



Investing in
Excellence

*The Report of the
Performance-Based
Research Fund
Working Group*



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Transition Tertiary Education Commission
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MINISTERIAL FOREWORD

Knowledge creation, application and dissemination are the lifeblood of the knowledge society. Without a willingness and ability to push the boundaries of knowledge and understanding, and to challenge and test ideas, we will not be able to successfully become a birthplace of world-changing people and ideas, or a land where diversity is valued and reflected in our national identity.

The quality of research in our tertiary education providers is important for two main reasons. First, the tertiary education sector is a major component of New Zealand's research and innovation system. Increased quality in tertiary education research therefore has considerable benefits for the overall system, and for New Zealand as a whole. Second, and most importantly from the perspective of education, vigorous, high-quality research cultures underpin and enhance degree-level learning environments, especially at postgraduate level.

So how do we go about ensuring that our tertiary education sector produces high-quality research, which advances learning and our national interests? We are a small country, at some distance from other parts of the world, with often limited financial resources. As the Tertiary Education Advisory Commission concluded, the answer lies in focusing our efforts and resources around the areas and things we do well, and encouraging high performance. TEAC gave much thought to the matter, and recommended the creation of a Performance-Based Research Fund. The government agreed with this idea, and set up a Working Group to develop the detailed design for this Fund.

New Zealand has many areas of world-class research and has a unique contribution to make in terms of knowledge creation, application and dissemination. We need to recognise, reward and encourage the people contributing in these areas. We also need to maximise their – and our – ability to contribute, by building what the Working Group has described as “lively and highly productive research cultures,

which produce high-quality research, are attractive and effective learning environments for students, and are actively engaged with relevant communities.” As the Working Group notes, these environments improve productivity, creativity, and learning.

The Working Group's recommendations will support the achievement of these goals, and the Performance-Based Research Fund will provide a robust picture of research quality across the tertiary education sector. The government has therefore decided to accept the Working Group's recommendations in full, and the Tertiary Education Commission will begin implementing the proposed model immediately.

While there are aspects of the detailed implementation arrangements which have yet to be finalised, the Tertiary Education Commission expects that the outcome of the PBRF evaluation process will be available at the end of October 2003. To meet this timeline, the TEC plans to call for nominations for peer review panel members immediately following the release of the Working Group report and to have completed the panel establishment process and issued panel-specific assessment information for consultation in March 2003. It is envisaged that research evidence portfolios for eligible staff would be returned to the TEC by institutions by the end of August 2003. This timeline is tight, but it reflects the desire of the government and many in the sector for performance-based funding to phase in from 2004. The TEC will be putting priority on getting early information to the sector about PBRF processes, in particular the establishment of the review panels. This information, and other material related to the PBRF, will be available on the TEC website (www.tec.govt.nz) shortly.

Implementing the PBRF will involve a learning curve for both the sector and the government. We are determined to ensure that implementation is as smooth as possible and that all lessons learned are fed back into the PBRF design. The first evaluation

round will be reviewed, with a view to refining the procedure. Information about the distribution of quality generated by the first round may also be used to enhance the PBRF or to guide other tertiary education investments.

In the meantime, it will be important for providers to think carefully and strategically about how they invest in their strengths or address areas where research performance needs to be stronger. The government expects collaborative approaches to be an important means by which institutions can maintain and strengthen quality. The TEC will support strategic behaviour through the charter and profile negotiation process. The Ministry and the TEC will also closely monitor the effects of the PBRF, such as any impacts on taught postgraduate programmes or access to degree-level programmes.

The Working Group's proposals and the wide support they have garnered from the sector and stakeholders reflect the breadth and depth of expertise represented on the Group, the quality of their judgement, and the very open and consultative process that they followed in developing their model. I am particularly pleased that the Working Group has designed its model to assess investigative, creative activity across the entire tertiary education sector. Revealing and rewarding excellence wherever it exists will be essential. I am also pleased that the Working Group has responded in its model to the broader strategic context, particularly the goals of supporting and encouraging an integrated, specialised tertiary education sector, developing Maori and Pacific research capability, and better linking the sector with relevant communities.

I would like to thank the many institutions and individuals who contributed their ideas and support to the PBRF design. It has been encouraging to see the strong support for investing in quality demonstrated across the sector. I would also like to thank the Chair and the individual members of the Working Group for their dedication and hard work. The results of

their labour will make a considerable contribution to the fulfilment of the Tertiary Education Strategy, and to New Zealand's education goals.



Hon Steve Maharey
Associate Minister of Education (Tertiary Education)

EXECUTIVE SUMMARY

The Performance-Based Research Fund (PBRF) Working Group was established in July 2002, to provide advice to the Transition Tertiary Education Commission and Ministry of Education on the detailed design and implementation arrangements for a PBRF.

In preparing this advice, the Working Group concluded that the focus of a PBRF should be on revealing and rewarding researcher excellence and excellent research, defined in terms of: producing and creating leading-edge knowledge; applying that knowledge; disseminating that knowledge to students and the wider community; and supporting current and potential colleagues to create, apply and disseminate knowledge.

The most complete and robust picture of research and researcher excellence will be provided by a combination of measures – quality evaluation of academics by external peer review panels, research degree completions at each subject area/academic unit, and the external research income earned by each degree-granting provider. A broad and inclusive definition of “research” will ensure that the full range of original investigative activity which occurs in the tertiary sector can be captured by the PBRF.

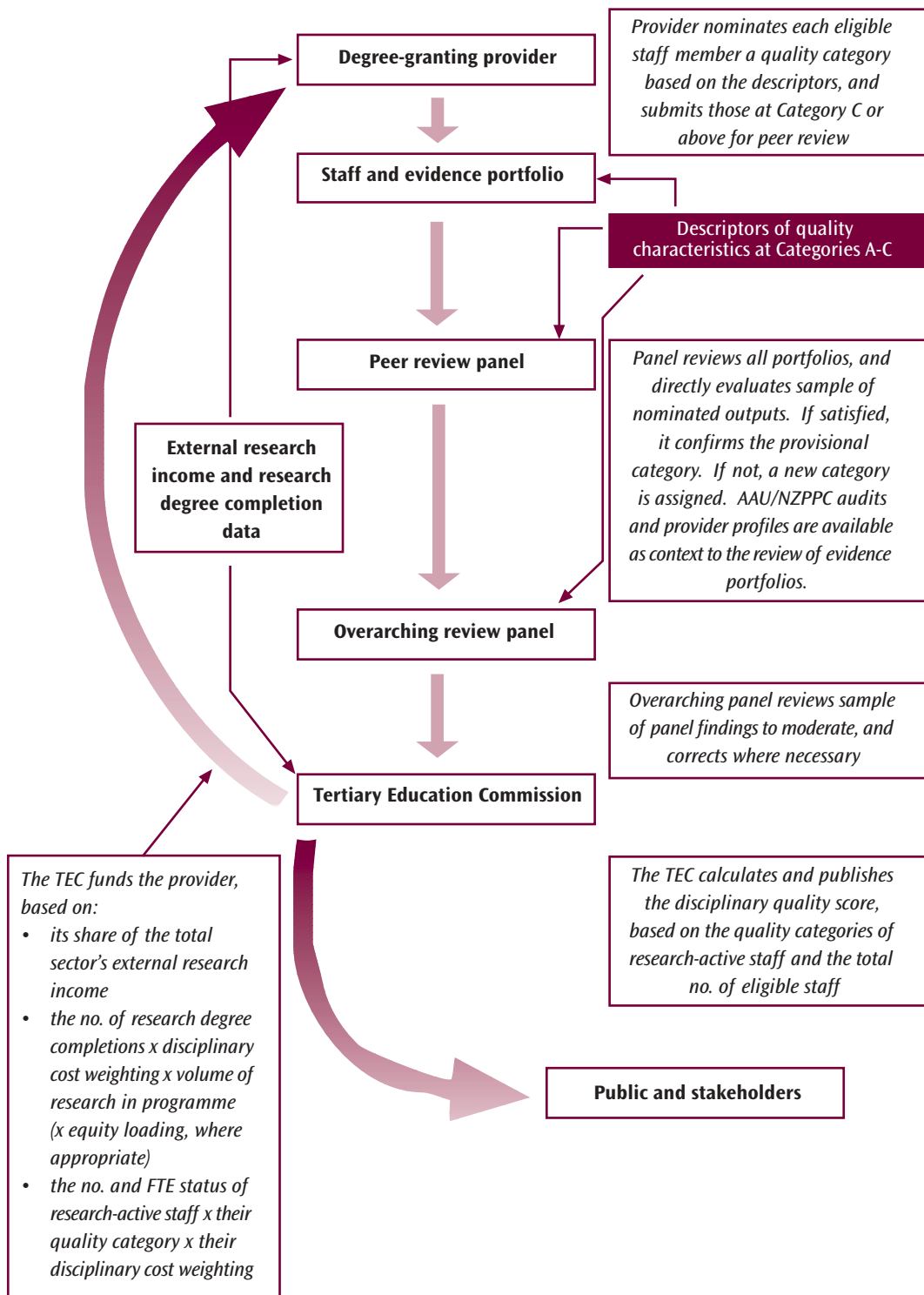
The quality evaluation process will place researchers into one of four categories, taking into account a range of factors, including research outputs, esteem factors, and contributions to the development of new researchers and a vital high-quality research environment. So as to reinforce the research-teaching nexus in degree programmes, all degree-granting providers and all academics within them who undertake research and/or degree-level teaching will be included in the quality evaluation process.

To appropriately reward excellence, more than half of PBRF funding will be allocated according to quality evaluation scores, and will provide significantly more funding to academics assessed as being at the highest levels of excellence.

The PBRF will not – and can not – achieve all of the government’s strategic goals for research in tertiary

education. However, when taken in conjunction with other mechanisms – such as charters and profiles, the assessment of strategic relevance, Vote: Research, Science and Technology funding for tertiary education researchers, and the Centres of Research Excellence – the PBRF will make a major contribution to the development of ‘our knowledge society’ and ‘a prosperous and confident nation’.

THE PERFORMANCE-BASED RESEARCH FUND IN OPERATION



WHY WE NEED A PERFORMANCE-BASED RESEARCH FUND

- 1 Research lies at the heart of higher, degree-based education. It acts as the bedrock of degree teaching programmes, and provides the critical, enquiring, and independent exercise that builds intellectual capability and pushes the boundaries of knowledge and understanding.
- 2 As the UK National Committee of Inquiry into Higher Education noted, there are four main roles for research and reasons for supporting it in higher education institutions:
 - to add to the sum of human knowledge and understanding;
 - to inform and enhance learning;
 - to generate useful knowledge and inventions in support of wealth creation and an improved quality of life;
 - to create an environment in which researchers can be encouraged and given a high level of training.¹
- 3 The key question is how best to support research in tertiary education providers, and how best to achieve these goals. The Tertiary Education Advisory Commission (TEAC) concluded – and the government subsequently agreed – that the current EFTS-based funding model:
 - does not provide the stability or security necessary for longer-term investigative work;
 - rewards providers for the volume of students, rather than the quality of research;
 - does not provide consistent, comparable or robust information about the quality of research; and
 - is quality blind. Funding is driven by student decisions, but students do not always have access to information that would tell them about the quality of the providers and departments available to them.²
- 4 The absence of incentives for performance places New Zealand at a disadvantage, since many of the nations that we traditionally compare and benchmark ourselves against have – or are increasingly moving towards – performance-based funding and regulatory systems for tertiary education research. The market for high-quality researchers is becoming increasingly globalised, and New Zealand must be able to remain internationally competitive and attract talented academic staff.
- 5 The solution to this lack of incentives proposed by TEAC³ – and subsequently endorsed by the government – was the establishment of a Performance-Based Research Fund (PBRF). All of the funding currently allocated through the research “top-ups” to degree-level EFTS and additional funding (in total, approximately \$134 million) will be transferred to a PBRF by 2007.
- 6 The government also established a Working Group to provide advice to the Ministry of Education and Transition Tertiary Education Commission on the detailed design and implementation arrangements for a PBRF. A list of the Working Group members is attached as Appendix 1, and the Working Group’s Terms of Reference are attached as Appendix 2.
- 7 Members of the Working Group met and corresponded regularly from July to October to discuss options and issues, consulting with their networks in the process. In addition, Ministry of Education and Transition Tertiary Education Commission officials consulted widely with providers, representative bodies, Māori, Pacific, and other stakeholders, and brought information from this consultation to the Working Group’s attention.
- 8 This report outlines the Working Group’s preferred approach to performance-based funding of research, informed and enhanced by this interaction with the tertiary sector and community. The Working Group recognises that the Tertiary Education Commission (the TEC) will have a key role in translating the broad PBRF design into effective operating systems. There are a number of detailed operational matters on which the TEC will need to do further work to ensure that the proposed design can be implemented in a cost-effective and timely way.

1 National Committee of Inquiry into Higher Education, *Higher Education in the Learning Society*, Report of the National Committee, paragraph 11.2 (1997)

2 Tertiary Education Advisory Commission, *Shaping the Funding Framework* (TEAC: Wellington, 2001), pp.85-7; Tertiary Education Advisory Commission, *Shaping the Strategy* (TEAC: Wellington, 2001), p.24

3 TEAC, *Shaping the Funding Framework*, pp.83-106

4 This figure is based upon the total research “top-up” funding provided through the EFTS system in 2001, and the \$20 million of new funding approved by Cabinet for the PBRF, when fully implemented in 2007.

THE AIMS AND ROLE OF THE PERFORMANCE-BASED RESEARCH FUND

- 9 Cabinet has agreed that a Performance-Based Research Fund should be established 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 information on research output;
 - 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 sector strengths in tertiary education research.
- 10 The government has also set a number of objectives and directions for research in its Tertiary Education Strategy 2002/07, which the PBRF will (where appropriate) need to reflect. The objectives include:
 - excellent research performance is encouraged and rewarded;
 - stronger accountability and enhanced performance reporting for tertiary education research;
 - increased global connectedness and mobility;
 - more focussed tertiary research investment through world-class clusters and networks of specialisation; and
 - increased breadth of support for research students and emerging researchers.
- 11 In considering how the Performance-Based Research Fund should fit into this broader context, the Working Group reached several key conclusions.
- 12 The first conclusion was that the primary focus of the PBRF should be to reward and encourage excellence. This involves measuring and making judgements about quality. The Working Group believes that research and researcher excellence should be the focus of the PBRF for three reasons:
 - the PBRF will be one component of the broader public investment in research, science and technology. A significant proportion of that investment is targeted towards specific outcomes and areas of enquiry.
 - the PBRF will be the key Vote: Education contribution to research, recognising the underpinning and enhancing role that research plays in degree-level (particularly postgraduate) learning. The diversity of degree programmes, and the traditions of institutional autonomy and academic freedom, makes targeting of this funding towards specific disciplines or areas inappropriate.
 - a world-class sector and knowledge society requires world-class researchers. Although there are currently many within the sector who produce research of international quality, the quality of that research effort is not currently recognised and encouraged in a systematic way. Revealing and rewarding excellence in tertiary research will be vital to achieving the country's growth and innovation goals.
- 13 The Working Group concluded that "excellence" as a researcher in the tertiary system was not just about the production of well-respected articles, books and other forms of research output; rather, it includes all of the following activities:
 - i. the production and creation of leading-edge knowledge;
 - ii. the application of that knowledge;
 - iii. the dissemination of that knowledge to students and the wider community; and
 - iv. supporting current and potential colleagues (e.g. postgraduate students) in the creation, application and dissemination of knowledge.
- 14 Therefore, the Working Group concluded that, in measuring and rewarding excellence, the PBRF should promote the development of lively and productive research cultures, which produce high-quality research, are attractive and effective learning environments for students, and are

- actively engaged with relevant communities.
- 15 Vital and active research environments are important for two reasons. They enhance research productivity, by creating ‘clusters’ of activity, where the interaction between clever, creative individuals has a multiplier effect. They also provide more effective and engaging learning environments for students (especially at postgraduate level).
- 16 This commitment to excellence necessarily requires some concentration of funding and effort. The resources available are limited, and the demand for quality is high. As the recent Higher Education Review in Hong Kong noted,
- there are more demands for research funding than can be met from the public purse. Tackling this question is likely to be a complex matter, but the fact that the pie has to be cut in one way rather than another cannot be avoided. The evidence from international comparators points unreservedly towards strategic and concentrated investment ... The international evidence is that competitiveness implies selectivity.*⁵
- 17 Vital high-quality research environments are also more likely to develop and flourish where talent is concentrated.
- 18 However, the Working Group also noted the Government’s overarching concern to have a strong, integrated tertiary sector, made up of focussed and specialised providers. The Working Group has therefore interpreted “undue concentration” to mean a level of concentration which either:
- was not sufficient to support the development of vital, high-quality research environments; or
 - was so extreme that it did not allow the retention of some smaller areas of excellence; or undermined integration of, and collaboration between, the overall tertiary sector.
- 19 The Working Group recognised that no system is ever perfect, and that models which provide benefits can also create negative or perverse impacts. From the perspective of the Working Group, the key tests for an appropriate model are to ensure that:
- the evaluation and funding package as a whole promotes all the desired outcomes and encourages supportive behaviours by providers and individuals;
 - the model is compatible with broader and related policy initiatives; and
 - potential negative effects are identified, and provisions made to manage or eliminate them.
- 20 With this in mind, the Working Group concluded that the PBRF should be guided by the following principles:
- *Comprehensiveness*: the PBRF should appropriately measure the quality of the full range of original investigative activity that occurs within the sector, regardless of its type, form, or place of output;
 - *Respect for academic traditions*: the PBRF should operate in a manner that is consistent with academic freedom and institutional autonomy;
 - *Consistency*: evaluations of quality made through the PBRF should be consistent, across the different subject areas and in the calibration of quality ratings against international standards of excellence;
 - *Continuity*: changes to the PBRF process should only be made where they can bring demonstrable improvements that outweigh the cost of implementing them;
 - *Differentiation*: the PBRF should allow stakeholders and the government to differentiate between providers and their units on the basis of their relative quality;
 - *Credibility*: the methodology, format and processes employed in the PBRF must be credible to those being assessed;
 - *Efficiency*: administrative and compliance costs should be kept to the minimum consistent with a robust and credible process;
 - *Transparency*: decisions and decision-making processes must be explained openly, except where there is a need to preserve confidentiality and privacy;

⁵ Stewart R. Sutherland, *Higher Education in Hong Kong: report of the University Grants Committee* (Hong Kong: UGC, 2002), p.33

- *Complementarity*: the PBRF should be integrated with new and existing policies, such as charters and profiles, and quality assurance systems for degrees and degree providers; and
- *Cultural inclusiveness*: the PBRF should reflect the bicultural nature of New Zealand and the special role and status of the Treaty of Waitangi, and should appropriately reflect and include the full diversity of New Zealand's population.

THE RECOMMENDED PERFORMANCE-BASED RESEARCH FUND MODEL

- 21 The PBRF model recommended by the Working Group has several features:
 - a participation criteria for providers and individuals, which ensure that all degree-granting providers and all academic staff within them who make a significant contribution to research activity and/or degree-level teaching within the tertiary sector are included within the PBRF;
 - b quality evaluation of researchers by external peer review panels and public reporting of evaluated quality scores at the level of the subject area and academic unit;
 - c a new definition of “research”, which is specific, yet wide-ranging and enables excellence to be recognised wherever it occurs;
 - d reporting and funding of performance against measures of external research funding and research degree completions;
 - e a funding model with three elements:
 - i one dependent on the quality of academic researchers, which provides higher levels of funding to reward and encourage higher quality researchers (60% of the total PBRF);
 - ii one for research degree completions (25% of the total PBRF); and
 - iii one for the external research income gained by participating tertiary providers (15% of the total PBRF).
- 22 This combination of measures was judged by the Working Group to best allow the recognition and funding of quality.
- 23 The Working Group acknowledged that the PBRF would increase administrative and compliance costs for providers. These higher costs are, in part, a result of developing a robust and credible system.
- 24 The extent to which costs rise will depend very much upon the degree to which providers are already taking steps to identify and raise their research quality. Many providers are already implementing Research Assessment Exercise or Institutional Grant Scheme-style systems for internal research grant allocations. The operation of the peer review system will also be reviewed shortly after the first evaluation round (see paragraph 79). This may reveal some opportunities for savings.

DETAILS OF THE PROPOSED MODEL

Participation criteria for providers and individuals

- 25 All New Zealand-based degree-granting tertiary education providers, and all subsidiaries that are wholly-owned by a New Zealand-based degree-granting tertiary provider, will be evaluated in the PBRF. This criterion reflects:
- *the guiding principle of comprehensiveness;*
 - *the Government's desire to improve the quality of information on research output:* developing a full picture of the state of research output and quality in New Zealand requires that all providers and provider subsidiaries involved in research be included in the PBRF; and
 - *the need to align the PBRF with the Education Act requirement that degrees be "taught mainly by people engaged in research":* involving all degree-granting providers in the PBRF will require them to demonstrate that they are meeting their legal obligations.
- 26 Subsidiaries are included within the PBRF on the grounds that they generally produce teaching and research outputs and/or contribute to the provider's teaching and learning environment. Several subsidiaries hire research students and provide placements for students to further their research.
- 27 The Working Group was also concerned that excluding subsidiaries from the PBRF could undermine the contribution of subsidiaries to the teaching and learning environment, by discouraging provider departments to release top researchers to work in these organisations. In addition, excluding subsidiaries could create the temptation for providers to enhance their quality scores, by shifting some staff onto contracts with a subsidiary.
- 28 The Working Group considered establishing a 'critical mass' threshold to entry, such as requiring providers to have a minimum number of research-active staff (as proposed by TEAC). Such a criterion could minimise transaction costs by reducing the number of staff to be evaluated, and could simplify the evaluation process by reducing the potential for providers with limited research records to seek funding. However, the Working Group decided that, in this case, the goal of improving information and incentives across the system was more important than the desire to minimise costs.
- 29 The Working Group also considered including the quality ratings of staff teaching parts of degrees for other providers (i.e. staff in franchising providers) in the quality score for the subject area/academic unit of the degree-granting provider. This could improve information about the quality of research underpinning degrees. However, the Working Group ultimately rejected this approach, on the grounds that this could discourage collaboration and other strategically-important behaviour.
- 30 In thinking about participation criteria for staff, the Working Group concluded that there were two high-level tests to guide whether an individual should be included in the PBRF:
- *is the individual an academic staff member? In other words, are they expected to contribute to the learning environment?*
 - *is the individual expected to make a significant contribution to research activity and/or degree teaching in a tertiary provider?*

- 31 If the answer to both of these questions is “yes”, the individual should be included. Based on these tests, the Working Group prepared the following participation criteria for individuals:
- All academic staff will be included in the PBRF if they:
- i) EITHER are employed on the census date by a degree-granting tertiary education provider or eligible subsidiary under a contract of salaried employment with a duration of at least one year;
 - ii) OR have been employed on the census date by a degree-granting tertiary education provider or eligible subsidiary for at least one year under one or more contract(s) of salaried employment on a continuous basis; and
- b they are employed for a minimum of one day a week on average or 0.2 FTE over the period of the entire year; and
 - c their employment functions include research and/or teaching degree-level programmes.
- 32 The census date is the date for assigning eligible individuals to the tertiary provider(s) where they are in post.
- 33 The eligibility criteria are deliberately broad, and are designed to appropriately reflect the guiding principle of comprehensiveness. The focus on staff “teaching degree-level programmes” is designed to ensure that degree-granting providers with large sub-degree offerings are treated fairly. However, staff hired on short-term contracts or a fee-for-service basis would not be included, on the basis that they would be unlikely to make a significant contribution to research activity.⁶
- 34 Within the individual eligibility criteria set out above and the quality “descriptors” described in paragraphs 53 and 54, providers will place academic staff within one of four categories, which will determine whether or not the individual researcher will be externally-evaluated. The Working Group considered that this approach would best:
- minimise administrative, compliance and assessment costs for providers; and
 - respect institutional autonomy.
- 35 Regardless of their category, all eligible staff will be counted when quality scores are calculated for subject areas and academic units (see paragraphs 94 to 103).
- 36 Academic staff who transfer between tertiary providers during the 12 months preceding the census date will be able to be submitted by both their former and current employing provider. Similarly, academic staff who are salaried employees of more than one provider on the census date can be submitted by each relevant provider. However, for the purposes of determining quality ratings for subject areas and funding allocations, transferring and shared staff can be counted only in relation to the relevant proportion of their contribution on a FTE basis for each provider.
- 37 Those academic staff who are on unpaid leave of absence or secondment on the census date will be eligible if:
- a they are contracted to return to their normal duties within one year from the start of their period of absence; and
 - b the staff recruited specifically to cover their duties are not evaluated through the PBRF.

Quality evaluation of researchers by external peer review panels

- 38 The key component of the PBRF will be the use of external peer review to evaluate the quality of researchers. The Working Group examined a number of performance-based research funding models, and concluded that the PBRF’s overarching goals of identifying relative quality and rewarding excellence required some form of peer review. Peer review is the most common and well-respected means of assessing and ensuring quality within the tertiary sector.
- 39 While models based solely on performance

⁶ Under these criteria, the following categories of staff are likely to be eligible: those employed full-time or part-time as Junior Lecturers, Lecturers, Senior Lecturers, etc; research fellows; post-doctoral fellows; and semi-retired academic staff who continue in salaried employment and are contracted to carry out academic duties. Ineligible staff include those paid on a casual or hourly basis (e.g. certain teaching assistants); those employed under consultancy contracts or on the basis of payment of fees for services, without a contract of employment; short-term academic staff (such as visiting professors, fellows and lecturers); those who have fully retired or who die before the census date; and those employed after the census date.

measures could be cheaper to operate than a peer review-based system, they could only ever provide proxies for quality (such as citation or research productivity). Moreover, models based purely on performance measures would be less able to capture the full range of contributions that made up researcher excellence, as outlined in paragraph 13 above, and could drive behaviour towards quantity rather than quality.

40 In line with the definition of “excellence” adopted for the PBRF, the peer review process would assess the overall performance of researchers, based on such characteristics as:

- their total output;
- peer esteem factors (such as awards, fellowships); and
- their contribution to the development of new researchers and/or a vital high-quality research environment.

The quality evaluation infrastructure

41 The evaluation of quality in the PBRF will be the responsibility of external panels, made up of experts in their fields. There will be 11 peer review panels, based around the following subject groupings:

- Humanities and Law
- Social Sciences and other Cultural/Social studies
- Education
- Physical Sciences
- Biological Sciences, Agriculture and Environmental Studies
- Mathematical and Information Sciences and Technology
- Engineering, Technology and Architecture
- Health and Medicine
- Management, Commerce, Business Administration and Marketing
- Creative and Performing Arts
- Māori Knowledge and Development.

42 There will also be an overarching peer review panel, composed of panel chairs, which will moderate the evaluations of the 11 subject-based panels. A more detailed description of the subject groupings is attached as Appendix 3.

43 The Working Group selected these groupings because they:

- could be matched with reporting frame-

works currently used within the tertiary sector (NZSCED);

- grouped common cognate clusters together; and
- appeared to provide a fairly even spread of workload among the various panels.

44 Where academic staff are engaged in cross-disciplinary research, providers will determine which panel provides the “best fit”. Panels will be able to cross-refer and call upon special advisers where necessary.

45 The Māori Knowledge and Development panel will evaluate research into distinctly Māori matters, such as research into tikanga Māori. Where research has a Māori focus, but is conducted within the frameworks of another discipline, it will be evaluated by the appropriate subject-based panel, with advice (where necessary) from the Māori Knowledge and Development panel.

46 The Working Group took note of the experience of existing research funding bodies in reflecting Māori research, and the inadequacy of simply providing written guidance for panel members assessing such research (as opposed to membership of panels by knowledgeable people). Therefore, the Working Group considered that, where appropriate, there should be Māori members on the other peer review panels. Where this is not appropriate or possible, panels should draw on special advisers for additional knowledge and support.

47 One means of ensuring the presence of suitable knowledge across all the panels (and potentially supporting greater consistency in assessment) could be to have overlapping membership between the Māori Knowledge and Development panel and other peer review panels. However, the Working Group acknowledged that this could create unfair burdens and workloads for the members of the Māori Knowledge and Development panel. The Working Group therefore recommended that the TEC consider the feasibility of this option, based on workloads, when establishing the panels.

48 The Working Group also recommended that the TEC convene an “esteemed body” of Pacific researchers to help define excellence in Pacific research and develop guidance for the peer review panels and expert advisers on Pacific research. This recommendation reflects two main needs:

- the PBRF guiding principles of cultural inclusiveness and comprehensiveness;
 - the Tertiary Education Strategy and Pacific Education Plan focus on assisting Pacific learners to develop skills of importance to the Pacific and New Zealand, and on linking the tertiary sector to Pacific aspirations.
- 49 Nominations for panel members would be sought by the TEC from a range of organisations, such as:
- New Zealand-based degree-granting providers;
 - relevant professional bodies (for example, the Institute of Chartered Accountants could nominate members for the Management, Commerce, Business Administration and Marketing panel);
 - learned societies; and
 - bodies representing industrial, business and other users of research.⁷
- 50 Nominated members would have to be highly-respected and have broad research expertise, experience acting in a peer review or research evaluation role⁸, or other forms of standing in the research community. Nominees need not be New Zealanders, nor New Zealand-based.
- 51 The TEC would then select members, with the aim of ensuring:
- an appropriate ethnic and gender balance;
 - that the panel has the knowledge and expertise necessary to make expert, dispassionate and reliable judgements about quality against international standards, across the range of disciplines within its coverage;
 - significant membership by international experts (ideally at least 25% across the panel system as a whole).
- 52 The Working Group noted that the Tertiary Education Commission will run panels for a range of activities, and intends to establish a comprehensive and integrated system for selecting and convening panels. The Working Group agreed with TEC advice that the PBRF panels should be included in this system.

⁷ Nominations could be provided by learned societies, professional bodies, etc. from within and outside of New Zealand.

⁸ Where appropriate, this could include significant experience in commissioning research and in directly using commissioned research.

Quality categories

- 53 The quality evaluation process will place researchers into one of four categories – A, B, C and D. Category A will signify researcher excellence at the highest levels. Category D will represent research activity or quality at a level which is insufficient for recognition by the PBRF.
- 54 The categories denoting research activity (A, B and C) will have generic descriptors, outlining the characteristics of researchers at these levels of quality. The descriptors are designed to ensure consistency of assessment across the various subject areas, and are outlined in Appendix 5. However, due to the different requirements and expectations of each subject area, each peer review panel may develop guidelines and working methods, outlining how the panel will interpret the descriptors for researchers falling within its coverage.

The quality evaluation process

- 55 Quality evaluation will be a two-step process. First, eligible staff will be internally-reviewed by their provider and provisionally placed in a quality category, in accordance with the generic descriptors. Second, the relevant peer review panel will either confirm the provisional category or classify the individual into a new category. Eligible providers will put forward for external evaluation evidence portfolios for all eligible staff provisionally placed in Categories A, B or C, so as to support these placements.
- 56 This two-step process, involving providers in the assignment of quality categories, is designed to achieve a number of purposes. First, it is intended to reduce the workload of the external peer review panels, by introducing an element of self-evaluation. Secondly, it is designed to:
- build up within the tertiary sector expertise about the quality evaluation process;
 - build up common understandings of the relative levels of quality; and
 - enhance opportunities for the quality evaluation process to be linked to providers' internal staff development systems in a positive manner.
- 57 Once expertise and common understandings have reached robust and reliable levels, more weight will be placed upon the categories nominated by providers. External panels will then

- play more of an audit role, rather than directly assessing research outputs.
- 58 Each individual's evidence portfolio must include:
- an indication of the individual's total peer-reviewable research outputs;
 - a more detailed list of peer-reviewable research outputs produced over the assessment period;⁹
 - a nomination of up to 4 research outputs from the detailed list in (b), which the staff member considered are their best works;
 - evidence of peer esteem; and
 - evidence of the researcher's contribution to the development of new researchers and/or a vital high-quality research environment.
- 59 Evidence of peer esteem and of contributions to the development of new researchers and/or a vital high-quality research environment will be limited to no more than one page (each), so as to minimise the workloads for panels. Evidence of esteem could include prizes or fellowships won, or measures of research impact and uptake appropriate to the researcher's field. The nominated outputs in (c) will not be submitted, but must be made available to panels on request.¹⁰
- 60 The evidence portfolios and assigned categories will be forwarded to the relevant peer review panel. The panels will systematically review all evidence portfolios. They will also directly assess the nominated research outputs of:
- academic staff who are considered to fall on the 'borderline' between one quality category and another; and
 - a random sample of all staff in categories A, B and C.
- 61 Peer review panels will be able, when placing staff in categories, to take into account justifiable extenuating circumstances (such as maternity or sick leave, fewer than six years' experience, etc). Panels will also be able to ask for additional information about the evidence presented by researchers in their portfolios (e.g. more detailed information about peer esteem measures). The Tertiary Education Commission will audit a random sample of the outputs claimed by academic staff in their evidence portfolios, to check the veracity of the information provided.

Fast-tracking

- 62 In developing its approach to quality evaluation, the Working Group was cognisant of the PBRF's guiding principle of efficiency. The Group therefore looked for other complementary mechanisms that could assist in reducing costs, without compromising the integrity and credibility of the overall approach.
- 63 After some reflection, the Working Group considered that it could be possible to develop a "fast track" option to classifying academic staff in Category C. Under this approach, eligible staff who had produced peer-reviewed research outputs equivalent in total to 4 sole-authored journal articles over the assessment period could apply for Category C status.¹¹
- 64 The outputs would need to meet the PBRF research definition (see paragraphs 68 to 72 below) and be appropriate to the relevant subject area. In order to be eligible, the outputs would also need to be listed as peer-reviewed in Ulrich's directory, the ISI list, or the Australian Department of Education, Science and Training website.

⁹ The assessment period is the period during which outputs that may be nominated for direct evaluation must have been published. For the purposes of the PBRF, the assessment period will be 6 years long. In the first (2003) evaluation round, the assessment period will be 1 January 1997 to 31 December 2002 (inclusive). Outputs in (b) should be organised into groups according to category (e.g. articles, chapters, books, designs, creative works, reports, patents, etc) and should be ordered to distinguish peer-reviewed from non-peer reviewed outputs.

¹⁰ Where the actual presentation of the output is unduly difficult or impossible (for example, where the output is a large piece of art held in private ownership), alternative evidence of the output (e.g. a photograph) could be presented instead. Guidelines about what constitutes a suitable substitute will be developed either by the TEC or by the relevant peer review panel.

¹¹ The Australian Department of Education, Science and Training's data collection framework will be used to determine the relative weighting of outputs:

Research output	Weighting
Books – Authored Research	5
Book chapter	1
Journal articles – refereed article in scholarly journal	1
Conference publications – refereed	1
Refereed designs – includes design awards and curated exhibitions	1
Patents	2
Major original creative works	1

- 65 The fast-track option would only apply to staff wishing to be classified in Category C. Academics would have their evidence portfolios (and in some cases outputs) directly assessed where they:
- had been provisionally placed by their provider in Category A or B; and/or
 - had not produced outputs equivalent to 4 sole-authored journal articles, but had justifiable extenuating circumstances (e.g. new researcher of less than six years' experience, parental or sick leave) or had produced outputs of sufficiently high quality to offset low productivity.
- 66 The fast-track threshold is set at a level higher than that anticipated to represent a 'minimum standard' for Category C, so as to prevent any dilution of quality. Care will need to be taken by providers to ensure that if a staff member meets the requirements for the fast track, they have also been considered for nomination at Category A or B level.
- 67 The peer review panels will have a responsibility to ensure that the fast-track process does not result in lower standards or create a situation where quantity of output is valued over quality of output. Evaluation in the fast-track will still be overseen by the panels, with a particular focus on ensuring that "fast-tracked" individuals are neither disadvantaged nor advantaged. Panels would still be able to sample outputs from individuals seeking classification through the fast track.

WHAT COUNTS AS 'RESEARCH'?

68 The PBRF is intended to reveal the state of research quality across the tertiary sector. As such, it is important that the definition of “research” that underpins the PBRF is:

- sufficiently inclusive to cover the range of original investigative activity that occurs across the disciplines;
- detailed enough to indicate precisely what sorts of outputs and activity should be excluded; and
- robust and comparable with international standards.

69 With this in mind, the Working Group considered a number of options, including the definitions currently applied by the New Zealand Qualifications Authority, the NZVCC Committee on University Academic Programmes (CUAP), and the British Research Assessment Exercise. Each had its strengths and weaknesses. Specifically, it was felt that:

- the CUAP definition did not give enough recognition of investigative activity in the creative and artistic disciplines;
- the NZQA definition assumed a dichotomy between “artistic endeavour” and “investigation of an experimental or critical nature”, which the Working Group did not consider entirely appropriate;
- the CUAP focus on research findings being open to scrutiny was crucial; and
- the British RAE definition provided a far greater level of detail and clarity about the sorts of outputs or activities that would be excluded, and better recognised applied and industry-focused research.

70 The Working Group decided to combine the best components from each of the definitions examined. The proposed definition of “research” below represents this synthesis:

Research is original investigation undertaken in order to gain knowledge and understanding. It typically involves enquiry of an experimental or critical nature driven by hypotheses or intellectual positions capable of rigorous assessment. It is an independent¹², creative, cumulative and often long-term activity conducted by people with specialist knowledge about the theories, methods and information concerning their field of enquiry. Its findings must be open to scrutiny and formal evaluation by others in the field, and this may be achieved through publication or public presentation. In some fields, the results of the investigation may be embodied in the form of an artistic work, design or performance.

Research includes contributions to the intellectual infrastructure of subjects and disciplines (e.g. dictionaries and scholarly editions). It also includes the experimental development of design or construction solutions, as well as investigation that leads to new or substantially improved materials, devices, products or processes.

¹² The interpretation of “independent” should not exclude collaborative research.

The following specific activities are excluded:

- preparation for teaching;
- the provision of advice or opinion, except where it is consistent with the definition of research;
- scientific and technical information services;
- general purpose or routine data collection;
- standardisation and routine testing;
- feasibility studies (except into research and experimental development projects);
- specialised routine medical care;
- the commercial, legal and administrative aspects of patenting, copyrighting or licensing activities;
- routine computer programming, systems work or software maintenance (but note that research and experimental development into applications software, new programming languages and new operating systems is included); and
- any other routine professional practice (e.g. in arts, law, architecture or business).¹³

- 71 The quality evaluation process will give full recognition to work of direct relevance to the needs of industry and commerce, and all research, whether applied or basic/strategic, will be given equal weight.
- 72 So as to ensure that all appropriate original investigative activity within the tertiary sector can be evaluated in the PBRF, the absence of peer review will not, in itself, be taken to imply lower quality. While evidence that research outputs have already been reviewed or refereed by peers may be used as one measure of quality, the quality evaluation process will have regard to all reviewing processes, as appropriate, including those operated by users of research in commissioning or funding research work.

¹³ Stakeholders have sought clarification as to whether such activities as clinical trials and evaluations will be included within the PBRF. Clinical trials, evaluations and similar activities will be included, where they are consistent with the definition of “research”.

PROVIDING REGULAR AND RELIABLE EVALUATIONS

Frequency of quality evaluations

73 In the longer term, the quality evaluations will be conducted every six years. However, given the need for a managed transition, the Working Group considered that the second PBRF round should take place three years after the first. In other words, if the first round of evaluations is held in 2003 as the Working Group recommends, the next round would be in 2006.

74 In thinking about the frequency of evaluations, the Working Group was conscious of the trade-off between responsiveness and minimised costs. A large gap between evaluations would spread the costs of the peer review exercise over time. However, less frequent reviews would mean that providers and researchers that significantly improved their quality would not be quickly rewarded. More frequent evaluations might improve responsiveness, but would increase costs, potentially reduce funding stability, could dissuade providers from engaging in longer-term research, and might focus researchers on productivity rather than quality.

75 The Working Group considered two main means of resolving this tension. The first was to allow for mid-term quality evaluations. These could be triggered, for example, where:

- i a provider took on or lost significant numbers of academic staff; or
- ii a provider's performance in terms of external research income, research degree completions and postgraduate EFTS significantly improved or deteriorated; or
- iii a provider requested a mid-term evaluation and met the full costs of establishing the peer review panels.

76 Upon further analysis, however, it was concluded that mid-term evaluations would not solve the problem. If mid-term evaluations were linked to funding allocations, improvements in quality revealed through a mid-term evaluation would require reductions in funding to other providers. This could encourage repeated requests for mid-term evaluations by all providers, which would effectively turn into a

series of very short full-blown evaluation cycles.

77 The alternative was to permit mid-term evaluations that did not have any funding consequences. This approach might allow providers to make significant reputational gains where improvement was verified. This would not reward excellence, however, and may prove more demoralising than encouraging.

78 Given that the second PBRF evaluation round would occur fairly promptly after the first, it was considered unlikely that there would be much need or demand for more frequent evaluations in the short-term. The Working Group therefore recommended that the need for an additional three-year evaluation cycle (i.e. another round in 2009) should be considered after the 2006 round. Another evaluation round in 2009 could also allow for better continuity of process in the early years of the PBRF.

Ensuring effective and efficient evaluation processes

79 So as to ensure that the peer review processes are appropriate and effective, the first quality evaluation round will be reviewed six months after its completion, with a focus on such issues as:

- the administration of the evaluation exercise;
- the selection of panel chairs and members;
- the operation of the panel system;
- the nature and application of the evaluation criteria;
- inter-panel moderation; and
- the costs of the exercise.

Reconsideration of quality scores

80 The peer review process involves making judgements about people and their performance. Natural justice requires that the people being judged have the right to a fair and unbiased process, and have the right to challenge judgements that do not meet the criteria of fairness and impartiality.

81 The Working Group therefore recommends that a reconsideration process be established for cases of:

- procedural error; and/or
- unreasonable judgements.

82 So as to prevent frivolous requests, the reconsideration process could only be available on the following conditions:

- only providers, not individuals, may apply for a reconsideration since quality ratings are intended to determine the quality scores and funding allocations for providers; and
- providers must meet the full costs of the reconsideration process; and
- no new evidence can be presented.

83 The Working Group noted that the Tertiary Education Commission intends to establish a unified review system for all its activities, and agreed with TEC advice that the PBRF reconsideration process should be integrated into this unified system.

Evaluating research environments

84 Because vital and active research environments are a key outcome sought from the PBRF, the Working Group investigated additional methods of assessing the vitality of environments. Options evaluated included:

- a requiring all degree-granting providers to submit Research and Research Training Management Plans, as a condition of entry to the PBRF;
- b requiring providers or academic units to submit evidence of their research environment's vitality for evaluation by the peer review panels; or
- c visits by peer review panels to some (or all) degree-granting providers, to directly assess the state of research environments.

85 After some analysis, however, it was decided that these requirements would duplicate existing activities and policies and/or create excessive compliance costs. For example, the New Zealand Universities Academic Audit Unit and the New Zealand Polytechnics Programmes Committee already examine the systems that should sustain vital research environments.

86 Similarly, the Working Group noted publications by the Working Party on charters and profiles and the Transition Tertiary Education Commission, which state that providers will include information on their management approaches to research and research training in Part B of their profiles.

87 The Working Group therefore concluded that no additional measures were necessary. The broad approach to individual evaluation would take into account an academic's contribution to the development of a vital, high-quality research environment. In addition, the recommendations of recent AAU/NZPPC audits and research components of profiles will be available to peer review panels as a context for their work.

USING INFORMATION ABOUT QUALITY

Providers and the use of individual quality scores in the PBRF

- 88 It is important that tertiary education providers do not assume that PBRF evaluations are a substitute for the assessment of an individual's academic performance. It should be noted that:
- staff performance extends beyond research activity, and typically includes teaching responsibilities and contributions to the wider community, and may also include administrative responsibilities;
 - formative assessment and summative assessment have different roles, so the kind of summative assessment that would be undertaken in PBRF evaluations should not displace good formative assessments of the research contribution of staff members. The PBRF evaluations will only occur once every three to six years and cannot substitute for regular assessment of staff research performance.
- 89 The TEC will not publicly report individuals' quality scores, and will return the results of individuals' panel evaluations to their institutions in confidence. As a general principle, the Working Group felt that a provider should not use individual staff PBRF quality scores for internal purposes, unless prior permission of the individual had been obtained. Providers will need to manage the use of this information within their own ethical and policy frameworks, and within the constraints of legislation (in particular the Privacy Act). Providers should also establish protocols for the security and use of such information, and ensure personal grievance and review processes are clearly understood so that misuse of information does not occur.
- 90 This is not to say that providers cannot use PBRF staff scores. They may be useful in staff promotion and recruitment (if submitted by the staff in their application forms). PBRF scores may also be helpful in informing staff performance assessments immediately after the PBRF evaluations have been conducted. They should only be considered in conjunction with a range of other information on the performance of the individual concerned.
- 91 The PBRF quality score is the result of a single process at a single point in time (i.e. a snapshot of research performance). The evaluation of research performance is based primarily on quality aspects and not on productivity. The PBRF assessment period may, or may not, coincide with the individual's most productive period of research activity.
- 92 Accordingly, it should not be automatically assumed that there would be a close correlation between an individual's research score and their overall level of achievement or academic standing. A different conclusion might be arrived at, especially in borderline cases, if the assessment were for a different purpose, such as for the awarding of a scholarship, funding a research proposal, or in considering an individual for promotion. There will always be a need to consider the intended purpose of PBRF evaluations (i.e. to rate disciplines and to allocate resources) when considering whether the information could be used for another purpose within the provider.
- 93 Subject area or academic unit quality ratings would be more appropriate than individual ratings for use in internal funding allocation and organisational restructuring, as they are at a higher level of aggregation and are, therefore, more likely to be accurate.

Public reporting of quality scores

- 94 A key desired outcome from the PBRF is the production and publication of useful information about the relative quality of providers and subjects. This will better allow:
- students to make decisions about where to study; and
 - the private sector and community to identify appropriate research partners.
- 95 As a result, the publication of quality scores will promote further concentration of funding and people around areas of excellence.
- 96 In designing a reporting system, the Working Group was conscious of the need to balance consistency with credibility. Consistent reporting frameworks will be necessary to support comparisons of quality between similar areas of knowledge. However, tertiary providers are structured in a number of different ways, which limits the ability to make consistent and meaningful comparisons.
- 97 The Working Group's recommended solution is to create two levels of reporting. At the first level, quality scores would be reported against the relevant subject area, based on a modified form of the NZSCED (the New Zealand Standard Classification of Education) detailed fields. The Tertiary Education Commission will clarify how and when NZSCED will be modified for PBRF reporting purposes.
- 98 At the second level, providers would also be able to nominate an academic unit against which quality scores would be reported. So, for example, a School of History, Philosophy and Politics could have its aggregated quality scores reported at:
- the level of each NZSCED level (in this case, Studies in Human Society, Philosophy and Religious Studies, and Political Science and Policy Studies); and
 - a school level.
- 99 So as to ensure that all reporting at the academic unit level provides an accurate picture of quality, all eligible staff members will be mapped to an NZSCED detailed field, and the TEC will be responsible for the publication of all quality scores. Some further work will need to be done on establishing systems that support dual-level reporting, without creating high compliance costs for providers.

100 Each quality category will have a numerical score attached to it:

Quality category	Numerical score
Category A	5
Category B	3
Category C	1
Category D	0

101 The quality scores for subject areas and academic units will be derived by:

- weighting each participating individual's numerical quality score by their FTE status;
- adding up the numerical quality scores of all the individuals evaluated in that subject area (or academic unit); and
- dividing up the total by the number of FTEs of all academic staff teaching degrees or undertaking research in that subject area/academic unit.

102 Put another way, where:

- the numerator = $\sum[(\text{individual's numerical quality score}) \times (\text{FTE for that person})]$; and
- the denominator = $\sum \text{FTE teaching and research staff in the provider's subject area/academic unit}$,

the quality score would be:

$$\frac{\sum [(\text{individual numerical quality score}) \times (\text{FTE for that individual})]}{\sum \text{FTE}}$$

103 As well as the average score for each subject area/academic unit, a range of other information will be reported, including:

- a the average score for the relevant subject area across all providers (this would not apply for reporting of academic units);
- b the proportion of eligible staff that received a category A or B rating;
- c the number of EFTS places at undergraduate, taught postgraduate, and wholly research postgraduate levels;
- d the number of research postgraduate completions;
- e the number of eligible staff (in FTEs);
- f the proportion of academic staff who are involved in research and/or degree-level teaching; and
- g the proportion of (f) who are research active (that is, at Category C or above).

MEASURING AND REPORTING PERFORMANCE AGAINST OTHER MEASURES

104 Although the Working Group considered that peer review is the key to discerning relative quality through the PBRF, it was also acknowledged that quality in research is multi-faceted. The use of performance measures could augment peer review, to offer a fuller picture of a particular provider or academic unit's performance. In addition, since it is easier and less burdensome to collect information on performance through indicators, the use of performance measures will allow the PBRF to be more responsive than a model based solely on peer review.

105 The Working Group considered a number of potential performance measures that providers could report and be funded against, including research productivity (i.e. the number of outputs), and research impact (e.g. measured in terms of the number of citations). However, these measures were judged to have too many potential perverse effects. The Working Group wanted to select measures which would provide a reasonable "proxy" for quality, as well as being indicative of volumes of quality.

106 Therefore, eligible providers will report annually on their performance against two other measures:

- the number of research degree completions; and
- the amount of external research income gained.

107 Research degree completions (RDC) and external research income (ERI) were selected because:

- a measuring and funding research degree completions can encourage providers to improve the quality of research training;
- b research degree completions represent contributions to New Zealand's research capability, and to knowledge;
- c external research income was considered to be a proxy for quality and peer or stakeholder esteem; and
- d the two performance measures had the least potential for negative effects.

108 Research degree completions would be reported at the level of the subject area/academic unit. This information, together with data on the number of postgraduate students, could help students make decisions about where to study.

109 The Working Group initially saw some merit in reporting external research income at the level of the subject area or academic unit. Provided the information was normalised, it could allow stakeholders and the government to identify high-performing units within providers. However, the Group also noted that disaggregating the data down to this level could be costly and complicated, particularly for providers that have multi-disciplinary funding contracts. In the interests of efficiency and credibility, the Working Group therefore concluded that external research income should be reported at the level of the provider.

Research Degree Completions

110 Only completions of research-based postgraduate degrees (e.g. Doctorates, Masters) with a significant (≥ 0.75 EFTS) externally-assessed¹⁴ wholly research component will generate funding for providers. This measure serves two key purposes:

- it provides a proxy (along with a number of other proxies) for research quality. The underlying assumption here is that students choosing to undertake lengthy, expensive, advanced degrees (and especially doctorates) will tend to search out departments and supervisors that have high reputations (in the relevant fields) for quality in research (and research training).
- it captures, at least to some degree, the connection between staff research and research training, thus providing some assurance of the future capability of tertiary education research.

¹⁴ For the purposes of the PBRF, "externally-assessed" means "assessed by academic staff of another tertiary institution, either in New Zealand or overseas."

111 Research degrees are also the international standard for other performance-based research funding schemes that incorporate student data. For example,

- the research funding formula used for Israeli universities includes a weighting for Doctoral research student enrolments;
- the Australian Institutional Grants Scheme provides a weighting for Masters and Doctoral student numbers, and the Research Training Scheme weights for Masters and Doctoral completions; and
- the number of research students is reflected in the funding formula for the British Research Assessment Exercise (RAE). The RAE also takes into account the number of postgraduate research degrees awarded and the numbers of postgraduate research studentships gained at each department.

112 The Working Group considered arguments that the completion of other postgraduate programmes should be included in the PBRF. Specifically, some stakeholders suggested that the completion of taught postgraduate programmes (or the completion of their research components) should be reflected in the completions measure.

113 In the view of these stakeholders, taught postgraduate programmes also represented contributions to research capability and to the production of knowledge and should therefore be included. They were also concerned that excluding taught postgraduate programmes in the completions measure could send the signal that such programmes were not valued, and discourage their provision.

114 The Working Group acknowledged that taught postgraduate programmes can make a contribution to research training and knowledge production. However, this contribution is generally much less direct than that made by research degree programmes. Students in thesis-based Masters and Doctorates gain direct experience in undertaking substantial research projects (and often in publishing articles based on that research). Moreover, the outputs produced through research degree programmes are far more likely to be original material and expand the boundaries of knowledge. Finally, and perhaps most importantly, the Working Group considered that the ability of taught postgraduate programmes to act as a credible proxy for

research quality was poor.

115 Quite apart from these reasons (and the positions stated in paragraphs 110-11), the Working Group considered that including taught postgraduate completions would be problematic, and could act against the overall focus of the PBRF on quality. For example, most – if not all – research degrees require assessment by external examiners, thus helping to ensure the maintenance of standards. This practice is not widely used for taught postgraduate research papers, reports or dissertations. Including taught postgraduate completions in the PBRF could therefore create the temptation to lower standards.

116 The Working Group noted the issues around the potential signalling effects of excluding taught postgraduate completions from the PBRF. The Group certainly does not wish to downplay the importance of these programmes. However, it remained unconvinced that including taught postgraduate completions in the PBRF would solve this problem. Fully reflecting taught postgraduate completions in the PBRF would overstate their contribution to research training and capability development. On the other hand, weighting taught programmes lowly or only reflecting the completion of research components in taught programmes would not generate much in the way of funding.

117 The Working Group recommends that the Funding Category Review consider increasing funding for postgraduate education, particularly in light of the removal of the degree 'top ups' funding in creating the PBRF. This would be the preferred way of addressing issues associated with adequacy of funding for taught postgraduate programmes.

External Research Income

118 For the purposes of the PBRF, “external research income” will include all cash income, both from public and private sources, in respect of externally-sponsored research conducted by a tertiary provider and/or its wholly-owned subsidiary. Further definitions of what can and cannot be included as “external research income” for the purposes of the PBRF are attached as Appendix 4.

119 Only funding that comes from sources outside the tertiary sector will be included. Transfers between providers and from providers to subsidiaries (such as in the form of subcontracting)

will not count, as this would allow double-counting. However, where providers enter into collaborative research ventures, they will be able to allocate the external funds won amongst themselves and have these funds counted for the purposes of the PBRF.

120 The Working Group also noted concerns about the potential for provider funding to be channelled through trusts as a means of increasing the provider's "external research income". A number of options were considered as means to control this risk, including excluding funding provided from trusts where the provider was the settlor; excluding funding from trusts where the provider was the trustee; and excluding funding from trusts where the provider was the beneficiary.

121 These options either did not entirely manage the risk, or they had the potential to exclude worthy sources of funding (e.g. charities). The Working Group therefore concluded that the key test should not be the nature of the trust, but the nature of the funding provided. Specifically, research funding offered to a tertiary provider by a trust may only count as external research income in the PBRF, if it had been left to the trust explicitly for the purposes of research. This approach would enable enforcement, by creating a relatively clear audit trail. However, the Working Group recommends that this approach be reviewed in 2006, to ensure that it is effective and/or is not discouraging organisations from providing research income to tertiary institutions.

122 The Working Group gave some thought to the matter of whether or not all forms of external research income should be equally weighted. For example, funding from competitive research pools could be given extra weighting to recognise the additional peer review element involved. Alternatively, funding from the private sector could be given an additional weighting, to encourage greater interaction between the tertiary sector and end-users. Finally, weightings could be introduced to offset 'skewing' caused by the focus of public contestable funds on certain outcomes or disciplinary areas (which make up a significant proportion of the total amount of external research income available).

123 Ultimately, the Working Group concluded that

all eligible forms of external research income should be treated equally in the funding formula, since:

- differentiating some forms of external research income from others would increase complexity and administrative costs;
- as noted above, the PBRF is designed to have regard to all reviewing processes, including those operated by users of research in commissioning or funding research work. Providing an additional reward to the peer review processes in contestable funds would run counter to this principle;
- the PBRF is designed primarily to reward and encourage excellence, rather than promote greater connection with industry and end-users of research. The PBRF should not discourage 'relevance', but other RS&T interventions exist to promote this goal; and
- the impact of any 'skewing' is likely to be limited, since the proportion of PBRF resources allocated on the basis of external research income will be relatively low.

FUNDING PERFORMANCE

- 124 Although information about relative quality will be a key driver of behaviours and outcomes, a PBRF also requires a funding formula that rewards excellence and supports improvements in quality. In developing the proposed funding formula (outlined below), the Working Group was aware that it was operating within the constraints of very limited information. Therefore, the proportions of funding allocated to each of the three elements below are tentative, and should be reviewed after the first evaluation round, when better and more comprehensive information on the distribution of quality is available.
- 125 The total amount of funding in the PBRF (approximately \$134 million by 2007) will be divided into three elements:
- a an element to reward and encourage the quality of researchers (60% of the total PBRF);
 - b an element to reflect research degree completions (25% of the total PBRF); and
 - c an element to reflect external research income gained (15% of the total PBRF).
- 126 Although the Working Group acknowledged the need for further work to establish the most appropriate distribution of funding between the three elements, the Working Group considered that the 60/25/15 distribution was preferable to the TEAC recommendations of a 50/25/25 funding split for two reasons.
- 127 First, given the emphasis of Government policy on quality and excellence, it seemed important to give the peer review element a greater weighting than 50%. While the research degree completions and external research income measures are important for building the overall picture of quality within the tertiary sector, the peer review process provides the most direct and reliable measure of quality.
- 128 Second, there was a strong case for reducing the weighting for external research income, on two grounds. While the Working Group endorsed the role of external research income in measuring quality, there was some concern that an excessive weighting could distract from that goal. The PBRF is designed to reward excellence, rather than relevance. Although the two goals are not necessarily mutually exclusive, the achievement of one may not always mean the achievement of the other.
- 129 The Working Group also noted that a significant proportion of external research income was clustered around a relatively narrow range of disciplines. The impact of this 'skewing' would be limited under a 15% weighting, but could be significant and problematic under a higher weighting. Stakeholders consulted throughout the development of the Working Group's proposals generally endorsed the lower weighting of 15%.
- 130 Finally, the Working Group considered that a comparatively higher weighting for research degree completions should be retained, for the grounds outlined in paragraph 110 above.
- 131 The Working Group looked at a number of options for funding formulae. For example, the Working Group considered integrating the three elements in a single funding formula, in which quality, research degree completions and external research income would attract points, be weighted individually, and then summed.
- 132 This approach was not supported, however, on the grounds that it could be too volatile. Three distinct funding elements would better control against the impacts of sudden fluctuations in one element (e.g. a sudden increase in the number of research degree completions), and maintain the primary focus of the PBRF on rewarding and encouraging excellence.
- 133 The Working Group also considered linking the research degree completions measure to the peer review quality score, whereby academic units or providers would need to achieve a minimum score in order to generate funding for completions. This approach could increase the funding available per-completion, and would signal the need to have a strong link between high-quality research and the learning environment.
- 134 This approach was not ultimately supported, on the grounds that it would be complex to admin-

ister, and possibly too blunt. Linking eligibility to generate research degree completions funding to an overall provider score would penalise pockets of excellence within an institution. On the other hand, it would be difficult to appropriately link research degree programmes (particularly multidisciplinary programmes) to subject areas or academic units.

135 All funding won from the PBRF will be delivered in the form of a bulk grant, which providers will be free to use as they see fit. However, the PBRF grant will be delivered separately from student component grants, and the grant to reward and encourage the quality of researchers will be allocated to the provider where the teaching staff are based, rather than the provider which holds the relevant degree accreditation. This policy is designed to accommodate franchising and collaborative degree provision arrangements, and to reinforce the importance of the teaching-research nexus. This policy would not apply where the franchisee was not itself a degree-granting provider (since staff in these providers would not have been evaluated through the PBRF).

136 Funding to reward and encourage the quality of researchers would remain constant¹⁵ over the six-year period between evaluations. Funding generated by research degree completions and external research income would be allocated to providers on the basis of a rolling average of their performance over the past three years, once the necessary data is available. The rolling average would be calculated through a weighted formula, with a 50% weighting for performance in the previous year, 35% for performance in the year prior to that, and 15% for performance in the year before that. This would ensure a reasonable level of funding stability to providers, while maintaining incentives for providers to improve their performance.

Funding to reward and encourage the quality of researchers

137 Funding to reward and encourage the quality of researchers will be allocated on the basis of the total number of staff in Categories A, B and C, weighted to reflect the:

- numerical quality scores (see paragraph 100 above) of individuals within that provider;
- FTE status of those individuals; and

- cost weighting for their subject area.

138 In other words, the funding will be allocated according to the following formula:

$$\sum[(\text{base funding unit}) \times (\text{numerical quality score of researcher}) \times (\text{FTE status of researcher}) \times (\text{cost weighting for relevant subject area})]$$

139 The base funding unit will be derived through the formula:

$$\frac{\text{Total amount of funding available for research quality}}{\sum [(FTE status of researcher) \times (\text{numerical quality score of researcher}) \times (\text{cost weighting for relevant subject area})]}$$

140 Under this approach, a staff member in Category A will attract five times as much funding as a staff member who is in Category C (assuming they are in the same subject area and are of the same FTE status). Staff in Category D will not generate any funding.

141 While the Working Group agreed that the funding formula should reflect the differences in the cost of undertaking research that occur between subject areas, it was also aware that little robust information is currently available on these costs.

142 The best available proxies in New Zealand would appear to be the differentials between the top-ups added to EFTS for research-based postgraduate degrees. Under this approach, the subject cost weightings¹⁶ would be:

Subject areas	Weightings
Arts, Social Sciences, Business, Accountancy, Law, Teaching	1
Science, Computing, Nursing, Music, Fine Arts	2
Engineering, Agriculture, Architecture, Audiology, Veterinary Science, Medicine, Dentistry, Specialist Large Animal Science	2.5

143 Teacher Education research would be grouped with humanities, for the purposes of simplicity and since the funding differential between the top-ups for Category I (Teaching) and Category A (Arts, Social Sciences, Business, etc) are very small.

¹⁵ In nominal terms, at least

¹⁶ Since most tertiary research activity occurs in TEIs, the funding differentials have been derived from the 2003 TEI base rates

144 Similarly, research into Medicine, Dentistry, Veterinary Science (the current Category G) and Specialist Large Animal Science (Category H) would be grouped with Engineering, Architecture and Agriculture (Category C), since:

- Category G provides a flat funding rate, regardless of the programme level; and
- Category H does not have a sub-degree rate, from which a research-based postgraduate top-up can be calculated.

145 A notional sub-degree rate will be developed for Categories G and H, based upon the proportional difference between the sub-degree and undergraduate rates for Category C. Funding above this notional sub-degree in Categories G and H will be transferred into the PBRF.

146 It is conceded that this approach is very limited, since the EFTS “top-ups” were not derived from a reliable costing exercise and include teaching costs. In comparison, the funding formula for Research Assessment Exercises in the UK and Hong Kong is based on their assessed costs of undertaking research, rather than teaching. The Hong Kong RAE has 5 or 6 funding categories, with research in the more expensive laboratory and clinical subjects funded at about twice the rate of research in ‘cheap’ subjects. The English RAE formula has three main cost categories:

- Low-cost subjects. Weighting: 1
- Intermediate cost subjects. Weighting: 1.3
- High cost laboratory and clinical subjects. Weighting: 1.6

147 The Working Group considered recommending the use of the British RAE cost weightings, but concluded that they would not be appropriate, since:

- the differential costs of research in the UK might not match those in New Zealand (due to, for example, the lack of economies of scope and scale that could apply in some of the large science departments in the UK); and
- they could involve quite considerable disruption to providers that are more used to the existing New Zealand differentials.

148 The Working Group noted that the Funding Category Review may consider the appropriate relativities between the tuition funding rates for undergraduate, taught postgraduate and research-based postgraduate programmes. It is recommended that, where appropriate, the

findings of the Review inform the further development of the PBRF funding formula, and that further work be done to determine the relative costs of undertaking research in New Zealand.

Funding for research degree completions

149 Funding for research degree completions will be allocated on the basis of the number of completions, weighted to reflect:

- the volume of research in the programme:* a Masters with a research component of between 0.75 and 1 EFTS would be weighted at its EFTS value; a Masters with a thesis component of 1 EFTS or more would be weighted at 1; and a Doctorate with a thesis would be weighted at 3.
- the relative cost of the subject:* as in the tuition funding system, funding for research degree completions will be weighted to reflect the different costs between disciplines. The differentials will be the same as those used in the “funding to reward and encourage the quality of researchers” element.

150 In other words, funding for research degree completions will be allocated according to the following formula:

$$\sum [(base\ funding\ unit) \times (volume\ of\ research\ in\ the\ programme) \times (cost\ weighting\ for\ the\ relevant\ subject\ area)]$$

151 The base funding unit will be derived through the formula:

$$\frac{\text{Total amount of funding available for research degree completions}}{\sum [(number\ of\ research\ degree\ completions) \times (volume\ of\ research\ in\ the\ programme) \times (cost\ weighting\ for\ relevant\ subject\ area)]}$$

152 The weightings for relative subject costs may be adjusted later, depending on the results of the Funding Category Review.

153 An equity weighting would also be added to completions of research degrees by Māori and Pacific students, to encourage providers to enrol and support such students. The Working Group concurred with submissions made by stakeholders that New Zealand’s research base should reflect the diversity of the community, and that achieving this goal required additional and enhanced support for Māori and Pacific students. The equity weighting also supports the

government's strategic goals of contributing to the achievement of Māori development aspirations and educating for Pacific Peoples' development and success.

154 The Working Group considers that the equity weighting should:

- have a weighting of 2; and
- be reviewed after the second or third quality evaluation round to assess its effectiveness and the ongoing need for such a measure.

Funding for external research income gained

155 The PBRF will allocate funding for external research income on a proportional basis. In other words, a provider that attracts an average of 7% of the total external research income earned by all degree-granting providers will receive 7% of the total funding available in the external research income element. As for the research degree completions element, a provider's annual funding grant would be based on a rolling weighted average of its performance over the previous three years (once the data is available).

INTERACTION WITH OTHER POLICIES AND REFORM INITIATIVES

156 The PBRF has some obvious interactions with several other areas of policy, including:

- quality assurance of degrees and the accreditation of degree providers;
- charters, profiles and portfolio reviews; and
- other funding delivered through the Integrated Funding Framework.

157 It will be important that the relevant policies and agencies operate in a coherent and consistent manner. It would be expected, for example, that quality assurance agencies would take into account PBRF quality evaluations when reviewing degrees or degree accreditations, particularly where poor research quality or low levels of research activity had been identified at that provider. Agencies could also link the frequency of their quality audits to the level of research quality revealed by the PBRF.

158 Similarly, it will be important that the TEC takes PBRF quality evaluations into account when negotiating profiles for degree-granting providers and undertaking portfolio reviews. The Working Group is keen to see the TEC introduce robust approaches to managing research and research training through Part B of profiles. As for individuals' evidence portfolios, providers should report research outputs in their profiles according to a common format, grouped by type (e.g. journal article, chapter, creative work, etc) and ordered to distinguish peer-reviewed from non-peer reviewed outputs.

TRANSITION AND IMPLEMENTATION

159 A key challenge in transition is that the PBRF will introduce both a new evaluation system, which will reveal information about quality that has not been previously available, and a new funding system based on evaluations of quality.

160 Some aspects of the transition have been covered earlier in this paper. For example, the Working Group proposes that the quality evaluation exercises run on a three-yearly cycle at first, moving later towards a six-year cycle. This would allow the development of good practice in performance evaluation, and acknowledges the need to learn from experience in the first peer review round.

161 Another factor in transition is how quickly the funding shifts from the current EFTS-based system to the new performance-based system. The Government's objective is that all funding is allocated according to the new PBRF formula by 2007. At the least, it is expected that any new funding would be allocated via the PBRF formula.

162 The Working Group considered alternative transition profiles. Some stakeholders suggested that only the new funds should be allocated on performance evaluation criteria in the first three years. The Working Group rejected the option of running the first evaluation round without any funding implications, on the grounds that this would be demoralising and costly, and could undermine the credibility of the exercise.

163 Given these points, the Working Group's recommendation is for a funding transition based on the following table (the percentages in the third column refer to the share of the total [i.e. current] funding):

Year	Funding on EFTS Formula	Transferred Funding on PBRF formula	New funding on PBRF formula	Funding through PBRF
2003	100%	0	0	0
2004	90%	10%	\$10m	\$21.4m
2005	80%	20%	\$10m	\$32.8m
2006	50%	50%	\$20m	\$77m
2007	0%	100%	\$20m	\$134m

164 Under this proposal, institutions would have a reasonable period of time to adjust to the implications of the PBRF evaluation before significant amounts of funding are put "at risk". At the same time, it gives a strong signal that funding is to shift towards quality. The Working Group proposal is that the allocation for 2004-2006 be stable in the sense that it is based on the three funding elements as measured in 2003. Following the second evaluation in 2006, the fund would start to adjust annually based on changes in the research income and degree completions measures (measured in terms of three-year rolling averages).

165 Some concerns were expressed about greatly increasing the transfer of EFTS funds in 2006. By this point, any flaws in the system from the 2003 round would have been clearly identified and use of flawed information could undermine the credibility of the system. However, others felt that the 2003 process (with external review of a higher proportion of the nominated outputs, and the role of the overview panel) should provide high-quality judgements. Another suggestion was that funding adjustments in 2005 and 2006 could be based on changes in the research degree completions or external research income measures (although this would reduce the stability of the fund).

166 It was also acknowledged that the government could choose to change the transition process

later on, if it wished. The TEC would also be considering the impacts of policy changes on providers' overall income.

167 One issue is the extent to which current funding levels are put "at risk" during the introduction of the PBRF. The current absence of robust information about quality (which will be revealed through the first and subsequent peer review rounds) means that it is difficult to predict what impact the new formula will have on institutions.

168 One suggestion has been that in the early years of PBRF implementation, existing funding would be stabilised in some way, limiting the extent to which any provider would lose funding from current levels. Such an approach would provide a buffer against any anomalies in the first evaluation round. However, it might also mean that funding moves towards quality at a slower rate, with potentially reduced incentives to improve performance.

169 The Working Group is not recommending any specific "dampening" mechanism, but notes that the Government could introduce a measure of this sort if it were necessary. It will be important, immediately following the first evaluation round, to model the system-wide implications of the fund, and to identify any impacts which would make it difficult for institutions to invest appropriately in raising quality. The Working Group has recognised that bigger, broader-based institutions will be better placed to cross-subsidise and adjust than smaller providers.

170 A major transition issue beyond funding is how the TEC, the Ministry of Education and other research funders will react to information that reveals that substantial proportions of disciplines lack the support of research activity.

Evaluation process in 2003

171 The Working Group has considered an indicative timeline for introduction of the PBRF, with an evaluation exercise in late 2003.

172 The Working Group has also noted the concerns raised by some institutions that the proposed implementation path involving an evaluation in 2003 is too rapid – in particular, if there is to be adequate preparation for the peer review process. The general view of the Working Group is that the timeframe is tight, but achievable provided that early information can be made

available to institutions, with the panels set up in early 2003.

173 The Working Group has noted that the TEC now needs to work on the details of the timeframe and process required for setting up the peer review system and panels. Indicative timetables will be prepared shortly, including a census date, submission deadlines, and other relevant matters.

UNDERSTANDING AND MANAGING THE IMPACTS OF THE PBRF

174 As noted above, the Working Group agreed that a key test for an appropriate PBRF model is that the purposes are achieved, potential negative effects are identified, and provisions made to mitigate them. In working through the details of the PBRF model, the Working Group has considered carefully the potential impacts, and the areas of concern raised by stakeholders.

175 The key issues identified through the consultation process were:

- impacts on new and emerging research areas and researchers;
- impacts on incentives to engage in “risky” research;
- impacts on teaching;
- impacts on academic contributions to the community and administration;
- implications for Māori and Pacific research;
- impacts on research degree students;
- impacts on the academic labour market;
- implications for women;
- impacts on collegiality and collaboration;
- implications on some disciplines of publicly revealing the distribution of quality;
- impact of the ‘learning curve’; and
- potential disincentives to increase quality.

New and emerging research areas and researchers

176 It has been suggested that, under the PBRF, providers might not classify emerging researchers or researchers in new fields in Categories A, B, or C, due to the relatively poor financial rewards and the comparatively poor ‘track records’ of such individuals. By being placed in Category D, these researchers would effectively be considered research-inactive for the purposes of the PBRF, which could have a negative impact on their careers and morale. Other stakeholders expressed concerns that the peer review panels would not be appropriately constructed or knowledgeable to appropriately judge the quality of research in new and emerging fields.

177 In recommending that the PBRF focus primarily on rewarding and encouraging excellence, the Working Group was explicitly recognising that the PBRF can not be expected to meet the needs of both our top researchers and those who are just beginning their careers. Although the Working Group looked at a range of measures to reflect emerging researchers, it ultimately concluded that including such measures could:

- risk sending mixed and confusing policy signals to the sector; and/or
- spread limited resources too thinly to appropriately support either excellence or emerging researchers.

178 The Working Group was fully aware of the importance of emerging researchers to New Zealand’s future, and of the need to provide support, career structures, and resources for them. However, the Working Group considers that such support and resources would best be provided through alternative mechanisms.

179 That said, the Working Group does consider that there are aspects of the PBRF which may assist emerging researchers. For example, although the financial rewards for staff in Category C are likely to be modest, there would appear to be little benefit for a provider in not placing potentially research-active staff at least in Category C for external evaluation.

180 In terms of emerging research fields, the PBRF includes a number of features that may help to appropriately reveal and reward quality. These include:

- the broad definition of research;
- broad panels, covering a range of disciplinary expertise;
- the ability to cross-refer evidence portfolios to more than one panel;
- the role of the overarching peer review panel; and
- the ability to call in special advisers.

181 Above all, the PBRF will evaluate excellence based upon a wider range of criteria than just research outputs. Although the peer review panels will, in some cases, directly assess outputs, their final judgements will be based on a range of evidence and individual characteristics.

Impacts on incentives to engage in “risky” research

182 It was suggested that the focus in the quality evaluations on research outputs may discourage long-term research of a highly speculative nature and encourage researchers to stick with “safe” areas of investigation (i.e. that which is more likely to lead to the production of assessable outputs).

183 One response to these concerns is to point out that the evaluation system is supposed to look at the overall characteristics of a researcher, rather than just their outputs. However, outputs are important, in the sense that where peer review panels decide to directly verify an individual’s evidence portfolio and provisional quality score, they will do so by looking at nominated outputs and related evidence.

184 Any potential perverse incentives could be controlled by lengthening the assessment period (that is, the time period from which researchers can draw outputs to submit for evaluation). If the assessment period does not match the frequency of peer review cycles, there is a possibility that the same output could be submitted for evaluation more than once. However, this could be managed through a relatively straightforward audit process.

185 On balance, the Working Group decided not to extend the assessment period, on the grounds that the six-year period proposed for the PBRF is

generous by international standards, and that the overall evaluation process is broader and more inclusive than a review of outputs. However, the Working Group agreed that the TEC and the Ministry of Education should monitor the effects of the PBRF, to ensure that more “risky” or innovative research is not being driven out.

186 The Working Group noted that there is little evidence to suggest that the current EFTS-based funding system provides much support or incentives for long-term speculative research. There are also tools in Vote: Research, Science and Technology (such as the Marsden fund) which can support more speculative research.

Impacts on teaching

187 The PBRF will provide strong signals about the importance of research, through:

- the publication of information about the relative quality of researchers; and
- rewarding providers that have higher numbers of research-active staff.

188 There might be incentives for providers to move academic staff on to research contracts at the expense of teaching, or to shift the burden of teaching onto technicians. Some stakeholders considered that these incentives, and the removal of degree top-ups for undergraduate degrees, might lead to the divergence of teaching and research. Other stakeholders have questioned whether the focus on quality reporting for researchers, but not for teachers, may undermine the standing of teaching.

189 It is possible that some providers may feel encouraged to move staff onto research contracts. However, the incentives for this may be relatively small, since PBRF funding will only make up a relatively small proportion of a provider’s total public funding. The rewards for increased numbers of research-active staff are therefore unlikely to be large, except where the staff member achieves an A or B quality score.

190 The quality categories will allow, to some degree, evaluation of a staff member’s contribution to the research and learning environment. And the PBRF quality reporting systems will help reveal the extent to which academic units are meeting their legal obligation that degrees be “taught mainly by people engaged in research”. However, the Working Group acknowledged that some work may be required

to ensure that appropriate action is taken, where legislative obligations were not being met. A review of quality assurance arrangements will be commencing shortly, which may cover this issue.

191 Impacts on the standing of teachers are harder to predict or control. Most provider funding will continue to be generated by tuition (i.e. the student component and student fees), so there should be relatively strong incentives to maintain a focus on teaching. However, teaching quality will not be publicly reported in the same way as research quality. The government has introduced Tertiary Teaching Awards, but these are designed primarily to reward the very best teachers. It may be worth including “the impact of the PBRF on teaching” as a topic for investigation in the PBRF review, or for ongoing monitoring.

192 Should the PBRF actually have negative effects on teaching, the Working Group was strongly of the view that the solution should be to strengthen the information, accountability and rewards for quality in teaching and learning, rather than dilute the focus on quality in research. The upcoming introduction of a performance element in the student component may provide the means to improve information and accountability for quality in teaching.

Impacts on academic contributions to the community and administration

193 Comment on performance-based research funding models overseas suggests that there may be disincentives for academics – particularly senior researchers – to contribute to community activities and community development, or to administration within their provider.

194 The Working Group noted that hard evidence to support these claims is somewhat scarce. Nevertheless, it was recognised that the higher degree of scrutiny created by the PBRF and the increased (and desirable) incentives for performance will lead some people to focus on research over other activities. Where this leads to better clarification of roles and expectations for staff, this development could be positive.

195 However, the Working Group would be concerned if academics and institutions significantly reduced their involvement with the community. The general thrust of Government policy is to encourage greater linkages between the tertiary

sector and external stakeholders, and the PBRF is designed to promote vital, high-quality research environments that “are actively engaged with relevant communities”.

196 The Working Group recommends that any effects of the PBRF on provider engagement with the community, or on the contribution of academics to administration within their provider, be monitored.

Implications for Māori and Pacific research

197 The Working Group recognised the issues raised by the tertiary sector about the implications of the PBRF for Māori and Pacific research and the development of Māori research capability. Although the PBRF is not specifically set up to address these issues, the Working Group acknowledged the need to ensure that the PBRF design fully recognises quality in Māori and Pacific research, and avoids discouraging the development of Māori and Pacific research capability.

198 Māori research was seen to encompass research into things Māori, and research conducted according to Māori methods of research and subscribing to Māori ways of knowing. It could also – but not necessarily – include research conducted by Māori; and/or research conducted for Māori (for example, for a Māori audience).

199 Stakeholder issues considered by the Working Group included:

- the need for Māori and Pacific development and advancement to be supported adequately by high-quality research.
- the diverse nature of Māori research and the strong basis in action-based research, and collaboration with communities and end users.
- the need for the PBRF to reflect the fact that quality in Māori research is often manifested by stakeholder satisfaction.
- the fact that Māori and Pacific research has some areas of existing excellence, but is also a developing area with a relatively high proportion of new researchers. There are concerns that the PBRF's focus on past performance might disadvantage Māori and Pacific research, especially in new institutions such as the wananga.
- the concern that rationalisation or concentration of current degree-level programmes

- could impact adversely on access for Māori students to higher-level learning (unless collaboration occurs, allowing continued access to regionally-based degree programmes with an adequate research base.)
- the concern about levels of current provider investment in Māori and Pacific capability-building, and the potential for the PBRF signals to discourage rather than encourage further investment in Māori and Pacific research capability.
 - the fact that the demands placed on many Māori and Pacific staff to contribute to capability development in their own institutions, and to contribute to iwi and community initiatives, can reduce the time they have available to engage in research.
- 200 The Working Group considered that the following aspects of the PBRF's design should address the main issues identified in sector consultation.
- 201 First, the emphasis of the PBRF on quality was important. Māori and Pacific interests and capability development will be best supported by high quality research and learning environments. Working Group members noted that Māori and Pacific students need access to high-quality learning opportunities, and good information about where quality lies.
- 202 Second, the overall nature and operation of the PBRF would be guided by a set of principles, which include the need to be mindful of New Zealand's bicultural nature and the special role of the Treaty of Waitangi, and the need to appropriately reflect and include New Zealand's diverse population.
- 203 The broad definition of research should encompass the wide variety of activities which Māori and Pacific researchers have argued form part of their research.
- 204 The evaluation of quality via assessment of researcher contributions is broadly defined, and should generally be able to account for the variety of ways in which Māori and Pacific researchers make research inputs to iwi-based and community initiatives. Measures of impact and uptake could be included in a researcher's evidence portfolio as esteem indicators.
- 205 Experts on Māori research would be involved in the peer review process through a Māori Knowledge and Development panel. The panel would directly evaluate Māori researchers, and (where appropriate) provide advice to other panels where the research being evaluated had a Māori focus. The peer review panels will also be supported by guidance from an "esteemed body" of Pacific researchers.
- 206 The growth of Māori and Pacific research capability would be encouraged in the PBRF by the recommendation in paragraphs 153-4 that an equity weighting of 2 be added to research degree completions by Māori and Pacific students for the first two or three evaluation rounds. Extra emphasis will also be given in the quality evaluations (through the quality descriptors) to contributions made by academic staff to developing Māori and Pacific researchers.
- 207 However, the Working Group also agreed that there was a need for additional measures to support the development of Māori and Pacific research capability beyond the PBRF. Key inputs to this development are adequate investment and support. Effective targeting of the Strategic Development Fund is one option, provided that adequate resources are available. Charters and profiles will have a significant influence on the strategic choices made by institutions. The Working Group recommended that the TEC apply charters and profiles rigorously, to ensure that degree-granting providers are adequately investing in, and supporting, the growth of Māori and Pacific research capability.
- 208 Quality assurance agencies, such as the New Zealand Universities Academic Audit Unit, could assist capability development by evaluating the quality of supervisory practice for Māori and Pacific research degree students. The Working Group also noted that the Health Research Council is developing strategies to develop Pacific research capability, and considered that there could be merit in the other public research funding agencies applying these strategies and frameworks.
- 209 The Working Group also recommended that the TEC, in consultation with the Ministry of Research, Science and Technology, prepare a Best Practice guide, to assist providers in developing strategies to increase and improve support for Māori and Pacific research capability.
- 210 Careful consideration of strengths and investment needs, and a willingness to collaborate, should help to ensure that reasonable access is maintained to degree level programmes in the

regions – while also ensuring that access is available to programmes with sound underpinning research.

- 211 Working Group views on the general issue of supporting emergent research capability are outlined elsewhere in the report.
- 212 The Working Group noted the views expressed about the role that taught postgraduate programmes play in building Māori research capability, but did not see this as an overriding factor in determining the definition of postgraduate degree completions.
- 213 Transition arrangements for the PBRF will be important in allowing institutions to react to the first round of evaluations, and to build up quality. The Working Group noted the need to monitor with care the impacts on key institutions, including wananga.

Impacts on research degree students

- 214 Some stakeholders questioned whether the weighting for Doctorates should be set at 4 rather than 3, on the grounds that (a) PhD students can currently generate up to 4 EFTS worth of funding; and (b) comparable systems in Australia provide a weighting of 4.
- 215 Some concerns were also expressed that the shift in funding from enrolments to completions may encourage providers to:
- focus on enrolling those students who are more likely to complete within the expected time; and
 - exclude those who are less likely, due to personal circumstances (e.g. Māori students, who are more likely to study part-time).
- 216 The Working Group considered the issue of increasing the weighting for Doctoral completions, but concluded that such a move was not necessary. The weightings for research degrees are not intended to represent a desired completion time; they are designed instead to establish a reasonable funding differential between a Masters degree and a Doctorate. From this perspective, the PBRF weightings are actually more generous towards Doctorates than the Australian Research Training Scheme, where the differential between Masters and Doctoral completions is 2:4 – essentially 1:2.
- 217 The likely impact of the PBRF on research students' access and learning environment will

depend in part on the proportion of funding for research-based postgraduate students that is provided through the student component relative to the research degree completions element. This, in turn, will depend on:

- the recommendations of the Funding Category Review; and
 - the distribution (between cost categories) and number of research degree completions.
- 218 Where the proportion of funding generated by the research degree completions element is relatively high, there will be stronger signals for providers to enrol students who are more likely to complete.
- 219 Given that New Zealand appears to have fairly low completion rates for advanced research degree programmes, the Working Group considered that some greater level of selection might be a desirable outcome. However, it will be important to monitor any effects on enrolment in research-based postgraduate programmes, and the TEC may need to investigate if unusual enrolment patterns emerge.
- 220 The Working Group also noted submissions made by postgraduate student representatives, and saw some merit in their suggestion that provider eligibility to access research degree completion funds be linked (in the medium-term) to compliance with higher quality standards or a Code of Best Practice for postgraduate student support. This would help achieve the government's strategic goal of "increased breadth of support for research students and emerging researchers".

Impacts on the academic labour market

- 221 Some stakeholders questioned whether the quality gradient proposed for the PBRF would encourage providers to 'poach' or compete for staff with high scores.
- 222 The Working Group considered a number of potential gradients, including 'flatter' gradients that would reduce financial incentives for poaching and the development of a 'transfer market'. The Group also gave some thought to limiting the ability of providers to claim funding or quality scores for recently-transferred staff. However, these options were rejected on the grounds that they would reduce the ability of the PBRF to reward and encourage excellence, or might actually inhibit due concentration and the development of vital, high-quality research

environments.

- 223 Many of the incentives for poaching and transfer will be generated by the signalling effects of the PBRF. Short of not publishing academic unit quality scores – which would act against the goal of improving the quality of information on research output – there may not be much that can be done to control these effects.
- 224 Upon reflection, the Working Group considered that some degree of transfer is desirable, since it assists in concentrating expertise and enhancing conditions and salaries for researchers. Therefore, transfers could improve the attractiveness of New Zealand’s research providers to (current and future) local and international talent. However, it was acknowledged that the implications of talented staff moving away from some providers would need to be carefully monitored by the TEC.

Impacts on women

- 225 Analyses of the UK RAE suggest that women are less likely to be put forward for assessment, because they tend to undertake more teaching and pastoral work at the expense of research, and devote more time to family commitments. Some stakeholders questioned whether the PBRF might create similar dynamics in New Zealand.
- 226 The PBRF is based primarily on performance, and those who have had more opportunities to achieve will probably do well. However, as noted above, peer review panels will have the flexibility, when placing staff in categories, to take into account justifiable extenuating circumstances (such as maternity or sick leave, fewer than six years’ experience, etc). Moreover, the peer review decisions will be based primarily on judgements of quality, not productivity. It will therefore be possible for people with lower levels of outputs, but high quality, to be recognised and rewarded.
- 227 In addition, as with new and emerging researchers, it is expected that the increased scrutiny put on provider behaviour by the TEC, and the more explicit statement of government’s expectations in the Tertiary Education Strategy, will help reduce disparities in opportunity for women.
- 228 The TEC will examine provider profiles for their equal employment opportunity strategies and will assess provider performance against these

strategies. Nevertheless, it will be important to closely monitor any effects of the PBRF on women.

Impacts on collegiality and collaboration

- 229 Some stakeholders have questioned whether the focus on the evaluation of individuals’ outputs might discourage collaborative research and collegiality.
- 230 Although the PBRF quality evaluation will involve the direct assessment of outputs in some cases, it is designed to evaluate a number of activities and contributions to an academic unit’s research environment. These include collaborative activities and work. Other aspects of the PBRF, such as the external research income element may also provide some incentives for collaboration.
- 231 In addition, while the Working Group does not want to discourage collaboration, in the context of the PBRF, collaboration is of value where it enhances quality and improves research (and therefore learning) environments. Encouraging collaboration for collaboration’s sake may not necessarily be desirable.

Implications on some disciplines of publicly revealing the distribution of quality

- 232 It is possible that substantial proportions of some disciplines will be revealed through the PBRF as lacking the support of research activity. Providers revealed to be offering degree programmes without underpinning research may choose to close these programmes, instead of increasing the level of research activity and quality.
- 233 The Working Group acknowledges that this is a risk, but does not consider that this is a reason to modify, or diverge from, the recommended PBRF model. Learning programmes that lack a research base should not have been approved as “degrees”, and the long-term interests of students, industry and the community at large are not well served by preserving such programmes.
- 234 Where the loss of provision poses a threat to the achievement of strategic goals or nationally-important areas of learning, the TEC will need to manage the relevant providers carefully through the profile negotiation process and may need to invest to lift the providers’ research performance.

Impacts of the 'learning curve'

235 Moving from the current EFTS-based funding model to the proposed PBRF model will require considerable adjustment and learning by both the sector and government. There is a possibility that some researchers or academic units may be inappropriately scored, and that this may have negative impacts on some providers (e.g. provoking undesirable or 'knee-jerk' closures of programmes and/or departments).

236 It will be important to factor the 'learning curve' into the implementation of the PBRF. Specifically, the TEC will need to closely monitor any provider responses to the PBRF, and catch any undesirable behaviour at the profile negotiation stages.

237 In terms of ensuring consistent and credible quality judgements,

- peer review panels would directly assess a higher proportion of outputs in the first few rounds of the PBRF; and
- the overview panel would moderate a higher proportion of quality scores in the first few rounds.

238 As noted in paragraph 79, the operation of the PBRF would be thoroughly reviewed after the first evaluation round, with the aim of informing and improving subsequent rounds.

Potential for disincentives to improve quality

239 Concerns have been expressed that:

- if the total PBRF is not indexed to inflation, the real rewards – and incentives – for quality will reduce over time. Moreover, if the student component is indexed, but the PBRF is not, the relative incentives to engage in research will reduce;
- if the quality-assessment element of the PBRF is not indexed to reflect improvements in quality, disincentives may be created for improved quality; and
- if the research degree completions element of the PBRF is not indexed to reflect increases in the number of completions, the amount of funding per-completion will fall.

240 Recent government practice has been to increase tuition subsidies to reflect changes in the CPI. The Working Group considers that the same principle should apply to the PBRF, and

recommends that the government adjust the funding for the PBRF each year to ensure that, at a minimum, the real value of the fund is maintained over time.

241 Experience with the British and Hong Kong Research Assessment Exercises suggests that improvements in evaluated research quality can be expected from the PBRF. If these improvements in quality are not supported by additional funding, there is a risk either of reduced incentives for excellence or a loss of capability.

242 One response could be to increase selectivity, by creating more (and more finely-grained) quality categories and targeting funding towards the very top researchers. However, this approach would still mean reductions in funding for some high-quality researchers and their potential loss from the system. Moreover, introducing a very high degree of selectivity could also prove counter-productive, by discouraging excellence or demotivating some staff.

243 The Working Group therefore recommends that the government adjust the overall level of funding allocated to the PBRF after each quality evaluation round to reflect changes in the assessed quality of research being undertaken in the tertiary sector. In order to maintain the incentives and rewards for quality, adjustments should also take into account the overall size of the PBRF-eligible sector (with particular attention being given to changes in the number of research-active staff on a FTE basis and the number of research degree completions).

244 The fact that the research degree completions element of the PBRF may only generate a certain amount of funding per-completion does not mean that an institution may not allocate more funding to research degree students. PBRF funding will be allocated as a bulk grant, which providers can use as they see fit. However, it is acknowledged that the different funding elements of the PBRF may send different signals to providers. This issue could be managed by the recommended adjustment outlined in paragraph 243.

RECOMMENDATIONS

The Performance-Based Research Fund Working Group recommends that:

Aims and roles of the PBRF

- a The primary focus of the Performance-Based Research Fund (PBRF) be to reward and encourage excellence.
- b “Excellence” as a researcher be interpreted to include all of the following activities:
 - i. the production and creation of leading-edge knowledge;
 - ii. the application of that knowledge;
 - iii. the dissemination of that knowledge to students and the wider community; and
 - iv. supporting current and potential colleagues (e.g. postgraduate students) in the creation, application and dissemination of knowledge.
- c Excellence be measured by a combination of external peer review, research degree completion and external research income indicators.
- d The PBRF promote the development of lively and productive research cultures, which produce high-quality research, are attractive and effective learning environments for students, and are actively engaged with relevant communities.
- e The PBRF avoids “undue concentration”, which is a level of concentration that either:
 - i. is not sufficient to support the development of vital, high-quality research environments; or
 - ii. is so extreme that it does not allow the retention of some smaller areas of excellence, or undermined integration of, and collaboration between, the overall tertiary sector.
- f The operation and implementation of the PBRF be guided by the following principles:
 - *Comprehensiveness*: the PBRF should appropriately measure the quality of the full range of original investigative activity that occurs within the sector, regardless of its type, form or place.
 - *Respect for academic traditions*: the PBRF should operate in a manner that is consistent with academic freedom and institutional autonomy;
 - *Consistency*: evaluations of quality made through the PBRF should be consistent, across the different subject areas and in the calibration of quality ratings against international standards of excellence;
 - *Continuity*: changes to the PBRF process should only be made where they can bring demonstrable improvements that outweigh the cost of implementing them.
 - *Differentiation*: the PBRF should allow stakeholders and the government to differentiate between providers and their units on the basis of their relative quality;
 - *Credibility*: the methodology, format and processes employed in the PBRF must be credible to those being assessed;
 - *Efficiency*: administrative and compliance costs should be kept to the minimum consistent with a robust and credible process;
 - *Transparency*: decisions and decision-making processes must be explained openly, except where there is a need to preserve confidentiality and privacy;
 - *Complementarity*: the PBRF should be integrated with new and existing policies, such as charters and profiles, and quality assurance systems for degrees and degree providers; and
 - *Cultural inclusiveness*: the PBRF should reflect the bicultural nature of New Zealand and the special role and status of the Treaty of Waitangi, and appropriately reflect and include the full diversity of New Zealand’s population.

Participation in the PBRF

- g All New Zealand-based degree-granting tertiary education providers, and all subsidiaries that are wholly-owned by a New Zealand-based degree-granting tertiary provider, be evaluated by the PBRF.
- h All academic staff be included in the PBRF if they:
 - **EITHER** are employed on the census date by a degree-granting tertiary education provider or eligible subsidiary under a contract of salaried employment with a duration of at least one year;
 - **OR** have been employed on the census date by a degree-granting tertiary education provider or eligible subsidiary for at least one year under one or more contract(s) of salaried employment; and
- i. they are employed for a minimum of one day a week on average or 0.2 FTE over the period of the entire year; and
- ii. their employment functions include research and/or teaching degree-level programmes.
- i All eligible staff be counted when quality scores are calculated for subject areas and academic units.
- j Academic staff who transfer between tertiary providers during the 12 months preceding the census date be able to be submitted by both their former and current employing provider.
- k Academics who are salaried employees of more than one provider on the census date be able to be submitted by each relevant provider.
- l Transferring and shared staff be counted only in relation to the relevant proportion of their contribution on a FTE basis for each provider for the purposes of determining quality ratings for subject areas/academic units and funding allocations.

Peer review of researchers by external panels

- m The evaluation of researcher quality in the PBRF be the responsibility of external peer review panels, which are made up of experts in their fields.
- n There be 11 external peer review panels, and one overarching peer review panel comprised of panel chairs, which would moderate the evalua-

tions of the 11 subject-based panels.

- o The 11 external panels be:
 - Humanities and Law
 - Social Sciences and other Cultural/Social Studies
 - Education
 - Physical Sciences
 - Biological Sciences, Agriculture and Environmental Studies
 - Mathematical and Information Sciences and Technology
 - Engineering, Technology and Architecture
 - Health and Medicine
 - Management, Commerce, Business Administration and Marketing
 - Creative and Performing Arts
 - Māori Knowledge and Development
- p Where appropriate, Māori members be included on all the peer review panels.
- q The TEC convene an “esteemed body” of Pacific researchers to define excellence in Pacific research and provide guidance to peer review panels/expert advisers on Pacific research.
- r The TEC select peer review panel members to ensure:
 - an appropriate ethnic and gender balance;
 - that the panel has the knowledge and expertise necessary to make expert, dispassionate and reliable judgements about quality against international standards, across the range of disciplines within its coverage;
 - significant membership by international experts (ideally at least 25% across the panel system as a whole)
- s The PBRF panels be included in the TEC’s comprehensive and integrated system for selecting and convening panels.
- t The quality evaluation process place eligible staff into one of four categories – A, B, C or D. Category A would signify researcher excellence at the highest levels, and Category D would represent research activity or quality at a level which is insufficient for recognition by the PBRF.
- u The categories have generic descriptors, outlining the characteristics of researchers at the various levels of quality. Peer review panels could develop guidelines and working methods,

outlining how they would interpret the descriptors within the context of the disciplines they covered.

- v The quality evaluation process have two steps;
 - first, eligible providers would internally review their academic staff and provisionally place them in a quality category, in accordance with the generic descriptors;
 - the relevant peer review panel would either confirm the provisional category or classify the individual into a new category.
- w Over time, and where appropriate, more weight will be placed upon the categories nominated by providers. External panels will then play more of an audit role, rather than directly assessing research outputs.
- x The peer review panels evaluate researchers against the individual's evidence portfolio, which must include:
 - an indication of the individual's total peer-reviewable research outputs;
 - a more detailed list of peer-reviewable research outputs produced over the assessment period;
 - a nomination of up to 4 research outputs from the detailed list, which the staff member considered are their best works;
 - evidence of peer esteem; and
 - evidence of the researcher's contribution to the development of new researchers and/or a vital high-quality research environment.

Fast track

- y A 'fast track' option be developed, whereby a staff member who had produced peer-reviewed research outputs equivalent (in terms of the Australian Department of Education, Science and Training weightings) in total to 4 sole-authored journal articles over the assessment period could be placed in Category C.
- z The outputs selected for the 'fast track' be required to meet the PBRF research definition, be appropriate to the relevant subject area, and be listed as peer-reviewed in Ulrich's directory, the ISI list, or on the Australian DEST website.
- aa The peer review panels be responsible for ensuring that the fast track process does not result in lower standards or create a situation where quantity is valued over quality of output.

Definition of "research"

- bb A new definition of "research" be adopted for the purposes of the PBRF, which is more specific and inclusive than definitions currently in use within the tertiary education sector;

Frequency of evaluations

- cc Quality evaluation of researchers through the peer review panels be conducted every six years, in the longer term.
- dd In order to ensure a managed transition, the first two evaluation rounds be conducted in 2003 and 2006, with the need for an additional round in 2009 assessed after 2006.

Reviewing the peer review system

- ee The first quality evaluation round be reviewed six months after its completion, with a focus on such issues as:
 - the administration of the evaluation exercise;
 - the selection of panel chairs and members;
 - the operation of the panel system;
 - the nature and application of the evaluation criteria;
 - inter-panel moderation; and
 - the costs of the exercise.

Reconsideration of quality ratings

- ff Provision be made for the reconsideration of individual quality ratings where:
 - the relevant provider – not individual – applies for the reconsideration;
 - the relevant provider meets the full costs of the reconsideration process; and
 - no new evidence is presented.
- gg The reconsideration process be integrated into the TEC's unified review system.

Public reporting of quality scores

- hh Quality scores be reported at the subject area level (based on a modified form of the New Zealand Standard Classification of Education detailed fields) and at the level of the academic unit.
- ii The numerical quality scores used to derive subject area/academic unit quality ratings and funding allocations be:

Quality category	Numerical score
Category A	5
Category B	3
Category C	1
Category D	0

- jj The following information about subject areas and academic level be reported for each provider:
 - i. the average score for the relevant subject area across all providers (this would not apply for reporting of academic units);
 - ii. the proportion of eligible staff that received a category A or B rating;
 - iii. the number of EFTS at undergraduate, taught postgraduate, and wholly research postgraduate levels;
 - iv. the number of research postgraduate completions;
 - v. the number of eligible staff (in FTEs);
 - vi. the proportion of academic staff who are involved in research and/or degree-level teaching; and
 - vii. the proportion of (vi) who are research active (that is, at Category C or above).
- kk Eligible providers report annually on their performance in terms of:
 - the amount of external research income gained; and
 - the number of research degree (e.g. thesis-based Masters and Doctorates) completions.
- ll Research degree completions be reported at the level of the subject area/academic unit, and that external research income be reported at the level of the provider.
- mm Only completions of research-based postgraduate degrees with a significant externally-assessed wholly-research component (≥ 0.75

EFTS) generate funding for providers.

- nn The Funding Category Review consider increasing funding for postgraduate education, particularly in light of the removal of the degree “top-ups” funding to create the PBRF.
- oo For the purposes of the PBRF, “external research income” include all cash income, both from public and private sources, in respect of externally-sponsored research conducted by an eligible tertiary education provider and/or a subsidiary that is wholly-owned by an eligible tertiary education provider. Research earnings funding from within the tertiary education sector would be excluded.
- pp All eligible forms of external research income be treated equally in the funding formula.
- qq The total amount of funding in the PBRF be divided into three elements:
 - one dependent on the quality of researchers (the Working Group provisionally recommends that 60% of the total PBRF be allocated through this element);
 - one for research degree completions (provisionally set at 25% of the total PBRF); and
 - one for external research income gained (provisionally set at 15% of the total PBRF).
- rr The proportions of funding provisionally recommended for each element (60-25-15) be reviewed after the first evaluation round, when better and more comprehensive information on the distribution of quality is available.
- ss All funding allocated through the PBRF be delivered in the form of a bulk grant.
- tt Funding to reward and encourage the quality of researchers be allocated to the provider where the teaching staff are based, rather than the provider which holds the relevant degree accreditation (except where the franchisee is not itself a degree-granting provider).
- uu The funding to reward and encourage the quality of researchers remain constant over the period between evaluations.
- vv As data allows, the funding generated by research degree completions and external research income be allocated to providers on the basis of a rolling average of their performance during the preceding three years, with a weighting of 50% for performance in the previous year, 35% for performance in the year before that, and 15% for the furthest year out.

ww Funding to reward and encourage the quality of researchers be allocated on the basis of the total number of staff in Categories A, B and C, weighted to reflect the:

- numerical quality scores of individuals within that provider;
- FTE status of those individuals; and
- cost weighting for their subject area.

xx The provisional cost weightings for the first PBRF round be:

Subject areas	Weightings
Arts, Social Sciences, Business, Accountancy, Law, Teaching	1
Science, Computing, Nursing, Music, Fine Arts	2
Engineering, Agriculture, Architecture, Audiology, Veterinary Science, Medicine, Dentistry, Specialist Large Animal Science	2.5

yy Where appropriate, the findings of the Funding Category Review inform the further development of the PBRF funding formula, and that further work be done to determine the relative costs of undertaking research in New Zealand.

zz Funding for research degree completions be allocated according to the number of completions, weighted to reflect:

- the volume of research in the programme; and
- the relative cost of the subject, based on the provisional cost weightings in (xx).

aaa An equity weighting of 2 be added to completions of research degrees by Māori and Pacific students.

bbb The equity weighting be reviewed after the second or third quality evaluation round.

ccc The PBRF allocate funding for external research income on a proportional basis (i.e. the proportion of the total external research income earned by degree-granting providers).

ddd Funding for research be shifted from the EFTS “top-ups” to the PBRF from 2003 to 2007 in the following fashion:

Year	Funding on EFTS Formula	Transferred Funding on PBRF formula	New funding on PBRF formula	Funding through PBRF
2003	100%	0	0	0
2004	90%	10%	\$10m	\$21.4m
2005	80%	20%	\$10m	\$32.8m
2006	50%	50%	\$20m	\$77m
2007	0%	100%	\$20m	\$134m

Interaction with other policies and reform initiatives

eee Providers report research outputs in their profiles according to a common format, grouped by type (e.g. journal article, chapter, creative work, etc) and ordered to distinguish peer-reviewed from non-peer reviewed outputs.

Impacts

fff Support and resources for emerging researchers be provided through alternative mechanisms to the PBRF.

ggg Any effects of the PBRF on “risky” or innovative research be monitored.

hhh Any effects of the PBRF on provider engagement with the community, or on the contribution of academics to administration within their provider, be monitored.

iii The TEC apply charters and profiles rigorously, to ensure that degree-granting providers provide adequate investment and support to grow Māori and Pacific research capability.

jjj A Best Practice guide be developed, to assist providers in developing strategies to increase and improve support for Māori and Pacific research capability.

Indexation

kkk The Government adjust the funding for the PBRF each year to ensure that, at a minimum, the real value of the fund is maintained over time.

lll The Government adjust the overall level of funding allocated to the PBRF after each quality evaluation round to reflect changes in the assessed quality of research being undertaken in the tertiary sector. Adjustments should also take into account the overall size of the PBRF-eligible sector (with particular attention being given to changes in the number of research-active staff on a FTE basis and the number of research degree completions).

REFERENCES

- Boston, Jonathan. (2002). *Designing a Performance-Based Research Fund for New Zealand: Report for the Transition Tertiary Education Commission*.
- Department of Education, Science and Training (2002a). *Institutional Grants Scheme Guidelines*.
- Department of Education, Science and Training (2002b). *Research Training Scheme: Guidelines for 2002*.
- Higher Education Funding Council for England (1999). *Research Assessment Exercise 2001: Assessment Panels' Criteria and Working Methods*.
- Higher Education Funding Council for England (2001a). *A Guide to the 2001 Research Assessment Exercise*.
- Higher Education Funding Council for England (2001b). *2001 Research Assessment Exercise: The Outcome*.
- Higher Education Funding Council for England (2002). *The Research Assessment Exercise and HEFCE Research Funding*. Memorandum to the House of Commons Science and Technology Committee.
- House of Commons Science and Technology Committee (2002). *The Research Assessment Exercise*. Second Report of Session 2001-02, HC 507
- Ministry of Education (2001). *Report of the Working Party on Charters and Profiles*.
- Ministry of Education (2002). *Tertiary Education Strategy 2002/07*.
- National Committee of Inquiry into Higher Education (1997). *Higher Education in the Learning Society*.
- Peters, Michael (2001a). *Performance-Based Research Funding Options for the Tertiary Education Sector, Part A*. New Zealand Vice-Chancellors' Committee.
- Peters, Michael (2001b). *Performance-Based Research Funding Options for the Tertiary Education Sector, Part B*. New Zealand Vice-Chancellors' Committee.
- Peters, Michael (2001c). *Performance-Based Research Funding Options for the Tertiary Education Sector, Part C*. New Zealand Vice-Chancellors' Committee.
- Sutherland, Stewart R. (2002). *Higher Education in Hong Kong: Report of the University Grants Committee*.
- Tertiary Education Advisory Commission (2001a). *Shaping the Strategy*.
- Tertiary Education Advisory Commission (2001b). *Shaping the Funding Framework*.
- Tertiary Education Advisory Commission (2001c). *Specifications of the Proposed Performance-Based Research Fund*.
- Transition Tertiary Education Commission (July 2002). *Draft Guidelines for the Development of Charters and Profiles*.
- University Grants Committee of Hong Kong (1999). *Research Assessment Exercise: Guidance Notes*.



APPENDIX 1:

MEMBERSHIP OF THE PERFORMANCE-BASED RESEARCH FUND WORKING GROUP:

Professor Marston Conder (University of Auckland) (Chair);

Professor Dame Anne Salmond (University of Auckland);

Associate Professor Pare Keiha (Auckland University of Technology);

Dr Peter Coolbear (Manukau Institute of Technology);

Associate Professor Warwick Slinn (Massey University);

Professor Steve Weaver (University of Canterbury);

Mr John Patrick (University of Otago);

Dr Tricia Harris (AgResearch and former member of the Tertiary Education Advisory Commission); and

Dr Andrew Cleland (Institution of Professional Engineers New Zealand).

Professor Jonathan Boston (Victoria University of Wellington) acted as a Special Adviser to the Working Group.

APPENDIX 2:

TERMS OF REFERENCE FOR THE PERFORMANCE-BASED RESEARCH FUND WORKING GROUP

The Ministry of Education and the Transition Tertiary Education Commission (the T-TEC) are working together to provide advice to the government on the detailed design and implementation arrangements for a Performance-Based Research Fund (PBRF). The PBRF Working Group will:

- provide advice to the Ministry of Education and the Transition Tertiary Education Commission on the detailed design of the new Performance-Based Research Fund to be implemented progressively from 2003.

Individual members of the Working Group will:

- contribute to discussions on the basis of their expertise, without representing any particular organisation or sub-sector;
- contribute to the development of advice through peer review and, by agreement, produce working papers within their field of expertise;
- where possible assist in investigating or modelling the implications of particular performance indicators, data collection systems, peer assessment systems, timeframes, etc.; and
- canvas proposals widely within their network of contacts in the sector to identify potential implementation risks and help develop robust approaches for managing these.

Objectives

The PBRF Working Group will provide advice to the Ministry of Education and the T-TEC on proposals for a Performance Based Research Fund that:

- is focussed on increasing the average quality of research and improving the quality of information on research output while underpinning the core strengths of tertiary education research and avoiding undue concentration of research funding;

- uses a combination of both performance measures and peer assessment in allocating funding - with funding to be provided as a bulk grant to providers;
- is funded primarily by way of annual transfers from the current degree top ups, with additional funding of \$5 million in 2003, \$10 million in 2004 and 2005, and \$20 million in 2006 and outyears; and
- is fully operational and incorporates all current degree 'top ups' by 2007

In addition, the Working Group will ensure that proposals:

- are as simple and straightforward as possible;
- enable a first round of indicator collection and peer review based assessment to occur during 2003 for allocation of PBRF funding in 2004;
- encourage transparency in reporting and funding arrangements;
- in so far as is possible, improve incentives for quality research output without distorting behaviours away from desirable research activities;
- minimise administration and compliance costs;
- allow for a smooth transition from current funding arrangements to new funding arrangements; and
- respect institutional autonomy and academic freedom.

Deliverables

The Working Group will produce detailed recommendations on the design and implementation arrangements for the PBRF by 30 September 2002. These recommendations will help to inform officials' advice to Ministers on the PBRF.

The PBRF Working Group's recommendations will include:

- a set of performance indicators that would measure tertiary education research performance;
- the indicators and peer assessment arrangements that would drive funding decisions;

- the arrangements for an initial collection of indicators and application of the peer review system in 2003 for funding allocations from the PBRF in 2004, and arrangements for subsequent funding years;
- a means of managing transition from the current system of degree 'top ups' to the PBRF, and in particular managing impacts on teaching and opportunities for new researchers to access funding;
- the identification of all critical interactions between the above proposals and other policies (e.g. review of funding rates)
- the identification of other implementation risks and means of managing these;
- advice on timeframes, communications mechanisms, system changes, etc. that will be required to implement the PBRF.

A first working draft of proposals should be prepared by 31 August 2002.

Timeframes & Availability

The members of the Working Group will be available for about five meetings between mid-June 2002 and the end of September 2002. Dates for all meetings will be finalised at the first meeting of the Working Group in June.

APPENDIX 3:

PEER REVIEW PANELS AND COVERAGE

Proposed panel	NZSCED narrow field	NZSCED detailed field
Humanities and Law	Human Welfare Studies and Services	
	Studies in Human Society	History
	Law	Art History
	Justice and Law Enforcement	Classics
	Language and Literature	
	Librarianship, Information Management and Curatorial Studies	
	Philosophy and Religious Studies	
Social Sciences and other Cultural/Social studies	Political Science and Policy Studies	
	Behavioural Science	
	Studies in Human Society	Human Geography
		Women's Studies
		Archaeology
		Anthropology
		Sociology
Education	Economics and econometrics	
	Other Society and Culture	
	Communication and Media Studies	
Physical sciences	Teacher Education	
	Curriculum and Education Studies	
	Other Education	
Physical sciences	Physics and Astronomy	
	Chemical Sciences	
	Earth Sciences	
	Other Natural and Physical Sciences	
Biological sciences; agriculture; environment	Biological Sciences	
	Agriculture	
	Horticulture and Viticulture	
	Forestry Studies	
	Fisheries Studies	
	Environmental Studies	
	Other Agriculture, Environmental and Related Studies	

Proposed panel	NZSCED narrow field	NZSCED detailed field
Mathematical and Information Technology and Sciences	Mathematical Sciences	
	Computer Science	
	Information Systems	
	Other Information Technology	
Engineering, Technology and Architecture	Manufacturing Engineering and Technology	
	Process and Resources Engineering	
	Automotive Engineering and Technology	
	Mechanical and Industrial Engineering and Technology	
	Civil Engineering	
	Geomatic Engineering	
	Electrical and Electronic Engineering and Technology	
	Aerospace Engineering and Technology	
	Maritime Engineering and Technology	
	Other Engineering and Related Technologies	
	Architecture and Urban Environment	
	Building	
Health and Medicine	Medical Studies	
	Nursing	
	Pharmacy	
	Dental Studies	
	Optical Science	
	Veterinary Studies	
	Sport and Recreation	
	Public Health	
	Radiography	
	Rehabilitation Therapies	
	Complementary Therapies	
Other Health		
Management/ Commerce/ Business Admin/Marketing	Accountancy	
	Business and Management	
	Sales and Marketing	
	Tourism	
	Banking, Finance and Related Fields	
Other Management and Commerce		
Creative and Performing Arts	Performing Arts	
	Visual Arts and Crafts	
	Graphic and Design Studies	
	Other Creative Arts	

APPENDIX 4:

EXTERNAL RESEARCH INCOME

The following items may be included as “external research income”:

- Grants providing a stipend to a research student and/or the cost of a student’s research degree;
- Funds provided specifically for the purpose of travel when used to enable access to a programme of research. It is expected that the researcher(s) using the funds would be active in the research programme, rather than being an observer or visitor;
- Funds supplied for clinical trials provided the purpose of the trial meets the definition of research;
- Funds that support any other part of the full costs of a research programme (e.g. support for travel to conferences directly associated with a research programme).

The following may not be included as “external research income”:

- Funding for student places provided through the student component bulk grant;
- Interest income accruing to research grants and contract research funds;
- Goods or services or cash contributions received on condition that the tertiary provider uses them to purchase goods or services from the funder;
- Capital grants, unless explicitly for research purposes;
- Income which is not earmarked by the donor for research, but which may be spent on research at the discretion of the provider;
- Income received for purposes other than research (for example, profits from workshops or fee-paying courses);
- Consultancy fees for projects that do not meet the PBRF definition of research.

An independent audit certificate would need to be provided for income data, and in this instance the assessment period would span one year.

APPENDIX 5:

GENERIC DESCRIPTORS OF QUALITY CATEGORIES

The generic descriptors of quality are intended to:

- provide a means of clarifying performance expectations for tertiary education research;
- ensure consistency of standards across the 11 assessment panels; and
- permit international benchmarking of levels of excellence.

Each panel will be expected to reference these descriptors, although they may elaborate on the descriptors in relation to their disciplinary areas in preparing more detailed guidance to institutions and staff in preparing evidence portfolios. The descriptors are not intended to be a straitjacket, but are designed to enable panels to reveal comparable levels of excellence in whatever form this excellence is expressed and wherever it occurs.

Assessment of each staff member against the generic descriptors will be undertaken in a holistic manner by panels and individual panel members. It should be noted that the assessment is not solely related to research outputs, but is an assessment of the overall contribution of a staff member to tertiary education research and the transfer of this research to teaching and learning. This assessment is, therefore an integrated appraisal of the overall contribution of the staff member to:

- research outputs within the institution;
- the research environment of the institution;
- research training in the institution;
- advanced degree teaching and learning in the institution that is a result of their research activity; and
- the wider discipline, to knowledge creation and research impact and uptake.

Each of the categories has:

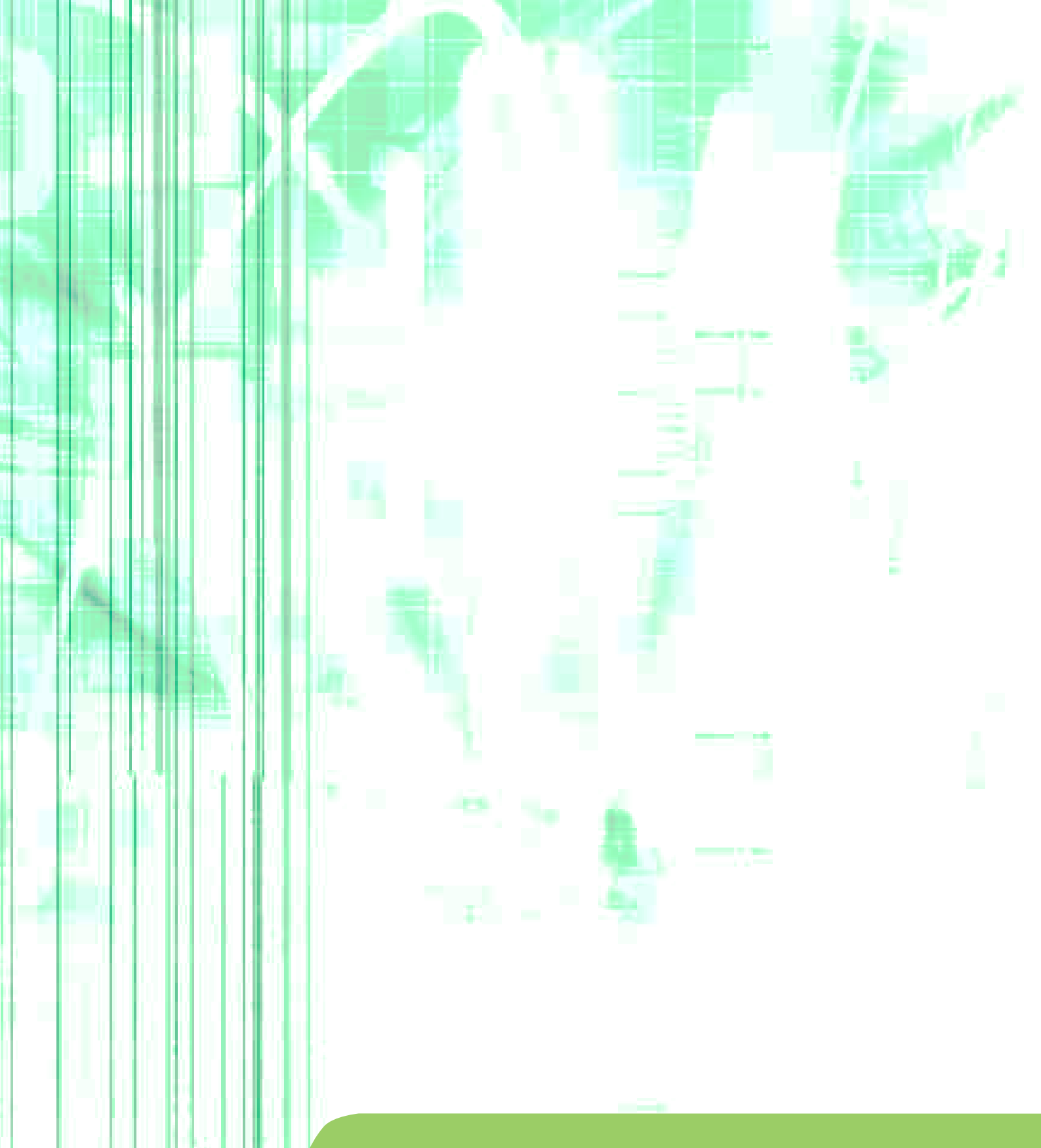
- a level of research excellence (A, B or C; with A being the highest category);
- a descriptor (which describes the level of excellence for the category); and
- evidence indicators (which form the basis for assessment and for construction of evidence portfolios).

The evidence indicators are loosely grouped by research output, impact and uptake factors, peer esteem factors, and contribution to research training. It should be noted that there are no weightings implicit in this ordering.

Descriptor	Conforming to a category characterised by some or all of:
<p>Highly original or innovative research that ranks with the best of its kind in the world and is esteemed by the international academic community.</p>	<ul style="list-style-type: none"> • Research outputs that are exemplary in their field, demonstrating the highest quality of intellectual rigour, imaginative insight or methodological skill • Research outputs that reshape existing methodological or conceptual frameworks and/or lead to significant new applications, policies or practices • Research outputs published in peer reviewed journals (or equivalent) that are regarded internationally as being of world-class excellence • Presentations, performances, designs or exhibitions that are regarded highly internationally and are positively reviewed in terms of their impact • Reviews of the researcher’s outputs by internationally esteemed researchers or commentators on research outputs acknowledging world-class quality (e.g. review articles or professional comments on artistic performances, designs) • Favourable citations of the researcher’s outputs [or work] by internationally esteemed researchers • The research output results in significant impact or uptake in a manner that demonstrates that the research ranks with the best of its kind in the world (e.g. further research activities, patents, products brought to market, business formation, royalties, changes in professional practice or iwi or government policy, etc.) • Esteemed international prizes or awards related to research output • Fellowship(s) of leading learned societies and academies • Research Fellowship(s) of prestigious international institutions • Membership(s) of editorial panels of top-ranked international journals • Invited as keynote speaker to prestigious international academic conferences/events • Membership(s) of an internationally renowned collaborative research team • Membership(s) of national and international research selection panels • Appointments to significant government or industry committees • Other contributions to international debate in the discipline and/or public understanding of developments in the discipline • Research students publish (possibly in combination with academic staff) in internationally peer-reviewed journals • Esteem factors associated with research students (e.g. gaining post-doctoral fellowships internationally in departments with high research ratings or ability to attract the best students internationally within the field) • Contributions to developing new researchers (particularly Māori and Pacific researchers) and to research vitality within the institution and across institutions • Research leadership at an international level (e.g. leading/participating in major international research consortia)

Descriptor	Conforming to a category characterised by all or some of the following:
<p>Original or innovative research that is recognised within New Zealand or elsewhere and is esteemed by the academic community beyond the researcher's own institution.</p>	<ul style="list-style-type: none"> • Research outputs that are well researched and substantive, generating new ideas or interpretations and making a valuable contribution to existing paradigms and practices • Research outputs that are published in high quality peer reviewed journals (or equivalent) that are regarded as being of an intermediate level of excellence • Presentations, designs, exhibitions or performances that are reviewed positively and have an impact within New Zealand or elsewhere • Reviews of the researcher's outputs by esteemed researchers or commentators nationally, acknowledging high quality (e.g. review articles or professional comments on artistic performances, designs, etc) • Favourable citations of the researcher's outputs [or work] by esteemed researchers • The research output results in significant impact or uptake in a manner that demonstrates that the research has national significance (e.g. further research activities, patents, products brought to market, business formation, royalties, changes in professional practice or iwi or government policy, etc.) • Prizes or awards given within New Zealand or elsewhere that relate to research output • Membership of a national collaborative research team • Membership(s) of a professional society or similar that has restricted or elected admission • Research Fellowship(s) of esteemed institutions • Membership(s) of editorial panels of intermediate ranked journals within New Zealand or elsewhere • Invited as keynote speaker to academic conferences / events that are at an intermediate level of excellence • Membership(s) of research selection panels • Appointments to government or industry committees • Other contributions to debate in the discipline and/or public understanding of developments in the discipline • Research students under supervision publish (possibly in combination with academic staff) in peer-reviewed journals • Esteem factors associated with research students (e.g. gaining doctoral scholarships or post-doctoral fellowships in departments with good research ratings) • Contributions to developing new researchers (esp. Māori and Pacific researchers) and/or research vitality within the institution and across institutions • Research leadership at the national level

Descriptor	Conforming to a category characterised by all or some of the following:
<p>Regular application of existing research methodologies with acknowledgement by peers of sound research basis.</p>	<p>In order to facilitate ease of assessment in this category and to reduce the costs of the PBRF, a “fast track” assessment route may apply. This is not a mandatory requirement, and institutions can choose to have some or all staff assessed by means of a full evidence portfolio, with up to four research outputs nominated for detailed assessment as required.</p> <p>EITHER (applies to category C only) peer-reviewed research outputs are identified that are equivalent (in terms of the Australian DEST weightings) to 4 sole-authored journal articles; have been produced over the assessment period; meet the requirements of the PBRF research definition; are appropriate to the field, and are of peer-reviewed status.</p> <p>N.B. Peer review status is as defined in the DEST specifications: i.e. if journals are listed as peer-reviewed in Ulrich’s directory, the ISI list, or the DEST website. The Tertiary Education Commission will audit outputs to ensure that they are bona fide and all requirements are met.</p> <p>IT SHOULD NOT BE ASSUMED THAT FAST TRACK NOMINATIONS WILL AUTOMATICALLY MEET CATEGORY C AS ALL NOMINATIONS MAY BE SUBJECT TO PANEL SCRUTINY.</p> <p>OR conforming to a category characterised by some or all of:</p> <ul style="list-style-type: none"> • Publications in peer-reviewed journals or in peer-reviewed conference proceedings • Presentations, designs, exhibitions or performances that are conveyed to public audiences and are reviewed positively • Reviews of the researcher’s outputs (e.g. review articles or professional comments on artistic performances, designs, etc.) that are favourable • Appointment to committees related to research matters • Prizes, awards, etc • Letters of commendation on matters related to research output • Supervision of masters or doctoral level research students (esp. Māori and Pacific students) • Contribution to research vitality within the institution or beyond • Other contributions to the discipline. <p>N.B. All researchers may have a satisfactory evaluation if there are justifiable extenuating circumstances for not meeting the requirement for four peer reviewed outputs (e.g. new researcher of less than six years’ experience, maternity or sick leave), or if the quality is sufficiently high to offset low productivity (in which case a panel may also choose to allocate a higher rating). In some disciplines a large work (e.g. a sole-authored book or major exhibition) may be the equivalent of the four items that researchers are asked to nominate as their best.</p>



MINISTRY OF EDUCATION

Te Tāhuhu o te Mātauranga

TRANSITION Tertiary Education Commission



WHAKAWHITINGA Te Ako Pae Tawhiti