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7<sup>th</sup> Annual  
Smart Grids  
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Conference

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Cambridge, June 2016

# GUIDING FUTURE INVESTMENTS FOR INFRASTRUCTURE AND SUSTAINABILITY GROWTH

*Peter Sharratt (Professor)  
Head of Strategic Consulting  
WSP Parsons Brinckerhoff*

07713 985 833 m

# CITIES AS DRIVERS OF THE GLOBAL ECONOMY

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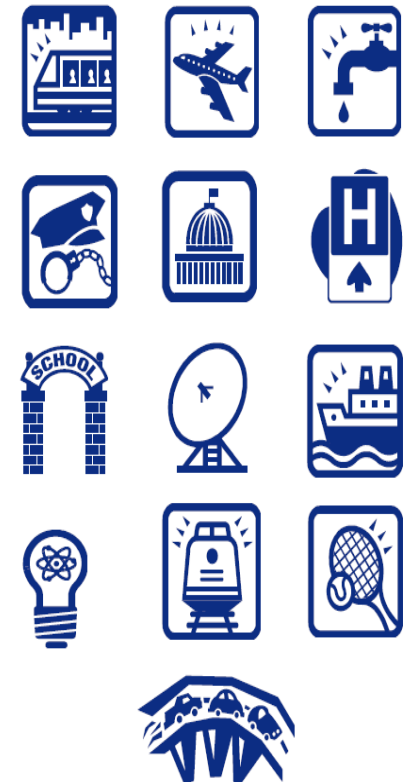
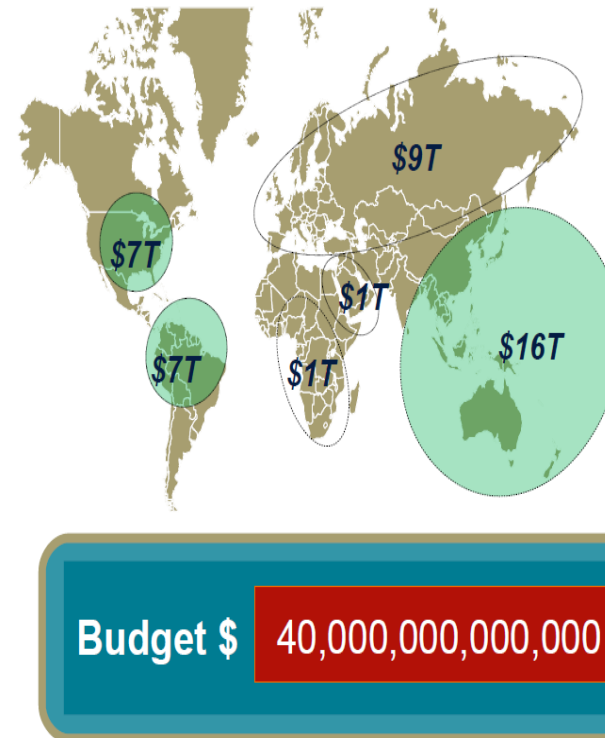


Top 23 Mega-cities with just **1/20<sup>th</sup>**  
world's population generate **14%** global GDP

Metro-regions are **2%** of the world's surface  
and generate **80%** of the world's wealth

**In the next 15 years .....**  
**Largest 600 Cities - 2 billion people**  
**Will generate \$64 trillion**

# RE-THINKING GROWTH: UNDERSTANDING THE GLOBAL CHALLENGE



# EMERGING ASSET



## Re-lifting Assets

*“ Even a power station due to closure has a significant value when you consider the large land footprint and existing fuel supply, cooling, water and electrical connection infrastructure.”*

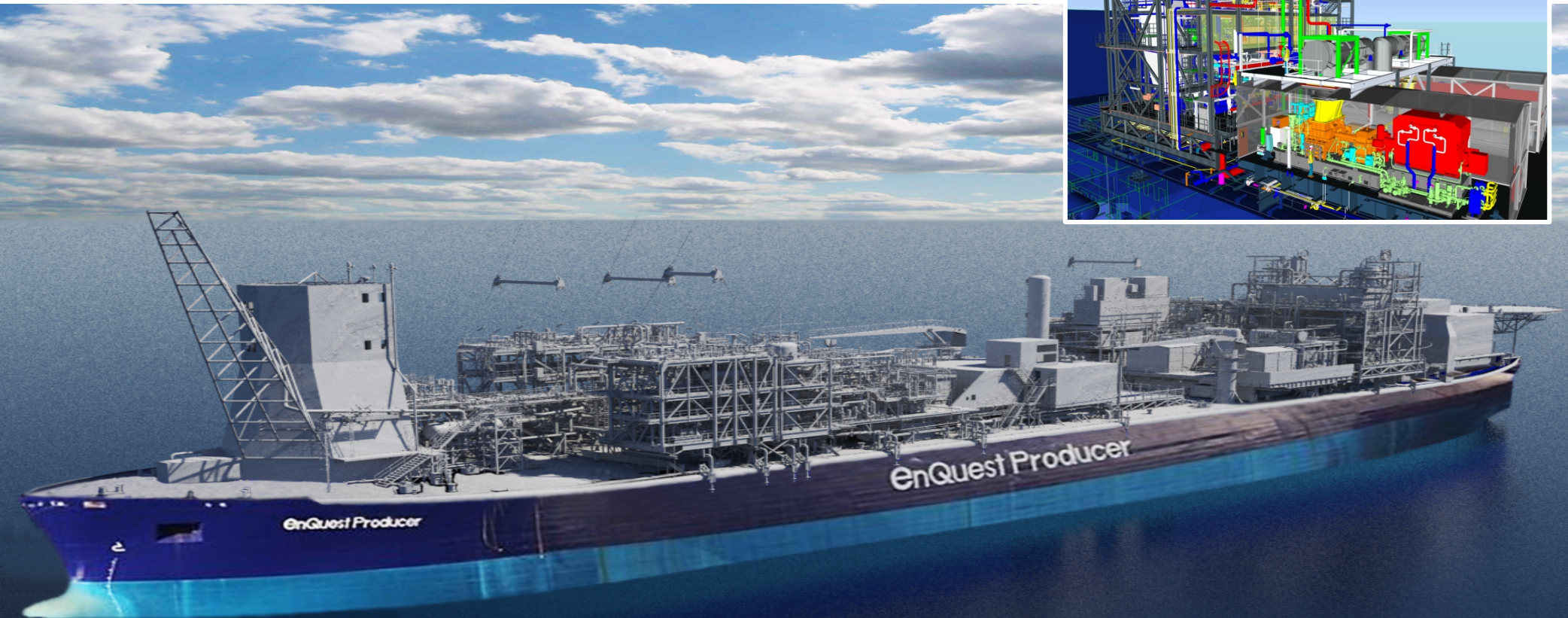
North Sea **‘Power-Boats ‘**

Ethiopian National Infrastructure Plan to support **Green Growth**

UK Electrical Networks **DS2030** national resilience + **Future Ready Review**

**TOD** – transport orientated design.

# ENQUEST PRODUCER FPSO



WSP PB co-designed the EnQuest Producer, converted a oil supertanker into a Floating Production, Storage and Offloading (FPSO) facility to recover oil from the depleted Alma/Galia field in the North Sea, 310 km southeast of Aberdeen. The project includes the design and installation of the subsea infrastructure to accommodate eight production wells and two water injection wells. The FPSO will be moored in position for 10 years continuously, and will require a significant source of electric power in order to recover the remaining oil reserves by pumping it to the surface.

**PARSONS  
BRINCKERHOFF**

# TRANSPORT LED DEVELOPMENT

**So how will London grow?**

8.2 million      2011  
10.1 million      2036

**23% in 25 years**

**Densify City Fringe**

**Population Dispersal  
To Greater SE Region**

**New Settlements  
Eco-towns**

**Sub-urban  
Intensification**

**Urbanisation**

Town Centre  
Gardens

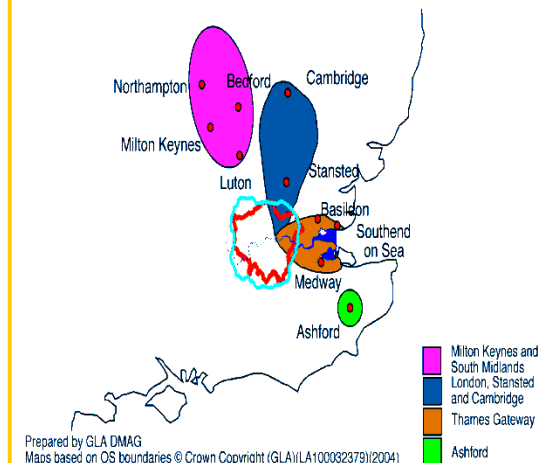
**Land Release**

Green belt  
Brownfield  
Industrial Land

## Greater SE Additional Capacity

Brighton	110,000
Hastings + Eastbourne	100,000
Canterbury + Dover	115,000
Chatham	100,000
Southend	100,000
Basildon	50,000
Reading + Slough	50,000
Luton	50,000
Milton Keynes	50,000
Peterborough	90,000
Cambridge	15,000
Ipswich	65,000
<b>Potential</b>	<b>905,000</b>

## Government Sustainable Communities Plan



Source: D. Bowie University of Westminster, Highbury Group

## Projected Spend

£5.5bn	Underground
£1bn	Station
£15bn	CrossRail
£6.5bn	ThamesLink
£14bn	R3 Heathrow
<b>£42bn</b>	

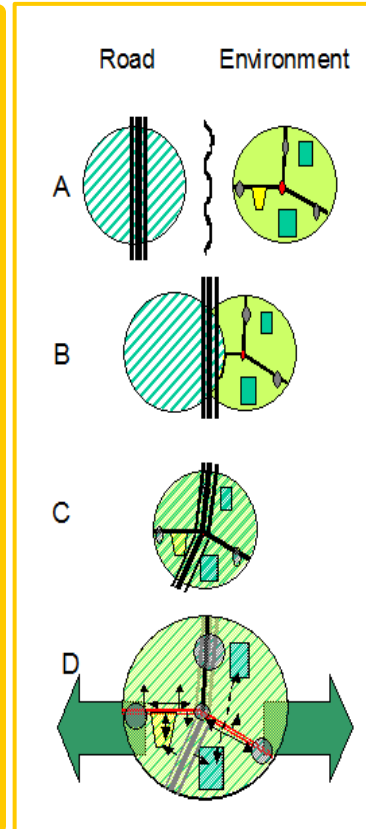
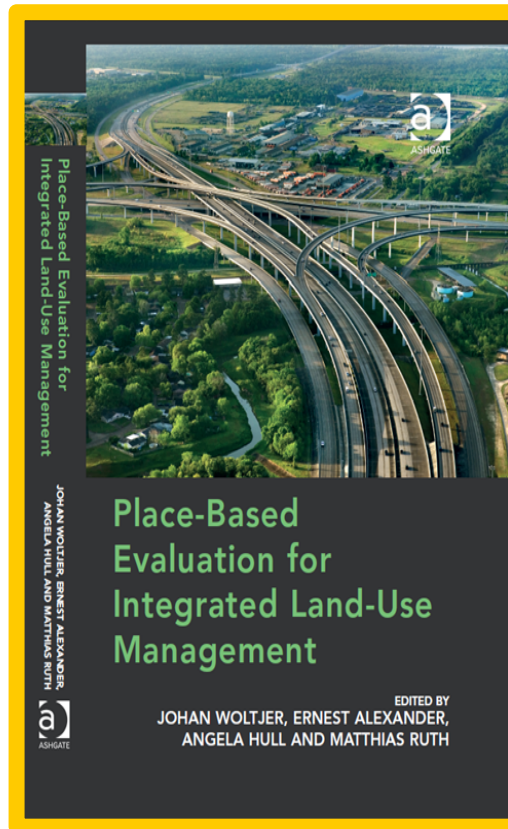


# URBAN INFRASTRUCTURES RESEARCH CENTRE, UOW

## The Five Case Model

Governed by HM Treasury  
Green Book

- 1) Strategic Case
- 2) Economic case
- 3) Financial Case
- 4) Commercial Case
- 5) Management Case



## Research Focus

**Wellbeing:** understanding opportunity, choice, the value of infrastructure;

**Resilience:** resistance-adaptation-transformation, 'spirit', capacity, redundancy towards

**Place-based:** Linking to the context in which processes of development take place: potential, (inter)local, causal

**Strategic Design:** Outcomes based 'Hard' and 'soft' design, institutional design at generic and inter-agency level.

**Social Value Creation:** job creation, community development

# 'GREEN GROWTH' : STRATEGIC PLANNING

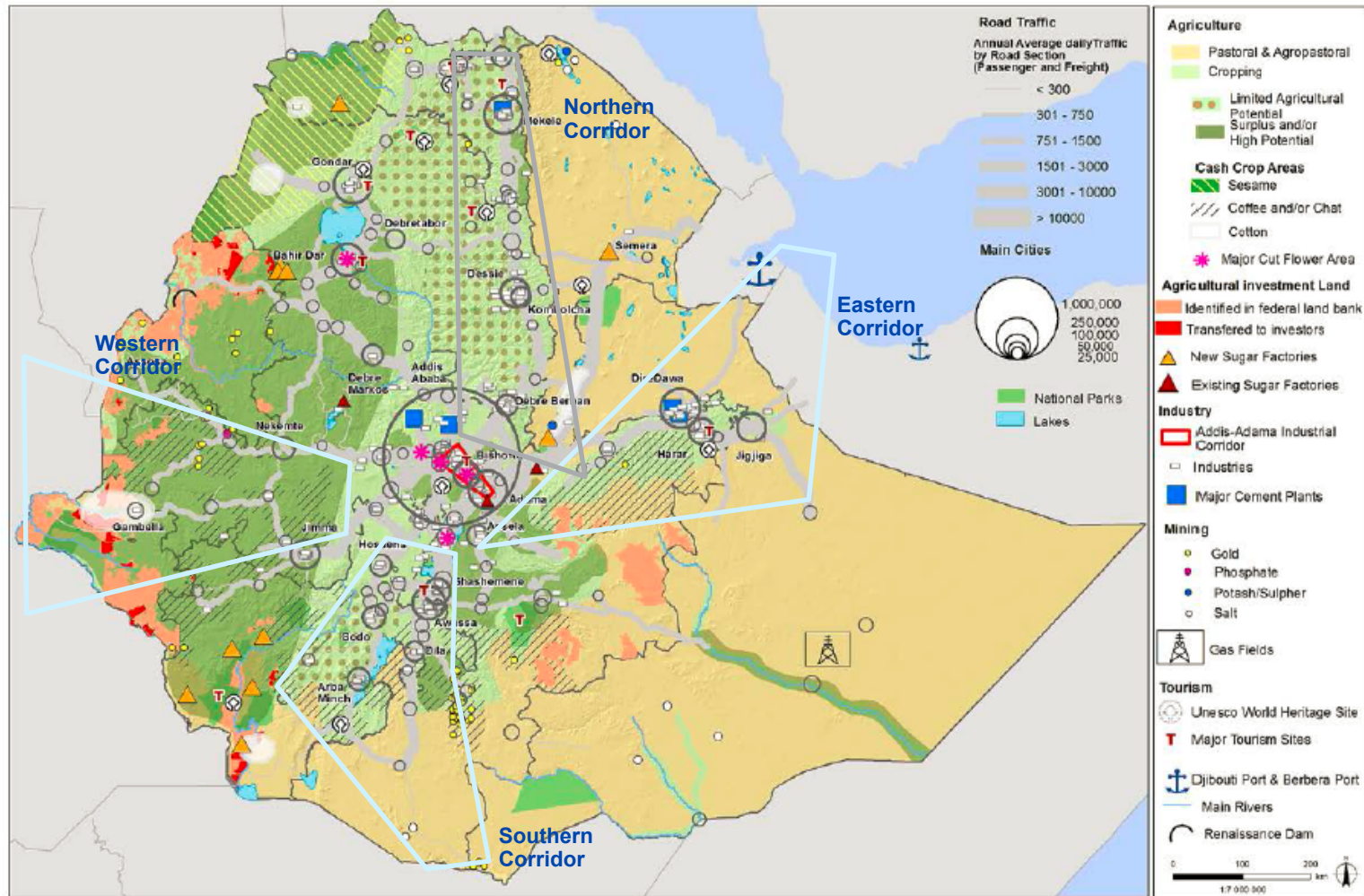
## NUDS - Major Economic Resources & Potentials

egisInternational

Ministry of Urban Development, Housing & Construction

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Ministry of Urban Development, Housing & Construction



## THE NEW CLIMATE ECONOMY

The Global Commission on the Economy and Climate



## Contact:

[Peter.sharratt@wspgroup.com](mailto:Peter.sharratt@wspgroup.com)

07713 985 833m