

Regulatory Impact Statement: Amendments to the Environmental Reporting Act 2015

Coversheet

| Purpose of Document | |
|--|---|
| Decision sought: | Cabinet agreement on final Environmental Reporting Act 2015 proposed policy amendments |
| Advising agencies: | Ministry for the Environment |
| Proposing Ministers: | Hon James Shaw, Associate Minister for the Environment (Biodiversity/Minister with delegated responsibilities for amendments to the Environmental Reporting Act 2015) Endorsed by Hon David Parker, Minister for the Environment |
| Date finalised: | 21 June 2022 |
| Problem Definition | |
| <p>The proposed amendments to the Environmental Reporting Act 2015 (ERA) seek to build a stronger environmental reporting foundation. One in which we are better able to understand our environment, the impacts we are having on it and the opportunities we have to make well informed decisions.</p> <p>In 2019, the Parliamentary Commissioner for the Environment¹ (PCE) reviewed the effectiveness of Aotearoa New Zealand’s environmental reporting system² under the ERA. The PCE’s report identified a series of reasons why reporting under the ERA is currently less efficient and effective in informing New Zealanders about the influences people are having on the environment. Since 2019, the Ministry has reviewed the PCE’s recommended changes and concluded that most of the PCE’s recommendations will deliver an improved reporting system. There were, however, some additional amendments needed to supply the system with better information and to make it easier for people to find out the health of the environment.</p> <p>The 10 proposed amendments discussed in this Regulatory Impact Assessment combine to re-direct environmental reporting towards more focused and robust reporting. Without these amendments the environmental reporting programme cannot confidently report on the state of the environment to support informed decisions to improve environmental outcomes for Aotearoa.</p> | |
| Executive Summary | |
| <p>The publication of <i>Environment Aotearoa 2019</i> (a state of the environment report produced under the ERA by the Ministry for the Environment (the Ministry) and Stats NZ) provided a timely opportunity for the Parliamentary Commissioner for the Environment (PCE) to review New Zealand’s environmental reporting system. The PCE made recommendations to amend</p> | |

¹ The PCE has a statutory role to comment on the reports produced under the ERA.

² Parliamentary Commissioner for the Environment (PCE). 2019. [Focusing Aotearoa New Zealand’s environmental reporting system](#). Wellington: PCE

the ERA in a 2019 report, which form the foundation of the proposed amendments to the ERA (listed below).

The PCE found that huge gaps in data and knowledge undermine our stewardship of the environment, and recommended concerted action and serious investment to improve the system. Data gaps, along with inconsistent data collection and analysis, make it hard to construct a clear national picture of the state of our environment – and whether it is getting better or worse.³

In the absence of intervention, it is expected that the environmental reporting programme will continue to produce reports that:

- do not lead to action
- cannot communicate the complexity of interconnected environmental issues
- rely on sub-optimal data
- are not able to incorporate te ao Māori and mātauranga Māori meaningfully and appropriately
- are not produced at the right time on the right things.

If the programme is not able to improve the environmental reporting there is a risk of missing environmental degradation until it is too late and irreversible damage occurs.

The Ministry undertook targeted consultation between 8 February – 18 March 2022. The consultation document, *Te whakawhanake i te pūnaha ripoata taiao o Aotearoa – Improving Aotearoa New Zealand’s environmental reporting system*, set out the following package of 10 initial proposed amendments:

1. Clarify the purpose of environmental reporting.
2. Mandate a Government response to state of the environment (previously also referred to as synthesis) reports.
3. Add drivers and outlooks to the reporting framework.
4. Adjust roles and responsibilities.
5. Mandate a standing advisory panel.
6. Replace environmental domains with cross-domain themes.
7. Reduce the frequency of state of the environment reports to six-yearly.
8. Replace domain reports with one commentary each year.
9. Establish a set of core environmental indicators.
10. Strengthen the mechanisms for collecting data.

The majority of the proposed amendments were supported, and the Ministry’s policy positions remain largely unchanged following consultation. However, in response to feedback and further internal advice, Proposal 2: Mandate a Government response to state of the environment reports, Proposal 9: Establish a set of core environmental indicators and Proposal 10: Strengthen the mechanisms for collecting data were adjusted.

The Ministry commissioned Allen + Clarke to complete a full Cost Benefit Analysis (CBA).

³ Parliamentary Commissioner for the Environment (PCE). 2019.

Specific costs for proposals 2, 3, 5, 6, 9 and 10 (as well as legislation costs, and costs for Māori engagement to better incorporate te ao Māori and mātauranga Māori in environmental reporting) have been calculated individually. Proposals 1, 4, 7 and 8 are not expected to generate any additional costs other than the process costs associated with amending the legislation.

The immediate benefits from these amendments are improved access to and quality of data, incorporation of te ao Māori and mātauranga Māori in a meaningful and appropriate way, being better able to communicate complex interrelationships within the environment, timely reporting that focuses on the right environmental areas, and requiring the Government to consider taking action.

As the proposals complement each other and work together, the benefits increase when they are considered as a package. Key benefits from amending the ERA are identified as:

- reduced regulatory burden
- improved Māori engagement and participation
- slower ecosystem degradation
- less harm from pollution
- reduction in staff turnover in the environmental reporting programme.

Given the nature of the expected costs and benefits and the assumptions required to produce this CBA, Monte Carlo analyses⁴ were carried out to assess the range and probability of potential outcomes.

Benefits are estimated to exceed costs in 98.8 per cent of the 20 thousand iterations of a Monte Carlo analysis, with a mean net benefit of \$504 million and an average benefit cost ratio of 1.9 over a 30-year investment horizon.⁵

Limitations and Constraints on Analysis

The Associate Minister for the Environment, Hon James Shaw, commissioned this work based on recommendations made by the PCE to amend the ERA.

The proposed amendments to the ERA are intended to address four overarching issues specific to national environmental reporting:

- environmental reporting requires regular reporting, but lacks a clear purpose and legislated direction to identify key issues or desired outcomes
- New Zealand does not have a fit-for-purpose national environmental reporting system
- inconsistent and deficient data and knowledge is impeding comprehensive and robust evidence-based reporting

⁴ Monte Carlo simulations or analyses are used to model the probability of different outcomes in a process that cannot easily be predicted owing to the intervention of random variables. This technique is used to show the impact of risk and uncertainty in prediction and forecasting models.

⁵ Note that the preliminary CBA used in the consultation document *Te whakawhanake i te pūnaha ripoata taiao o Aotearoa – Improving Aotearoa New Zealand’s environmental reporting system* used a 12-year investment horizon to cover two reporting cycles. A 30-year horizon was chosen for the full CBA to allow for longer term benefits to be better measured and to align with other recent CBAs (ie, those used for Resource Management reform).

- under-recognition of the Crown’s Treaty of Waitangi (Te Tiriti o Waitangi) responsibilities, te ao Māori and mātauranga Māori.

The ERA is an important step toward the system improvements required in the environmental monitoring and reporting system. While there are issues in the wider environmental monitoring and reporting system, these cannot all be addressed by amending the ERA and are out of scope for this work.

The benefits of these amendments are indirect benefits. They will provide a sound basis for taking direct action to address environmental issues, but if these actions are not taken, then the benefits of these amendments will be muted.

Time constraints, the COVID-19 environment and other competing stakeholder priorities may have had an impact on the volume and depth of feedback received. As a result, the Ministry undertook additional direct engagement to test final policy thinking with Ministry staff, Stats NZ, and several key Treaty partners (eg, representatives from the Iwi Leaders Group) and stakeholders (eg, the PCE).

Responsible Manager(s) (completed by relevant manager)

Nicola Sole

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Ministry for the Environment*



22 June 2022

Quality Assurance (completed by QA panel)

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| Reviewing Agency: | Ministry for the Environment and Statistics New Zealand |
| Panel Assessment & Comment: | <i>The Ministry for the Environment’s Regulatory Impact Analysis Panel has reviewed the Regulatory Impact Summary (RIS) “Regulatory Impact Statement: Amendments to the Environmental Reporting Act 2015”. The panel considers the document meets the quality assurance criteria for regulatory impact analysis. The paper clearly sets out the options available and provides a convincing analysis of the reasons for the amendments.</i> |

Section 1: Diagnosing the policy problem

What is the context behind the policy problem and how is the status quo expected to develop?

Context and current state (including existing legislation and regulation)

1. The Environmental Reporting Act 2015 (ERA) sets out the framework for independent, structured and regular reporting, at a national level, on the state of the environment in Aotearoa New Zealand. This helps us understand how New Zealand's environment is tracking and the impacts of our activities over time, which is vital for good decision-making.
2. The ERA requires the Ministry for the Environment (the Ministry) and Stats NZ to jointly produce and publish:
 - five domain reports published over a three-year period (roughly two per year) covering air, atmosphere and climate, freshwater, land, and marine domains
 - a state of the environment report published every three years.
3. The topics to be covered in each report are set out under [Environmental Reporting \(Topics for Environmental Reports\) Regulations 2016](#). These topics prescribe what needs to be covered for each domain alongside the impact topics for all domains⁶ listed in the ERA.
4. While the Ministry and Stats NZ are jointly responsible for producing environmental reporting under the ERA, many players in the environmental monitoring and reporting system contribute. This includes other central government agencies (eg, Department of Conservation (DOC), Ministry of Business, Innovation and Employment (MBIE), Ministry for Primary Industries (MPI)), mātauranga Māori experts and Māori, local government, Crown research institutes (CRIs), scientists and citizen scientists.
5. Independence is a key requirement of the ERA. The Government Statistician ensures that the statistics selected for reporting are at arm's length from the Government of the day, and together the Secretary for the Environment and the Government Statistician ensure the reporting as a whole remains independent of Ministers of the Crown and policy initiatives.
6. Once reporting is released, the Government, public and private agencies, Māori and other communities and individuals can use the information in the reporting and act on the findings, but no formal response or subsequent actions are required.
7. The Ministry and Stats NZ recognise that the ERA could be improved to produce more timely, in-depth and impactful reporting. To achieve this, flexibility is required to support a wider variety of reporting formats, and additional tools and other data sources will need to be used.

⁶ The topics relating to the impact that the state of the environment and changes to it may be having on each of the impact categories in relation to each of the domains are as follows: (a) biodiversity and ecosystem processes; (b) public health; (c) the economy; (d) mātauranga Māori, tikanga Māori, and kaitiakitanga; (e) customary use and mahinga kai; (f) sites of significance, including wāhi taonga and wāhi tapū; and (g) culture and recreation.

What will happen if no action is taken?

8. In the absence of intervention, the Ministry expects that the environmental reporting programme will continue to produce reporting that:
 - a. does not lead to action
 - b. cannot communicate the complexity of interconnected environmental issues
 - c. relies on sub-optimal data
 - d. is not able to incorporate te ao Māori and mātauranga Māori meaningfully and appropriately
 - e. is not produced at the right time on the right things.
9. If the programme is not able to improve environmental reporting there is a risk of missing environmental degradation until it is too late and irreversible damage occurs.
10. In addition, incremental improvements that have been made outside of the ERA (for example, setting up an interim science advisory panel, and including drivers and outlooks in the reporting framework) will not be safeguarded for future reporting.

Relevant decisions and confidence and supply agreements

11. The Labour Party's 2020 Election Manifesto and accompanying fact sheet, *A better planning system for the future*,⁷ flagged the intention to improve New Zealand's environmental reporting system, informed by the Parliamentary Commissioner for the Environment's (PCE's) 2019 report, *Focusing Aotearoa New Zealand's environmental reporting system*,⁸ so that environmental decisions are based on the best available information.
12. On 9 December 2021 Cabinet Environment, Energy and Climate (ENV) Committee agreed to pass the legislation (Environmental Reporting Amendment Act 2023) in the current term of government.
13. On 13 December 2021 Cabinet agreed to release the consultation document (which also acted as the interim regulatory impact assessment) *Te whakawhanake i te pūnaha rīpoata taiao o Aotearoa Improving Aotearoa New Zealand's environmental reporting system*.⁹

Links to other ongoing government work programmes

14. There are several other government initiatives underway that influence or relate to national environmental reporting. Some key examples are included below (paragraphs 15-18).
15. The Government is committed to repealing the Resource Management Act 1991 (RMA) within this government term, and enacting new legislation based on the recommendations of the Resource Management Review Panel (RM Panel). The RM

⁷ Labour Party. 2020. *Fact Sheet: A better planning system for the future*. https://d3n8a8pro7vhm.cloudfront.net/nzlabour/pages/18726/attachments/original/1601588231/RMA_-_Fact_Sheet.pdf?1601588231.

⁸ Focusing Aotearoa New Zealand's environmental reporting system 2019 <https://www.pce.parliament.nz/publications/focusing-aotearoa-new-zealand-s-environmental-reporting-system>.

⁹ See [CAB-21-MIN-0530].

Panel noted that robust national environmental monitoring, reporting and stewardship will be crucial to the effective implementation and operation of the new resource management system. Establishing effective links between the ERA and monitoring and reporting functions under the proposed Natural and Built Environments Act (NBA) is an ongoing process as reforms occur in parallel. The ERA will support the tracking of limits and targets being developed under the proposed NBA.

16. The Environment and Climate Research (ECR) Strategy is being developed alongside MBIE's Te Ara Paerangi Future Pathways reform programme (also known as Future Pathways) of the research, science, and innovation system. The development of the ECR Strategy responds to a recommendation by the PCE for a clear, unambiguous national-level environmental research strategy and will allow Government to speak with one voice and take a more strategic and coordinated approach to prioritising and investing in environment and climate research, data, capability and infrastructure.
17. Stats NZ is leading work to improve the collection and quality of environmental data:
 - a. Ngā Tūtohu Aotearoa – Indicators Aotearoa New Zealand is looking at indicators to monitor and report on kaitiakitanga (guardianship) and the state of the environment. It will focus on data quality, consistency, availability and presentation of indicators in an understandable format.
 - b. The Data Investment Plan sets out sources of existing data and what new data needs to be obtained and requires investment, and the Data and Statistics Bill (to replace the Statistics Act 1975) will provide for the collection of data for official statistics and research as well as setting the data standards for those.
 - c. Co-designing a Māori Data Governance Model in partnership with Māori for reporting information, and for the provision of that information.
18. Local government initiatives, including Land Air Water Aotearoa (LAWA), National Environmental Monitoring Standards (NEMS) and environmental data management systems (EDMSs), and the CRIs' National Environmental Data Centre (NEDC) look to make improvements in how environmental data and information is collected and shared, and contribute to the knowledge used in national environmental reporting.

What is the policy problem or opportunity?

What is the size of the problem?

19. While there are broader challenges within the environmental monitoring and reporting system that affect environmental reporting, this assessment looks specifically at the issues with the ERA.
20. *Environment Aotearoa 2019* outlined the significant and increasing pressure on Aotearoa's waterways, atmosphere, marine environment and land in terms of the way the environment is used, posing a threat to our wellbeing and way of life. However, this report (as well as *Environment Aotearoa 2022* and previous domain reports) clearly highlighted that there is not, consistently across the board, good enough data and knowledge to authoritatively report on what is happening to the environment.
21. In short, the environmental reporting programme cannot confidently report on the state of the environment and make informed decisions to improve environmental outcomes for Aotearoa.

Root cause

22. The root cause of these problems rests with the design and implementation of the ERA. For instance, the purpose statement provides little direction and the commitment to passive information gathering has limited the evidence base available for reporting.
23. In his 2019 report, the PCE commented that “[i]n practice, six-monthly reporting has put [the Ministry] and Stats NZ staff on a never-ending treadmill of report preparation and production.¹⁰ It requires them to spend too much time tinkering with and repackaging old information, instead of developing new indicators, undertaking analyses and gathering new insights to improve future reporting”.¹¹ The current statutory reporting deadlines limit the flexibility to report effectively and in a timely way on the things that matter most. As a result, environmental reporting is not having as much impact on environmental knowledge and decision-making as it should.
24. When the ERA was passed, new appropriations were given to Stats NZ and the PCE, however the Ministry received no additional funding for the upfront costs of establishing the environmental reporting programme. If the environmental reporting system is to be of value for New Zealand, both the reporting system and the broader national coordinated environmental monitoring system require dedicated ongoing investment.
25. While the Ministry and Stats NZ have made operational changes, with more funding in recent years and in response to the PCE’s recommendations, legislative amendments are needed to further embed, enable and evolve the environmental reporting programme.

Identifying the issues

26. The four issues being addressed are:
 - a. Unclear purpose of environmental reporting means that it requires regular reports, but lacks legislated direction to identify key issues or desired outcomes:
 - i. the current purpose of the ERA (to “require regular reports on New Zealand’s environment”) does not involve any shared vision or purpose for reporting
 - ii. the frequency of reporting, which the PCE described as a “never-ending treadmill”, is resource intensive, and detracts from more in-depth analysis. When driven by release deadlines, organisations do not have the capacity to complete the in-depth research and analysis needed
 - iii. the pressure-state-impact framework currently used for reporting lacks key elements, limiting analysis and reporting.
 - b. New Zealand does not have a fit-for-purpose national environmental reporting system. In particular:
 - i. the current fragmented reporting model uses available data and information, which is supplemented with research (‘body of evidence’) for case studies

¹⁰ Reports published to date have taken about 18 months to produce, with three reports simultaneously in different stages of production, requiring sustained effort from about ten Stats NZ staff and about 30 Ministry staff at any one time.

¹¹ PCE, 2019, page 47.

and local examples. This limits our understanding of the impacts of activities on the environment and human wellbeing

- ii. although the ERA sets out the roles and responsibilities allocated jointly to the Secretary for the Environment and the Government Statistician, there has been a lack of clarity in the actual execution of the duties and responsibilities
 - iii. the prescribed domain topics and reporting cycles do not acknowledge the complexity of the environment, how it affects wellbeing, or that it is an interconnected system. A more holistic view would include te ao Māori and mātauranga Māori, and contain information, for example about urban air and water quality, or urban land use, in a form that is helpful for decisions about urban areas.
- c. Inconsistent and deficient data and knowledge is impeding comprehensive and robust, evidence-based reporting by:
- i. requiring only existing and available data, obtained using reasonable efforts
 - ii. basing the monitoring on others' data, over which there is no legislated method for consistency
 - iii. the Ministry and Stats NZ not having the mandate to monitor the state of the environment directly under the ERA – so they are unable to fill any gaps beyond those partially filled under other legislation
 - iv. mātauranga Māori being absent from reporting requirements in the ERA, apart from the impact on te ao Māori.
- d. Under-recognition of the Crown's Te Tiriti responsibilities, te ao Māori, and mātauranga Māori, because:
- i. the ERA does not explicitly involve Māori in environmental reporting, which means te ao Māori and mātauranga Māori are not meaningfully represented
 - ii. there is insufficient recognition of the value and opportunities for the integration of te ao Māori and mātauranga Māori throughout formal environmental reporting requirements in the ERA
 - iii. the current domain-based reporting prevents a more holistic view of the environment, and does not reflect te ao Māori and mātauranga Māori which acknowledges the interconnectedness of the environment across these domains
 - iv. the current scale (focus on national data sets) limits quantitative approaches that are relevant in local areas, not recognising the valid empirical methods in te ao Māori.

Stakeholder impact

- 27. The Crown's Treaty partners are affected by and have an interest in these issues.
- 28. Stakeholders affected by, or with an interest in these issues, include:
 - a. central government agencies (eg, Stats NZ, DOC, MPI)
 - b. advisory groups (eg, Interim Science Advisory Panel, Interim Mātauranga Science and Insights Panel)

- c. local government
 - d. CRIs
 - e. universities and institutes of technology
 - f. sector interest groups (eg, Life Cycle Association of NZ and PlanTechNZ)
 - g. non-government organisations.
29. The proposed amendments have moderate direct impacts on Treaty partners and key stakeholders who have environmental monitoring and reporting functions or interests under the ERA. This is primarily due to the resourcing required to undertake these functions, such as for new equipment and trained staff (including capacity) to undertake additional monitoring.

Consultation

30. Targeted consultation ran from 8 February to 18 March 2022 during which time the Ministry received 42 submissions from regional councils and unitary authorities (10), CRIs (3), Non-Government Organisations (NGOs) (5), hapū and iwi (4), industry bodies (2), businesses, education and health sector (4), the PCE, and individuals (13).
31. Time constraints, the COVID-19 environment and other competing stakeholder priorities may have had an impact on the volume and depth of feedback received. Some respondents noted that, owing to these pressures, they were unable to provide comprehensive information (such as cost implications), and that they knew of others who were unable to make a submission. As a result, the Ministry undertook additional direct engagement to test final policy thinking with Ministry staff, Stats NZ, and several key Treaty partners (eg, representatives from the Iwi Leaders Group, mātauranga Māori experts) and stakeholders (eg, the PCE).

Overview of submissions received through consultation

32. Submissions highlighted broad support for the proposals. The key themes from the submissions included:
- a. support to establish core environmental indicators; however, there were several views on how to present this within the ERA
 - b. a need to ensure Te Tiriti is reflected in the ERA, to be used as the basis from which to explore how te ao Māori and mātauranga Māori could be reflected within environmental reporting
 - c. whether the clarification of roles and responsibilities outlined in the ERA could or should extend beyond the Ministry and Stats NZ to include, for example, regional councils, other government agencies, CRIs and others
 - d. agreement that the ERA needs to include better data collection mechanisms; however, there were several different views on what the mechanism should be
 - e. from an implementation perspective, concerns about funding, costs, resourcing and capacity particularly in relation to data collection. This was especially pertinent for regional councils and unitary authorities, CRIs, and hapū and iwi groups.

33. Feedback was also received about issues and opportunities relating to the broader environmental monitoring system. This feedback falls outside the scope of the current proposed amendments to the ERA; however, much of it will be addressed within the wider reforms of the resource management system and broader environmental monitoring and reporting system (outlined in paragraphs 15 to 18 above).
34. In addition, the Ministry held online hui with environmental and mātauranga Māori experts¹² to discuss how to reflect Te Tiriti in the ERA, and to ensure te ao Māori and mātauranga Māori are properly supported.
35. Key themes from online hui included:
 - a. the need to give effect to Te Tiriti by including principles and/or a partnership approach in the ERA
 - b. support for inclusion of mātauranga Māori in environmental reporting, with some specific considerations identified to be explored with Māori partners
 - c. a need for resource to support Māori to actively participate at all levels
 - d. recognition of a need for a core set of Māori indicators.

Outcome from consultation on policy proposals

36. Respondents supported most proposals, and policy positions remain largely unchanged following consultation. However, in response to feedback and/or further internal advice, Proposal 2: Mandate a Government response to state of the environment reports, Proposal 9: Establish a set of core environmental indicators and Proposal 10: Strengthen the mechanisms for collecting data have been adjusted.

What objectives are sought in relation to the policy problem?

37. To address the four issues above, the proposed changes should achieve the following objectives:
 - a. To have a clear purpose for environmental reporting that drives a focus on key issues and the desired outcomes.
 - b. To drive the shift to a clearly defined, coordinated reporting system that gives a robust, comprehensive, authoritative evidence base on the state of New Zealand's environment.
 - c. To increase the influence environmental reporting has on decisions affecting the environment.
 - d. To better meet our partnership responsibilities in terms of Te Tiriti, including how mātauranga Māori, data, evidence, knowledge and science is used, collected, managed and protected in environmental reporting.

¹² Hui were with the Ministry's interim Science Advisory Panel (SAP), Iwi Leaders Group – Data representatives, Dr Hauiti Hakopa (EMRS Strategic Governance Group member), Te Arawhiti, and the Ministry's Interim Mātauranga Māori Science and Insights Panel (IMSIP).

Section 2: Deciding upon an option to address the policy problem

What criteria will be used to compare options to the status quo?

38. The Ministry used the assessment criteria set out in [Annex 1](#) to assess the suitability of each option.
39. The Ministry also assessed the options against the potential impact based on the Treaty principles.

What scope will options be considered within?

40. The Associate Minister for the Environment, Hon James Shaw has commissioned this work based on comprehensive recommendations made by the PCE to amend the ERA.
41. For this reason, the scope of proposals and the options within these are informed by the scope of the PCE's recommendations. The additional Proposal 10: Strengthen the mechanisms for collecting data acts as an extension to the PCE's recommendation on a shift from passive to active information gathering.
42. The proposed amendments are considered minor adjustments and do not significantly change the intent of the ERA.

Cost Benefit Analysis approach

43. The Ministry commissioned Allen + Clarke to complete a full CBA. As the proposals complement each other and work together, the benefits increase when they are considered as a package.
44. The CBA analysis is underpinned by the following general assumptions, which apply to assessing the costs and benefits of all the proposals:
 - a. the amendments will be enacted from 1 July 2023
 - b. cost estimates apply a deadweight cost of taxation allowance (0 per cent/20 per cent/40 per cent representing low/central/high beta distribution assumptions)
 - c. present values are calculated on a 30-year time horizon, with central estimates of present values calculated with a 5 per cent discount rate (2 per cent – 8 per cent low/high bands). The 30-year horizon means that the analysis incorporates five six-year reporting cycles
 - d. values are presented in constant 2021 prices in present value terms for the entire 30-year period
 - e. compliance costs are calculated without attributing who will bear these costs
 - f. current costs of passing the ERA amendments are included
 - g. the Monte Carlo analyses were carried out to assess the range and probability of potential outcomes and provide 95 per cent confidence intervals for the estimated costs and benefits

- h. labour costs are based on updated calculations from Treasury’s 2015 policy cost study and Stats NZ’s data as set out below:

| Assumption | Low | Central | High | Beta (skewness) |
|--|-----------|-----------|-----------|-----------------|
| <i>Labour costs per full time equivalent (FTE)</i> | | | | |
| Ministry for the Environment | \$183,619 | \$247,327 | \$328,987 | 1.30 |
| Other departments and CRIs | \$206,523 | \$229,426 | \$279,207 | 2.20 |
| Stats NZ and regional councils | \$153,029 | \$170,000 | \$206,886 | 2.20 |

45. Specific costs for proposals 2, 3, 5, 6, 9 and 10 (as well as costs for Māori engagement and legislation costs) have been calculated individually. Proposals 1, 4, 7 and 8 are not expected to generate any additional costs other than the process costs associated with amending the legislation. The final cost item relates to engagement (collaboration) with Māori to better incorporate te ao Māori and mātauranga Māori in environmental reporting. Cost estimates for each proposal are set out below.

What options are being considered?

Proposal 1: Clarify the purpose of environmental reporting

46. This proposal clarifies the purpose of the ERA, including why the state of the environment is being reported, and what the reporting is supposed to achieve, while setting the scene for interpreting and implementing the ERA.
47. Three options were set out in the consultation document for consideration:
- Option 1. Amend the purpose of the ERA to a variation on the PCE’s wording; separate the purpose (the why) from the reporting framework (the how).
 - Option 2. Amend the purpose of the ERA in line with the PCE’s recommendation.
 - Option 3. Status quo.

How do the options compare?

48. The comparison of each of the options is set out in [Annex 1](#).

What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

49. Given that the purpose is the basis from which all other sections in the ERA are interpreted, Option 1 to amend the purpose of the ERA to a variation on the PCE’s wording; separate the purpose (the why) from the reporting framework (the how) is the initial preferred option because it would:
- support a clear purpose for reporting by setting it out in a way that focuses on the key issues and desired outcomes
 - drive a clearly defined, coordinated evidence base for reporting by giving guidance on why reports, commentaries and indicators are prepared
 - increase the influence of reporting by clearly stating who the reporting is for and the reason for it, and giving greater visibility in reporting which may help to prevent duplication in effort of other reports and greater engagement in the reporting by the public, which will increase the consciousness of the state of the environment

- d. provide the foundation for a partnership approach and improve how Te Tiriti responsibilities are met, by requiring environmental reporting to include purposeful information that meets the environmental needs of Māori and includes mātauranga Māori and te ao Māori perspectives of the environment.

Consultation themes

50. Overall, most respondents supported the initial preferred proposal. Specifically, providing feedback:
 - a. on terminology eg, timely, enduring, comparable
 - b. on the need to promote the role environmental reporting will play in ensuring better decision-making
 - c. that the purpose should sit within a Te Tiriti framework so the ERA supports both effective stewardship and kaitiakitanga and gives effect to Te Tiriti
 - d. that definitions may be needed depending on what wording is used in the purpose
 - e. that appropriate funding will be required.

Final proposal following consultation

51. Following consultation, the final proposal is to:
 - a. Clarify the ERA's purpose by separating the why from the how.
 - b. Amend the purpose of the ERA to set out a short statement on the following points:
 - The reason for the ERA eg, to enable an evidence base that will:
 - inform New Zealanders
 - support analysis and decisions that lead to effective, enduring environmental stewardship and kaitiakitanga.
 - How the ERA will do this eg, requiring regular, independent, evidence-based, consistent, trusted and reliable state of the environment reporting of a range of scales and refer to the drivers-pressures-state-impacts-outlooks reporting framework.
 - Providing greater alignment with and incorporation of te ao Māori, including mātauranga Māori, and the values and aspirations of hapū, iwi, and Māori for the environment.
 - Referring to reporting (as opposed to reports).

What are the marginal costs and benefits of the option?

52. It is presumed that the activities involved fall within the business-as-usual activities of the Ministry and Stats NZ. This means there should be no explicit additional cost implications nor additional full-time equivalent staff (FTE) requirements from this proposal.
53. Benefits have not been calculated for each proposal. Instead, the expected benefits have been calculated based on the complete package of proposals.

Proposal 2: Mandate a government response to state of the environment reports

54. This proposal initially required the Government to formally acknowledge state of the environment reports within six months and release an action plan within 12 months. This increases transparency and accountability for addressing environmental issues, closing the loop between reporting and action taken.
55. The highest scoring three options were set out in the consultation document for consideration (with other options considered included in an appendix):
 - a. Option 1. Mandate a response from the Government, with the Minister for the Environment coordinating the response from relevant Ministers.
 - b. Option 2. Mandate a response from the Government, with only the Minister for the Environment responsible for responding.
 - c. Option 3. Mandate a response from a select committee.

How do the options compare?

56. The comparison of each of the options is set out in [Annex 1](#).

What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

57. Option 1 is the initial preferred option because it would:
 - a. drive a clearly defined, coordinated reporting system by closing the 'response' gap in the framework
 - b. require a whole of Government response to allow for a wider range of actions to be decided
 - c. give the decision-making to the Government which has the ability to implement actions compared with select committees and the PCE
 - d. maintain the independence of the state of the environment report from the Government's response
 - e. not delay the release of the information in the state of the environment report by waiting for the Government response
 - f. allow sufficient time for actions and policies to be developed within government, and for some consultation on those policies before their release, while still ensuring a timely Government response.

Consultation themes

58. Overall, most respondents supported the initial preferred option. Specifically, providing feedback on:
 - a. whether responses should be required for in-between commentaries
 - b. the extent to which the content of the response (and what this would include) would be outlined in the legislation
 - c. the need for the response to sit within a Te Tiriti o Waitangi framework, and how this might be achieved

- d. who should be involved in the response
- e. the timing of response
- f. whether the responses would be reviewed to ensure that the action plans or strategies are being carried out
- g. concerns about costs of new data potentially required by a government response, especially for local government
- h. related costs.

Final proposal following consultation

59. Following consultation, the final proposal is to:
- a. mandate a one-year time frame in which a response with subsequent actions must be produced
 - b. mandate that the Government response (and subsequent actions) is led by the Minister for the Environment coordinating the response with other appropriate Ministers, Treaty partners and stakeholders
 - c. include a minimum set of key elements that must form part of the response to ensure the response is meaningful and that all related activity provides positive outcomes for the environment. Minimum key elements would include:
 - a list of current policies and initiatives associate with the issues raised
 - any new policies and initiatives that are proposed or planned
 - the roles, responsibilities and timeframes (start and end) for any actions that will be taken to address the issues
 - what policy analysis the Government proposes to undertake to identify any other policies and initiatives that are needed and the timeframe in which they intend to do this and the expenditure and investment allocated to addressing issues
 - what issues raised in the state of the environment reports the Government does not intend to address, and why
 - any subsequent actions identified including timeframes for completion
 - d. include that the ERA will require Cabinet agreement on the scope of the response within the first three months of a state of the environment report being released. This will enable the establishment of a working group to produce the response. The working group will include representatives from relevant departments (eg, DOC, MPI, MBIE), Treaty partners, local and regional government and others as required depending on the nature of issues raised within the report.
60. The Ministry removed the requirement for an initial response to be produced within six months and then be followed within a further six months with an action plan as further analysis and feedback suggested a two-step process would add little value.

What are the marginal costs and benefits of the option?

61. It is assumed that this proposal will have resource implications every six years in the year following the release of state of the environment reports. The Ministry is expected to require 1 FTE resource to co-ordinate responses from other departments. Allen + Clarke cost estimates assume 9 FTE inputs to assess implications and responses to

each state of the environment report, 0.5 FTE from the Ministry and 8.5 from other departments.

62. The range of present values of Proposal 2 are presented in Table 1. The 10 FTE government labour requirement is estimated to cost \$2.3 million in one year during the proposed six-year reporting cycle. The present value of five cycles over a 30-year period (based on 5 per cent discount rate and applying a 20 per cent deadweight cost of tax) is \$6.7 million.

Table 1: Present value of Proposal 2

| Cost elements | Low | Central | High |
|------------------------|-------|---------|--------|
| Present Value (NZ\$ m) | \$3.1 | \$6.7 | \$12.5 |

63. Benefits have not been calculated for each proposal. Instead, the expected benefits have been calculated based on the complete package of proposals.

Proposal 3: Add drivers and outlooks to the reporting framework

64. This proposal extends the pressure-state-impact¹³ framework to provide a more complete view of environmental issues by including:
- drivers – factors that cause the pressures on the environment
 - outlooks – how the state of the environment may change in the future, and the likely impact of such changes.
65. The top three options were set out in the consultation document for consideration (with other options considered included in an appendix):
- Option 1. Include drivers and outlooks.
 - Option 2. Include drivers, outlooks and responses.
 - Option 3. Include outlooks.

How do the options compare?

66. The comparison of each of the options is set out in [Annex 1](#).

What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

67. Option 1 is the initial preferred option because it would:
- expand the framework for easier identification of the key drivers, which reinforces the value of the reports by explaining what is driving the pressures
 - provide an extrapolation of the current state into the future based on the identified drivers, pressures and impacts to forecast the outlooks if nothing in the system changes
 - provide a more complete framework that offers more tools for reporting

¹³ Pressures describe what may be causing, or have the potential to cause, changes to the state of the environment. The state of the environment describes what the current condition of the environment is. Impacts explain how the state of the environment might impact on areas including ecological integrity, public health, the economy, te ao Māori and culture and recreation.

- d. work well with other knowledge systems such as te ao Māori and mātauranga Māori
- e. maintain the independence of the reporting by not including responses which could be viewed as getting into the area of policy and evaluation making any analysis potentially political.

Consultation themes

68. Overall, most respondents supported the initial preferred option. Specifically, providing feedback on:
- a. whether ‘backward looking’ responses, listing what steps have already been taken without analysing their effectiveness, should be included in the environmental reporting framework
 - b. concerns about costs of new data potentially required for drivers and outlooks, especially for local government
 - c. the importance of working with Māori to incorporate the appropriate use of mātauranga Māori and embed a Te Tiriti based framework in environmental reporting and in the Government’s response
 - d. the need for definitions of drivers and outlooks, and the nature of outlooks being based on assumptions and projections.

Final proposal following consultation

69. Following consultation, the final proposal is to mandate the inclusion of drivers and outlooks (not responses) using a shortened version of the driver-pressure-state-impact-response framework plus outlooks. This approach supports flexibility as the proposed framework can incorporate te ao Māori and mātauranga Māori based drivers, pressures, states, impacts and outlooks, and is also broad enough to use other frameworks alongside (eg, He Ara Waiora).

What are the marginal costs and benefits of the option?

70. Stats NZ has estimated that set up activities will involve 1 FTE, with an additional 2 FTE required in each subsequent year. The Ministry has estimated that set up activities will involve 0.5 FTE, with an additional 4 FTE required in each subsequent year to provide ongoing expert advice. Additional ongoing input from CRIs and regional councils has also been incorporated. An additional cost of \$1 million per year has been provided to purchase services from other organisations.
71. The range of present values of Proposal 3 is presented in Table 2. The 12 FTE labour requirement and budget for purchase of services is estimated to cost \$3.5 million per year, which represents a present value of \$69.5 million over a 30-year period.

Table 2: Present Value of Proposal 3

| Cost elements | Low | Central | High |
|------------------------|------|---------|---------|
| Present value (NZ\$ m) | \$41 | \$69.5 | \$113.5 |

72. Benefits have not been calculated for each proposal. Instead, the expected benefits have been calculated based on the complete package of proposals.

Proposal 4: Adjust roles and responsibilities

73. This proposal adjusts roles and responsibilities to clearly define the joint roles and responsibilities for the Secretary for the Environment and the Government Statistician, to reduce overlaps and ensure that each organisation uses their expertise, with:
- the Secretary for the Environment as the steward for New Zealand’s environment
 - the Government Statistician as the leader of the official statistics system.
74. Two options were set out in the consultation document for consideration:
- Option 1. Adopt the PCE’s recommendation to adjust the roles and responsibilities of the Secretary for the Environment and the Ministry, and the Government Statistician and Stats NZ.
 - Option2: Status quo.

How do the options compare?

75. The comparison of each of the options is set out in [Annex 1](#).

What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

76. Option 1, which included the following changes to the roles and responsibilities of the Secretary for the Environment and the Government Statistician, is the initial preferred option:

| Who | Current roles and responsibilities | Proposed changes |
|-------------------------------|--|--|
| Secretary for the Environment | Jointly produce and publish environmental reports; must use Ministry expertise | Responsible for: <ul style="list-style-type: none"> producing environmental reports as the steward for New Zealand’s environment defining a set of environmental indicators in consultation with the Government Statistician contributing to updating the indicators (as discussed in proposal 9) establishing and working with an advisory panel to improve independent, expert advice checking the consistency and accuracy of statistics and indicators used in reporting in conjunction with Government Statistician. |
| Government Statistician | Jointly produce and publish environmental reports; must use Stats NZ expertise. Decide on statistics to measure topics prescribed by regulations, in consultation with the Secretary for the Environment. | Responsible for: <ul style="list-style-type: none"> deciding the procedures for procuring and providing statistics and indicators updating and quality-assuring the indicators (with input from the Secretary for the Environment) checking the consistency and accuracy of statistics and indicators used in |

| | | |
|--|---|--|
| | Sole responsibility for deciding the procedures for providing statistics for an environmental report. | reporting in conjunction with the Secretary for the Environment <ul style="list-style-type: none"> • ensuring fairness, accuracy, and relevance of reporting. |
|--|---|--|

77. Within this option, there is consideration as to whether specialists, Māori, government agencies, and other organisations might have formal roles under the ERA.
78. This is the initial preferred option because it would:
- a. support a clear purpose for environmental reporting, facilitating the Secretary for the Environment’s role as steward for our environment, and the Government Statistician’s independent leadership of the official statistics system
 - b. drive a clearly defined, coordinated reporting system. Clearly defined roles, with transparent decision-making, would allow each organisation to lead on the parts of reporting aligned to its role in central government more generally, improving efficiency
 - c. increase the influence of reporting through transparent decision-making
 - d. improve on how Te Tiriti responsibilities are met. Working with Māori in a more cohesive and appropriate way.

Consultation overall themes

79. There was general support for clarifying roles and responsibilities for the Secretary for the Environment and the Government Statistician. Feedback mostly fell under three main points:
- a. For accountability, efficiency and to ensure responsibilities reflect areas of expertise, some stakeholders did not support joint approvals under the ERA. Instead, it was suggested that the Secretary for the Environment and the Government Statistician should have an approval role based on their areas of expertise with the caveat that they consult each other before a decision is made.
 - b. There was strong support for the ERA to include mechanisms for enabling hapū, iwi, and Māori to participate in report preparation and production; and for a partnership approach that would provide flexibility for Māori to design the roles and responsibilities for Māori in incorporating te ao Māori and mātauranga Māori in environmental reporting.
 - c. There was acknowledgement that many other agencies and stakeholders have roles and responsibilities for environmental reporting, with local government being a key contributor to environmental monitoring and reporting, although how these other roles and responsibilities could be reflected in the ERA was not proposed in detail.

Final proposal following consultation

80. Following consultation, the final proposal has changed slightly to reflect feedback and is as follows:

| Who | Proposed changes |
|-------------------------------|---|
| Secretary for the Environment | <ul style="list-style-type: none"> • Approving and producing environmental reports and commentaries as the steward for New Zealand’s environment. • Specifying scientific environmental monitoring standards and methods for collecting data provided for the core environmental indicators under the ERA (including the use of any standards and methods set in place in other legislation or regulations, as outlined in proposal 10). • Checking the consistency and accuracy of science used in reporting and communicating that science to various audiences. <p>In consultation with the Government Statistician:</p> <ul style="list-style-type: none"> • Defining a set of core environmental indicators. • Reviewing and updating the set of core environmental indicators in Regulations. • Contributing to, interpreting, and providing advice and expertise to support the Government Statistician in updating the core environmental indicators and other quality data and statistics (proposal 9). • Establishing and working with an advisory panel (proposal 5) to improve independent, expert advice. • Ensuring fairness, accuracy and relevance of reporting. • Administering the procurement and provision of data and statistics for environmental reporting. |
| Government Statistician | <ul style="list-style-type: none"> • Publishing of the core environmental indicators and other quality data and statistics in coordination with the Ministry for the Environment. • Following statistical best practice to ensure fairness, accuracy, and relevance of the reporting whenever reasonably practicable. <p>In consultation with the Secretary for the Environment:</p> <ul style="list-style-type: none"> • Deciding how statistics are to be produced for environmental reporting and approving their publication in reports and commentaries. • Independently producing the set of core indicators needed for environmental reporting and its evidence base. Also applicable to other quality data and statistics as practicable. • Administering the procurement and provision of data and statistics for environmental reporting. • Collecting data for environmental reporting using the Data and Statistics Act (once enacted) as appropriate alongside a range of system partners. |

81. The final proposal includes replacing or amending existing section 17 of the ERA with a statement similar to that in section 35 of the Child Poverty Reduction Act 2018 which is “In preparing the report, and performing other duties or functions under this Act, the Statistician and the chief executive must, whenever it is reasonably practicable to do so, follow statistical best practice”.

What are the marginal costs and benefits of the option?

82. It is assumed that the costs involved in delivering this proposal represent business as usual activities for both agencies and so no additional cost implications or FTE requirements are expected.
83. Benefits have not been calculated for each proposal. Instead, the expected benefits have been calculated based on the complete package of proposals.

Proposal 5: Mandate a standing advisory panel

84. This proposal requires a standing advisory panel under the ERA that guarantees independent expert advice is provided across a range of perspectives and disciplines.
85. The highest scoring three options were set out in the consultation document for consideration (with other options considered included in an appendix):
 - a. Option 1. Adopt the PCE's recommendation of establishing a statutory requirement for a standing advisory panel.
 - b. Option 2. Establish an independent Science Advisory Council as a Crown entity.
 - c. Option 3. Status quo.

How do the options compare?

86. The comparison of each of the options is set out in [Annex 1](#).

What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

87. Option 1 to require the establishment of a standing advisory panel under the ERA is the initial preferred option because it would:
 - a. be appointed by, and report to, the Secretary for the Environment ensuring that it has the right mix of experience and knowledge to support the environmental reporting programme
 - b. its main role would be to provide advice to the environmental reporting programme rather than having a much wider role that would limit the environmental reporting programme's timely access to advice
 - c. the panel's main role would be to advise on reporting such as the themes to address in the next commentary, but on occasion that may be extended, at the discretion of the Secretary for the Environment, to other Ministry work programmes relating to science and knowledge systems
 - d. the panel's independence can be easily monitored and assured
 - e. the panel's advice would not be compromised by the other advice it would be required to provide other organisations if it were a Crown entity or under the Environmental Protection Authority
 - f. by being mandated in the ERA, the continuation of the standing advisory panel – and provision of independent advice for the environmental reporting programme – would be assured for the future.

Consultation overall themes

88. Some respondents stated clearly that they support a legislated standing advisory panel and some said they support a standing advisory panel.
89. Overall, respondents who answered questions in this section mainly reflected on how to ensure the membership of the panel has the range and diversity of expertise it needs to be effective.

Final proposal following consultation

90. Following consultation, the final proposal is as follows:
- a. Have a mandatory standing advisory panel that will provide independent, expert advice (both on request and on its own initiative) to the Secretary for the Environment.
 - b. Have a terms of reference set by the Secretary for the Environment that will reflect the four principles of best practice for bringing science into policy¹⁴ (inclusive, rigorous, transparent and accessible) and ensure panel selection is based on:
 - a track record in, and a breadth of knowledge of systems, and strategic thinking
 - science communications expertise
 - working style and panel experience.
 - c. Seven or nine panel members where practicable (including the Chair) appointed at the discretion of the Secretary for the Environment. Panel members are to be appointed for a three-year term with opportunity for re-appointment.
 - d. Must have a collective knowledge of, and experience, expertise and practice in:
 - environmental science and monitoring (including statistical methods and concepts)
 - te ao Māori, tikanga Māori and mātauranga Māori
 - economic, social, cultural and human health impacts associated with the environment.
 - e. The standing advisory panel will provide independent, expert advice on:
 - the timing and focus of the (one per year) commentaries
 - existing and emerging environmental issues of concern and significant changes in the environmental indicators, measures and evidence
 - the environmental issues that should be given priority in the national state of the environment reports
 - further research, monitoring and data needed to provide robust and comprehensive environmental reporting, including advice on environmental indicators, measures and evidence
 - advising on how te ao Māori and mātauranga Māori (including the development of environmental indicators, measures and evidence used) would be included in the reporting.
 - f. Note the Secretary for the Environment and the Government Statistician can set up additional advisory panels and working groups as required, independent of this proposal.

¹⁴ The principles were published in *Nature* (Donnelly *et al*, 2018) and widely cited and adopted around the world as 'best practice', including by the *International Network for Government Science Advice* and the World Health Organisation (Langlois *et al*, 2018).

What are the marginal costs and benefits of the option?

91. The costs associated with formally instituting a standing advisory panel include the Ministry providing secretariat services for the advisory panel and holding panel meetings. The cost estimates presented are based on secretariat duties requiring 3.5 FTE input from the Ministry each year. Allen + Clarke assumed that there will be on average nine panel members who will meet on average nine times per year. Allen + Clarke also assumed that reimbursement costs for panel members will average \$3415 for each member attending a meeting. This amount includes travel, accommodation and meeting fees in accordance with the Cabinet Fees Framework. It is presumed that each meeting will involve three days of work for each panel member. An allowance of \$1 thousand per meeting is also allowed for venue hire¹⁵ and catering purposes.
92. Once established the annual cost of the standing advisory panel is likely to be \$1.2 million with a present value of \$23.1 million over a 30-year period.

Table 3: Present value of Proposal 5

| Cost elements | Low | Central | High |
|--------------------------------|--------|---------|--------|
| 30-year Present Value (NZ\$ m) | \$12.3 | \$23.1 | \$40.3 |

93. Benefits have not been calculated for each proposal. Instead, the expected benefits have been calculated based on the complete package of proposals.

Proposal 6: Replace environmental domains with cross-domain themes

94. This proposal replaces environmental domains with cross-domain themes that form the basis of state of the environment reports and in-between commentaries. This will better represent the complexity and interrelationship of environmental systems and better reflect a holistic te ao Māori view of te taiao.
95. The highest scoring three options were set out in the consultation document for consideration (with other options considered included in an appendix):
 - a. Option 1. Shift to cross-domain themes.
 - b. Option 2. No mandatory themes or domains.
 - c. Option 3. Retain modified domains.

How do the options compare?

96. The comparison of each of the options is set out in [Annex 1](#).

What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

97. Option 1 to shift to cross-domain themes is the initial preferred option because it would:
 - a. allow a wider focus for commentaries giving a more holistic picture of the environment, with all its complexity and interconnectedness, by removing the artificial confines of reporting on a single domain

¹⁵ While it is likely that premises will be available at the Ministry, including the premises' costs accounts for the opportunity cost of the premises.

- b. still require themes to focus the standing advisory panel's advice by providing them as a checklist for the panel to consider in deciding its recommendations for the next commentaries
- c. include themes that are better aligned with te ao Māori and mātauranga Māori.

Consultation themes

98. There was a mix of opinions on the move to cross-domain themes. Most commented that it would help communicate the interconnectedness of environmental issues but that there was also a risk it could result in less detailed reporting. There was consensus that te ao Māori should span all themes.

Final proposal following consultation

99. Following consultation, the final proposal is to shift to cross-domain themes. This will treat the environment as an interconnected system and will be more reflective of te ao Māori.
100. Following consultation, which identified the need for more holistic reporting, the Ministry considered that the type of themes used for *Environment Aotearoa 2019* were broad and would encompass the interrelationships within the environment. The Ministry proposes the following cross-domain themes based on the themes in *Environment Aotearoa 2019*:
- a. climate change and variability
 - b. land and freshwater use
 - c. coastal and marine use
 - d. pollution and waste
 - e. ecosystems and biodiversity.
101. When preparing commentaries, the Secretary for the Environment in consultation with the Government Statistician must:
- a. provide for te ao Māori and mātauranga Māori
 - b. ensure they are driven by:
 - topics that require a more in-depth analysis than possible in state of the environment reporting
 - key or existing issues
 - new research or data that has significantly changed our understanding
 - new or emerging issues
 - c. have a requirement to cover all themes (separately or as part of a combined commentary) in between state of the environment reports. To balance the large amount of flexibility proposed around commentaries, this requirement helps ensure that the Ministry is reporting across all themes. The themes may be covered narrowly or comprehensively depending on what is important during the years between state of the environment reporting
 - d. use the driver-pressure-state-impact-outlook framework

- e. report on the five impact categories including the expanded impact category of public health and wellbeing
 - f. draw on core indicators as a primary source of evidence.
102. When preparing state of the environment reporting the Secretary for the Environment and Government Statistician must:
- a. provide for te ao Māori and mātauranga Māori
 - b. include that all cross-domain themes and all core indicators must be reported on
 - c. focus on providing evidence and analysis on the state of the environment and important trends and changes
 - d. use the driver-pressure-state-impact-outlook framework.

What are the marginal costs and benefits of the option?

103. It is assumed that there will be upfront design and planning costs associated with a transition from domains to themes, but once embedded there will be no ongoing cost implications from this proposal.
104. Upfront input by 3 FTE will be required to manage the transition to a cross-domain theme focus. This includes 1 FTE each from the Ministry and Stats NZ, plus the equivalent of 1 FTE from other government departments. This will have a resource cost equivalent to \$0.8 million (see Table 4).

Table 4: Present value of Proposal 6

| Cost elements | Low | Central | High |
|--------------------------------|-------|---------|-------|
| 30-year present value (NZ\$ m) | \$0.3 | \$0.8 | \$1.4 |

105. Benefits have not been calculated for each proposal. Instead, the expected benefits have been calculated based on the complete package of proposals.

Proposal 7: Reduce the frequency of state of the environment reports to six-yearly

106. This proposal reduces the frequency of the state of the environment reports from three-yearly to six-yearly. This achieves a more appropriate balance between reporting timeliness, rates of change and seeing connections between changes (which can typically take longer than three years before they are evident in the data).
107. The highest scoring three options were set out in the consultation document for consideration (with other options considered included in an appendix):
- a. Option 1. Reduce the state of the environment reporting frequency to six-yearly.
 - b. Option 2. Reduce the state of the environment reporting frequency to five-yearly.
 - c. Option 3. Reduce the state of the environment reporting frequency to four-yearly.

How do the options compare?

108. The comparison of each of the options is set out in [Annex 1](#).

What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

109. Option 1 is the initial preferred option – reduce the frequency of state of the environment reports from a three-yearly to a six-yearly cycle.
110. The PCE concluded that a six-yearly cycle would be optimal. It would fit between every second election cycle and the Long-term Insights Briefings, which could share some of the collected data, improving efficiencies. By reducing the reporting frequency, investment into better and more robust data for reporting can be made.
111. This is the initial preferred option because it would:
 - a. support a clear purpose for reporting. It sets a longer timeframe for environmentally and statistically significant data on key issues to emerge
 - b. drive a clearly defined, coordinated reporting system. It allows more time to obtain new robust, comprehensive and authoritative data, statistics and knowledge for reporting, and to develop more innovative and useful ways of reporting
 - c. increase the influence of reporting. It strikes a more appropriate balance between reporting timeliness, rates of environmental change, and links between environmental change and new information. These more comprehensive but less frequent reports have the potential to increase public engagement
 - d. improve on how Te Tiriti responsibilities are met by allowing more time for engagement on specific reports.

Consultation overall themes

112. A six-yearly cycle was supported by most respondents for the following reasons:
 - a. it allows better quality reporting due to resource allocation and greater data collection
 - b. environmental changes are slow to occur and take time to appear and therefore the reporting interval should reflect this
 - c. a six-yearly cycle is more suitable than five-yearly due to short election cycles and the Long-term Insights Briefing cycle (three years).

Final proposal following consultation

113. Following consultation, the final proposal is to mandate a six-yearly cycle for state of the environment reporting.

What are the marginal costs and benefits of the option?

114. No cost implications are expected from this proposal, as a reduction in reporting frequency is not expected to reduce staffing requirements, but instead enable more in-depth analysis underpinning reporting.
115. Benefits have not been calculated for each proposal. Instead, the expected benefits have been calculated based on the complete package of proposals.

Proposal 8: Replace domain reports with one commentary each year

116. This proposal replaces the two domain reports that are published each year, with one cross-domain theme-based commentary each year (and additional commentaries if required), as recommended by the standing advisory panel.
117. This is to make the reporting cycle less resource intensive, encourage more in-depth analysis, reduce the risk of repetitive reporting and enable reporting of emerging and important issues when needed the most.
118. Three options were set out in the consultation document for consideration:
 - a. Option 1. Produce a commentary each year (and additional commentaries if required) as recommended by the proposed standing advisory panel.
 - b. Option 2. Adopt the PCE's recommendation of producing one commentary each year on each cross-domain theme in between state of the environment reports (which are produced every six years).
 - c. Option 3. Status quo continue to produce two reports (in-between commentaries) each year, including one in the state of the environment reporting year.

How do the options compare?

119. The comparison of each of the options is set out in [Annex 1](#).

What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

120. Option 1 is the initial preferred option. It replaces the two domain reports produced each year with one cross-domain theme-based commentary each year and allows additional commentaries if required. The standing advisory panel recommends commentaries (priority, issue, event, timing and scope etc) with the Secretary for the Environment remaining the final decision-maker.
121. This is the initial preferred option because it would:
 - a. support a clear purpose for reporting through a variety of forms of commentary to present the key issues
 - b. drive a clearly defined, coordinated reporting system. It allows time to develop innovative and useful ways of reporting. It also enables reporting to focus on the issues and themes of most concern, providing commentaries on one or several themes that capture the links between drivers, pressures and impacts
 - c. increase the influence of reporting by focusing commentaries on environmentally significant changes identified by the standing advisory panel. As with Proposal 6, there is also a potential benefit of increased engagement by the public in less frequent but more engaging reports
 - d. improve on how Te Tiriti responsibilities are met. It has the flexibility to focus reporting on issues that are important to Māori
 - e. in addition, by slowing the treadmill, reducing the frequency of reporting from six-monthly to yearly could reduce staff turnover in the environmental reporting programme.

Consultation overall themes

122. There was overall support for:
- a. one commentary to be produced each year with the possibility of additional commentaries if needed
 - b. commentaries being more flexible, adaptable and able to capture a more holistic view of the environment by crossing multiple themes
 - c. the standing advisory panel recommending commentaries (priority, issue, event, timing and scope etc).

Final proposal following consultation

123. Following consultation, the final proposal is to mandate the production of commentaries with the following requirements:
- a. the standing advisory panel recommends commentaries (priority, issue, event, timing and scope etc) with the Secretary for the Environment remaining the final decision-maker
 - b. one commentary will be produced each year, excluding the year that the state of the environment report is produced. Additional commentaries can be recommended by the panel, at the agreement of the Secretary for the Environment, in consultation with the Government Statistician
 - c. commentaries must report on relevant core environmental indicators as a primary source of evidence and provide narratives appropriate to the themes being reported
 - d. each of the cross-domain themes will be reported on at least once in between state of the environment reports, either as a singular commentary or as part of a commentary that covers multiple cross-domain themes.

What are the marginal costs and benefits of the option?

124. As with Proposal 7, no cost implications are expected from this proposal, as a reduction in reporting frequency is not expected to reduce staffing requirements, but instead enable more in-depth analysis underpinning reporting.
125. Benefits have not been calculated for each proposal. Instead, the expected benefits have been calculated based on the complete package of proposals.

Proposal 9: Establish a set of core environmental indicators

126. This proposal initially required a set of core environmental (core) indicators to be established and maintained with possible themes/topics included in regulations, allowing the Secretary for the Environment in consultation with the Government Statistician to choose the actual core indicators. It provides a directive for implementing the core indicators, which will improve data collection abilities.
127. The highest scoring three options were set out in the consultation document for consideration (with other options considered included in an appendix):
- a. Option 1. Set out the core indicator themes/topics in regulations, and allow the Ministry and Stats NZ to choose the actual indicators.

- b. Option 2. Set out the core indicators' themes and/or topics in the ERA and allow the Ministry and Stats NZ to choose the actual indicators.
- c. Option 3. Adopt the PCE's recommendation to specify the indicators in regulations.

How do the options compare?

128. The comparison of each of the options is set out in [Annex 1](#).

What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

129. Option 1 of setting out the core indicator themes/topics in regulations, and allowing the Ministry and Stats NZ to choose the actual core indicators is the initial preferred option. With this option:

- a. core indicators would be selected for reporting based on indicator-specific topics or themes set out in regulations
- b. selecting the core indicators would be a joint process led by the Secretary for the Environment in consultation with the Government Statistician, with additional input from the standing advisory panel, specialists from a range of government and research organisations, and in partnership with Māori
- c. the data for each core indicator would be reviewed regularly, and core indicators would be updated where data are environmentally/statistically significant
- d. core indicators would be reviewed at least once per reporting cycle, but this would not be in any particular order or in relation to other reporting timeframes.

130. This is the initial preferred option because it would:

- a. allow the Secretary for the Environment and Government Statistician to not only select the core indicators but also to bring them into the reporting mix earlier than if they were in the ERA or in regulations
- b. avoid the need for an amendment to the ERA or to the regulations saving time and effort
- c. maintain independence in the selection of core indicators as there would be no Ministerial involvement
- d. provide another form of analysis and presentation of the key issues that has been previously considered but not implemented.

Consultation overall themes

131. There was strong support for the establishment of a set of core indicators to be used for environmental reporting.

132. There was support for a balanced approach that allows flexibility needed to update the core indicators frequently and swiftly when required and the prescription of core indicators in the legislation (ERA or regulations) for the purpose of ensuring the indicators are successfully resourced by those parties responsible for monitoring and collecting data.

Final proposal following consultation

133. Following consultation, the final proposal is to mandate the establishment of core indicators, without any link to themes (as was initially proposed):
- a. The ERA will define and prescribe core indicators and set out principles for their use in environmental reporting.
 - b. The ERA will require that mātauranga Māori is recognised where appropriate into the development of core indicators.
 - c. The associated regulations will include the list of core indicators. The ERA will state that the first set of core indicators must be in regulations within three years of the ERA's enactment.

Note these provisions will sit alongside and not conflict with the mandatory use of other quality statistics and data generated under the Data and Statistics Bill for creation of indicators.

134. Further to measuring the most critical aspects of the environment, the ERA will require that core indicators adhere to the following principles:
- a. A core indicator must measure at least one of the following:
 - The health, mana and/or mauri of one or more aspects or components of the natural environment.
 - One or more pressures on the health, mana and/or mauri of the natural environment.
 - One or more impacts of changes in the health, mana and/or mauri of the natural environment.
 - One or more drivers of changes in the health, mana and/or mauri of the natural environment.
 - b. A core indicator must be relevant to environmental management and/or kaitiakitanga.
 - c. A core indicator must measure something that can be measured over the long term, using credible and defensible scientific or mātauranga methodology that is available or could feasibly become available.
 - d. Selection of a core indicator should consider:
 - whether it could be used to generate outlooks, or meaningfully link to outlooks predicted by recognised sources
 - whether it could be compared to suitable reference conditions, thresholds or targets, that are either established or could become available.
 - e. Selection of a core indicator should not be influenced by:
 - whether supporting data, statistics or indicators that meet the desired standard for the potential core indicator are currently available or expected to become available
 - whether the indicator will produce information that is relevant to policy development, implementation, assessment or interventions, or desired for those purposes

- political bias.

Note these principles will be applied in balance with best practice statistical principles and protocols.

135. The ERA will require that the set of core indicators listed in the regulations is reviewed by the Ministry at least once between the publication of each six-yearly state of the environment report. If required, the set of core indicators will be updated with new core indicators that meet the selection criteria and principles.
136. The ERA will also define 'quality data and statistics' as the data and statistics (including core indicators) used for environmental reporting.
137. The ERA will prescribe that both state of the environment and commentary reports must report on any other available quality data and statistics where required, to supplement the evidence provided by core indicators. Requiring the use of other quality data and statistics in the ERA will ensure that these other sources of information are recognised and resourced and provide the additional statistics needed for environmental reporting.

What are the marginal costs and benefits of the option?

138. It is assumed that the Ministry will require substantial initial resources to help define an appropriate set of core indicators and design a programme of work to enhance the set of core indicators over time. For this reason, it is assumed that the Ministry will need to maintain activity in this area. Input from Stats NZ and others will be required to help collect data and manage indicator series. Interest has been expressed by other government agencies to be involved with this proposal, particularly in relation to the initial selection and set up of core indicators, so allowance for FTE involvement from other agencies has been included in the cost estimates.
139. Three stages have been factored into labour requirement estimates: an initial set up phase requiring 7 FTE from the Ministry and 3 FTE from Stats NZ, a high input period during the first six years as core indicators are identified and established, and the mature phase from year seven on. A modest allowance for efficiency gains has been factored into labour requirements from year seven on. The cost implications are set up costs of \$2.1 million, costs of \$4.9 million per year for years one to six, and then \$3.7 million per year from year seven on. This generates a central present value estimate of \$82 million.

Table 5: Present value of Proposal 9

| Cost Elements | Low | Central | High |
|--------------------------------|--------|---------|---------|
| 30-year present value (NZ\$ m) | \$49.5 | \$81.6 | \$130.6 |

140. Benefits have not been calculated for each proposal. Instead, the expected benefits have been calculated based on the complete package of proposals.

Proposal 10: Strengthen the mechanisms for collecting data

141. This proposal creates new provisions in the ERA to improve the collection of both existing and new data, and to set data collection standards to improve consistency, to ensure the reporting programme has the data it needs to create a more comprehensive picture of the environment on an enduring basis.

142. The highest scoring three options were set out in the consultation document for consideration (with other options included in an appendix):
- a. Option 1. New provisions in the ERA for the supply of data with data collection primarily relying on negotiated voluntary agreements but supported by some powers for collection.
 - b. Option 2. Require agencies to provide data under the Data and Statistics Bill.
 - c. Option 3. Inclusion of powers under the ERA that enable the Secretary for the Environment, the Government Statistician or both to require agencies to monitor, collect and provide data against standards, and impose penalties on agencies that fail to do this.

How do the options compare?

143. The comparison of each of the options is set out in [Annex 1](#).

What option is likely to best address the problem, meet the policy objectives, and deliver the highest net benefits?

144. Option 1 is the initial preferred option because it would:
- a. move data collection from the passive harvesting of reasonably accessible data to active procurement of all existing data as well as new data with the additional powers, if needed, leading to both improved data access and knowledge collection
 - b. drive a clearly defined, coordinated reporting system where:
 - i. the Secretary for the Environment, the Government Statistician or both can require information from other public sector agencies, meeting the purposes of national reporting and supporting clarity of roles and increased accountability between agencies
 - ii. there is data certainty and the ability to promote a more comprehensive picture of the state of the environment, including via other bodies of evidence
 - iii. other public sector agencies would be required to provide data monitored and collected under Ministry and Stats NZ-administered legislation, regulation or national direction, providing a comprehensive data pool
 - iv. the ERA sets out consistent collection methodologies and frequencies for national reporting through the ERA, and if needed through the Data and Statistics Bill, for data that is required under the ERA that is not monitored and collected under Ministry and Stats NZ-administered legislation, regulation or national direction
 - c. increase the influence of reporting by giving insights into and measures of New Zealand's economic, social and environmental situation
 - d. improve on how Te Tiriti responsibilities are met through partnership with Māori to include mātauranga Māori, data, evidence, knowledge which is collected, managed and protected appropriately in reporting.

Consultation overall themes

145. Overall, feedback highlighted:
- a. issues with obtaining new data, relating to large gaps in reporting
 - b. the need to align data collection with other legislation ie, Data and Statistics Bill and the proposed NBA
 - c. support for voluntary agreements on the collection of data rather than mandating provision of data by regulation
 - d. the widespread need for on-going dedicated financial support
 - e. the need for consistent standards for data both in terms of the scientific environmental monitoring standard and the data standard
 - f. the desire for access for everyone (or at least other data providers) to data collections where possible
 - g. opportunities to augment data collection with new technologies
 - h. the need to improve on how Te Tiriti responsibilities are met with a more active partnership approach
 - i. the need to preserve hapū and iwi rangatiratanga over information which is a taonga, designing a framework to share information and ensuring information is appropriately protected
 - j. suggested mechanisms for embedding te ao Māori as well as means proposed for monitoring of mātauranga Māori
 - k. the importance of including Māori worldviews, values and mātauranga and recognition of place-based differences.

Final proposal following consultation

146. Following consultation, the final proposal is to:
- a. include provisions for requiring existing data similar to those in section 32(2)(b)(i) and (ii) of the Climate Change Response Act 2002 which allow voluntary data collection and require data collection from government agencies and other agencies that hold relevant information respectively. Voluntary agreements will be the primary mechanism for data collection
 - b. include provisions for the Secretary for the Environment to specify environmental monitoring standards through the issue of guidelines, in consultation with the Government Statistician for the purposes of core indicators and for the Government Statistician to set data standards in consultation with the Secretary for the Environment for the purposes of core indicators. Note that:
 - i. the Government Statistician also has powers under the Data and Statistics Bill to collect data and set standards
 - ii. such provisions will be aligned with clauses in the NBA requiring the use of any nationally prescribed standards or methods for monitoring and data management
 - iii. the work to set environmental monitoring standards could be delegated to a working group, either to be established as an advisory panel or through an existing group

- iv. negotiations for agreements with hapū and iwi will, on a case-by-case basis, include consideration of how the information will be respected and protected when it is provided for environmental reporting purposes
 - v. negotiations for information collected in relation to private landowners will also include how that information is to be protected and presented
 - vi. provisions will be needed to ensure data collections and time-series data are prioritised, sustained and maintained
- c. replace the data collection constraints in ss 8(3) and 11(3) of the ERA with an obligation to make best practicable efforts to obtain existing and new data.

What are the marginal costs and benefits of the option?

147. It is assumed that most government department labour inputs will be upfront, but that a level of ongoing input will also be required. Allen + Clarke’s cost estimates factor in a reasonable scale of input from CRIs and regional councils. In addition, an allowance has been made for increased environmental monitoring and data collection activity, particularly from regional councils, but also by Māori. It is assumed that these data collection costs will be funded by the Ministry.
148. It is anticipated that these data costs will be equivalent to each regional council increasing the number of sites they monitor by 10 per year for the first six years and then by one per year beyond year six. These sites have been costed at \$30 thousand to establish a new site and \$10 thousand per year to maintain each site. In addition, Allen + Clarke have explicitly allowed for environmental data collection by Māori to reach, and be maintained at, \$3 million per year by year six.
149. This means data costs associated with this proposal are expected to increase to \$15 million per year in the first decade and modestly increase to around \$17 million by year 30. Allowing for a 20 per cent deadweight cost of tax and using a 5 per cent discount rate produces a 30-year central present value estimate of \$287.7 million.

Table 6: Present value of Proposal 10

| Cost elements | Low | Central | High |
|--------------------------------|---------|---------|---------|
| 30-year present value (NZ\$ m) | \$156.7 | \$287.7 | \$494.6 |

150. Benefits have not been calculated for each proposal. Instead, the expected benefits have been calculated based on the complete package of proposals.

The ERA in a Te Tiriti framework

151. One of the objectives of the amendments to the ERA is to better meet our partnership responsibilities in terms of Te Tiriti, including how te ao Māori and mātauranga Māori, data, evidence, knowledge, and science is used, collected, managed and protected in environmental reporting.
152. The development of each policy proposal, as informed by the targeted consultation and engagement process, has considered Te Tiriti responsibilities and Māori values and aspirations for the environment (eg, the purpose statement, response mechanism, standing advisory panel and data mechanisms).
153. Further work will be done to ensure an enduring partnership approach to environmental reporting can be realised, recognising that much of this will happen through the implementation process should all the amendments be agreed.

What are the marginal costs and benefits of the option?

154. The CBA has analysed the costs for involving Māori in the ERA. These costs are calculated to cover the costs for both Crown and Māori participation. Feedback from organisations interviewed by Allen + Clarke indicated that effective engagement requires a long-term commitment to partnership. Allen + Clarke's cost estimates assume that the costs of engaging with Māori with respect to environmental reporting will be entirely in addition to other actual or prospective engagements.
155. The central cost estimates assume that the Ministry will require a dedicated team of four FTE to be responsible for engagement with Māori on environmental reporting issues. Engagement is assumed to take place at three levels:
- Level one is an engagement design phase which involves interaction with select kaumātua. The cost estimates assume eight meetings over a two-year period with 40 kaumātua, with a cost of \$1 million per year.
 - Level two is national hui. Each national hui has an estimated cost of \$750 thousand. The cost estimates assume one national hui in year one, two in year two, and four in each subsequent year.
 - Level three is made up of smaller regional hui. Each regional hui is assumed to cost \$75 thousand. The cost estimates assume 10 regional hui per year beginning from year three.
156. This translates to an investment of \$1.8 million in year one, increasing to \$2.5 million in year two, and stabilising at \$3.8 million per year thereafter. With Ministry labour costs of \$1 million per year and allowing for a 20 per cent deadweight cost of tax and using a 5 per cent discount rate generates a central estimate of the 30-year present value for Māori engagement activities of \$88 million (see table 6).

Table 6: Present value of Māori partnership

| Cost elements | Low | Central | High |
|--------------------------------|--------|---------|---------|
| 30-year present value (NZ\$ m) | \$48.9 | \$88.0 | \$148.2 |

157. Benefits have not been calculated for each proposal. Instead, the expected benefits have been calculated based on the complete package of proposals.

Legislative Costs

What are the marginal costs and benefits of this legislation amendment?

158. The cost associated with legislation needs to be explicitly accounted for, as from a national perspective, there is an opportunity cost associated with the administrative activities associated with drafting legislation, consultations and parliamentary processes. Resources involved could potentially be used for other government activities. Allen + Clarke have estimated legislation costs for the suite of proposed amendments, rather than allocating costs to specific proposed amendments.
159. Departmental costs for legislation are based on the assumption of 5 FTE from the Ministry and 0.5 FTE from Stats NZ. This provides a central departmental cost of \$1.3 million. International literature suggests a rule of thumb that associated parliamentary costs are 43 per cent of departmental costs. Allen + Clarke, however, adopted a more conservative approach assuming that parliamentary costs will match departmental costs.

160. As all legislation costs are assumed to be set up costs, the present value of legislation is estimated to be departmental costs (\$1.3 million) plus parliamentary costs (\$1.3 million) multiplied by the 20 per cent deadweight cost of tax allowance, producing a present value of \$3.2 million.

Table 7: Present value of legislation cost

| Cost elements | Low | Central | High |
|--------------------------------|-------|---------|-------|
| 30-year present value (NZ\$ m) | \$1.2 | \$3.2 | \$6.0 |

Conclusions and recommendations

161. The amendments proposed to the ERA are expected to have the following impacts:

| Proposals | Impacts |
|---|--|
| <i>Reporting purpose, framework and format</i> | |
| 1. Clarify the purpose of the ERA | These amendments will provide: <ul style="list-style-type: none"> guidance to the environmental reporting programme as to what needs to be achieved a more complete and robust framework in which to analyse the information on the environment a comprehensive consideration of cross-domain issues and provide for te ao Māori and mātauranga Māori more time and less pressure on the environmental reporting programme to allow for more in-depth analysis and to develop new reporting products |
| 3. Expand the environmental reporting framework to include drivers (that cause pressures on the environment), and outlooks | |
| 6. Replace domains with environmental cross-domain themes | |
| 7. Reduce the frequency of state of the environment reports from three-yearly to six-yearly | |
| 8. Replace the existing six-monthly domain reports with at least one commentary per year, excluding the year that the state of the environment report is produced | |
| <i>Core environmental indicators and other quality statistics and data</i> | |
| 9. Require the establishment and use of a set of core environmental indicators | This amendment will: <ul style="list-style-type: none"> underpin environmental reporting by providing a long-term view of how and why our environment is changing |
| <i>Strengthen mechanisms and setting standards for collecting environmental reporting data</i> | |
| 10. Amend the ERA to strengthen mechanisms for collecting environmental reporting data | This amendment will: <ul style="list-style-type: none"> require the collection of existing data, mainly through voluntary agreements, and the commissioning of new data to fill information gaps using best practicable efforts specify environmental monitoring and data standards for the information collected |
| <i>Standing advisory panel</i> | |
| 5. Establish a standing advisory panel | This amendment will: <ul style="list-style-type: none"> provide independent, expert advice to the environmental reporting programme |
| 4. Adjust roles and responsibilities of the Secretary for the Environment and the Government Statistician | This amendment will: <ul style="list-style-type: none"> reduce overlaps between the Ministry and Stats NZ and align the roles and |

| | |
|---|---|
| | responsibilities with their organisational expertise |
| <i>Government response to environmental reporting</i> | |
| 2. Require the Government to formally respond to the state of the environment reports | This amendment will: <ul style="list-style-type: none"> ensure follow-up actions are taken to address the findings of the report |

162. The proposed amendments, should they all be passed into law, will support more comprehensive and consistent environmental reporting. The package refocuses reporting content and timeframes, better aligns roles and responsibilities, moves towards a more active collection of environmental data and knowledge, reduces administrative burden, increases the knowledge base through integrating te ao Māori and mātauranga Māori while expanding the framework, better meets Te Tiriti responsibilities, and ensures recent improvements to environmental reporting are safeguarded for the future.

Total costs

163. Combining all estimated costs produces a central estimate of \$560.5 million for the present value of costs associated with proposed amendments to the ERA. These estimates are the average expected costs for a 30-year investment in the proposed amendments, and are spread across the period which runs from 1 July 2024 to 30 June 2053. Monte Carlo analysis produces a 95 per cent confidence interval for these present value costs which range between \$402.1 million and \$779.7 million over a 30-year horizon.

Analysis of expected benefits

164. The impacts of individual proposals have not been estimated. As there are synergies between different proposals the potential impact of the suite is likely to be greater than the sum of its individual parts. This section sets out the assumptions and estimates of benefits against each of the categories of monetised benefits identified. Note that benefit calculations do not involve a tax impact, so no adjustment is made for tax deadweight cost impacts.
165. The reporting produced under the ERA is a driver for change and not the change itself. The benefits are therefore indirect and depend on actions being taken as a result of this information.

Reduced regulatory burden

166. An improved understanding of the state of the environment will allow policy makers to set environmental policies with more confidence, with an expected reduction in the regulatory burden of the resource management system. This improved understanding would result in:
- potential for improving the strategic focus of the resource management system by understanding environmental pressures
 - potential for efficiency gains as a result of a resource management system that is better focused owing to a better understanding of the state of the environment
 - better environmental outcomes.

- 167. In an independent analysis conducted for the Ministry by Castalia, it was stated that improvements in resource management systems could generate national benefits with an annual benefit of \$206 million.¹⁶
- 168. Allen + Clarke’s calculations are based on the ERA amendments eventually generating resource management efficiency gains equivalent to 10 per cent of those generated by the resource management reforms, ie, \$21 million per year from year six onwards.
- 169. This generates a central estimate for the present value of \$248.97 million for the benefit expected from efficiency gains to resource management regulatory processes. This is based on calculations using a 5 per cent discount rate.

Table 8: Present value of reduced regulatory burden

| Benefit elements | Low | Central | High |
|---------------------------------------|----------------|----------------|----------------|
| 30-year present value (NZ\$ m) | \$128.4 | \$248.9 | \$431.0 |

- 170. The ERA amendments will improve our understanding of the state of the environment which Allen + Clarke estimate could produce significant efficiency gains because policies could be designed with more confidence, particularly in the resource management system.

Slower ecosystem degradation

- 171. Ecosystem services from inland wetlands, indigenous forest, indigenous grasslands and coastal systems are incorporated in the estimation of potential benefits from the ERA amendments. Allen + Clarke attempted to estimate a benefit that would come from the ERA amendments encouraging policy and/or behaviour responses that slow down the pace of environmental degradation. The approach is to estimate the value of ecosystem services generated by natural capital in New Zealand. A lower level of natural capital will generate lower levels of ecosystem services, which will have wellbeing impacts for New Zealanders, either through reduced services (eg, scenic values, leisure opportunities, water purification, carbon sequestration, etc.) or through increasing adaptation opportunity costs (eg, coastal protection, sewage treatment, desalination, etc).
- 172. Valuations of per hectare ecosystem services are sourced from de Groot et al's¹⁷ 2012 valuations, translated into 2021 New Zealand prices. National values were then obtained by using the amount of land within each of the four ecosystems, such as indigenous forest cover and wetlands (sourced from the Ministry’s LUCAS land use maps), to estimate the range of values of ecosystem services from these environments.
- 173. The benefit generated by the ERA amendments assumed in the CBA estimates is effectively to assume a one-off, but sustained prevention of a 0.02 per cent degradation in each environment. There is no firm basis for this choice of degradation

¹⁶ This figure was rounded in the Cost Benefit Analysis to \$210 million. The amount of \$206 million was correct as at 5 May 2022. Ministry for the Environment. 2021. Economic Analysis of the Independent Panel’s Proposed Reforms to the Resource Management System: Final report. Prepared for the Ministry for the Environment by Castalia. Wellington: Ministry for the Environment.

¹⁷ Rudolf de Groot et al., ‘Global Estimates of the Value of Ecosystems and Their Services in Monetary Units’, *Ecosystem Services* 1, no. 1 (1 July 2012): 50–61, <https://doi.org/10.1016/j.ecoser.2012.07.005>.

reduction, except that according to LUCAS it represents the average annual decline in indigenous forest area in New Zealand since 2001. That is, the CBA assumes that over a 30-year period the ERA amendments will reduce environmental degradation by an amount equivalent to the recent pace of one year’s decline in indigenous forest area.¹⁸

174. No impact is accounted for in the first five years, with a gradual increase in “saved” ecosystem services over the next 12 years. This is a remarkably small attribution of benefit expected to result from the ERA amendments. Allen + Clarke’s central estimates incorporate an annual benefit of \$4.6 million in year six increasing gradually to \$54.7 million per year from year 17 onwards. Over the 30-year analysis period this represents a present value of \$446.8 million.

Table 9: Present value of reduced degradation

| Benefit elements | Low | Central | High |
|--------------------------------|---------|---------|---------|
| 30-year present value (NZ\$ m) | \$219.4 | \$446.8 | \$811.4 |

Less harm from pollution

175. The valuation of the potential impact of pollution on wellbeing was estimated by Allen + Clarke using information from the 2018 Quality of Life Survey.¹⁹ Typically, the analysis from the survey indicates a negative correlation between household income and exposure to wellbeing damaging problems such as noise or air pollution.
176. The premise behind this approach is that the financial equivalence of an irritant can be deduced by the ability for people to use their financial resources towards avoiding exposure to it. The price that people are willing to spend to avoid irritants therefore provides a financial-equivalent estimate of the cost to people who remain exposed to the irritant.
177. This approach provides estimates of the monetised value of exposure to noise or poor-quality air or water, with such exposure self-defined by survey respondents. To provide some context 19 per cent of survey respondents in 2018 reported that water quality was a “big problem” locally. Similar figures for air quality and noise problems were 4 per cent and 7 per cent respectively. Table 10 provides the central results of this pollution valuation analysis.

Table 10: Estimates of annual costs of pollution, 2018

| | Water | Air | Noise |
|--|-----------|----------|-----------|
| Annual cost to individual affected households (NZ\$ m) | \$2,230 | \$11,950 | \$7,460 |
| Household count with potential issues | \$319,400 | \$67,300 | \$123,300 |
| Implied national value (NZ\$ m) | \$713.5 | \$804.8 | \$918.1 |

¹⁸ As no data is available for degradation of other ecosystems, the degradation rate of indigenous forests is estimated to be a conservative assumption.

¹⁹ Nielsen. (2018) *Quality of Life Survey 2018*. (A report to participating City and Regional Councils). Wellington, New Zealand as cited in Allen + Clarke. 2022. *Proposed Amendments to the Environmental Reporting Act 2015: Cost Benefit Analysis*, page 33.

178. To value the potential impacts that the ERA amendments might have on the costs to society from exposure to pollution, Allen + Clarke assumed that:
- a. The benchmark exposure to pollution will remain proportional to the 2018 Quality of Life Survey (ie, the number of houses exposed will increase with population growth, as projected by Stats NZ).
 - b. The ERA amendments are assumed to reduce the pace of increase in exposure by 10 per cent from 2029 onwards. Thus, if annual population growth is 0.6 per cent in a particular year, the ERA amendments are assumed to reduce the increase in households exposed to a problem from 0.6 per cent to 0.56 per cent.
179. This approach generates values that vary from year to year, but generally increase due to the impact of population growth (a given level of pollution is likely to adversely affect more people when the population is larger). Allen + Clarke's estimates assume no impact before year six, when impacts are valued at less than \$1 million for each type of pollution but increase to annual impacts of \$15 million to \$20 million by year 30. Despite the quite minor potential impact attributed to impacts from ERA amendments, the estimated positive impact on wellbeing has a present value of \$266.6 million.

Table 11: Present value of less harm from pollution

| Benefit elements | Low | Central | High |
|---------------------------------------|----------------|----------------|----------------|
| 30-year present value (NZ\$ m) | \$121.8 | \$266.6 | \$505.3 |

Improved Māori partnership

180. Improved partnership with Māori is hoped to encourage increased Māori participation in and influence over the direction of environmental reporting, and result in greater recognition and provision for te ao Māori and mātauranga Māori. More effective Māori engagement on environmental reporting will create benefits such as:
- a. increasing the opportunities for environmental policies to reflect Māori values and aspirations for the environment
 - b. increasing Māori sense of being a valued partner (an enhanced sense of being listened to and involved in policy development processes).
181. Such benefits go beyond a pure environmental wellbeing domain and into the social wellbeing domain. What the improved Māori partnership and participation in environmental reporting will look like is yet to be designed with Māori, and means that there is considerable uncertainty in assessing the scale of potential benefits. It may be assumed, however, that there are likely social benefits that can be attributed to a partnership approach.
182. The approach Allen + Clarke has adopted here is to assume that the social wellbeing benefit resulting from increased engagement and Māori involvement with environmental reporting will be equivalent to the Māori wellbeing proportion of the expected reduction in environmental degradation. This is estimated here as 17 per cent of the ecosystem service benefits estimated in section 5.2, where 17 per cent reflects the Māori proportion of the New Zealand population.

183. As with the estimated environmental impact, the social benefit is expected to emerge only gradually, but to emerge five years prior to the assumed emergence of environmental improvements. The central assumption is for the annual social wellbeing benefit to increase from \$0.8 million in year two to an annual level of \$9.3 million from year 13 on.
184. The 30-year present value of the benefit from enhanced Māori engagement in environmental reporting is \$101.1 million. This represents 9.5 per cent of the total benefits estimated to accrue from the ERA amendments. Omitting this quantification of Māori engagement benefits would reduce the net benefit estimate from \$504 million to \$403 million and the benefit-cost ratio from 1.90 to 1.72.

Table 14: Present Value of Māori Partnership

| Benefit Elements | Low | Central | High |
|---------------------------------------|---------------|----------------|----------------|
| 30-year Present Value (NZ\$ m) | \$50.3 | \$101.1 | \$183.7 |

Reduction in staff turnover

185. The PCE noted in his 2019 report, based on staff retention data provided by the Ministry and Stats NZ, that staff turnover is higher than usual. On average, Stats NZ has 10 staff contributing to environmental reporting at any one time. Average tenure of environmental reporting staff has been about two years. Similarly, the Ministry has 30 staff contributing to environmental reporting at any one time. Of the 30 staff, two thirds have a tenure of one year or less, and one third have a tenure of two to three years.²⁰ This compares with the Ministry's overall turnover of 25.8 per cent at that time.²¹
186. At present, the Ministry's permanent staff in the environmental reporting programme have been in their roles on average for less than one year.
187. Lower staff turnover related to environmental reporting is assumed, from year two onwards, delaying staff resignations to the point that staff turnover is one lower each year in the environmental reporting programme. This assumes that a lower reporting frequency will reduce staff burnout and promote staff retention.

Table 15: Present value of reduction in staff turnover

| Benefit elements | Low | Central | High |
|-------------------------------|--------------|--------------|--------------|
| Present value (NZ\$ m) | \$0.5 | \$0.9 | \$1.5 |

²⁰ Focusing Aotearoa New Zealand's environmental reporting system 2019, page 47 citing Ministry and Stats NZ officials, pers. comms, August 2019.

²¹ Ministry for the Environment. Annual Report 2020/21, page 29.
<https://environment.govt.nz/assets/publications/annual-report-2021.pdf>

Total benefits

188. The expected benefits should all the proposed amendments be passed into law, include reduced regulatory burden, improved Māori engagement, slower ecosystem degradation, less harm from pollution, and a reduction in staff turnover in the environmental reporting programme. The estimated values of these benefits (including the 95 per cent confidence bands) and the total benefit are:

| Benefits | Central Estimate (NZ\$ m) | 95% confidence band (NZ\$ m) |
|--|---------------------------|------------------------------|
| Reduced regulatory burden | 248.9 | (128.4/431.0) |
| Improved Māori engagement | 101.1 | (50.3/183.7) |
| Slower ecosystem degradation | 446.8 | (219.4/811.4) |
| Less harm from pollution | 266.6 | (121.8/505.3) |
| Reduction in staff turnover in environmental reporting | 0.9 | (0.5/1.5) |
| Total benefits (B) | 1,064.3 | (683.4/1,540.1) |

189. Combining all estimated benefits produces a central estimate of \$1064.3 million for the present value of benefits associated with proposed amendments to the ERA. Monte Carlo analysis produces a 95 per cent confidence interval for these present value benefits that range between \$683.4 million and \$1540.1 million.

Total costs and benefits and cost benefit ratio

190. The estimated aggregate costs and benefits for the package of proposed amendments are:

| Costs (including deadweight cost of taxation) | Central estimate (NZ\$ m) | 95% confidence band (NZ\$ m) |
|---|---------------------------|------------------------------|
| Total costs (C) | 560.5 | (402.1/779.7) |
| Total benefits (B) | 1,064.3 | (683.4/1,540.1) |
| Net benefits (=B – C) | 503.8 | (60.0/1,012.4) |
| Benefit-cost ratio (=B/C) | 1.90 | (1.09/3.20) |
| Probability of costs exceeding benefits | 1.2% | |

Section 3: Delivering an option

How will the new arrangements be implemented?

Prior to legislation

191. Final policies will be enacted through amendments to the ERA. A bill will be introduced in late 2022-early 2023 and it is expected that a submission process would be open to the public.
192. Before the legislative process begins, the Ministry will continue working through some aspects of the proposals outlined in this document with iwi, Māori, regional councils, MBIE and CRIs to test their workability, particularly proposals 9 and 10 relating to core environmental indicators and mechanisms for data collection.

The role of central government once enacted

193. The Ministry will:
 - a. establish and provide secretariat services for the standing advisory panel
 - b. work with hapū, iwi and Māori in line to give effect to Te Tiriti to develop a partnership approach to environmental reporting
 - c. work with Treaty partners and stakeholders, primarily CRIs and regional councils, to establish voluntary agreements to share place-based information as a first step towards filling data and information gaps required for core environmental indicators and other reporting.
194. The Ministry and Stats NZ will progressively implement these amendments over the six to nine years following enactment to:
 - a. revise and agree an operational working arrangement
 - b. establish the initial set of core indicators to be set out in regulations within three years of the ERA being enacted after engaging with a targeted group of Treaty partners, stakeholders and the mandated standing advisory panel to create a short list of core indicators
 - c. develop and publish requirements for environmental monitoring standards and data standards respectively. These standards will be based on existing legislative requirements and best practice
 - d. expand their reporting to deliver cross-domain theme reporting and include drivers and outlooks in the environmental reporting framework.
195. Stats NZ will decide the procedures for procuring and providing core indicators and other quality data and statistics.
196. The Ministry, along with other relevant government agencies, will support the mandated Government response to the six-yearly national state of the environment reporting.

Implementation risks

197. There are potential implementation risks in amending the ERA, as outlined below:
- a. The ERA amendments may be perceived as ineffective, as some Treaty partners and stakeholders may expect the ERA amendments to address all issues in the wider environmental monitoring and reporting system. To mitigate this, the Ministry will continue public messaging on how the ERA amendments are the first step towards broader reform of the environmental monitoring and reporting system.
 - b. As part of proposal 10, in the short term there will be a reliance on developing new relationships, enhancing existing relationships and entering ongoing voluntary arrangements to improve data (and data collection from non-government organisations). This is a purposeful decision that will allow for discussions on funding to support the generation of new environmental data. There is a risk, however, that voluntary agreements will not be entered into and the data or information will not be available for environmental reporting. Better relationship building will be needed to mitigate this risk.
 - c. Although as part of the amendments to the ERA there will be more flexibility in commentary reporting (reporting in between state of the environment reporting), these commentaries will be driven by key or existing issues, where new research or data has significantly changed our understanding, or new or emerging environmental issues. There is the risk that areas of the environment are continually overlooked as a different area of the environment is always more urgent. This risk is mitigated by the need for all cross-domain themes to be reported on in between the state of the environment reporting, either as a singular report or with multiple cross-domain themes being reported on. There will also be the ongoing release of updates to core indicators on Stats NZ platforms.
 - d. There was a high level of interest from Treaty partners and stakeholders, namely other Government agencies, CRIs and regional councils, along with hapū and iwi (for mātauranga Māori indicators, measures and evidence), in the development of core indicators. There is a risk that the timeframes to set the initial core indicators in the ERA may be too short for the negotiations needed. Managing expectations of the level of influence Treaty partners and stakeholders have in the selection of the core indicators will need to be addressed. For mātauranga Māori indicators, the Ministry and Stats NZ will work with individual Treaty partners, and as a priority those Treaty partners or Māori groups with whom voluntary agreements have been entered into.
 - e. The benefits of these amendments are dependent on the additional funding of a net present value of approximately \$18.7 million per year being available over the 30 year period, and of that an average of \$33 million per year for the first 12 years.
 - f. The proposed amendments to data collection will not fill all environmental data gaps nor meet all environmental data needs. Improving environmental data requires improving ongoing dedicated funding across the environmental monitoring and reporting system (EMRS). The EMRS is due to be reviewed separately from the ERA amendments to address system-wide issues.

How will the new arrangements be monitored, evaluated, and reviewed?

How will the impact of the new arrangements be monitored?

198. The Ministry's and Stats NZ's joint environmental reporting programme will continue to use existing review and improvement mechanisms, to monitor, and evaluate the success of each reporting product eg, lessons learned sessions, engagement with stakeholders and feedback from external parties following release of the report, as well as metrics including the number of report downloads and page views from the Ministry and Stats NZ websites. Any findings will be incorporated directly back into programme improvement.
199. To date, monitoring has indicated that improvements need to be made to fill data gaps, up to date data is used, data is maintained in a secure environment to ensure it remains clean, a programme agreement document between the Ministry and Stats NZ is needed to ensure all programme staff are aware of their specific duties and timelines, and a standard review structure is needed.
200. Quality control processes for data used for environmental reporting are already in place and are regularly reviewed to ensure that the processes provide data that is clean, robust and fit for purpose. Standardisation of data collection for environmental reporting will occur and the quality of the data monitored regularly.
201. The set of core indicators will be reviewed on a regular basis, the frequency of which will be set out in the ERA or regulations.
202. A review structure for the six-yearly and annual reviews will be established during the implementation phase to ensure consistency and completeness.
203. It is expected that the PCE will choose to continue to provide independent commentary and report on reporting produced under the amended ERA, and the effectiveness of the amended ERA.

When and how will the new arrangements be reviewed?

204. The Ministry and Stats NZ will review the effectiveness and efficiency of the new arrangements under the amended ERA regularly (in general this will follow the production of a commentary report each year), and make any operational changes needed.
205. The Ministry and Stats NZ will also do a full review of the new arrangements every six years following the six yearly state of the environment report, and report to the responsible Minister as to whether further amendments are needed. Such reviews are likely to align with the regular system evaluation reporting under the NBA to assess whether the implementation of the ERA amendments is providing the information needed to improve functioning of the resource management system.

Annex 1: Assessing options against criteria

Assessment criteria

The criteria used to assess the suitability of each option, is set out below:

- **A. Effective reporting:** the extent to which the proposal will lead to relevant, robust, meaningful and dependable reporting. Reports should reflect the issues important to New Zealanders, underpinned by quality evidence. The proposal should allow for meaningful comparisons across reports, while avoiding repetition.
- **B. Certainty:** the extent to which the proposal can clearly define the parameters for preparing reports, including certainty on the roles and responsibilities, the frequency and content of reporting. The structure and content of reports should be flexible to best reflect and communicate the issues.
- **C. Independence:** the extent to which the proposal provides for independent reporting, free from real or perceived bias, drawing on relevant expertise.
- **D. Cost-efficiency:** the extent to which the benefits of the proposal outweigh the costs and risks.

Options were also assessed against their impacts based on the Treaty of Waitangi principles.

| Table key | |
|-----------|----------------------------------|
| ✓✓ | fully meets criteria |
| ✓ | partially meets criteria |
| ~ | Neutral |
| ✗ | partially does not meet criteria |
| ✗✗ | does not meet criteria |

| Options considered | Assessment criteria | | | | |
|--|---------------------|---------|-------------|----------------|-------|
| Proposal 1: Clarify the purpose of environmental reporting | | | | | |
| Options considered | Effective | Certain | Independent | Cost efficient | Score |
| Option 1: Amend the purpose of the ERA to a variation on PCE's wording; separate out the purpose and reporting framework | ✓✓ | ✓✓ | ✓✓ | ✓✓ | 8 |
| Option 2: Amend the purpose of the ERA in line with the PCE's recommendation | ✓✓ | ✓✓ | ✓✓ | ✓ | 7 |
| Option 3: <i>Status quo</i> | ~ | ✗ | ✓✓ | ~ | 1 |

| Proposal 2: Mandate a government response to state of the environment reports | | | | | |
|---|-----------|---------|-------------|----------------|-------|
| Options considered | Effective | Certain | Independent | Cost efficient | Score |
| Option 1: Mandate a response from the Government; the Minister for the Environment co-ordinates the response from relevant Ministers | ✓✓ | ✓✓ | ✓ | ✓✓ | 7 |
| Option 2: Mandate a response from the Government; only the Minister for the Environment responds | ✓ | ✓✓ | ✓ | ✓ | 5 |
| Option 3: Mandate a response from a select committee | ✓✓ | ✓✓ | ✓ | ~ | 5 |
| Option 4: Mandate a response from the PCE to every state of the environment report | ✓ | ✓✓ | ✓✓ | ✗ | 4 |
| Option 5: <i>Status quo</i> | ✓ | ✗ | ✓✓ | ~ | 2 |
| Where the response should appear: | ✓✓ | ✓✓ | ~ | ✓ | 5 |
| Option 1: Adopt the PCE's recommendation to require a separate response after each state of the environment report's publication | | | | | |
| Option 2: Include the Government's response within the state of the environment report | ✓ | ✓ | ✗✗ | ✓ | 1 |
| Time limits by which the Government would be expected to respond after the reports' publication: | ✓✓ | ✓✓ | ~ | ✓✓ | 6 |
| Option 1: Within six months of publication, the Government providing an initial response acknowledging the report and its findings, and within 12, months, release an action plan on actions made, and intended | | | | | |
| Option 2: Adopting the PCE's recommendation of six months of publication | ✓ | ✓ | ~ | ✓ | 3 |
| Option 3: Having no time limit | ~ | ✗✗ | ~ | ✗ | -3 |
| Proposal 3: Add drivers and outlooks to the reporting framework | | | | | |
| Options considered | Effective | Certain | Independent | Cost efficient | Score |
| Option 1: Include drivers and outlooks | ✓✓ | ✓✓ | ✓✓ | ✓✓ | 8 |
| Option 2: Include drivers, outlooks and responses | ✓✓ | ✓✓ | ✓ | ✓✓ | 7 |
| Option 3: Include outlooks | ✓ | ✓ | ✓✓ | ✓✓ | 6 |
| Option 4: Include drivers | ✓ | ✓ | ✓✓ | ✓ | 5 |

| Option 5: Include responses | ✓ | ✓ | ✓✓ | ✓ | 5 |
|---|-----------|---------|-------------|----------------|-------|
| Option 6: <i>Status quo</i> | ✓ | ✓ | ✓✓ | ✓ | 5 |
| Proposal 4. Adjust roles and responsibilities | | | | | |
| Options considered | Effective | Certain | Independent | Cost efficient | Score |
| Option 1: Adopt the PCE's recommendation to adjust the roles and responsibilities of the Government Statistician and Stats NZ, and the Secretary for the Environment and Ministry | ✓✓ | ✓✓ | ✓ | ✓ | 6 |
| Option 2: <i>Status quo</i> | ~ | ✓ | ~ | ~ | 1 |
| Proposal 5: Mandate a standing advisory panel | | | | | |
| Options considered | Effective | Certain | Independent | Cost efficient | Score |
| Option 1: Adopt the PCE's recommendation to establish a standing advisory panel | ✓✓ | ✓✓ | ✓ | ✓ | 6 |
| Option 2: Establish an independent Science Advisory Council as a Crown entity | ✓ | ✓ | ✓✓ | ✓ | 5 |
| Option 3: <i>Status quo</i> | ✓ | ✓ | ~ | ~ | 2 |
| Option 4: Utilise the Environmental Protection Authority's (EPA) committees or advisory boards as an advisory panel | ✓ | ~ | ✗ | ~ | 0 |
| Proposal 6: Replace environmental domains with cross-domain themes | | | | | |
| Options considered | Effective | Certain | Independent | Cost efficient | Score |
| Option 1: Shift to cross-domain themes | ✓✓ | ✓ | ✓✓ | ✓✓ | 7 |
| Option 2: No mandatory themes or domains | ✓ | ~ | ✓ | ✓ | 3 |
| Option 3: Retain modified domains | ✓ | ✓✓ | ✓✓ | ✓ | 6 |
| Option 4: <i>Status quo</i> | ✓ | ✓✓ | ✓✓ | ✓ | 6 |
| Proposal 7: Reduce the frequency of state of the environment reports to six-yearly | | | | | |
| Options considered | Effective | Certain | Independent | Cost efficient | Score |
| Option 1: Reduce state of the environment reporting frequency to six-yearly | ✓✓ | ✓✓ | ✓✓ | ✓✓ | 8 |
| Option 2: Reduce the state of the environment reporting frequency to five-yearly | ✓✓ | ✓✓ | ✓✓ | ✓✓ | 8 |

| Option 3: Change state of the environment reporting frequency to four-yearly | ✓ | ✓✓ | ✓✓ | ✓ | 5 |
|---|-----------|---------|-------------|----------------|-------|
| Option 4: <i>Status quo</i> of three-yearly reporting | ✓ | ✓✓ | ✓✓ | ✓ | 6 |
| Proposal 8: Replace domain reports with one commentary each year | | | | | |
| Options considered | Effective | Certain | Independent | Cost efficient | Score |
| Option 1: Produce commentaries as recommended by the advisory panel | ✓✓ | ✓ | ✓✓ | ✓✓ | 7 |
| Option 2: Adopt the PCE's recommendation to produce a commentary on each of the cross-domain themes in between state of the environment reports | ✓✓ | ✓ | ✓✓ | ✓ | 6 |
| Option 3: <i>Status quo</i> of two in-between commentaries each year, and one in the state of the environment reporting year | ✗ | ✓✓ | ✓✓ | ✓ | 4 |
| Proposal 9: Establish a set of core environmental indicators | | | | | |
| Options considered | Effective | Certain | Independent | Cost efficient | Score |
| Option 1: Set out the core indicator themes in regulations; allow the Ministry and Stats NZ to choose the indicators | ✓✓ | ✓✓ | ✓✓ | ✓ | 7 |
| Option 2: Set out the core indicator themes in the ERA; allow the Ministry and Stats NZ to choose the actual indicators | ✓ | ✓✓ | ✓✓ | ✓ | 6 |
| Option 3: Adopt the PCE's recommendation to specify the indicators in regulations | ✓ | ✓✓ | ✓ | ✓ | 5 |
| Option 4: Include everything relating to the indicators in the ERA | ~ | ~ | ~ | ~ | 0 |
| Option 5: <i>Status quo</i> | ✓ | ✓ | ✓ | ✓ | 4 |
| Proposal 10: Strengthen the mechanisms for collecting data | | | | | |
| Options considered | Effective | Certain | Independent | Cost efficient | Score |
| Option 1: New provisions in the ERA for the supply of data | ✓ | ✓✓ | ✓✓ | ✓✓ | 7 |
| Option 2: Require agencies to provide data under the Data and Statistics Bill | ✓ | ✓ | ✓✓ | ✓✓ | 6 |
| Option 3: Include regulations under the ERA that enable the Secretary for the Environment, the Government Statistician or both to require agencies to monitor, collect and provide data against | ✓ | ✓ | ✓ | ✓✓ | 5 |

| | | | | | |
|---|----|----|----|----|----|
| standards, and impose penalties on agencies that fail to do this | | | | | |
| Option 4: Adopt the PCE's recommendation of requiring the Government Statistician to collect the data | x | ✓ | ✓✓ | x | 1 |
| Option 5: Use non-regulatory methods to obtain data and knowledge | x | ✓ | ✓✓ | x | 1 |
| Option 6: <i>Status quo</i> | xx | xx | ✓✓ | xx | -4 |