MINISTRY OF BUSINESS, INNOVATION & EMPLOYMENT
HĪKINA WHAKATUTUKI

COVERSHEET

Minister	Hon Dr Megan Woods	**Portfolio**	Energy and Resources
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List of documents that have been proactively released		
Date	**Title**	**Author**
24 February 2020	Cabinet Paper: The Crown's Approach to Decommissioning the Tui Oil Field in Response to Operator Tamarind Liquidation	Office of the Minister of Energy and Resources
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24 February 2020	Addendum: responses to questions raised at DEV on 19 February 2020 and additional information to support decision making	MBIE

Information redacted **YES**

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Some information has been withheld for the following reasons:

- Legal professional privilege
- Commercial information

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In Confidence
Office of the Minister of Energy and Resources
Chair, Cabinet Business Committee

The Crown's approach to decommissioning the Tui Oil Field in response to operator Tamarind liquidation

1. This paper seeks to appropriate $154.641 million to meet the best estimate of costs associated with decommissioning the Tui oil field ("Tui").

2. This paper also signals costs associated with future petroleum decommissioning, resulting from tax rules and orphaned wells.

Executive Summary

3. Tamarind Taranaki Ltd ("Tamarind"), the operator of Tui since 2017 has recently been placed in liquidation and receivership. Tamarind's liabilities far exceed its assets, which means that it will not likely be able to afford the cost of decommissioning Tui's infrastructure. This cost is estimated at around $154.641 million – noting however that this cost is very difficult to estimate given the nature of the decommissioning process and the early stage the process is at.

4. Legal professional privilege

5. MBIE advises and Treasury officials agree that from an accounting perspective, a constructive obligation exists such that the full cost of decommissioning Tui should be appropriated now. Furthermore, Commercial Information . Funding is therefore required now to ensure this process is done safely and efficiently, while minimising total costs of decommissioning.

6. This paper seeks Cabinet's approval to appropriate $154.641 million to meet estimated costs associated with decommissioning Tui. The estimated cost profile is set out below:

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Cost Element	2019/20 (million)	2020/21 (million)	2021/22 (million)	2022/23 (million)	2023/24 (million)	Total
MBIE Project Management and Administration Departmental procurement, monitoring, legal, communication and stakeholder engagement costs.	$0.8	$1.2	$0.8	-	-	$2.8
Demobilisation oversight and Decommissioning planning (Front end planning) Secures a service provider to oversee demobilisation of the FPSO and plan the overall decommissioning project	Commercial Information					
Demobilisation Well kill and flushing, demobilise the FPSO *Umuroa*, pre-abandonment						
Decommissioning Plugging of the wells, and removal of subsea infrastructure.						
Total	Com			Com		$154.6

Legal professional privilege

7. Legal professional privilege

8.

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Legal professional privilege

9. Legal professional privilege

Next steps

10. MBIE is currently working with BWO (the owner of the FPSO), the Environmental Protection Authority (EPA) and WorkSafe NZ to ensure that demobilisation occurs in a way that is both safe and cost efficient when factoring in the entire decommissioning process.

11. Once funding is secured, MBIE will work to procure a service provider to oversee the demobilisation phase and plan out the wider decommissioning project. Once that plan is in place, and the appropriate consents are obtained, work can begin on plugging and abandoning the subsea wells and removing the infrastructure.

Risks

12. The Crown will have to manage a range of risks throughout Tui's decommissioning. The nature of some of these risks will become clearer as planning is completed and expert advice is prepared. These risks include:

- *Resourcing risks* - Under-resourcing any part of the decommissioning process is likely to increase other identified risks. There are also risks of cost overruns. For example, if there are complications, adverse events, significant delays to any part of the decommissioning process, or adverse foreign exchange movements.

- *Environmental risks* - As with any offshore oilfield operation, there are risks to the marine environment. These risks will be managed through consent conditions and through appropriate management and oversight of the decommissioning process. Adverse weather events may also impact the timeline for decommissioning.

- *Health and safety* - Offshore decommissioning involves high risk activities which need to be conducted by parties with specialist expertise, with oversight by WorkSafe NZ.

- *Marine consents timeline* - Tui's decommissioning process will have to comply with the relevant marine consenting requirements. There is some uncertainty regarding how these processes will impact the project timeline and costs.

Crown Minerals Act 1991 (CMA) changes

13. As part of the 2018 CMA reforms, the CMA was amended to enable MBIE to properly assess and influence the outcome when a late-life asset is transferred to a smaller, less well-resourced company. MBIE did not have this ability when Tamarind assumed control of Tui in 2017. This will not eliminate the risk of a company

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encountering financial difficulties, but does allow the Crown some control when the asset is transferred between operators.

14. I am also currently leading a review of the CMA, and as part of this I am consulting on a range of further proposals to improve and strengthen the decommissioning regulatory framework. Public consultation on the review closed on 27 January 2020, and I am aiming for final policy recommendations to Cabinet in mid-2020.

Future petroleum decommissioning liabilities

15. There are two kinds of petroleum decommissioning costs the Crown will have to address in the coming years (details of these can be found in Annex One):
    - Tax and royalty rebates for decommissioning of petroleum installations, and
    - Plugging and abandonment of historic and orphaned onshore wells.

16. I will report back to Cabinet by December 2020 with a plan to manage the Crown's future petroleum decommissioning liabilities and risks. Funding necessary to meet these costs is expected to be met through future Budget bid processes.

Background on the Tui Oil Field

17. The Tui oil field ("Tui") is located 50km off the Taranaki coast and is currently operated by Tamarind. It is a subsea development, featuring eight wells and associated infrastructure on the seafloor. Connected to this infrastructure is a FPSO vessel (the *Umuroa*) which processes and stores the oil. Decommissioning costs are driven by the need to demobilise the FPSO, plug and abandon the eight wells and remove the subsea infrastructure.

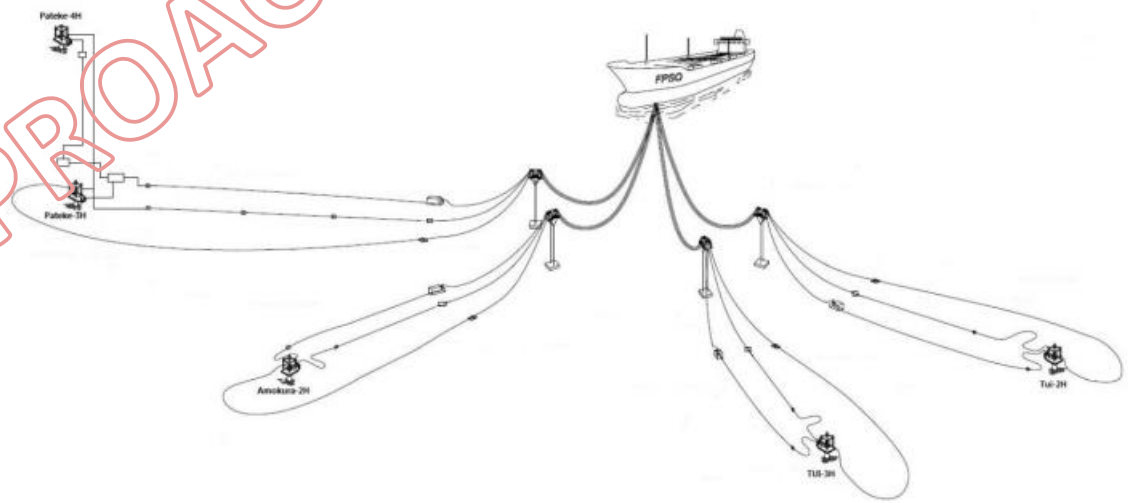

Figure 1. Diagram of the FPSO and subsea infrastructure of the Tui oil field

18. Production from the field began in 2007 and was as high as 50,000 barrels of oil per day. It has now reached the end of its economic life. To date, Tui has yielded approximately NZ $539 million in royalties.

19. Tamarind ceased production from Tui in late November 2019 following an oil sheen sighted off the starboard side of the FPSO. The EPA served an abatement notice on 28 November 2019 prohibiting production from Tui until evidence was provided

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confirming the other flowlines were not compromised before resuming production. The purpose of the abatement notice was to prevent further unauthorised discharges of oil into the marine environment. The sheen was found to have been caused by damage to one of the subsea flow lines. No environmental damage has been reported.

20. A subsequent EPA abatement notice further prohibited resuming production. Given Tamarind's financial position, it is unlikely the Tui field will resume production.

History of events: the lead up to Tamarind liquidation in 2019

21. When Tamarind assumed control of Tui in 2017, the base case timeline was that production would end and decommissioning would begin in 2019. Tamarind however intended to extend the life of the Tui field by drilling three new development wells – this would have added approximately 5 years to the life of the field (producing an additional 6-8 million barrels), thereby, pushing decommissioning out to late 2025. This drilling campaign however failed.

Failure of the 2019 drilling campaign and its contribution to Tamarind liquidation

22. In 2019, Tamarind contracted the drill rig *COSL Prospector* to drill three development wells.[1] The drilling campaign experienced significant delays with the first well completed in early September 2019. The drilling of the first well failed to identify hydrocarbons and it was plugged and abandoned. The well also experienced a significant cost overrun of US$8 million.[2]

23. On 12 September 2019 Tamarind advised MBIE that its financiers had withdrawn support for the remaining two wells. This is an unusual situation in the petroleum sector as normally a campaign such as this would not be abandoned at the first hurdle.

24. The drilling campaign put Tamarind in a tight financial position. The location of the COSL Prospector drilling rig over the Amokura structure[3] reduced Tui's production rate by almost 30% (foregoing approximately 400 barrels of oil per day). This meant that Tui was only producing 1,100 barrels per day - well below the economically sustainable level of 1,500 barrels per day which accounts for operational costs.

25. Reduced production, coupled with cost overruns of the drilling campaign, the withdrawal of financial support, and the low price of crude oil ultimately led to Tamarind's financial difficulty. Tamarind entered voluntary administration, with Borrelli Walsh appointed as administrator on 11 November 2019. At the watershed meeting on 19 December 2019, Tamarind was placed into liquidation with Borrelli Walsh appointed as liquidator. That same morning, John Fisk and Malcolm Hollis of PWC were appointed by the secured creditor as receivers.

[1] COSL is an abbreviation of "China Oilfield Services Limited".
[2] Liquidators report [55]
[3] One of Tui's subsea petroleum wells.

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Tamarind lacks the assets to decommission the Tui field

26. To decommission Tui, the FPSO *Umuroa* will have to be demobilised (safely moved off the field), the eight subsea wells plugged, and associated infrastructure either removed or appropriately abandoned. The timeframe to conduct this work and ultimate cost depends on several factors such as rig (or work boat) availability and weather conditions, as well as the physical condition of the infrastructure. At this point, we estimate total decommissioning costs $151.841 million (cost scenarios are addressed in the financial implications section of this paper).

Tamarind is unlikely to be able to meet its decommissioning liabilities

27. It is highly unlikely that Tamarind will be able to meet the estimated decommissioning cost of $151.841 million. Borrelli Walsh have indicated that as at 19 December 2019, the Tui joint venture (comprising four companies all owned by Tamarind) has the following assets and liabilities:[4]

Assets and Liabilities	**Value in USD million of assets and (liabilities)**	
	Low estimate	*High estimate*
Assets [5]	3.881	16.052
Secured creditors	(68.144)	(68.144)
Preferential unsecured (Employees) creditors	(0.095)	(0.095)
Unsecured creditors	(251.451)	(251.451)
Net assets / (Liabilities)	**(315.809)**	**(303.638)**

28. As indicated in the table above, Tamarind's liabilities far exceed its assets. I do not expect Tamarind's assets to increase above these estimates. Despite the estimated 4.9 million barrels remaining in Tui, in light of the EPA's abatement notice, production is unlikely to restart. The liquidators and/or receivers may yet try to market the field as an asset to a new operator which would provide a way for them to realise value (and further push decommissioning into the future). Nevertheless, I think this possibility is remote.

29. Tamarind's assets are currently under the control of the receivers who are seeking to realise them for the benefit of the secured creditor. The assets are not sufficient to meet that debt. If the receivers resign or (much less likely) the debt to the secured creditor is satisfied, then the assets will be handed back to the liquidators.

30. A liquidator's role is to protect, realise and distribute assets or proceeds from realisation of assets of the company to its creditors.[6] This does not include incurring

[4] Tamarind Taranaki Limited Liquidators' Report, page 19.
[5] These figures represent the liquidator's assessment of the estimated realisable value (ERV) of the Tui projects assets as at 19 December 2019.

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new costs in relation to decommissioning. While the Crown is an unsecured creditor, it is unlikely to receive a distribution from Tamarind given the priority granted to secured creditors.[7]

31. Once the liquidation is completed, Tamarind will be removed from the Companies Register. At this point, Tamarind's participating interest in the permit will vest in the Crown under section 92A(2) of the CMA, at which point that company's obligation for decommissioning formally falls to the Crown.

The Crown's constructive obligation to meet Tui decommissioning costs

32. Under the Public Finance Act 1989, the Government must prepare all financial statements in accordance with generally accepted accounting practice.[8] The New Zealand Accounting Standards Framework sets down a financial reporting strategy for New Zealand and establishes that Public Benefit Entities, such as MBIE, must follow accounting standards based on International Public Sector Accounting Standards (IPSAS).

33. Applying IPSAS 19, MBIE has determined, and the Treasury agrees, that the Crown is subject to a constructive obligation to meet the costs of decommissioning Tui.

34. A constructive obligation exists and must be recognised where:[9]

a) By an established pattern of past practice, published policies, or a sufficient specific current statement, the entity has indicated to other parties that it will accept certain responsibilities; and

b) As a result, the entity has created a valid expectation on the part of those other parties that it will discharge those responsibilities; and

c) A reliable estimate can be made.

35 Elements a) and b) above are established via the following:

- ***Tamarind's receivership and liquidation*** – Tamarind lacks the assets to meet its decommissioning liability. Furthermore, incurring the costs to decommission Tui does not align with either the receivers or the liquidators objectives.

- ***Section 92A(2) of the Crown Minerals Act 1991*** – Once liquidation is complete, Tamarind will be removed from the companies register. At this point, the Tamarind Taranaki Ltd's interest in the Tui permit will vest in the Crown, and the Crown will be liable for all permit obligations which includes decommissioning. This is the point when the Crown will assume legal responsibility. The Crown has no discretion over any of these steps.

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[6] Section 253, Companies Act 1993.
[7] Secured creditors claim to be owed US$68 million, which far exceeds the high estimate of Tamarind's assets.
[8] Section 26H, Public Finance Act 1989.
[9] Public Benefit Entity International Public Sector Accounting Standard 19 Provisions, Contingent Liabilities and Contingent Assets (PBE IPSAS 19).

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- **Public expectation of environmental protection** – given no other party will decommission Tui, the public expects the Crown to perform this function as the provider of last resort.

36. The above factors, coupled with the fact that reliable estimates do exist (in the form of the AWE modelling discussed below) means that a constructive obligation exists.

Timing of this constructive obligation versus legal responsibility

37. MBIE recognises, and the Treasury agrees, that the test for constructive obligation was met at the start of this year when the indebted nature of Tamarind became clear. Accordingly, this obligation on the Crown already exists. The effect of this is that the Crown is currently unappropriated, and that appropriations need to be put in place (as proposed in this Cabinet paper).

38. Legal professional privilege

What happens if appropriations are not provided to meet this constructive obligation?

39. MBIE will continue to go unappropriated. It will also be unable to incur substantial costs to begin managing the decommissioning process. Planning delays will likely increase the overall cost of decommissioning, which the Crown will face eventually.

40. This cost will also have to be validated by Parliament. To validate this expense, the Minister of Energy and Resources will have to account for this in the House of Representatives as set out in section 26C of the PFA.

Legal professional privilege

41. Legal professional privilege

Legal professional privilege

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[10] Section 2(1), Companies Act 1993.

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44. Legal professional privilege

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Next Steps for the Crown in respect of Tui decommissioning

57. MBIE is currently working with BWO (the owner of the FPSO), the EPA and WorkSafe NZ to ensure that demobilisation occurs in a way that is both safe and cost efficient when factoring in the entire decommissioning process.

58. MBIE is also in the process of securing expert resources to plan the decommissioning process. Once funding is secured, MBIE will work to procure a service provider to oversee the demobilisation phase and plan out the wider decommissioning project. Once that plan is in place, and the appropriate consents are obtained, work can being on plugging and abandoning the wells and removing the subsea infrastructure. This work could begin in the summer of 2021/22 assuming the completion of the planning phase and depending on vessel availability.

Risks

59. The Crown will have to manage a range of risks throughout Tui's decommissioning. The nature of some these risks will become clearer as planning is completed and through expert advice, but the kinds of risks the Crown can expect are canvassed below.

Resourcing risks

60. Given the Crown does not normally perform decommissioning itself, securing appropriate project management and expert services will be critical to ensuring that the process is done safely, efficiently, and at the least cost. Under-resourcing any part of the process, including MBIE's project management and oversight, is likely to increase other risks identified in this section.

61. There are also risks of cost overruns, for example, there are complications, adverse events or significant delays to any part of the decommissioning process.

Environmental risks

62. As with any offshore oilfield operations, there are risks to the marine environment. These risks will be managed through consent conditions and through appropriate management and oversight of the decommissioning process.

63. Decommissioning work is also subject to weather related constraints. Adverse weather conditions can cause delays to plugging and abandonment work or the decommissioning of subsea infrastructure.

Health and safety

64. Offshore decommissioning involves high risk activities which need to be conducted by parties with specialist expertise under the oversight of WorkSafe NZ.

Marine consent timeline

65. Tui's decommissioning process will have to comply with the relevant marine consenting requirements processes under the Exclusive Economic Zone and Continental Shelf (Environmental Effects) Act 2012 (EEZ Act). There is some

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uncertainty regarding how these processes will impact the project timeline and costs. Normally, decommissioning projects (and associated consenting and regulatory processes) are initiated years in advance. The current situation does not allow for this lead in time, therefore, some uncertainty around planning and timelines must be accepted.

66. Another factor that may impact the consenting timeline is the new decommissioning regulations under the EEZ Act, which should be in force by June 2020. Once in force, operators will be required to hold an accepted decommissioning plan before they can apply for decommissioning related marine consents under the EEZ Act. Any application must be in accordance with that accepted plan. The regulations will prescribe the information that must be included in a plan, the process for dealing with a plan and the criteria against which a decommissioning plan must be assessed. The regulations strengthen the current regime by providing for more meaningful consultation and ensure better environmental outcomes that meet the sustainable management purpose of the EEZ Act and our international obligations.

Background: How Tamarind came to own Tui

67. In early 2017, Tamarind took full control of Tui by buying out all the participants in Petroleum Mining Permit 38158 (Tui). This permit was first granted on 25 November 2005 to a consortium of AWE, Mitsui and NZOG for a duration of 20 years. By March 2017, Tamarind had acquired all the shares in the Tui permit participants, including AWE Taranaki which was the permit operator, thereby giving it full control of the Tui field.

68. By 2017, the Tui field was nearing end of life with decommissioning planned for 2019. Tamarind sought to improve the profitability of the field by adding reserves through additional drilling, renegotiating the FPSO contract and undertaking decommissioning at a lower price than that carried by the previous permit holders.

69. The sale and purchase agreement resulted in Tamarind receiving US$30 million in working capital from the previous permit holders. This US$30 million represented the value of the field taking into account the cost of decommissioning, which exceeded the value of the remaining oil reserves.

70. At the time of the transaction, Tamarind may have had sufficient financial capability to decommission Tui, however officials were concerned that the US $30 million that Tamarind received may be moved to other parts of the organisation. Despite having no legislative mechanisms for doing so, MBIE sought a parent company guarantee from Tamarind Classic Resources Private Limited (a parent company registered in Singapore) of Tamarind's and the other Tamarind permit participants' obligations under the permit. Tamarind Resources Ltd (registered in Australia) has since become the parent company and renewed this parent guarantee in 2019.

71. Tamarind stated at the time that the US$30 million would be retained for the decommissioning of the Tui field and not reinvested in other ventures. It was not possible to compel Tamarind to retain the money, by for example placing it in escrow, as there were no legislative mechanisms for this.

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Limited ability to regulate the transfer of the Tui field to Tamarind in 2017

72. At the time, the Minister of Energy and Resources (the Minister) and MBIE were limited in their ability to regulate changes in control of a permit participant. Under the old section 41A of the Crown Minerals Act 1991 (CMA), a Tier 1 permit operator – which was AWE Taranaki for the Tui sale to Tamarind in 2017 – was only required to notify the Minister that the change of control had occurred after the event. No prior Ministerial consent was required for the change to proceed.

73. The only option available to the Minister in these cases was to revoke the permit if the Minister was not satisfied that following the change of control the permit holder continued to have the financial capability to meet its obligations under the permit.

74. At that time, the Tui field had negative value. If the Crown had revoked the permit in 2017, it would not have been possible to reallocate the permit to another party. The cash payment of US$30 million that Tamarind received would have remained with Tamarind, and the Crown would have had to take steps to decommission the field, although it was not legally required to do so. The decommissioning costs were estimated to be as much as US$100 million (AWE carried cost). Therefore, on balance it was decided not to revoke the Tui permit because it would have resulted in a similar situation that faces the Crown now, only it would have come about sooner and with no prospect of further royalties or Tamarind fulfilling their obligations to decommission the Tui Field.

75. The 2017 Tui transaction highlighted a 'loophole' in the CMA, whereby a company could sidestep the tests that would normally be in place for a new operator of a petroleum permit (by acquiring the shares of existing petroleum permit operators). This did not allow for any assessment of the operator's technical, health and safety, and financial capabilities under new ownership and enabled the tests for transfer and change of operator to be avoided. This loophole closed on 19 February 2019 via the Crown Minerals Amendment Act 2019 (2019 No 2).

76. The CMA now requires that the change of control of a Tier 1 permit operator receives prior approval as if it were a change of operator. This means that the Crown will not face a similar situation now as it did in 2017, should the owners of other petroleum fields such as *Maari* and *Pohokura* look to exit by selling the shares in the permit holding companies.

MBIE is progressing work to address future petroleum decommissioning liabilities

77. Section 41A, the since-amended legislative mechanism that enabled Tamarind to take control of the Tui asset, envisaged an on-market takeover of a listed company. The precise time that such a change of control takes place and the inherent difficulties in unwinding such a transaction meant that s41A was considered a pragmatic approach at the time of drafting.

78. Where petroleum assets were historically owned by a consortium of listed entities, the industry has recently gone through a change, whereby late life assets are being acquired by private companies, without joint venture partners, funded by private equity, and this presents a problem for regulators.

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79. Following the 2019 CMA amendments, MBIE can now properly assess and influence the outcome when a late life asset is transferred to a smaller, less well-resourced company.

80. This will not eliminate the risk of a company encountering financial difficulties, but does allow some control at the time of entry. MBIE endeavours to place suitable conditions on the new entrant that safeguard against default at a later date.

The Crown Minerals Act 1991 Review contains proposals to improve the decommissioning regulatory framework

81. MBIE is currently reviewing the requirements around decommissioning and other end-of-life issues associated with petroleum exploration and mining through the CMA Review. We are consulting on a range of proposals to improve the regime:

- including explicit obligations in the CMA for decommissioning and plugging and abandonment (P&A), including the obligation to meet the costs of doing so;[14]
- enhancing the ability for MBIE to require information to determine permit/licence holders' ongoing financial capability to complete decommissioning and P&A obligations and other work programme commitments. These financial capability assessments would be supported by additional powers to require other relevant information, such as field development plans; and
- new regulatory powers relating to financial security to make sure that permit/licence holders are financially capable of discharging decommissioning and P&A obligations to reduce the risk of transferring financial risk to the Crown or third parties.
- requiring permit/licence holders to obtain approval from the Minister of Energy and Resources to cease petroleum production;

82. Public consultation closed on 27 January 2020, and I intend to take policy recommendations to Cabinet in mid-2020. I expect that these proposals, if implemented, will provide greater certainty to the Crown around the scope, potential magnitude of costs, and potential liabilities associated with decommissioning that will be undertaken.

83. The proposals relating to financial security in particular will help minimise the financial risk to the Crown of situations such as Tamarind where an operator defaults on its obligations. Under the proposals, an escrow account could have potentially been used to ensure that the US$30 million that Tamarind received in 2017 was ring-fenced in the event of insolvency. A letter of credit may have also been required from Tamarind to act as a bond for potential decommissioning costs.

I will report back on an approach to future petroleum decommissioning

84. In the normal course of business, an operator such as Tamarind would pay for the full cost of decommissioning, and then the Crown would provide 42 to 48 per cent of this cost back to the operator in the form of royalty and tax rebates. In the case of

[14] Currently these obligations are imposed as conditions of permits, rather than as a default obligation under the CMA.

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Tui's decommissioning, the Crown might have expected to pay up to $US48m in royalty and tax rebates assuming a decommissioning cost of $US100m. The rationale for these royalty and tax rebates is explained in Annex One.

85. Accordingly, whenever a petroleum installation is decommissioned, the Crown is exposed to some of the decommissioning cost through tax rules. These costs must be viewed against the positive fiscal impact these installations generate for the Crown. For example, Tui has yielded approximately NZ$539 million in royalties.

86. There are two kinds of petroleum decommissioning costs the Crown will have to address in the coming years (details of these can be found in Annex One):

- Tax and royalty rebates for decommissioning of petroleum installations, and
- Plugging and abandonment of historic and orphaned onshore wells.

87. I will report back to Cabinet by December 2020 with a plan to manage the Crown's petroleum decommissioning cost, and any other petroleum decommissioning risks the Crown is exposed to. Funding necessary to meet these costs is expected to be met through Budget bid processes.

Consultation

88. Crown Law, the Treasury, the Ministry for the Environment, WorkSafe NZ and the Environmental Protection Authority were consulted. The Department of Prime Minister and Cabinet has been informed.

Financial Implications

89. Based on the information officials have to date, both MBIE advises, and Treasury agrees, that a constructive obligation (as set out in International Public Sector Accounting Standard 19) exists for the Crown to meet Tui decommissioning costs, and therefore, a provision and corresponding expense of Tui decommissioning should be recognised now.

90. Since the constructive obligation and the provision expense occurred before approval by Parliament, it is likely to result in a technical breach of $151.841 million. Any unappropriated expenditure will be validated at the end of the financial year through the process outlined in section 26C of the Public Finance Act 1989.

91. As the expenses will be recognised this year, an appropriation will need to be in place to provide the appropriate authority for this expense. The Crown must appropriate its best estimate of the total costs at the same time it agrees to fund the decommissioning.

92. Accordingly, this paper seeks to appropriate:
    - $151.841 million to meet the best estimate of total decommissioning costs, and
    - $2.800 million to meet MBIE's departmental costs until 2021/22.

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Estimated Cost to Decommission Tui – $151.841 million

93. Decommissioning costs are based on the *Tui Field Abandonment and Decommissioning Feed Study* commissioned by AWE and conducted by AGR in July 2015. This study provides the best modelling available on estimated costs and broadly aligns with other reports.[15]

94. A set of four possible options was considered at a workshop facilitated by AGR using a Multi-Criteria Analysis (MCA) framework to establish the best approach for field retirement. The result from the MCA established that the option that best satisfied most of the outlined criteria was *Option #4: A rig based "through tubing" P&A with small Construction Support Vessel (CSV)*. When considered against criteria such as health safety and environment, regulatory requirements, cost and project schedule reliability, it was concluded that Option #4 was the most robust option, with the lowest risk of cost over-runs and the highest chance of success.

What is the best estimate?

95. Accounting standards[16] legally bind MBIE to provide for the **best estimate** of the expenditure necessary to meet the Crown's decommissioning costs. The best estimate *does not necessarily mean* the most conservative estimate. It is the best estimate which must account for expert judgment of risks and probable outcomes.

96. MBIE has determined $151.841 million as the best estimate available. MBIE began with the expected cost figure as provided in the AWE modelling, then it factored in the following incremental costs associated with the unplanned absence of the FPSO during decommissioning, and the planning situation unique to Tui:

- Alternative means would have to be found to control the wells at the time of decommissioning. Currently the wells can be opened and shut via hydraulics from the FPSO. Without this system, ROVs[17] will have to be employed to install alternative control systems which carry significant cost.
- Similarly, the flow lines will have to be detached and left on the sea floor, then raised again and flushed at a later time. This work carries additional cost.
- Given the delay between demobilisation and decommissioning (as opposed to a normal process where these events are synchronised), there will be costs associated with monitoring the flow lines and wells to ensure no harm to the environment occurs while waiting for the decommissioning stage.
- Cost savings through vessel or rig mobilisation planning also appears unlikely. New Zealand is a long way from where such specialised vessels are usually stationed and urgent deployment for a one-off job means that the cost of

[15] These include a report written by DOF Subsea titled Tui Area Oil Project, Decommissioning and Well Abandonment Feasibility Study, and a report commissioned by Tamarind and conducted by Calderwood Energy Ltd in March 2018 titled Tui Field – Decommissioning and Well Abandonment Plan.
[16] Public Benefit Entity International Public Sector Accounting Standard 19 Provisions, Contingent Liabilities and Contingent Assets (PBE IPSAS 19).
[17] Remotely operate vehicle – in other words, an underwater robot.

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mobilisation (approximately US$15 million for a large drill rig) cannot be shared with other operations.

97. Given the above factors, MBIE determined $151.841 million as representative of a risk adjusted mid-point for the Tui decommissioning. This position reflects MBIE's expert judgment of risks and probable outcomes. Components of this cost are discussed below.

Demobilisation oversight and decommissioning planning (front end planning) – Commercial Information

98. A service company is required to initiate and manage the demobilisation and decommissioning on the Crown's behalf. The Crown has no capability to perform this function itself. Funds need to be available immediately to ensure a service company can be contracted to plan and conduct the decommissioning process, particularly since demobilisation could begin as early as March 2020.

99. Under normal circumstances Tamarind would perform this function, with the FPSO owner conducting most of the work to demobilise the vessel. It is very important that demobilisation is done properly so that the subsea infrastructure is left in a state that does not present an environmental risk or add cost and complexity to the decommissioning phase of the project. Commercial Information

Demobilisation (Well Kill & Flushing, FPSO Disconnect, and Pre-Abandonment) - Commercial Information

100. Demobilisation is the first phase of decommissioning and involves removing the FPSO, ensuring the flow lines are clean, and leaving them safely on the sea floor. Demobilisation is a complex task requiring support vessels to handle flow lines, umbilicals and mooring lines, and tugs to hold the FPSO on station during disconnection. This needs to take place during the summer months while the weather permits such activities.

101. Legal professional privilege

102. BWO has a reputation as an internationally responsible operator and is willing to work with regulators to achieve a satisfactory outcome. Legal professional privilege

103. In light of this, I recommend the Crown contributes to the demobilisation costs given the following factors:

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- *Minimisation of environmental risk* – Crown contribution to the demobilisation costs ensures that the flow lines are left in an optimal state and the subsea wells are suspended, thereby minimising the risk to the marine environment.

- *Potentially cost efficient* – The FPSO's connection to the subsea wells and infrastructure provides control of the well heads and the possibility of using resin plugs, which would significantly reduce costs. Flushing the line is also easier from the FPSO.

104. Commercial Information. If the flow lines do not need to be flushed, this may defer some of the cost. Commercial Information . Finally, if flow line integrity problems arise, these may have to be repaired before demobilisation, which may carry an incremental cost.

Decommissioning (Well Plugging & Abandonment, Decommissioning, and Project Close-Out) - Commercial Information

105. After demobilisation of the FPSO the remaining infrastructure must be decommissioned. This involves the plugging and abandonment of the wells to ensure hydrocarbons cannot leak into the marine environment and the removal of the remaining subsea infrastructure. This physical work may begin as early as the summer of 2020/21, and optimistically, may be completed in the summer of 2021/22 depending on planning, weather and vessel availability.

106. Commercial represents a base case scenario which uses a drill rig to conduct the plugging and abandonment and removal of infrastructure. If the use of a work boat instead of a rig proves viable for some or all of the plugging and abandonment work, this will reduce costs.

MBIE Project Management and Administration – approximately NZ$2.8 million

107. Overseeing and managing the demobilisation and decommissioning of the Tui field will be a resource intensive and technically challenging task over a period of years, with the Crown ultimately ensuring that process is carried out in timely, safe and efficient manner.

108. Costs will include project management and administration staff, procurement and legal services, oversight and monitoring of service contracts, iwi communication and engagement and physical activities being carried out by service providers in the ocean environment. Some of the skillsets required are likely to be highly specialized in nature.

109. MBIE lacks the ability to absorb these costs within baselines as reprioritisation occurred in both the 18/19 and 19/20 financial years for the Crown Minerals Estate appropriation and it is fully committed towards core service delivery.

110. $2.8 million will fund MBIE's costs until 2021/22. MBIE is expected to continue incurring departmental costs for the duration of the decommissioning process which

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is expected to continue until at least 2023/24. Accordingly, departmental costs from 2022/23 onwards will be sought via a future Budget process.

Proposal: Appropriate $154.641 million to meet estimated departmental and non-departmental costs associated with Tui decommissioning

111. Given the estimates detailed above, I propose to appropriate $154.641 million to provide for the expense of Tui decommissioning:
    - $151.841 million to meet the best estimate of total decommissioning costs, and
    - $2.800 million to meet MBIE's departmental costs until 2021/22.

112. The profile of expenditure is forecast below:

Cost Element	2019/20 (million)	2020/21 (million)	2021/22 (million)	2022/23 (million)	2023/24 (million)	Total
MBIE Project Management and Administration Departmental procurement, monitoring, legal, communication and stakeholder engagement costs.	$0.8	$1.2	$0.8	-	-	$2.8
Demobilisation oversight and Decommissioning planning (Front end planning) Secures a service provider to oversee demobilisation of the FPSO and plan the overall decommissioning project.	Commercial Information					
Demobilisation Well kill and flushing, demobilise the FPSO *Umuroa*, pre-abandonment						
Decommissioning Plugging of the wells, and removal of subsea infrastructure.						
Total	Com					$154.6

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113. Officials have informed me that $154.641 million constitutes the best estimate available at this time. There may be foreign exchange risks and factors during the decommissioning which may require revision to this appropriation. Any underspends will return to the Crown.

114. MBIE aims to ensure that the decommissioning work is well managed, and that all options to reduce costs (such as those noted above) will be explored. In the event that funding remains in excess of decommissioning costs, this will be returned to the Crown.

115. It should be noted that these sorts of decommissioning projects are usually initiated years in advance with a team of highly specialised professionals undertaking detailed preparations. The current situation does not allow this and in taking responsibility for the project, the Crown must accept that activities can no longer be conducted in a

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properly planned, optimised and efficient way. This means that activities may be subject to change and that costs are more difficult to estimate.

Legislative Implications

116. There are no legislative implications from this paper.

Impact Analysis

117. Neither a Regulatory Impact Statement nor a Climate Implications of Policy Assessment is required.

Human Rights

118. The proposals in this paper are consistent with the New Zealand Bill of Rights Act 1990 and the Human Rights Act 1993.

Gender Implications

119. The proposals in this paper do not have any gender implications.

Disability Perspective

120. The proposals in this paper do not have any implications for disabled people.

Publicity

121. I do not propose to issue a press release on this Cabinet paper.

Proactive Release

122. Legal professional privilege

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Recommendations

The Minister of Energy and Resources recommends that the Committee:

1. **note** that Tamarind Taranaki Limited ("Tamarind"), the operator of the Tui oil field ("Tui") is in liquidation and receivership and lacks the assets necessary to meet costs necessary to decommission Tui's infrastructure;

2. **note** that failure to decommission Tui risks harm to the marine environment;

3. Legal professional privilege

4. **note** that under section 92A(2) of the Crown Minerals Act 1991, the Tui permit will vest in the Crown once Tamarind is removed from the companies register, upon completion of liquidation and receivership, which could occur this year;

5. **note** that due to the International Public Sector Accounting Standard 19 (PBE IPSAS 19), the Crown faces a constructive obligation to meet Tui decommissioning costs,
Legal professional privilege

6. **note** that while the decommissioning costs will be spread over several years, PBE IPSAS 19 requires the provision of the full expected liability to be recognised immediately;

7. Legal professional privilege

8. **note** that the Public Finance Act 1998 allows the Auditor-General to stop payments out of bank accounts for unlawful spending (section 65ZA) and has indicated a willingness to do this in the past;

9. **note** that the total decommissioning cost is currently estimated at approximately $154.641 million which consists of:
   - $151.841 million non-departmental expense to meet the cost of planning, demobilising and decommissioning the Tui oil field, and
   - $2.800 million departmental expense to meet MBIE's project management and oversight costs until 2021/22;

10. **note** that the figures in recommendation 9 represent the best estimate of costs at this time, although noting that the actual cost may differ depending on factors including decommissioning mechanisms available, rig or vessel availability, weather conditions, and foreign exchange movements;

11. **note** that funding for MBIE's project management and oversight costs from 2022/23 onwards will be sought through a future Budget process;

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12. **note** that officials will seek ways to minimise the fiscal impact to the Crown through negotiation with decommissioning service providers;

13. Legal professional privilege and they will report back to the Minister of Energy and Resources and the Minister of Finance by the end of March 2020 seeking directions on how to proceed;

Financial Implications

14. **agree** to fund Tui decommissioning noted in recommendation 9 above;

15. **agree** to establish the following new appropriation:

Vote	Business, Science and Innovation
Appropriation Minister	Minister of Energy and Resources
Title	Oil Field Decommissioning
Type	Non-Departmental Other Expense
Scope	This appropriation is limited to the costs associated with the demobilisation and decommissioning of New Zealand oil fields

16. **approve** the following changes to appropriations to give effect to the policy decision in recommendation 14 above, with a corresponding impact on the operating balance and net core Crown debt:

	$m – increase/(decrease)				
Vote Business, Science and Innovation Minister of Energy and Resources	**2019/20**	**2020/21**	**2021/22**	**2022/23**	**2023/24& Outyears**
Non-Departmental Other Expense: Oil Field Decommissioning	$151.841	-	-	-	-
Departmental Output Expenses: Energy and Resources: Management of the Crown Mineral Estate (funded from revenue Crown)	$0.800	$1.200	$0.800	-	-

17. **agree** that the proposed change to appropriations for 2019/20 above be included in the 2019/20 Supplementary Estimates and that, in the interim, the increase be met from Imprest Supply;

18. **agree** that the expenses incurred under recommendation 14 above will represent a decrease in OBEGAL and an increase in net core Crown debt;

19. **note** that since the constructive obligation and the provision expense occurred before approval by Parliament, it is likely to result in $151.841 million of unappropriated expenditure, which will be validated at the end of the financial year

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through the process outlined in section 26C of the Public Finance Act 1989, if necessary;

20. **direct** the Minister of Energy and Resources to report back to Cabinet once decommissioning planning is completed and updated estimated cost figures are made;

21. **note** that the Minister of Energy and Resources will report back to Cabinet by December 2020 on a plan to manage the Crown's future petroleum liabilities associated with tax and royalty rebates for decommissioning of petroleum installations, the plugging and abandonment of historic and orphaned wells, and wider petroleum decommissioning risks to the Crown.

Authorised for lodgement
Hon Dr Megan Woods
Minister of Energy and Resources

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Annex One – Future Crown petroleum liabilities

Crown's exposure through royalty and tax rebates (42%- 48% of total decommissioning costs)

1. In the normal course of business, a company deducts its expenses from its income to determine its taxable income. A reduction in taxable income ultimately reduces the amount of tax payable.

2. In the case of petroleum decommissioning, a petroleum miner incurs a considerable cost to decommission its installation, however, it cannot offset this expense against its income. This is because an installation at the decommissioning phase produces no income because it has reached the end of its productive life. This means that a petroleum miner has no way to achieve the tax benefit from expenditure incurred that any other business would achieve under normal tax rules.

3. Recognising that decommissioning costs fall at the end of a field's life when a petroleum miner makes little to no income, the tax rules allow a petroleum miner to spread decommissioning costs back across previous years of income. This ex-post adjustment thereby reduces taxable income in previous years, which reduces the amount of royalties and taxes payable. This necessitates a rebate from the Crown – effectively rebating a proportion of tax and royalties received. Company tax is 28 per cent of revenue and the royalty rate is 20 per cent of profit, resulting in a rebate of between 42 and 48 per cent of decommissioning costs.

The Crown will have to manage future tax and royalty rebates

4. Tui is the first of several offshore petroleum installations that will be decommissioned in the coming years. As a result of the tax rules, the Crown is exposed to a proportion of these decommissioning costs through tax and royalty rebates. A table of fields, potential costs, and when these costs are expected to fall is included below:

Installation name and operator	Type of installation	Approx. cost of decommissioning	Effective Crown Rebate[18]	*End of field life (min)*	End of field life (max)
Maui A and B -OMV	Large, heavy, fixed platform.	Commercial Information			
Maari field - OMV	Connected to a FPSO[3]				

[18] Rates are different between the petroleum licenses of older fields compared to petroleum permits of newer fields. This is due to historical differences in royalty rates and deductible costs. Kupe and Maui are Petroleum Mining Licenses whereas the others are Petroleum Mining Permits.

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Installation name and operator	Type of installation	Approx. cost of decommissioning	Effective Crown Rebate[18]	*End of field life (min)*	End of field life (max)
Kupe Field - Beach	Small unmanned, fixed platform.	Commercial Information			
Tui -Tamarind	FPSO installation				
Pohokura - OMV	Small unmanned, fixed platform.				

5. The above table represents our best knowledge of decommissioning costs at this time. We are currently working with the Petroleum and Exploration Association of New Zealand and petroleum permit/licence holders in order to obtain better estimates of likely future decommissioning costs.

The Crown will have to manage the cost to decommission onshore orphaned wells

6. More than 960 onshore wells have been drilled in New Zealand over the last 150 years. The majority of these wells have been or will in due course be correctly abandoned.

7. MBIE have recently undertaken a review of all onshore wells and have identified 104 wells without active permit holders (i.e. orphaned wells) that may have outstanding plugging and abandonment (P&A) commitments, i.e. wells that were not recorded as having been plugged and abandoned or where the data is questionable. These wells in their current state represent an unknown risk to health and safety and the environment if hydrocarbons are able to migrate up the well to either shallow water aquifers or surface.

8. The cost to safely plug and abandon these wells was recently estimated to total $14.34 million. The abandonment costs are based on recent experience of abandoning onshore wells in New Zealand but must be recognised as Level 1 costs estimates (+/-40%).

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