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Appendix D—Summary of Questions

Section 3—Excellence in Research for Australia

ERA policy

Value of ERA

Q3.1 To what extent is ERA meeting its objectives to:

- a. Continue to develop and maintain an evaluation framework that gives government, industry, business and the wider community assurance of the excellence of research conducted in Australian higher education institutions. A very large amount; A large amount; A moderate amount; A small amount; Not at all. Please explain your answer.

Although the utility of ERA differs across the different stakeholder groups, overall, it provides a large amount of assurance concerning the excellence of research conducted at universities. Its effectiveness is greater for those groups that are closer to the Higher Education sector.

- b. Provide a national stocktake of discipline level areas of research strength and areas where there is opportunity for development in Australian higher education institutions. A very large amount; A large amount; A moderate amount; A small amount; Not at all. Please explain your answer.

A large amount in terms of identifying areas of strength; given that it is a retrospective exercise, ERA also identifies areas of weakness. These may be areas for development, or areas from which an institution may choose to divest.

- c. Identify excellence across the full spectrum of research performance. A very large amount; A large amount; A moderate amount; A small amount; Not at all. Please explain your answer

A large amount. The ERA is constrained by the Units of Assessment (UOAs) based on the historical Field of Research (FOR) codes. In some cases, Units of Assessment do not offer sufficient granularity, although their ability to identify areas of excellence may improve with their 2020 revision.

- d. Identify emerging research areas and opportunities for further development. A very large amount; A large amount; A moderate amount; A small amount; Not at all. Please explain your answer.

A small amount. As noted above, ERA is a retrospective exercise, so an emerging area will not appear in the data at all if it fails to reach the low-volume threshold within an existing discipline.

- e. Allow for comparisons of research in Australia, nationally and internationally, for all discipline areas. A very large amount; A large amount; A moderate amount; A small amount; Not at all. Please explain your answer.

A moderate amount. Within the constraints of the Field of Research codes, the exercise does allow for useful benchmarking of most if not all discipline areas, but it primarily allows for more benchmarking in a national, rather than international, context. This is especially true in the peer-reviewed disciplines, for which there are no direct international benchmarks.

Q3.2 The ERA objectives are appropriate for meeting the future needs of its stakeholders. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Agree. However, ERA has not been accorded the significance at a national level that its aims and the effort expended by Australia's universities warrant. Consideration should be given to ERA as a major driver of Commonwealth support, and, if it were recognised accordingly, it would create tangible incentives for improved research performance, as is the case with regard to the UK REF.

- a. If you disagreed with the previous statement, what should the primary purpose of ERA be going forward? Please explain your answer.

Q3.3 What impacts has ERA had on:

- a. the Australian university research sector as a whole

The Australian university sector has developed a greater focus on quality research, in large part as a result of the ERA process. Through ERA, the sector has put in place comprehensive benchmarking against national research performance, and this development has led to improved performance across the board. However, international benchmarking through university and subject rankings (which does drive income) has arguably resulted in an equal or greater impact.

- b. individual universities

ERA creates a context characterised by an emphasis on quality over quantity in research. This emphasis on quality of research is welcome. It is in direct contrast to the historical incentive to emphasise volume, a result of the use of HERDC publication volume as a driver of block grant funding. Under ERA and the Watt reforms, individual institutions have promoted research quality and have reprioritised their strategic investments to focus on key areas of strength.

- c. researchers

Researchers have responded to ERA by adopting a "quality over quantity" approach to publication. Researchers now have greater clarity concerning what constitutes quality, though quality is still indicated retrospectively in citation analysis. An increased array of journal-level metrics guides how researchers should focus their efforts to achieve higher quality outputs.

- d. Other?

University-level performance metrics have shifted emphasis to quality indicators rather than volume indicators, and this shift has had an impact on the assessment of individual academics' research. This development has provided an incentive for academics to publish in high-quality outlets.

Q3.4 How do you use ERA outcomes? Please describe.

UNSW has in the past allocated some internal funds on the basis of an ERA metric, but it no longer does so because of the difficulty of mapping disciplines to administrative structures. Nevertheless, at the central level, the ERA outcomes are very useful for UNSW's understanding of the relative strengths of specific disciplines at the university, particularly in a national context.

At individual faculty and school levels, ERA outcomes inform strategic planning. They are used in recruitment, grant applications, and for initiating collaborations, and are also sometimes used in marketing: activities which are not centrally directed but are initiated at the faculty, school, or individual researcher level.

Q3.5 ERA outcomes are beneficial to you/your organisation. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Strongly agree. ERA outcomes provide an independent, external evaluation of research quality across the full range of disciplines represented at the university. This is especially important concerning the HASS disciplines, which do not readily lend themselves to evaluation in relation to citation or output-level metrics.

Q3.6 Do you have any suggestions for enhancing ERA's value to you/your organisation? Please explain your answer.

It has long been a source of concern at the faculty, school, and department levels that Units of Assessment do not neatly align with university structures. However, it is difficult to see any immediate solutions in terms of possible changes to the current structure of the UoAs, and, in any case, this issue of alignment would differ between institutions. Some schools are associated with a UoA (e.g., Management and FOR1503), and may include researchers outside the school who perform research that materially affects the assessment, whereas other schools do not directly map to a single UoA, especially where they involve interdisciplinary groups that publish across a range of UoAs but are often not the dominant contributors to any of them.

ERA methodology

ERA methodology at a glance

Q3.7 The current methodology meets the objectives of ERA. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Agree. Overall, ERA meets its objectives as well as could be expected given the retrospective nature of the assessment exercise. It is weaker in identifying emerging areas, but it achieves its other objectives well.

Q3.8 What are the strengths of the overall methodology? Please describe.

The RCI post hoc methodology appropriately rewards quality as well as penalising low-quality/high-quantity outputs.

Q3.9 What are the weaknesses of the overall methodology? Please describe.

The UoA basis for assessing research quality at each university is both broad (two-digit codes) and specific (four-digit discipline codes). However, multiple schools and/or research centres at a university may contribute outputs to a specific discipline code, and, given inherent differences within codes, there can be non-trivial differences in the type and quality of outputs.

Citation analysis methodology

Q3.10 The citation analysis methodology for evaluating the quality of research is appropriate. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Strongly agree. There is no comparable qualitative alternative for the consideration of huge volumes of research outputs in a single UoA, and citation metrics are more appropriate than output metrics (despite recent refinements), as, overall, they reflect the quality of individual outputs rather than simply reflecting the quality of related journals.

Q3.11 Does the discipline-specific approach for evaluating research quality (citation analysis or peer review for specific disciplines) continue to enable robust and comparable evaluation across all disciplines?

Yes.

Q3.12 What are the strengths of the citation analysis methodology? Please describe.

The citation analysis methodology facilitates comparison of UoAs using objective, quantifiable metrics based on individual output quality against international norms.

Q3.13 What are the weaknesses of the citation analysis methodology? Please describe.

Citation analysis referenced to a world average RCI will understandably penalise nationally important work in predominantly domestic output disciplines such as law and Indigenous studies. There is also some evidence that international standards are falling due to increased global research outputs, which may in part contribute to the bracket creep that has become evident over the lifespan of ERA assessments to date.

Citation analysis is not suited to disciplines where publication often appears in outlets other than journal articles. However, there are currently no citation-assessed areas in ERA that are unsuitable for citation analysis. This has not always been the case (e.g., ERA 2010, for which there were insufficient journal publications worldwide to generate reliable benchmarks for FOR 1006 Computer Hardware).

Citation analysis at the 4-digit FOR level can overlook the underlying sub-discipline mix in a UoA where citation rates may be very different. For example, within FOR 0912 (Materials) graphene research is considered “hot” and is therefore highly cited, whereas iron/steel research is cited far less frequently. ERA results thus favour a certain sub-discipline mix that is not in keeping with national research priorities, funding, or a comprehensive staffing profile in the discipline.

Q3.14 Can the citation analysis methodology be modified to improve the evaluation process while still adhering to the ERA Indicator Principles? Yes/No.

Yes.

a. If you answered ‘Yes’, please describe how the methodology could be improved.

The journal list should be reduced in order to de-emphasise low-quality outputs.

Peer review methodology

Q3.15 The peer review methodology for evaluating the quality of research is appropriate. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Agree. Peer review has long been the gold standard in assessing research. For large FORs, it is impractical to expect that all available peer-reviewed items can be individually scrutinised, so scrutiny of a 30% selection remains the best method of assessment in the humanities and social sciences.

Q3.16 What are the strengths of the peer review methodology? Please describe.

The methodology permits robust evaluation in disciplines where research outcomes are communicated through monographs, chapters, conference proceedings, and non-traditional means.

Q3.17 What are the weaknesses of the peer review methodology? Please describe.

The necessity of sampling a high volume of outputs in some UoAs can create workload issues and may impact negatively upon the breadth of expertise available on review panels.

The relative lack of improvement in peer-reviewed disciplines over 4 ERA cycles against the world standard, as compared to the major increase in citation disciplines, is striking and not in keeping with improvements in global subject rankings. This result calls into question the rigour of assessment (e.g., whether assessors are being too stringent) as well as the more challenging benchmarking that occurs in peer-reviewed disciplines.

Q3.18 Can the peer review methodology be modified to improve the evaluation process while still adhering to the ERA Indicator Principles? Yes/No.

No. But consideration could be given to better relative benchmarking between ERA cycles.

- a. If you answered 'Yes', please describe how the peer review methodology could be improved.

Contextual indicators

Q3.19 The volume and activity indicators are still relevant to ERA. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Disagree. Although they provide some context, panel members would have some idea of these through other indicators. The RCI algorithm penalises high volume that lacks quality, in any case.

Q3.20 The publishing profile indicator is still relevant to ERA. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Strongly agree. This indicator is useful for determining the publication patterns for individual UoAs, specifically whether the profile is reasonable within the context of the discipline, and whether the focus is on low quality or high-quality outputs/outlets within the UoA.

Q3.21 The research income indicators are still relevant to ERA. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Strongly agree. Research income is an independent indicator of quality, especially Category 1 National Competitive Grants, but also (albeit to a lesser extent) other categories of funding: the fact that an organisation/body is willing to fund the research indicates the rigour and soundness of the research. We note that income is the overwhelming driver for the Research Block Grant.

Q3.22 The applied measures are still relevant to ERA:

- a. Patents. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Disagree. Patents are not a good indicator of research quality. Patents can be acquired for ideas and inventions that are not inherently research-based. However, they should still be collected and considered for EI.

- b. Research commercialisation income. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Neither agree nor disagree. This could be seen as a useful adjunct to the HERDC income data submitted in ERA, but it more usefully underpins the EI engagement metrics.

- c. Registered designs. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Strongly disagree. Only 6 registered designs across 41 universities were submitted in ERA 2018, so this applied measure cannot be considered a worthwhile indicator.

- d. Plant breeder's rights. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Strongly disagree. Similarly, only 27 were submitted for ERA 2018 nationally, so this applied measure cannot be considered a worthwhile indicator.

- e. NHMRC endorsed guidelines. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Strongly disagree. Once again, only 22 were submitted nationally according to the ERA 2018 national report.

ERA rating scale

Q3.23 The five-band ERA rating scale is suitable for assessing research excellence. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Agree. The rating scale is suitable and conforms to the 5-point rating scales used in research assessments internationally (e.g., UK, HK).

Q3.24 Noting that 90% of units of evaluation assessed in ERA 2018 are now at or above world standard, does the rating scale need to be modified to identify excellence? Yes/No.

No. In order to document changes over time, it is important that the rating scale is comparable round-on-round. Given the comparative rise in Australian university ranking results, the rise in 4s or 5s in the citation disciplines seems to reflect a genuine improvement in quality in line with the aims of ERA. Assessing longitudinal changes in the next round will be especially important post-COVID and after the increased interval between 2018 and the next assessment. There would be limited value in extending the rating scale.

- a. If you answered, 'Yes', please explain how the rating scale can be modified to identify excellence.

ERA low-volume threshold

Q3.25 The ERA low-volume threshold is appropriate. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Agree. Although a case could be made that increasing the threshold in citation-assessed areas would lead to more robust evaluations, doing so would presumably occur at the expense of the number of fields that can be assessed overall (i.e., fewer could then be assessed).

Q3.26 Are there ways in which the low-volume threshold could be modified to improve the evaluation process? Please describe.

No.

ERA staff census date

Q3.27 What is the more appropriate method for universities to claim research outputs—staff census date or by-line? Please explain your answer.

Staff census date. Use of a staff census date more accurately portrays the research quality of the current staff cohort. A by-line approach would include outputs from long retired staff and staff who had moved elsewhere, and it would be cumbersome to implement.

Q3.28 What are the limitations of a census date approach? Please describe.

There are no serious concerns. The potential for individual researcher gaming is minimised both by the scale of outputs assessed and by the ERA rules.

Q3.29 Would a by-line approach address these limitations? Yes/No. Please explain your answer.

No. A by-line approach would distance outcomes from the current state of research in a UoA, including outputs from departed staff (i.e., of up to 7 years earlier, given time from submission to the release of ERA results).

Q3.30 What are the limitations of a by-line approach? Please describe.

Implementing a by-line approach would present a major logistical challenge. At present, the nature of the data supplied by publishers to citation indexes and other data sources limits the ability to use a by-line approach. Indexing services such as Scopus and Web of Science would need to supply by-line rather than affiliation metadata for consumption by institutional systems to enable a change to using by-line data instead of the staff census date. Currently, by-line data can only be gathered

manually on a paper-by-paper basis, creating an unsustainable reporting burden. A by-line approach would require definition of “at the time of publication”, as publishers can often (and, confusingly, do) use a variety of dates, including first online and first in print.

ERA interdisciplinary research and new topics

Q3.31 ERA adequately captures and evaluates interdisciplinary research. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Neither agree nor disagree. No matter what approach is taken, interdisciplinary research by definition will contribute to the assessment of the individual, canonical disciplines that it spans. It would not be practical to create a separate assessment process to target interdisciplinary research, which would prove unduly fluid and thus would render the research un-assessable.

- a. If you disagreed with the previous statement, how could interdisciplinary research best be accommodated? Please describe.

Addressed in Q3.30 above.

ERA and Indigenous research

Q3.32 My institution would meet ERA low-volume threshold in Indigenous studies at:

- a. Two-digit? Yes/No. If you answered ‘yes’, please list which ones.

Yes – although this is not guaranteed and would depend on both the methodology and future staff changes. However, if assessments under this code are peer reviewed with the current threshold, it is probable that UNSW would be able to meet the threshold.

- b. Four-digit? Yes/No. If you answered ‘yes’, please list which ones.

UNSW engages in Indigenous research through Nura Gili: Centre for Indigenous Programs, and UNSW also has strong engagement with regard to Indigenous health, as it has an ongoing relationship with, and funding from, the Lowitja Institute, and as UNSW has been the lead institution on several NHMRC CREs related to Indigenous health.

As such, it is possible that UNSW may reach the threshold of 50 outputs in Aboriginal and Torres Strait Islander Health and Wellbeing (4504) and Aboriginal and Torres Strait Islander Peoples, Society and Community (4505). However, these are new codes, and so there may be teething issues with institutional submissions arising from unfamiliarity, i.e., researchers would need to provide input in the first instance to assist in the classifying of outputs under the new codes.

On a related note, internationally-benchmarked citation analysis is not well suited to research that has a local or regional focus and is typically published in local or national outputs: there is necessarily a smaller “citation audience” than there would be for globally applicable research, so it would be problematic to create appropriate benchmarks. There are too few journals specifically devoted to Indigenous research to create reliable citation benchmarks, and including more generalist journals is likely to inflate and inappropriately stretch the benchmarks by comparing regionally/locally-focussed research with research of more universal applicability.

- Q3.33 In ERA, the best approach for evaluating Indigenous Studies is (choose one):
- Using established ERA methodology i.e. the low-volume threshold would apply to the Indigenous Studies discipline and all its specific disciplines
 - For Aboriginal and Torres Strait Islander studies by combining low-volume disciplines into single units of evaluation
 - For Aboriginal and Torres Strait Islander studies by combining low-volume disciplines into two units of evaluation (one unit comprising Humanities, Arts, and Social Sciences disciplines and one unit comprising Science, Technology, Engineering and Mathematics disciplines)
 - Other. Please describe.

a.

- Q3.34 What would be the advantages and/or disadvantages of your preferred approach for evaluating Indigenous studies in ERA? Please describe.

It is important that a consistent approach is taken across the full spectrum of disciplines, especially in the first round in which this UoA is used. The current threshold of 50 weighted outputs over 6 years should be attainable for many institutions at the 2-digit level, especially if it includes non-traditional output types, such as submissions to official policy reviews and research reports around matters of interest to Indigenous communities, etc.

ERA process

Collection of ERA data

- Q3.35 ERA should move to an annual collection of data from universities. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Strongly disagree. Given our strong preference for retaining a census date approach and avoiding the burdensome administrative complexity of a by-line approach, there would be little advantage to annual collection.

- Q3.36 What would be the advantages and/or disadvantages of an annual data collection? Please describe.

If annual collection were to be adopted by the ARC, previously submitted outputs would need to be removed whenever a researcher leaves a university before the census date, and additional back-entry of publications would be required as new researchers arrive. There would be pressure to push this back onto the universities, which would require significant staff resourcing for the transforming of metadata to compatible formats, and sourcing and digitising of outputs.

Publication of ERA data

- Q3.37 In future ERA rounds, should the volume of outputs submitted for each unit of evaluation be included in the National Report?
- Yes, Please explain your answer.

Yes. This has been suggested for earlier ERA rounds, but it has never materialised. It would allow for a better appreciation of the significance of a UoA at individual institutions.

- b. No, Please explain your answer.

Q3.38 In future ERA rounds, research outputs should be published with their assignment to specific disciplines following completion of the round. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Disagree.

- a. What would be the advantages? Please explain your answer.

It would enable greater transparency.

- b. What would be the disadvantages? Please explain your answer.

There would be little added value arising from the publication of these data.

Q3.39 What other data do you think the ARC should publish following an ERA round? Please describe.

Apart from the volume of outputs, income indicators at the UoE level would be useful.

Section 4—Engagement and Impact Assessment

El overview

Q4.1 Considering that EI is a new assessment, to what extent is it meeting its objectives to:

- a. encourage greater collaboration between universities and research end-users, such as industry, by assessing engagement and impact? A very large amount; A large amount; A moderate amount; A small amount; Not at all. Please explain your answer.

A moderate amount. Given the longstanding efforts at promoting collaboration through schemes such as CRC and ARC Linkage programs (and previously Collaborative Research Grants), it is difficult to identify precisely what impact the EI has had. As a recent innovation, the EI is not yet likely to have achieved its full potential in terms of its impacts, but this could be accelerated by linking some portion of funding to EI outcomes.

- b. provide clarity to the Government and the Australian public about how their investments in university research translate into tangible benefits beyond academia? A very large amount; A large amount; A moderate amount; A small amount; Not at all. Please explain your answer.

A moderate amount. The EI is truly the first sector- and discipline-wide stocktake of approaches to research impact through engagement with end-users. It has only now established a baseline against which future EI assessments may be compared. EI is even less well-known than ERA in the broader community.

- c. identify institutional processes and infrastructure that enable research engagement? A very large amount; A large amount; A moderate amount; A small amount; Not at all. Please explain your answer.

A large amount. EI has led to greater attention being paid to the means of engagement and to developing more centralised and formal mechanisms for capturing engagement-related data/metrics/activity. It has also helped universities to identify and address uneven levels of support across disciplines for engagement activities. Academic promotion criteria have been amended to formally recognise engagement.

- d. promote greater support for the translation of research impact within institutions for the benefit of Australia beyond academia? A very large amount; A large amount; A moderate amount; A small amount; Not at all. Please explain your answer.

A large amount. The EI has highlighted the need for translation of research into impact. As this is often a lengthy process, the immediate effect has been an upsurge in engagement activity. Such engagement often takes place without formal, centralised institutional support, while some faculties have created new appointments, such as that of Associate Dean, Engagement and Impact, or similar. UNSW has created a professional development program for academic staff regarding the translation of research to impact.

- e. identify the ways in which institutions currently translate research into impact? A very large amount; A large amount; A moderate amount; A small amount; Not at all. Please explain your answer.

A large amount. The EI has generated a valuable resource by making institutional narratives for high-rated engagement and their approach to impact statements publicly available.

- Q4.2 The EI objectives are appropriate for the future needs of its stakeholders. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Agree. The EI provides a process through which universities can showcase how research benefits society, and it also represents an opportunity to elucidate mechanisms that give rise to this benefit through engagement with end-users and their adoption of research outcomes. These results meet the needs of stakeholder groups.

- Q4.3 What impact has EI had on:

- a. the Australian university sector as a whole? Please describe.

The EI has brought into greater focus the need to translate research into real-life outcomes. Clearly, there is also a need for “blue sky” research to continue, as such research can lead to transformative rather than incremental change, and much of Australia’s most impactful research has arisen from basic, initial approaches that did not have obvious applications at the time this research was undertaken.

- b. Individual universities. Please describe.

The development of systems to record information about engagement and impact in a systematic and rigorous way. This development has resulted in reflection on the ways that engagement occurs, with the additional benefit of promoting engagement at a university-wide level.

- c. researchers. Please describe.

Engagement activity is now more heavily weighted when academic promotion is considered, with a consequent incentive for researchers to actively engage with research end-users.

d. other sectors outside of academia? Please describe.

It has not had much effect in this area.

Q4.4 How do you, or your organisation, use EI outcomes? Please describe.

EI outcomes facilitate conversations with academics around the importance of engagement and impact, and how engagement and impact can be incorporated into future plans and strategies. They have been valuable in highlighting areas for improvement, and they reflect the need to focus on engagement with the wider community.

Q4.5 The EI outcomes are valuable to you or your organisation. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Agree. The EI process, rather than the outcomes, has been valuable in improving internal systems and processes dealing with engagement and impact. As noted in Q4.4, outcomes are used to facilitate conversations around engagement and impact, and they influence university-wide strategy moving forward.

Q4.6 How else could EI outcomes be used? Please describe.

The EI outcomes could be used as a driver for Research Block Grant funding in some manner, at least.

EI definitions

Q4.7 The current Engagement definition is appropriate. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree.

Agree.

a. If you don't agree, what are your suggested amendments to the Engagement definition? Please describe.

Q4.8 The current Impact definition is appropriate. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree.

Agree.

a. If you don't agree, what are your suggested amendments to the Impact definition? Please describe.

Q4.9 The current end-user definition is appropriate. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree.

Agree. However, see response in b. below.

a. If you don't agree, what are your suggested amendments to the end-user definition? Please describe.

b. Are there any end-user categories excluded in the current definition of research end-user that you think should be included? Please explain your answer.

It is suggested that HEPs could be end users. This could relate to their teaching activities rather than their general research activities. For example, there may be new approaches to instructional design and new technologies for remote learning, etc. that could be considered as research impact.

Q4.10 Are there other key terms that need to be formally defined? Yes/No. If you answered 'Yes', please explain your answer.

No.

EI methodology

Unit of assessment

Q4.11 Are the two-digit Field of Research codes the most appropriate method to define units of assessment for Engagement and Impact? Yes/No. Please explain your answer.

Yes. In order to reduce the workload involved in the EI submission, it is necessary to limit the number of case studies to a manageable number. The two-digit level creates a balance between the need for a comprehensive review and the need to keep the effort involved in developing an EI submission at a reasonable level.

Q4.12 Are there other ways to classify units of assessment in EI, for example, SEO codes? Yes/No. Please explain your answer.

Yes. The ATN/Go8 impact trial used two-digit SEO codes. However, it seems FOR codes are more appropriate, as they compare research with like research.

Selectiveness of EI

Q4.13 Should there be more or fewer units of assessment per university? More units of assessment; The same number as in EI 2018; Fewer units of assessment.

The same. Given the significant workload involved in preparing the submission and the stresses on the sector caused by the Covid-19 pandemic, we do not see the need for an increase in the number of units of assessment.

a. How many and why? Please explain your answer.

EI low-volume threshold

Q4.14 The EI low-volume threshold should continue to be based on the number of research outputs submitted for ERA. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree.

Strongly agree. There needs to be a threshold of some kind, and the ERA provides the only reasonable source for this threshold.

a. If you disagree, how should eligibility for assessment in EI be determined? Please explain your answer.

Q4.15 The low volume threshold is set at the appropriate level. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Neither agree nor disagree. The reference period for EI is over a far greater time span than the ERA outputs reference period. On that basis, there cannot be an appropriate fixed number of ERA outputs/UoAs as the publication reference period for ERA does not align with the reference period underpinning research in an impact study. Thus, the current threshold is reasonable in this context.

Engagement indicators

Q4.16 Overall, the engagement indicator suite for the assessment of research engagement is suitable. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Agree. There is a need for a quantitative aspect to the assessment, but emphasis should be placed on a holistic assessment of the narrative, with the quantitative measures providing contextual information.

Q4.17 The cash support from research end-users indicator using HERDC data is appropriate for the assessment of research engagement? Strongly agree; agree; neither agree nor disagree; disagree; strongly disagree. Please explain your answer.

Agree – but greater clarity is needed around the definition of “end-user”. Changes in HERDC reporting (specifically, the for profit/not for profit/philanthropy disaggregation of Category 3 income) offer useful sub-categories for the EI. Given this, it might be simpler to have all Category 3 income reported in the EI without regard to end-user status. Panel members can then make interpretive judgements as they see fit.

Q4.18 The research commercialisation income is appropriate for the assessment of research engagement. Strongly agree; agree; neither agree nor disagree; disagree; strongly disagree. Please explain your answer

Agree. It is a clear indicator that the research is valued as useful for practical purposes by end-users.

Q4.19 Are there additional metrics that would be appropriate across many or all disciplines? Yes/No. If you answered 'Yes', please outline the metrics. If you answered 'No', please explain your answer.

No.

Q4.20 Are there alternative metrics that would be appropriate across many or all disciplines? Yes/No. Please specify the metrics.

No.

Q4.21 Should any of the current Engagement metrics be redesigned? Yes/No. If you answered 'Yes', which ones and how?

No – as noted above, the income metrics will become more meaningful if disaggregated into for profit / not-for-profit funding sources.

Q4.22 The co-supervision of HDR students should be made an engagement indicator in future rounds of EI. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Neither agree nor disagree. Where a scholarship is funded by industry (such as through an APA(I) or modern equivalent) the research is directed at industry/end-user needs. There needs to be clear guidance around what an end-user is for this purpose.

Q4.23 In your opinion, are any of the ERA applied measures appropriate indicators of research engagement in EI?

a. Patents. Yes/No. Please explain your answer.

Yes and no. If the patent generates income, then, yes; however, this may be reflected in commercialisation income. Simply applying for (as opposed to progressing) a patent does not require any end-user engagement, so patents are not direct indicators of either engagement or impact.

b. Research commercialisation income. Yes/No. Please explain your answer.

Yes – it's an indicator of engagement.

c. Registered designs. Yes/No. Please explain your answer.

No. Only six were reported nationally in ERA 2018. These could be mentioned in the engagement or impact narrative, if relevant.

d. Plant breeder's rights. Yes/No. Please explain your answer.

No. Only 27 were submitted nationally. These could be mentioned in the engagement or impact narrative, if relevant.

e. NHMRC endorsed guidelines. Yes/No. Please explain your answer.

No. Only 22 were reported in ERA 2018. These could be mentioned in the engagement or impact narrative, if relevant.

Engagement narrative

Q4.24 The narrative approach is suitable for describing and assessing research engagement with end-users. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer

Strongly agree. Engagement takes different forms across different disciplines. A narrative approach permits greater flexibility and allows for a multiplicity of engagement activities to be evaluated.

a. If you disagree, what alternative approach could be used to replace the narrative? Please explain your answer. If you are suggesting indicators, please be specific.

Q4.25 One engagement submission per broad discipline is sufficient for capturing the research engagement within that discipline. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Agree. One submission is adequate, and it's difficult to conceive how more than one statement could be implemented; i.e., would 2-digit codes have to be sub-divided?

Q4.26 The engagement narrative needs to be longer. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Disagree. The character limit ensures clarity and cohesion within the engagement narrative.

Q4.27 Additional evidence is needed within the narrative. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Disagree. There is ample opportunity to provide whatever evidence is needed.

Impact narrative

Q4.28 The narrative approach is suitable for describing and assessing impact. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Agree. It is difficult to think of an alternative that would have general applicability over the full range of possible impacts.

- a. If you disagree, what alternative approach could be used to replace the narrative? Please explain your answer. If you are suggesting indicators, please be specific.

Q4.29 One impact study per broad discipline is sufficient for capturing the research impact within that discipline. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Agree. Although some UoAs (such as those for Engineering, Human Society, and the Health disciplines) are far greater in scope/volume of research, it is examples of major (not minor) and long-run impact that are desired, and these are typically limited. This is an area for which depth rather than breadth is needed.

Q4.30 The impact narrative needs to be longer. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Disagree. There is ample opportunity to articulate the impact within the permitted character limit.

Q4.31 There is a need for additional evidence to be provided within the narrative. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Strongly Disagree. Institutions have the opportunity to offer evidence that is pertinent to the case study in question. There are no "one size fits all" indicators or evidence "types" that would suit the broad range of possible impacts, such as cultural vs. technological.

Of note is that the ban on hyperlinks is restrictive when there is evidence of impact that can only be accessed online, e.g., a website, policy, or online resource.

- a. If yes, what evidence should be provided? Please explain your answer.

Q4.32 In your opinion, are there quantitative indicators that could be used to measure the impact of research outside of academia? Yes/No. Please explain your answer.

Yes and No. Some types of impact would lend themselves to quantitative measures (economic benefit, i.e., dollars saved; health benefits, i.e., lives saved/quality of life indicators/reduced burden of disease), but none of these would be applicable in a universal way over the range of possible impacts. While there is a desire, particularly concerning the STEM disciplines, for a more quantitative approach, at the same time, no new metrics or indicators have been proposed.

If adopted, any indicators selected should be non-proprietary, i.e., not specific to a publisher or vendor.

- a. If you answered 'yes' to the previous question, please name and describe the quantitative indicator/s, and the disciplines for which they are relevant. Please list and describe.

Approach to impact Narrative

Q4.33 The narrative approach is suitable for describing and assessing approach to impact. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Strongly Agree. Given the numerous approaches to impact which are possible, a narrative approach is best. An overly prescriptive format could inadvertently privilege some approaches over others that are equally effective or are specific to niche areas.

- a. If you disagree, what alternative approach could be used to replace the narrative? Please explain your answer. If you are suggesting indicators, please be specific.

Q4.34 One approach to impact narrative per broad discipline is sufficient for capturing the activities within that discipline. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Neither agree nor disagree. This is because the delineation between engagement and approach to impact is hazy, rendering the need for both questionable. Also, within impact narratives, there is some room for approach to impact information that it is specific to that case study.

Q4.35 The approach to impact narrative needs to be longer. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Strongly disagree. The 6,000-character limit is more than adequate. Indeed, the approach to impact could instead be subsumed under either the engagement or the impact narrative, in which case a greater character limit could be entertained for those two.

Q4.36 There is a need for additional evidence to be provided. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Strongly disagree. If there is a need for additional evidence, institutions should provide this in their narratives. As noted earlier, there is no "one size fits all" solution given the broad spectrum of possible approaches to impact.

Q4.37 Would there be benefit in combining engagement and approach to impact? Yes/No. Please explain your answer.

Yes. These should be combined, as it is difficult to imagine “approach to impact” without engagement with end-users. As noted earlier, some consideration of approach to impact can take place in the impact case study as well, although duplication should then be avoided.

El rating scales

Q4.38 The engagement rating scale is suitable for assessing research engagement. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Agree. The rating scale is suitable, but a five-point rating scale, such as that in ERA, would also be suitable, and, in fact, it was the one originally proposed for the RQF impact scale (i.e., A through E).

Q4.39 The descriptors for the engagement rating scale are suitable. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Agree.

Q4.40 The impact rating scale is suitable for assessing impact. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Agree. The rating scale is suitable for this purpose, but we have no objection to a more graduated (perhaps 5-point) scale.

Q4.41 The descriptors for the impact rating scale are suitable. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Agree.

Q4.42 The approach to impact rating scale is suitable for assessing approach to impact. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

Agree. Approach to impact is less important than the impact or engagement, and a three-point scale is adequate. We are firmly in favour of combining the approach to impact with engagement, which would make the question moot.

Q4.43 The descriptions for the approach to impact rating scale are suitable. Strongly agree; Agree; Neither agree or disagree; Disagree; Strongly disagree. Please explain your answer.

See response to Q4.42 – UNSW advocates combining the approach to impact with the engagement narrative.

El interdisciplinary research

Q4.44 Should El continue to include an interdisciplinary impact study in addition to the two-digit Fields of Research impact studies? Yes/No. Please explain your answer.

Yes. The interdisciplinary classification allows for research that does not fit comfortably within a 2-digit FOR code.

EI and Aboriginal and Torres Strait Islander research

Q4.45 Should the EI low-volume threshold be applied to the unit of assessment for Aboriginal and Torres Strait Islander research in EI 2024 with the option to opt in if threshold is not met? Yes/No. Please explain your answer.

Yes – there does need to be a threshold so that institutions with low volume are not required to submit under this code. The opportunity to opt in is always available for institutions that do not reach the threshold.

Q4.46 Should the unit of assessment for Aboriginal and Torres Strait Islander research include engagement in EI 2024? Yes/No. Please explain your answer.

Yes. It is important that a consistent approach is taken across all Units of Assessment.

Section 5—Overarching Issues Common to both ERA and EI

Frequency of ERA and EI

Q5.1 How often should ERA occur? Every three years; Every five years; Other, please specify. Please explain your answer.

No more frequently than every five years. Given the huge stresses on the sector due to the Covid-19 pandemic, and the submission work required by institutions that commences 18 months prior, the next ERA round should be delayed until 2024, rather than held in 2023.

Q5.2 What impact would a longer assessment cycle (i.e. greater than three years) have on the value of ERA results, particularly in the intervening years? Please explain your answer.

Nil. We note the much longer intervals used in the UK REF exercise, and that calibration occurring every five years rather than every three will make little difference. It is important to drop the overlapping assessment period used to date whereby each output was needlessly assessed twice over two ERA cycles.

Q5.3 How often should the EI assessment occur? Every three years; Every five years; Other, please specify. Please explain your answer.

As for the ERA. As EI relies upon ERA metrics and output volume, to reduce the substantial administrative burden on universities and the ARC, it should be conducted in the year after the ERA assessment.

Q5.4 What impact would a longer assessment cycle (i.e. greater than three years) have on the value of EI results, particularly in the intervening years? Please explain your answer.

As for Q5.2.

Streamlining and simplifying ERA and EI

Q5.5 ERA and EI should be combined into the one assessment. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Strongly disagree. Both assessments are resource intensive for administrators and academics alike, and are thus best separated, with EI taking place the year after ERA (as ERA outputs determine EI thresholds).

a. What would be the advantages and/or disadvantages? Please explain your answer.

See response to Q5.5.

Q5.6 Are there other ways to streamline the processes to reduce the cost to universities of participating in ERA and EI? Yes/No. Please explain your answer.

Suggest removal of some of the low-volume applied measures from ERA and streamlining of the income submission by removing the Category 1 grant requirement of “proportion of grant in reference period”, which refers indirectly to income years outside the reference period.

Q5.7 In your view, what data sources could ERA utilise? Please explain your answer.

Apart from data from the citation provider, the ARC could align staff totals with official staff returns (assuming retention of the census date approach to ERA).

Q5.8 In your view, what are the most time-consuming elements of an ERA submission? Please describe.

Data integrity of outputs that are not included in citation databases. These naturally form part of the assessment, so there is no particular change to the process that would ameliorate the burden of this activity. To reduce the burden on participating institutions, we suggest the removal of applied measures that are marginal to the assessment.

a. Are there efficiencies that could be introduced? Yes/No. Please describe.

Q5.9 In your view what are the most time-consuming elements of an EI submission? Please describe.

a. Are there efficiencies that could be introduced? Yes/No. Please describe.

Utilising technological advances and pre-existing data sources

Q5.10 ORCID iDs should be mandatory for ERA. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Strongly agree. UNSW supports the inclusion of ORCID IDs and DOIs in the data submission, where these are available.

a. What are the advantages and/or disadvantages? Please explain your answer.

DOIs are used for most outputs across most disciplines, and initiatives to extend their use to other types of outputs, in particular the grey literature, facilitates a fuller picture of how Australian research outputs are related. For example, funding acknowledgements for added data and equipment identifiers are reported to NCRIS, with DOIs increasingly being included in this reporting

as well. The only disadvantage is that these are sometimes not available, but we acknowledge that uptake could be greatly enhanced if DOIs are included in the data submission in future.

Q5.11 The automatic harvesting of output data using ORCID iDs would streamline a university's submission process. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

Disagree. There will still be a need for institutions to intervene in the process even with automatic harvesting of output metadata: e.g., assignment of research codes, addition of non-traditional outputs, etc. There would also still be some complexity in managing the merger of automated data collected with the additional data elements and outputs required.

a. What are the advantages and/or disadvantages? Please explain your answer

As above.

Q5.12 DOIs should be mandatory for ERA. Strongly agree; Agree; Neither agree nor disagree; Disagree; Strongly disagree. Please explain your answer.

See response at Q5.10.

a. What are the advantages or disadvantages? Please explain your answer.

Q5.13 Are there new ways to collect data to reduce the cost and burden to universities of participating in ERA and EI whilst maintaining the robustness of the ERA and EI process? Yes/No. Please explain your answer.

Yes.

Data from citation providers could be ingested by the ARC directly, based on the unique identifier from the citation provider, author information, and FOR coding provided by institutions. It may also be possible for institutions to review the automated coding. We would not endorse a move to enforced automated coding based on journal lists or machine learning algorithms.

We currently assign staff to FORs algorithmically based on the distribution of their outputs across FORs. Instead, this exercise could be undertaken by the ARC itself to reduce the burden on universities. The only per-FTE indicators provided to panels in the current ERA dashboards are the income indicators. It would be better to use an automated staff FOR allocation base on their outputs.

a. What are the advantages and/or disadvantages? Please explain your answer.

There would be consistent data quality across all institutions for the automatically ingested metadata. However, there could be complexities associated with the necessary supplementation of the dataset with outputs not included in the automatic ingestion, such as non-traditional outputs.