

Consultation on the Future Research Assessment Programme (FRAP)

Consultation response from the Royal Academy of Engineering

6 May 2022

The Future Research Assessment Programme (FRAP) aims to explore possible approaches to the assessment of UK higher education performance. Initiated at the request of UK and devolved government ministers and funding bodies, and led by Research England, the Scottish Funding Council, the Higher Education Funding Council for Wales, and the Department for the Economy, NI.

Academy responses are below each numbered question in indigo.

Section one: purposes of research assessment

1. In addition to enabling the allocation of research funding and providing accountability for public investment in research, which purposes should a future UK research assessment exercise fulfil?
Select all that apply.
 - a. Provide benchmarking information
 - b. Provide an evidence base to inform strategic national priorities
 - c. Provide an evidence base for HEIs and other bodies to inform decisions on resource allocation
 - d. Create a performance incentive for HEIs.

No answer

2. What, if any, additional purposes should be fulfilled by a future exercise?

No answer

3. Could any of the purposes be fulfilled via an alternative route? If yes, please provide further explanation.

No answer

4. Do you have any further comments to make regarding the purposes of a future research assessment system?

The primary purpose of the REF is to allocate research funding, with accountability for public investment in research following closely. As has been widely acknowledged this has resulted in concerns over high levels of bureaucracy and effort, driven by the economic benefits for researchers and institutions of achieving a good REF outcome. Given the link between purpose and bureaucracy, we are pleased to see the FRAP is exploring burden and bureaucracy (see answer to question 25).

As one of the essential purposes of research assessment is to provide accountability for public investment in research; for the engineering community that reinforces the importance of including 'impact' in any future research assessment exercises, as impact is the return on public investment in research.

In addition, this is the first time a single UOA has been used for engineering, the results of REF2021 may give us some particularly useful insights into the overall profile of engineering research, and some valuable reflections on the process, and therefore on what direction a future research assessment system could take. We look forward to reflecting on the REF2021 results when they are released, and hope to then be able to make further inputs to this discussion.

Section two: setting priorities

5. To what extent should the funding bodies be guided by the following considerations in developing the next assessment system? Please rank the considerations from 1 (most important) to 9 (least important)
- a. Ability of the system to promote research with wider socio-economic impact.
 - b. Comparability of assessment outcomes (across institutions, disciplines and/or assessment exercises)
 - c. Ensuring that the bureaucratic burden of the system is proportionate
 - d. Impact of the assessment system on local/regional development
 - e. Impact of the system on research culture
 - f. Impact of the system on the UK research system's international standing
 - g. Maintaining continuity with REF 2021
 - h. Providing early confirmation of the assessment framework and guidance
 - i. Robustness of assessment outcomes

No answer

6. Relating to research culture, to what extent should the funding bodies be guided by the following considerations in developing the next assessment system? Please rank the considerations from 1 (most important) to 6 (least important)
- i. Impact of the assessment system on research careers:
 - ii. Impact of the assessment system on equality, diversity and inclusion:
 - iii. Ability of the assessment system to promote collaboration (across institutions, sectors and/or nations)
 - iv. Impact of the system on inter- and transdisciplinary research
 - v. Impact of the system on open research
 - vi. Impact of the system on research integrity

No answer

7. What, if any, further considerations should influence the development of a future assessment system? Please set out the considerations and indicate where they should be located in the list of priorities.

For the above two questions (5 & 6) the options are all important and closely interlink, and we are therefore not prepared to rank them.

8. How can a future UK research assessment system best support a positive research culture?

The impact of research assessment on research culture is a critical consideration. The whole R&D system relies on having skilled, motivated and diverse individuals moving through and between components of the system. These skilled individuals emerging from the research system are an 'output' of importance on par with research papers, patents and other traditional outputs. Having a research culture that supports individuals, resulting in them being motivated and ready to deploy their broad skillsets across the R&D system, is therefore a key measure of a successful research environment.

The Academy has welcomed the increasing focus on research culture in recent years, and it is key that the impact the REF and any future assessment exercises can have on it is carefully considered and recognised. Any changes to the incentives and motivations in the system will have effects on research culture. An assessment system that pays due considerations to bureaucracy could also aid with research culture issues.

Section three: identifying research excellence

Components of excellence

9. Which of the following elements should be recognised and rewarded as components of research excellence in a future assessment exercise?

(Multiple options: 'Should be heavily weighted' – 'Should be moderately weighted' – 'Should be weighted less heavily' – 'Should not be assessed' – 'Don't know')

- a. Research inputs (e.g. research income, internal investment in research and in researchers)
- b. Research process (e.g. open research practices, collaboration, following high ethical standards)
- c. Outputs (e.g. journal articles, monographs, patents, software, performances, exhibitions, datasets)
- d. Academic impact (contribution to the wider academic community through e.g. journal editorship, mentoring, activities that move the discipline forward)
- e. Engagement beyond academia
- f. Societal and economic impact
- g. Other (please specify).

No answer

10. Do you have any further comments to make regarding the components of research excellence?

For our own activities, such as nominations for Fellowship, the Academy's definition of excellence is purposefully broad to ensure that the whole breadth of individuals in academia, industry and beyond fall in scope: "The full citation of personal achievements in engineering must highlight the candidate's individual engineering excellence at some time in his or her career, identifying related outcomes. It should not simply list posts." To accompany this is an extensive list of examples, but the most relevant to research excellence are:

- nominations from Academic and Research Institutes should identify inventions or innovation resulting in successful products, processes or practices, in addition to providing evidence of a successful academic career;
- leadership of an engineering school must be complemented by engineering achievements.

Impact is key to the evidencing of these achievements. The inclusion of impact since REF 2014 has had a hugely positive influence on universities, encouraging them to articulate and ultimately improve the translation of their research into social, environmental or economic benefits. In particular, impact appears to be changing the way in which university–business collaborations are viewed and valued, including by stimulating a more positive attitude among academics towards working with business.

Impact is integral to engineering excellence, and we see it as continuing to be so for future exercises.

Consideration should be given to impact having greater weighting in future for engineering, and whether all subject areas should receive the same weighting across environment, outputs and impact. Increased weighting of impact would require the number of impact case studies to be reviewed. The Academy would be happy to convene discussions on impact and how this could be improved if increased weighting was pursued.

There could also be more thought on whether the whole spectrum of activities related to business-university collaboration are recognised, and whether teamwork and interdisciplinarity are appropriately included. For all of these, we will have to see and reflect on the results of REF2021 before we can provide any particular comments or input.

Assessment criteria

11. Are the current REF assessment criteria for outputs clear and appropriate? (Yes/No/Don't know)

- a. Originality
- b. Significance
- c. Rigour

No answer

12. Do you have any further comments to make regarding the criteria for assessing outputs?

Greater emphasis should be placed on rigour – and especially integrity, checking that results have been replicated, and imposing strong penalties if outputs submitted to REF are subsequently withdrawn, for example. This could be achieved through financial penalties in the reduction of block grants, and the associated reputational impact this would have on individuals involved would likely help deter undesirable behaviours.

13. Are the current REF assessment criteria for impact clear and appropriate? (Yes/No/Don't know)

- a. Reach
- b. Significance

No answer

14. Do you have any further comments to make regarding the criteria for assessing impact?

In question 10 we explained the importance of impact to excellence in engineering and how the Academy approaches excellence. Once REF2021 has reported, there should be a reflection on how impact was assessed, specifically looking at comparisons between different disciplines.

Consideration could also be given to whether achieving the challenges we set out to solve and subsequently do solve – whether as a nation, an institution, or a research group - counts as impact, and if so to what extent this is covered by the current REF processes.

We would also welcome further exploration on whether equal significance should be applied to impacts that benefit UK economy and society vs globally.

15. Are the current REF assessment criteria for environment clear and appropriate? (Yes/No/Don't know)

- a. Vitality
- b. Sustainability

No answer

16. Do you have any further comments to make regarding the criteria for assessing environment?

Integrity should receive more emphasis in the environment, as it is a crucial component of sustainability in the research system. Similarly, clear emphasis on inclusive cultures and increasingly diverse populations of researchers better reflecting the society they serve would be more in line with our position on EDI.

Previously, we welcomed the inclusion of the impact template as an explicit section of the environment element, and look forward to understanding how this has been utilised in REF2021.

Section four: assessment processes

Frequency

17. When considering the frequency of a future exercise, should the funding bodies prioritise:
- stability
 - currency of information
 - both a. and b.
 - neither a. nor b.
 - Don't know.

No answer

18. Do you have any further comments to make regarding the prioritisation of stability vs. currency of information?

No answer

Sequencing

19. Should a future exercise take place on a rolling basis?
- Yes, split by main panel
 - Yes, split by assessment element (e.g. outputs, impact, environment)
 - No
 - Don't know.

No answer

20. Do you have any further comments to make regarding conducting future research assessment exercises on a rolling basis?

No answer

Granularity

21. At what level of granularity should research be assessed in future exercises?
- Individual
 - Unit of Assessment based on disciplinary areas
 - Unit of Assessment based on self-defined research themes
 - Institution
 - Combination of b. and d.
 - Combination of c. and d.
 - Other (please specify)

We would not discourage a or d, but are agnostic about the others.

22. Do you have any further comments to make regarding the granularity of assessment in a future research assessment exercise?

The announcement in September 2017 that there would be a single UOA for engineering in 2021, rather than the four for REF 2014, was a very significant change for the engineering community. Previously, no consensus emerged from the Academy's consultation with the engineering community regarding the optimal UOA structure. This is not surprising in view of the fact that the boundaries between engineering disciplines do not obviously give rise to a UOA structure that would be administratively acceptable or consistent with the approaches taken for other disciplines. As mentioned in our answer to question 4, we look forward to learning and reflecting on the experience of a single engineering UOA, with particular attention to capacity of the sub-panel members to assess the volume of submissions, the role of interdisciplinary advisors, the exclusion of metrics from the assessment process and more.

Metrics

23. To what extent and for what purpose(s) should quantitative indicators be used in future assessment exercises? (Please select as many as apply)
- a. Move to an entirely metrics-based assessment
 - b. Replace peer review with standardised metrics for:
 - i. Outputs
 - ii. Impact
 - iii. Environment
 - c. Use standardised metrics to inform peer review of:
 - i. Outputs
 - ii. Impact
 - iii. Environment
 - d. Should not be used at all.
 - e. Other (please specify)

No answer

24. Do you have any further comments to make regarding the use of metrics in a future research assessment exercise?

The Academy's view to date is that the engineering community does not support the use of quantitative data for the assessment of excellence in engineering research, and this reflects the Academy's status as a signatory of the Declaration on Research Assessment (DORA). Although metrics methodology has improved over recent years, for engineering the most common and developed form of metrics, bibliometric indicators, including journal name, have not been found to provide a robust indication of research quality. We would welcome further discussion on metrics and would need to consider if there had been a significant improvement to the metrics collected and available.

Burden

25. How might a future UK research assessment exercise ensure that the bureaucratic burden on individuals and institutions is proportionate?

The consensus appears to be that the bureaucratic burden of the REF is not proportionate, however it is unclear to what extent that is due to behaviours rather than requirements. Before any future exercise it is essential to evaluate the benefits as well as the costs of running the exercise, including cost, and the time and effort that the exercise requires.

We know that this is separate to the Independent Review of Research Bureaucracy and are aware that the FRAP team are sharing data and insights with that team – this is something that we are pleased to see.