



HM Treasury, 1 Horse Guards Road, London, SW1A 2HQ

23 November 2016

The Rt Hon. Lord Adonis
Chair
National Infrastructure Commission
11 Philpot Lane
London
EC3M 8UD

Dear Andrew,

NEW NATIONAL INFRASTRUCTURE COMMISSION STUDY

I am writing to you to request that the National Infrastructure Commission undertake a study on how new technologies can improve infrastructure productivity.

I was very pleased with the response to the 'Call for Ideas' exercise run by the Treasury and the Commission regarding the subject of the next study. As you are aware, we received over two hundred responses from stakeholders, which demonstrates the great public interest in the work the Commission is doing.

A number of responses struck on the theme of how new technology could enhance our infrastructure. This is a critical issue. Innovation and infrastructure are at the heart of the government's economic and industrial strategy, and emerging technologies have the potential to radically improve the way we manage our infrastructure. That is why I am asking you to conduct a study to identify which new technologies have the greatest potential for improving the productivity of our infrastructure, and what steps government should take to support the deployment of these technologies. I attach terms of reference for the study, which reflect feedback from the Commission on this proposal.

This study will run alongside your ongoing work on the Cambridge-Milton Keynes-Oxford corridor. In response to your interim report, I announced at Autumn Statement that I am backing your recommendations with £110 million of funding for East West Rail, and a commitment to deliver the new Oxford to Cambridge Expressway. I welcome the Commission's recognition that governance is extremely important for growth in the area, and your intention to look, with local and national partners, at a range of delivery models for housing and transport in the corridor, including development corporations. Separately, I look forward to the publication of your report on 5G digital technology.

Finally, in a parallel letter I have set the fiscal remit for the Commission. One of the Commission's key roles is to prioritise infrastructure investments within affordability constraints, and therefore you should ensure that any recommendations emerging from the specific studies are consistent with the fiscal remit.

A handwritten signature in black ink, appearing to read 'Philip Hammond', with a horizontal line under the name.

PHILIP HAMMOND

USING NEW TECHNOLOGY TO IMPROVE INFRASTRUCTURE PRODUCTIVITY

Terms of reference

Context

1. The UK has a large existing infrastructure asset base. In some areas we need to expand our networks, hence the government's decisions, for example, to back HS2, Hinkley Point C, and the expansion of Heathrow airport. But it is also vital that we maximise the value of our infrastructure networks by making them as productive as possible.
2. Emerging technologies have the potential to radically improve the way we manage our infrastructure. Data management and analytics already play a very important role. Areas like digitalisation, the internet of things, big data, and artificial intelligence will all create opportunities for improving the way we operate infrastructure, maintain existing assets, and enhance the capacity and resilience of our networks.
3. The UK has an excellent science and research base, and is a world leader in many of these areas. Science and research will be key aspects of the government's industrial strategy. So there is a strong basis for encouraging the application of new technology to improve infrastructure services and build on and develop the UK's strengths in these areas.

Scope

4. The government asks the Commission to:
 - a) Identify which emerging technologies have the most potential in terms of optimising the management, performance and maintenance of existing and future infrastructure assets to support economic growth;
 - b) Make recommendations to government on what actions it should consider to support the deployment of those technologies across infrastructure areas and sectors, including identifying where trial approaches may be appropriate.
5. The Commission may focus on a subset of technologies that it judges to have the biggest potential impact. This study should be closely linked to the work the NIC is doing to assess the country's long-term infrastructure needs for its National Infrastructure Assessment (NIA).
6. In carrying out its study, the government asks the Commission to:

- Consult widely with relevant experts, including the Government Office for Science and the Council for Science and Technology;
- Consider international best practice in the deployment of new technology in infrastructure;
- Build on other relevant work such as the Cambridge Centre for Smart Infrastructure and Construction (CSIC) report on the transport sector, and Commission studies on 5G and Smart Power;
- Consider the relationship between the UK science sector and the infrastructure industry and how well this relationship facilitates innovation and the efficient deployment of new technology in UK infrastructure;
- Consider interdependencies between different infrastructure sectors;
- Ensure recommendations are consistent with the Commission's fiscal remit;
- Ensure recommendations work with the market, and catalyse rather than crowd out emerging commercial strategies.

7. The issue of skills in the construction industry is out of scope as this will be considered in separate work taken forward by the Infrastructure and Projects Authority (IPA).

Timing

8. The Commission should publish its report by the end of 2017.