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Leaving the EU: Further call for evidence

Written evidence submitted by the Engineering Professors' Council

The Engineering Professors' Council (http://epc.ac.uk) represents the academic engineers in the UK, with 81 university engineering faculties as members comprising over 6,500 academic staff. It is a "nominating institution" for the purposes of the Research Excellence Framework (REF) and four panellists from REF2014 sit on its governing Committee, which also numbers a Vice President of the Royal Academy of Engineering, a President of the Institute of Measurement and Control and an immediate past President of the Institution of Civil Engineers, as well as four universities' pro Vice-Chancellors.

We enclose our written evidence to the inquiry, citing issues already faced by our members and expressing concerns about the future of Engineering in Higher Education and impacts on UK's industrial strategy.

We would be pleased to elaborate on any on our response if invited to do so.

Yours sincerely

Professor Stephanie Haywood

President

Executive summary

1. The Engineering Professors' Council and its members have expressed deep concern about the negative impacts of Brexit on science, engineering and research in particular.

2. EPC members have already reported evidence of impact in terms of lost opportunities to attract international funding and less attractive prospects for international staff and students.

3. The EPC believes that the impacts experienced so far may become severely damaging to the UK world-leading higher education in engineering – and in turn the UK's industrial strategy that depends in part on academic engineering for innovation – if or when Brexit takes place unless specific measures are implemented to protect the sector.

4. The current reassurances offered by the Treasury to underwrite any research funding until 2019 that might be withdrawn as a result of the UK's exit from the EU are welcome, but barely touch on the impacts that current evidence suggests will be experienced.

5. In its future negotiations with European partners, the Government should be clear that it is committed to maintaining the UK's status in Europe's science, engineering and research programmes, and the free movement of academic staff and students in the country's best interests.

Written evidence

6. Since the EU Referendum result, some EPC members have been asked by European partners to withdraw from research proposals/consortia in case their continued participation presents a risk to securing EU funding. Others reported that following the Referendum result, invitations to join consortia were not extended as expected.

   Other EPC members reported that non-European candidates have been put off from applying for research positions in the UK (such as Chinese research candidates applying to become Marie Curie Fellows) because they have not received adequate reassurance that the UK can still act as a potential and competitive host.

   In the course of just a few weeks, we have been alerted to a number of specific instances of these impacts. They represent the more extreme examples of a general shift towards a negative view from current and future research partners on the likelihood of being successful in applications for European funding that include UK partners. Our expectation is that, even before any Brexit takes place, we will see access to research funding from the European Union diminish as a result of the likelihood of Brexit.

7. While the recent assurances from the Treasury regarding continued support for research projects that might lose funding as a result of Brexit are welcome, they do not address the issue that UK engineering research now enters any competition for funding with a significant handicap. Furthermore, it is hard to understand exactly what funding might in practice be protected by the Treasury assurance, as research projects are subject to the protection of contractual terms anyway and, if they are in receipt of European funding, the contract will be made with an international consortium of which UK partners are a part.

8. EPC members have also reported concerns about European and international research staff and students. For such individuals, there are the same uncertainties that are being experienced

by all non-UK nationals resident in the UK in terms of whether they will be entitled to remain and continue to work or study in the UK under the same conditions after Brexit.

However, in the context of academic engineering, there are particular additional concerns. There is a significant and recognised shortage of engineering skills in the UK and the UK HE system ameliorates this shortage for the wider economy by attracting students and staff who have desirable skills from other countries.

The consequences of the Brexit referendum have been to make the UK appear less welcoming to international staff and students. Some of our members have reported both staff and students turning down the offer of places. At the moment, we are unable to provide data on the extent of this, but current indications suggest it reflects a significant and sizeable response to the UK's changed circumstances.

In the longer term, the UK may not merely *appear* to be less welcoming, but if visa regulations and the free movement of staff and students become more restrictive, then the UK may experience a 'brain drain'.

As academic engineering is the starting point for much of the UK's technical and scientific innovation (whether through knowledge transfer to industry or through partnerships with business), this will have a deleterious impact on the UK's industrial strategy.

9. Engineering in UK higher education is critical to the broader national interests in terms of both economic and industrial strategy. For example, Rolls Royce alone accounts for around 2% of all UK trade exports and is a prime example of a private sector business that relies heavily on excellence in engineering in UK universities. Not only does Rolls Royce commission research on its own behalf, but it also draws extensively on research and expertise in engineering departments in universities. It also recruits graduates from UK engineering departments. Like other international businesses, Rolls Royce does not have to conduct this activity in the UK, but does so because the excellence of UK academic engineering fosters international relationships and, critically is fostered by them. The EPC is profoundly concerned that Brexit will undermine these relationships in a way that will handicap industrial growth.

10. The UK engineering sector also comprises many small and medium sized enterprises. They do not have resources for large-scale research projects of their own nor for establishing international partnerships opening up global trade. Like the multinationals but in a different way, these SMEs rely heavily on the internationalism of UK higher education.

11. It has been suggested that any loss in trade exports to the EU may be replaced by an increase in opportunities to deal with the rest of the world. Regardless of whether there is any evidence to support this view, the same does not apply to the impact of compromising the influx of European staff, students and research funding to UK higher education. UK higher education is already recognised as a global centre of excellence, particularly in engineering. There are no new markets to be opened up nor any onerous restrictions that would be liberated by Brexit. The situation – including the UK's reputation in engineering – can only be damaged by Brexit, rather than improved.

Recommendations

12. The EPC urges the House of Commons Science & Technology Select Committee to call on the Government to protect the interests of UK academic engineering in negotiations for Brexit as a critical element in ensuring the country's industrial strategy. To that end, regardless of other Brexit arrangements, the UK Government should ensure that:

    a. UK higher education institutions can continue to apply for and receive EU-backed funding for research on an equal footing with other member nations of the EU. If necessary, this should involve UK Government contributions to the relevant European funds.

    b. In the event that it is not possible to secure such an equal footing, the Government should provide further reassurances that additional funding from the UK Government will be available for engineering research to maintain the global excellence of UK universities and their outstanding contribution to industrial innovation and jobs.

    c. The free movement of academic staff and students within Europe continues in a way that attracts the brightest and best to come to the UK to study, teach and research.

13. The Government should also make this support explicit and public in order to mitigate the impact of current uncertainties.