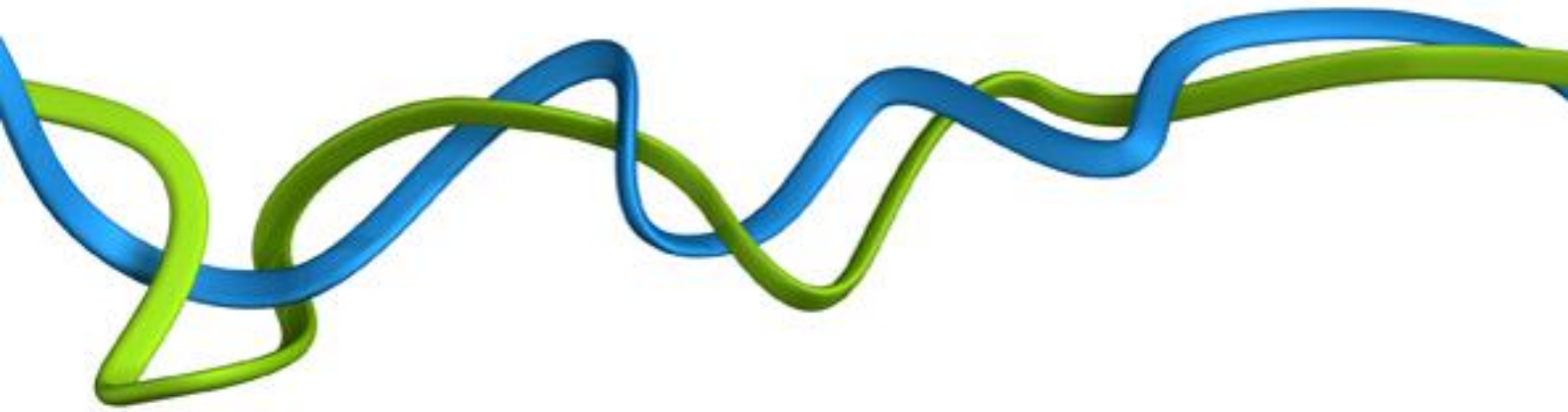
ROYAL ACADEMY OF ENGINEERING

Higher Education and Research Bill

Public Bill Committee

Submission from the Royal Academy of Engineering

12 September 2016



About the Royal Academy of Engineering

As the UK's national academy for engineering, we bring together the most successful and talented engineers for a shared purpose: to advance and promote excellence in engineering.

The Royal Academy of Engineering' evidence to the Public Bill Committee examining the Higher Education and Research Bill

September 2016

Introduction

1. The Royal Academy of Engineering welcomes the opportunity to submit evidence to the Public Bill Committee to support Parliamentary scrutiny of the Higher Education and Research Bill. This evidence builds upon the Academy's submissions to the Department for Business, Innovation and Skills' consultations on the Green Paper *Higher Education: teaching excellence, social mobility and student choice*[1] and on Innovate UK's integration with Research UK.[2]

2. The Academy's evidence has been informed by the expertise of its Fellowship, which represents the nation's best practising engineers, including leading researchers, innovators and entrepreneurs.

3. The creation of UKRI will see the UK's seven Research Councils, Innovate UK, and the newly created Research England, integrated into one body. The establishment of UKRI is a development of profound significance for the UK's research and innovation community. The Academy also recognises that such developments as the decision to leave the European Union and the creation of a new Industrial Strategy make it more important than ever that there is a strong and effective voice for UK research and innovation. Following the original proposal to integrate Innovate UK into Research UK the Academy articulated concerns regarding the rationale of the proposal and the risks associated with its implementation.[3] However, the Academy has been encouraged by the government's constructive response to the concerns and the Academy's focus is now on supporting government in its efforts to build an organisation that delivers excellent results for both UK innovation and research.

4. The Academy is working with its sister National Academies: the Academy of Medical Sciences, the British Academy and the Royal Society, to ensure that the changes to the UK's research and innovation landscape will strengthen the UK's internationally outstanding track record of excellence in research and innovation. As part of this work the National Academies have produced a briefing outlining a number of probing amendments that could be used to seek further clarification on the detail of the Higher Education and Research Bill.[4] This evidence complements the National Academies briefing, and sets out key areas of importance to the engineering community.

UKRI

5. In establishing UKRI, there will be a single Chief Executive Officer for UKRI, while the heads of the nine Councils will become Executive Chairs. The Academy believes it is essential that the Councils are able to provide effective leadership for their own Councils with significant autonomy, including relative budgetary autonomy. Through our probing amendments with our sister Academies we are seeking further clarity on the relationship between the Councils and UKRI, including in how the strategic direction of UKRI and its Councils will be set.

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[1] Royal Academy of Engineering's submission to the Department for Business, Innovation and Skills, consultation on Higher Education, Fulfilling Our Potential: teaching excellence, social mobility and student choice, 2016
[2] Royal Academy of Engineering's submission to the department for Business, Innovation and Skills consultation on Innovate UK's integration with Research UK, 2016
[3] *Ibid*
[4] National Academies Commons Committee stage briefing on questions raised by the research proposals in the Higher Education and Research Bill, 2016

6. The creation of UKRI has the potential to substantially improve the facilitation and support of interdisciplinary and multidisciplinary research, in part through the creation of a 'common research fund' to be managed by the UKRI Board, as detailed in the White Paper *Success as a Knowledge Economy: Teaching Excellence, Social Mobility and Student Choice*.[5] However, through our probing amendments the National Academies seek clarification on whether a common research fund will be established, and if so what its proposed function will be and how it will be managed.

7. The current wording of the Bill allows the Secretary of State to add or omit Councils or change the name of a Council without a requirement for consultation with the research and innovation community. Although it is necessary that the Secretary of State is able to make challenging and important decisions, these decisions need to be fully informed for the best outcomes to prevail. Therefore, the Academy believes consultation with the communities who will ultimately be affected by any such decisions will increase the quality of the government's decision making and increase the likelihood of a positive outcome for UK research and innovation.

8. The Academy recognises that the creation of UKRI offers the opportunity to reduce the administrative burden of the nine Councils, in part through simplification; however, it cannot be assumed that a reduction in burden will automatically arise as a result of the new arrangements. It will be essential that for any simplification or consolidation to be undertaken in a way that is sensitive to any genuine differential needs between the nine Councils: in some instances different approaches will be required.

9. The Academy welcomes the Bill's recognition that it will be critical for the Office for Students (OfS) and UKRI to cooperate with one another. However, as detailed in the National Academies' probing amendments, the Academy seeks greater clarity on how government plans to ensure a strong interface between research and teaching. A seamless link between teaching and research is critical to ensure an overview of the UK's skills pipeline, the health of disciplines, postgraduate training, shared facilities and knowledge exchange.

Innovation

10. Innovation is instrumental in delivering the economic and productivity gains associated with investment in research, and offers a key route to developing new tools and approaches for tackling major societal challenges and improving quality of life.[6] However, innovation stretches far beyond the traditional view of commercialisation of a scientific discovery resulting in a marketable product; innovation can also derive from developments in design, business models and mechanisms of service delivery.

11. The Bill proposes to integrate Innovate UK, the UK's innovation agency, into UKRI. The primary focus of Innovate UK is to incentivise business-led technology innovation, through funding, supporting and connecting innovative businesses via a mix of expertise, facilities, networks and programmes to accelerate sustainable growth.[7] To achieve its aims Innovate UK requires a close connectivity to its primary customer base of business and entrepreneurs, and an understanding of markets, supply chains and mechanisms of business growth. The Academy and the engineering community seek assurance that the

[5] Success as a Knowledge Economy: Teaching Excellence, Social Mobility and Student Choice, Department for Business, Innovation and Skills 2016
[6] Investing in Innovation, Royal Academy of Engineering, 2015
[7] Innovate UK's strategy, Concept to commercialization, 2011-2015

business-led focus of Innovate UK will be adequately maintained when it becomes a Council of UKRI. The probing amendments detailed by the National Academies seek clarification that the wording in the Bill fully reflects protection of Innovate UK's business-facing focus.

12. By 2019-2020 it is intended that Innovate UK will have converted £165 million of its grant funding into new financial products. It remains unclear if these products will be effective in stimulating and supporting the type of high-risk and disruptive innovation that has previously been part of Innovate UK's portfolio. In addition, there is significant concern that the reduction in grant-based funding that will result from the diversion of Innovate UK's budget into new financial products will erode an already sub-optimal innovation support budget. The Bill details arrangements whereby if UKRI wishes to engage in certain activities it must seek consent from the Secretary of State, including to 'form, participate in forming or invest in a company'. Clarification on the extent to which the Secretary of State's consent would be needed to operate Innovate UK's new financial products and any future products Innovate UK may develop, such as convertible loans and equity investments, would be welcomed.

13. Although the primary focus of Innovate UK is to incentivise business-led technology innovation, its relationship with the research base is also important. Closer communication and collaboration between the Research Councils and Innovate UK will undoubtedly be beneficial. Closer interactions between the two organisations could further strengthen the offering for collaborative R&D and innovation support and enable a more seamless transition between the Councils of UKRI for high-quality research with strong commercial potential.[8]

14. To ensure that UKRI fulfils its potential of facilitating, supporting and promoting innovation, it will be essential that support for innovation is embedded throughout UKRI. The Academy welcomes the requirement for the consideration of industrial and commercial experience for members of the UKRI Board. However significant representation of individuals with broad business experience should be required throughout UKRI, not just at the senior level.

15. The Academy seeks confirmation that the White Paper's commitment that 'Research England will be established to undertake the England only functions in relation to […] knowledge exchange that are currently performed by HEFCE' will be honoured, including the funding of knowledge exchange activities through the Higher Education Innovation Fund (HEIF).

Dual support

16. The UK's world-class research base has been funded for many years by the dual support system that combines a mix of competitive project funding through the Research Councils and long-term support through formula based quality-related research (QR) funding. The Academy believes that this dual support funding mechanism has contributed to the UK's research success and therefore welcomes the Bill's legal protection of dual-support. However, the Academy seeks greater clarity on how this protection will be implemented through our probing amendments with our sister National Academies.

17. QR funding is a devolved matter and UKRI, through Research England, will only be responsible for administering QR funding for England. However, the funding administered by

[8] Dowling Review of Business-University Research Collaborations, 2015

the eight other Councils of UKRI will be UK-wide. Further clarification of how UKRI will manage its relationship with the devolved nations would be welcomed.

Teaching Excellence Framework

18. The Academy welcomes the principle of a Teaching Excellence Framework (TEF) and has long argued for improvements in the balance of teaching and research to enhance the quality of teaching and learning for students.

19. In general, the Academy supports the criteria proposed for measuring teaching quality in the technical consultation of the TEF. However, the Academy is particularly concerned with two of the core metrics for Year Two: the proportion of graduates in employment or further study using the 6 month Destinations of Leavers of Higher Education (DLHE) data and National Student Survey (NSS) data. Despite having some merits, they cannot be seen as a measure of teaching quality.

20. Furthermore, DLHE data need to be treated with particular caution as there are variations in student outcomes across subject areas. For example, there is evidence that, due to the high contact time in STEM subjects, some students postpone looking for a graduate level job until after graduation, which subsequently affects the six month DLHE data on these degree programmes.

21. The Academy agrees with the use of benchmarks for comparison between universities on aspects such as ethnicity and socio-economic deprivation. However, additional data should also be included to ensure the benchmarks are considered alongside contextual information specific to each university. For example, the location of particular universities is likely to impact on graduate earnings and employment prospects – particularly for those institutions which attract local students who cannot afford to leave home while studying.

22. The Academy would like to see the TEF move towards a discipline based measure as soon as possible, as a TEF score for an entire university will not provide any meaningful data to students applying for specific degree programmes.

23. The Academy welcomes that the TEF will accept recognition of courses by professional, statutory and regulatory bodies (PSRBs) within a higher education institution's measurement. Professor Sir William Wakeham FREng highlighted in his review of STEM graduate employability the value of accreditation of degree programmes in terms of improved graduate employment outcomes.[9] The engineering profession, and others, have a long-standing system of quality assurance through accreditation of undergraduate degrees undertaken by professional engineering institutions, with the standards maintained by the Engineering Council. The TEF will provide more incentive for other subject areas to adopt accreditation processes by PSRBs.

[9] Wakeham Review of Stem Degree Provision and Graduate Employability, 2016