

The National Infrastructure Commission: opportunities and principles to improve UK infrastructure



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Introduction

In October 2015, inspired by a proposal originally made by Sir John Armitt (2015), George Osborne announced that Lord Andrew Adonis will chair a newly formed independent National Infrastructure Commission (2015a). The remit of which is “to provide expert independent analysis of the long-term infrastructure needs of the country” (HM Treasury, 2015). Creation of the National Infrastructure Commission, which describes itself as “an independent body that enables long-term strategic decision making to build effective and efficient infrastructure for the UK” is undoubtedly a very positive development for the future of infrastructure in the UK (National Infrastructure Commission, 2015b). Also, a National Infrastructure Commission that successfully fulfils its remit is good news for all of the elements of the economy that infrastructure enables either directly or indirectly (ie the whole economy).

The National Infrastructure Commission

Responsibilities

In principle, the work of the Commission will have two dimensions:

- 1 Strategic long-term assessment of the UK’s infrastructure needs.
- 2 Detailed reports to address specific infrastructure questions.

In response to point 1, the National Infrastructure Commission will produce a national infrastructure assessment (NIA) once per parliament. This NIA will analyse infrastructure need over a 10 to 30 year time horizon and articulate a vision to address those needs. As part of the NIA, the Commission will also produce a high-level commentary

on how those needs may be met and identify key strategic projects, and priorities (HM Treasury and National Infrastructure Commission (2016).

The unique set of transformative opportunities created by the requirement for an NIA and a set of guiding principles for the Commission to consider when designing and undertaking the NIA are proposed in subsequent sections of the briefing note.

In response to point 2, following a request by the UK Government, the National Infrastructure Commission has already completed a call for evidence (National Infrastructure Commission, 2015c) during which all interested parties (including industry, local and regional government, NGOs and the wider public) were asked for evidence on three infrastructure topics:

- **Northern connectivity:** particularly identifying priorities for future investment in the north’s strategic transport infrastructure to improve connectivity between cities, especially east-west across the Pennines.
- **London’s transport system:** particularly reviewing strategic options for future investment in large scale transport improvements – on road, rail and underground – including Crossrail 2.
- **Energy:** reviewing how the UK can better balance supply and demand.

Commission findings will be reported to government before the next Budget.

Consultation on Commission governance, structure and operation

A consultation on the governance, structure and operation of the National Infrastructure Commission

is currently underway and will close on Thursday 17 March 2015. The consultation seeks input from all interested stakeholders on a range of questions connected to how the Infrastructure Commission will operate. Full details of this and details of how to respond to this consultation are available at: <http://tinyurl.com/jlb39eo>

The importance of NIA

The requirement for an NIA to be regularly undertaken creates a unique set of transformative opportunities. If these are embraced they will enable the UK economy to become both resilient to and capable of adapting to future global challenges. These opportunities include:

- address the absence of truly strategic thinking in UK infrastructure decision making
- challenge the prevailing view of infrastructure as a series of sectors
- raise the profile of how significant infrastructure is in enabling daily life
- facilitate more effective delivery and operation of infrastructure
- create awareness of the pressing need for the UK’s infrastructure systems to be more resilient.

On the importance of the NIA to future infrastructure decision making, Commission chair Lord Adonis (2015) comments “*the independent National Infrastructure Commission will transform the way we plan and deliver major infrastructure projects in this country, enabling the long-term decision making we need to unlock the jobs and growth of the future*” and in particular emphasises the importance of the NIA to this transformation, stating that the “*national infrastructure assessment will be at the heart of the way we*

reshape infrastructure planning and delivery in the UK. It will look across departments and across the country to create a genuinely strategic overview.”

Also, in recognition of the importance of engaging widely when assessing future infrastructure needs and options to meet these requirements, Sir John Armitt, President of the Institution of Civil Engineers, will chair a coalition of business, industry,

academic and environment leaders to gathering evidence to feed into the first NIA (Masters, 2015).

Guiding principles for NIA

Adapted from an opinion piece originally published in Infrastructure Intelligence (Dolan, 2015) and building on commentary by Sir John Armitt (2015) and Paul Jowitt (2015), this briefing note proposes a series of guiding principles (A–H) for

the Commission to consider when designing and undertaking an NIA. If embraced by the Commission and with support from industry, regulators and the infrastructure research community, these principles can help to realise those opportunities. Figure 1 illustrates the connection between these principles through a route map, from infrastructure purpose through infrastructure needs assessment, to the selection of infrastructure solutions.



Figure 1 A route map for application of guiding principles A–H

Principle A: Purposeful – identify the societal level outcomes that infrastructure should enable

The apparent absence of high-level cross-sectoral discourse, policy, vision or strategic thinking on the purpose of infrastructure and the types of societal outcome that the UK collectively wants to enable through infrastructure provision is a significant problem for infrastructure planning. The Commission has the opportunity to address this gap by initiating society-wide discussion with the objective of identifying a set of cross-sectoral outcomes that infrastructure should aspire to enable in the future. This process of discourse will raise the profile of how important infrastructure is and generate aspirational outcomes against which future infrastructure needs can be identified. To ensure that the outcomes identified remain 'fit for purpose' in the face of continually changing contexts, the process of identifying outcomes should be repeated on a regular basis.

Principle B: Inspirational – raise awareness of the importance of infrastructure

All economic and societal activity is, to some extent, enabled by infrastructure, and the form society takes is enabled by the infrastructure chosen. So, it is striking that while everybody has a view about how society should function, few have a view about the infrastructure the country should demand and, for the most part, the general public seem to only notice the importance of infrastructure to their quality of life, when it fails to provide the quality of service they have all become accustomed/dependent upon. The Commission has the opportunity to engage more broadly and raise the profile of infrastructure in order to emphasise the scale of the society-wide value that infrastructure provision enables.

Principle C: Systemic – encourage broad cross-sectoral thinking on resilient infrastructure

Resilience is a system level property that is vital for a developed society,

best achieved by understanding the characteristics of the system not just the properties of component parts or sectors that it is comprised of. This is because infrastructure is increasingly needed to be resilient to rising interdependence between infrastructure sectors, 'extreme' weather patterns and long-term impacts of climate change, and to reduce its collective CO₂(eq) footprint to support reduction targets by 2050.

It follows, that the identification and resolution of infrastructure needs at a sectoral level is no longer sufficient.

The Commission has the opportunity to promote a systemic approach to infrastructure and infrastructure need assessment. More broadly, through adoption of a systemic perspective, has the opportunity to create vital discourse on the role that infrastructure is expected to play in creating a society resilient to these challenges.

Principle D: Future facing – be aware that infrastructure provision is subject to changing contexts

Linking infrastructure planning to the type of outcomes required will make identifying infrastructure need an inherently forward-looking process. The Commission has the opportunity to supplement this perspective by maintaining and regularly updating a broad qualitative awareness of the shape of future trends and the possible impact of these on infrastructure. Such trends include, but are not limited to, the expected impacts of climate change on weather patterns and sea level, changing demographic structures in society and global migration patterns, the potential for ICT to continue changing patterns of infrastructure demand.

Principle E: Methodologically transparent – avoid unstated assumptions, make reasoning explicit

The conclusions the Commission reaches, when assessing infrastructure needs will have a profound impact on infrastructure provision well into the future. The Commission have the opportunity to further strengthen the credibility of

the needs they identify by employing a pre-agreed, evidence-based, peer-reviewed, transparent needs assessment methodology in a way that is open to public scrutiny. So, enabling the rationale for all decisions made during the needs assessment process to be clearly understood and the credibility of needs assessment findings to be accepted as robust.

Principle F: Identify 'solution-neutral' needs – start from absolute basics

There is currently a tendency to frame infrastructure needs in a 'solution-dependent' way, ie in terms of possible solutions or the infrastructure sector from which the need arises. This bounded framing of needs implies all infrastructure challenges are best solved using already established solutions and reinforces sectoral divisions. By contrast, framing infrastructure needs in an objective 'solution-neutral' way creates a number of benefits, by enabling:

- the identification of common needs that span multiple sectors
- solutions to identified infrastructure needs to be analysed from a systemic perspective
- the opportunity for innovative solutions to be considered.

The Commission have the opportunity to address the tendency to frame 'solution-dependent' infrastructure needs by developing a need assessment methodology that, in the first instance, frames infrastructure needs in objective 'solution-neutral' terms.

For example, the need for 'extra reservoir capacity in the south-east of England' identified in previous work relating to needs assessment, is framed in a 'solution-dependent' way, and links a possible solution into the statement of need. As a consequence, visibility of the underlying need that is 'increased capacity to supply water to a growing population in the south-east of England' is obscured and the opportunity to consider alternative solutions from a systemic perspective restricted. The principle illustrated

here is that identifying needs in objective 'solution-neutral' terms, not only enables a range of possible solutions to be identified, it also enables open discussion of the scale (local, regional, national) at which a need is best addressed.

Principle G: Solution selection – take a cross sectoral approach to translating needs into solutions

The move from an agreed 'solution-neutral' need to an agreed solution is not a trivial step. So, a clearly defined, transparent, evidence-based process is required to convert 'solution-neutral' needs into options

for 'fit-for-purpose' infrastructure solutions. The National Infrastructure Commission has the opportunity to establish such a process, and embed systemic principles into the way in which options for infrastructure solutions are selected in the UK. The adoption of such a process will provide confidence that once any infrastructure solution is selected, a complete evidence trail can be traced from a statement of societally-desired outcomes, through an objective identification of need to the decision to implement the chosen infrastructure solution from the options.

Principle H: Subject to regular review – remain 'fit for purpose'

Long-term infrastructure needs identified through any assessment should be subject to regular review to confirm that those needs remain 'fit for purpose'. This is particularly significant because the political, economic, social, technological, legal and environmental (PESTLE) components that comprise the context from which the demand for infrastructure arises are subject to continual change.

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