatsu for DISER, 2020, [2020 Review of activities of the National Offshore Petroleum Titles Administrator](#), p. 19.

⁴⁶ AASB, 2019, [Climate-related and other emerging risks disclosures: assessing financial statement materiality using AASB/IASB - Practice Statement](#), p. 5.

⁴⁷ Ibid.

⁴⁸ Climate Action 100+, 2021, [Global Investors Driving Business Transition](#), pp. 19-20.

⁴⁹ Ibid, pp. 56-7.

⁵⁰ Carbon Tracker, 2021, [Flying Blind: The Glaring Absence of Climate Risks in Financial Reporting](#), p. 53.

⁵¹ Ibid, p. 18.

⁵² Ibid.

Social license and reputational risk

Obtaining and maintaining a social licence during the decommissioning phase of a project is becoming increasingly important, as regulatory pressure increases, risks increase, and civil society groups apply greater pressure to oil and gas operators over multiple environmental and social issues associated with offshore operations.⁵³ The current energy crisis has further diminished the social licence of offshore oil and gas operators.

Scrutiny of Australian operators in particular has increased since the well-publicised Northern Endeavour case, in which the responsibility for the clean up of the oil vessel was passed from the liquidated former owner Northern Oil & Gas Australia (NOGA) to the federal government. Woodside in particular faced heavy political, media and public criticism for its involvement in the case - which was described in the media as a 'major financial, regulatory and ESG headache' for the company.⁵⁴ Woodside was also subject to inter-industry critique (in Chevron's parliamentary inquiry submission into legislation enabling the levy to pay for the clean-up of the Northern Endeavour, the company protested that it should not be forced to pay for the 'failings' of others).⁵⁵

The government-commissioned Walker Review, into the circumstances leading to NOGA's administration and liquidation, raised serious issues about Woodside's maintenance of the infrastructure: 'previous expectations that the facility was coming to the end of its production life' meant that the company failed to undertake 'corrective maintenance', leaving a 'legacy' of 'extensive corrosion' inherited by operator UPS. A near-fatal workplace incident in 2017 was attributed to this lack of maintenance.⁵⁶ The first regulatory inspection of the Northern Endeavour under UPS inspection identified 21 outstanding recommendations, already raised under Woodside's operatorship.⁵⁷

Not only did the case emphasise the need for a strengthened legislative and regulatory framework, both of which have now been enforced, but it also highlighted considerable reputational risks for offshore oil and gas operators in relation to maintenance and end-of-life asset management. Recent public submissions made to the decommissioning levy inquiry indicate that civil society groups have ongoing concerns about: ineffective, incomplete, delayed or inadequate maintenance and decommissioning of offshore oil and gas projects; impacts of offshore infrastructure on crucial fishing grounds, including in the Timor Sea; the risk of stranded assets; the preparedness of operators to pay for decommissioning costs; a lack of transparency by operators; the need to maximise jobs and economic benefit from decommissioning projects now and into the future; the offshore oil and gas industry's contribution to climate change; the 'meagre' economic benefits provided by the offshore oil and gas industry to the Australian community; the environmental impacts of 'in-situ' decommissioning; extreme workplace safety risks on offshore facilities, causing severe and preventable injuries; and aggressive anti-union management on some facilities, including the refusal to engage in enterprise bargaining.⁵⁸ Each of the groups cited intends to continue to scrutinise the behaviour of offshore operators.

⁵³ Sabrina Genter, 2019, 'Stakeholder Engagement in the Decommissioning Process.' Paper presented at the SPE Symposium: Decommissioning and Abandonment, December 3, 2019, D012S013R001. Kuala Lumpur, Malaysia: SPE. <https://doi.org/10.2118/199203-MS>.

⁵⁴ AFR, 2022, '[Dud deal costs oil industry \\$3.4b](#)'.

⁵⁵ Chevron, 2021, submission to the [Offshore Petroleum \(Laminaria and Corallina Decommissioning Cost Recovery Levy\) Bill 2021 \[Provisions\] and Treasury Laws Amendment \(Laminaria and Corallina Decommissioning Cost Recovery Levy\) Bill 2021](#).

⁵⁶ Steve Walker, 2020, [Review of the circumstances that led to the administration of the Northern Oil and Gas Australia \(NOGA\) Group of Companies](#), p. 51.

⁵⁷ Ibid, p. 25.

⁵⁸ See submissions to the [Offshore Petroleum \(Laminaria and Corallina Decommissioning Cost Recovery Levy\) Bill 2021 \[Provisions\] and Treasury Laws Amendment \(Laminaria and Corallina Decommissioning Cost Recovery Levy\) Bill 2021 \[Provisions\]](#): Submission 2 (The Wilderness Society); Submission 3 (Offshore Alliance); Submission 8 (Jubilee Australia Research Centre); Submission 10 (Publish What You Pay Australia); Submission 13 (The Australia Institute).

Regulatory change and scrutiny

The national legislative and regulatory framework for decommissioning has changed significantly in Australia over the past 5 years, and operators are now dealing with several new limitations.⁵⁹ It is still largely unclear how Australian listed operators are responding – in terms of how their planned decommissioning activities may have changed, and how provisioning may be affected or differently calculated. However, it has been suggested that some of these changes are already impacting the sale of assets.⁶⁰

The government-commissioned review into the circumstances leading to NOGA's voluntary administration and liquidation, the Walker Review, concluded that the 'current (decommissioning) situation' in Australia was 'vulnerable'.⁶¹ British offshore regulatory expert Steve Walker, who led the review, recommended a 'trailing liability' be introduced,⁶² but cautioned that such a measure was 'only a backstop' and that 'it is essential that current titleholders continue to have prime liability for decommissioning'.⁶³

A trailing liability has now been introduced, along with a handful of other regulatory measures, further complicating the future sale of offshore assets. The regulator, NOPSEMA, intends that this will help 'ensure that the costs and liabilities associated with decommissioning will be borne by the petroleum industry and do not become the responsibility of the government or the Australian community'.⁶⁴ This new, stricter approach was seemingly having an effect on oil and gas majors even before it came into force. ExxonMobil abandoned the sale of its Bass Strait operation a fortnight after the federal Resources Minister privately advised the company that the government and regulatory agencies NOPSEMA and NOPTA would 'closely scrutinise any transaction'.⁶⁵

New legislation

Since the national legislative and regulatory framework for decommissioning was overhauled, titleholders now have new obligations to meet.⁶⁶ Recent changes include: strengthened trailing liability provisions; the introduction of tighter scrutiny and government approval of any changes of interest of more than 20%, including changes in parent companies; increased requirements for financial assurance; changes to decommissioning planning; strengthened remedial directions powers; and, public engagement and transparency measures.

Through the *Offshore Petroleum (Laminaria and Corallina Decommissioning Cost Recovery Levy) Bill 2021*, which passed Australian parliament in April 2022, a levy was imposed on offshore petroleum production in order to cover the Commonwealth for the costs of decommissioning and remediating the Laminaria and Corallina oil fields. Speeches given in support of the bill by ALP members – now in government – suggest that the industry may be subject to further regulation. Madeleine King MP – now the Minister for Resources – said that Australia is in need of '... a regulatory system that delivers the planning, monitoring, oversight and enforcement of high-standard decommissioning outcomes for offshore oil and gas infrastructure'.⁶⁷ Josh Wilson MP has flagged the need for 'concerted and rapid work from government in partnership with industry' to develop a 'state-of-the-art Australian decommissioning industry'.⁶⁸

⁵⁹ DISER, 2020, [Enhancing Australia's decommissioning framework: for offshore oil and activities](#), Consultation paper, Canberra, p. 2.

⁶⁰ Sydney Morning Herald, 2022, ['Chevron fails to exit Woodside's ageing North West Shelf'](#).

⁶¹ Steve Walker, 2020, [Review of the Circumstances that Led to the Administration of the Northern Oil and Gas Australia \(NOGA\) Group of Companies \(Executive Summary\)](#), p. 7.

⁶² Ibid.

⁶³ Ibid.

⁶⁴ NOPSEMA, 2022, *The Regulator: 2022, Issue 2*, ['Trailing liability provisions now in effect'](#).

⁶⁵ Boiling Cold, 2022, ['Australia told ExxonMobil CEO 'no easy exit' before \\$3B Bass Strait sale canned'](#).

⁶⁶ DISER, 2020, [Enhancing Australia's decommissioning framework: for offshore oil and gas activities](#).

⁶⁷ Madeleine King MP, 2022, *Offshore Petroleum (Laminaria and Corallina Decommissioning Cost Recovery Levy) Bill 2021*, [Second reading speech](#).

⁶⁸ Josh Wilson MP, 2022, *Offshore Petroleum (Laminaria and Corallina Decommissioning Cost Recovery Levy) Bill 2021*, [Second reading speech](#).

Changing regulatory focus

Regulator NOPSEMA has taken up a more assertive approach to decommissioning⁶⁹ in response to a 2019 Ministerial directive, which asked the regulator to heighten its oversight of duty holder compliance with their decommissioning obligations under the OPGGS Act (section 572).⁷⁰ NOPSEMA has introduced a suite of decommissioning policies, including a Section 572 Maintenance and removal of property policy⁷¹ and a 5-year Decommissioning Compliance Strategy and Plan. NOPSEMA now requires all structures, equipment and property to be 'decommissioned to approved end-state within 5 years of permanently ceasing production' and all wells to be plugged within 3 years of permanently ceasing production, then removed after another two.⁷² Companies have until 2023 to lodge a formal plan outlining how they intend to do this, and NOPSEMA has reminded companies that decommissioning must be 'considered and planned for at all stages of a project's life'.⁷³

NOPSEMA has also re-stated its intention to prosecute titleholders who allow property and equipment to degrade to the point that it cannot be removed safely, or where it becomes an occupational health and safety risk.⁷⁴ According to NOPSEMA's new inspection policy, factors likely to increase an operators' risk of having compliance action taken against it include: operations on areas of higher risk and/or greater likelihood of non-compliance, including where a project has reached the decommissioning stage of life; where there has been a change of duty-holder; where the duty-holder has a poor compliance history; where the duty-holder is inexperienced.⁷⁵

Additionally, NOPSEMA has clarified its approach to ageing assets and life extension, and its expectation that accountability for managing ageing and life extension risk 'primarily rests at a senior level'.⁷⁶ Regulatory investigations in late 2018 identified a 'need for improved ageing asset management' across assets and facilities in Commonwealth offshore areas, and found that over half of the 41 uncontrolled hydrocarbon releases reported that year came from late life assets, over 20 years of age.⁷⁷ Investigations by regulatory authorities in the UK, Norway and Australia have identified similar problems associated with ageing infrastructure.⁷⁸ NOPSEMA warns that poor management of ageing assets can be very costly for operators - as was the case in 2018, when a titleholder had to pay AUD\$30 million to address integrity deficiencies and comply with enforcement actions.⁷⁹

ASIC investigations

In 2021, the Australian Securities and Investments Commission (ASIC) highlighted asset values and provisions as key areas of regulatory focus.⁸⁰ ASIC reiterated that 'assumptions underlying estimates and assessments for financial reporting purposes should be reasonable and supportable'.⁸¹ ASIC Commissioner Sean Hughes noted:

'The changing environment in which each company operates will affect its strategies and its assumptions about the future performance of its assets and businesses. It remains more important than ever that investors and markets are properly informed through a company's financial reports and related disclosures about underlying drivers of results, key assumptions, strategies, future prospects and risks in both full-year and half-year reports'.

Case study: Regulatory scrutiny of Woodside

⁶⁹ NOPSEMA, 2021, ['New guidance for planning proactive decommissioning'](#).

⁷⁰ NOPSEMA, 2020, [Section 572 Maintenance and removal of property](#).

⁷¹ NOPSEMA, 2020, ['NOPSEMA releases regulatory policy on maintenance and removal of property'](#).

⁷² NOPSEMA, [Decommissioning Compliance Strategy](#) - see 'targets'.

⁷³ NOPSEMA, 2021, [Complying with your decommissioning obligations](#), pp. 5, 8.

⁷⁴ NOPSEMA, [Decommissioning Compliance Strategy](#) - see 'actions'.

⁷⁵ NOPSEMA, 2020, [Inspections - monitoring and ensuring compliance](#).

⁷⁶ NOPSEMA, 2021, [Ageing assets and life extension](#).

⁷⁷ NOPSEMA, 2018, [Annual Offshore Performance Report - Safety and environmental performance of Australia's offshore petroleum industry](#).

⁷⁸ NOPSEMA, 2021, [Ageing assets and life extension](#).

⁷⁹ NOPSEMA, 2018, [Annual Offshore Performance Report: Safety and environmental performance of Australia's offshore petroleum industry](#), p. 3.

⁸⁰ ASIC, 2021, [21-342MR ASIC highlights focus areas for 31 December 2021 financial reports under COVID-19 conditions](#).

⁸¹ Ibid.

Scrutiny around Woodside's decommissioning plans has increased since the Northern Endeavour case, which elevated political⁸² and public⁸³ critique of the company. Woodside has also recently been the subject of an ASIC investigation into decommissioning provisioning, and has received multiple decommissioning directions from offshore regulator NOPSEMA.

In February 2021, NOPSEMA took compliance action against Woodside Energy Ltd over the disposal of its old offshore oil equipment at its Nganhurra offshore operations. Although production ceased at this site in 2018, NOPSEMA noted that Woodside (and joint titleholder Mitsui E&P Australia Pty Ltd) 'had not taken adequate action to remove property' associated with the operations since that time.⁸⁴ Eighteen wells, a flowline and riser system, a riser turret mooring (RTM) and anchor system, and subsea structures all remained at the site.

Woodside was issued with an enforcement action to plug or close off wells, remove property, provide for the conservation and protection of natural resources and make good any damage to the seabed or subsoil in the title area, all by 2025 or 2026, and is now required to report annually to NOPSEMA on its progress against each of these items.⁸⁵ The order carries significant civil and criminal penalties. While NOPSEMA had accepted Woodside's revised Cessation of Operations Environmental Plan for the site, it placed further requirements on the company to undertake protective measures to reduce impacts to whale sharks, turtles and seabirds.⁸⁶ NOPSEMA also announced it was investigating Woodside for a possible breach of the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* as a result of the company's failure to comply with original removal plans.⁸⁷

In August 2021, BHP was ordered by NOPSEMA to clean up three offshore fields within five years or less: Griffin, Stybarrow (jointly held with Woodside) and Minerva.⁸⁸ For each field, BHP is required to remove all remaining property, make good any damage, and report annually to NOPSEMA on its progress. A long list of property had been left by BHP at the Griffin field, despite production having ceased in 2009. NOPSEMA noted that the company had not submitted an Environmental Plan for the property to be left in-situ, nor explained how it was maintaining the remaining property 'so as not to preclude full removal in the future'.⁸⁹ NOPSEMA raised similar concerns about property left at Stybarrow, where several wells have also not been plugged or closed off, in breach of the previously negotiated Well Operations Management Plan (WOMP). At Minerva, assets had also been left after production ended in 2019, and a number of wells had not been plugged or closed off, in breach of the existing Environment Plan (EP). In all three cases, NOPSEMA stated that it had 'inadequate visibility... of [the company's] decommissioning plan and progress', warranting additional oversight and compliance actions. Based on the Woodside BHP-P merger documentation⁹⁰, it appears these liabilities have transferred to Woodside due to the merger.

In February 2022, ASIC revealed that it was conducting ongoing investigations into Woodside Petroleum Ltd's reporting of restoration provisions for offshore infrastructure assets, which did not allow for the full removal of certain infrastructure assets, as well as related disclosures.⁹¹ Full removal of infrastructure is the 'base case' in Australia, and while deviations may be pursued in particular circumstances and with regulatory approvals in place, NOPSEMA has questioned if operators are properly valuing offshore assets on the basis of full removal.⁹² Although Woodside 'improved its disclosure of the basis for providing for future restoration costs' in 2021 annual reporting, ASIC's investigations are ongoing.⁹³

⁸² Commonwealth of Australia, 2021, [Offshore Petroleum \(Laminaria and Corallina Decommissioning Cost Recovery Levy\) Bill 2021 - Treasury Laws Amendment \(Laminaria and Corallina Decommissioning Cost Recovery Levy\) Bill](#).

⁸³ AFR, 2022, ['Dud deal costs oil industry \\$3.4b'](#).

⁸⁴ NOPSEMA, 2021, [General Direction](#).

⁸⁵ Ibid.

⁸⁶ NOPSEMA, 2021, [Nganhurra Operations Cessation](#), pp. 9-10.

⁸⁷ NOPSEMA, 2021, [NOPSEMA takes compliance action against Woodside Energy Ltd](#).

⁸⁸ NOPSEMA, 2021, [General Direction](#).

⁸⁹ Ibid, p. 3.

⁹⁰ KPMG, 2022, [Independent Expert Report, Woodside](#).

⁹¹ ASIC, 2021, [22-027MR Woodside Petroleum increases restoration provision and enhances associated disclosure](#).

⁹² NOPSEMA advisory board, 2020, [NOPSEMA advisory board meeting minutes](#).

⁹³ ASIC, 2021, [22-027MR Woodside Petroleum increases restoration provision and enhances associated disclosure](#).

Following its investigations into Woodside's reporting of restoration provisions, ASIC encouraged 'other industry participants to reassess the reasonableness of their financial reporting obligations and adequacy of disclosures'.⁹⁴

⁹⁴ Ibid.

Disclosure risks

Shareholders need to be properly informed about the extent to which companies are exposed to decommissioning obligations. However, at present shareholders are not receiving sufficient information to assess this, due to poor disclosure practices and uncertain timelines. There are genuine risks with under provisioning due to inappropriate assumptions, and this has a bearing on company value.

The scope of the task is unclear

It is difficult to obtain a comprehensive picture of the number, age and stage of Australian operators' offshore assets, based on annual reporting documents. While the Federal government urges titleholders 'to keep, and regularly review, an inventory of infrastructure in their title areas, including reference to any associated approvals',⁹⁵ companies do not self-publish such inventories. Although regulators expect decommissioning to be planned for and managed proactively throughout a project's life, shareholders are often not privy to these plans until the company has begun or is very nearly about to begin works. This complicates efforts to understand each company's decommissioning timelines.

Some data on offshore oil and gas wells is available through public datasets, including: the National Offshore Petroleum Information Management System (NOPIMS); South Australian government, Petroleum Exploration and Production System (PEPS); Western Australian Petroleum and Geothermal Information Management System (WAPIMS); Queensland government, Open Data Portal; and Northern Territory government, Open Data Portal. This data contains well information such as the status of the well ('suspended'; 'abandoned'), its location, and when it was drilled – operators must legally report this to relevant authorities. While this is somewhat helpful for roughly 'mapping' current petroleum assets in different jurisdictions, it does not indicate anything useful about a company's future plans for abandonment. Furthermore, the datasets are not standardised, and are not easily comparable. NOPIMS advises that amongst the industry, terms such as 'suspended' and 'abandoned' are applied inconsistently.

A recent estimate of Australian offshore oil and gas asset stock was published by industry-funded National Energy Resources Australia (NERA). NERA advises that this report was compiled using publicly available datasets, as well as information provided directly to NERA by some operators.⁹⁶

Australia's offshore asset stock, by basin and typology Source: NERA ⁹⁷	
Asset type	Location <small>*in count **in mass/length terms</small>
1,008 wells (59% platform; 30% subsea development; 11% subsea exploration and appraisal)	35%* North Carnarvon 45%* Gippsland
57 fixed facilities	55%** North Carnarvon 37%** Gippsland
11 floating facilities	45%* North Carnarvon 27%* Browse 27%* Bonaparte
82 export and inter-field pipelines	Bonaparte (~15%**), Browse (~15%**), Gippsland (18%**), and North Carnarvon (47%**)

⁹⁵ DISER, 2018, [Offshore Petroleum Decommissioning Guideline](#), p. 6.

⁹⁶ Pers comms, 2021, CODA/NERA.

⁹⁷ NERA, 2022, [A Baseline Assessment of Australia's Offshore Oil and Gas Liability](#).

535 subsea structures	60%* North Carnarvon Remaining 40% split between (in order of amount): Browse, Bonaparte, Gippsland, Otway
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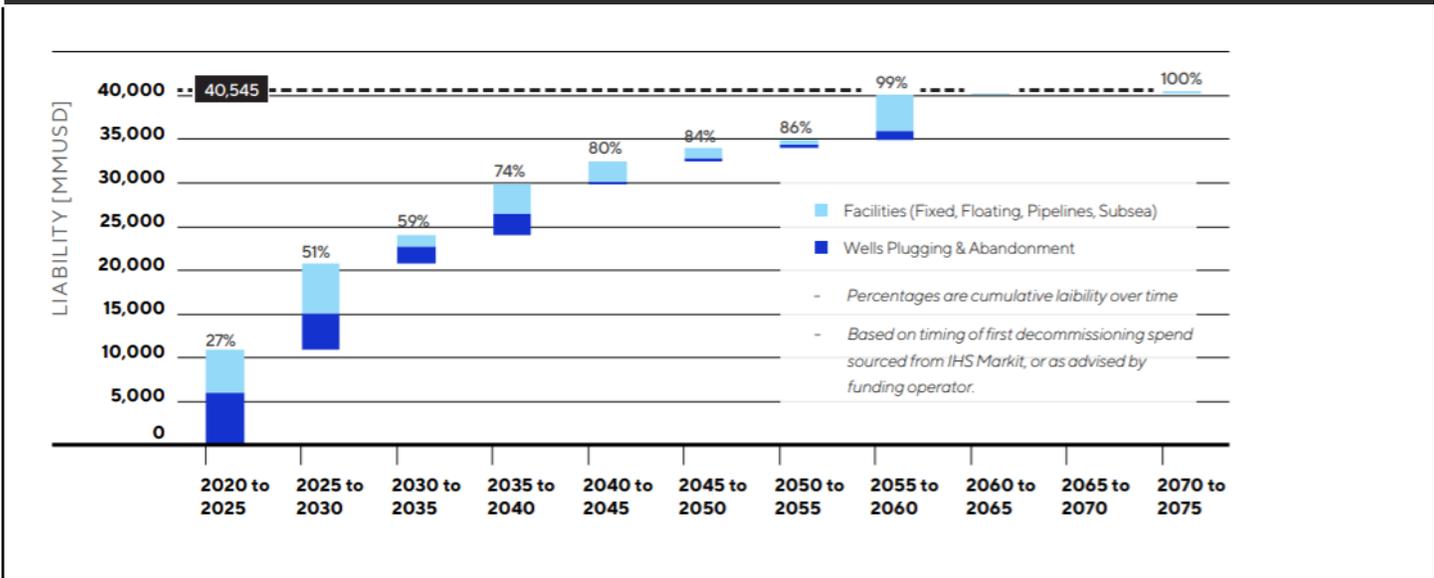
Timelines are uncertain

Australian offshore oil and gas decommissioning liability has been estimated at \$US40.5 billion to 2050, with a significant portion of work due to occur between 2020 and 2030 (see Figure 1).⁹⁸ However, the state and cost for many ageing offshore oil and gas facilities in Australia is uncertain.

Woodside Petroleum recently enhanced its disclosure of restoration costs in its 2021 Annual Report, but not before an ASIC investigation into the company's financial reporting on the topic.⁹⁹ Currently, Environmental Plans (EP) are not required to be put to the public for comment.¹⁰⁰ In effect, shareholders of Australian listed companies often have a limited view of company plans for decommissioning in the short and medium term.

Figure 1: Australian offshore oil and gas liability by asset type

Source: Centre for Decommissioning Australia (Advisian study), 2021, *A Baseline Assessment of Australia's Offshore Oil and Gas Decommissioning Liability*, p. 6



Furthermore, and as industry analysts have noted, there is a 'lack of impetus by some industry players to decommission facilities in a timely way'.¹⁰¹ Analyst Saul Kavonic recently commented that:

*'...companies have not really been decommissioning even once [a] facility comes to the end of its life. They're just mothballing it and ticking it over and pushing it down the road.'*¹⁰²

Case study: Esso Bass Strait decommissioning maintenance issues and timing

⁹⁸ Centre of Decommissioning Australia / NERA, 2022, *A Baseline Assessment of Australia's Offshore Oil and Gas Decommissioning Liability*.

⁹⁹ ASIC, 2021, *22-027MR Woodside Petroleum increases restoration provision and enhances associated disclosure*.

¹⁰⁰ However, Esso recently elected to publish one of their EPs, on decommissioning activity in the Bass Strait, for public comment.

¹⁰¹ AFR, 2021, *'Woodside in fresh offshore foul up'*.

¹⁰² Saul Kavonic, 2020, *Bracing for low oil*.

In May 2021, regulator NOPSEMA ordered Esso to complete all preparatory decommissioning activities and begin dismantling its Bass Strait infrastructure before October 2027, after inspecting several of the company's non-producing facilities.¹⁰³ NOPSEMA stated that the company was not maintaining its infrastructure adequately and the structural integrity of several facilities was unknown, potentially undermining the company's ability to safely dismantle these facilities in the future.

Further, NOPSEMA noted that Esso's 'level of planning and timing proposed for removal (was) not commensurate with the scale of decommissioning activities required', and that due to limited reporting, the regulator did not have adequate visibility over Esso's decommissioning plans and progress.

In June 2022, Esso Resources Australia published its plans for decommissioning in the Gippsland Basin.¹⁰⁴ The company is proposing to leave structures between 18m and 38m on the seafloor, and is considering leaving some dismantled materials at sea, although this is yet to be approved by the regulator. This decommissioning project is in the middle of the newly proposed Gippsland Offshore Electricity Area.

¹⁰³ NOPSEMA, 2021, [General Direction - section 574](#).

¹⁰⁴ Esso Australia Resources Pty Ltd (ExxonMobil), 2022, [Document DC1-EM-ALL-RPPLN-0003](#).

Company disclosure is inconsistent, and often limited

Company decommissioning provisions are complex calculations, made using information about the assets which need to be removed (their age, condition, complexity), and various assumptions about removal requirements and future costs. These assumptions may be moderated by legislation (climate, environment, safety, taxation), regulatory settings, and oil prices, among other factors.

However, reporting of present and upcoming decommissioning obligations by Australian operators is generally minimalist, preventing shareholders from obtaining an accurate picture of assets due for decommissioning in the short- medium and long term, and the primary inputs into assumptions underlying provisioning.

What does the literature say?

There is a growing body of scholarly literature examining the disclosure practices of extractive companies with respect to decommissioning. Broadly, it finds that company disclosure of decommissioning provisions is limited, discretionary, and heterogeneous.

Paananen et al. (2021)¹⁰⁵ argue that firms involved in extractive activities treat the disclosure of estimated environmental liabilities, such as the plugging and abandonment of oil wells, 'as a strategic choice', due to 'the potentially negative economic and environmental externalities associated with environmental liabilities and the inherent uncertainty involved in estimating the liabilities'.¹⁰⁶ As a result, there is a tendency towards 'box-ticking', and a lack of what these authors term 'decision-useful disclosure' in company financial reporting.¹⁰⁷ Furthermore, these authors argue that 'companies provide poorer disclosures when they have strong incentives to withhold environmental information or when the cost of non-compliance is low'.¹⁰⁸ Coupled with the fact that capital market actors such as investors often do not actively demand disclosure on liability estimation methods,¹⁰⁹ this results in an 'information vacuum' surrounding environmental liabilities, including provisions for decommissioning, dismantling and clean-up costs. In turn, this '(increases) the risk of the public having to take responsibility for cleanup costs in case of company failure'.¹¹⁰ Paananen and colleagues' study of reporting by European-listed extractive firms found that only just over half of these firms provided information in reporting about key inputs like discount rates or time horizons.

A previous study by Abdo & Magena (2018)¹¹¹ reported on the degree to which London Stock Exchange-listed oil and gas companies disclose information about provisions for decommissioning costs, in accordance with international accounting standards (IASs). They found that on average, these companies disclose 62.9% of the information required of them by relevant accounting standards, with 19.1% disclosing less than half of the required information, and some disclosing none at all. The authors conclude that:

'investors are not well informed about the extent to which the firms are exposed to decommissioning commitments', nor about 'the implications of such exposures'.¹¹²

¹⁰⁵ Mari Paananen, Emmeli Runesson, & Niuosha Samani, 2021, 'Time to clean up environmental liabilities reporting: Disclosures, media exposure and market implications.' *Accounting Forum*, 45(1): 85-116. <https://doi.org/10.1080/01559982.2021.1872909>.

¹⁰⁶ *Ibid*, p. 85.

¹⁰⁷ *Ibid*.

¹⁰⁸ *Ibid*, p.89, Following Gary F. Peters & Andrea M. Romi, 2013, 'Discretionary compliance with mandatory environmental disclosures: Evidence from SEC filings.' *Journal of Accounting and Public Policy*, 32(4): 213-236. <https://doi.org/10.1016/j.jaccpubpol.2013.04.004>.

¹⁰⁹ See: Giovanna Michelon, Mari Paananen, & Thomas Schneider, 2020, '[Black box accounting: Discounting and disclosure practices of decommissioning liabilities](#).' Report prepared for ICAS (The Institute of Chartered Accountants of Scotland).

¹¹⁰ Mari Paananen, Emmeli Runesson, & Niuosha Samani, 2021, 'Time to clean up environmental liabilities reporting: Disclosures, media exposure and market implications.' *Accounting Forum*, 45(1): 85-116, p.111. <https://doi.org/10.1080/01559982.2021.1872909>.

¹¹¹ H. Abdo & M. Mangena, 2018, [The Case of Oil and Gas Companies Listed in the UK](#), p. 11.

¹¹² *Ibid*, p. 6.

Furthermore, based on their interviews with oil and gas authorities, oil and gas industry representatives, academic experts, independent consultants and industry auditors, the authors identify 'both (a) knowledge-based gap and disclosure expectation gap between companies and stakeholders'.¹¹³ They continue:

'These gaps can be minimized by providing more detailed, transparent and adequate information on provisions for decommissioning costs in companies' annual reports and accounts and other means of reporting and disclosures such as companies' websites and press release conferences'.¹¹⁴

How are ASX-listed companies disclosing their obligations?

Estimated decommissioning liabilities are provisioned for on company balance sheets.¹¹⁵ As they are reviewed each year, the profit and loss statements also include any necessary adjustments to decommissioning provisions.¹¹⁶

Companies currently report restoration provision balances as a single figure, along with some explanatory notes. Often, there is an acknowledgement that decommissioning costs involve complex calculations, using information about the assets which need to be removed (their age, condition, complexity) and various assumptions about legislative requirements, future technologies, commodity prices, and stakeholder expectations. The Australian Accounting Standards Board (AASB) 137, *Provisions, Contingent Liabilities and Contingent Assets*, is the main standard for decommissioning reporting.¹¹⁷ Other relevant standards include AASB 116, *Property, Plant and Equipment* and AASB 101, *Presentation of Financial Statements*, specifically sections 125 - 133 on Sources of estimation uncertainty. ASX-listed companies often also report more general narrative information about the assumptions and risks underpinning their decommissioning liabilities.

For instance, Beach Energy Ltd (ASX: BPT) acknowledges that it faces certain climate change risks, including that demand for its products may decrease, extraction from some of the company's reserves may become unviable, physical climate impacts may increase, and/or that changing political, environmental, safety and public expectations may challenge the company's costings and timelines.¹¹⁸ Cooper Energy (ASX: COE) notes that 'the expected timing of expenditure can also change, for example in response to changes in oil and gas reserves or to production rates'.¹¹⁹ In Woodside (ASX:WPL)'s 2021 Climate Report, it is noted that transition and physical risks relating to climate may lead to increased decommissioning costs.¹²⁰ And for Santos (ASX: STO), the company's significant judgements and key estimates made about restoration obligations, including the timing of restoration activities, deferred taxes, and the determination of liabilities,¹²¹ are subject to "market supply and demand profiles, carbon emissions reduction profiles, legal impacts and technological impacts".¹²²

Case study: Woodside (ASX:WPL)

Although Woodside has since merged with BHP's petroleum assets, its recent disclosures provide an insight into how decommissioning provisioning is changing.

In its 2021 Annual Report, Woodside disclosed a \$2.2bn restoration provision at a portfolio level, with no breakdown by asset or scope (table below¹²³). It also disclosed that 65% of the non-current balance is 'not expected to be settled in 10 years', which is a decrease from 73% in the 2020 Annual report.

¹¹³ Ibid, p. 8.

¹¹⁴ Ibid.

¹¹⁵ [AASB 137, Provisions, Contingent Liabilities and Contingent Assets](#).

¹¹⁶ [See paragraph 82 AASB 101 Presentation of Financial Statements](#).

¹¹⁷ Note, this standard incorporates IAS 37 Provisions, Contingent Liabilities and Contingent Assets, issued by the International Accounting Standards Board (IASB).

¹¹⁸ Beach Energy, [Annual Report 2021](#), p. 100.

¹¹⁹ Cooper Energy, [Annual Report 2021](#), p. 99.

¹²⁰ Woodside, [Climate Report 2021](#), pp. 32-33.

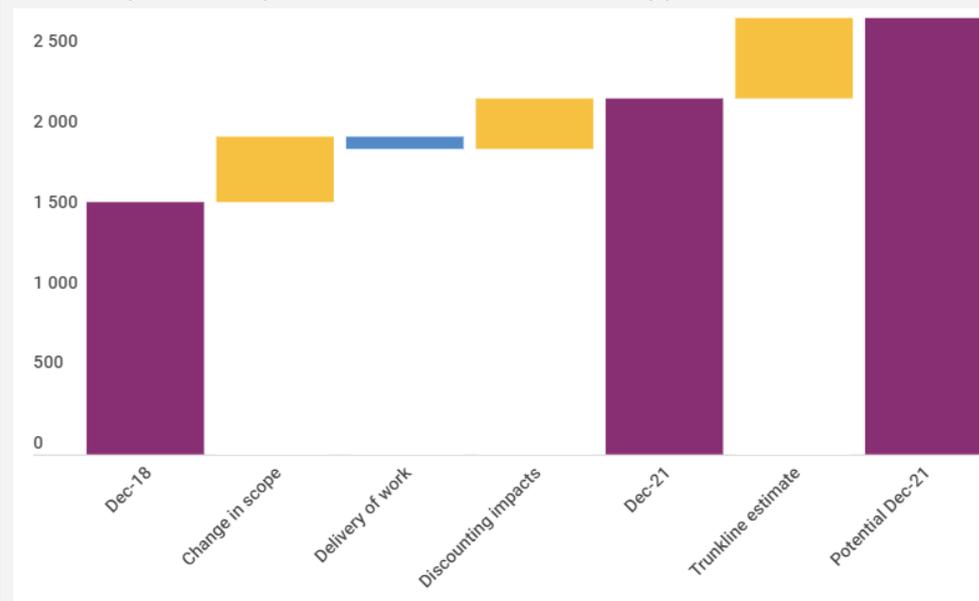
¹²¹ Santos, [Annual Report 2021](#), pp. 72, 94.

¹²² Ibid, p. 72.

¹²³ Woodside, [Annual Report 2021](#), Note D.5.

In recent years, there has been a sizable increase in this provision. As well as adjustments to discount rates, there has been \$US 400 million of scope growth (including updated cost estimates), whilst only \$US 76 million of scope has been delivered. The company's 2021 Annual Report suggests the provision may increase further, since it does not yet allow for full removal of large diameter trunklines between the offshore platforms and onshore plants. Full removal would lead to an 'increase to the provision of approximately \$300 - \$500 million.'¹²⁴ Including full removal costs could therefore see Woodside's decommissioning provision almost double in a little over 3 years.

Figure 1. Changes to Woodside's decommissioning provision since 2018 (US million)



The BHP Annual report and BHP-P / WPL merger documentation provide additional insight into the liabilities for the combined entity. The BHP Group lists \$11.9 billion for restoration provisions¹²⁵, and notes that \$3.9 of these would be derecognised under the Woodside merger.¹²⁶ BHP says that 'individual site provisions are discounted to their present value using currency specific discount rates aligned to the estimated timing of cash outflows.' This note does not mention risk adjusted discount rates, so may be calculated on a different basis to WPL's provisions. BHP has not typically disclosed the petroleum division's share of decommissioning provision, so it is not possible to determine how this has evolved over time.

Removal plans are unclear

ASX listed companies often refer to their intentions to either leave in-situ, fully remove, or partially remove their offshore infrastructure. In many cases, and despite the fact that the full removal of offshore infrastructure is currently expected in Australia, the ability of companies to leave at least some of their infrastructure at sea underpins company restoration provisions.

At present, the full removal of offshore infrastructure is the 'base case' in Australia, although deviations may be pursued in particular circumstances and with regulatory approvals in place. Offshore regulator NOPSEMA has questioned if operators are properly valuing offshore assets on the basis of full removal, and Woodside is currently being investigated by ASIC for not allowing for the full removal of certain infrastructure assets in financial reporting.

¹²⁴ Ibid, p. 129.

¹²⁵ BHP, [Annual Report 2021](#), p. 159.

¹²⁶ Ibid, p. 185.

Whether, and to what extent, companies will be able to leave a portion of their infrastructure 'in-situ' is unknown. However, it is clear that many ASX-listed operators are making strong assumptions about their future ability to do this.

For instance, in its 2022 Annual Report, Cooper Energy notes that 'the ultimate cost of decommissioning and restoration' is partly dependent upon 'the extent of restoration required due to changes to the relevant legal or regulatory requirements and the emergence of new restoration techniques or experience at other fields'.¹²⁷

In its annual reporting, Beach Energy notes that most of its decommissioning work is due to occur 'many years in the future', and as such the 'precise requirements that will have to be met when the removal event occurs are uncertain' – 'technologies and costs are constantly changing, as are political, environmental, safety and public expectations'.¹²⁸ Beach Energy concedes that its cost estimates for decommissioning include assumptions about its ability to prove that leaving assets in place will result in equivalent or better environmental outcomes (compared to removal). It also notes that its cost estimates are underpinned by assumptions around campaign cost savings, being the alignment of decommissioning schedules for multiple assets in the same area so that equipment can be deployed more efficiently, and that 'the future outcome of negotiations with regulators' may impact its ability to realise these savings. If so, decommissioning works 'may need to be expanded or brought forward', and provisions may increase by up to \$270 million.¹²⁹

Table 3 summarises the current removal assumptions underpinning restoration obligations of four ASX-listed companies:

TABLE 3. Provisioning assumptions around offshore infrastructure removal, for four ASX-listed companies	
Beach Energy Ltd (ASX: BPT) ¹³⁰	BPT believes it can gain regulatory approval to leave all major subsea pipelines in-situ, by demonstrating equal or better environmental outcomes.
Cooper Energy Ltd (ASX: COE) ¹³¹	COE plans to leave offshore pipelines made of steel or concrete in-situ, where regulatory approval can be gained. If regulatory approvals were not granted, COE notes this would incur an additional provision of 'approximately \$60 - 100 million'.
Woodside Petroleum Ltd (ASX: WPL) ¹³²	WPL plans to leave 'certain pipelines and infrastructure, parts of offshore platform substructures, and certain subsea infrastructure' in-situ, where regulatory approval can be granted. WPL notes that if it was required to remove 'all, or a substantial portion of' its infrastructure, its provisioning would increase by approximately \$300-\$500 million, plus extra costs 'related to large diameter trunklines between the offshore platforms and onshore plants', for which the company needs to conduct further assessments.
Santos Ltd (ASX: STO) ¹³³	STO assumes that it may only have to partially remove some offshore infrastructure, 'where the Company believes it will result in better environmental, safety and asset integrity outcomes that will be within regulatory requirements'.

¹²⁷ See: Cooper Energy, *Significant Accounting Judgements, Estimates and Assumptions*, [Annual Report 2022](#), p. 121.

¹²⁸ Beach Energy, [Annual Report 2022](#), p. 111.

¹²⁹ *Ibid.*, p. 94.

¹³⁰ *Ibid.*

¹³¹ Cooper Energy, [Annual Report 2022](#), p. 65.

¹³² Woodside, [Annual Report 2021](#), p. 129.

¹³³ Santos, [Annual Report 2021](#), p. 94.

Conclusion

Decommissioning is an evolving, material issue for Australian companies. It embeds a broad range of risk areas, including financial, regulatory, safety, environmental and climate change. As government and regulatory action increases, the preparedness of Australian operators to responsibly manage existing and future decommissioning challenges is in doubt. Also in doubt is the durability of current assumptions underpinning company cost estimates for future decommissioning works. These escalating risks call for improvements to company disclosures, at a minimum.

ACCR sought to bring these issues to the attention of investors in 2022, through the filing of shareholder resolutions with three Australian oil and gas companies: Woodside, Santos and Origin Energy. For Woodside and Santos, the filed resolutions requested that the companies make annual public disclosures about: their infrastructure slated for decommissioning over the medium-term; their provisioning for decommissioning this infrastructure, including the major assumptions underpinning provisioning, and; an analysis of the useful life of company assets using different oil and gas demand scenarios, including the IEA Net Zero by 2050 scenario.¹³⁴ In August, ACCR filed a resolution with Origin Energy, requesting that it integrate a climate sensitivity analysis in the notes to its audited financial statements.¹³⁵ The resolution was withdrawn after Origin agreed to include this information. ACCR will continue to monitor ASX-listed companies' progress on this issue.

¹³⁴ ACCR, 2022, '[Investor briefing: Shareholder Resolutions to Santos Ltd on climate-related lobbying and decommissioning](#)'; '[Investor briefing: Shareholder Resolutions to Woodside Petroleum Ltd on climate-related lobbying and decommissioning](#)'.

¹³⁵ ACCR, 2022, '[ACCR Shareholder Resolutions to Origin Energy Ltd on climate sensitivity analysis](#)'.

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