

Business threats and opportunities from the infrastructure challenge

“To make infrastructure, the built environment and transport systems resilient to environmental change, less carbon intensive and more socially acceptable”

Issues:

The state of the UK infrastructure, and its resilience to environmental change has been the subject of a number of recent reports^{1,2,3}.

The UK Government classifies infrastructure into:

- Energy
- Transport
- Digital Communications
- Flood management, water and waste

LWEC has added the built environment.

There is general agreement that the challenges facing our infrastructure are:

- Poor resilience to systemic failure caused by:
 - Age of much of the infrastructure.
 - Increasing interconnection and interdependence of infrastructure systems.
 - Systems near maximum capacity due to economic growth, demographic and social changes.
- Need to adapt to environmental change:
 - Need for low carbon infrastructure solutions to meet 80% reduction target.
 - Need to future-proof core components against extreme weather events.
 - Need to cope with future demographic and social change.
- The fragmented nature of the infrastructure in terms of:
 - Decision making.
 - Delivery.
 - Governance.

Business Threats:

All economic activity in the UK is dependent on the infrastructure to supply energy and water, handle waste from manufacturing processes, move raw materials, finished goods and people around the country or internationally, and to provide the communications systems to knit the economy together.

Failure or degradation of any of the core infrastructure components will have an immediate local impact on business continuity, with the potential for the problem to spread throughout the system damaging or degrading linked infrastructure components.

¹“National Infrastructure Plan 2010”, October 2010, H M Treasury and Infrastructure UK

²“The State of the Nation: Infrastructure 2010”, 2010, Institute of Civil Engineers

³“A National Infrastructure for the 21st Century”, June 2009, Council for Science and Technology

Business Opportunities:

It is estimated that £500bn needs to be spent on the UK infrastructure by 2020.

Infrastructure UK has demonstrated that infrastructure investment in the UK is particularly expensive and is looking at ways of reducing the cost; including the development of a Green Investment Bank. There are a very large number of opportunities for existing and new businesses in transforming the UK infrastructure. Some of the key opportunities identified are:

- Improving energy efficiency in new and existing buildings.
- Improving the energy efficiency of industrial processes.
- New nuclear power stations.
- Offshore wind, wave and tidal generation.
- Carbon capture and storage.
- Smart meters and smart grids.
- New power interconnections with continental Europe.
- Removing road transport bottlenecks.
- Making better use of existing road, rail, air and sea capacity by intelligent transport systems.
- Decarbonisation of the vehicle fleet.
- Development of a high-speed rail network.
- Develop a national high-speed broadband network; both mobile and static.
- More efficient use of water in homes and businesses.
- Upgrading the water collection, treatment and distribution network.
- Improved management of coastal erosion and flooding.
- New approaches to inland flood management.
- Extending and improving the efficiency of recycling.
- Developing sustainable product designs.
- Diverting biodegradable waste from landfill.
- Increasing energy recovery from non-recyclable waste.

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