

*Text from covering letter from Academy President, Lord Browne of Madingley to Professor Adrian Smith FRS, Director General Science and Research, BIS*

Thank you for asking us to reply to four questions on the Science and Research Budget review. On June 11<sup>th</sup> 2010, The Royal Academy of Engineering sent you a draft response and I now attach a final version. (in Annex A).

Our submission makes four key points:

1. engineering research is a crucial engine of delivery for the economy, enabling the commercialisation of innovation by creating working systems at scale;
2. we believe that research should be concentrated on activities from which a contribution to the economy, within the short to medium term, is foreseeable. I recognise that this calls for significant changes in practice but I see no alternative in the next decade. This may mean disinvesting in some areas in order properly to invest in others;
3. we believe that engineering research should be largely concentrated in a number of our best-performing universities. Engineering research often needs large scale physical equipment and space which means there are efficiencies to be gained from concentrating it in fewer places than at present.

We recognise that there are risks in over-concentration, and that care is needed with universities that focus successfully on just one or two disciplines. Nevertheless, in the belief that such matters can be addressed, we now recommend that a small number of universities should be designated as Engineering Research Universities. You might consider inviting the Academy to convene a group to advise on the selection of these universities.

In leading research universities, engineering teaching benefits from close proximity to research. It is important that teaching quality is not diminished in those HEIs not designated as Engineering Research Universities. Evidence from the United States shows that this can be avoided;

4. a strong, rebalanced economy will require engineering-based industry and business to provide a greater contribution to future economic growth. While expenditure on R & D is not guaranteed to result in growth, failure to invest in R&D is a sure way to stifle the innovation on which growth depends. Core funding on research from government encourages and enables funding from corporations. It follows that, if government spending on research reduces in certain areas, many companies may do the same. They increasingly have a choice overseas: countries such as Germany, the USA and Singapore have shown their willingness to offer inducements. Government needs, therefore, to incentivise certain behaviours that will work to the benefit of the economy: industry-academia interaction deserves special attention.

I and the Royal Academy of Engineering will be pleased to answer any questions that may arise from this letter and its annex.

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