MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

COVERSHEET

Minister	Hon Dr Megan Woods	**Portfolio**	Energy and Resources
Title of Cabinet paper	Additional proposals for the Crown Minerals (Decommissioning and Other Matters) Amendment Bill and Tui project update	**Date to be published**	23 June 2021

List of documents that have been proactively released		
Date	**Title**	**Author**
7 April 2021	*Additional proposals for the Crown Minerals (Decommissioning and Other Matters) Amendment Bill and Tui project update*	*Office of the Minister of Energy and Resources*
7 April 2021	*Residual liability for petroleum wells and infrastructure following decommissioning*	*MBIE*
7 April 2021	*Impact Summary: Additional options to address limitations with petroleum infrastructure decommissioning regime under the Crown Minerals Act 1991*	*MBIE*
7 April 2021	*Additional proposals for the Crown Minerals (Decommissioning and Other Matters) Amendment Bill and Tui project update – Minute of decision*	*Cabinet Office*

Information redacted **YES / NO** *[select one]*

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Some information has been withheld for the reasons of Confidentiality, Free and Frank advice, Legal professional privilege and commercial sensitivity.

Coversheet: Residual liability for petroleum wells and infrastructure following decommissioning

Advising agencies	Ministry of Business, Innovation and Employment
Decision sought	Amend the Crown Minerals Act 1991 (CMA) to enable the regulator to require payments from permit/licence holders where there is a risk of failure to wells that have been plugged and abandoned and infrastructure left in situ, after decommissioning has completed.
Proposing Ministers	Hon Dr Megan Woods, Minister of Energy and Resources

Summary: Problem and Proposed Approach

Problem Definition

What problem or opportunity does this proposal seek to address? Why is Government intervention required?

New Zealand's petroleum regulatory regime is based on a polluter-pays principle, whereby those who have benefitted most from environmentally harmful activities bear the cost of any associated remediation and clean-up activities. However, this principle is currently only explicit in relation to the lifetime of a petroleum permit or licence.[1] The Crown Minerals (Decommissioning and Other Matters) Bill (the Bill) will provide an explicit obligation on petroleum permit and licence holders to plug and abandon petroleum wells and decommission any infrastructure left in situ, after production has ceased. The Bill is currently silent on the responsibility for any failure to wells and infrastructure (i.e. residual liability) after decommissioning has completed. Even if regulators have accepted that wells have been satisfactorily plugged and abandoned and infrastructure properly decommissioned, there remains a risk that failures will occur to wells and infrastructure over the years and decades ahead. There are no market incentives for petroleum permit and licence holders to factor this residual liability into their economic decision-making. The absence of any market or regulatory incentives for permit/licence holders to factor residual liability into economic decision-making may give rise to inefficient economic outcomes and negative environmental externalities. It also raises questions of equity when third parties, including the Crown, are exposed to the risk and cost of residual liability arising from decommissioned wells and infrastructure which affects wider community welfare.

[1] This document refers to permit/licence holders, because Cabinet agreed that changes to the regulation of decommissioning be extended to petroleum licences. This would replace and modernise the requirements for licences under the Petroleum Act 1937 and align the decommissioning obligations under both the CMA and the Petroleum Act 1937, ensuring clarity and consistency.

Summary of Preferred Option or Conclusion (if no preferred option)

How will the agency's preferred approach work to bring about the desired change? Why is this the preferred option? Why is it feasible? Is the preferred approach likely to be reflected in the Cabinet paper?

We recommend introducing an additional power in the Bill to enable the regulator to collect payments from petroleum permit/licence holders where a residual risk remains from failure of their decommissioned wells and infrastructure. These payments would be assessed on a case-by-case basis depending on the residual risk and cost of well and infrastructure failure associated with an individual permit/licence holder's decommissioned fields. These payments could be held in a central government account and used to contribute to the costs of any remediation and clean-up activities related to well and infrastructure failure after decommissioning has completed.

We consider this option would be effective to incentivise permit/licence holders to factor in the full long-term cost of residual liability into economic decision-making, creating more economically efficient outcomes. The option would also limit third party exposure to the cost of well and infrastructure failure after decommissioning has completed and ensure that those who have benefitted the most from petroleum production, over many years, are responsible for residual liability. This aligns with the polluter-pays principle on which the petroleum regulatory regime is based.

The details on the size of the payment, when and how it is collected and administered will be consulted on as part of the design of the regulations. Cabinet approval will be sought on the preferred option for the regulations following consultation.

Section B: Summary Impacts: Benefits and costs

Who are the main expected beneficiaries and what is the nature of the expected benefit?

The main financial beneficiary of the proposed regulatory change is the Crown (and taxpayers). Other key financial beneficiaries are:

- Landowners on whose land petroleum mining has taken place, who are currently liable under the Resource Management Act 1991 (the RMA) for remediation to wells and infrastructure after decommissioning in the event: a permit or licence holder no longer exists; and when the local council has not imposed any resource consent conditions holding permit holders accountable for ongoing monitoring and remediation after decommissioning has completed;
- Local government agencies, including local and regional councils that regulate environmental effects of petroleum facilities onshore and in New Zealand's territorial waters (within 12 nm of the coast); and
- Environmental agencies including the Environmental Protection Authority (EPA) that regulate the environmental effects in the Exclusive Economic Zone (EEZ) beyond 12 nm of the coast;
- WorkSafe New Zealand that regulates health and safety standards including the High Hazards Unit (HHU).

Other key communities who potentially gain from a clear regime for residual liability after decommissioning are:

- The agricultural community, vulnerable to hydrocarbon leakage onshore; and
- Commercial marine users, such as the commercial shipping and the fisheries community vulnerable to: snagging fishing nets on decommissioned offshore installations left in situ; and the degradation of offshore decommissioned infrastructure and hydrocarbon leaks from wells left in situ into the ocean.

The wellbeing of the general public and future generations will also be enhanced by establishing clear responsibility for the remediation of decommissioned wells and infrastructure failure into the future. Local iwi, particularly in the Taranaki region, will also gain from onshore and offshore well remediation. Iwi are particularly sensitive to the pollution of waterways.

The proposed regulatory change may also encourage operators to ensure decommissioning is completed in a way that mitigates the risk of failure after decommissioning has completed, especially in terms of the risk from any infrastructure left in situ.

Where do the costs fall?

The costs of the proposed regulatory change will fall on current and future petroleum permit/licence holders. There will be a small-to-medium level increase in costs for MBIE's regulatory function (New Zealand Petroleum and Minerals) in terms of:

- Resources and expertise for determining the level of the residual liability payment to be collected; and
- Administering the proposed fund.

What are the likely risks and unintended impacts? How significant are they and how will they be minimised or mitigated?

There is a risk that permit holders cannot afford to pay the amount required to cover the residual risk associated with their decommissioned well(s) and infrastructure left in situ. In this case, an unintended impact could potentially be that permit holders voluntarily liquidate, exacerbating the problem that MBIE is seeking to address.

We intend to mitigate this risk through the development of the regulations, by:

- Consulting (including with industry) on the appropriate risk modelling that will inform the regulator's assessment of the quantum of risks and costs involved;
- Providing for flexibility on when and how permit and licence holders are charged. For example, over the remaining lifetime of the permit or in a lump sum near the time of decommissioning for financially stronger permit/licence holders; and
- Considering options to spread the costs of any post-decommissioning remediation across permit/licence holders. For example, through the mechanism of a pooled fund.

We do not consider that any risk of unintended consequences is sufficient to warrant a different regulatory design or form of government regulation.

Section C: Evidence certainty and quality assurance

Agency rating of evidence certainty?

How confident are you of the evidence base?

MBIE's Geoscience Information Service holds very limited New Zealand-sourced data on the likelihood of failure to wells and infrastructure left in situ after decommissioning. In New Zealand many fields are expected to be decommissioned over the next 10-15 years. However, there is little experience with fields that have been decommissioned, and to the satisfaction of regulatory bodies.

Globally only a handful of petroleum wells have been decommissioned to standards synonymous with international best practice, and this has only occurred in the past 15 or so years. There is no robust international evidence that we are aware of, as to the risks of failure after decommissioning has been completed to a standard accepted by regulatory bodies. While there is information about remediation costs from prior eras, before decommissioning was carried out to what is now accepted as international best practice, enhanced decommissioning requirements mean that the risk of failure is expected to be reduced.

We are in discussion with oil and gas sector regulators overseas who have significantly more experience with decommissioning petroleum fields. From this engagement, we understand that the risk of wells failing where decommissioning is performed to an acceptable standard, is low, but can increase over time and the impact of failure can be high. This risk also extends to the failure of infrastructure left in situ.

To be completed by quality assurers:

Quality Assurance Reviewing Agency:
MBIE's Regulatory Impact Analysis Review Panel (RIARP) has reviewed the Impact Summary "Residual liability for petroleum wells and infrastructure following decommissioning" produced by the MBIE and dated 30 March 2021.
Quality Assurance Assessment:
The review panel considers that the information and analysis summarised in the Impact Summary meets the criteria necessary for Ministers to make informed decisions on the proposals in this paper.
Reviewer Comments and Recommendations:
The review panel has noted that there is a limited evidence base and there has been limited consultation undertaken on the specific issue and the options for addressing it to date. We have therefore considered whether it is appropriate for the purposes of the quality assurance criteria that the range of options be narrowed at this stage in the process, or whether an analysis based on further consultation would be advised before Cabinet policy decisions are taken. A key issue is whether the current level of consultation creates a significant risk that that (a) the issue is not fully and accurately identified, (b) the full range of options have not been identified and explored to address the issue, or (c) the impacts of those options have not been fully identified. We are satisfied with the current level of consultation, on the basis that the resulting regulatory powers will apply to permit/licence holders on a case-by-case basis, with a full consultation process around the further design and application of the powers. An important assumption of our quality assurance assessment is that sufficient flexibility is maintained in the proposed regime to avoid prematurely narrowing the potential means available to regulators and permit/licence holders to address residual risk.

Impact Statement: Residual liability for petroleum wells and infrastructure following decommissioning

Section 1: General information

1.1 Purpose

The Ministry of Business Innovation and Employment (MBIE) is solely responsible for the analysis and advice set out in this Regulatory Impact Statement, except as otherwise explicitly indicated. This analysis and advice has been produced for the purpose of informing policy decisions to be taken by Cabinet.

1.2 Key Limitations or Constraints on Analysis

Constraints on scope of the proposal

This Regulatory Impact Assessment (RIA) supports the inclusion of additional regulatory powers for the Crown Minerals (Decommissioning and Other Matters) Bill (the Bill). The scope covers the residual liability of current and future petroleum permit/licence holders for the failure of wells and infrastructure left in situ after decommissioning has completed.[i] The detailed design that will implement the Bill will subsequently be developed in Regulations.

The scope is limited to funding the remediation and environmental clean-up of wells and infrastructure left in situ after decommissioning has completed.[2] The ongoing, routine monitoring of wells and related infrastructure left in situ after decommissioning is the responsibility of the Ministry for the Environment (MfE) and its regulatory agencies, and outside the scope of the proposal.

This RIA only relates to current and future permit holders that are yet to decommission their petroleum wells and infrastructure.

Limitations on evidence of the problem

The key limitations in the evidence supporting the analysis and regulatory proposal are lack of certainty about the risk that wells and related infrastructure pose after decommissioning has completed, and the associated costs involved. All plugged and abandoned wells pose a small level of residual health, safety and environmental risk due to the possibility of failure of barriers. Each instance of well and infrastructure failure would need to be assessed on a case-by-case basis for environmental and cost impact. New Zealand Petroleum and Minerals (NZP&M) have attempted to quantify the likelihood of, and risk associated with an onshore well failing in the future that has been plugged and abandoned. However, as there have only been a few instances of this occurring in New Zealand, and no instances in relation to offshore petroleum fields which are yet to be decommissioned, we have been unable to accurately assess the likely risks and costs involved.

Globally only a handful of petroleum wells have been decommissioned to standards synonymous with international best practice, and this has only occurred in the past 15 or so years. There is no

[2] Liability for wells and infrastructure that have already been abandoned or decommissioned falls outside the scope of this proposal.

robust international evidence that we are aware of, as to the risks of failure after decommissioning has been completed to a standard accepted by regulatory bodies. While there is information about remediation costs from prior eras, before decommissioning was carried out to what is now accepted as international best practice, enhanced decommissioning requirements mean that the risk of failure is expected to be reduced.

We are in discussion with oil and gas sector regulators overseas who have significantly more experience with decommissioning petroleum fields. From this engagement, we understand that the risk of wells failing where decommissioning is performed to an acceptable standard, is low, but can increase over time and the impact of failure can be high. This risk also extends to the failure of infrastructure left in situ.

Limitations on consultation

Although we consulted on options for strengthening decommissioning obligations in a discussion document released in December 2019, we have not consulted on the policy approach and options identified in this RIA. However, the policy approach adopted in this RIA is based on existing principles that form the basis of New Zealand's petroleum regulatory regime, including the polluter-pays principle that has been used to strengthen the regulatory regime for decommissioning. The options developed in this RIA have also been informed by the 2017 discussion document on a related subject where stakeholders provided views on managing third party risk exposure from onshore petroleum wells. We note however, that the scope and objective of that consultation was different to the current RIA: the consultation was limited to onshore wells; also included historic wells that had been abandoned (outside the scope of this current RIA); and had the main objective of limiting third party risk arising from current, future and historic wells.

We propose to consult on the detailed design features of the regulations that will implement the legislative provisions to strengthen decommissioning obligations. These will be subject to future Cabinet decisions, and regulatory impact analysis. Consultation will include inputs into the risk modelling that will determine how the payment is calculated, and when it is collected and how it is held. As part of this consultation we will be consulting with industry, other experienced overseas regulators, and experts on the risks of failure to wells and infrastructure left in situ after decommissioning has been completed.

1.3 Responsible Manager (signature and date):

Michelle Schulz

Manager, Resource Markets Policy

Energy and Resource Markets

MBIE

30 March 2020

Section 2: Problem definition and objectives

2.1 What is the current state within which action is proposed?

Petroleum industry context

Transition to a low emissions future

In 2018, the Government announced its decision not to grant any new offshore petroleum prospecting, exploration or mining permits. The decision reflected the Government's position of taking leadership to act on climate change and its flow on impacts, towards a 2050 target of net-zero emissions. The Government's long-term vision for the petroleum and minerals sectors in New Zealand to contribute to the transition to a low emissions future and a productive, sustainable and inclusive economy puts further focus on the sector's financial preparedness for decommissioning activities.

Decommissioning of many oil and gas fields will occur over the next decade

The New Zealand petroleum sector was built on the back of early exploration and development dating back to the 1950s. As the sector continues to mature, an increasing number of petroleum fields may be nearing the end of their productive lives over the next decade, and will require decommissioning. This is consistent with global trends where an increasing number of petroleum fields are nearing depletion, following decades of production.

Decommissioning is an inevitable activity in the lifetime of an oil and gas project, and is a complex and costly exercise. Once decommissioning is complete, there remains an enduring but low risk (as currently understood) of the integrity of properly plugged and abandoned wells being compromised, and a risk of infrastructure left in situ degrading and failing.

There are currently 27 active petroleum mining permits and licences in New Zealand. Five of these, including the soon to be decommissioned Tui field, are offshore, with the remaining 22 operations based onshore. These operations range in scale from the large, multi-generational offshore Maui field, to small onshore oil fields such as Cheal East.

Pattern of large producers selling to smaller private equity firms

Recent experience in New Zealand and overseas has been that the ownership of late-life petroleum assets has seen a consolidation to fewer permit participants, with some mature fields being acquired by smaller private equity firms. Free and frank opinions

The situation with Tamarind Taranaki Ltd's (Tamarind) liquidation in 2019 is an example of a smaller, private equity company buying out a petroleum field near the end of its productive life and failing to meets its obligations. The Crown, as provider of last resort, has stepped in to fund decommissioning in order to protect the marine environment at an estimated cost of $155 million. Wider legislative amendments will help ensure that all permit and licence holders take responsibility for decommissioning their wells and infrastructure and also any remaining residual liability of decommissioned wells and infrastructure left in situ.

Most companies holding permits are unlikely to exist after decommissioning

Most petroleum permits and licences are held by limited liability subsidiary companies and joint ventures that are unlikely to exist once decommissioning has been accepted and the permit relinquished. All 27 permits and licences in New Zealand are held by limited liability subsidiaries with the exception of the OMV field that is held by a special purpose vehicle. Most permits/licences are also held by multiple participants. These subsidiaries are effectively shell companies, with assets limited to that operation, and which typically cease to exist once the permit has been relinquished. The use of limited liability subsidiary companies is common practice in the oil and gas sector to manage business risks. For example the Tamarind bought the offshore Tui filed in 2017 as a limited liability subsidiary.

Social context

Social licence for petroleum permit and licence holders exists when society trusts that they are conducting themselves in a legitimate, accountable, and socially responsible way. More New Zealanders are becoming aware of the impact fossil fuels and mining can have on the environment, as well as the interests of Māori have in protecting certain land from the effects of mining.

With many petroleum fields, onshore and offshore, nearing their end-of-life cycle and growing concerns about the impact of fossil fuel consumption, the petroleum decommissioning activities are expected to increase over the coming decade.

There are a number of legislative reviews underway such as those in New Zealand and Australia with the objective to better guide and control decommissioning obligations and responsibilities, including for the remediation and clean-up of failures of wells and infrastructure left in situ after decommissioning (i.e. **residual liability**). Other more mature and legally sophisticated regimes, such as those in the United Kingdom and Norway, are already advanced in imposing detailed regimes to manage decommissioning obligations and responsibilities, including residual liability.

Clarification of residual liability for wells and infrastructure that have been decommissioned, in a manner that ensures industry responsibility, will enhance social licence for industry to continue to operate. Iwi have also expressed particular concern about the potential for any toxic substances entering waterways.

2.2 What regulatory system(s) are already in place?

The current settings in place to manage residual liability are fragmented

The Crown Minerals Act 1991 (CMA) is currently silent on legal obligations for holding permit/licence holders liable for residual liability. Petroleum permits issued under the CMA are primarily designed to manage the prospecting, exploration and mining of the resource, and provide a fair financial return for the Crown as well as for permit/licence holders. Permits are centred on a minimum work programme approach and general conditions of the permit. The regulatory system only imposes liability on permit/licence holders that arose during the life of the permit and within 6 months of the resource ceasing to be active. This means that the regulatory system does not remove the residual risk of well and infrastructure failure.[3]

[3] This is consistent with other sectors in the economy. Although the Resource Management Act 1991 has a polluter-pays principle, this liability only exists during the duration of the life of the consent. For example, resource consents for landfills allow for the discharge of substances for the term of the consent during which time the consent holder is liable. These

There are different regulatory regimes that apply to residual liability for petroleum fields depending on whether they are located:

- Onshore
- Offshore within New Zealand's territorial waters
- Offshore within the Exclusive Economic Zone (EEZ)

Onshore wells and infrastructure

Permits and licences are typically held by limited subsidiary companies that are disestablished once an onshore well has been abandoned and the decommissioning of infrastructure is signed off by the High Hazards Unit of WorkSafe New Zealand and the local and regional councils.[4]

For onshore wells, in the absence of a permit/licence holder, and any relevant conditions in a resource consent, the Resource Management Act 1991 (RMA) places responsibility on landowners. Local and regional authorities can bring enforcement proceedings if a breach of a resource consent has occurred or in more general circumstances where there is a concern that the provisions of the RMA are being breached and/or there is likely to be an adverse effect on the environment. In the latter case, local authorities can rely on s314(1)(da) of the RMA in requiring a landowner to address these adverse effects. The Environment Court provides for remediation to be made against a landowner or occupier even if they had no part in creating the adverse effects. It is not always clear that the landowner is aware or has the financial means to carry out the remediation work to the standard required.[5]

Past experience indicates that in practice, the costs of remediation and cleaning up contaminated land tends to falls on the public including councils and the Crown through MfE's Contaminated Site Remediation Fund (CSRF).[6] MfE has a priority list of 10 contaminated sites and the CSRF is currently over-subscribed. MfE has also informed us that it is unlikely a landowner could claim if the well had been plugged and abandoned to the standard accepted by regulators. In this way, any recourse to the CSRF may fall outside the scope of this RIA (which only covers residual liability arising from failures to wells and infrastructure where decommissioning has been successfully completed and accepted by relevant regulators).

The Crown is therefore likely to be a provider of last resort to address environmental effects involved with any failures to onshore wells and the resulting contamination.

Offshore wells and infrastructure

For offshore wells:

- local and or regional councils are responsible for environmental effects of oil and gas fields in New Zealand's territorial waters;

consents can extend beyond the operational life of the landfill, but once a site is determined to no longer need this consent and the surrender of a consent is accepted, there is no liability in perpetuity.

[4] The High Hazards Unit forms part of WorkSafe New Zealand is dedicated to the petroleum products and mining industries.

[5] Land owners and occupiers are usually compensated for activities a permit holder undertakes on their land, or (where activity pre-dated the current owners) are likely to have enjoyed a lower purchase price in light of the well's presence on the land. However, this is not always the case.

[6] The Contaminated Site Remediation Fund supports regional councils, unitary authorities and territorial authorities fulfil their obligations for contaminated land management under the RMA. Funding is provided for by the Ministry for the Environment (MfE).

- the Environmental Protection Authority (EPA) is responsible for oil and gas fields that are more than 12 nm from the coastline, under the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (EEZ Act); and
- Maritime New Zealand is responsible for ensuring operators have emergency response plans if there is a leak or spill into the sea.

However, these current settings do not address residual liability. As indicated above, local and regional councils have traditionally not included requirements for residual liability as part of the permit or licence conditions.

The Environmental Protection Authority's (EPA) regulations for decommissioning fields in the EEZ enable it to impose a condition on a marine consent, requiring the consent holder to provide a bond for the performance of any one or more conditions of the permit. However, this only relates to the monitoring of wells and infrastructure post decommissioning and does not cover remediation. The residual liability for the failure for wells and infrastructure left in situ under the EEZ Act would fall to the owner of the infrastructure but, after a permit or licence had been surrendered (following decommissioning), liability is likely to fall to the Crown.

New Zealand's marine environment is also protected by the Maritime Transport Act 1994 and the marine protection rules that come under that Act. Marine Protection Rules Part 102 requires offshore installations operating in New Zealand to hold a certificate of insurance at an appropriate level of liability cover for oil pollution damage. However, this insurance policy would be terminated upon plugging and abandoning the well(s). The Maritime Transport Act 1994 also requires Maritime New Zealand to establish and administer an Oil Pollution Fund (OPF). This is used amongst other things to cover the costs of the Oil Pollution Advisory Committee and of investigating, controlling, and cleaning up any marine oil spill. The OPL applies to all offshore oil installations, exploration wells and oil pipelines. Offshore petroleum producers pay into the OPF during the lifetime of the field but not after decommissioning has taken place. The OPF therefore does not cover liability for any failures to offshore wells after decommissioning has occurred.

International Law

Normally, the tort law of the host country determines residual liability. Most countries' tort laws provide that entities or persons who own property at the time of its shutting down will retain the residual liability. Some jurisdictions, such as the United Kingdom and Norway, have imbedded this in their statutory interpretation of their regulations.[7]

Government is strengthening the decommissioning liabilities for industry

Crown Minerals (Decommissioning and Other Matters) Amendment Bill

There are currently no provisions in the CMA that regulate decommissioning. In response to the Crown having to fund and undertake the decommissioning of the Tui Oil field, Cabinet agreed in June 2020, to strengthen the current regulatory settings for petroleum decommissioning infrastructure under the CMA. This strengthening is being carried out via a package of regulatory proposals that will:[8]

[7] Tim Martin adr.governance.inc, Alberta, Canada, Decommissioning of International Petroleum Facilities: Evolving Standards and Key Issues, p. 10

[8] The Cabinet paper is available here: https://www.mbie.govt.nz/dmsdocument/11617-regulatory-framework-for-decommissioning-petroleum-infrastructure-and-enforcement-strengthening-the-crown-minerals-act-regime-proactiverelease-pdf and the Regulatory Impact Assessment here: The RIA is available here: https://www.mbie.govt.nz/dmsdocument/11619-regulation-governing-legal-and-financial-responsibility-for-

- impose an explicit statutory obligation on all current and future petroleum permit and licence holders to carry out and fund decommissioning, with penalties for the failure to do so;
- enable the regulator to periodically assess permit and licence holders' financial capability to meet their decommissioning obligations, based on sufficiently detailed and up to date planning and financial information disclosures;
- enable the regulator to require permit and licence holders to establish and provide adequate financial security for decommissioning purposes;
- provide the regulator with additional enforcement powers to: accept enforceable undertakings, issue compliance notices, and authorise the development of an infringement offence scheme; and
- make some minor and technical amendments to support effective implementation of the above proposals and improve the general administration of the regulatory regime.

The overall aim of these proposals is to mitigate the risk to the Crown or other third party to have to fund and carry out decommissioning activities. The Crown Minerals (Decommissioning and Other Matters) Amendment (the Bill) is currently under development.

Strengthening the Decommissioning provisions of the CMA is part of a wider review (Tranche Two) that is aiming to ensure the CMA regime remains fit-for-purpose. The Terms of Reference for Tranche Two of the CMA Review is focussing on the following objectives:

- New Zealand's petroleum and minerals sectors should contribute to the country's productive, sustainable and inclusive economy;
- Risks and downsides associated with the sector need to be appropriately managed;
- The sector needs to be governed by a regulatory regime that is clear, coherent and fair.

The Bill is currently silent on residual liability. In November 2020, the Minister of Energy and Resources also agreed to undertake work to consider options for residual liability for decommissioned petroleum fields.

Decommissioning Regulations for oil and gas fields in the EEZ

MfE is also undertaking work-streams relating to strengthening environmental oversight of the decommissioning process for the four oil and gas fields in New Zealand's EEZ, all located offshore Taranaki, and regulated by the EPA.

The objective of these regulations is to ensure that offshore structures, installations, and pipelines are decommissioned in a way that is consistent with the purpose of the EEZ Act and provides for more meaningful engagement with iwi, the public and government in the process.

MfE's exposure draft of the regulations covers arrangements to **manage** the environmental effects of decommissioning, including post decommissioning arrangements. When reaching a view on the best practicable environmental option and before determining whether to accept a decommissioning plan from a permit/licence holder, the EPA must consult with other relevant marine management agencies and iwi authorities.

Review of the Resource Management Act 1991

MfE is currently carrying out a review of the Resource Management Act 1991 (RMA). MfE's overall responsibility for policy relating to environmental effects will be covered in a new piece of legislation:

decommissioning-petroleum-infrastructure-and-enforcement-tools-under-the-crown-minerals-act-1991-proactiverelease-pdf.

Natural and Built Environments Act. The Act will introduce legislative change to help ensure adverse effects of activities on the environment are avoided, remedied or mitigated.

Ministry for the Environment's wider review of compliance, monitoring and enforcement

MfE is also working with regional councils and territorial authorities to address whether they have capacity and sufficient statutory ability to compel nationally significant, industrial operations to implement robust site remediation plans. New Zealand is facing a changing industrial landscape where several large industrial operations are nearing end-of-life after 50 or more years of operation. Their decommissioning is likely to require complex, challenging and costly remediation. MfE is seeking to avoid a repeat of problems that have occurred with the costs and responsibilities for remediation falling on central or local government.

MfE's work follows the release of the Hazardous Systems Compliance System Funding Report 2020 which described New Zealand's environmental management tool box as being "light" on effective cost recovery mechanisms. The report recommended that when dealing with hazardous substances and waste, specific legislative provision should exist for the clean-up and cost recovery of contaminated sites.

2.3 What is the policy problem or opportunity?

Properly decommissioned petroleum wells and infrastructure may still carry risk

A properly plugged and abandoned well and related infrastructure left in situ after decommissioning may still carry a risk of undesirable environmental outcomes or a risk to human health and safety, arising at some point in the future. Remediating wells and related infrastructure left in situ may involve addressing the following risks:

- Surface water contamination onshore or offshore, from minerals, bacteria and drilling waste
- Leakage from aquafers to the surface
- Contamination of groundwater
- Hydrocarbons leaking to surface or into aquafers
- Hydrocarbons building up pressure beneath the seal which may result in a blow-out
- Sub-surface infrastructure that has become detached from the seabed
- Damage following a natural disaster such as an earthquake.

The environmental effects and health and safety concerns arising from these failures can be high and widespread. Remediation of wells also includes the clean-up of these negative environmental hazards and effects.

The status quo is sub-optimal

An economically inefficient externality is created

There is no market incentive for permit and licence holders to factor in negative externalities posed by residual liability into their petroleum producing and decommissioning activities after decommissioning has completed and the permit/licence has ended or been relinquished. The lack of any obligation for residual liability creates a potential economic inefficient externality whereby:

- permit/licence holders do not take the residual costs into account in deciding whether it is economically efficient to carry out petroleum producing and decommissioning activities; and,

- permit holders do not have sufficient incentives to minimise the risk of failure and the cost of remediation.

The outcome is a market for petroleum producing activities that is not working efficiently as residual liability is not factored into economic decision-making.

There are equity issues arising in holding third parties responsible for residual liability

Although New Zealand's petroleum regulatory regime operates on a polluter-pays basis, there is no mechanism to require permit and licence holders to contribute financially to the residual liability of any failures to wells and infrastructure after decommissioning has completed. Third parties, including the Crown, are currently financially exposed from the failure to wells and infrastructure left in situ. For onshore wells, landowners are exposed in the absence of an accountable permit/licence holder when the local council has not provided for residual liability as a condition in their consents. These landowners tend to be local farmers who may not always have benefitted from petroleum producing activities and/or be unaware of their liability.

In practice, the Crown or government regulatory agencies are likely to need to pick up responsibility for any failures given the urgency of any failure, and the accompanying environmental effects and health and safety concerns. This raises equity concerns where those who have benefitted most from petroleum producing activities, over many years, are not accountable for residual liability and negative impacts on environmental and health and safety effects.

Most permit holders are unlikely to exist after decommissioning

Most of New Zealand's petroleum fields are held by limited liability companies that exist solely for the purposes of the permit and comprise multiple participants i.e. shell companies. Once the permit has been relinquished, the company is often disestablished. In this situation, the residual liability for any failures in years to come, can be extremely difficult to establish, even in the context of a legislative change to hold participants of former permits liable for decommissioned wells and infrastructure.

2.4 What do stakeholders think about the problem?

Stakeholder consultation

Key stakeholders include:

- the owners and participants of the 27 petroleum permit and licence holders, local and regional councils
- local iwi especially in the Taranaki region where most onshore and offshore wells are located
- landowners on whose land wells and infrastructure are present
- local and regional councils responsible for environmental effects for onshore and offshore petroleum fields
- the Ministry for the Environment (MfE), responsible for policy regarding monitoring of environmental effect and its administering agencies including local and regional councils and the Environmental Protection Authority (EPA)
- environmental groups.

In 2017, MBIE released a discussion document on Managing Third Party Risk Exposure from Onshore Petroleum Wells (the 2017 discussion document).[9] Stakeholder views submitted during the course of that consultation have informed the options considered in this RIA. We note however, that

[9] https://www.mbie.govt.nz/have-your-say/managing-financial-risk-from-current-and-future-wells/

the scope and objective of that consultation was different to the current RIA. The consultation was limited to onshore wells, also included historic wells that had been abandoned (outside the scope of this current RIA) and had the main objective of limiting third party risk arising from current, future and historic wells.

We propose to consult on the detailed design features of the regulations that will implement the legislative provisions to strengthen decommissioning obligations. These will be subject to future Cabinet decisions, and regulatory impact analysis.

Consultation will include inputs into the risk modelling that will determine how the payment is calculated, and when it is collected and how it is held. As part of this consultation we will be consulting with industry, other experienced overseas regulators and experts on the risks of failure to wells and infrastructure left in situ after decommissioning has been completed.

Consultation on two options identified in the 2017 discussion document to manage third party liability for onshore wells are relevant to the current RIA: the issuance of non-statutory guidance on existing financial assurance mechanisms and, establishing a levy to be pooled and used to cover both plugging and abandonment and any future remediation of wells.

MBIE received five submissions on the 2017 discussion document, these were from:

- Petroleum Exploration and Production Association New Zealand (PEPANZ);
- Greymouth Petroleum (Greymouth);
- Todd Energy Limited (Todd);
- Taranaki Regional Council (TRC); and
- Federated Farmers of New Zealand (Federated Farmers).

The non-industry submitters preferred the option of levying industry and pooling these funds as they felt it was the only option that provided protection for landowners after the permit holder had ceased operation, and felt that it was important that permit holders contribute to manage the risk to third parties.

The industry submitters opposed the pooled-levy option as they considered it was not equitable to collectivise risk, they considered that costs to industry of the proposal exceeded the scale of the issue and they were concerned it would deter investment.[10]

MBIE also commissioned the BTW company to provide an independent assessment of the options proposed in the discussion document. BTW concluded that the most appropriate options to implement would be a levied fund and a bond. After implementing these interventions, they advised creating non-statutory guidance. BTW considered the levy should be based on the percentage of production royalties and the fund should be capped at a prescribed level.

A majority of submitters supported the provision of non-statutory guidance on options to mitigate third party liability for onshore wells, as secondary option, to be published after MBIE has determined how to mitigate the risk. Some however, noted that publishing guidance did not mitigate third party risk relative to the status quo. Those who opposed it did so because they considered it didn't provide enough certainty and felt that clarification was required on the nature of the land owner's financial exposure.

In December 2019, MBIE released a Discussion Document to consult on options for strengthening the regulatory settings for decommissioning. Due to the timing of policy development work, we have

not consulted publicly on the proposals in this RIA to be included in the Bill. This is due to the timing of the policy work (the Bill is already being drafted). We will be running a consultation on the options for the design of the regulations. Stakeholders will have a further opportunity to comment on these through the Select Committee process.

Iwi Consultation

We have engaged with iwi in Taranaki on the policy intent of mitigating the risk to the Crown of decommissioning in developing the policy. We propose sending a summary of the provisions in the Bill to iwi in Taranaki and other affected iwi. This will provide iwi with an opportunity to engage with the Bill ahead of Select Committee process.

2.5 What are the objectives sought in relation to the identified problem?

We are currently seeking to incentivise petroleum permit/licence holders to take residual risk into account when making economic decisions regarding petroleum producing activities in a way that:

- minimises the risk and cost of any failure to wells and infrastructure after decommissioning has completed; and,
- promotes economically efficient and equitable outcomes.

Section 3: Option identification

3.1 What options are available to address the problem?

New Zealand's environmental law follows a polluter-pays principle whereby those who have benefitted most from the potentially environmentally hazardous activity, should pay for the risk involved with any failures. The approach is also consistent with the Parliamentary Commissioner for the Environment's report 'Drilling for oil and gas in New Zealand: Environmental oversight and regulation' 2014 that recommended the Minister of Energy and Resources '*"ensure that the oil and gas industry bears* This *the cost of ongoing monitoring of abandoned oil and gas wells and the remediation of future leaks, by, for example, the imposition of an annual levy."* [11]

This polluter-pays approach is consistent with principles in the Crown Minerals (Decommissioning and Other Matters) Bill where permit and licence holders will have a statutory obligation to fund and carry out decommissioning on the basis that they have benefitted most from petroleum activities.

The following two options have been identified as preferred for limiting the risk to the Crown of issues arising from residual liability. We note that these options have not been informed by consultation given timing constraints. The design of the options however, have benefitted from consultation that took place in 2019 on the proposal to strengthen petroleum permit and licence holders' decommissioning obligation and MBIE's 2017 discussion document on managing third

[10] It should be noted that this option included current and future permit holders paying for remediation of historic wells which is outside the scope of this consultation. It also included collectivising levies to pay for decommissioning which is also outside the scope of this RIA.

[11] Parliamentary Commissioner for the Environment, 'Drilling for oil and gas in New Zealand: Environmental oversight and regulation,' 2014

party liability for onshore wells where similar options were explored. Consultation will occur during the Select Committee process and we will consult on the detailed design features of the regulations that will implement legislative provisions related to residual liability.

Option 1: Bond provided by permit and licence holders

Under this option, a provision would be added to the Bill making permit/licence holders liable for the risk of failure to wells and infrastructure left in situ after decommissioning has completed. In order to fulfil their obligation to contribute to residual liability, permit/licence holders would be required to provide a bond, under the CMA, for any future remediation work required on a case-by-case basis (for example, depending on the level of risk attached to well type, and if any infrastructure is left in situ). The length of the bond could be for around 10 years given the practicality of holding a bond beyond this period decreases (together with its value) and the expectation it will be returned to its owner. Permit/licence holders would be responsible for remediation and would forfeit the bond, should they fail to fulfil their obligations. The bond would be held individually (not collectivised) and only for use in relation to any remediation required to the provider's decommissioned petroleum filed.

At the time of decommissioning, permit/licence holders would be required to provide an acceptable plan to the relevant regulator for monitoring and maintenance. Permit/licence holders would be responsible for both monitoring and any remediation work required following decommissioning.

Following the end of the term of the bond, the Crown would take responsibility for costs involved with remediation of wells and any infrastructure left in situ.

Option 2: Payments held in a pooled fund

Under this option, a provision would be added to the Bill making permit/licence holders liable for the risk of failure to wells and infrastructure left in situ after decommissioning has completed. Industry would be required to provide payments (i.e. cash funds), calculated on a case-by-case basis, to cover the risk of any remediation work required to wells and infrastructure left in situ following decommissioning. The payments would be placed into a pooled fund in order to spread the risk of failure across multiple fields and thereby decrease the amount required from each permit/licence holder. Given the quantum difference between the risk for offshore (as compared to onshore wells and infrastructure), the funds could be ring-fenced for onshore and offshore fields to avoid any potential for cross subsidisation of significantly different risk profiles.

The fund could be accessed, at the discretion of the Minister of Energy and Resources, by the government agency best placed to take responsibility for remediating the environmental effects and/or health and safety concerns created by the failure of wells and/or related infrastructure. The fund could cover:

- remediation of wells and related infrastructure;
- environmental effects and health and safety concerns created by the failure; and
- out-of-cycle monitoring of wells and infrastructure to investigate any suspected failure.

Responsibility for routine monitoring of wells and infrastructure will remain with MfE and its regulatory agencies.

Non regulatory options

Given residual liability is a cost for industry, and devoid of profit incentives, we have discounted any non-regulatory model for shifting the responsibility of residual liability to industry. Non regulatory options include:

- those based on trust and social licence to continue to operate in New Zealand;
- the use of government royalties to pay into a central fund for residual liability; and,
- issuing non statutory guidance to clarify responsibility for residual liability for onshore wells.

We have assessed the social licence option as being ineffective given the mature state of New Zealand's oil and gas fields and Government's policy not to grant further offshore exploration permits. We do not consider there are sufficient incentives, such as the award of future permits, to motivate industry to remediate any failures to their wells or infrastructure following decommissioning.

The Crown collects royalties from permit holders as payment for exploitation of the resource. As the Crown will always be guarantor of the last resort, the scope of the fund is limited to ensuring those who have benefitted from petroleum production activities make a contribution to legacy costs of decommissioned wells and infrastructure. In selecting options, we have also followed a core principle of New Zealand's environmental policy (polluter-pays), requiring that those who have benefitted the most from environmentally damaging activities should pay for the risks involved or hazards created.

Overseas experience

In selecting the options, we have considered experience from petroleum regulators oversees and in particular the United Kingdom (UK), Norway and Western Australia. These overseas approaches have been ruled out for the reasons set out in section 3.3 (to follow).

The United Kingdom

The United Kingdom Government's decommissioning strategy is to achieve the maximum extension of field life and to ensure that decommissioning, when executed, is done in a safe, environmentally sound and cost effective manner. The UK imposes a liability in perpetuity on owners of any infrastructure left in place after decommissioning has completed.

The UK separates liability for infrastructure left in situ from wells that have been plugged and abandoned. For infrastructure left in situ, guidance states that liability for costs associated with problems arising after an oil filed is decommissioned, such as degradation of infrastructure left at sea, rests with the owner or section 29 notice holder at the point of decommissioning. The term 'owners' includes a wide community to help ensure the Crown does not pay for decommissioning and residual liability.[12] The Secretary of State has the discretion to elect any one of the relevant parties to bear costs. Given the risk that the lifespan of these 'owners' may come to an end, either when the permit is relinquished, or over the short to medium term, the owners must remain in continuous contact with the UK authorities and notify the Government of any changes to their company structure and domicile even after the licence has been relinquished. The Secretary of

[12] The term 'owners' includes (a) a person having the management of the concerned installation; (b) the licensee, (c) a person who has transferred his or her interest under a licence without the consent of the relevant authority, (d) a party to a JOA or similar agreement; and (e) a body corporate associated with any of the parties mentioned in (a) to (e) above. See Guidance notes for industry on the decommissioning of offshore installations and pipelines under the Petroleum Act 1998, Oil and Gas Authority, United Kingdom

State has the power to make other persons responsible for residual liability in the eventuality of a risk to current 'owners'.

The liability for wells that have been plugged and abandoned are dealt with through the petroleum licensing regime. Post decommissioning monitoring and maintenance for wells includes the requirement to provide seabed sampling surveys to monitor levels of hydrocarbons, heavy metals and other contaminants. A commitment to submit the results of surveys to the regulator is also required. On completion of the last intended survey, the requirement for further work will depend on the results and will be agreed in discussion with the regulator. This arrangements leaves a possibility that the regulator (Oil and Gas Authority) could pursue negligence claims against former owners but this might be difficult if the company is no longer responsible for maintenance of the well.

Norway

The primary objective of Norway's petroleum policy is to facilitate profitable production of oil and gas over a long-term perspective. The Norwegian Government requires licensees and owners of decommissioned petroleum facilities to take responsibility for residual liability except where there is an agreement with the state. The Petroleum Act 1996 provides that the licensee or owner may agree to transfer residual liability to the state upon an agreed financial compensation. The financial compensation is specific to a particular filed.

Western Australia

In Western Australia, registered holders are responsible for the costs and liabilities relating to the removal of property and rehabilitation of the licence area following decommissioning. Post-decommissioning costs in monitoring the efficacy of the decommissioning activities for an agreed period of time are also the registered holders' responsibility. The time period will be determined on a case-by-case basis but would be expected to be in terms of multiple years, with a requirement of annual reporting of observations.

3.2 What criteria, in addition to monetary costs and benefits have been used to assess the likely impacts of the options under consideration?

We assessed all of the options against the following assessment criteria, which have been given equal weighting:

- **Effectiveness** (the extent to which the option contributes to the desired policy outcomes). Does the option address the problem identified with the current CMA regulatory settings effectively?
- **Proportionality** (the extent to which the costs/risks of implementing the option are proportional to the expected benefits). Does the option minimise the costs, risks and potential unintended consequences of addressing the problem identified with the current CMA regulatory settings?
- **Regulatory certainty** (the extent to which the option provides clarity of regulatory requirements and predictability of regulatory outcomes). Does the option address the problem identified with the current CMA regulatory settings in a way that makes the regulatory requirements more clear and transparent, and regulatory outcomes more predictable?
- **Practicality** (the extent to which the option reduces any implementation risks). Does the option minimise any implementation risks, provides for administrative simplicity, and encourages timely decision-making?

3.3 What other options have been ruled out of scope, or not considered, and why?

We have ruled out the following options from further analysis:

- perpetual residual liability: responsibility remains with the owner of the original infrastructure at the end of decommissioning. This approach to residual liability is used in jurisdictions overseas including the United Kingdom and Norway;
- commercial insurance: seeking an insurance solution to the legacy risk;
- holding individual securities separately;
- placing responsibility on landowners in the first instance, for remediation of onshore wells after decommissioning has completed;
- using a combination of bonds (Option 1) or guarantees and payments (Option 2) to cover residual liability rather than a pooled fund

Perpetual residual liability

As set out above, legal arrangements are used by jurisdictions overseas to address residual liability in the petroleum sector whereby former permit owners are held perpetually liable for any remediation required to decommissioned wells and infrastructure left in situ. A similar approach could, for example, include accepting an enforceable undertaking from a permit/licence holder's parent company that it will take responsibility for residual failures to its former wells and infrastructure. However, it is uncertain whether these legal arrangements could adequately incentivise petroleum permit/licence holders to reduce cost and risk associated with residual liability for the following reasons:

- Most permits and licences are held by multiple permit participants and parent companies, many of which are based overseas. It is uncertain whether the Crown would have the jurisdictional reach to make these agreements legally enforceable in New Zealand after the life of the permit/licence has ceased. Given the lack of market incentive to return to New Zealand to fix a leaking well or failed infrastructure, and the questionable social licence incentive when firms are no longer operating in New Zealand, this option is likely to place the burden on the Crown to enter into legal proceedings to enforce agreements.
- There is also no certainty that the parent company would exist in the years and decades following decommissioning.
- It is questionable whether former permit/licence holders could be reasonably held liable for failures when monitoring is carried out by government agencies, as is the current arrangement. Former permit/licence holders could mount a legal claim of negligence or lack of monitoring that could have prevented a high impact failure.
- Putting in place a regulatory regime to ensure parent companies arrange monitoring could be onerous and difficult to enforce if parent companies of former permit/licence holders are not based in New Zealand or Australia.

Commercial insurance

Commercial insurance has been explored by the regulator (New Zealand Petroleum and Minerals (NZPM). Quantifying the likelihood of failure presents a number of challenges. New Zealand's relatively small number of wells does not provide a sufficient sample group to draw significant conclusions on the likelihood of a plugged and abandoned well requiring intervention. Officials attempted to quantify the likelihood of an intervention through enquiries with regulators in other jurisdictions, such as Alberta and South Australia, and the insurance sector without success. Officials

found post-plugging and abandonment well data is either not tracked, or there is insufficient information available to be able to price risk.

Until 2009, the UK Oil and Gas Authority's guidance notes on decommissioning, proposed that an insurance solution might be possible to cover the risk of residual liability. However, the uncertainty over the risks involved, together with a perpetual commitment, made the solution impracticable in a commercial context. The option of commercial insurance is not assessed to be sufficiently commercially viable to offer a practical solution over the medium to longer term.

We have ruled out the commercial insurance option due to the lack of practicality of reaching a commercial solution for a risk that lasts in perpetuity and uncertainty of the risk involved.

Holding individual payments separately

We have also ruled out the possibility of each permit/licence holder providing individual securities or guarantees that cannot be placed in a pooled fund to spread the risk of failure as this option would prove:

- more costly to industry: this option would require an increased level of payment for each decommissioned field which would be more costly to industry;
- increase the risk and cost to the crown: it would increase the likelihood that the Crown would need to pay for any large failure over and above the individual payments provided.

Placing residual liability on landowners for onshore wells

For onshore wells, it is questionable whether it is fair and equitable that landowners are best placed to bear the cost of any remediation required to onshore wells, as:

- Landowners may not necessarily have benefitted from petroleum activities on their land, especially if these activities have taken place in the past.
- Petroleum exploration and production is a permitted activity in Taranaki and private landowners may not be in a position to unreasonably restrict access to land they may own, or occupy, to prevent resources being recovered for the benefit of New Zealanders.[13]
- There is also an inconsistency with offshore wells, where the Crown is currently liable for remediation to wells and infrastructure after decommissioning in the event no permit/licence holder exists.
- Landowners may not have the financial means to carry out remediation work.

We therefore do not consider it to be fair or equitable to place responsibility for residual liability of onshore wells and infrastructure onto landowners in the first instance.

A combination of Options 1&2

Using a combination of bonds (Option 1) and payments (Option 2) could involve holding a bond for up to 10 years (Option 1), returning a percentage of that bond if no failure occurred during this time period, and retaining a lesser percentage to cover longer-term risk as cash funds (Option 2) over the medium to long term. This option would however, mitigate the ability to collectivise and spread the risk of any failure to wells and infrastructure, as fields will be decommissioned at different dates, and possibly up to 10-15 years apart, increasing the likelihood of there being insufficient funds held, at any one time, to remediate a high impact failure over the short-term (up to 10 years following

[13] If the landowner refuses access, the permit holder may apply to the Chief Executive of the Ministry of Business, Innovation and Employment for a declaration by the Governor General that an arbitrator determine an access arrangement for reasons of public interest.

decommissioning). The outcome would be less effective for the Crown as its capacity to deal with high impact risks would be limited in the short-term. It would also be less proportionate on permit/licence holders as the size of any security held would need to be increased to account for the possibility of a high impact failure. We understand the risk of failure increases over time, which would not align with needing to return a percentage of the bond after 10 years (i.e. when the risk of failure was increasing).

Section 4: Impact Analysis

Marginal impact: How does each of the options identified in section 3.1 compare with taking no action under each of the criteria set out in section 3.2?

	No action – no regulatory system for residual liability	Option 1 – Industry bond at the point of decommissioning	Option 2 – Payments held in a pooled fund
Effectiveness	**0** There is high risk that third parties, including the Crown will be required to fund the failure of wells and related infrastructure over the short, medium and longer-terms. This creates little economic incentive on permit and licence holders to minimise risk and cost of residual liability.	+ This would effectively shift responsibility for residual remediation of wells and infrastructure left in situ back to industry from landowners (for onshore wells) and other third parties, including the Crown as guarantor of last resort, over the shorter term for both monitoring and remediation (for the duration of the bond e.g. 10 years). The bond would effectively serve as a guarantee that decommissioning was carried out effectively in the short term. The bond would provide an incentive on industry to minimise risks and costs of residual liability but costs associated with medium to longer term risks would not be included in this assessment. The bond would be targeted for a particular field which would prevent the Crown pooling funds to cover a large failure, even in the short term. Petroleum fields are also likely to be decommissioned at different dates, e.g. up to 10-15 years apart, reducing the funds in the account at any one time, if each bond was returned after 10 years. The bond would not be effective at all once it is handed back i.e. in the medium to longer term whereas the risk of failure increases over time with degradation of materials and subsurface movement.	++ This option effectively shifts responsibility for the remediation of wells and infrastructure left in situ to industry and away from landowners (for onshore wells) and other third parties, including the Crown as guarantor of last resort, over the long term. Monitoring would be carried out by relevant environmental and health and safety regulators (the current status quo situation). The risk the fund over-recovers in a way that results in inefficiency would need to be kept under review. There may also be a risk that the fund is under recovered in the early years, before multiple onshore and offshore fields are decommissioned allowing funds to be pooled. The payment for residual liability would be assessed on a case-by-case basis depending on the nature of risk. This would provide an incentive on permit/licence holders to decrease the cost and risk associated with residual liability e.g. by leaving less infrastructure in situ and thereby less risk. The cost would be priced for long term residual liability. This could be an effective option to address equity issues over the longer-term as the Crown retains funding for remediation. The fund would also be pooled (and ring fenced for onshore and offshore fields) which would spread the risk of failure over multiple fields (for example, it may be likely that a single production well in one out of the four EEZ fields and infrastructure required remediation).[14]

[14] There are multiple wells in each field. Free and frank opinions

			The risk of any failure would be spread across numerous fields as the securities collected would be held in a pooled fund, thereby providing sufficient fund a high impact failure. A pooled fund could be held in an investment capacity, thereby growing the fund over the medium to longer term, providing safeguard against inflation thereby proving more effective over time.
Proportionality	**0** The high risk that third parties will need to take responsibility for residual liability. This raises equity issues and in terms of the significant economic benefit permit/licence holders have received from petroleum production activities over many years.	+ This option is more proportionate than the status quo over the short term as it shifts liability back to permit/licence holders for monitoring and remediation in the time immediately following decommissioning. As the bond would need to cover risk related to a particular field, and could not be pooled to cover a high impact failure, the size of the bond would need to be significant. As the bond would be handed back to industry over the medium term, just when the risk of degradation of materials was increasing, the option is not proportionate to the nature of the risk.	+ Permit/licence holders may object to being required to provide payments on top of decommissioning expenses and not see it returned even in the event no failures occur. There is an element of proportionality involved whereby the regulator is releasing the permit/licence holder of responsibility for remediating failures post decommissioning in exchange for the payments (unlike some overseas regimes where permit holders remain responsible for failures post decommissioning in perpetuity). Retaining the payments in perpetuity can be justified on the basis that the risk of failure increases over time, and is thereby proportionate to the nature of the risk. The payments collected from each field would be placed into a pooled-fund, spreading the risk, and thereby decreasing the amount of the payment required from each field, thereby increasing proportionality for industry. Proportionality would depend on accurate calculation of the likelihood of remediation being required after decommissioning has been accepted.
Regulatory Certainty	**0** The current regulatory system is fragmented in terms of who is	+ This option would shift responsibility for monitoring and remediation work to industry but only over the short to medium term (duration of the bond).	++ Regulatory certainty would be clear – once permit holders make the payments, and decommissioning has

	responsible for residual liability. This creates confusion and regulatory uncertainty. There is a misalignment between the polluter-pays policy intent of the petroleum regulatory system and the current legislative regime for residual liability.	Regulatory uncertainty would persist as to responsibility for residual liability over the medium to longer term.	been accepted by the regulator, the permit/licence holders are released of responsibility.
Practicality	**0** The absence of a regulatory system for residual liability may prove costly for the Crown, especially in the event of a high impact failure. Permit/licence holders are not incentivised to minimise the cost and risk of residual liability.	+ It may prove challenging to collect the full bond at the end of the life of a field where profits from the field have ceased and the permit holder has been faced with decommissioning expenses. The regulator may in practice, be forced to accept a lower bond than required to cover the risk calculated. Risk of failure can be calculated more accurately over the shorter term and if a set time for the bond is identified.	+ this option depends on the successful calculation of risk into the long term where little data exists to inform the calculation. Ultimately, this option can be expected to require a contribution from former permit and licence holders to residual liability and accepts that the Crown will need to act as guarantor of last resort. As it is intended to hold the funds in a pooled capacity, thereby spreading the risk of failure across numerous wells, the regulator could have increased ease of access to sufficient funds to cover any significant failure. The regulator has access to permit/licence holder finances and assets that require decommissioning as part of the information used to identify the level of financial payments required to be set aside for decommissioning. The regulator can use this analysis to decide whether it is more practicable to collect a permit/licence holder's residual liability payments on a periodic basis (for example, where the entity is financially weak) or in a lump sum near the end of decommissioning (for example, where the entity is financially strong).

Overall assessment		+ Better than doing nothing.	++ Much better than doing nothing.

Key:

++	much better than doing nothing/the status quo
+	better than doing nothing/the status quo
0	about the same as doing nothing/the status quo
-	worse than doing nothing/the status quo
- -	much worse than doing nothing/the status quo

Section 5: Conclusions

5.1 What option, or combination of options is likely to best address the problem, meet the policy objectives and deliver the highest net benefits?

Both options 1 and 2 would be preferable to the status quo where:

- there is no market or regulatory incentive for permit and licence holders to factor in residual liability into their decision-making when carrying out petroleum producing activities; and
- equity issues are raised about third parties, including the Crown and landowners, being liable for the remediation of failed wells and infrastructure after decommissioning has completed when permit and licence holders have benefitted most from petroleum producing activities.

Option 1 (a bond) is only practical and effective in the short term for example, 10 years following decommissioning and fails to fully cost residual liability into the economic decision-making of permit/licence holders while they are carrying out petroleum producing activities. In this way, the bond is unlikely to produce optimal economic efficient outcomes. Option 1 provides an equitable outcome but only for the short term. In the medium-to-longer term, liability will fall to third parties and the Crown as guarantor of last resort. Therefore, Option 1 is unlikely to fully achieve an optimal outcome in terms of equity and community welfare.

As the bond would be held individually, the risk of failure could not be spread across many decommissioned fields so the cost to permit/licence holders is likely to be higher than a collective arrangement to allow for the high impact nature of any failure but might be disproportionate to the low-risk of any failure occurring.

Our overall preference is Option 2: enabling the regulator (MBIE) to collect payments to cover the risk of well and infrastructure failure after decommissioning has been completed. This option is preferred as it has the following benefits:

- it would help ensure permit/licence holders factor in the full long term cost of residual liability into decision-making for petroleum producing activities, creating more economically efficient outcomes;
- the option would also help ensure that those who have benefitted the most from petroleum production over many years, are liable for any future failure to wells and infrastructure after decommissioning has completed. This aligns with the polluter-pays principle on which the petroleum regulatory regime is based and provides an equitable outcome; and
- the approach could also be proportionate to industry. The payments would be more practical to collect as they could be collected over the remaining life left in the petroleum field and while it remains producing and profitable. The risk of failure could also be spread across many decommissioned fields making it more practicable for the relevant regulator to access funds for any significant remediation work required and decreases the liability of each individual field. This arrangement would relate well to the low risk, but high impact risk profile, attached to the failure of wells and infrastructure after decommissioning has been accepted.

However, the main disadvantage of Option 2 is that risk over the longer-term is difficult to calculate given the limited data available on the failure of wells and infrastructure that have been successfully decommissioned, particularly in a New Zealand context. We will consult with industry and relevant experts, including engineers and geologists in establishing this risk and how it can be calculated on a case-by-case basis.

During MBIE's 2017 public consultation, industry submitted that it would not be equitable to collectivise risk and that the costs to industry would exceed the scale of the issue.[15] However, as the payment is intended to be calculated on a case-by-case basis and directly linked to the level of risk, it would be fair and proportionate to each permit/licence holder's circumstance.

A collective pooled fund would also spread the risk of any failures across multiple fields and thereby reduce the amount charged to each permit/licence holder. Permit holders and related entities can be assured that they will not face future costs associated with remediation and it is the Crown that is effectively placed as guarantor of last resort over the long term. The benefit for the Crown, is assurance that those who have gained most of the economic benefit from petroleum activities, over many years, contribute to the risk of future failure of decommissioned well and infrastructure left in situ.

For the reasons stated above, we consider that perpetual liability for permit holders and related businesses, either on its own, or in combination any other option, has significant limitations and we cannot be confident of its effectiveness in the New Zealand context.

We do not consider that further stakeholder consultation is likely to assist in understanding the issues, options and their impacts to an extent that would alter our recommendations. We intend to consult on options for how the preferred option is designed and implemented, including the level of risk attached to wells and infrastructure that have been decommissioned in a manner that has been accepted by the relevant regulatory bodies. Therefore, we do not consider there are significant risks from recommending and proceeding with our preferred option and discounting alternative approaches at this stage.

5.2 Summary table of costs and benefits of the preferred approach

Affected parties *(identify)*	**Comment**: *nature of cost or benefit (eg, ongoing, one-off), evidence and assumption (eg, compliance rates), risks*	**Impact** *$m present value where appropriate, for monetised impacts; high, medium or low for non-monetised impacts*	**Evidence certainty** *(High, medium or low)*
Additional costs of proposed approach compared to taking no action			
Regulated parties	Individual regulated parties would face costs associated with residual liability for well and infrastructure failure after decommissioning.	medium[16]	medium

[15] PEPANZ submission on discussion document 'Managing third party risk exposure from onshore petroleum well', p. 2 https://www.energyresources.org.nz/publications/submissions/

[16] The costs stated for regulated parties (permit and licence holders) is stated as 'medium' whereas the benefits stated for the Crown in table 5.2 are 'high'. This is because each of the regulated parties will be required to contribute into a pooled-fund, designed to spread the risk of well/infrastructure failure. Their individual contributions will therefore be decreased. However, if a failure did occur, the Crown would have access to the total amount of funds built up to deal with any high-impact failure. The benefit to the Crown has therefore been assessed as 'high'. The benefit to landowners is assessed as being high, as these tend to be farmers with little financial means to pay for remediation of failed wells.

Regulators	MBIE would need to determine a payment for residual liability associated with well and infrastructure failure. Regulators would need to arrange for remediation to take place following a well/infrastructure failure but using funds provided by permit holders.	low-medium	medium
Wider government	Costs for establishing and holding the pooled funds	low	high
Other parties			
Total Monetised Cost		N/A	N/A
Non-monetised costs		*low-medium*	medium

Expected benefits of proposed approach compared to taking no action			
Regulated parties	Regulated parties benefit from relinquishing perpetual liability upon paying the payment.	low	medium
Regulators	Regulators would have a system and funding in place for dealing with residual liability and would not be left trying to reprioritise funding to go towards unexpected well remediation work.	high	medium
Wider government	The Crown would be significantly absolved of paying for remediation work for failed wells and related infrastructure.	high	medium
Other parties	Landowners would not be held responsible for funding remediation of onshore wells and related infrastructure following decommissioning. Wider societal and ecological benefits to minimise the risk of failure and system in place to clean up and remediate the site.	high	medium
Total Monetised Benefit		N/A	
Non-monetised benefits		*high*	medium

5.3 What other impacts is this approach likely to have?

Shifting the responsibility back to permit holders for residual liability, following decommissioning, may have a marginal impact of reducing New Zealand's appeal as a petroleum investment destination.

Clarifying responsibility for residual liability and requiring payments for associated risk from industry is not designed to impose more onerous obligations. Instead, it is intended to provide more effective means of ensuring that those that have benefitted most from the mining and petroleum activities fulfil their obligation to decommission and take responsibility for the risk of any future failure, rather it than being left to the Crown or other third parties.

A well designed method of calculating the payment required to cover the risk of residual liability, careful design of how the funds would be held and accessed, would help ensure the risk was well targeted and proportionate.

Section 6: Implementation and operation

6.1 How will the new arrangements work in practice?

We propose to include an enabling mechanism for MBIE to require payments to cover the cost of liability for well and infrastructure failure post decommissioning in the Crown Minerals (Decommissioning and Other Matters) Amendment Bill.

An options paper will be released on the design of the regulations that will consult on options for how the payments will be calculated and collected. As part of the design options, the regulations will also provide details on how the relevant government agencies responsible for environmental effects, and health and safety can work with MBIE to access funds required for remediation of decommissioned wells and infrastructure. These regulations are subject to further policy work, consultation with stakeholders, and Cabinet decisions, at a later date.

Consideration will be given to the timing of when the amendments should be brought into effect, taking into account the wider changes that are currently taking place (e.g. Covid-19) and the impact these changes will have on the industry. Exact timing will be confirmed on introduction of the legislation to Parliament. The implementation of the options may also involve some transitional period to allow permit/licence holders to make necessary changes to their practices.

The preferred option will be enforced by MBIE as the relevant regulator for the CMA regime and as part of a wider regime for strengthening industry's responsibilities for decommissioning. MBIE is an experienced regulator. As set out in that RIA, we expect charging industry for residual liability together with the wider regulatory regime for strengthening industry's decommissioning responsibilities, will impose additional administrative cost on MBIE as the regulator.

6.2 What are the implementation risks?

The main implementation risks involved with charging permit/licence holders are:

- accurately calculating the payments for residual risk, including gaining New Zealand-relevant data and evidence on well and infrastructure failure after decommissioning; and
- some permit/licence holders being unable to make the payment for residual liability.

We intend to mitigate these risks by consulting industry and experts (including geologists, engineers) on the risks attached to wells and infrastructure that have been successfully decommissioned and continuing to draw on overseas data. For example, we will consider pulling together a panel of experts to advise on the risk of failure and the level of the impacts involved. The nature of the pooled fund also mitigates the risk that there will be insufficient funds to remediate a significant failure. We consider this is proportionate to the low risk but high impact nature of the risk involved.

We intend to mitigate the risk that some permit/licence holders may not be able to afford to pay by building flexibility into how the security is collected. For those that are financially weaker, we propose to collect the payment in instalments over the remaining life of the field.

Section 7: Monitoring, evaluation and review

7.1 How will the impact of the new arrangements be monitored?

We will consult with industry on the final design option for calculating and collecting the payments and monitor the impact on permit/licence holders including those in financial distress. The monitoring of the effect of the residual liability payments can be carried out at the same time as monitoring permit/licence holders financial strength as part of the calculation and collection of the financial security required to be set aside for decommissioning.

We will also engage regularly with local iwi, councils and the EPA for feedback on how the pooled fund is working, including access to those funds for remediation and monitoring for remediation purposes.

We will also keep a close watch on data, as it becomes available, in New Zealand and overseas on the risk of well and infrastructure failure after decommissioning has completed to fine-tune the way the liability and payment is calculated.

7.2 When and how will the new arrangements be reviewed?

There is no plan to conduct a formal review of the proposed options within a particular timeframe. However, the interaction with stakeholders following implementation of the amendments, as well as the regulator's ongoing monitoring and enforcement functions, will assist to uncover whether there are any issues that need addressing.

MBIE regularly evaluates and reviews amendments to the law it administers. The changes could, for example, be reviewed and evaluated two to three years after coming into force (subject to resource constraints). An evaluation or review at this time would allow the changes to have bedded in and any initial impacts to show.