Office of the Minister for Tertiary Education, Skills and Employment

Cabinet Social Policy Committee

IMPROVING THE EFFICIENCY AND EFFECTIVENESS OF THE PERFORMANCE-BASED RESEARCH FUND

Proposal

1. I propose a package of changes to improve the effectiveness and efficiency of the Performance-Based Research Fund (PBRF) through:
    - clarifying the objectives of the PBRF
    - better valuing user-perspectives of research quality and engagement in user-orientated research
    - simplifying the PBRF Quality Evaluation to reduce transaction costs
    - better supporting the sustainability of the tertiary education research workforce
    - strengthening reporting on research performance.

Executive summary

2. The PBRF supports high-quality tertiary education research and research-led teaching and learning at degree level and above. By 2016/17 the PBRF will allocate $300 million per year to tertiary education organisations. I initiated a review of the PBRF in 2012 to consider policy and operational changes to maximise the value of the government's investment.

3. The review found that the PBRF has supported a significant increase in the research performance and productivity of New Zealand tertiary education organisations, including increases in the average quality of research, higher qualification completion rates for postgraduate research degrees, and growth in the share of world-indexed publications and citations by New Zealand tertiary education organisations.

4. These findings indicate that fundamental changes to the design of the fund are not required. However, the review did identify several areas for improvement, specifically:
    - the Quality Evaluation (the largest component of the PBRF) is complex and costly to administer
    - the PBRF may not adequately recognise user perspectives of research quality or reward engagement in user-orientated research
    - the PBRF creates potential disincentives for tertiary education organisations to recruit and develop new and emerging researchers, and
    - the reporting of PBRF results is complex, may not provide a robust picture of performance across tertiary education organisations, and lacks full transparency.

5. In August 2013 Cabinet agreed to public consultation on a set of proposals to improve the PBRF [CAB Min (13) 26/3 refers]. The proposals in this paper reflect the feedback from this consultation.

6. I propose to revise the current objectives of the PBRF to reaffirm that the PBRF should support high-quality tertiary education research and research-led teaching and learning. The revised objectives will also signal that the PBRF should assist universities to maintain and lift their performance in international rankings, support the Government's wider priorities in science, research and innovation, and support the advancement of mātauranga Māori.

7. The proposed changes to the PBRF align with the revised objectives, and will address the areas for improvement identified by the review. These changes will:

    - better value user-perspectives of research quality and engagement in user-orientated research by rewarding tertiary education organisations that attract external research income, particularly from New Zealand industry, iwi and not-for-profit organisations
    - simplify the Quality Evaluation to reduce transaction costs by reducing the size of the Evidence Portfolios submitted, and simplifying the process to assess them
    - better support the sustainability of the tertiary education research workforce by increasing incentives for tertiary education organisations to recruit, develop and retain new and emerging researchers
    - strengthen reporting on research performance by using fewer measures, that are robust and provide meaningful comparisons between tertiary education organisations.

8. The proposals will be implemented between 2015 and 2018. However because the PBRF allocates funding based on past performance, tertiary education organisations will start responding to the changes as soon as they are announced.

Background

9. The PBRF was developed in 2002 to reward and encourage tertiary education research excellence. The PBRF works alongside tuition subsidy funding to enable New Zealand students and international students studying in New Zealand to receive degree and postgraduate qualifications that are truly world-class and internationally competitive.

10. The PBRF has a unique role in the tertiary education, science and innovation system. It provides financial and reputational incentives to support high-quality tertiary research and research-led teaching and learning at degree level and above by:

    - assessing research excellence
    - publishing information on research performance, and
    - allocating funding based on research performance.[1]

11. By rewarding and encouraging research excellence and research-led teaching, the PBRF also supports wider government scientific, research and innovation priorities. These include enabling research that will provide economic, social, environmental and cultural benefits to New Zealand, encouraging business innovation and commercialisation, and

[1] More detail on the current design of the PBRF is provided in Appendix A.

developing new scientific talent to strengthen New Zealand's research system. However, there are a number of other funds specifically designed to address these priorities.[2] The PBRF should, therefore, remain primarily concerned with supporting research excellence and research-led learning for students.

12. In 2016/17 the PBRF will reach $300 million per annum, making up 20% of the Government's total research and development investment in that year. In 2012, I initiated a review of the PBRF to consider policy and operational changes to maximise the value of this investment. The review was undertaken by the Ministry of Education in consultation with the Tertiary Education Commission and the Ministry of Business, Innovation and Employment.[3]

13. I sought Cabinet's approval in August 2013 to public consultation on a set of changes to improve the PBRF [CAB Min (13) 26/3 refers]. The consultation feedback forms the basis of the proposals set out in this Cabinet paper. The consultation document and subsequent decisions have been informed by input from two expert advisory panels: a PBRF Expert Advisory Panel, and a PBRF Mātauranga Māori Advisory Panel. The proposals focus on improving the efficiency and effectiveness of the current PBRF. The review found that fundamental changes to the design of the PBRF are not required.

Clarifying the objectives of the PBRF

14. The original objectives of the PBRF have not been revised since the policy was introduced in 2002. These objectives were to:

    - increase the average quality of research
    - ensure that research continues to support degree and postgraduate teaching
    - ensure that funding is available for postgraduate students and new researchers
    - improve the quality of public information on research outputs
    - prevent undue concentration of funding that would undermine research support for all degrees or prevent access to the system by new researchers, and
    - underpin the existing research strengths in the tertiary education sector.

15. I propose to clarify the PBRF objectives to reaffirm the primary purpose of the PBRF and set out the role of the PBRF in supporting the Government's wider priorities in science, research and innovation.

16. I propose that the primary purpose of the PBRF will remain rewarding and encouraging high-quality tertiary education research and research-led teaching and learning at degree level and above. High-quality research and research-led learning is essential to the performance of New Zealand's tertiary education organisations, including the ability of these organisations to produce graduates with degrees and postgraduate qualifications that are internationally competitive.

17. The revised primary objectives include a new focus on international research rankings. These rankings broadly reflect the underlying health of the universities, and play a key role in positioning New Zealand as a quality educational destination for domestic and international students. In recent years, despite improved research performance by New

[2] These include Vote Science and Innovation contestable funding, the National Science Challenges, the Primary Growth Partnership, Callaghan Innovation, and business-led research and development funds.

[3] More information about the Review, including an overview of consultation findings is provided in Appendix B.

Zealand universities, increased investment and the expansion of higher education in countries such as China has seen the relative position of New Zealand universities fall in most of the best known ranking systems. The new objective reinforces that the PBRF aims to assist universities to maintain and lift their research performance in international rankings, by incentivising and rewarding research excellence.

18. I also propose some additional objectives to recognise the contribution that the PBRF makes to the Government's wider priorities in tertiary education, science, research and innovation. An explicit reference to the advancement of mātauranga Māori reflects wider government strategies including the Tertiary Education Strategy 2014-2019 and Ka Hikitia – Accelerating Success 2013-2017. Supporting greater knowledge and use of Māori language, tikanga Māori, and development of mātauranga Māori is an important contributor in improving the educational success of Māori.

The proposed primary objectives of the PBRF are to:

- increase the quality of basic and applied research at New Zealand's degree-granting tertiary education organisations
- support world-leading research-led teaching and learning at degree and postgraduate levels
- assist New Zealand's tertiary education organisations to maintain and lift their competitive research rankings relative to their international peers
- provide robust public information to stakeholders about research performance within and across tertiary education organisations.

In doing so, the PBRF will also:

- support the development of postgraduate student researchers and new and emerging researchers
- support research activities that provide economic, social, cultural, and environmental benefits to New Zealand, including the advancement of mātauranga Māori
- support technology and knowledge transfer to New Zealand businesses, iwi and communities.

19. These changes will clarify the objectives of the PBRF in line with the Government's expectations for the fund.

Proposed policy and operational changes to the PBRF

20. Proposed changes to the PBRF align with the revised objectives and are designed to improve the effectiveness and efficiency of the fund by:
    - better valuing user-perspectives of research quality and engagement in user-orientated research
    - simplifying the PBRF Quality Evaluation to reduce transaction costs
    - better supporting the sustainability of the tertiary education research workforce, and
    - strengthening reporting on research performance.

Better valuing user-perspectives of research quality and engagement in user-orientated research

21. The External Research Income component of the PBRF allocates funding to tertiary education organisations based on the amount of research income they attract from external funding sources. This measure serves as a useful proxy for research user perspectives of research quality and engagement in user-orientated research. I propose:

    - increasing the proportion of funding that is allocated based on External Research Income (and decreasing the relative value of the Quality Evaluation)
    - introducing financial weightings for External Research Income from non-New Zealand Government sources.

Proposed change: increase the proportion of funding allocated based on External Research Income

The value of the External Research Income measure will increase from 15% of total funding to 20% of total funding. The value of the Quality Evaluation measure will reduce from 60% to 55% of total funding. The value of the Research Degree Completion measure will remain the same, at 25% of total funding.

22. Increasing the External Research Income measure from 15% to 20% of total funding will better reward tertiary education organisations that earn external research income and strengthen incentives to actively seek out additional external research income. The change will bring the New Zealand system more in line with international practice.

23. To accommodate this increase, I propose a modest reduction in proportion of funding allocated based on the Quality Evaluation, from 60% to 55%. The Quality Evaluation will continue to allocate the largest proportion of PBRF funding, reflecting its importance as the most comprehensive measure of research quality in the PBRF.

24. This change will influence the share of total PBRF funding that different tertiary education organisations receive. However modelling indicates that the increases in the size of the fund following decisions in Budget 2012 mean no tertiary education organisation will see their actual PBRF funding reduce below 2013 levels due to this change[4].

25. This change was not included in the proposals in the public consultation process. Before finalising this proposal I intend consult on the details of this specific change with those tertiary education organisations most affected, and with key science sector stakeholders.

Proposed change: introduce financial weightings for External Research Income from New Zealand non-government sources and overseas sources

Tertiary education organisations will be required to report External Research Income by the following sources:

- NZ government contestable funds
- NZ public sector contract research
- Overseas research income
- NZ non-government sources (including funding from industry, iwi, and the not-for-profit sector)

A new financial weighting of 2 will be placed on External Research Income from New Zealand non-government sources, and 1.5 on External Research Income from overseas sources.

[4] This does not take into account variation in the relative performance of particular tertiary education organisations, as this cannot be predicted.

26. The PBRF does not currently reward tertiary education organisations sufficiently for attracting external research income from end-users including industry, iwi and not-for-profit organisations. The Statistics New Zealand Research and Development Survey showed that in 2011, New Zealand universities attracted 74% of their external research income from government sources, with just 7% from the private sector. The proportion of university research income from the private sector has fallen in recent years.

27. Requiring tertiary education organisations to report external research income by source as a condition of receiving PBRF funding will increase transparency and provide the government and other research funders with greater information about the nature of research activities undertaken in the tertiary education sector.

28. Placing a weighting of 1.5 on external research income from overseas sources (both government and non-government) will incentivise tertiary education organisations to seek additional income for research from outside New Zealand. Attracting foreign investment reduces the dependence of New Zealand tertiary education organisations on New Zealand government income. This change could also improve New Zealand's attractiveness as a location for foreign direct investment in research and development.

29. Placing a weighting of 2 on external research income from New Zealand non-government sources, will create stronger incentives for tertiary education organisations to engage with end-users and seek out research funding from New Zealand industry, iwi and not-for-profit organisations. A weighting of 2 also recognises the additional effort required by tertiary education organisations to engage with end users and seek out research funding from non-government sources in New Zealand.

Simplifying the Quality Evaluation to reduce transaction costs

30. The PBRF Quality Evaluation is conducted every six years and determines the majority of funding received by tertiary education organisations. It involves peer review assessment of the research quality of participating tertiary education organisations, based on Evidence Portfolios produced by individual teaching and research staff. The Quality Evaluation provides a robust and comprehensive measure of the research performance of tertiary education organisations. However it is also complex, and imposes significant transaction costs on tertiary education organisations, departments and researchers.

31. I propose significant changes to the operation of the Quality Evaluation to reduce its complexity and associated costs. These changes:

    - reduce the size of Evidence Portfolios submitted by individual teaching and research staff
    - exclude staff based overseas from participating in the Quality Evaluation
    - tighten provisions for staff to have special circumstances considered
    - simplify the assessment of Evidence Portfolios by Quality Evaluation Panels.

Proposed change: reduce the size of Evidence Portfolios

Evidence Portfolios will include up to four nominated research outputs (no change) and to list up to 12 other research outputs (a reduction from 30).

The Peer Esteem and Contribution to the Research Environment measures will be combined into a single measure called 'Research Contribution'.

Evidence Portfolios will include up to 15 examples of Research Contribution (a reduction from 30 examples of Peer Esteem and 30 examples of Contribution to the Research Environment).

32. Reducing the size of Evidence Portfolios will significantly reduce the amount of time and effort that individual researchers and tertiary education organisations spend preparing for the Quality Evaluation. It will also reduce the time that Quality Evaluation panels spend assessing each Evidence Portfolio.

33. The consultation found strong support for combining the Contribution to the Research Environment and Peer Esteem measures into a single measure. The two measures overlapped and created unnecessary duplication. There was also a general consensus that the number of 'other' research outputs and examples of research contribution and peer esteem was unnecessarily high.

34. The proposed changes reduce the number of 'other' research outputs (including book chapters, journal articles, details of exhibitions, and conference papers) that can be listed in an Evidence Portfolio by 60% (from 30 to 12). The number of examples of research contribution or peer esteem that can be included in an Evidence Portfolio reduces by 75% (from 60 to 15). This strikes a balance between collecting a sufficient amount of information to allow for robust assessment of Evidence Portfolios, while not collecting more information than is necessary.

Proposed change: exclude staff based overseas

Streamline eligibility criteria for the Quality Evaluation to exclude staff based overseas.

35. Streamlining eligibility criteria for the Quality Evaluation will clarify existing operational guidance, in order to focus the Quality Evaluation on staff who contribute significantly to research and teaching in New Zealand. The Tertiary Education Commission estimates that this will affect a very small number of overseas-based staff, while significantly reducing audit requirements for the Tertiary Education Commission.

Proposed change: tighten provisions for staff to have special circumstances considered

The Tertiary Education Commission will investigate the most effective approach to tighten provisions for staff to have special circumstances considered where these account for a reduction in the quantity of research outputs and examples in their Evidence Portfolios. This work will be undertaken in consultation with a Sector Reference Group, with the objective of reducing the proportion of staff requesting consideration of special circumstances to no more than 10%.

36. The special circumstance provisions allow a range of situations to be recognised during the Quality Evaluation; however, a large proportion of Evidence Portfolios cite special circumstances (37% in 2012). This significantly increases the time spent by peer review panels on assessments, but has a minimal impact on results. In 2012 these provisions resulted in only 1% of Evidence Portfolios receiving a higher grade (an A, B, or C).

37. I considered removing the ability to claim special circumstances entirely; however, this was opposed by most submitters who commented that the ability to state special circumstances and have these recognised in the assessment process is important for the

perceived fairness and equity of the system. Many submitters suggested that the complexity and transaction costs associated with the special circumstance provisions would be better addressed by tightening the provisions instead.

38. The Tertiary Education Commission will therefore undertake further work with a Sector Reference Group to identify the most effective approach to tighten the special circumstance criteria, and introduce these changes prior to the next Quality Evaluation. To guide this work I propose to set an objective of reducing the proportion of evidence portfolios citing special circumstances to 10% for the 2018 quality evaluation.

39. Tightened criteria will reduce transaction costs associated with assessing special circumstances, while continuing to allow individuals to have significant circumstances taken into account which have a major impact on the quantity (but not quality) of work undertaken in an assessment period.

Proposed change: simplify the assessment of Evidence Portfolios

Tertiary education organisations will no longer be able to request that an Evidence Portfolio is considered by more than one peer review panel.

Only the chairs of peer review panels will be able to cross-refer an Evidence Portfolio to another subject area peer review panel for further advice. The use of specialist advisors will be discontinued.

The two expert advisory groups (for Pacific research, and professional and applied research) will be disestablished.

Experts in professional and applied research will be included within subject area peer review panels. The Tertiary Education Commission will investigate establishing a subject area peer review panel for Pacific research.

Guidance will be more explicit that the new Research Contribution measure can include examples of contribution and esteem both within and outside academia.

40. Simplifying the assessment process will improve the efficiency by reducing the amount of time that Quality Evaluation panels spend reviewing Evidence Portfolios. Cross-referrals to peer review panels, expert advisory groups and specialist advisors increase the complexity of the assessment process with minimal impact. During the 2012 Quality Evaluation cross-referrals resulted in a change in the overall score given to Evidence Portfolios (A, B, C or R), in less than 1% of cases.

41. There was general agreement among submitters to the PBRF consultation that the expert advisory groups had not worked well in the 2012 Quality Evaluation. A clear majority supported removing the two expert advisory groups, and incorporating experts in professional and applied research into the subject area peer review panels. More efficient assessment processes will be accompanied by improved operational guidance to better recognise and reward applied research.

42. New guidance for subject area peer review panels will draw on the work of the 2012 Quality Evaluation's Professional and Applied Expert Advisory Group, which developed detailed criteria for assessing the excellence of applied research. Guidance for teaching and research staff will reinforce that the new Research Contribution measure may include examples of esteem and contribution inside and outside academia. Professional and applied researchers will be encouraged to submit evidence of research application, including impact on policy, professional practice, or business processes, products or services.

43. The consultation found in principle support for replacing the Pacific research expert advisory group with a Pacific research peer review panel. However, there were practical concerns about the viability of such a panel and the ability to manage conflicts of interest given the limited existing capacity and expertise in Pacific research. I have asked the Tertiary Education Commission to investigate the operational feasibility of establishing a peer review panel for Pacific research before the 2018 Quality Evaluation.

44. Consultation feedback from tertiary education organisations showed a preference for retaining some form of cross-referrals to support the assessment of interdisciplinary research. Allowing peer review panel chairs to request that an Evidence Portfolio is reviewed by more than one panel will ensure that there is still sufficient flexibility for Evidence Portfolios to be reviewed by additional subject matter experts if required. Chairs of peer review panels are best placed to determine when a cross-referral is appropriate to address a lack of panel expertise, and will be able to clearly signal the type of input they need from another panel to help inform their assessment.

Better supporting the sustainability of the tertiary education research workforce

45. The PBRF encourages tertiary education organisations to focus on the current value and performance of researchers, rather than their future value and performance. In doing so, the PBRF contains potential financial and reputational disincentives for tertiary education organisations to recruit and develop new and emerging researchers. Over the past decade, the proportion of lecturers reduced (from 24% in 2001 to 15% in 2011), while the proportion of professors increased from 7% to 12% and associate professors increased from 9% to 11%.

46. I propose to introduce a financial weighting for Evidence Portfolios submitted by new and emerging researchers who achieve a C score in the Quality Evaluation. This change will increase the financial value of Evidence Portfolios submitted by new and emerging researchers and better support the sustainability of the tertiary education research workforce. The consultation found strong support for this proposal.

47. I also considered whether a financial weighting should be placed on Evidence Portfolios submitted by new and emerging researchers that receive a B score in the Quality Evaluation. Consultation feedback indicated that would be a disproportionate response which could encourage undesirable behaviour by providers, such as the employment of new and emerging researchers on fixed-term contracts prior to each Quality Evaluation, rather than the development and retention of existing staff. I have therefore decided not to pursue this change.

Proposed change: introduce a financial weighting for new and emerging researchers

Introduce a financial weighting for Evidence Portfolios submitted by new and emerging researchers who receive a 'C' score in the Quality Evaluation. This will mean that financial weightings for Evidence Portfolios are: A=5, B=3, C(new and emerging)=2, C=1.

Strengthening reporting on research performance

48. Public reporting of PBRF Quality Evaluation results does not affect the amount of funding tertiary education organisations receive; however, it provides powerful reputational incentives for tertiary education organisations to increase their research performance. Public attention is largely focused on the average quality score (AQS) which enables rankings of research performance at an institutional level and by subject area. It is important that public reporting of Quality Evaluation results enables meaningful

comparisons of research performance. It is also important that the way in which these results are calculated does not create negative unintended consequences for human resources practices within tertiary education organisations.

49. The 2012 Quality Evaluation reported on research quality at the institutional level using four measures of AQS. Each measure used a different denominator to report on average quality:

    - AQS(N) reported average quality based on the assessment of the Evidence Portfolios that were submitted
    - AQS(S) reported average quality based on the number of teaching and research staff in each tertiary education organisation
    - AQS(E) reported average quality based on the number of equivalent full-time students enrolled at degree level and above
    - AQS(P) reported average quality based on the number of equivalent full-time students enrolled in post-graduate qualifications.

50. AQS(N) was used as the primary measure of research quality, with the three other measures providing contextual information. Only AQS(N) was reported by subject area and nominated academic unit.

Proposed change: revising the measures used to report Quality Evaluation results

AQS(S) - average quality, based on the number of teaching and research staff in tertiary education organisations, will become the primary measure of research quality.

An additional contextual measure, AQS(E), based on the number of full-time equivalent students enrolled at degree level and above, will continue to be reported at the institution level.

The AQS(N) and AQS (P) measures will no longer be reported.

51. I propose to simplify the publication and interpretation of Quality Evaluation results by halving the number of average quality scores reported. Reporting four measures of average quality is complex and confusing for students, the public, and research end-users, including industry. I also intend to replace AQS(N) as the primary measure for reporting Quality Evaluation results with a more meaningful measure of the research intensity of tertiary education organisations: AQS(S). This will enable comparisons of research performance which take into account the size and scale of tertiary education organisations and their teaching and research workforce.

52. The use of AQS(S) as the primary measure for reporting Quality Evaluation results will be supported by changes to improve the quality and consistency of the staffing information collected from tertiary education organisations. In past Quality Evaluations, information about teaching and research staff was collected through a one-off PBRF staff census. The Tertiary Education Commission had to intervene to address behaviours by tertiary education organisations which aimed to boost their average quality scores, but undermined the credibility of the measures. In 2012, this resulted to late changes to the measures used to calculate average quality scores.

53. To address these risks, the Ministry of Education will undertake further work with tertiary education organisations to replace the two current staffing statistical collections[5] with a single framework for tertiary education organisations to report staffing information that is robust, credible and appropriate. This will simplify existing reporting requirements for tertiary education organisations and create a single staffing statistical collection that can be used for annual monitoring and reporting purposes, and to report PBRF Quality Evaluation results in the future.

54. I propose to retain AQS(E), which provides complementary information about the extent to which teaching at degree-level and above is underpinned by quality research, and to stop reporting average quality scores based on the number of equivalent full-time students enrolled in postgraduate qualifications AQS(P). In the 2012 Quality Evaluation AQS(P) was highly influenced by student mix, and tended to advantage tertiary education organisations with proportionately fewer postgraduate students.

Proposed change: increase transparency of PBRF funding allocations

In addition to publishing the total amount of funding received by each tertiary education organisation against each of the PBRF's three measures, the Tertiary Education Commission will publish breakdowns within each measure as follows:

- Quality Evaluation, by subject area
- Research Degree Completions, by subject area, and by weightings for Māori and Pasifika students and te reo theses
- External Research Income, by source

55. Publishing greater detail about the basis of PBRF funding allocations to each tertiary education organisation will highlight the amount of funding that particular subject areas attract to the institution through the Quality Evaluation and Research Degree Completions. This change will create greater transparency for the public and staff within tertiary education organisations regarding the relationship between performance in the PBRF and funding.

56. Increased transparency will reinforce existing financial incentives for tertiary education organisations to maximise research performance across subject areas, boost research degree completions, and attract external research income. It will also reinforce the value of strategic and equity weightings for Research Degree Completions by Māori and Pasifika students and theses in te reo Māori.

57. The PBRF reforms will be supported by a stronger focus on research performance through the Investment Plan process, which determines the allocation of just over $2 billion of Student Achievement Component tuition subsidy funding. The Tertiary Education Commission intends to strengthen the accountability of tertiary education organisations for research performance in 2015/16 Investment Plans.

[5] The Ministry of Education and the Tertiary Education Commission have two staffing statistical collections. One is a snapshot of staffing as in July each year. This is known as the Single Data Return (SDR) collection and is managed by the Ministry. The other is an accumulated return taken as part of the financial data collection managed by the Tertiary Education Commission annually. Both collections currently have weaknesses.

Impact of the changes

58. I expect these changes to support tertiary education organisations to increase their future research performance. Taken together, the changes in this paper will:

    - shift funding to tertiary education organisations that attract substantial amounts of external research income, particularly income from New Zealand industry, iwi and not-for-profit organisations, and overseas sources
    - reduce the costs of the Quality Evaluation, including time spent by teaching and research staff preparing Evidence Portfolios, by academic departments and tertiary education organisations reviewing Evidence Portfolios, and by peer review panels assessing Evidence Portfolios
    - better reward tertiary education organisations, that recruit, develop and retain new and emerging researchers
    - provide clearer measures of performance in the Quality Evaluation, and more detailed information, linking performance in the PBRF to the funding that tertiary education organisations receive.

Financial impact of changes on individual tertiary education organisations

59. Three changes will impact on the amount of funding received by individual tertiary education organisations between 2015 and 2018[6]:

    - increasing the size of the External Research Income component to 20% and reducing the size of the Quality Evaluation component to 55% - this will shift just under $14.4m between these components for 2015, increasing to $15m for 2016 and future years
    - the introduction of weightings for external research income from non-government sources within New Zealand and overseas sources will change the share of External Research Income funding that different tertiary education organisations receive from 2017
    - the introduction of a new weighting for Evidence Portfolios produced by new and emerging researchers that receive a C grade in the Quality Evaluation – this will change the share of Quality Evaluation funding that different tertiary education organisations receive for 2018 onwards.

60. The impacts for two of these changes have been modelled and results can be found in Appendix C for 2015 and Appendix D for 2018. This modelling cannot take into account changes in relative performance by individual tertiary education organisations, but provides a useful indication of how these changes may impact across tertiary education organisations.

61. It is not possible to model the impact of introducing weightings for external research income from non-government sources within New Zealand and overseas sources, as the Government does not currently have information on the sources of external research income earned by individual tertiary education organisations.

[6] PBRF funding is paid a year in arrears so funding for 2015 will actually be paid to tertiary education organisations in 2016 and funding paid for 2018 will actually be paid in 2019

2015

62. The modelling shows that increasing the size of the External Research Income component for 2015 will result in a small shift (0.11%) in the share of PBRF funding away from institutes of technology and polytechnics and private training establishments, to increase the concentration of funding among the universities. In relative terms the main winners (i.e. those who receive a greater share of total PBRF funding) are the University of Auckland (+0.38%) and Lincoln University (+0.15%), while the University of Otago and Te Whare Wananga O Awanuiarangi also make marginal gains (+0.04% and +0.01% respectively). The remaining universities, all of the institutes of technology and polytechnics, and all but one of the private training establishments see a reduction in their share of PBRF funding.

63. Budget 2012 decisions mean that the PBRF is increasing from $250m per year in 2011/12 to $300m per year in 2016/17. As a result, although some tertiary education organisations will see their share of PBRF funding decrease, no tertiary education organisation is expected to receive less actual funding for 2015 than they receive in 2013, in the absence of changes in relative performance.

2018

64. The modelling shows that the introduction of a new weighting for Evidence Portfolios produced by new and emerging researchers that receive a C grade for 2018, will see a small shift (0.14%) in the share of PBRF funding away from universities to institutes of technology and polytechnics and private training establishments. When combined with the earlier change to the size of the External Research Income and Quality Evaluation components, the proportion of PBRF funding received by each subsector for 2018 is roughly the same as for 2013, though there is variation in the share of funding that different tertiary education organisations receive.

65. The modelling shows the University of Auckland receiving a greater share of PBRF funding after these changes (+0.32%), with Lincoln University (+0.1%), the University of Otago (+0.1%), and Otago Polytechnic (+0.04%). The remaining universities and Unitec see a small reduction in their share of PBRF funding (between -0.02% and -0.27%), while other institutes of technology and polytechnics and all private training establishments see negligible increases or decreases in their share of funding (+/- 0.01% or less).

Risks

66. There is a risk that tertiary education organisations may not respond to the changes to the PBRF by lifting their research performance. I propose to mitigate this by:

    - using a Sector Reference Group to help develop operational guidelines to ensure these attract buy-in and are well understood by tertiary education organisations (there is an established process for this based on past Quality Evaluations)
    - communicating the changes to the PBRF as soon as possible to provide more time for tertiary education organisations to respond
    - continuing to monitor the research performance of tertiary education organisations through the Tertiary Education Commission's periodic PBRF reports
    - developing a new framework for tertiary education organisations to report annual staffing information, which will allow shifts in employment practices to be identified.

Timing and implementation

67. The PBRF assesses and allocates funding based on previous research performance, so while the next Quality Evaluation will take place in 2018, it will assess Evidence Portfolios based on the work done by researchers between 1 January 2012 and 31 December 2017. Results will reflect research strategies by tertiary education organisations and the human resource decisions they make about their research workforce during this period.

68. There is a similar but shorter pattern with External Research Income and Research Degree Completions where the funding that tertiary education organisations receive for these components is linked to their performance over the preceding three years.

69. The effect of this is that while most of the changes in this paper will take several years to be fully implemented, tertiary education organisations will begin responding to these changes as soon as they are announced. Following agreement to these proposals by Cabinet, a communication plan will be developed that sets out clear messages for tertiary education organisations about the planned changes.

70. The table below summarises when these changes will be made, noting when the funding tertiary education organisations receive will actually be affected, where applicable.

	2014	**2015**	**2016**	**2017**	**2018 Quality Evaluation**	**2019**
Increase External Research Income to 20%, reduce Quality Evaluation to 55%		Implemented	Affects funding received			
New financial weights for External Research Income from NZ non-government sources, and overseas sources	Guidelines published (December)	Begin reporting External Research Income by source		Affects funding received		
Changes to simplify the Quality Evaluation			Guidelines published		Implemented	
New financial weight for new and emerging researchers' Portfolios					Implemented	Affects funding received
Strengthen research performance reporting in Quality Evaluation			Guidelines published		Implemented	
TEC to publish more detailed breakdowns of funding		Begin implementing				

Consultation

71. The Tertiary Education Commission, Ministry of Business, Innovation and Employment, Treasury, Te Puni Kokiri were consulted on the content of this paper. The Department of Prime Minister and Cabinet were informed.

Treasury Comment

72. Treasury agrees with the PBRF's continued emphasis on research excellence. The increased weighting proposed for External Research Income moves in the right direction, but we think their impact on the transfer of knowledge and technologies from universities will be limited. Given the importance of ensuring that benefits for New Zealand occur, and the priority accorded to this in the draft Tertiary Education Strategy (Priority 5), we think the design of other approaches to promote technology and knowledge transfer should be actively explored in the BGA Building Innovation work stream.

73. Treasury disagrees with the approach (recommendation.4) to identify the primary objectives and consequential outcomes of the PBRF. It has the effect of confusing means and ends, and needs to better align with the key outcomes the Government is seeking:

    - The primary objectives for the PBRF exclude the impact or application of research for New Zealand, which are picked up as consequential outcomes. In our view, the objectives on generating robust public information about research performance (bullet 4) and the impact of research (bullet 6) should be reversed.
    - Regarding international rankings (in bullet 3), Treasury considers these should be carefully monitored as they have reputational effects which may influence international students' choices of where to study. However, they should not drive Government's policy and/or funding decisions, which should be based on national priorities to achieve the outcomes Government is seeking from the tertiary system.

Financial implications

74. None of the proposals in this paper have financial implications as they do not involve changes to the overall size of the PBRF.

Legislative implications

75. There are no legislative implications associated with this paper, and it does not require a regulatory impact assessment.

Human rights implications, gender implications and disability perspective

76. None of the proposals contained in this paper are in any way inconsistent with the New Zealand Bill of Rights Act 1990 or the Human Rights Act 1993. None of the proposals in this paper raise gender or disability issues.

Publicity

77. I intend to publicly announce changes to the PBRF following agreement to these changes by Cabinet. Announcing the changes quickly will allow tertiary education organisations to begin responding immediately, and will provide certainty to researchers about the future of the PBRF.

78. I also plan to publish a summary of the feedback that was received in submissions during consultation on proposed changes, and this Cabinet paper. Publishing these documents will allow those with an interest in the tertiary education research system to see how feedback received during the consultation has influenced the final changes.

Recommendations

79. The Minister for Tertiary Education, Skills & Employment recommends the Committee:

1. **note** that Cabinet previously agreed to public consultation on a proposal to increase the efficiency and effectiveness of the Performance-Based Research Fund (PBRF) [CAB Min (13) 26/3 refers]

2. **note** that following feedback from the consultation, this paper seeks Cabinet's agreement to proposals that will:
    - clarify the objectives of the PBRF
    - better value user-perspectives of research quality and engagement in user-orientated research
    - simplify the PBRF Quality Evaluation to reduce transaction costs
    - better support the sustainability of the tertiary education research workforce
    - strengthen reporting on research performance

3. **agree** that the PBRF continue to be based on:
    - the Quality Evaluation – a periodic peer review of the research quality of individual teaching and research staff
    - Research Degree Completions
    - External Research Income

4. **agree** to revised objectives for the Performance-Based Research Fund, as follows:

    The primary objectives of the PBRF are to:
    - increase the quality of basic and applied research at New Zealand's degree-granting tertiary education organisations
    - support world-leading research-led teaching and learning at degree and postgraduate levels
    - assist New Zealand's tertiary education organisations to maintain and lift their competitive rankings relative to their international peers
    - provide robust public information to stakeholders about research performance within and across tertiary education organisations

    In doing so, the PBRF will also:
    - support the development of postgraduate student researchers and new and emerging researchers
    - support research activities that provide economic, social, cultural, and environmental benefits to New Zealand, including the advancement of mātauranga Māori
    - support technology and knowledge transfer to New Zealand businesses, iwi and communities

Better valuing user-perspectives of research quality and engagement in user-orientated research

5. **agree** in principle, subject to further consultation with affected Tertiary Education Organisations and key science sector stakeholders, to increase the proportion of funding allocated to the External Research Income component from 15% to 20% by reducing the weighting of the Quality Evaluation component from 60% to 55%

6. **agree** that the Minister for Tertiary Education Skills and Employment will take a final decision on implementing this change after considering responses received through this consultation;

7. **agree** that tertiary education organisations will be required to report PBRF-eligible external research income, broken down by the following sources: New Zealand government contestable funds; New Zealand public sector contract research, New Zealand non-government sources; and overseas research income

8. **agree** to place weightings of 2 on external research income from non-government sources in New Zealand, and 1.5 on external research income from overseas sources

Simplifying the Quality Evaluation to reduce transactions costs

9. **agree** that the Tertiary Education Commission will implement operational changes to reduce transaction costs associated with the Quality Evaluation by:
    - reducing the size of Evidence Portfolios
    - streamlining PBRF eligibility criteria to exclude staff based overseas
    - tightening provisions for staff to have special circumstances considered
    - simplifying the assessment process

10. **note** that operational changes will involve:
    - reducing the number of research outputs that can be included in Evidence Portfolios from 30 to 12
    - combining the Contribution to the Research Environment and Peer Esteem components and reducing the number of examples of Research Contribution that can be included in Evidence Portfolios from 60 to 15
    - clarifying operational guidance to reinforce that the new ‘Research Contribution’ measure may include examples of esteem and contribution inside and outside academia
    - excluding overseas-based staff from the Quality Evaluation
    - tightening the criteria for staff to have special circumstances considered in the assessment process, with the objective that fewer than 10% of evidence portfolios submitted seek to have special circumstances considered
    - allowing only the chairs of peer review panels to request that an Evidence Portfolio is considered by more than one peer review panel
    - discontinuing the use of specialist advisors
    - disestablishing the two expert advisory groups (for Pacific research, and professional and applied research)

Better supporting the sustainability of the tertiary education research workforce

11. **agree** to introduce a financial weighting of 2 for new and emerging researchers who receive a C quality category in the Quality Evaluation

Strengthening reporting on research performance

12. **agree** that the primary measure for reporting future Quality Evaluation results will be average research quality based on the number of full-time equivalent teaching and research staff (AQS(S)) in tertiary education organisations, subject areas and nominated academic units

13. **agree** that additional context will be provided by reporting the extent to which teaching at degree level and above is underpinned by high-quality research (AQS(E)) in tertiary education organisations

14. **note** that the Ministry of Education will undertake further work with tertiary education organisations to develop a single framework to capture information about teaching and research staff that allows for the reporting of a robust and credible AQS(S) measure

15. **note** that the Tertiary Education Commission will publish annual PBRF funding allocations for each tertiary education organisation that detail funding provided for:

    - the Quality Evaluation, by subject area
    - Research Degree Completions, by subject area, and by weightings for Māori and Pasifika students and te reo theses
    - External Research Income, by source

Timing and implementation

16. **note** that changes to increase the size of the External Research Income component and require the reporting of external research income by source will apply to PBRF funding from 2015, with weightings for external research income from non-Government sources affecting the funding received by tertiary education organisations from 2017 onwards

17. **note** that operational guidelines for changes to simplify the Quality Evaluation and introduce a new weighting for Evidence Portfolios by new and emerging researchers will be developed with input from a Sector Reference Group, and published by June 2016 so that tertiary education organisations have time to adapt their practices before the Quality Evaluation in 2018

18. **note** that changes to strengthen reporting on the Quality Evaluation will apply to the next Quality Evaluation in 2018, and the Tertiary Education Commission will begin publishing more detailed breakdowns of funding in its periodic PBRF reports from 2015

Responding to wānanga concerns

19. **note** that the three wānanga (Te Whare Wānanga o Awanuiārangi, Te Wānanga o Raukawa, and Te Wānanga o Aotearoa), have raised concerns about research funding and capability, and I have directed the Ministry of Education to engage with the wānanga to identify potential solutions that would address their research aspirations.

Hon Steven Joyce
Minister for Tertiary Education, Skills and Employment

_____/_____/_____

Appendix A: Description of PBRF design features prior to PBRF Review

Participation by tertiary education organisations in the PBRF is voluntary. All eight universities, ten institutes of technology and polytechnics, one wānanga and eight private training establishments participated in the 2012 Quality Evaluation. Universities dominate PBRF funding, receiving 97% in 2012. This reflects the fact that universities are larger, more research-intensive, and have a greater proportion of delivery at degree level or higher.

The assessment of research performance and allocation of funding to tertiary education organisations through the PBRF has been based on three measures, as set out below.

PBRF Measures	Description
Quality Evaluation 60% of PBRF funding	A periodic peer review assessment conducted every six years, based on Evidence Portfolios submitted by teaching and research staff in participating tertiary education organisations. Evidence portfolios contain examples of: • Research outputs (for example, books, journal articles, intellectual property, products, performances and exhibitions). Teaching and research staff include up to four of their best research outputs, and list up to 30 other research outputs. • Peer esteem (for example, fellowships, prizes, memberships of learned societies, invitations to present at conferences). Teaching and research staff include up to 30 examples of peer esteem. • Contribution to the research environment (for example, membership in research consortia, generation of external research income, supervision of student research). Teaching and research staff include up to 30 examples of research contribution. Evidence Portfolios are assessed by peer review panels made up of subject experts who assign each Evidence Portfolio a score – A, B, C, or R (research inactive). Funding has been based on the scores assigned to Evidence Portfolios, weighted by the subject areas to which Evidence Portfolios have been assigned, and the full-time-equivalent (FTE) status of the participating PBRF-eligible staff. Higher cost subjects such as medicine, sciences, engineering and agriculture attract higher weightings than lower cost subjects such as humanities.
Research Degree Completions 25% of PBRF funding	A measure of the number of research-based postgraduate degrees (research masters and doctorates) that are completed within a tertiary education organisation. Funding has been based on: • the funding weighting for the subject area in which a research degree is completed • an equity weighting applied to research degrees completed by Māori and Pasifika students, or where a thesis has been submitted in te reo Māori • the volume of research in each research degree programme.
External Research Income 15% of PBRF funding	A measure of income received by a tertiary education organisation and/or any wholly-owned subsidiary for the purposes of conducting research. Funding has been based on the total amount of external research income from government contestable funds, contract research, international research income, and business and community sources. Tertiary education organisations have not been required to report External Research Income by source. Each dollar of External Research Income earned has been worth the same amount of PBRF income, regardless of source.

The Tertiary Education Commission publishes periodic PBRF reports which provide information about the allocation of funding and research performance against the three PBRF measures. Following each Quality Evaluation, the Tertiary Education Commission has also published average quality scores (AQS), reported at the level of participating tertiary education organisations, peer review panels, subject areas, and academic units nominated by participating tertiary education organisations.

Appendix B: The PBRF Review

1. The PBRF review sought to identify options to improve the efficiency and effectiveness of the fund.

Findings from the Review

2. The review found that the PBRF has supported a significant increase in the research performance and productivity of New Zealand tertiary education organisations. This is shown by an increase in the average quality of research measured in each PBRF Quality Evaluation, higher qualification completion rates for postgraduate research degrees, and growth in the share of world-indexed research publications and citations by New Zealand tertiary education organisations.

3. The review also found that the PBRF is well-regarded internationally and has a number of design strengths relative to performance-based funding systems in other countries. By combining peer review and quantitative measures, the PBRF has provided a comprehensive approach to assessing research excellence and rewarding valued research activities across a wide range of disciplines.

4. The review did, however, identify some specific issues and areas for potential improvement:

    - The PBRF Quality Evaluation is complex and costly to administer, with high transaction costs for government, tertiary education organisations, academic departments, and teaching and research staff.
    - The PBRF may not adequately recognise user perspectives of research quality or reward engagement in user-orientated research. The fund provides limited recognition for tertiary education organisations that seek out research income from non-government sources, or engage in research commercialisation.
    - The PBRF creates potential reputational and financial disincentives for tertiary education organisations to recruit, develop and retain new and emerging researchers.
    - Current reporting of PBRF results is unnecessarily complex and may not provide a robust picture of average research quality across tertiary education organisations.
    - Current reporting of PBRF funding allocations to tertiary education organisations lacks full transparency. The relationship between subject-level performance within tertiary education organisations and funding received could be clearer.

5. In response to these findings, I sought Cabinet's approval in August 2013 to public consultation on a package of changes to improve the effectiveness and efficiency of the PBRF [Cab Min (13) 26/3 refers].

Role of the expert advisory groups

6. The PBRF Expert Advisory Panel was set up to advise on the PBRF review, including by providing analysis and feedback on potential options developed by officials. The panel included the following people who were selected based on their expertise in the New Zealand research and innovation system, the tertiary education sector, and performance-based funding:

- Professor John Raine - Chief Moderator for the 2012 Quality Evaluation, Head of School of Engineering and Pro Vice-Chancellor Innovation and Enterprise, Auckland University of Technology
- Dr Garth Carnaby, Entrepreneur-in-Residence, Lincoln University
- Mark Flowers, Chief Executive, Wintec (Waikato Institute of Technology)
- Dr Andrew Cleland, Chief Executive, Institute of Professional Engineers New Zealand (IPENZ)
- Professor Peter Hunter, Director, Auckland Bioengineering Institute, University of Auckland
- Professor Richard Blaikie, Deputy Vice-Chancellor Research and Enterprise, University of Otago
- Dr William Rolleston, Vice-President, Federated Farmers and Director, South Pacific Sera.

7. The Mātauranga Māori Advisory Panel was set up to advise the PBRF review about the role of the PBRF in supporting mātauranga Māori, and to develop analysis and help identify options for change. The panel included the following people, who were selected based on their knowledge of Māori research, mātauranga Māori, and the PBRF:

    - Professor Chris Cunningham, Chair of the Māori Knowledge and Development peer review panel for the 2012 Quality Evaluation, Director, Research Centre for Māori Health & Development, Massey University
    - Associate Professor Pare Keiha, Pro Vice Chancellor for Māori Advancement, Auckland University of Technology
    - Hana O'Regan, Kaiārahi and Director of the Student Services Division, Christchurch Polytechnic Institute of Technology
    - Selwyn Parata, Chairman, Mātauranga-A-Iwi (Iwi Education Partners).

8. The panel was co-chaired by the Deputy Secretary for Tertiary, International and System Performance at the Ministry of Education and Dr Wayne Ngata, an expert in te reo Māori and Māori literature.

The consultation proposal

The table below compares the proposed changes to the PBRF that were circulated as part of the public consultation, with the final proposals in the Cabinet paper. The colour of the right hand box indicates whether the final proposal is the same as the consultation proposal (a green box) or a modified version of the consultation proposal (a yellow box). A red box indicates a proposal that was included for public consultation, which not been progressed. There is also one final proposal which was not part of public consultation (shown in purple).

Status Quo	**Changes proposed in the public consultation**	**Final proposals for Cabinet**
Clarifying the objectives of the PBRF		
The PBRF is designed to: • increase the average quality of research • ensure that research continues to support degree and postgraduate teaching • ensure that funding is available for postgraduate students and new researchers • improve the quality of public information on research outputs • prevent undue concentration of funding that would undermine research support for all degrees or prevent access to the system by new researchers • underpin the existing research strengths in the tertiary education sector.	The primary objectives of the PBRF are to: • increase the average quality of basic and applied research at New Zealand's degree-granting tertiary education organisations • support world-leading research-led teaching and learning at degree and postgraduate levels • assist New Zealand's tertiary education organisations to maintain and lift their competitive rankings relative to their international peers • provide robust public information to stakeholders about research performance within and across tertiary education organisations. In doing so, the PBRF will also assist to: • support research activities that provide economic, social, cultural, and environmental benefits to New Zealand • support the development of postgraduate student researchers and new and emerging researchers • support commercialisation of research and technology transfer to New Zealand businesses and organisations.	The primary objectives of the PBRF are to: • increase the quality of basic and applied research at New Zealand's degree-granting tertiary education organisations • support world-leading research-led teaching and learning at degree and postgraduate levels • assist New Zealand's tertiary education organisations to maintain and lift their competitive research rankings relative to their international peers • provide robust public information to stakeholders about research performance within and across tertiary education organisations. In doing so, the PBRF will also: • support the development of postgraduate student researchers and new and emerging researchers • support research activities that provide economic, social, cultural, and environmental benefits to New Zealand, including the advancement of mātauranga Māori • support technology and knowledge transfer to New Zealand businesses, iwi and communities.

Status Quo	Changes proposed in the public consultation	Final proposals for Cabinet
Better valuing user-perspectives of research quality and engagement in user-orientated research		
		Increase the proportion of funding that is allocated based on External Research Income. The value of the External Research Income measure will increase from 15% of total funding to 20% of total funding. The value of the Quality Evaluation measure will reduce from 60% to 55% of total funding. The value of the Research Degree Completion measure will remain the same, at 25% of total funding. This decision will be finalized following a further consultation round targeting affected organizations.
Tertiary education organisations report on the total amount of External Research Income that they receive each year. There is no requirement to report External Research Income by source. Each dollar of External Research Income earned is worth the same amount of PBRF income, regardless of source.	Tertiary education organisations will be required to report External Research Income by the following sources: • NZ government contestable funds • NZ public sector contract research • Overseas research income • New Zealand non-government sources (including research funding from industry, iwi, and the not-for-profit sector). A new financial weighting of 2 will be placed on External Research Income from New Zealand non-government sources.	Tertiary education organisations will be required to report External Research Income by the following sources: • NZ government contestable funds • NZ public sector contract research • Overseas research income • New Zealand non-government sources (including research funding from industry, iwi, and the not-for-profit sector). A new financial weighting of 2 will be placed on External Research Income from NZ non-government sources, and 1.5 on External Research Income from overseas sources.
All sources of income received to conduct research can be included in External Research Income, but not commercialisation income earned from research outputs.	Include commercialisation income earned from research outputs in the calculation of PBRF-eligible External Research Income. PBRF-eligible commercialisation income would include income from royalties and sales of intellectual property.	

Status Quo	Changes proposed in the public consultation	Final proposals for Cabinet
Simplifying the Quality Evaluation to reduce transaction costs		
Evidence Portfolios are required to include up to four nominated research outputs and up to 30 other research outputs. Evidence Portfolios can include up to 30 examples of Contribution to the Research Environment and 30 examples of Peer Esteem.	Evidence Portfolios will include up to four nominated research outputs (no change) and to list up to five other research outputs (a reduction from 30). The Peer Esteem and Contribution to the Research Environment measures will be combined into a single measure called 'Research Contribution'. Evidence Portfolios will include up to eight examples of Research Contribution (a reduction from 30 examples of Peer Esteem and 30 examples of Contribution to the Research Environment).	Evidence Portfolios will include up to four nominated research outputs (no change) and to list up to 12 other research outputs (a reduction from 30). The Peer Esteem and Contribution to the Research Environment measures will be combined into a single measure called 'Research Contribution'. Evidence Portfolios will include up to 15 examples of Research Contribution (a reduction from 30 examples of Peer Esteem and 30 examples of Contribution to the Research Environment).
Staff based overseas can be eligible for the PBRF if they meet particular requirements.	Streamline eligibility criteria for the Quality Evaluation to exclude staff based overseas.	
Researchers submitting Evidence Portfolios can claim special circumstances where these account for a reduction in the quantity of research outputs and examples in their Evidence Portfolios. The types of special circumstances that can be claimed are: • impact of the Canterbury Earthquakes (2012 Quality Evaluation) • extended leave • significant community responsibilities • leadership positions involving extended or above-the-usual time commitment • long-term disability • part-time employment • other circumstances. These special circumstances can be taken into account by panels when determining scores.	Special circumstance provisions would be removed. This proposal would not preclude the introduction of special circumstances provisions where an exceptional event (such as the Canterbury earthquakes) occurs that impacts a large group of people.	The Tertiary Education Commission will investigate the most effective approach to tighten provisions for staff to have special circumstances considered, where these account for a reduction in the quantity of research outputs and examples in their Evidence Portfolios. This work will be undertaken in consultation with a Sector Reference Group. To guide this work, an objective is set that no more than 10% of evidence portfolios submitted will seek consideration of special circumstances.
When tertiary education organisations submit Evidence Portfolios for the Quality Evaluation, they can specify which subject area peer review panel an Evidence Portfolio will be assessed by, and can also request that an Evidence Portfolio is cross-referred to other panels and/or expert advisory	Tertiary education organisations will no longer be able to request that an Evidence Portfolio is considered by more than one peer review panel. Only the chairs of peer review panels will be able to cross-refer an Evidence Portfolio to another subject area peer review panel for further advice. The use of specialist advisors will be discontinued. The two expert advisory groups (for Pacific research, and professional and applied research) will be disestablished.	

Status Quo	Changes proposed in the public consultation	Final proposals for Cabinet
groups to help the responsible peer review panel assess the Evidence Portfolio. There are two expert advisory groups for Pacific research and professional and applied research. When assessing Evidence Portfolios, panels can request specialist advisers to help them assess specialised material in Evidence Portfolios.	Experts in professional and applied research will be included within subject area peer review panels. The Tertiary Education Commission will investigate establishing a subject area peer review panel for Pacific research. Guidance will be more explicit that the new Research Contribution measure can include examples of contribution and esteem both within and outside academia.	
To determine a final score for each Evidence Portfolio a panel produces: • preparatory numeric scores for each of the three components then • a preliminary numeric score for the three components, then • a calibrated numeric panel score for each of the three components, then • a holistic quality category, then • a final quality category.	Instead of developing numeric scores for each of the three PBRF components, panels would assign a single score to each Evidence Portfolio. This would be checked and calibrated before a final score is determined. Additional commentary would be provided for each quality category to give a sense of the placement of the Evidence Portfolio within the band (e.g. high C or low B).	
Better supporting the sustainability of the tertiary education research workforce		
The current financial weightings for Evidence Portfolios that receive different scores in the Quality Evaluation are: A=5, B=3, C=1, C (new and emerging researcher)=1.	For new and emerging researchers assessed at C the weighting would be higher than for other C researchers. For new and emerging researchers assessed at B the weighting would be higher than other B researchers. This would mean that weightings are: A=5, B=4 (for new and emerging researchers), B=3, C=2 (for new and emerging researchers), C=1.	Introduce a financial weighting for Evidence Portfolios submitted by new and emerging researchers who receive a 'C' in the Quality Evaluation. This will mean that financial weightings for Evidence Portfolios are: A=5, B=3, C=2 (for new and emerging researchers), C=1.

Status Quo	Changes proposed in the public consultation	Final proposals for Cabinet
Strengthening reporting on research performance		
The 2012 Quality Evaluation reported on average research quality at the institutional level using four average quality scores (AQSs): • AQS(N) reported average research quality against the number of full-time equivalent staff receiving an A, B, C • AQS(S) reported average research quality against the number of full-time equivalent teaching and research staff • AQS(E) reported average research quality against the number of equivalent full-time students enrolled at degree level and above • AQS(P) reported average research quality against the number of equivalent full-time students enrolled in post-graduate qualifications. AQS(N) was used as the primary measure of research quality, with the three other measures providing contextual information. Only AQS(N) was reported at the level of subjects and nominated academic units.	AQS(S) - average quality, based on the number of teaching and research staff in tertiary education organisations, will become the primary measure of research quality. An additional contextual measure, AQS(E), based on the number of full-time equivalent students enrolled at degree level and above, will continue to be reported at the institution level. The AQS(N) and AQS (P) measures will no longer be reported.	
The Tertiary Education Commission produces a detailed report on research performance by tertiary education organisations, subject areas and academic units following each Quality Evaluation. The Tertiary Education Commission also produces regular reports which specify the total amount of funding received by each tertiary education organisation, but does not publish detailed breakdowns of PBRF funding allocations to each tertiary education organisation within each of the PBRF's three measures.	In addition to publishing the total amount of funding received by each tertiary education organisation against each of the PBRF's three measures, the Tertiary Education Commission will publish breakdowns within each measure as follows: • Quality Evaluation, by subject area • Research Degree Completions, by subject area, and by weightings for Māori and Pasifika students and te reo theses • External Research Income, by source.	

The consultation process

2. Consultation took place over six weeks between 26 August and 4 October 2013, using a document that set out all of the proposed changes.[7] Submitters were able to provide written submissions via the Ministry of Education website, or by completing a series of questions in an online questionnaire. The consultation process also involved officials meeting with representatives of New Zealand's eight universities, as well as wānanga, and representatives from Science New Zealand, Business New Zealand, and the Tertiary Education Union.

9. A total of 127 submissions were received. These included submissions from: all eight universities; 15 university academic departments; all three wānanga; four institutes of technology and polytechnics; two private training establishments; two institute of technology/polytechnic and private training establishment peak bodies; four tertiary education staff and student peak bodies; 11 science and industry peak bodies; and 78 individuals.

Overview of consultation feedback and how it influenced proposed PBRF changes

10. Overall, the consultation proposal was well received. There was widespread support for clarifying the PBRF objectives, included positive responses to the proposed supplementary objective to support for research activities with economic, social, cultural and environmental benefits to New Zealand. There was widespread support for reducing transaction costs associated with the Quality Evaluation, and strengthening performance reporting to improve the credibility of Quality Evaluation results and discourage potential 'gaming' by tertiary education organisations.[8] There was also majority support for introducing financial weightings for evidence portfolios produced by new and emerging researchers.

11. Submitters highlighted strong support for retaining core policy design features of the PBRF, on the basis that:

    - the current system has worked well to support a culture within tertiary education organisations in which all PBRF-eligible teaching and research staff are encouraged to improve their performance
    - the PBRF is well-entrenched, particularly in the university sector, which has developed and implemented customised data collection and staff management systems which align with the PBRF.

12. There was majority support for retaining the individual unit of assessment in the Quality Evaluation. Submitters noted that this allows the PBRF to recognise research excellence across tertiary education organisations and academic units, regardless of their size, and that a shift to group-based assessment would involve significant disruption and create additional costs for no clear benefit. This feedback has confirmed my intention to retain the individual as the unit of assessment in the PBRF Quality Evaluation.

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[7] A copy of the consultation document is available from http://www.minedu.govt.nz/NZEducation/EducationPolicies/TertiaryEducation/PolicyAndStrategy/~/media/MinEdu/Files/EducationSectors/TertiaryEducation/PBRF/PBRFConsultationDocument.pdf

[8] For example, boosting Quality Evaluation results by not submitting Evidence Portfolios for teaching and research staff who are unlikely to achieve an A or B quality category, or changing employment conditions so that staff who are unlikely to receive a funded quality category are treated as 'ineligible' for the PBRF Quality Evaluation.

13. There was, however, concern from tertiary education organisations and academic staff that some of the proposed changes to reduce transactions costs went ‘too far’ and would reduce sector confidence in the robustness of Quality Evaluation, and decrease the ability of peer review panels to distinguish between Evidence Portfolios in order to allocate scores. I have amended the proposal in line with this feedback.

14. There were mixed views of proposals to better recognise user perspectives of research quality and reward research commercialisation, and strong opposition to including income from the commercialisation of research (e.g. royalties) in the definition of external research income. In view of this feedback, I have chosen not to proceed with the proposal to reward research commercialisation directly through the PBRF.

15. Instead, I have included a proposal to increase the size of the External Research Income component. I believe this will better emphasise user perspectives of research quality. I have also directed the Treasury and the Ministry of Business, Innovation and Employment to provide further advice on the incentives for individual researchers to participate in knowledge transfer and commercialisation activities, and New Zealand’s performance in knowledge transfer and commercialisation. This will be undertaken as part of the Building Innovation stream in the upcoming refresh of the Business Growth Agenda.

16. I have also included a proposal to weight external research income from non-government sources. Consultation feedback on this proposal varied, with some tertiary education organisations welcoming greater recognition of industry, iwi, and community investment and others questioning the extent to which this would lead to significant changes in the behaviour of individual researchers. Industry peak bodies, including Federated Farmers New Zealand, DairyNZ and the Institute of Professional Engineers, were strongly supportive of weighting research income from non-government sources.

17. The consultation found strong support for simplifying the publication and interpretation of Quality Evaluation results. However, feedback from the universities was mixed as to whether the primary measure for reporting Quality Evaluation results should be based on the number of Evidence Portfolios receiving funded grades (AQS(N)), or the average quality of research across all teaching and research staff in tertiary education organisations (AQS(S)).

18. Submitters who argued in favour of continuing to report the average quality of research based on AQS(N) doubted that it would be practical to develop a robust staffing measure to support a credible AQS(S) and were concerned that changes to the collection of staffing information would introduce new compliance costs. Submitters who supported the proposal to report the average quality of research across all teaching and research staff in tertiary education organisations (AQS(S)), argued that this is the best measure of research intensity, subject to developing a robust and consistent way of counting teaching and research staff.

19. I consider that the advantages of continuing to report PBRF average quality scores based on the quality of Evidence Portfolios that receive a funded score are outweighed by the disadvantages of retaining this measure (AQS(N)). I propose to use AQS(S) as the primary measure for reporting Quality Evaluation results, alongside changes to improve the quality and consistency of staffing information collected from tertiary education organisations.

Wānanga concerns regarding research funding and capability

20. Over the course of the PBRF review, the three wānanga (Te Whare Wānanga o Awanuiārangi, Te Wānanga o Raukawa, and Te Wānanga o Aotearoa) raised long-standing concerns about their ability to meet expectations set out in the Education Act 1989. This states that wānanga are characterised by "teaching and research that maintains, advances, and disseminates knowledge and develops intellectual independence, and assists the application of knowledge regarding ahuatanga Māori (Māori tradition) according to tikanga Māori (Māori custom)". The wānanga indicated that, while they are considering pursuing a claim through the Waitangi Tribunal, they would prefer to enter negotiations with the Crown to address their research aspirations.

21. The PBRF is not well placed to address these concerns. The wānanga have commented that, as new institutions, they did not have the same level of research capability in place as universities when the PBRF was established. Scale issues mean that small institutions, (and those with limited existing research capability), are not well served by funding which is allocated based on past research performance. I have directed the Ministry of Education to engage with the wānanga to identify potential solutions that would address their research aspirations.

Appendix C: Possible impact of increasing the External Research Income component to 20% and reducing the Quality Evaluation Component to 55%

The table below shows the potential impact of changing the size of the External Research Income and Quality Evaluation components in 2015 and compares this with indicative funding for tertiary education organisations in 2013.

These figures do not take into account any changes in the relative research performance of tertiary education organisations, as it is not possible to estimate this. The figures factor in increases in the size of the PBRF following Budget 2012.

	PBRF funding in 2013		Estimated PBRF funding for 2015		Increase in actual $
	Total $	%	Total $	%	
University of Auckland	$80,486,506	30.66%	$89,244,758	31.04%	$8,758,252
University of Otago	$53,473,940	20.37%	$58,673,763	20.41%	$5,199,823
Massey University	$34,392,804	13.10%	$37,574,574	13.07%	$3,181,770
Victoria University of Wellington	$26,975,493	10.28%	$29,242,170	10.17%	$2,266,677
University of Canterbury	$24,635,945	9.39%	$26,574,865	9.24%	$1,938,920
University of Waikato	$14,908,929	5.68%	$16,248,458	5.65%	$1,339,529
Lincoln University	$8,708,444	3.32%	$9,984,972	3.47%	$1,276,528
AUT	$11,924,794	4.54%	$12,638,818	4.40%	$714,024
Total for universities	**$255,506,855**	**97.34%**	**$280,182,380**	**97.45%**	**$24,675,525**
Unitec New Zealand	$2,673,518	1.02%	$2,762,048	0.96%	$88,530
Otago Polytechnic	$1,110,535	0.42%	$1,181,193	0.41%	$70,658
Waikato Institute of Technology	$521,109	0.20%	$549,415	0.19%	$28,306
Christchurch Polytechnic Institute of Technology	$495,268	0.19%	$510,657	0.18%	$15,389
Eastern Institute of Technology	$450,353	0.17%	$460,555	0.16%	$10,202
Manukau Institute of Technology	$367,798	0.14%	$374,959	0.13%	$7,161
Whitireia Community Polytechnic	$167,394	0.06%	$177,450	0.06%	$10,056
Open Polytechnic of New Zealand	$148,939	0.06%	$153,907	0.05%	$4,968
Wellington Institute of Technology	$149,327	0.06%	$167,476	0.06%	$18,149
Northland Polytechnic	$90,549	0.03%	$91,066	0.03%	$517
Total for institutes of technology and polytechnics	**$6,174,790**	**2.35%**	**$6,428,726**	**2.24%**	**$253,936**
Te Whare Wānanga O Awanuiārangi	$318,066	0.12%	$366,268	0.13%	$48,202
Total for Wānanga	**$318,066**	**0.12%**	**$366,268**	**0.13%**	**$48,202**
Whitecliffe College of Arts and Design	$231,054	0.09%	$240,579	0.08%	$9,525
Laidlaw College Inc	$93,375	0.04%	$96,363	0.03%	$2,988
Carey Baptist College	$46,656	0.02%	$46,841	0.02%	$185
AIS St Helens	$36,081	0.01%	$36,224	0.01%	$143
Bethlehem Institute of Education	$30,257	0.01%	$35,668	0.01%	$5,411
New Zealand College of Chiropractic	$31,761	0.01%	$35,026	0.01%	$3,265
New Zealand Tertiary College	$18,662	0.01%	$18,736	0.01%	$74
Good Shepherd College	$12,442	0.00%	$12,491	0.00%	$49
Total for private training establishments	**$500,288**	**0.19%**	**$521,928**	**0.18%**	**$21,640**
TOTAL FUNDING	**$262,499,999**		**$287,499,302**		

Appendix D: Possible impact of increasing the weighting on Evidence Portfolios by new and emerging researchers and increasing the External Research Income component to 20%

The table below shows the potential impact of placing a weighting on Evidence Portfolios produced by new and emerging researchers that receive a 'C' grade, combined with changing the size of the External Research Income and Quality Evaluation components.

Estimates are given for 2018 (the first year where a weighting for new and emerging researchers will apply) and break out the effect of this change from the change to increase the size of the External Research Income component.

These figures do not take into account any changes in the relative research performance of tertiary education organisations or in human resource practices, as it is not possible to estimate these. These figures factor in increases in the size of the PBRF following Budget 2012.

	PBRF funding in 2013		**% after increasing size of External Research Income only**	**% after weighting new & emerging researchers only**	**Estimated PBRF funding for 2018**	
	Total $	**%**			**Total $**	**%**
University of Auckland	$80,486,506	30.66%	31.04%	30.60%	$92,946,101	30.98%
University of Otago	$53,473,940	20.37%	20.41%	20.44%	$61,404,350	20.47%
Massey University	$34,392,804	13.10%	13.07%	13.07%	$39,124,557	13.04%
Victoria University of Wellington	$26,975,493	10.28%	10.17%	10.10%	$30,017,075	10.01%
University of Canterbury	$24,635,945	9.39%	9.24%	9.42%	$27,830,553	9.28%
University of Waikato	$14,908,929	5.68%	5.65%	5.64%	$16,853,674	5.62%
Lincoln University	$8,708,444	3.32%	3.47%	3.26%	$10,256,643	3.42%
AUT	$11,924,794	4.54%	4.40%	4.68%	$13,567,040	4.52%
Total for universities	**$255,506,855**	**97.34%**	**97.45%**	**97.20%**	**$291,999,992**	**97.33%**
Unitec New Zealand	$2,673,518	1.02%	0.96%	1.03%	$2,919,758	0.97%
Otago Polytechnic	$1,110,535	0.42%	0.41%	0.47%	$1,366,527	0.46%
Waikato Institute of Technology	$521,109	0.20%	0.19%	0.20%	$568,225	0.19%
Christchurch Polytechnic Institute of Technology	$495,268	0.19%	0.18%	0.19%	$531,216	0.18%
Eastern Institute of Technology	$450,353	0.17%	0.16%	0.19%	$540,150	0.18%
Manukau Institute of Technology	$367,798	0.14%	0.13%	0.14%	$395,396	0.13%
Whitireia Community Polytechnic	$167,394	0.06%	0.06%	0.07%	$211,554	0.07%
Open Polytechnic of New Zealand	$148,939	0.06%	0.05%	0.07%	$200,305	0.07%
Wellington Institute of Technology	$149,327	0.06%	0.06%	0.06%	$182,254	0.06%
Northland Polytechnic	$90,549	0.03%	0.03%	0.04%	$114,141	0.04%
Total for institutes of technology and polytechnics	**$6,174,790**	**2.35%**	**2.24%**	**2.47%**	**$7,029,525**	**2.34%**

	PBRF funding in 2013		% after increasing size of External Research Income only	% after weighting new & emerging researchers only	Estimated PBRF funding for 2018	
	Total $	**%**			**Total $**	**%**
Te Whare Wānanga O Awanuiārangi	$318,066	0.12%	0.13%	0.12%	$385,308	0.13%
Total for Wānanga	**$318,066**	**0.12%**	**0.13%**	**0.12%**	**$385,308**	**0.13%**
Whitecliffe College of Arts and Design	$231,054	0.09%	0.08%	0.09%	$254,269	0.08%
Laidlaw College Inc	$93,375	0.04%	0.03%	0.04%	$102,408	0.03%
Carey Baptist College	$46,656	0.02%	0.02%	0.02%	$54,974	0.02%
AIS St Helens	$36,081	0.01%	0.01%	0.02%	$41,536	0.01%
Bethlehem Institute of Education	$30,257	0.01%	0.01%	0.01%	$42,101	0.01%
New Zealand College of Chiropractic	$31,761	0.01%	0.01%	0.02%	$47,130	0.02%
New Zealand Tertiary College	$18,662	0.01%	0.01%	0.01%	$30,541	0.01%
Good Shepherd College	$12,442	0.00%	0.00%	0.00%	$12,216	0.00%
Total for private training establishments	**$500,288**	**0.19%**	**0.18%**	**0.21%**	**$585,174**	**0.20%**
TOTAL FUNDING	**$262,499,999**				**$299,999,273**	