

Institution of Civil Engineers (ICE) written submission to the Business, Innovation and Skills Select Committee: [Inquiry on the Government's Productivity Plan](#)

## Introduction

*ICE welcomes the opportunity to respond to the Select Committee's inquiry into the Government's Productivity Plan and acknowledges the wide range of economic and social benefits that higher levels of productivity will generate for the UK.*

## Executive Summary

*Infrastructure is a central part of the long-term investment plan for achieving greater productivity. This is welcome and in order to optimise infrastructure as a means of achieving the Government's objectives, ICE believes that over the next five years policy should focus on:*

- *Delivering high performing infrastructure networks and assets to support economic growth;*
- *Building resilience into the UK's existing infrastructure networks to ensure that they are able to contribute to economic growth in the longer term;*
- *Supporting the rollout of the digital economy as an enabler of productivity growth and as a mechanism for extracting maximum capacity out of existing infrastructure.*

*Government's role in this is to:*

- *Create a stable policy making environment to incentivise long-term investment in infrastructure;*
- *Improve departmental capacity to plan investments and better manage the delivery of infrastructure projects;*
- *Contribute to the development of a world class engineering workforce that is flexible and can easily be redeployed between projects in the infrastructure pipeline;*
- *Manage the balance between strategic decision making and local delivery as greater powers are devolved to city regions and other national governments.*

*Productivity in construction has barely grown in the last 20 years<sup>1</sup>. The industry must take steps to find more effective ways of planning and delivering investments in infrastructure. These include:*

- *Increasing investment in a range of Research and Development (R&D) to bring about the innovation necessary for productivity growth;*
- *Developing new business models to support increased investment in R&D;*
- *Developing an industry culture willing to adopt new technologies and methods of working produced by such R&D.*

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<sup>1</sup> [https://www.thenbs.com/topics/practiceManagement/articles/uk-productivity\\_how-the-construction-industry-can-help.asp](https://www.thenbs.com/topics/practiceManagement/articles/uk-productivity_how-the-construction-industry-can-help.asp)

**Do you agree with the Government's assessment of the reasons for the UK's productivity slowdown? Has the Government acknowledged all of the main causes of the UK's poor productivity growth?**

1. ICE broadly agrees with the Government's assessment of the reasons for the UK's productivity slowdown.

*However, greater recognition is required - relative to other major economies, but particularly France, Germany and the USA - that low levels of productivity have been a long-standing feature of the UK's economy<sup>2</sup>.*

2. At present the UK is ranked 27<sup>th</sup> for the overall quality of its infrastructure by the World Economic Forum<sup>3</sup>. Finding sustainable solutions to the productivity slowdown is key to improving this record and therefore the overall provision of infrastructure in the UK.

**One pillar of the Government's Plan is to increase "long-term investment". It outlines eight areas with specific measures to increase productivity.**

**a. Why has the UK's long-term investment been so low up to now?**

3. Long-term investment in infrastructure drives economic growth, which in turn acts as an enabler for higher levels of productivity.
4. Levels of long-term investment have generally been stable in the infrastructure sectors where there are clearly defined incentives for investors, which have been derived from thorough consultation and are well supported by robust regulatory frameworks. The water and energy sectors are both good examples in this context.

*Infrastructure sectors where long-term investment has generally been weaker have tended to be those in which a stable policy and regulatory environment has been absent; such as roads, rail and flood protection. However, ICE does note the steps being taken to address these weaknesses, particularly in the strategic roads sector where investment is being channelled through back-to-back five year strategies.*

5. Long-term investment in new infrastructure is a particular challenge. For institutional investors specifically, the risks associated with investing in new infrastructure tend to be greater than those encountered in existing infrastructure or brownfield projects<sup>4</sup>. These risks include:

- The changing policy and regulatory landscape;
- Capabilities around calculating project costs;
- Accurately determining project procurement and construction timeframes.

*Existing infrastructure or brownfield projects, for example in UK airports and HS1, have been more attractive to institutional investors because future cost and revenue streams are easier to predict where infrastructure is already operational.*

6. ICE believes that the Government does support measures for investment in infrastructure. Measures such as growing the Public Private Partnership (PPP) market and streamlining the planning system for nationally significant infrastructure projects have had some success. The UK Guarantee Scheme has

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<sup>2</sup> [https://fullfact.org/economy/low\\_productivity\\_britain\\_america\\_germany-45141](https://fullfact.org/economy/low_productivity_britain_america_germany-45141)

<sup>3</sup> <http://reports.weforum.org/global-competitiveness-report-2014-2015/rankings/>

<sup>4</sup> [http://www.cbi.org.uk/media/1507874/cbi\\_-\\_an\\_offer\\_they\\_shouldn\\_t\\_refuse\\_-\\_attracting\\_investment\\_to\\_uk\\_infrastructure.pdf](http://www.cbi.org.uk/media/1507874/cbi_-_an_offer_they_shouldn_t_refuse_-_attracting_investment_to_uk_infrastructure.pdf)

*also had a positive impact in supporting a number of major projects, but further incentives will be required when the scheme closes at the end of 2016.*

*However, a lack of independent and strategic assessment has meant that it has been difficult for long-term investment decisions to be made. This applies to a range of investors, both public and private, and further exacerbates issues around determining long-term investment risk.*

**b. How can we ensure that the measures relating to long-term investment in the new Plan will contribute to productivity growth?**

7. *The Government has committed to taking a decision on airport capacity in the south east by the end of 2015. Through its economic, social and environmental assessment of the options, the Davies Commission has also drawn conclusions around which of these would produce the greatest increase in productivity.*

*ICE believes that the measures relating to long-term investment in the Plan will make the greatest contribution to productivity growth if they are evidenced-based in this way. In this respect, we welcome the Government's commitment to invest £100 billion in infrastructure over the course of the Parliament, but urge that this be tied to a thorough strategic assessment of future requirements.*

*In particular, there is no reason why an evidenced-based approach could not be applied to the measures contained in the Plan that are more forward facing. For example, in producing the second Roads Investment Strategy or in policy aimed at refocusing the development of the railways, which are both included in the Plan's measures for the transport sector.*

8. *The Government must also focus on developing departmental capacity to better plan investment and manage the delivery of infrastructure projects in the areas where it provides significant funding, including in the roads and railways sectors. This means building and retaining the skills base in the relevant departments, benchmarking performance against the success of the highest performing private investors in infrastructure and putting in place the necessary governance processes to properly hold executive agencies to account.*
9. *We welcome the announcement that the Government is to develop a new Transport and Infrastructure Skills Strategy. It is integral that the UK maintains a healthy pipeline of skilled workers in the rail and road industries. In addition, we believe that the NIP for Skills (which this strategy will sit alongside) will have the greatest long-term impact on productivity growth if it is delivered by Infrastructure UK; given its own underlying strategic remit.*

*Building a workforce that is flexible and that can easily be redeployed between projects in the infrastructure pipeline will make a positive contribution towards productivity growth.*

10. *There is more that can be done in schools to ensure that there are enough engineers coming through the pipeline to deliver the infrastructure of the future, including:*
- Increasing the number of maths and physics teachers in schools so that all children have the opportunity to take Science, Technology, Engineering and Maths (STEM) subjects;*
  - Ensuring that Ofsted rigorously inspects schools' careers guidance so that the range of modern STEM paths available, including vocational and technician roles, are communicated to students.*
11. *Finally, upskilling and life-long learning are both important in ensuring that we have a workforce capable of delivering our future infrastructure needs. ICE is currently developing an Academy, which aims to just exactly this. The ICE Academy will upskill the existing workforce and those who have taken career breaks by providing topical learning content structured around four knowledge areas - technical, business skills, people skills and personal development. It will offer a growing range of mid-career qualifications to help our members maintain relevance in the market, some of which will be supported by training.*

**The second pillar of the Government's Plan is to encourage a "dynamic economy". It outlines seven areas with specific measures to increase productivity.**

**a. What are the main weaknesses of our economy, in terms of dynamism, which are suppressing our productivity?**

12. ICE believes that moving towards a more digitised economy will enable maximum capacity to be extracted out of existing infrastructure networks, therefore acting as an enabler for growing productivity. At present, the relatively slow rollout of smarter technology, real time data and network management across the energy, transport and water sectors respectively, is hindering the potential to do so.
13. We are also aware that the construction industry requires major improvements to increase its own productivity. In the UK, between 1997 and 2008, productivity in construction was 0.8% compared to 4.2% in the manufacturing industry<sup>5</sup>.
14. The Plan suggests that under investment in R&D is a particular cause of low productivity in the UK. The construction industry itself has a poor record on investing in R&D to stimulate the sort of innovation that could help grow productivity. Increasing R&D in the sector is likely to require new business models that address low levels of profitability.
15. However, low levels of innovation are not solely attributable to under investment. The industry, by its own omission, has struggled to make the cultural changes necessary in order to fully embrace new technologies and methods of working that would grow productivity. Instead, there remains a preference for consolidation and traditional project management methods, characterised by low levels of learning and knowledge sharing with associated fields.

The industry must exploit new technologies and innovations to grow productivity rather than using them to entrench existing practices, including:

- Greater use of Building Information Modelling in data management;
  - Taking more whole life approaches to project costs<sup>6</sup> and asset management<sup>7</sup>;
  - Developing a better understanding of how design-to-value can reduce overall project costs.
16. Through our Industry Transformation programme we are taking action to help the construction industry to utilise the tranche of technologies and approaches outlined above<sup>8</sup>. Not only will the programme help to drive productivity growth, but it will also better prepare industry for growing global challenges, including: demographic change, greater urbanisation, resource scarcity and climate change resilience.

**b. Do the measures introduced under the plan address those weaknesses and are they appropriate?**

17. Measures in the Plan relating to planning focus mainly on housing and in particular fast tracking Brownfield sites for development. There is little consideration of how changes to the wider infrastructure planning regime would help to boost productivity and the role that economic infrastructure plays in regeneration alongside housing.
18. There is also a case for including more detail in the NIP infrastructure pipeline, so that details around the viability, size and income potential of projects are clearer to investors. This will help potential investors to better determine the risk associated with given infrastructure projects and is therefore likely to incentivise investment.

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<sup>5</sup> [http://www.ons.gov.uk/ons/dcp171766\\_283259.pdf](http://www.ons.gov.uk/ons/dcp171766_283259.pdf)

<sup>6</sup> <http://constructingexcellence.org.uk/resources/whole-life-costing/>

<sup>7</sup> <https://www.thomastelford.com/books/SampleChapters/00-prelims.pdf>

<sup>8</sup> <https://www.ice.org.uk/disciplines-and-resources/industry-transformation>

19. *The proposed measures for rebalancing the economy - through the creation of a Northern Powerhouse and stimulating resurgence in other cities - are welcome. It is important that the Government develops (and implements) these in close partnership with the local communities that they will effect, as this approach is likely to optimise their impact. On specific measures, such as those relating to transport, opportunities for drawing on the efficacy of service delivery in London should be maximised, whilst acknowledging at the same time that there can be no 'one-size fits all' approach.*

**Overall, does the Plan adequately address the main causes of low productivity in the UK (as discussed in question 1) and will it have the desired results?**

20. *Low levels of productivity are restricting the potential for the UK to become an even more prosperous nation. The Plan addresses a range of the causes for this.*

*Across the sectors in which the ICE maintains an interest, but particularly in energy and transport, we welcome the measures set out in the Plan for infrastructure to play a significant role as an enabler for productivity growth and as a direct contributor.*

*Equally, for the measures to be successful we believe that greater detail is required in order to explain how they will be implemented and, more strategically, why these measures are most appropriate.*

*To reiterate, ICE welcomes the Government's commitment to invest £100 billion in infrastructure over the course of the Parliament, but maintains that this should be done as part of a wider strategic and evidenced-based assessment of the UK's infrastructure needs.*