

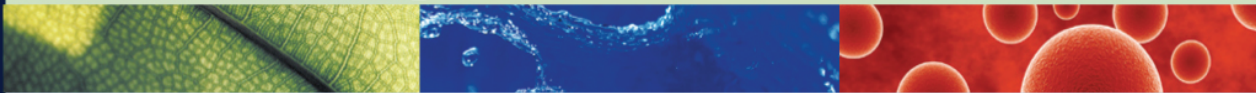


Australian Government  
Australian Research Council

Physical, Chemical and Earth Sciences (PCE)  
and Humanities and Creative Arts (HCA) Clusters

## Evaluation Guidelines for the 2009 ERA Trial

ERA



Excellence in Research for Australia

April 2009

RESEARCH in the national interest - enabling the future

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**Figure 1: ERA Timeline for Clusters One and Two**

**Cluster One—Physical, Chemical and Earth Sciences (PCE)**

| <i>Phase</i>             | <i>Activity</i>  | <i>Start Date</i>        | <i>End Date</i>          | <i>Responsible</i>                             |
|--------------------------|--|--------------------------|--------------------------|--|
| <i>Submission</i>        | <i>Obtain Electronic Identifiers (EID)</i>   | <i>2 March 2009</i>      | <i>29 May 2009</i>       | <i>Institutions and citation data supplier</i> |
|                          | <i>Submission Period (including electronic lodgement of Cluster Submission Certification Statements)</i> | <i>1 June 2009</i>       | <i>3 July 2009</i>       | <i>Institutions</i>                            |
|                          | <i>Lodgement of hard-copy Cluster Submission Certification Statements</i>                                |                          | <i>10 July 2009</i>      | <i>Institutions</i>                            |
|                          | <i>Compile Bibliometrics</i>   | <i>6 July 2009</i>       | <i>29 July 2009</i>      | <i>ARC and citation data supplier</i>          |
| <i>Assignment</i>        | <i>Assignment of material to reviewers</i>   | <i>30 July 2009</i>      | <i>14 August 2009</i>    | <i>ARC and REC Chair</i>                       |
| <i>Evaluation</i>        | <i>Stage 1 - Preliminary evaluation by reviewers</i>   | <i>17 August 2009</i>    | <i>17 September 2009</i> | <i>Reviewers</i>                               |
|                          | <i>Stage 2 - REC views all preliminary evaluation outcomes and aggregated indicator profiles</i>         | <i>18 September 2009</i> | <i>25 September 2009</i> | <i>ARC and REC</i>                             |
|                          | <i>Stage 3 - REC meets to finalise recommended evaluation outcomes</i>                                   | <i>28 September 2009</i> | <i>2 October 2009</i>    | <i>ARC and REC</i>                             |
| <i>Outcome Reporting</i> | <i>Distribution of institutional reports and publication of national outcomes</i>                        |                          | <i>November 2009</i>     | <i>ARC</i>                                     |

## **Cluster Two—Humanities and Creative Arts (HCA)**

| <i>Phase</i>             | <i>Activity</i>  | <i>Start Date</i>        | <i>End Date</i>          | <i>Responsible</i>       |
|--------------------------|--|--------------------------|--------------------------|--------------------------|
| <i>Submission</i>        | <i>Submission Period (including electronic lodgement of Cluster Submission Certification Statements)</i> | <i>3 August 2009</i>     | <i>21 August 2009</i>    | <i>Institutions</i>      |
|                          | <i>Lodgement of hard-copy Cluster Submission Certification Statements</i>                                |                          | <i>28 August 2009</i>    | <i>Institutions</i>      |
|                          | <i>Compile Bibliometrics</i>   | <i>24 August 2009</i>    | <i>4 September 2009</i>  | <i>ARC</i>               |
|                          | <i>Test Institutionally-supported Repositories</i>   | <i>24 August 2009</i>    | <i>4 September 2009</i>  | <i>ARC</i>               |
| <i>Assignment</i>        | <i>Assignment of material to reviewers</i>   | <i>7 September 2009</i>  | <i>23 September 2009</i> | <i>ARC and REC Chair</i> |
| <i>Evaluation</i>        | <i>Stage 1 - Preliminary evaluation by reviewers</i>   | <i>24 September 2009</i> | <i>27 October 2009</i>   | <i>Reviewers</i>         |
|                          | <i>Stage 2 - REC views all preliminary evaluation outcomes and aggregated indicator profiles</i>         | <i>28 October 2009</i>   | <i>6 November 2009</i>   | <i>ARC and REC</i>       |
|                          | <i>Stage 3 - REC meets to finalise recommended evaluation outcomes</i>                                   | <i>9 November 2009</i>   | <i>13 November 2009</i>  | <i>ARC and REC</i>       |
| <i>Outcome Reporting</i> | <i>Distribution of institutional reports and publication of national outcomes</i>                        |                          | <i>December 2009</i>     | <i>ARC</i>               |

Institutions are required to make the research outputs they have identified for ERA peer review available in institutionally supported repositories by the end of the submission period. This will enable the ARC to confirm accessibility prior to evaluation.

## **1 Purpose of the Evaluation Guidelines**

The purpose of these Evaluation Guidelines is to provide information to Research Evaluation Committee (REC) Members and Peer Reviewers for Clusters One (Physical, Chemical and Earth Sciences – PCE) and Two (Humanities and Creative Arts – HCA) about their roles and responsibilities. They also provide guidance on the evaluation of assigned material for Excellence in Research for Australia (ERA) in 2009.

These Guidelines must be read in conjunction with the:

- *ERA Submission Guidelines*;
- *ERA Indicator Principles*;
- *ERA–SEER Technical Specifications*; and
- *ERA Indicator Benchmark Methodology*.

These documents can be downloaded from the Australian Research Council (ARC) website at [www.arc.gov.au](http://www.arc.gov.au) > *Research Excellence*.

REC Members are expected to develop and document working methods for the purposes of evaluation for the PCE and HCA Clusters trial. Other explanatory material may be provided by the ARC from time to time during the process.

These Guidelines outline the:

- key elements of ERA evaluation;
- roles and responsibilities of REC Chairs, Members and Peer Reviewers;
- evaluation process;
- rating scale and guidance for evaluating assigned material;
- ERA information management system, SEER, which will be used to access and view material assigned for evaluation;
- moderation processes; and
- reporting of ERA outcomes.

For information about the key elements of ERA, in addition to the elements of evaluation, refer to the *ERA Submission Guidelines*.

A list of abbreviations used in this document is at **Attachment A**. A Glossary of Terms used in ERA is included in the *ERA Submission Guidelines*.

## 2 Overview of ERA

### 2.1 Introduction

The ERA initiative aims to identify and promote excellence across the full spectrum of research activity, including discovery and applied research, in Australia's higher education institutions. ERA reflects the Australian Government's commitment to a transparent, streamlined approach to the evaluation of the quality of research undertaken in Australia's higher education institutions.

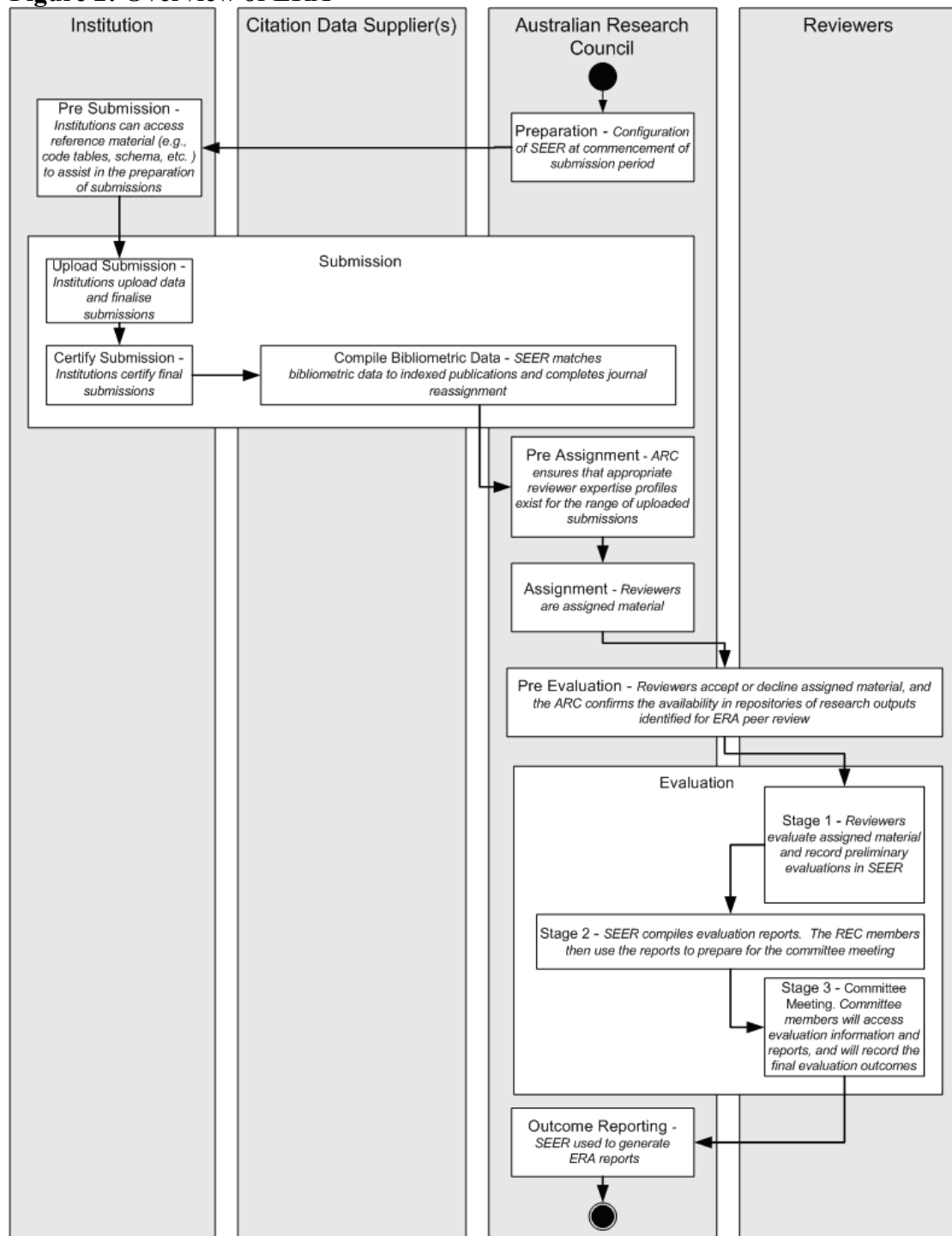
The ARC has developed ERA in consultation with the National Health and Medical Research Council (NHMRC) with advice from the Department of Innovation, Industry, Science and Research (DIISR). Expert advice has been provided by the Indicators Development Group (IDG) and a range of discipline expert groups.

For the purposes of ERA, a REC for each Cluster will be formed to evaluate the quality of research undertaken in eligible higher education institutions. Eligible institutions are listed in the *ERA Submission Guidelines*.

RECs comprise internationally-recognised members with expertise in research evaluation and with broad disciplinary expertise.

The following diagram outlines the overall process of ERA.

**Figure 2: Overview of ERA**



## **2.2 Objectives**

The objectives of ERA are to:

1. establish an evaluation framework that gives government, industry, business and the wider community assurance of the excellence of research conducted in Australia's institutions;
2. provide a national stocktake of discipline-level areas of research strength and areas where there is opportunity for development in Australia's higher education institutions;
3. identify excellence across the full spectrum of research performance;
4. identify emerging research areas and opportunities for further development; and
5. allow for comparisons of Australia's research nationally and internationally for all discipline areas.

## **3 Overview of the ERA evaluation processes**

ERA will undertake a comprehensive review of the quality of research undertaken in the Australian higher education sector.

The four major phases of ERA are Submission, Assignment, Evaluation, and Outcome reporting.

### **3.1 Submission**

When the ERA trial commences, institutions will be given access to the ERA IT system, the System to Evaluate the Excellence of Research (SEER), to upload their cluster submission data. This data will be verified and validated by SEER to ensure that the data submitted aligns with the *ERA Submission Guidelines* and *ERA-SEER Technical Specifications*. Once the data for a particular institution has been submitted correctly, the submission needs to be certified by the institution.

The ARC will then, where relevant, append to the submission, bibliometric data (i.e. citation information obtained under contract from citation data supplier(s), including national and international benchmarks.

Further information about submissions is provided in the *ERA Submission Guidelines*.

### **3.2 Assignment**

Once all bibliometric data has been appended, the ARC will commence breaking down the submissions into units of evaluation. Material will then be assigned to REC Members and, where appropriate, Peer Reviewers.

### **3.3 Evaluation**

RECs will undertake expert review of research items across all relevant indicators for each unit of evaluation, providing preliminary outcomes. As part of this process ERA peer review will be undertaken of a sample of research outputs, where appropriate. Each ERA peer reviewer will provide preliminary outcomes for assigned material.

REC members will then consider all the preliminary outcomes for their assigned units of evaluation in addition to the indicators for the relevant two digit division, in preparation for the REC meeting.

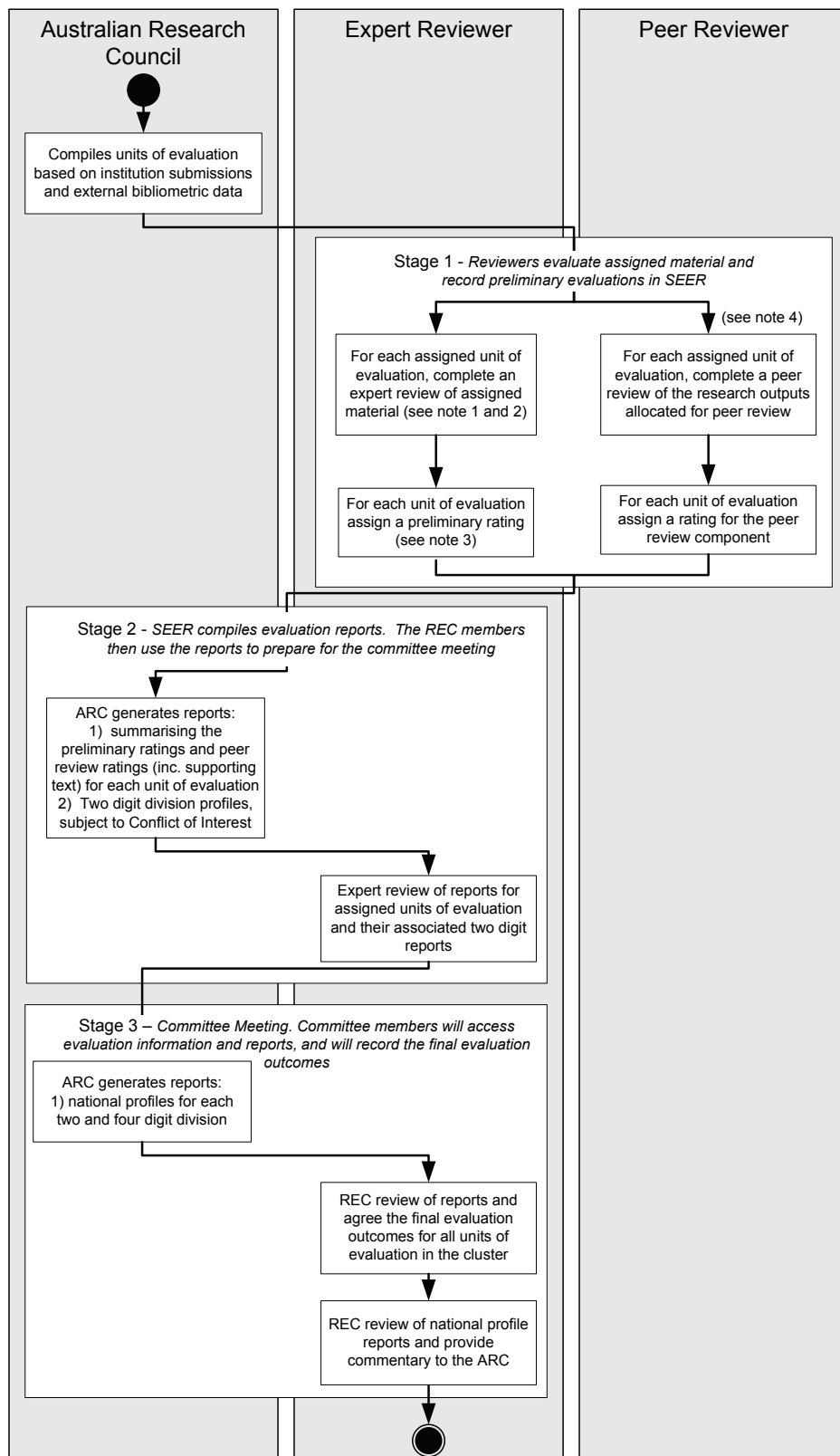
Each REC will then convene to consider the preliminary outcomes and agree to final evaluation outcomes for each unit of evaluation. Each REC will also consider the aggregated indicators and provide a report to the ARC at the national level for each discipline.

### **3.4 Outcome reporting**

The ARC will publicly release outcomes of the evaluations for Clusters One and Two aggregated to the national level. The ARC will also make available to individual institutions analyses of their own disciplines. For the ERA trial, outcomes of evaluations at the institution-level will not be made public.

The following diagram outlines the overall evaluation processes in ERA:

**Figure 3: Overview of ERA Evaluation Processes**



## **4 Key elements of ERA evaluation**

### **4.1 Unit of Evaluation**

The Unit of Evaluation (UoE) for ERA is the research discipline for each institution.

All ERA data collection will be at the four-digit level, regardless of the volume of an institution's research activity at that level. For some areas of research, it is recognised that there may not be sufficient research volume to undertake a valid analysis at the four-digit Field of Research (FoR) level for a given institution.

In these instances, the ARC will allow RECs to conduct analyses at the two-digit level where two-digit volumes are sufficient for evaluation. In the case of low volumes at the two-digit level, RECs will not undertake an evaluation of that two-digit discipline for that institution.

For the purposes of national reporting for a discipline, evaluations will be undertaken of disciplines aggregated across institutions at the two-digit and four-digit levels regardless of the volume of research at those levels within individual institutions. This information will not be identifiable at an institution level.

### **4.2 Interdisciplinary and multidisciplinary research**

As ERA is a discipline-based research evaluation exercise, interdisciplinary and multidisciplinary research will be disaggregated based on its discipline components. Information about FoR assignment in ERA is included in the *ERA Submission Guidelines*. The FoR codes submitted with each research output will be a particularly important tool for the assignment phase, to ensure correct expertise is allocated to the Unit of Evaluation.

Institutions will be able to internally track interdisciplinary and multidisciplinary research by submitting up to two Institutional Unit code(s) and/or research themes to each research item. The codes and themes profiles will not form part of the evaluation process. Further information about the codes and theme profiles are provided in the *ERA Submission Guidelines*.

### **4.3 Indicator categories**

ERA will use a range of discipline-specific indicators to evaluate the quality of research in Australian universities. Information about which indicators will be used for each Unit of Evaluation for Cluster One (PCE) and Cluster Two (HCA) is included with the *ERA Submission Guidelines* as a *Discipline Matrix*.

### **4.4 Expert review**

For the purposes of ERA, the ARC will appoint RECs for each Cluster. RECs will comprise internationally-recognised members with expertise in research evaluation and with broad disciplinary expertise. REC members will undertake expert review at each Stage of Evaluation. Their expert review will be informed by the range of indicators identified in the *Discipline Matrix*, the outcome of the expert review by colleagues on the REC, and peer review (where peer review is identified in the *Discipline Matrix*).

## **4.5 Peer review**

For the purposes of ERA, the ARC will appoint peer reviewers, where peer review is identified in the *Discipline Matrix*, to assist RECs. Peer reviewers will only have access to a sample of outputs for an assigned Unit of Evaluation. For disciplines where peer review is used, institutions are asked to identify a pre-determined proportion of their outputs for peer review. The proportion of outputs required to be made available for peer review by institutions is reflected in the *Discipline Matrix*.

Members of a REC may also undertake an evaluation of a sample of outputs, consistent with their expert review role.

Peer review will not be used for the PCE cluster disciplines. All references to peer review in this document are relevant only to the HCA cluster disciplines.

## **5 Roles and responsibilities of the Research Evaluation Committees (RECs)**

### **5.1 Role of the REC**

The role of the REC is to assign an agreed rating for all Units of Evaluation within the Cluster where there is sufficient volume for evaluation, and report the results (see Section 14.5 on Reporting) to the ARC CEO.

### **5.2 Responsibilities of a REC Chair**

The responsibilities of the REC Chair are to:

- participate fully in the evaluation process within their REC;
- ensure that the REC operates within the policies, guidelines and procedures established by the ARC;
- ensure that confidentiality is maintained for the deliberations and decisions of the REC;
- contribute fully, constructively and dispassionately to all REC processes and take ownership of the collective decisions of the REC;
- identify instances where they may have a conflict of interest (COI) or other sensitivity and raise these with the ARC prior to conflict occurring;
- evaluate assigned material and give preliminary ratings;
- assign material to others for evaluation;
- ensure that evaluations are completed within agreed time frames;
- chair the REC Meeting to review preliminary ratings, and guide the REC to provide final ratings for quality separately for each Unit of Evaluation;
- ensure that REC Members have an opportunity to contribute fully to the process and REC activities;
- ensure that REC decisions are documented (see Section 14.5 on Reporting REC Results);

- report on REC results at the conclusion of the REC Meeting;
- participate in a review at the conclusion of the REC Meeting and report to the ARC on the quality assurance of evaluation processes undertaken by the REC; and
- abide by confidentiality and COI requirements.

In the event that a REC Chair is unable to perform some or all of these responsibilities the ARC will appoint an Acting Chair from within the REC with responsibilities, determined by the ARC, for all or part of the responsibilities of a REC Chair. This will most commonly occur, for example, where the Chair has identified a COI and the ARC appoints an Acting Chair for the purposes of assigning material for evaluation.

### **5.3 Responsibilities of REC Members**

The responsibilities of REC Members are to:

- participate fully in the evaluation process within their REC;
- be diligent in completing tasks allocated to them by the REC Chair;
- provide advice on suitable Peer Reviewers (as required), evaluate assigned material and allocate preliminary ratings to each Unit of Evaluation;
- contribute fully, constructively and dispassionately to all REC processes and, within the capacity of their expertise, take ownership of the collective decisions of the REC;
- maintain confidentiality of both the deliberations and decisions of the REC;
- exercise due skill and care in the performance of their responsibilities;
- identify all instances where they may have a COI or other sensitivity and raise these with the ARC prior to conflict occurring; and
- abide by confidentiality and COI requirements.

## **6 Roles and responsibilities of Peer Reviewers**

The *Discipline Matrix* identifies peer review as an indicator for the HCA Cluster. For the ERA trial in 2009, the REC may utilise Peer Reviewers for the evaluation of the peer review component of Units of Evaluation during Stage One of evaluation. See Section 12 for information about the processes for identifying and appointing Peer Reviewers. Peer Reviewers are external specialists who may be used particularly where gaps in expertise are identified or where significant workload issues are expected.

The responsibilities of Peer Reviewers are to:

- evaluate assigned material and give preliminary ratings;
- be diligent in completing tasks allocated to them by the REC Chair;
- exercise due skill and care in the performance of their responsibilities;
- identify instances where they may have a COI or other sensitivities and raise these with the ARC prior to conflict occurring; and
- abide by confidentiality and COI requirements.

## **7 Confidentiality, Conflict of Interest (COI) and other sensitivities**

### **7.1 Confidentiality**

REC Members and Peer Reviewers are required to sign a confidentiality agreement with the ARC prior to their participation in ERA. The agreement covers all aspects of their work with ERA, and the agreement will survive the conclusion of their engagement for the purposes of ERA.

REC Members and Peer Reviewers must not contact researchers and/or institutions to seek clarification or to discuss material that has been submitted for evaluation in ERA. REC Members and Peer Reviewers must not reveal details about any evaluation, REC deliberations or conclusions, before or after the final outcomes have been released by the ARC.

### **7.2 Conflict of Interest (COI)**

A COI is any situation where a REC Chair, Member or Peer Reviewer has an interest which conflicts, might conflict, or may be perceived to conflict with the interests of the implementation of ERA. Examples of COI include:

- being employed by, or holding an adjunct or honorary appointment at, the institution which has made the submission which is being assigned;
- having a close personal relationship with someone whose work is significantly incorporated in the Unit of Evaluation or peer review task being assigned for evaluation. This could include a partner, spouse, family member or close friend. Included in this category is enmity;
- being a close collaborator with someone whose work is significantly incorporated in the unit of evaluation or peer review task which is being assigned for evaluation (for example, publishing with that person within the two years prior to 2009);
- other conflicts that a REC Member or Peer Reviewer may wish to raise and have clarified, including financial interests (for example holding a company directorship, stock ownership or options, patents, royalties, consultancy or grant which could lead to financial gain to a REC Member or Peer Reviewer in circumstances where they have access to information or are able to influence decision-making).

A REC Chair, Member or Peer Reviewer is required to declare a COI as soon as practicable after it has been identified. In such circumstances, the ARC will address each instance on a case by case basis. In most cases, these situations will be handled either by the REC noting the conflict, or the individual Member or Peer Reviewer not evaluating the particular material. REC Members and Peer Reviewers should not evaluate any material for which they have a potential COI.

REC Members and Peer Reviewers must contact the ARC if they are unsure about whether they have a COI. This is any COI that would prevent them submitting a completely objective evaluation. All concerns will be addressed in confidence.

### **7.3 Other sensitivities**

If REC Members or Peer Reviewers are asked to evaluate tasks within a Unit of Evaluation, and the research material causes offence or serious sensitivity, they should raise their concern with the ARC as soon as practicable. One example is that the research offends their personal beliefs, or there may be another sensitivity that may significantly affect their expert judgment of a Unit of Evaluation. The task will be reassigned to another REC Member or Peer Reviewer.

## **8 Assignment of material for evaluation**

### **8.1 Pre-assignment processes**

The dates for submission are set out earlier in this document in Figure 1. At the conclusion of the submission period, the ARC will examine the material that has been submitted. For the purposes of assignment, the ARC will

- identify and sort submission material into Units of Evaluation (four-digit Field of Research codes for each institution);
- identify interdisciplinary/multi-disciplinary research profiles;
- identify potentially sensitive material and resolve assignment and access issues;
- identify non-repository items and resolve access issues; and
- identify COI and other pre-determined inability to evaluate and initiate preventative processes.

In consultation with the REC Chair, the ARC will develop a work program for each REC Member, including potential workload based on submissions.

### **8.2 The assignment process**

The ARC will assign the relevant Units of Evaluation to the Chair of the REC (excluding those prohibited by the Chair's COI or other sensitivity – see Section 5.2 for information about arrangements for the appointment of an Acting Chair). The Chair is responsible for the assignment of the Units of Evaluation to REC Members, having regard to:

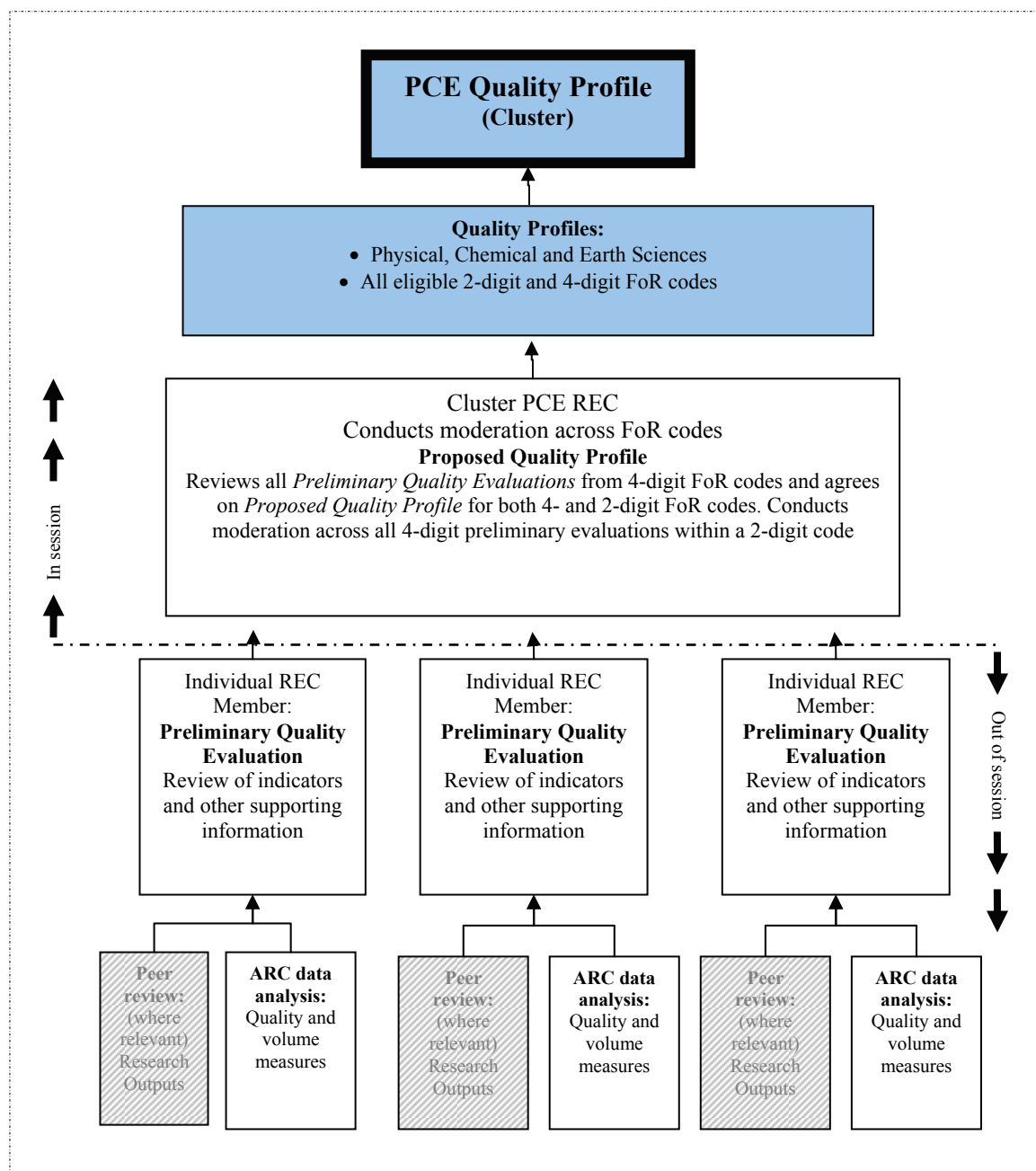
- the expertise of the REC Members to match the research profile;
- any declared COI or other declared inability to evaluate, including pre-identified sensitivities;
- sensitive materials; and
- achieving a balance of workload across REC Members.

Chairs will arrange for the assignment of every Unit of Evaluation to **at least two REC Members**. The HCA Chair may also assign material for Peer Review (see Section 12 below).

## 9 Overview of evaluation

The following diagram presents an overview of the processes of evaluation. The example given is for the PCE Cluster, and so the ‘peer review’ boxes have been ‘greyed out’ to reflect that peer review will not be used in the evaluations of PCE disciplines.

**Figure 4: Overview of evaluation**



The processes, in summary, are as follows:

**Stage One (out of session)**—REC Members will conduct individual preliminary evaluations of assigned Units of Evaluation out of session. This will be informed by the material that has been assigned for evaluation and the ARC data analysis. Peer review, where it is indicated in the *Discipline Matrix*, also takes place in Stage 1.

**Stage Two (out of session)**—REC Members will have access to the combined preliminary evaluations, for those Units of Evaluation they have been assigned to, from other REC Members and Peer Reviewers.

**Stage Three (in session)**—the preliminary evaluations will be reviewed and moderated across all four-digit codes within a two-digit code at the commencement of the REC Meeting and subsequently across all two-digit codes.

**Stage Four (in session)**—the REC will assign an agreed rating for all Units of Evaluation within the Cluster, where there is sufficient volume for evaluation, at the four- and two-digit level.

## 10 The Rating Scale

The Rating Scale for ERA is broadly consistent with the approach taken in research evaluation processes in other countries to allow for international comparison where appropriate.

**Figure 5: ERA Rating Scale**

| Rating | Descriptor   |
|--------|--|
| 5      | Exceptional quality research that is world-renowned. Generally regarded as a point of reference in its field, demonstrating the highest standards of scholarship and originality. It could be agenda setting research or contribute to the formation of new paradigms. The Unit of Evaluation profile would normally be characterised by very strong performance at the highest level of quality across a majority of the suite of indicators used for evaluation, as reflected in the profile of indicators.  |
| 4      | Very high quality research making a major contribution internationally to the advancement of knowledge. Sustained contribution to setting and maintaining new research directions. The Unit of Evaluation profile would normally be characterised by very strong performance at the higher levels of quality across the suite of indicators used for evaluation, as reflected in the profile of indicators.  |
| 3      | High quality research, exceeding the national standard while not considered to be at the leading edge of international scholarship. Strong incremental contribution to the global stock of knowledge. The Unit of Evaluation profile would normally be characterised by very strong performance at the national level, which would be reflected in the profile of indicators.  |
| 2      | Moderate quality, research of average/moderate standard but not at the level of significantly advancing knowledge in the field. Not able to set or sustain independent research directions. The Unit of Evaluation profile would normally be characterised by evidence of average performance presented by the suite of indicators used for evaluation, as reflected in the profile of indicators.   |
| 1      | Below average quality, research of low standard and/or no reasonable level of contribution to knowledge demonstrated. Would generally be regarded as having either limited or no significant academic impact, contributes little or no additional understanding or insight in the discipline or field, and/or is considered to be lacking in appropriate application of theory and/or methods. The Unit of Evaluation profile would normally be characterised by evidence of below average performance presented by the suite of indicators used for |

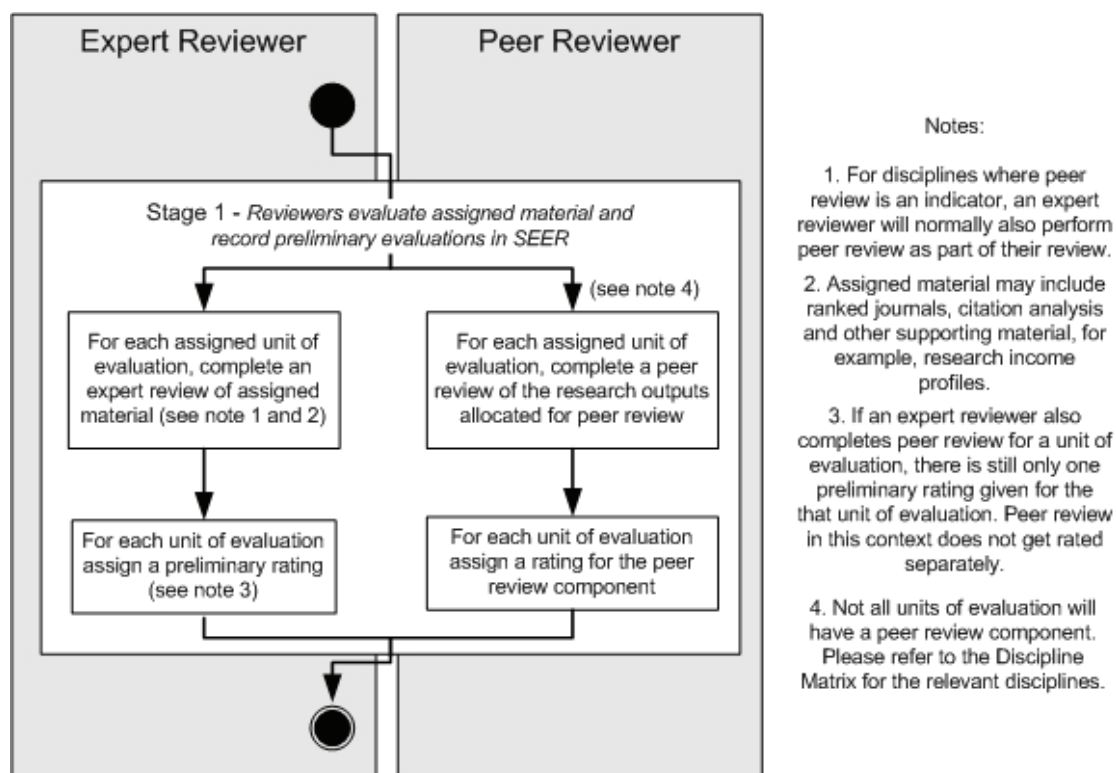
|    |   |
|----|---|
|    | evaluation, as reflected in the profile of indicators.  |
| NA | Not assessed due to low volume. The number of research outputs does not meet the volume threshold standard for evaluation in ERA. |

In order to achieve a rating at a particular point on the scale, the majority of the output from the Unit of Evaluation will normally be expected to meet the standard for that rating point.

‘World-renowned’, ‘international’ and ‘national’ refer to quality standards. They do not refer to the nature or geographical scope of particular subjects, or to the locus of research nor its place of dissemination.

## 11 Expert review—Evaluation Stage One

Figure 6: Overview of Stage One



## **11.1 Overview**

During Evaluation Stage One, REC Members will:

- confirm for assigned material that they have no COI or other reason for declaring an inability to evaluate which would prevent them from appropriately reviewing and rating the Unit of Evaluation that is assigned to them;
- identify any anomalies in the material assigned and report them to the ARC; and
- review and give a preliminary rating for all the material within a Unit of Evaluation which is assigned to them, and submit ratings.

REC Members must not seek additional information either by contacting others, or by undertaking their own research/inquiries about the material which is assigned for evaluation. For example, web searches and independent citation analyses are strictly not permissible.

In Evaluation Stage One, the information contained in the material assigned to a REC Member should not be disclosed to any other person either involved in evaluation for ERA or outside of ERA. This is particularly so when evaluating information contained in an institutional submission that is identified as confidential or includes culturally sensitive material (and for which its treatment or use would be a matter of profound concern to others). Care must be taken by REC Members to ensure that the material is not disclosed (whether inadvertently or not) to any other person, except in the course of the proper activities of the REC.

Prior to the REC Meeting (Evaluation Stage Three), REC Members must not discuss their evaluation with any others, including those involved in evaluation for ERA. REC Members must form a preliminary, independent rating of the Unit of Evaluation (including any evaluation of the sample of peer review outputs during this Stage).

## **11.2 Use of indicator categories to inform the evaluations**

Evaluation in ERA is informed by a range of indicators.

For the ranked journals and citation analysis indicators, the ARC will conduct preliminary data analysis and provide recommended ratings based on an institution's performance relative to world benchmarks. Comparison against Australian institution<sup>1</sup> benchmarks will also be available for RECs to consider. Quality evaluation will incorporate an element of comparison against relevant and available national and international data. Although comparison in ERA is used to provide additional information to RECs, it is not necessarily an indicator of quality. For example those Units of Evaluation where Australia is world-leading which rank third and fourth in the Australian institution comparison may produce world-class research assessed as being of very high quality. Conversely, in those Units of Evaluation where Australia is less strong, it may be that even the Unit of Evaluation ranked first overall via the ERA process could be allocated a relatively low quality rating.

For other information supporting the research quality evaluation (the income and applied research/translation indicators), the ARC will provide RECs with profiled information with some additional guidance on benchmarks for research income only.

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<sup>1</sup> Refers to ERA eligible Australian higher education institutions.

### 11.3 Ranked journals and citation analysis

Note: The tables presented in this section are indicative only of the information and the way in which that information might be presented to the RECs for the trial. Further information is provided in the *ERA Indicator Benchmark Methodology* document.

#### 11.3.1 Ranked journals

The ranked journals have publicly available criteria which REC Members need to be familiar with (they are reproduced in this document at **Attachment F**). REC Members will have access to a constructed profile of research outputs within the ranked journals' four tiers similar to the example below. This is how the institutional data might be presented to the RECs. The *ERA Indicator Benchmark Methodology* document provides more detail about the benchmarks.

**Table 1: Example of total ranked research publication outputs profiled across the four tiers**

| Ranked Outlets: A01 Journals |               |               |                          |                               |
|------------------------------|---------------|---------------|--------------------------|-------------------------------|
| Institution: University X    |               |               |                          |                               |
| Discipline Cluster: PCE      |               |               |                          |                               |
| FoR code: 0403               |               |               |                          |                               |
| FoR name: Geology            |               |               |                          |                               |
| Journal Tier                 | No. of Papers | % of Papers   | Aust. Inst. Distribution | Indicative World Distribution |
| A*                           | 55            | 15.9%         | 11.8%                    | 8.7%                          |
| A                            | 61            | 17.7%         | 20.1%                    | 19.2%                         |
| B                            | 91            | 26.4%         | 33.1%                    | 30.1%                         |
| C                            | 138           | 40.0%         | 35.0%                    | 42.0%                         |
| <b>Total</b>                 | <b>345</b>    | <b>100.0%</b> | <b>100.0%</b>            | <b>100.0%</b>                 |

All journal articles published in the reference period within a Unit of Evaluation will be profiled by the ranked journals relevant for that discipline. While it is recognised that journals do contain articles of variable quality, the quality tier reflects the overall quality of articles published in the journal itself. The quality rating is defined in terms of how it compares with other journals and should not be confused with its relevance or importance to a particular FoR.

Additionally REC Members will be able to view this profile information by year of publication to enable Members to ascertain trajectory or trends as below.

**Table 2: Example of ranked journal outlet analysis by year of publication**

| Ranked Outlets: A01 Journals                    |               |       |       |       |       |       |
|---|---------------|-------|-------|-------|-------|-------|
| Institution: University X                       |               |       |       |       |       |       |
| Discipline Cluster: PCE                         |               |       |       |       |       |       |
| FoR Level: four-digit                           |               |       |       |       |       |       |
| FoR Number: 0405                                |               |       |       |       |       |       |
| FoR Name: Oceanography                          |               |       |       |       |       |       |
| Journal Tier                                    | No. of Papers |       |       |       |       |       |
|   | 2002          | 2003  | 2004  | 2005  | 2006  | 2007  |
| A*  | 5             | 6     | 8     | 10    | 11    | 15    |
| A   | 8             | 12    | 11    | 6     | 9     | 15    |
| B   | 10            | 11    | 17    | 18    | 21    | 14    |
| C   | 17            | 20    | 18    | 26    | 31    | 28    |
| <b>Total</b>                                    | 40            | 49    | 54    | 61    | 72    | 72    |
| <b>Distribution of output across the period</b> | 11.5%         | 14.1% | 15.5% | 17.5% | 20.7% | 20.7% |

REC Members will also be able to view the bibliographic information about the articles for each tier. REC Members will not be able to obtain full access to the Research Outputs unless they have been specifically assigned to the output by the REC Chair for the purposes of peer review.

When viewing the ranked journals profiles, REC Members should pay close attention to any relevant disciplinary practices related to publishing in journals, particularly for practitioner-focused research, and take this into consideration when rating the Unit of Evaluation.

### 11.3.2 Citation analysis

Citation analysis is one of the most widely used bibliometric tools for assessing the impact of scholarly research. It involves the scrutiny of the references contained in journal articles, including analysis of reference frequency and patterns, using the abstract and citation databases.

Citation analysis will be available for REC Members for a Unit of Evaluation if:

- citation analysis has been selected as a suitable indicator for that discipline; and
- there is sufficient volume of indexed outputs for that Unit of Evaluation to produce a statistically robust profile.

For more information about citation analysis see the *ERA Indicator Benchmark Methodology*.

REC Members will be provided with:

- a relative citation impact (evaluated against the world and Australian institution benchmarks for the field);
- distribution of indexed journal articles against relative citation impact classes; and
- distribution of indexed journal articles based on:
  - comparison to world centile thresholds; and
  - comparison to the field.

**Table 3: Example of relative citation impact analysis**

| Citation Analysis: B01 Relative citation impact (RCI) against world and Australian institution average |              |                          |                       |                  |
|--|--------------|--------------------------|-----------------------|------------------|
| Institution: University X  |              |                          |                       |                  |
| Discipline Cluster: PCE  |              |                          |                       |                  |
| FoR Level: four-digit  |              |                          |                       |                  |
| FoR Number: 0301   |              |                          |                       |                  |
| FoR Name: Analytical Chemistry   |              |                          |                       |                  |
| Total Publications   | Sum of Cites | Institution RCI against: |                       | % Papers Indexed |
|  |              | World Benchmark          | Aust. Inst. Benchmark |                  |
| 57   | 927          | 1.83                     | 3.59                  | 96.3%            |

The profile shows the total number of publications (57) and citations (927) for the Unit of Evaluation benchmarked against world and Australian institutions benchmarks. In the example above, University X has a relative citation impact of 1.83 times the world average, and 3.59 times the Australian average for this Unit of Evaluation (FoR code 0301). The percentage of journals indexed (96.3%) is the percentage of papers that are published in indexed journals (indexed by the citation supplier).

The *ERA Indicator Benchmark Methodology* document provides further details on the calculation of world and Australian institution benchmarks and RCI.

REC members will also have access to the distribution of papers across RCI classes. Further information about the calculation of RCI classes is included in the *ERA Indicator Benchmark Methodology* document.

**Table 4: Example of distribution of papers against RCI classes**

| Citations Analysis: B03 Citation Impact |                  |                      |                       |                        |                        |                     |                  |
|---|------------------|----------------------|-----------------------|------------------------|------------------------|---------------------|------------------|
| Institution: University X               |                  |                      |                       |                        |                        |                     |                  |
| Discipline Cluster: PCE                 |                  |                      |                       |                        |                        |                     |                  |
| FoR Level: four-digit                   |                  |                      |                       |                        |                        |                     |                  |
| FoR Number: 0301                        |                  |                      |                       |                        |                        |                     |                  |
| FoR Name: Analytical Chemistry          |                  |                      |                       |                        |                        |                     |                  |
|   | RCI Classes      |                      |                       |                        |                        |                     |                  |
|   | Class 0<br>(0.0) | Class I<br>0.01-0.79 | Class II<br>0.80-1.19 | Class III<br>1.20-1.99 | Class IV<br>2.00 -3.99 | Class V<br>4.0-7.99 | Class VI<br>≥8.0 |
| No. of papers                           | 10               | 35                   | 85                    | 21                     | 6                      | 0                   | 1                |

Additionally, REC Members will have access to a centile analysis showing the spread of indexed journal articles across centile bands. The centile profile will also show the number of un-cited indexed journal articles. The distribution profile is compared to that for Australian institutions as a whole in the field. An example is below.

**Table 5: Example of cumulative number and percentage of papers at world centile bands**

| Citation Analysis: B02 Distribution of papers based on world centile threshold and field average |                            |                          |  |                 |
|--|----------------------------|--------------------------|--|-----------------|
| Institution: University X  |                            |                          |  |                 |
| Discipline Cluster: PCE  |                            |                          |  |                 |
| FoR level: four-digit  |                            |                          |  |                 |
| FoR Number: 0301   |                            |                          |  |                 |
| FoR Name: Analytical Chemistry   |                            |                          |  |                 |
| World centile  | Institution                |                          | Aust. Inst. Average % of papers (cumulative) | % Paper Indexed |
|  | No. of papers (cumulative) | % of papers (cumulative) |  |                 |
| 1  | 3                          | 5.5%                     | 1.2%   |                 |
| 5  | 9                          | 16.4%                    | 6.2%   |                 |
| 10   | 13                         | 23.6%                    | 8.9%   |                 |
| 25   | 26                         | 47.3%                    | 25.5%  |                 |
| 50   | 42                         | 76.4%                    | 41.1%  |                 |
| Total  | 55                         | 100.0%                   | 100.0%                                       | 96%             |
| Un-cited   | 2                          |                          |  |                 |

The example shows that for Analytical Chemistry at University X, a total of 3 papers or 5.5 per cent of the papers were in the top 1 per cent of the most highly cited papers in the world. This is compared to the Australian four-digit level average for the discipline of 1.2 per cent, which means that 1.2 per cent of papers in 0301 are in the top 1 per cent of the most highly cited papers in the world. The above example suggests that the Unit of Evaluation at University X is performing above its peers in Australia in the field of 0301 Analytical Chemistry. The number and proportions are cumulative, so that for Institution X, 76.4 per cent of papers are within the top 50 per cent of cited papers in the world, as compared with the Australian four-digit average of 41.1 per cent. The 50th percentile is also the median for the field.

Further information about the derivation of world centile thresholds can be found in the *ERA Indicator Benchmark Methodology* document.

REC Members will be able to view the bibliographic information about the papers which are the subject of this analysis.

## 11.4 Other supporting information

### 11.4.1 Background Statement

REC Members will have access to a Background Statement at the two-digit FoR level. The Background Statement should be read as supplementary information supporting the Unit of Evaluation. Note that the Unit of Evaluation is usually at the four-digit FoR level, and the Background Statement is at the two-digit FoR level. The Background Statement will be up to two pages of free text submitted by the institution. REC Members should note that the Background Statement is designed to provide the institution with the opportunity to give context to the research performance within the ERA reference period at the two-digit FoR level, and should not be used to form a judgment on any prospective research performance of the institution.

See the *ERA Submission Guidelines* for more information on the likely contents of a Background Statement.

### 11.4.2 Volume and activity analysis

Information on volume and activity is also provided as supporting information. The analysis includes total research publication outputs (by type). The volume of outputs may vary according to disciplinary publishing practices and this should be considered by REC Members during the evaluation process.

An example of research publication outputs by type and proportion of total publication activity for an FoR is below.

**Table 6: Example of research publication outputs by type and proportion of total outputs**

| <b>Volume and Activity Analysis: C01 Research Publication Outputs</b> |                       |                     |                                    |
|---|-----------------------|---------------------|------------------------------------|
| <b>Institution: University X</b>                                      |                       |                     |                                    |
| <b>Discipline Cluster: HCA</b>  |                       |                     |                                    |
| <b>FoR Level: four-digit</b>  |                       |                     |                                    |
| <b>FoR Number: 1902</b>   |                       |                     |                                    |
| <b>FoR Name: Film, Television and Digital Media</b>                   |                       |                     |                                    |
| <b>Outlet Type</b>  | <b>No. of outputs</b> | <b>% of outputs</b> | <b>% of outputs for discipline</b> |
| Journal Articles  | 0                     | 0.0%                | 0.0%                               |
| Book Chapters   | 1                     | 4.5%                | 0.1%                               |
| Books   | 2                     | 9.1%                | 0.5%                               |
| Conference Proceedings  | 1                     | 4.5%                | 0.2%                               |
| Original Creative Works   | 15                    | 68.2%               | 3.0%                               |
| Live Performance of Creative Works                                    | 1                     | 4.5%                | 0.2%                               |
| Recorded/Rendered Creative Works                                      | 2                     | 9.1%                | 0.5%                               |
| Curated or Produced Substantial Public Exhibitions and Events         | 0                     | 0.0%                | 0.0%                               |
| <b>Total for Group 1902</b>   | <b>22</b>             | <b>100.0%</b>       | <b>4.5%</b>                        |

REC Members will also have access to information on eligible researchers and their full time equivalence (FTE). This gives some context for REC Members of the number of staff involved in a Unit of Evaluation, and the levels of the staff employed.

**Table 7: Example of eligible researchers profiled by FTE**

| <b>Volume and Activity Analysis: C03 FTE Profile by academic level</b> |                   |                  |
|--|-------------------|------------------|
| <b>Institution: University X</b>                                       |                   |                  |
| <b>Discipline Cluster: PCE</b>   |                   |                  |
| <b>FoR Level: four-digit</b>   |                   |                  |
| <b>FoR Number: 0305</b>  |                   |                  |
| <b>FoR Name: Organic Chemistry</b>                                     |                   |                  |
| <b>HESDC Level</b>   | <b>No. of FTE</b> | <b>% of FTEs</b> |
| Level A  | 3.1               | 23.8%            |
| Level B  | 3.9               | 30.0%            |
| Level C  | 2.5               | 19.2%            |
| Level D  | 1.0               | 7.7%             |
| Level E  | 1.5               | 11.5%            |
| Other  | 1.0               | 7.7%             |
| <b>Total</b>   | <b>13.0</b>       | <b>100.0%</b>    |

Note: the category ‘Other’ will include those who meet the eligible researcher criteria (see *ERA Submission Guidelines*) but do not hold an appointment at one of the levels

listed in the Higher Education Student Data Collection (HESDC), that is, Levels A–E. An example would be a member of the general staff or a Deputy Vice-Chancellor.

**Table 8: Example of eligible researchers profiled by headcount**

| Volume and Activity Analysis: C03 Headcount by academic level |                  |                    |
|---|------------------|--------------------|
| Institution: University X                                     |                  |                    |
| Discipline Cluster: PCE                                       |                  |                    |
| FoR Level: four-digit   |                  |                    |
| FoR Number: 0305  |                  |                    |
| FoR Name: Organic Chemistry                                   |                  |                    |
| HESDC Level   | Headcount of FTE | % of Headcount FTE |
| Level A   | 8.0              | 22.9%              |
| Level B   | 5.0              | 14.3%              |
| Level C   | 6.0              | 17.1%              |
| Level D   | 2.0              | 5.7%               |
| Level E   | 4.0              | 11.4%              |
| Other   | 10.0             | 28.6%              |
| <b>Total</b>  | <b>35.0</b>      | <b>100.0%</b>      |

The ARC will provide REC Members with a series of research income profiles that are also supporting information. Information on the Research Income Categories is provided in the *ERA Submission Guidelines*. The first example is the research income by HERDC income category at the highest level.

**Table 9: Example of total research income by HERDC income category**

| <i>Income: D01-D04 Profiling Research income</i> |                                     |                    |                     |                     |                     |
|--|-------------------------------------|--------------------|---------------------|---------------------|---------------------|
| <i>Institution: University X</i>                 |                                     |                    |                     |                     |                     |
| <i>Discipline Cluster: PCE</i>                   |                                     |                    |                     |                     |                     |
| <i>FoR Level: two-digit</i>                      |                                     |                    |                     |                     |                     |
| <i>FoR Number: 03</i>                            |                                     |                    |                     |                     |                     |
| <i>FoR Name: Chemical Sciences</i>               |                                     |                    |                     |                     |                     |
| HERDC Category                                   | Research Income Type                | 2005               | 2006                | 2007                | Total for period    |
| 1  | Australian competitive grants       | \$3,417,000        | \$10,200,000        | \$9,000,000         | \$22,617,000        |
| 2  | Other public sector research income | \$230,000          | \$2,732,000         | \$3,500,000         | \$6,462,000         |
| 3  | Industry and other research income  | \$595,214          | \$772,249           | \$2,226,200         | \$3,593,663         |
| 4  | CRC research income                 | \$2,380,000        | \$2,780,000         | \$1,732,800         | \$6,892,800         |
| <b>Total Income - All types</b>                  |                                     | <b>\$6,622,214</b> | <b>\$16,484,249</b> | <b>\$16,459,000</b> | <b>\$39,565,463</b> |
| <b>Total FTEs</b>                                |                                     |                    |                     |                     | <b>48.7</b>         |

From 2007 for HERDC, institutions are required to disaggregate Industry and Other research income into three sub categories: Australian; international competitive, peer-reviewed income; and other international income. For ERA, institutions must submit information on research income using these three subcategories for each year of the Research Income Reference Period. An example of how this might be profiled is as follows.

**Table 10: Example of a profile of Category 3 Research Income**

| <b>Income: D04 Profiling Research income (Category 3 breakdown)</b> |                  |                  |                    |                         |
|---|------------------|------------------|--------------------|-------------------------|
| <b>Institution: University X</b>                                    |                  |                  |                    |                         |
| <b>Discipline Cluster: PCE</b>                                      |                  |                  |                    |                         |
| <b>FoR Level: two-digit</b>   |                  |                  |                    |                         |
| <b>FoR Number: 03</b>   |                  |                  |                    |                         |
| <b>FoR Name:-Chemical Sciences</b>                                  |                  |                  |                    |                         |
| <b>Category 3 Research Income Type</b>                              | <b>2005</b>      | <b>2006</b>      | <b>2007</b>        | <b>Total for period</b> |
| 3(i) Australian   | \$68,000         | \$235,000        | \$1,420,200        | \$1,723,200             |
| 3(ii) International A   | \$89,000         | \$181,249        | \$606,000          | \$876,249               |
| 3(iii) International B  | \$438,214        | \$356,000        | \$200,000          | \$994,214               |
| <b>Total Income - Category 3</b>                                    | <b>\$595,214</b> | <b>\$772,249</b> | <b>\$2,226,200</b> | <b>\$3,593,663</b>      |
| <b>Total FTEs</b>   |                  |                  |                    | <b>48.7</b>             |

REC Members will not be able to access information about the individual project grants awarded.

Research income for all categories of funding will also be profiled at the national level for the Field of Research with a discipline benchmark per FTE, as follows.

**Table 11: Example of benchmarking Research Income**

| <b>Research Income: C01 Profiling Research income</b> |                                     |                      |                     |                             |                           |  |  |
|---|-------------------------------------|----------------------|---------------------|-----------------------------|---------------------------|--|--|
| <b>Institution: University X</b>                      |                                     |                      |                     |                             |                           |  |  |
| <b>Discipline Cluster: PCE</b>                        |                                     |                      |                     |                             |                           |  |  |
| <b>FoR Level : four-digit</b>                         |                                     |                      |                     |                             |                           |  |  |
| <b>FoR number: 0301</b>                               |                                     |                      |                     |                             |                           |  |  |
| <b>FoR Name: Analytical Chemistry</b>                 |                                     |                      |                     |                             |                           |  |  |
| <b>HERDC Category</b>                                 | <b>Research Income Type</b>         | <b>No. of grants</b> | <b>Total Amount</b> | <b>Average \$ per grant</b> | <b>Average \$ per FTE</b> | <b>Discipline Benchmark \$ per FTE</b> | <b>Ratio against benchmark avg. \$ per FTE</b> |
| 1   | Nationally competitive grants       | 4                    | \$690,614           | \$172,654                   | \$14,181                  | \$15,200                               | 0.93   |
| 2   | Other public sector research income |                      | \$1,292,400         |                             | \$26,538                  | \$18,000                               | 1.47   |
| 3   | Industry and other research income  |                      | \$1,197,888         |                             | \$24,597                  | \$16,500                               | 1.49   |
| 4   | CRC research income                 |                      | \$1,148,800         |                             | \$23,589                  | \$31,201                               | 0.76   |
| <b>Total FTEs</b>                                     |                                     | <b>48.7</b>          |                     |                             |                           |  |  |

### 11.4.3 Standard patents sealed

A patent is a right granted for any device, substance, method or process that is new and/or improved, innovative and useful. It gives the owner the exclusive right to commercialise the invention for the duration of the patent. If patents are selected as appropriate in ERA for a discipline, the information may be shown in the following type of profile.

**Table12: Example profile of standard patents sealed**

| <i>Applied: F01 Patents</i>                              |                      |
|--|----------------------|
| <i>Institution: University X</i>                         |                      |
| <i>Discipline Cluster: PCE</i>                           |                      |
| <i>FoR Level: four-digit</i>                             |                      |
| <i>FoR Number: 0307</i>                                  |                      |
| <i>FoR Name: Theoretical and Computational Chemistry</i> |                      |
| Country  | No. of patent sealed |
| Australia  | 3                    |
| Japan  | 0                    |
| United States  | 2                    |
| Europe   | 1                    |
| Other international                                      | 1                    |
| Triadic  | 1                    |
| <b>Total Patents in reference period</b>                 | <b>8</b>             |

REC Members will be able to view basic information about the patents represented in this table.

#### 11.4.4 Registered designs

As defined in relevant legislation, a registered design is a right granted for new and distinctive designs. Once a registered design has been examined and certified, the owner has an exclusive right to use, license and/or sell the registered design, and to enforce it against an infringer. In this context design refers to features which, when applied to a product, render it unique in appearance. This may include shape, pattern or ornamentation.

If registered designs are considered appropriate for a discipline, and an institution has reported such designs as part of their submission, the ARC will prepare the following type of profile for REC Members.

**Table 13: Example profile of registered designs**

| <i>Applied: F03 Registered designs</i>                |                                      |                           |
|---|--------------------------------------|---------------------------|
| <i>Institution: University X</i>                      |                                      |                           |
| <i>Discipline Cluster: HCA</i>                        |                                      |                           |
| <i>FoR Level: two-digit</i>                           |                                      |                           |
| <i>FoR Number: 19</i>                                 |                                      |                           |
| <i>FoR Name: Studies in Creative Arts and Writing</i> |                                      |                           |
| FoR Code  | Division Name                        | No. of registered designs |
| 19  | Studies in Creative Arts and Writing | 12                        |

REC Members will have access to view further information about the registered designs submitted for the Unit of Evaluation.

#### 11.4.5 Research commercialisation income

Institutions may provide information on research commercialisation income, which includes income resulting from licences, options and assignments (LOAs), including running royalties, cashed in equity and other types of income (see below for further detail). This includes only LOAs negotiated on full commercial terms, granting access

to institutional intellectual property (patented or otherwise) in return for royalties or licence fees.

If research commercialisation is considered appropriate for a discipline, and the institution has reported such income as part of their submission, REC Members will have access to the following types of profile prior to the REC Meeting, firstly at the four-digit level for REC Members, then later at the two-digit level:

**Table 14: Example of Commercialisation Income profile by year**

| <b>Applied: F04 Commercialisation Income</b> |          |          |                  |
|--|----------|----------|------------------|
| <b>Institution: University X</b>             |          |          |                  |
| <b>Discipline Cluster: PCE</b>               |          |          |                  |
| <b>FoR Level : four-digit</b>                |          |          |                  |
| <b>FoR Number: 0301</b>                      |          |          |                  |
| <b>FoR Name: Analytical Chemistry</b>        |          |          |                  |
| Research Income by Year                      |          |          | Total for period |
| 2005   | 2006     | 2007     |                  |
| \$15,000                                     | \$15,000 | \$20,000 | \$50,000         |

**Table 15: Example of benchmarking Commercialisation Income**

| <b>Applied: F04 Commercialisation Income</b> |              |            |                                |   |
|--|--------------|------------|--------------------------------|---|
| <b>Institution: University X</b>             |              |            |                                |   |
| <b>Discipline Cluster: PCE</b>               |              |            |                                |   |
| <b>FoR Level : four-digit</b>                |              |            |                                |   |
| <b>FoR Number: 0301</b>                      |              |            |                                |   |
| <b>FoR Name: Analytical Chemistry</b>        |              |            |                                |   |
| FTE  | Total Amount | \$ per FTE | Aust. Inst. Average \$ per FTE | Ratio of Inst. against Average \$ per FTE |
| 3.1  | \$50,000     | \$16,129   | \$24,000                       | 0.67                                      |

The profile above shows that for the Unit of Evaluation, University X received a total of \$50,000 in commercialisation income. University X has 3.1 FTEs allocated to 0301 which is \$16,129 per FTE. A ‘Discipline Benchmark per FTE’ of \$24,000 is shown which is the average \$ per FTE for all institutions for 0301. University X’s \$ per FTE is compared against the ‘Discipline Benchmark per FTE’ to arrive at a ratio of 0.67.

This suggests that University X is below average in its commercialisation income compared against its peers in 0301.

REC Members will also have access to annual income data.

## 12 Peer Review—Evaluation Stage One

### 12.1 Overview

The ARC will appoint Peer Reviewers, to assist RECs, where peer review is identified in the Discipline Matrix. In consultation with REC Members, REC Chairs will assign a sample of outputs for a Unit of Evaluation to a Peer Reviewer.

A Peer Reviewer may be used in the following circumstances:

- where the relevant subject area expertise for evaluating a particular body of work is not sufficiently available within the REC;

- where the significance of a particular body of work is disputed or uncertain; or
- where there are significant workload issues that prevent a REC Member with the relevant expertise from participating in the evaluation of a sample of outputs.

The final responsibility for determining whether a Peer Reviewer is necessary lies with the Chair (or Acting Chair where the Chair is conflicted) of the REC, in consultation with relevant REC Members. The selection of Peer Reviewers will be from an ERA expert database developed by the ARC from a range of relevant sources.

REC Members will not communicate directly with Peer Reviewers at any time. Peer Reviewers will submit ratings and supporting text, as for REC Members, through the System to Evaluate the Excellence of Research (SEER).

## **12.2 Information for peer review**

For disciplines where peer review is used, institutions are asked to identify a pre-determined proportion of their outputs for peer review. The proportion of outputs required to be made available for peer review is reflected in the *Discipline Matrix*. Other supporting information to assist with peer review is at:

- **Section 12.3** (below)—guidance about evaluating research outputs in the Creative Arts;
- **Attachment D** (Criteria)—Criteria for Publishers; and
- **Attachment E** (Criteria)—Curated events/commissioned works.

## **12.3 Research in the Creative Arts**

Research in the Creative Arts ranges from the experimental, involving the production of creative works, through to the analytical, involving the study of particular subjects.

When a creative work is submitted to ERA for evaluation, it may not be immediately clear what the research component of the research output is. To assist Peer Reviewers with this, the institution will be asked to write a Statement describing the research component of the research output to help with the task of reviewing the output. The Statement will accompany the output, and it is expected to be available in the institution's repository. The Statement will include information under the following headings:

- Research Background—Field, Context and Research question;
- Research Contribution—Innovation/New knowledge; and
- Research Significance—Evidence of excellence.

An example of a Statement is provided at **Attachment C** of this document. Further details on the requirements for this Statement are included in the *ERA Submission Guidelines*.

## 12.4 Determining a rating for peer review

Peer Reviewers will be assigned a representative sample of the pool of outputs for peer review, to enable them to make an informed judgment about the quality of the assigned material. Peer Reviewers may request an increased sample of outputs if the sample assigned is considered insufficient for a robust evaluation.

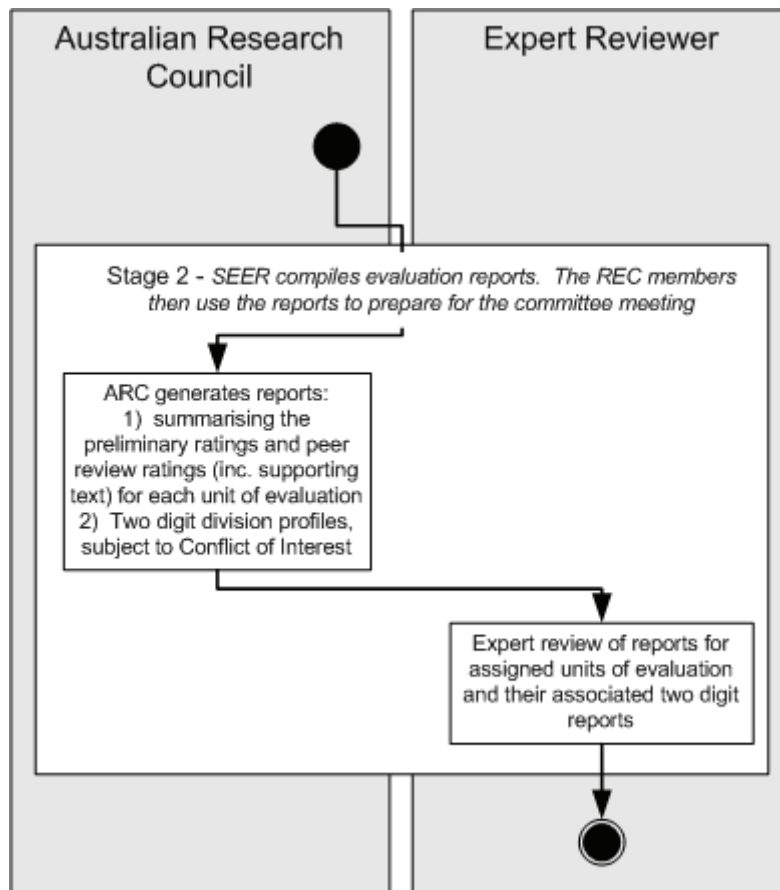
Peer Reviewers will read all of the assigned material and use their expert judgment in forming a rating for assigned material, based on the quality rating scale for ERA. Weightings will not apply to different output types or to different types of evidence.

## 12.5 Peer Review Report

Peer Reviewers will assign a single rating for each Unit of Evaluation, together with supporting text for the rating. The Peer Review Report will be made available to relevant REC members for Evaluation Stage Two. Peer Reviewers are not involved in the evaluation process from Stage Two, other than to the extent their reviews are used by the RECs.

# 13 Expert Review—Evaluation Stage Two

Figure 8: Overview of Stage Two



### **13.1 Overview**

In Evaluation Stage Two, REC Members will be given access to the preliminary evaluation outcomes (ratings and supporting text) from other REC Members and Peer Reviewers (where peer review has taken place), limited to those (four-digit FoR code) Units of Evaluation that they have been assigned to.

During Evaluation Stage Two, REC Members will also be able to review indicator and supporting information profiles at the two-digit level for Units of Evaluation that they have been assigned to. This allows a broader consideration of research performance in an institution.

### **13.2 Viewing the combined evaluations**

After all preliminary evaluations from REC Members and Peer Reviewers are received, the ARC will present the combined preliminary evaluations for each Unit of Evaluation to REC Members. REC Members will still only have access to the combined preliminary evaluations for those Units of Evaluation they have been assigned to, to continue management of COI.

A REC Member is able to view all the preliminary evaluations of other REC Members assigned to the Unit of Evaluation, and will also have access to the rating(s) and supporting text from Peer Reviewers. At this point such information is useful for REC Members because it will show areas of complementary views and ratings, the extent of differing ratings and comments, and the level of moderation required.

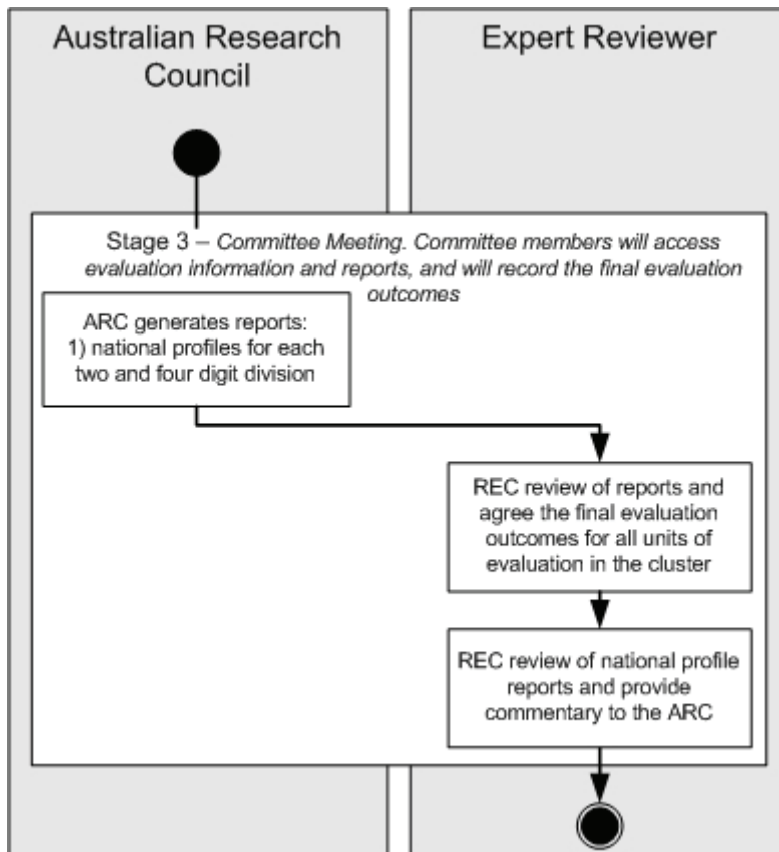
### **13.3 Viewing two-digit FoR indicators**

During Evaluation Stage Two, REC Members will also be able to view profiles at the two-digit level for those Units of Evaluation they have been assigned to. Access to these profiles is on the basis that no conflicts of interest are present when viewing the two-digit level information.

By viewing the aggregated information at the two-digit level for an institution, a REC Member is able to consider overall performance profiles of a range of disciplines, in preparation for the REC Meeting where profiles of disciplines (both by institution and nationally) will be considered.

## 14 Expert Review—Evaluation Stage Three

Figure 9: Overview of Stage Three



### 14.1 Overview

The REC Meeting is expected to be up to one week in duration. The Meeting will be held in Canberra for the Cluster One and Cluster Two trial.

Subject to COI or other identified sensitivity, all preliminary ratings will be available to all REC Members at this meeting, and final ratings for all Units of Evaluation will be determined by the RECs during this time. Moderation will take place during the meeting.

REC Members are expected to attend the REC Meeting to discuss, as a committee, the final ratings and feedback text for each Unit of Evaluation, and comment on national profiles and trends.

### 14.2 What information will be available at the Meeting?

At the Meeting, REC Members will have access to:

- preliminary ratings and supporting text from REC Members and (where it is identified in the *Discipline Matrix*) Peer Reviewers for each Unit of Evaluation;

- the context of the information which was assigned to Peer Reviewers for evaluation (including amount of material, and type of material), and what they were asked to focus on;
- the indicators—for example benchmarked data, ranked outlets, and applied measures; and
- indicator profiles at the four-digit and, two-digit FoRs within institutions and nationally to help establish a national view of research performance.

### **14.3 Working methods**

RECs will be expected to develop and document working methods for the purposes of evaluation for the PCE and HCA Clusters trial. The ARC will provide training for REC members, including a ‘mock evaluation’ using relevant test data. The training and ‘mock evaluation’ are expected to inform the development by the RECs of working methods for the purposes of evaluation for the trial. The trial will, in turn, inform the development of working methods for the full ERA process in 2010. Other explanatory material may be provided by the ARC from time to time during the process:

- at the REC Meeting, RECs will undertake a systematic review of all Units of Evaluation from institutions, and the preliminary ratings;
- REC Members should reach a collective conclusion within the limits of their expertise about the rating for a Unit of Evaluation, on the basis of collective debate, and agree on any supporting text for the rating;
- all REC Members are expected to participate fully in the evaluation process within their REC;
- REC Members will not be permitted to remain in the room during discussions of Units of Evaluation for which they have an identified COI;
- an Acting REC Chair may be appointed by the ARC from within the REC where the REC Chair is not present at the meeting (because of an identified COI, or other circumstances where the Chair is unavailable); and
- where consensus within the REC about a rating is not possible, the ARC may appoint a moderator to review the Unit of Evaluation and the proposed rating(s). The moderator will make a recommendation to the REC Chair, who will determine the final rating.

### **14.4 Moderation processes**

ERA will employ a number of moderation processes, coordinated through the supporting secretariat for each REC. These include:

- consistent interpretation of these Evaluation Guidelines;
- support to REC training sessions to ensure consistent messages are imparted;
- support to RECs with the development and review of working methods;
- support for RECs at the REC Meeting in addressing any irregularities identified in the evaluation processes;

- REC Members reviewing the preliminary ratings at the commencement of the REC Meeting and conducting moderation across all four-digit preliminary evaluations within a two-digit code;
- continuous review of REC processes during the REC Meeting for consistency with the established policies, guidelines and procedures for ERA; and
- RECs providing advice to the ARC regarding future moderation processes for ERA.

### **14.5 Reporting REC results**

At the completion of the REC Meeting, the expected outcomes are:

- an agreed rating for every Unit of Evaluation, except where there is insufficient volume for evaluation, and supporting feedback text;
- appropriate recording of working methods, including COI declarations and how they were dealt with by the REC;
- appropriate recording of any policy issues which had arisen during the course of the REC's deliberations, including the resolution of issues, and issues which had not been resolved during the course of the REC Meeting;
- appropriate recording of comments on the discipline profiles, by institution and nationally where appropriate;
- appropriate recording of comments on the comparisons with discipline-based international benchmarks where appropriate;
- an outcomes report that details the outcomes of the evaluation for the Cluster by the REC to the ARC Chief Executive Officer (CEO).

The report from the REC will be considered by the ARC CEO, and a report will be prepared for the Minister on the outcomes of the evaluations of the RECs.

## **15 Reporting the ERA outcomes**

The ARC will publicly release outcomes of the evaluations for the Clusters One and Two trial aggregated at the national level.

The ARC will also make available to individual institutions analyses of their own disciplines.

## **16 Supporting ERA documentation and further information**

The *ERA Submission Guidelines* provide an overview of, and specify the content and data requirements for, submissions that are part of the 2009 ERA. They also provide guidance to eligible higher education providers on policy and practical matters in preparing submissions.

The *ERA-SEER Technology Pack* which includes technical documentation, Code Tables and XML schema related to the submission process. It also includes the *ERA-SEER Technical Specifications* which outline requirements for ensuring that information is available to reviewers during the evaluation process.

All of the supporting documentation and further information about the ERA is available on the ERA website at [www.arc.gov.au](http://www.arc.gov.au) > *Research Excellence*

## **17 ERA contact**

Queries regarding ERA should be directed to the ERA Helpdesk on (02) 6287 6755 or email [era@arc.gov.au](mailto:era@arc.gov.au)

## List of abbreviations

|        |   |
|--------|---|
| ACGR   | Australian Competitive Grants Register                      |
| ANZSRC | Australian and New Zealand Standard Research Classification |
| ARC    | Australian Research Council                                 |
| COI    | Conflict of Interest  |
| DIISR  | Department of Innovation, Industry, Science and Research    |
| ERA    | Excellence in Research for Australia                        |
| FOI    | Freedom of Information                                      |
| FoR    | Field of Research (ANZSRC)                                  |
| FTE    | Full-Time Equivalent  |
| HCA    | Humanities and Creative Arts                                |
| HERDC  | Higher Education Research Data Collection                   |
| IDG    | Indicators Development Group                                |
| NCGP   | National Competitive Grants Program                         |
| NHMRC  | National Health and Medical Research Council                |
| PCE    | Physical, Chemical and Earth Sciences                       |
| RCI    | Relative Citation Impact                                    |
| REC    | Research Evaluation Committee                               |
| SEER   | System to Evaluate the Excellence of Research               |
| UoE    | Unit of Evaluation  |

**Field of Research (FoR) Codes**

Cluster One: Physical, Chemical and Earth Sciences – FoR Codes

| <b>Discipline</b>                                       | <b>FoR</b> |
|---|------------|
| ASTRONOMICAL AND SPACE SCIENCES                         | 0201       |
| ATOMIC, MOLECULAR, NUCLEAR, PARTICLE AND PLASMA PHYSICS | 0202       |
| CLASSICAL PHYSICS                                       | 0203       |
| CONDENSED MATTER PHYSICS                                | 0204       |
| OPTICAL PHYSICS   | 0205       |
| QUANTUM PHYSICS   | 0206       |
| OTHER PHYSICAL SCIENCES                                 | 0299       |
| ANALYTICAL CHEMISTRY                                    | 0301       |
| INORGANIC CHEMISTRY                                     | 0302       |
| MACROMOLECULAR AND MATERIALS CHEMISTRY                  | 0303       |
| MEDICINAL AND BIOMOLECULAR CHEMISTRY                    | 0304       |
| ORGANIC CHEMISTRY                                       | 0305       |
| PHYSICAL CHEMISTRY (INCL. STRUCTURAL)                   | 0306       |
| THEORETICAL AND COMPUTATIONAL CHEMISTRY                 | 0307       |
| OTHER CHEMICAL SCIENCES                                 | 0399       |
| ATMOSPHERIC SCIENCES                                    | 0401       |
| GEOCHEMISTRY  | 0402       |
| GEOLOGY   | 0403       |
| GEOPHYSICS  | 0404       |
| OCEANOGRAPHY  | 0405       |
| PHYSICAL GEOGRAPHY AND ENVIRONMENTAL GEOSCIENCE         | 0406       |
| OTHER EARTH SCIENCES                                    | 0499       |

Cluster Two: Humanities and Creative Arts – FoR Codes

| <b>Discipline</b>                          | <b>FoR</b> |
|--|------------|
| ARCHITECTURE                               | 1201       |
| DESIGN PRACTICE AND MANAGEMENT             | 1203       |
| URBAN AND REGIONAL PLANNING                | 1205       |
| OTHER BUILT ENVIRONMENT AND DESIGN         | 1299       |
| LAW  | 1801       |
| MAORI LAW                                  | 1802       |
| OTHER LAW AND LEGAL STUDIES                | 1899       |
| ART THEORY AND CRITICISM                   | 1901       |
| FILM, TELEVISION AND DIGITAL MEDIA         | 1902       |
| JOURNALISM AND PROFESSIONAL WRITING        | 1903       |
| PERFORMING ARTS AND CREATIVE WRITING       | 1904       |
| VISUAL ARTS AND CRAFTS                     | 1905       |
| OTHER STUDIES IN CREATIVE ARTS AND WRITING | 1999       |
| COMMUNICATION AND MEDIA STUDIES            | 2001       |
| CULTURAL STUDIES                           | 2002       |
| LANGUAGE STUDIES                           | 2003       |
| LINGUISTICS                                | 2004       |
| LITERARY STUDIES                           | 2005       |
| OTHER LANGUAGE, COMMUNICATION AND CULTURE  | 2099       |
| ARCHAEOLOGY                                | 2101       |
| CURATORIAL AND RELATED STUDIES             | 2102       |
| HISTORICAL STUDIES                         | 2103       |
| OTHER HISTORY AND ARCHAEOLOGY              | 2199       |
| APPLIED ETHICS                             | 2201       |
| HISTORY AND PHILOSOPHY OF SPECIFIC FIELDS  | 2202       |
| PHILOSOPHY                                 | 2203       |
| RELIGION AND RELIGIOUS STUDIES             | 2204       |
| OTHER PHILOSOPHY AND RELIGIOUS STUDIES     | 2299       |

### **Format of research statement for Peer Review of creative works for the HCA Cluster**

For the HCA cluster, the following research output types can also be submitted:

- original (creative) works in the public domain;
- live performances;
- recorded (performance) works; and
- curated or produced substantial exhibitions, events or renderings.

For these research outputs which are selected for peer review, a statement identifying the research component of the output must be available in an institutionally-supported repository. The statement must be a maximum of 250 words and address the following categories:

1. Research Background—Field, Context, Research Question.
2. Research Contribution—Innovation and New Knowledge.
3. Research Significance—Evidence of Excellence.

The following is an example of an acceptable visual arts research statement:

Research background:

Current international developments in painting have identified the need to establish complex forms for representing identity in terms of facial expression. While this research recognises the significance of facial expression, it has overlooked the unstable nature of identity itself.

Research contribution:

The paintings *Multiple Perspectives* by Y address the question of the unstable nature of identity as expressed in painterly terms through a study in unstable facial phenomenon using the philosophical concept of ‘becoming’. In doing so it arrives at a new benchmark for the discipline in understanding visual identity, namely that identity is not bound to stable facial phenomena but, like other forms of meaning, is constantly undergoing change.

Research significance:

The significance of this research is that it overcomes barriers for visually understanding the complex nature of identity and its expressive painterly possibilities. Its value is attested to by the following indicators: selection of the painting for inclusion in the Tier A international exhibition Documenta, Kassel, Germany; its inclusion as a case study in the renowned Courtauld Institute, University of London, *Issues in Contemporary Art* graduate seminar series; its being the subject of a chapter in the book *Identity Reframed* published by Thames and Hudson and authored by the renowned art historian Z; its forming part of a competitively funded ARC project.

When selecting outputs for ERA peer review, institutions should focus on those outputs with a substantial research component. Peer reviewers will only examine these outputs on the basis of the research component as specified in the research statement available in an institutionally-supported repository.

### **Criteria for publishers**

Note: The following criteria are provided as an additional tool for Peer Review in the Humanities and Creative Arts. They are not intended to be used by Peer Reviewers or the HCA Research Evaluation Committee for other purposes, such as developing a ranking of publishers.

#### **A (top 20%)**

Typically the output of A-ranked publishers will be characterised by a refereeing process and high scholarly standards. The books they publish in the discipline will be of a high quality, and there will be many more manuscripts submitted than accepted. These publishers will sometimes have a designated series in which senior scholars solicit and appraise manuscripts; alternatively, the commissioning editor will have disciplinary expertise. In reference publishing, they will have authoritative status. The Australian A-ranked publishers are likely to have published academic books that have won literary prizes, and will have distinguished academic authors on their lists. Books by A-ranked publishers will be reviewed by relevant academic journals. The majority of A-ranked publishers are likely to be academic presses, but will also include commercial publishers of academic books that conform to the same standards.

#### **B (next 30%)**

The output of B-ranked publishers is based on research that conforms to the academic conventions of the discipline. These publishers are less likely to submit manuscripts to academic evaluation, and less likely to be reviewed by academic journals. They may have published few distinguished academic authors, but are significant outlets for work of restricted significance and early career researchers. B-ranked publishers are likely to be commercial publishers or less prestigious academic publishers, and may also include a limited number of academic units with established, highly regarded monograph series.

#### **C (next 50%)**

Tier C includes publishers that do not meet the criteria of the higher tiers. They might include small and ephemeral commercial publishers, publishers that produce very few research-based books, and desk-top self-publishers. Their books will seldom be reviewed by academic journals and will have little impact on the scholarly literature. This tier will include the majority of in-house publications by academic units.

**Criteria for curated events and commissioned works**

Note: The following criteria are provided as an additional tool for Peer Review in the Creative Arts. They are not intended to be used by Peer Reviewers or the HCA Research Evaluation Committee for other purposes, such as developing a ranking of curated events.

**A (top 20%)**

Typically the output of A-ranked curated events and commissions will be characterised by a highly competitive international curatorial/judging/selection process and the highest professional standards, typified by examples such as selection as curator for and/or for inclusion in, international biennales and selection for world-wide commissions ('international' in this context includes designated international events or commissions in Australia).

These events and commissions will sometimes have a designated series in which senior curators/judges/selectors solicit and appraise projects; alternatively, the commissioning curator/judges/selectors will have disciplinary expertise and be internationally recognised in their fields.

These events and commissions will focus upon distinguished practitioners as recipients. The events and works will make a highly significant contribution to practice in the field, as evidenced through professional and/or scholarly publications, performances, recordings, broadcasts, forums and settings.

**B (next 30%)**

The output of B-ranked events and commissions is based on outcomes and research that conform to the conventions of the discipline, typified by examples such as solo exhibitions in state museums, commissions by state orchestras, design of significant publicly accessible buildings/products/landscapes, or production by local film houses. These events and commissions will likely have been evaluated by leading national practitioners.

B-ranked events and commissions are likely to be state-based events and commissions, and may also include a limited number of regional outlets with established, highly regarded programs. The events and works will make an important contribution to practice in the field as evidenced through professional and/or scholarly publications, performances, recordings, broadcasts, forums and settings.

**C (next 50%)**

Tier C events and commissions might be supported by public and private institutions, small and alternative organisations, production houses, distributors, museums. This tier will include the majority of in-house events and commissions by academic or institutional bodies tied to evaluation processes at the state, regional or local level.

The events and works may contribute to practice in the field as evidenced through professional and/or scholarly publications, performances, recordings, broadcasts, forums and settings.

**Tier definitions for the ranking of journals**

**A\***

Typically an A\* journal would be one of the best in its field or subfield in which to publish and would typically cover the entire field/subfield. Virtually all papers they publish will be of a very high quality. These are journals where most of the work is important (it will really shape the field) and where researchers boast about getting accepted. Acceptance rates would typically be low and the editorial board would be dominated by field leaders, including many from top institutions.

**A**

The majority of papers in a Tier A journal will be of very high quality. Publishing in an A journal would enhance the author's standing, showing they have real engagement with the global research community and that they have something to say about problems of some significance. Typical signs of an A journal are lowish acceptance rates and an editorial board which includes a reasonable fraction of well known researchers from top institutions.

**B**

Tier B covers journals with a solid, though not outstanding, reputation. Generally, in a Tier B journal, one would expect only a few papers of very high quality. They are often important outlets for the work of PhD students and early career researchers. Typical examples would be regional journals with high acceptance rates, and editorial boards that have few leading researchers from top international institutions.

**C**

Tier C includes quality, peer reviewed, journals that do not meet the criteria of the higher tiers.