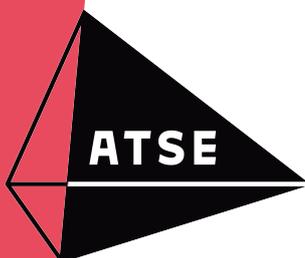


Submission to Australian Research Council

ATSE SUBMISSION TO ERA 2023 BENCHMARKING AND RATING SCALE CONSULTATION

22 April 2022



Australian Academy of
Technology & Engineering

GPO Box 4776
Kingston, 2604
ACT, Australia
T + 61 2 6185 3240
F + 61 3 9864 0930
E info@atse.org.au

ATSE SUBMISSION TO ERA 2023 BENCHMARKING AND RATING SCALE CONSULTATION

The Australian Academy of Technology and Engineering (ATSE) is a Learned Academy of independent, non-political experts helping Australians understand and use technology to solve complex problems. Bringing together Australia’s leading thinkers in applied science, technology and engineering, ATSE provides impartial, practical and evidence-based advice on how to achieve sustainable solutions and advance prosperity.

ATSE welcomes the opportunity to respond to the Australian Research Council’s consultation on the methodology used for the Excellence in Research for Australia (ERA) and Engagement and Impact (EI) assessments.

ATSE has also contributed to the previous [ERA EI review](#) in 2020 (Australian Academy of Technology and Engineering, 2020) and, more recently, the consultation on the inclusion of [preprints in ERA](#) (Australian Academy of Technology and Engineering, 2022).

This submission puts forward a suggestion for a more granular ranking scale and endorses the use of the two new citation metrics as advanced in the consultation paper. This submission also considers broader issues regarding the definition of “world standard”, improving end-user engagement with higher education research, and the future purpose of ERA.

Capturing excellence in higher education research

Ranking scale

The ERA EI Review recommended that the new rating scale should enable differentiation between strong and outstanding performers and enable comparisons between Australian universities and against world performance in each discipline (Australian Research Council, 2021). Both options for an improved ranking scale, as put forward by the consultation paper, would sufficiently address the issues raised in the current rating system.

ATSE agrees that the current levels 1 – 4 be retained, and current level 5 should be split into 2 levels for greater granularity. The upper level should be defined by the top 10% high performer benchmark. There is no preference expressed for the nomenclature of each level. One possibility is to use a star system for the top level (i.e., 5*). This system is represented in the table below, noting that the wording for each level could be adjusted – this may be desirable given the complexities of defining “world standard”, as discussed below.

This system would facilitate direct comparability to previous ERAs, while achieving the objective of providing more differentiation at the higher end of the scale.

Current ranking	New proposed ranking
5 – Well above world standard	5* - World leading (top 10%)
	5 – Well above world standard
4 – Above world standard	4 – Above world standard
3 – At world standard	3 – At world standard
2 – Below world standard	2 – Below world standard
1 – Well below world standard	1 – Well below world standard

Recommendation 1: Adopt a new ERA rating scale in which current levels 1 – 4 are retained, and current level 5 is split into two levels, the higher of which is defined as the top 10% of institutions.

Citation methodology

The quality of science and engineering disciplines is determined in ERA primarily using citation metrics. To facilitate greater differentiation among high performing institutions, the ARC has proposed two new citation metrics: the *high-performance indicator (HPI)* that illustrates performance compared to top 10% research institutions worldwide (using the ERA world dataset and ERA Journal List), and *dynamic relative citation impact (RCI)* classes that replace the existing RCI classes and provide greater clarity on different levels of performance, especially at the higher end of the scale

ATSE agrees that both metrics should be used, with the RCI facilitating the initial assessment and categorisation into ratings, and the HPI differentiating top performers between the proposed 5 and 5* levels.

Recommendation 2: Use the new citation metrics HPI and RCI to support implementation of the new rating scale.

Defining world standard in peer review disciplines

The issue of world standard being poorly defined was raised in the ERA EI Review, with a recommendation to revise the definition of world standard. While the proposed methodology and peer review guidance changes purport to address this issue, there is a fundamental limitation of the definition that cannot be overcome by incremental adjustments.

There is no singular world standard that is understood equally by all peer reviewers; consequently, peer review ratings are not replicable. Each reviewer's conception of world standard is informed and constrained by their volume of knowledge and the extent of experiences working and collaborating internationally. Other potential complications in defining world standard include temporal considerations (research considered world leading at the time of publications, as opposed to research that becomes impactful many years later) and bias towards highly ranked journal publications and English language research outputs more generally. One way to improve guidance would be to provide examples of highly ranked example outputs identified by sectoral experts that exemplify world standard in a discipline.

Considering the interplay between citation and peer review can provide further insight into the relative excellence of a discipline. This could include performing a citation analysis on a subset of a submission in a peer review discipline to sense-check the peer review rating. For interdisciplinary fields, both analyses could be performed on a submission either in parts or in its totality.

A further point to clarify is how the volume of a submission affects its rating (e.g., if two world-leading ranking submissions of differing volumes would be considered equally excellent).

Improving research engagement

There is a need to improve research engagement and collaborations between universities and industry. This has been targeted by recent Federal Government initiatives such as the development of the Higher Education Research Commercialisation (HERC) Intellectual Property (IP) framework.

EI, which was introduced in 2018 alongside ERA to quantify non-academic benefits of university research to end-users, could be used as a lever to further encourage public-private collaborations. As suggested by ATSE's previous submission to the ERA EI Review, the ARC could consider creating incentives to encourage use of EI data to promote impact and engagement.

Future purpose of ERA

When ERA was first conducted in 2010, its stated objectives were to establish an evaluation framework to provide stakeholders assurance of the quality of Australian university research, provide a national stocktake of research strengths at a disciplinary level, identify excellence across the spectrum of research performance, identify emerging research areas and opportunities for development, and facilitate comparisons of research nationally and internationally (Australian Research Council, 2011).

Now that the strengths and excellence of Australian higher education research has been quantified by previous ERAs, concerns have been raised about return on investment of ERA as a regular exercise (Sawszak, 2021). Its objectives and value into the future must be carefully considered, particularly considering the required resourcing from the ARC and research institutions, and the fact that global rankings are available from other independent sources.

To ensure resources are being used effectively, any efforts to reduce institutions' reporting burden and focus on furthering their core business are welcomed. For example, as recommended in the ATSE submission to the ERA EI Review and more recently in the ATSE submission to the ERA Preprints consultation, the ERA reference period should be lengthened to reduce the frequency of the ERA.

References

Australian Academy of Technology and Engineering. (2020). *Review of the ERA and EI assessment frameworks*.

Australian Academy of Technology and Engineering. (2022). *ATSE submission on ERA 2023 - Preprints Consultation*.

Australian Research Council. (2011). *ERA 2010*.

Australian Research Council. (2021). *ERA EI Review Final Report 2020-2021*.

Sawszak, K. (2021, August 16). Where is the evidence for ERA? Time's up for Australia's research evaluation system. *The Conversation*.