Performance-Based Research Fund Sector Reference Group review: Managing nominated research outputs

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Disclaimer:

This consultation paper has been prepared independently for the Tertiary Education Commission (TEC) by the Sector Reference Group, an external group, as part of the review of the Performance-Based Research Fund. Although the TEC is facilitating this process, the consultation paper represents the independent views and suggestions of the Sector Reference Group, and does not necessarily represent the views of the TEC.

PBRF Sector Reference Group consultation paper: Managing Nominated Research Outputs

1.   Purpose

This paper has been prepared as part of the consultation process for the 2012 PBRF assessment.

This paper:

- discusses the logistics of providing nominated research outputs to panel members
- considers some options for providing nominated research outputs to panel members in the 2012 assessment, and
- invites feedback from the tertiary sector and other interested parties on the options discussed in this paper.

Areas of discussion not included in this paper

The Sector Reference Group (SRG) is considering a number of redesign issues for the PBRF 2012 Quality Evaluation and will prepare consultation papers on each. Where particular issues overlap between papers, they will only be discussed in one.

Therefore, ensuring TEOs understand the importance of assigning new and emerging researcher status to eligible staff will be discussed as part of a consultation paper on new and emerging researchers and ensuring that TEOs accurately apply the criteria for Pacific research will be discussed as part of a Pacific research consultation paper.

2.   Aims and principles of the PBRF

In carrying out its role, the SRG for the 2012 PBRF will be guided by the aims and principles of the PBRF. The PBRF is designed to:

- increase the average quality of research
- ensure that research continues to support degree and postgraduate teaching
- ensure that funding is available for postgraduate students and new researchers
- improve the quality of 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.

The PBRF is governed 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.
- *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.
- *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.

3.   Principles of redesign

PBRF redesign work ahead of the 2012 Quality Evaluation will be based on a number of principles and considerations:

- upholding the aims and principles of the PBRF (outlined above)
- learning from the first two Quality Evaluations in order to make improvements to the design of the PBRF and the implementation of the 2012 Quality Evaluation
- drawing on relevant experience and expertise across the tertiary education sector
- exposing proposed changes to rigorous sector and expert scrutiny
- achieving as much sector agreement as possible about how the next Quality Evaluation should be conducted, and
- avoiding costly or time-consuming changes unless there are good reasons for believing they will bring significant improvements.

4.   Managing nominated research outputs: background

As part of the peer assessment process, staff members submit an evidence portfolio (EP) that provides evidence of the staff member's research outputs, peer esteem and contribution to the research environment.

Staff members select up to four research outputs that they consider to be their best works as evidence for the research output component. These four Nominated Research Outputs (NROs) are the primary basis for the scoring of the research output component of the EP and must be available to peer review panels on request. Staff members may also include up to 30 other research outputs. These items are not usually examined by panel members, but they inform the assessment of the staff member's research platform.[1]

4.1   The 2003 PBRF Quality Evaluation

PBRF Working Group

The PBRF Working Group, established in July 2002 to provide advice on the design and implementation of the PBRF, noted that each EP would include up to four research outputs that 'the staff member considered as their best works'. These NROs were not to be submitted with the EP, but were to be available to panels on request. Direct assessment of NROs would be needed for:

- academic staff who were on the 'borderline' between quality categories, and
- a random sample of staff in funded quality categories.[2]

2003 PBRF Guidelines

In the 2003 Quality Evaluation, panel members sourced NROs through the TEC. The Guidelines noted that, where possible, the TEC would source the items directly. Where this was not possible, TEOs would provide the NRO to the TEC within 5 working days, preferably electronically. Failure to do so within this timeframe would result in the item not being considered in the panel's assessment of the EP. Panel members were not required to source NROs through the TEC, but could obtain a copy of the item themselves. [3]

The expectation in the 2003 assessment was that panels would examine a minimum of 10% of NROs in the EPs that the panel was responsible for assessing. The Guidelines included examples of circumstances where direct examination of NROs might be required.[4] The purpose of examining NROs was to 'enable the panel member to check and clarify...the nature, integrity and general quality of the outputs on question'. An in-depth critical analysis was not required.[5]

Review of the 2003 PBRF Quality Evaluation

There were 5,771 EPs received for the 2003 assessment (72% of eligible staff members). These EPs contained 22,583 NROs (i.e. most staff members included 4 NROs) and 6,566 of these NROs were examined by panel members (29% of those included in EPs).[6]

The WEB Research report on the 2003 Quality Evaluation noted that most panel members examined at least 20% of NROs 'and felt obligated to do so in the interests of fairness'.[7]

[1] *PBRF Guidelines 2006*, pp.27, 41, 160.

[2] *Investing in Excellence*, p.15.

[3] PBRF: *A Guide for 2003*, p.201.

[4] ibid., pp.199-200.

[5] ibid., p.203.

[6] *The 2003 assessment*, p.32.

[7] WEB Research, p.26

The 2006 SRG established after the 2003 PBRF Quality Evaluation recommended that the minimum proportion of NROs to be examined by a panel be increased to 15 percent. The SRG considered asking for the NROs in electronic form, but the recommendation from most Panels was that a hard copy was easier for Panel members to read and consider in the evaluation exercise.

4.2   The 2006 PBRF Quality Evaluation

The recommendation for the increased proportion of NROs to be examined by panels was incorporated into the 2006 Guidelines. Other changes included an increase in the time within which TEOs had to supply the TEC with NROs requested by panel members and the removal of the statement that the TEC should source NROs directly where possible.[8]

The following information about how panel members were to select NROs for examination was included in the Guidelines:

All the NROs cited in an EP must be available to a panel on request. Examination of one or more NROs listed in an EP may be necessary to enable a panel member to form a reliable judgement about the overall quality of the RO component and to score it appropriately. Panel members select which particular NROs they want to examine.

Each peer review panel is expected to examine at least 15 percent of the NROs listed in the EPs that it is responsible for assessing.

As a rule of thumb, each assessor will review at least 15 percent of NROs from the EPs they are assigned. However, the actual proportion reviewed may vary from assessor to assessor.

Panels may examine more than 15 percent of NROs if they deem this to be appropriate and necessary.

The following list gives guidelines on the circumstances where an NRO is likely to be selected for examination:

- There is serious doubt about the appropriate score of the RO component of an EP; and, in the absence of examination of the output, there is a significant risk of an error of judgement being made (eg there is uncertainty as to whether the quality of the RO component is just above or below a particular tie-point).
- A significant proportion of NROs (and 'other' research outputs) listed in the EP are non-quality assured (and/or are confidential).
- The rigour of the quality-assurance processes is unclear to the panel member.
- There is doubt over whether a particular NRO meets the PBRF Definition of Research.
- Additional questions arise about the quality of the RO component, after the examination of a particular NRO.
- An EP has been cross-referred to another panel (in this case it may be prudent for a panel-member in the receiving panel to select one or more of the NROs for examination).

No particular type of research output (such as confidential outputs) should be excluded when considering which of the NROs to select for examination.[9]

[8] *PBRF Guidelines 2006*, p.169.
[9] ibid., pp.169-70.

The following information about how panel members were to select NROs for examination was included in the Guidelines:

Panel members will usually obtain NROs for examination through a request to the TEC secretariat. The TEC will then request the TEO to provide the NRO.

If, however, the NROs are readily available to the panel member (eg via their institution's library or electronically), the panel member is not obliged to make the request via the TEC Secretariat but may obtain a copy of the output(s) themselves.

Where the TEC Secretariat requests an NRO from a TEO, this must be received by the TEC within 10 working days of the receipt of the request by the TEO.

Where the TEO does not make an NRO available for examination within the 10-day deadline without good reason, that NRO will not be considered in the panel's assessment of the EP.[10]

The process used by the TEC to provide NROs to panel members is outlined in more detail in section 5.2 of this document.

The 2006 assessment was a partial round. Staff members who did not submit an EP had their quality category from the 2003 assessment carried over to the 2006 assessment. A smaller number of EPs were therefore submitted for assessment (4,532 EPs, 52 percent of eligible staff). These EPs contained 17,908 NROs, but a much higher proportion were examined by panels than in the 2003 assessment (c.10,500, 59 percent of those in EPs submitted).

This significant increase in number of NROs examined may have been a consequences of the removal of the dual assessment framework for the 2006 assessment (in the 2003 Quality Evaluation, TEOs assessed each staff members' EP and assigned it a quality category before submission to the TEC).[11]

TEC secretariat staff, temporary staff and the auditor managed the process of obtaining NROs for panel members. The estimated staffing cost was $55,000. Other costs (courier, space and other overheads) would place the cost to the TEC at a significantly higher value.

4.3   International comparisons

The Research Assessment Exercise in the United Kingdom provides the best international comparison for the management of research outputs to be examined by peer review panels. Each staff member nominates their best four research outputs for consideration by the subject panel. The Panel criteria and working methods notes that:

It is not expected that sub-panels will examine in detail all of the research outputs cited. Each sub-panel must, however, examine in detail a proportion which, in its own opinion, is sufficient to make an informed judgement on the quality profile of the work presented.... Each sub-panel indicates the minimum proportion of research outputs which it will examine in detail.[12]

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[10] *PBRF Guidelines 2006*, p.170.
[11] *PBRF: A Guide for 2003*, p.21.
[12] *RAE 2008 Panel Criteria and Working Methods Generic Statement*, paragraphs 34-35.

The proportion of outputs to be examined varied considerably between panels and sub-panels. For example, the Computer Science and Informatics sub-panel expected to examine at least 25 percent while the three other sub-panels in main panel F (Mathematics and Statistics sub-panels) expected to examine at least 50 percent of outputs submitted.[13] Other panels, such as the Biological Sciences sub-panel expected to examine every output submitted.[14]

For the 2008 RAE, institutions were asked to supply a digital object identifier (DOI) for journal articles where these were available if the journal article was one of the best four research outputs being considered by the subject panel;[15] no hard copy of the article had to be supplied if the DOI was provided. A hard copy of all other nominated research outputs (exceptions were made for some items) had to be supplied by the institution for panels to assess. The letter to the sector advising of the instructions for making research outputs available notes that:

Following informal feedback we have attempted to minimise the potential administrative burden on HEIs of responding to multiple requests from the RAE team to supply research outputs throughout 2008. Therefore, we are asking each institution to deposit all of the research outputs that it cites in its RAE submissions at one location on a pre-determined date.[16]

5.   Discussion of issues and concerns

5.1   Volume of NROs

The major issue with the process of supplying NROs to panel members for assessment in the 2006 Quality Evaluation was the sheer volume of NROs examined by panels and the tight time frame in which the panel assessment of EPs was conducted. The volume was significantly higher than expected and, despite a fall in the number of EPs submitted, there was a 60 percent increase in the number of NROs examined by panels.

The increase in the proportion of NROs examined by panels is probably a consequence of two changes to the assessment process. First, panels had more time to assess EPs with the submission date for EPs being 30 September in 2003 but 25 July in 2006. Panels met in November/December in both assessments. However, the time between requests from panel members and return of the NRO remained tight. Second, the dual assessment system was not used in the 2006 Quality Evaluation.

5.2   TEC process of managing NROs (2006 quality evaluation)

The process for managing NROs was:

- the TEC provided each Panel Member with an individual (personalised) EP NRO coversheet, listing all NROs for that EP (a Cognos form produced from PBRF Assessment application data)

[13] *RAE 2008 Panel Criteria and Working Methods: Panel F*, p.19.
[14] *RAE 2008 Panel Criteria and Working Methods: Panel D*, p.22.
[15] A DOI is 'an Internet-based global naming and resolution system that provides for the precise identification, retrieval and trading of digital items in the form of articles, books, images, bibliographies, supporting data, videos, charts, tables, audio, and other electronic files…that ensures persistent or permanent links to objects'. 'Digital Object Identifier', p.1, reprinted from *McGraw-Hill Yearbook of Science & Technology 2003*, online, available at: http://www.doi.org/topics/je-mh-doi-030970.pdf (28 August 2008).
[16] *RAE 2008 Arrangements for making submissions electronically and for subsequent deposit of physical research outputs*, http://www.rae.ac.uk/pubs/2007/cl/01/ (28 August 2008).

- panel members requested the item from the TEC secretariat - by selecting the NROs on their coversheet, and faxing to the TEC as per instructions
- requests were logged into the TEC's PBRF assessment system
- the TEC requested the item from the TEO and logged the request details in the PBRF Assessment system (the TEC could record several request attempts in the system
- either the TEO sent the item to the TEC by courier, or
- the TEO did not send the item to the TEC
  - the TEC recorded the non-receipt of the NRO in the TEC's PBRF Assessment system;
  - the TEC recorded that the NRO was not to be assessed in the PBRF Assessment system
  - the TEC notified the Panel Members that the NRO was not to be assessed
- the TEC logged that the item had been received into the PBRF assessment system
- the TEC photocopied the item
- the TEC sent the item to the panel member by courier
- some time later the TEC returned the NRO to the TEO.

The high demand for NROs made this process impossible to follow. Items were not copied by the TEC and they were dispatched to panel members immediately upon their receipt. This was necessary to avoid additional delays in supplying the NROs to panel members, but created difficulties in other parts of the process. The TEC was not able to track items for the purposes of retrieval and sometimes requested the TEO to supply the item more than once (when more than one panel member wished to examine a particular NRO).

Note: In 2006 the TEC's tracking of NROs improved greatly with the technology support provided. In 2003 tracking of NROs was completed using a spreadsheet and not linked to the 2003 PBRF Assessment System. Items were lost, requested more than once or not requested at all. The 2006 NRO tracking system included printable reports detailing which NROs had or had not been received in good time. The 2006 NRO tracking system was also integrated with the PBRF 2006 Assessment system through a web front-end for entering tracking and request information, and also through reporting and e-forms provided by a reporting engine over the PBRF database.

5.3   Access to electronic outputs

Inaccuracies in the NRO data in EPs and the fluidity of url addresses further compounded the burden placed on the TEC. These inaccuracies resulted in the TEC secretariat being the only avenue through which panel members could obtain some items.

Electronic copies of outputs were provided where possible. This made the process easier in some respects, but also created the complication of overloading the mailboxes of some panel members.

5.4   Outcomes of the 2006 assessment

The failure of the process placed a strain on relationships between TEOs and the TEC, made the TEC look inefficient and created the perception, as noted in the report by Jonathan Adams, that the TEC had not accorded the NROs the status they deserved. [17]

[17] Adams, p.58.

The 2006 Moderation Panel Report noted that the 'TEC's task in distributing multiple hardcopies of several thousand EPs and NROs was matched by the challenges faced by panel members in managing their individual allocations of this material' and that 'delays in obtaining NROs meant that most were not distributed to panel members until the latter part of the pre-meeting assessment period and that some were not distributed until panel meetings had started'.[18]

Other comments on the process of obtaining NROs were received from the peer review panels with almost all noting the need for better processes for the management of NROs.[19] Anecdotal comments suggest that international panel members were particularly affected by the difficulties in obtaining NROs.

5.5   Requirements of a system to manage NROs

There is little doubt that a more efficient system for enabling panel members to view NROs is needed. This system needs to:

- allow panel members to obtain NROs for examination in an efficient and timely manner
- allow the TEC to track which NROs are examined by panel members for monitoring and reporting purposes (and retrieval if necessary)
- manage paper-based and non-paper-based research outputs
- comply with copyright
- ensure that NROs are treated with the appropriate respect
- avoid duplication of existing systems
- avoid placing an inappropriate financial burden on TEOs or the TEC
- avoid the creation of unnecessary or undue workload for panel members, staff members who are submitting EPs, TEOs or the TEC
- ensure all hard copy originals (eg. books) are appropriately returned to the source TEO
- be achievable in sufficient time before the 2012 assessment, and
- have the confidence of the sector.

5.6   Parameters of a system to manage NROs

Who will require NROs?

Members of peer review panels and specialist advisors are the primary users of NROs, but they are also used by the auditors as part of the verification of EPs. Most panel members are staff at New Zealand universities and other tertiary education organisations. Other panel members include staff at Crown Research Institutes, international universities, and local and international industry and other organisations.

How many panel members will view a particular NRO?

Each EP is examined by two panel members for pre-meeting assessment and scoring.[20] Panel members select NROs for assessment as per the guidelines for their panel (and there is no

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[18] *The 2006 assessment*, p.286.
[19] Consultation paper 1, pp.19-20.
[20] *PBRF Guidelines 2006*, p.143.

requirement for the two panel members to select the same NROs for examination).[21] It is unlikely that more than two panel members would request to see a particular NRO and, in many cases, only one panel member will examine a particular NRO.

How many NROs will be examined by panel members in the 2012 assessment?

In the 2006 quality assessment, c.10,500 NROs were examined (59% of NROs in EPs submitted). However, this was only a partial round and there will be significantly more EPs submitted in the 2012 quality assessment. A ball park figure is that there will be 25-30,000 NROs submitted in 2012 (assuming no major changes to the eligibility criteria, the tertiary education workforce or participation by TEOs). At the 2003 rate of examination of NROs (29%), 7-9,000 items will be examined by panels. At the 2006 rate (59%) this increases significantly to 15-18,000 items.

There is considerable variation in the number of EPs (and therefore NROs) considered by each panel. The size of panels compensates for some, but not all, of this variation.

There were large differences in the proportion of NROs viewed by panels in the 2006 assessment (Table 1). While the Guidelines stated that a minimum of 15% of NROs should be examined by panels, seven of the 12 panels stated their intention to examine a higher proportion in the Guidelines. Information is not available about the actual number and proportion of research outputs examined by panels.

Table 1: Proportion of NROs to be sampled by panels in the 2006 assessment

Panel	Proportion of NROs to be sampled	Total NROs submitted	Estimated number examined	No. Panel members	Estimated NROs/ panel member
Biological Sciences	100%	1717	1717	15	114
Business and Economics	25%, and a higher proportion of non-quality assured outputs	2308	577	17	34
Creative and Performing Arts	As per Guidelines (15%)	1388	208	9	23
Education	As per Guidelines (15%)	1640	246	11	22
Engineering, Technology and Architecture	25%, a higher proportion of non-quality assured outputs and for EPs on the borderline of a tie-point	1217	304	16	19
Health	25%	1370	343	15	23
Humanities and Law	50%	2025	1013	21	48
Māori Knowledge and Development	As many as time constraints and availability allow (minimum 15%)	339	51+	9	6+

[21] *PBRF Guidelines 2006*, p.170.

Mathematics and Information Sciences and Technology	At least one per EP	1319	342	15	23
Medicine and Public Health	As per Guidelines (15%)	1716	257	15	17
Physical Sciences	At least 25% by at least one member of the panel	949	238	13	18
Social Sciences and Other Cultural/ Social Studies	As per Guidelines (15%)	1855	278	20	14

Over what time period?

In the 2006 assessment, TEOs submitted EPs to the TEC approximately 18 weeks before the peer review panels met. Panel members were assigned EPs and had approximately 12 weeks to assess these EPs before the panel meeting. This time period may be extended for the 2012 assessment; it is unlikely to be reduced.

What type of NROs will panel members examine?

There were 31 types of NRO submitted in the 2006 assessment. Evidence of these outputs could be provided using the following broad methods:

- published paper-based material (including printed copies of electronic-only material such as articles in e-journals, papers in electronic-only published conference proceedings)
- unpublished paper-based material (including printed copies of electronic-only unpublished material which might be accessible via web pages, institutional repositories)
- audio-visual material
- software and websites, and
- attestations from qualified bodies/individuals.

More than 75% of the NROs submitted as part of EPs in the 2006 assessment are readily identifiable as published items. Evidence of other output types can be published items (for example, exhibition catalogues) or theses, which although unpublished in their original form, are available as printed or electronic publications so the actual proportion will have been higher than 75%.

As Table 2 demonstrates, the types of research outputs varied considerably between subject panels. The great majority of NROs submitted to most of the Science panels were journal articles – the exception was the Mathematics and Information Science and Technology panel which also had a high proportion of conference papers in published proceedings. The Creative and Performing Arts and the Māori Knowledge and Development panels are atypical in the spread of NROs with

significantly more audio-visual items and, for the MKD panel, a higher number of books and chapters in books. The Humanities and Law panel had the highest proportion of books submitted as NROs.

Where could panel members obtain NROs from?

Panel members could obtain NROs from a range of sources:
- their own collections of books, journals, etc
- urls or DOIs provided in EPs although panel members would need to have authenticated and authorised access to the publications referenced by the urls or DOIs in order to access electronic copies of the publications, unless the publications were freely-available via the Internet
- libraries, databases, websites, etc in their own institutions
- libraries in other institutions via their institution's membership of the New Zealand Interloan Scheme, or in agreed cases, via the National Library's membership of the NZ Interloan Scheme
- Internet search engines (for example, Google Scholar, Kiwi Research Information Service: http://www.nzresearch.org.nz, etc) and the recently launched beta version New Zealand Libraries Catalogue (http://nzlc.natlib.govt.nz) for finding links to freely-available publications
- the TEC secretariat.

6.   Options for managing NROs in the 2012 PBRF assessment

This paper discusses three broad options for managing NROs in the 2012 assessment:
- retain the current system with some improvements and allow the Accepted Manuscript to be submitted as evidence
- require panel members to obtain copyrighted NROs from their institution's library (or the National Library) and to obtain open access NROs directly from the web where possible, with all other types of NROs to be obtained directly from TEC, or
- the TEC to provide a secure web-based capability whereby panel member can access NROs either directly (for those NROs held by the TEC) or via a hyperlink (for those NROs referenced electronically to their source).

6.1   Retain the current system with some improvements and allow the Accepted Manuscript to be submitted as evidence

The current system of panel members obtaining NROs through a request to the TEC secretariat could be retained. Improvements to the process would be required to ensure that panel members received NROs in a timely manner. These improvements might include:
- better resourcing of this part of the process by the TEC

- changing the guidelines for panels to encourage a smaller proportion of NROs to be examined
- allowing Accepted Manuscripts (NISO standard RP-8-2008), ie author's final manuscript as accepted for publication at the completion of the peer review process, to be submitted as evidence and requesting that these versions be made available electronically via institutional repositories (as accepted manuscripts are usually not subject to the same copyright restrictions)
- requiring a proportion of NROs in each EP to be available electronically.

Some of these changes may also improve the process for the other options discussed in this paper.

6.1.1   TEC resources

Six TEC Secretariat staff and four temporary staff managed the processing of NROs with the assistance of the auditor in the 2006 assessment. More staff dedicated to managing NROs may enable the TEC to provide panel members with items more efficiently.

6.1.2   Set a maximum proportion of NROs to be examined by panels

There were widely varying practices between panels in the proportion of NROs examined (Table 2). The purpose of examination of NROs is 'to enable the panel member to form a reliable judgement about the overall quality of the RO component' and is intended to be where there is a risk of not scoring the research output component appropriately (see section 4.2). It is therefore assumed that panel members will be able to form a judgement about the quality of research on the basis of the channels through which the output was disseminated and the comments provided by the staff member about the nature and significance of the output.

The proportion of NROs that panels should examine is not the subject of discussion of this consultation paper. However, it may be important to locate the discussion of setting a maximum proportion of NROs to be examined in the context of the purpose of panel members examining research outputs. The scoring instructions for panels note that the channels through which the research is disseminated may inform the assessment, but the instructions also include reference to methodology, intellectual rigour, level of innovation and contribution to the field.[22] It is difficult to see how these latter criteria could be assessed without examining any research outputs.   The proportion of NROs examined suggests that some panels were not confident that they could adequately assess research quality without examining at least one output.

It is worth noting that panel members are expected to have substantial knowledge of the subject area and they may already be aware of the research outputs in question and therefore do not need to examine them in order to judge quality (the relatively small population of academic staff in New Zealand further increases the likelihood that panel members will have seen research outputs and/or will be aware of the impact of the research).

The SRG believe that panels and panel members are in the best position to determine how many research outputs they need to examine in order to form a judgment on the quality or research presented in an EP and that setting a maximum is not appropriate.

[22] Guidelines, pp.165-66.

6.1.3   Allow the Accepted Manuscript to be submitted as evidence

In the previous assessments, it was expected that the final published version of research outputs would be supplied by the TEO to the TEC for examination by panel members. In some cases, this prevented the NRO from being easily accessed electronically by the TEC staff members responsible for supplying the copies of the NROs because of copyright issues. It has been suggested that allowing Accepted Manuscripts (NISO standard RP-8-2008), ie author's final manuscript as accepted for publication at the completion of the peer review process, to be submitted for examination would allow easier access to outputs, especially if TEOs were requested to make these versions available electronically in their institutional repositories.   (Accepted Manuscripts are usually not subject to the same copyright restrictions and therefore would be likely to be accessible to TEC staff members who would be responsible for supplying the NRO in hard copy to panel members.)

6.1.4   Requiring a proportion of NROs to be supplied electronically

The 2006 Guidelines noted that electronic formats were preferable when TEOs were supplying items to the TEC secretariat. However, there was no compulsion for TEOs to do so, and it is understood that very few did. For the next round in 2012, it may be reasonable to request that all TEOs ensure that a proportion of all NROs are available electronically (for example, at least one NRO per staff member could be a minimum, although exceptions may be needed for some panels and some EPs).

An increasing number of research outputs are available electronically via open access systems (for example, in institutional repositories, staff homepages, and open access journals) although the numbers are not yet significant enough to facilitate the required access for the TEC and the PBRF review panels.

A larger proportion of research outputs are available electronically via copyrighted systems. In order for the electronic links to copyrighted publications to be accessible via the publisher-agreed authorisation and authentication systems to the TEC and the PBRF panel members, TEC would have to take responsibility for negotiating access rights for either their staff members, or panel members directly, to the electronic versions of the copyrighted publications.

Requiring TEOs to make a proportion of NROs in each EP available electronically (for example, through a DOI link to an electronic version or a similar "handle" system as used in most NZ institutional repositories) at the same time as the EP is submitted would considerably reduce the workload of TEOs and the TEC in supplying items during the assessment period if there were a significant number of NROs available via open access systems and if the TEC had negotiated access rights to the electronic versions of the copyright publications that were available electronically.

For panels where there is a high proportion of journal articles submitted as NROs, this could potentially improve accessibility. However, for some NROs, particularly in the Creative and Performing Arts and the Māori Knowledge and Development panels, electronic formats may not be suitable for the types of research outputs produced.

Setting a requirement for a proportion of NROs to be available electronically has a number of other disadvantages:

- risks pre-selecting which NROs will be viewed by panel members
- risks staff members nominating research outputs on the basis of their electronic availability (for example, open access availability as opposed to copyrighted availability via publisher-agreed authorised and authenticated systems) rather than selecting their best works
- shows bias towards disciplines with outputs that are produced electronically or are easy to digitise
- could be costly and time-consuming for TEOs to transfer items into an appropriate electronic format, and
- likely to be costly and time-consuming for TEC to negotiate access rights to the electronic versions of all copyright publications supplied as NROs.

6.1.1 System support for tracking and managing NROs

The process for managing NROs is comprised of the following parts

- tracking and managing of NRO requests
- the physical distribution of the NROs.

Either a new application will need to be developed to track and manage the NRO requests for PBRF 2012, or the tracking system from 2006 could be improved. A cost benefit analysis of these options will commence in July 2009.

Note that the PBRF EP Manager (2006), which was the TEO front-end for EP submission, and the PBRF Assessment System, the TEC front-end for EP panel assignment, NRO management and score recording, are no longer active systems and both will either need to be replaced in their entirety, or **significantly** reworked.

Further, the management of the NRO requests and tracking of the NROs in the 2006 system was heavily embedded in the 2006 PBRF Assessment system. This may be assumed to be part of the "bigger" PBRF picture, and the costs for the assessment support piece of the design factored into that.

6.2 Require panel members to obtain NROs from their institution's library (or from the National Library of New Zealand if their institutional library is not a member of the New Zealand Interloan Scheme or they are international panel members) and to obtain open access NROs directly from the web where possible, with all other types of NROs to be obtained directly from TEC

6.2.1 Library systems

Obtaining and supplying information is the core business of libraries and they have robust systems in place to provide this service. University libraries, in particular, have extensive collections of

academic research outputs.   All libraries who are members of the New Zealand Interloan Scheme, including the National Library, also have systems for providing items to their internal and external clients when material is not held locally. These established systems could be used by panel members to obtain the great majority of NROs.

6.2.2   Open Access systems, including institutional repositories established by TEOs

As noted earlier an increasing, but still relatively small, number of research outputs are available electronically via open access systems (for example, in institutional repositories, staff homepages and open access journals).

All New Zealand universities and some polytechnics have also now established institutional repositories. At this point in time the vast majority of outputs in the institutional repositories are theses, but other types of research outputs are available and deposits of other types of material are likely to increase.

Although the majority of publications are still copyrighted, the growing open access movement amongst researchers and funding organisations has resulted in many publishers reviewing their publishing policies, particularly in relation to allowing researchers to load an electronic copy of their research output into their institutional repository, eg Accepted Manuscript.

In both the UK and Australia, services have been developed to assist researchers and librarians developing institutional repositories as to individual publisher copyright policies and self-archiving permissions: SHERPA/RoMEO (http://www.sherpa.ac.uk/romeo/index.html) in the UK, which is a JISC and Wellcome Trust funded initiative, and OAKLaw (http://www.oaklist.qut.edu.au/) in Australia, which is a DEST funded initiative, with both being operated out of universities (a similar service is not yet available in New Zealand).

As suggested earlier, by allowing Accepted Manuscripts (NISO standard RP-8-2008), ie author's final manuscript as accepted for publication at the completion of the peer review process, to be submitted as evidence and requesting TEOs to make these versions available electronically in their institutional repositories, there is likely to be a substantial increase in the amount of material available via open access by 2012.

The metadata from these repositories is harvested (in a Google-like process) to provide a single gateway to locating research publications produced at universities, polytechnics and other research institutions throughout New Zealand. This service is called the Kiwi Research Information Service (KRIS) and is located at www.nzresearch.org.nz. Users can search by author name and view a list of all research outputs loaded in the individual institutional repositories. Where the output is open access, the user can view an electronic copy of the item in the appropriate institutional repository. For outputs that are not open access, an electronic copy of the item may be available with further authentication.

The Ministry of Research, Science and Technology has recently established an Identity and Access Management Action Group for Education and Research (IMAGER). One of this Group's key tasks includes providing policy advice to the government 'on a systematic approach to interoperability

of identity and access management in the research and education sector'.[23] The goal is that researchers will be able to access data in their own institution and in other institutions through a single login process.[24] It is understood that there is considerable work yet to be done to achieve the necessary federations between individual institutional identity systems in order to achieve this outcome but, if successful, such a federation, would allow panel members from New Zealand TEOs, and potentially international panel members who belonged to an accredited federation, relatively easy access to a wide range of electronic research outputs. However, there is no certainty that a "whole of research and education sector" solution will be available for use by panel members in 2012.

6.2.3   Proposed process

A system would need to be developed that facilitated TEC's requirements while also allowing panel members to easily select which NROs they wished to examine and which parties would need to be approached for supply of those items.

The following process could be used to manage the supply of NROs to panel members:
  a) Published items and theses which are copyrighted and unavailable through open access systems.

  Panel members from New Zealand universities would request items through their institution's library. All other panel members, including international panel members, would request items through the National Library. Panel members would be able to indicate if they wished to receive hard or electronic copies of items (where available). The library would then supply the item directly to the panel member or, if they were unable to do so, forward the request to the TEC secretariat.

  Items would usually be expected to be supplied to panel members within 10 working days. Exceptions might be where items needed to be sourced internationally by libraries or items already on loan are not returned when recalled.

  b) Published items, including theses, which are available through open access systems or for which the Accepted Manuscript is deemed acceptable evidence.

  Panel members to obtain the items themselves from the web.

  c) All other NROs, eg non-print items, not available through the library systems or open access systems, and any other item which for some exceptional reason was not accessible via "a" or "b" above (eg book not available for loan from a library in NZ):
    - all panel members request items from the TEC secretariat
    - the TEC requests the item from the TEO
    - the TEO supplies the item to the TEC within 10 working days
    - the TEC supplies the item to the panel member
    - where required, the item is returned to the TEO through the TEC secretariat.

6.2.1   Resource implications

There would be costs for university libraries and the National Library in supplying NROs from published sources and this new cost would need to be considered within the context of the previous costs borne by TEC. The recommended cost for supply of an item via the NZ Interloan Scheme is specified by the Library and Information Association of NZ Aotearoa (LIANZA) at $14 plus GST, with international rates of supplying varying upwards from $20 plus GST. Assuming that 80% of items would be requested through libraries and an 80/20 split of local and international loans, this would cost $100-200,000 (excl GST) dependent on the proportion of NROs viewed by panels.

If each of the university libraries and the National Library was paid on the basis of the number of published NROs supplied to panel members, with a fee of $14 plus GST for an item supplied from a collection subscribed to by a NZ library and a fee of $20 plus GST for an item not subscribed to by a NZ library, this should cover the cost of the TEO's staffing resources and the other supply costs in managing this process on behalf of TEC.

There would also be costs for TEOs in further developing their institutional repositories in order to facilitate panel members and TEC's access to NROs via open access web repositories, eg TEC's agreement that Accepted Manuscripts could be submitted as evidence and the subsequent expectation that these NROs would be made accessible via institutional repositories.

The cost of loading accepted manuscripts and other open access publications into institutional repositories can only be estimated and will differ from institution to institution. It may take some time for an efficient process to be developed but it is estimated that it should take approximately an hour and a half for a qualified librarian, costed at $40 per hour, to check whether there is an open access copy already available for a published item, and if not, then digitise the publication to an appropriate standard, load the item into the repository, check the digitisation quality in the repository environment, create the metadata for the publication and create the permanent "handle" reference for the item.

It is difficult to estimate the number of NROs that might be able to be made accessible via open access institutional repositories. However if 5000 NROs are estimated to be able to be made accessible via open access institutional repositories as a result of Accepted Manuscripts being accepted as evidence by TEC, the estimated cost to TEC of encouraging the development of open access content in locally-based institutional repositories would be approximately $300,000 plus GST.

6.3 TEC to provide a secure web-based capability whereby panel member can access NROs either directly (for those NROs held by the TEC) or via a hyperlink (for those NROs referenced electronically to their source)

The creation of an electronic database hosted by the TEC was suggested by the Moderation Panel and many of the subject panels after the 2006 assessment. This is probably symptomatic of the frustration of panel members at the difficulties of obtaining items and an indication that a better system is required. On the surface, an online database specifically for NROs might appear to be the ideal solution. The panel member would login to the system, select the staff member and have immediate access to the four NROs.

However, it is questionable whether this solution warrants the costs in both time and money that setting up such a national system would require as effectively it would be duplicating the potential of the individual institutional repository systems that have already been established in all the universities and some of the polytechnics.

The TEC will not create an online database because of the problems cited above. A more realistic approach is for the TEC to provide a secure web-space with two areas.

The first area, for the approx. 75 percent of NROs that are electronically accessible, would be a meta-database that organises links to a standard version of each NRO. Links are put into this space by TEOs. The TEC does not hold the actual electronic artefacts.

Often these links would be links to library websites.

This would be different from KRIS because the TEC will not harvest metadata but require TEOs to submit links. There will be criteria for the quality of links.

Those remaining NROs that can be held electronically but cannot be stored in a suitable repository may be held directly by the TEC and accessed through the same web-space as described above.

The remaining NROs are those of the ephemeral type, for which there is no electronic format available. How these might be referenced through the web-space would need to be explored to ensure only essential information is included in the web-space and the Panel members are still able to complete the task at hand.

6.3.1 Design considerations to be explored and understood further

In any event, a full analysis and design of the most appropriate technology support for both aspects of the PBRF Quality Evaluation process (NRO tracking and management, and the PBRF Assessment itself) will commence in July 2009.

A fundamental principle will be to utilise as much as possible and practicable any existing technologies and systems that are now available and were not in 2006, e.g. existing library systems to access NROs.

Some example design questions to be explored are listed below:

1. Access to a secure web-based capability would have to be managed. This could be logistically difficult for overseas Panel members. During the review (pre-Moderation Panel, which are in New Zealand), availability of the system will need to considered to support overseas Panel Members and time differences.

2. Once they have logged in to the secure NRO website, it is expected that the Panel Members would want to quickly identify their EPs/NROs available for selection/viewing. There are a number of options to be explored to enable this, and input about these design considerations from Panel members is preferable.

3. The acceptability of electronic media by the Panel members in 2012 may be higher than in previous Quality Evaluation rounds, and the onus may be placed on the individual to print the NRO themselves if they do prefer to work from a paper copy.

Summary of three options

	TEC improvements & Accepted Manuscripts as evidence (6.1)	Combined Libraries/open access/TEC option (6.2)	TEC secure web-space (6.3)
Efficient and timely	Improvements would be required and also agreement that Accepted Manuscripts can be submitted as evidence	Yes for published and open access NROs. Librarians have long-established systems for managing access to published material and are also skilled at creating locally-hosted repositories in which all items are given permanent urls, eg DSpace "handle" system, thus improving the reliability of access via electronic systems. The balance between the traditional library access systems and access via repositories will be dependent on the proportion of published NROs available in institutional repositories as Accepted Manuscripts, etc.	Yes if system established to international information management standards. For those NROs that are published and have open access, links to the appropriate library systems would be available through the secure web-space. For those electronic NROs that are not published or available through other institutional repositories, there will be the option to upload these NROs to the secure web-space for the Panel to access later. Exploration of what would be feasible to support ephemeral NROs would need to be investigated.
Tracking	Improvements would be required	Systems would need to be established/enhanced to meet any reporting needs	Yes – automated status and workflow tracking of the quality evaluation process could be built into the system
Paper-based published outputs, including open access published outputs	Yes (where copyright allows)	Yes – less copyright issues if individual panel members request published items to be obtained via interlibrary loan systems – specifically allowed for in the Copyright Act	Yes (where copyright allows). Information about the paper-based NROs would be available on the web-space so that Panel members can request published items via libraray inter-loan systems

Non paper-based outputs	Yes; would need to be supplied by TEOs so that TEC could supply directly to panel members.	Yes, mostly through TEC which would have obtained the outputs directly from the TEOs in order to supply to panel members.	Partially; would need to be supplied by TEOs so that TEC could supply directly to panel members. For those electronic NROs that are not published or available through other institutional repositories, there will be the option for TEOs to upload these NROs to the secure web-space for the Panel to access later. Exploration of what would be feasible to support ephemeral NROs would need to be investigated.
Copyright	Copyright issues can make it difficult to supply published items, particularly electronically; however allowing Accepted Manuscripts as evidence will assist in increasing access electronically and reducing copyright issues.	Copyright conditions are best satisfied with this option. Obtaining published material for individual panel members is covered by the Copyright Act and allowing Accepted Manuscripts as evidence would minimise any other copyright issues.	The TEC provides access to copyrighted material for panel members Obtaining published material for individual panel members is covered by the Copyright Act and allowing Accepted Manuscripts as evidence would minimise any other copyright issues.
Respect for items	Improvements would be required	Likely to be increased respect for items as the vast majority of items would be sourced through libraries existing collections and through open access repositories not through individual researcher's personal copies.	Many items would not need to be sourced directly from staff members. Likely to be increased respect for items as the vast majority of items would be sourced through libraries existing collections and through open access repositories not through individual researcher's personal copies.

Duplication		Uses existing international-standard systems for interlibrary loan and the establishment and maintenance of institutional repositories.	Duplication is not an issue as this option uses systems already available in TEOs. Further, if the proposed Otago/Auckland University research repository is ready on time the TEC could also leverage this capability.
Financial costs	2006 costs $60,000++ Improvements could increase costs.	$100-200,000 + costs for items obtained through TEO or National Library library systems for published material; estimated $300,000 for loading Accepted Manuscripts and other open access materials into TEO institutional repositories. It needs to be noted that these two options may include duplicate costs and estimated costs per item might be preferable comparison, ie $14-$20 for published item and $40 for creating open access copy in a repository.	100K - 500K NROs don't need to be in a particular format as this system should handle all standard formats An option that will increase cost but also reliability is to provide each panel member with a laptop that is known to work to access everything
Workload	High for TEC and improvements would be needed. High for TEOs (and staff members) to supply NROs in timeframe required.	Workload of TEC and TEOs could be considerably reduced if open access Accepted Manuscripts were loaded into repositories around the time of completion so workload in supply to panel members by external parties was reduced at the review time. Direct supply of published items to panel members via library systems should reduce TEC and TEO individual researchers and Research Office workloads too. However there is likely to be increased workload on panel members in terms of accessing material; but this would be balanced by timely and efficient access to NROs.	Until the initial analysis and design is complete this is difficult to quantify.

Achievable in timeframe	Yes, as changes are relatively minor	Yes, as this option utilises existing systems.	Yes
Sector confidence	Problems in the 2006 assessment may have compromised confidence of the sector; sector may not have confidence in results based on Accepted Manuscripts	Use of library systems should facilitate improved confidence in the process because of the likely increased respect accorded to NROs and because of the fact that library systems are well established systems. If sector has confidence in PBRF results based on use of Accepted Manuscripts this new feature should also facilitate improved confidence as it will increase access via institutional repositories to NZ research outputs	Will be dependent on the effectiveness of the web-space and the associated systems.
Impact on researchers	Problems of the 2006 assessment would need to be addressed to ensure that researchers felt that their NROs were treated appropriately.	Reduced burden on researchers to provide copies of NROs to TEC during the PBRF process. However copies of Accepted Manuscripts would need to be supplied to their own institution's institutional repository on completion so as to reduce pressure at the time of the PBRF round. There is an additional benefit to the researcher in supplying to the local institutional repository however and that is that the publication will be accessible longer term not just for the purpose of the PBRF.	Research items could be nominated on the basis of their electronic availability rather than quality of output.

Impact on panel members	Delays in receiving copies of NROs could hinder panel members ability to assess the quality of EPs although one contact point for obtaining items is simple for panel members. Panel members may have less confidence in the quality of Accepted Manuscripts although this is less likely if the NISO standard is accepted as the required standard for Accepted Manuscripts.	May be confusing to be obtaining NROs from more than one source. Could result in increased workload for panel members. Panel members can choose if they wish to receive electronic or hard copies of many items	"One-stop-shop" for obtaining items accessible from wherever the panel member is geographically located.
Impact on TEOs	May place a strain on the relationship between TEOs and the TEC if improvements are not implemented or effective	TEOs would need to be compensated for the use of their library systems and for the creation of open access research outputs in their repositories.	A process for submitting links to NROs, actual electronic NROs not available through institutional repositories and ephemeral NROs would need to be designed in consultation with TEOs to ensure fitness for purpose. Where institutional repositories are referenced, then TEOs would need to be compensated for the use of their library systems and for the creation of open access research outputs in their repositories.
Support of aims and principles of PBRF	Process does not improve the quality of information on research output, one of the aims and principles of the PBRF process.	Approval of Accepted Manuscripts as evidence and requesting that these be made electronically available via TEO institutional repositories does improve the quality of information on research output in NZ	Approval of Accepted Manuscripts as evidence and requesting that these be made electronically available via TEO institutional repositories does improve the quality of information on research output in NZ Providing a single place for NROs as a directory also supports the aims and principles of the PBRF.

Possible improvements as discussed in 6.1

Improvement	Advantages	Disadvantages
Better resourcing of the TEC secretariat	• May allow for more efficient and timely provision of NROs to panel members	• May require using casual staff who are not familiar with the processes or requirements of the job • Additional cost
Maximum proportion of NROs to be examined	• May reduce the number of NROs examined (and therefore required to be obtained)	• May increase number of NROs examined if panels see the maximum as the expected proportion to be viewed • There may be variation between panels/subjects/EPs in the number of NROs necessary to inform judgements in quality
Proportion to be supplied electronically	• Should make obtaining NROs for panel members easier	• Some NROs cannot be supplied electronically • Research items could be nominated on the basis of their electronic availability rather than quality of output • May increase TEO workloads • Some electronic files may be too large to send by email

7 How to submit feedback

Feedback from the sector is sought in relation to:

- the general issues and concerns raised in this paper, and
- the options and recommendations identified in this paper.

The SRG welcomes feedback from all stakeholders in the tertiary sector, but particularly invites previous peer review panel members and university libraries to comment on the issues and options discussed in this paper.

In particular, the SRG would like feedback on the following questions:

- Should researchers be able to submit Accepted Manuscripts (NISO standard RP-8-2008), ie. author's final manuscript as accepted for publication at the completion of the peer review process as evidence of NROs (see section 6.1)?
- Would better resourcing of the TEC Secretariat resolve the issues experienced in the 2006 assessment (see section 6.1)?
- Would the library systems be able to supply NROs to panel members in an efficient, timely and cost effective way (see section 6.2)?
- If institutional repositories had a high proportion of NROs available as open access (based on allowing Accepted Manuscripts as evidence), should panel members primarily obtain NROs through this avenue (see section 6.2)?
- Are there sufficient advantages to an online TEC database to warrant the costs of developing such a database (see section 6.3)?
- Will researchers have decided on their NROs in sufficient time for them to be loaded onto an online TEC database (see section 6.3)?
- Are there any advantages or disadvantages of the options discussed that have not be raised in this paper?
- Are there other options that the SRG should consider?

Table 2: Nominated research outputs by panel and output type (2006 assessment)

Output Type	BIO	BEC	CPA	EDU	ETA	HEAL	HUM	MKD	MATH	MED	PHYS	SOC	All Panels
Total NROs	1,717	2,308	1,388	1,640	1,217	1,370	2,025	339	1,319	1,716	949	1,855	17,843
	%	%	%	%	%	%	%	%	%	%	%	%	%
Artefact/Object			7.2		0.2	0.1		4.1	0.2			0.2	0.69
Authored Book	0.5	2.4	3.0	3.0	2.2	1.3	12.9	10.3	1.7	0.8	0.8	7.0	3.76
Awarded Doctoral Thesis	3.7	5.3	2.4	3.8	2.9	4.2	4.5	5.3	3.8	2.7	2.5	5.4	3.96
Awarded Research Masters Thesis	0.2	0.9	2.7	3.4	0.8	2.0	0.8	3.5	0.7	0.6		0.6	1.20
Chapter in Book	1.7	6.2	4.3	11.1	2.7	4.1	19.6	15.9	4.1	1.5	3.0	14.7	7.47
Composition			3.2	0.2		0.1		1.8					0.31
Conf. Contribution - Abstract	0.9	0.5	0.7	0.6	0.6	3.4	0.1	1.5	0.3	1.2	1.1	0.7	0.87
Conf. Contribution - Full Conference paper	1.2	6.6	4.3	7.6	5.2	2.0	3.8	4.4	6.8	0.6	0.7	3.3	3.96
Conf. Contribution - Oral presentation	1.3	2.4	1.7	5.2	1.8	2.3	2.5	4.4	0.3	2.0	0.7	3.0	2.28
Conf. Contribution - Other	0.1	0.1	0.9	1.0	0.1				0.2			0.1	0.21
Conf. Contribution - Paper in published proceedings	2.1	8.9	3.2	8.3	15.8	2.1	2.7	4.7	21.5	0.6	1.7	3.9	6.15
Conf. Contribution - Poster presentation	1.3			0.3	0.5	1.3			0.6	0.8	0.9	0.5	0.53
Confidential Report	0.3	0.2		0.1	0.2	0.3	0.1	1.5	0.2	0.3		0.2	0.20
Design Output			5.1	0.1	3.0				0.2			0.1	0.64
Discussion Paper		0.5	0.1	0.2	0.1	0.2	0.1	0.3		0.1		0.1	0.15
Edited Book	0.3	0.7	1.6	1.2	0.4	1.1	3.9	0.6	0.3	0.2	0.1	3.1	1.28
Exhibition	0.1		31.7	0.2	0.3	0.2	0.6	3.8					2.67
Film/Video			3.7	0.4	0.2	0.4	0.3	0.6		0.2		0.1	0.42
Intellectual Property	1.0		0.1	0.2	1.3				0.1	0.3	0.6		0.31
Journal Article	83.6	60.8	8.1	44.5	57.7	70.1	43.3	17.7	55.8	84.6	87.7	51.5	57.48
Monograph		0.3	0.1	0.4	0.2	0.1	0.3	0.3	0.2			0.5	0.21
Oral Presentation	0.2	0.1	0.9	0.5	0.2	0.4	0.3	2.4	0.1	0.2		0.4	0.34
Other	0.2	0.4	2.6	1.0	0.2	0.7	1.4	2.7	0.5	0.8		0.6	0.82
Performance			10.7	0.4	0.2	0.1		0.9				0.3	0.94
Report for External Body	0.9	1.0	0.6	4.8	1.6	2.5	1.1	9.4	0.3	1.9		2.6	1.77
Scholarly Edition			0.8	0.1	0.2	0.4	0.6	0.3				0.2	0.20
Software	0.2	0.1	0.2	0.2	0.7	0.1	0.2		1.4	0.4			0.29
Technical Report	0.2	0.5		0.5	0.7	0.7	0.1	2.7	0.8	0.2	0.1	0.5	0.44
Working Paper		2.1	0.1	0.4	0.1		0.4	0.9	0.2	0.1		0.3	0.45
Total	100	100	100	100	100	100	100	100	100	100	100	100	100

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Performance-Based Research Fund

Feedback template for

Managing nominated research outputs consultation paper

Feedback from:	
Contact details:	

1   Purpose

The purpose of this template is to provide a mechanism for collecting feedback on the matters raised as part of the PBRF Managing nominated research outputs consultation paper.

The objective is to obtain feedback in such a way that will speed the collation and review of feedback pertaining to specific areas of interest.

Respondents are encouraged to answer the questions in this template, but should not feel limited from also providing comments in addition to those requested in the template.

Timeframe for feedback

Completed templates and any other comments should be emailed to PBRF.2012Redesign@tec.govt.nz or can be posted to Dr Damien Cole, Tertiary Education Commission, P O Box 27048, Wellington 6141.

Feedback would be appreciated as soon as possible, but no later than 5pm, Friday 14 August, 2009.

2.   Questions - Managing nominated research outputs

i)   Should researchers be able to submit Accepted Manuscripts (NISO standard RP-8-2008),
     ie. author's final manuscript as accepted for publication at the completion of the peer
     review process as evidence of NROs (see section 6.1)?

ii) Would better resourcing of the TEC Secretariat resolve the issues experienced in the 2006
     assessment (see section 6.1)?

iii) Would the library systems be able to supply NROs to panel members in an efficient, timely and cost effective way (see section 6.2)?

iv) If institutional repositories had a high proportion of NROs available as open access (based on allowing Accepted Manuscripts as evidence), should panel members primarily obtain NROs through this avenue (see section 6.2)?

v) Are there sufficient advantages to an online TEC database to warrant the costs of developing such a database (see section 6.3)?

vi) Will researchers have decided on their NROs in sufficient time for them to be loaded onto an online TEC database (see section 6.3)?

vii) Are there any advantages or disadvantages of the options discussed that have not be raised in this paper?

viii) Are there other options that the SRG should consider?

PBRF SRG review: Managing nominated research outputs consultation paper