Providing modelling and analytical capabilities for evidence-based national infrastructure planning

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City Conversations: How Are Infrastructure Decisions Made?
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The UK Infrastructure Transitions Research Consortium (ITRC) was launched in 2011 with the aim “to develop and demonstrate a new generation of system simulation models and tools to inform analysis, planning and design of national infrastructure.”

Four years later the ITRC has:

• Conceptualised, developed and implemented a national infrastructure planning model, for development and testing of a long-term strategic approach to infrastructure provision, which is integrated across infrastructure sectors and across all of Britain.

• Developed models of interdependent failure in national infrastructure networks and used them to demonstrate hotspots of national infrastructure criticality and the economic consequences of systemic failure.

• On the basis of in-depth case studies, proposed new approaches for the governance of interdependent infrastructure systems.
A system-of-systems modelling framework

The transport sector represents 34% of energy demand in the UK*

* (Defra, 2009)
The methodology for long term planning analysis
Examples of research outputs & collaborators

Minimum Intervention (MI) – historical levels of investment, continued maintenance and incremental system change.
Capacity Expansion (CE) – large scale, long-term investment into physical capacity expansion.
System Efficiency (SE) – technological and policy interventions to increase system throughput targeting supply and demand.
System Restructuring (SR) – rethinking the system through innovation, design, new service delivery models, demand reduction.
Thank you

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