

Science Capital

Opportunities and Challenges for SMEs in Low Carbon Retrofit

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Three points

- The economic opportunity in low carbon retrofit is massive
- SMEs are the most efficient way to release this value
- UK political culture is the biggest challenge we face to success



Encraft is a bootstrap start up that now employs 30 scientists and engineers in Warwick and works worldwide



Consulting engineering

AECB/Passivhaus/PHPP standards

Code for Sustainable Homes and BREEAM Assessors

Technical specialists in PV and wind

Planning and grid connection

Wind monitoring and solar access analysis

Financial modelling, technical due diligence and project development



Independent procurement services

Solar photovoltaic components and supply chain development

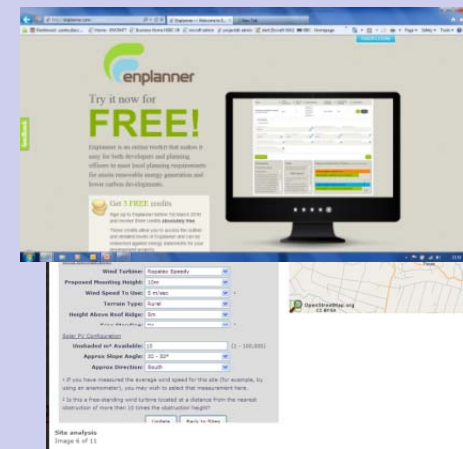


Web applications

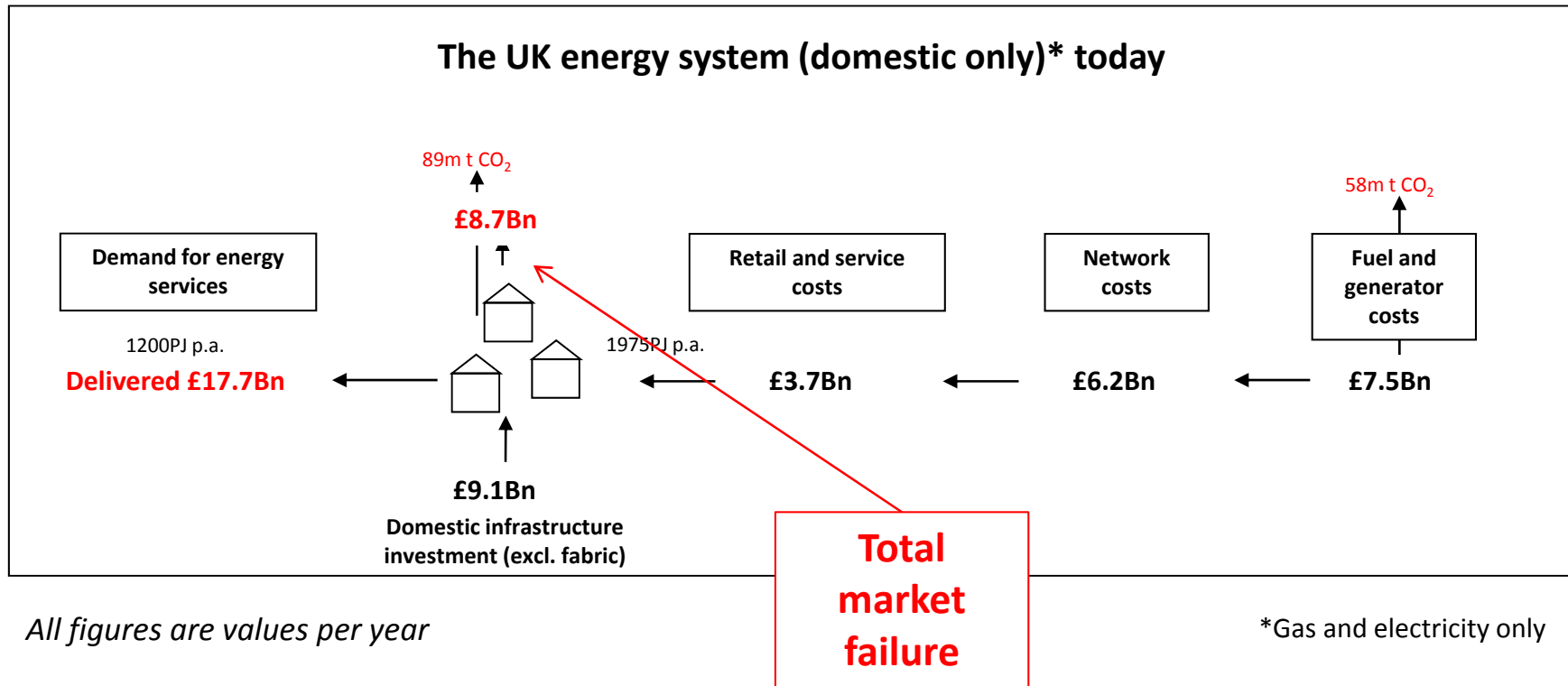
Project specification tools

Portfolio analysis

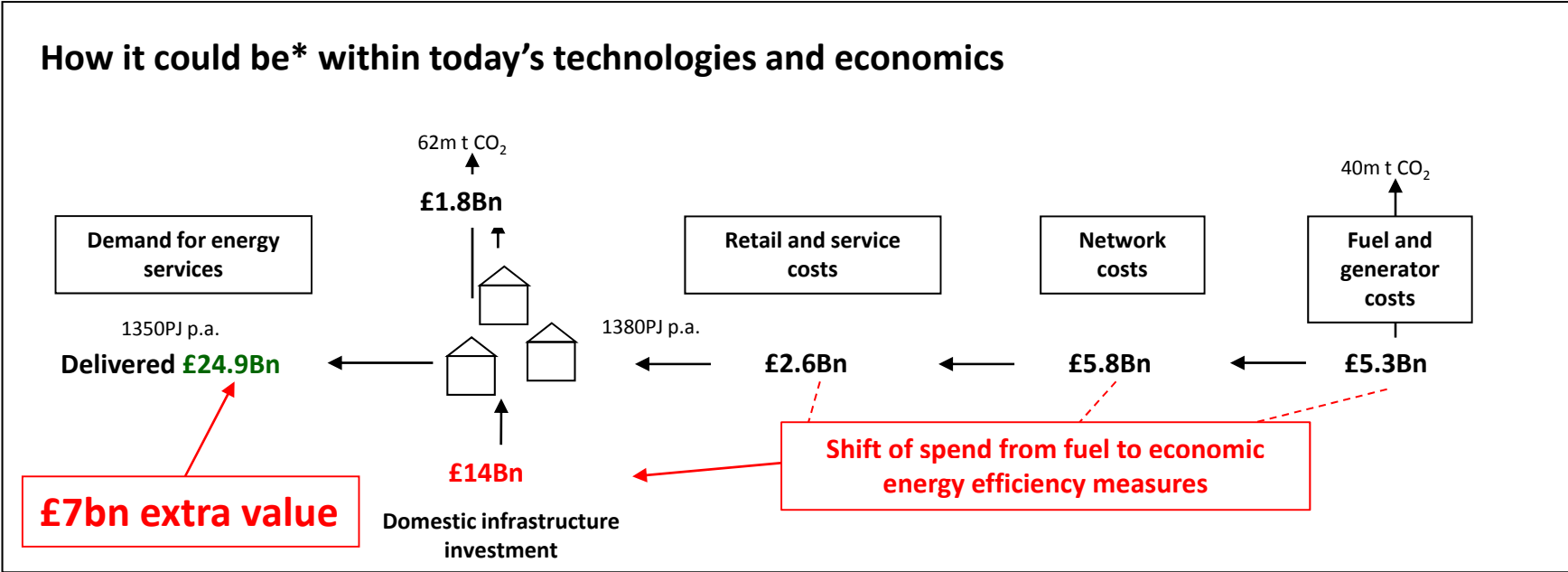
Planning and development control tools



The big picture – today £25-£30 billion of annual spend is circa 33% wasted



It needn't (and shouldn't) be this way



All figures are values per year *Using UK Govt figures for economic potential for **current energy efficiency technologies only** by 2020

The issue is: what is the best mechanism to release this value?



- Competitive markets
- Matched to the technical and economic challenges of the problem
- Regulate where natural monopolies or oligopolies are likely to inhibit effective competition

The housing retrofit opportunity is characterised by a high dependence on local engagement and technologies that are site sensitive



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More than 50% of project costs are in installation, maintenance and control



Well-trained front line staff



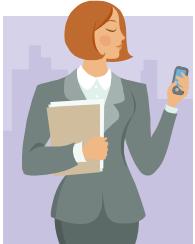
Encourage significant local investment in low carbon technologies



Installed by local firms



Encourages inward investment and manufacturing



Creates jobs



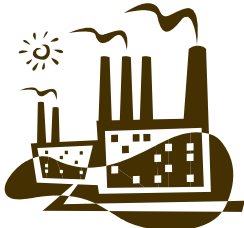
Saves CO₂
Cuts fuel costs

Improves health and built environment

Generates guaranteed 25 year income streams



Creates scarce, high skilled jobs



Creates more jobs and long-term wealth

...and more than 50% of the benefits are in ongoing management

The technologies are well-established but no one has done this at scale before



- Key market to make competitive is that for **local implementation**
 - **Technology innovation and fundamental R&D are red herrings:** we need innovation in business models and implementation tools and techniques
 - Key skills are **site supervision, occupant engagement, local crafts**
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- Regulatory focus and policy thrust should be on **demand side measures** to encourage development of innovative local economic responses, likely to be led by SMEs

The challenge for SMEs is that they are ruled out by design



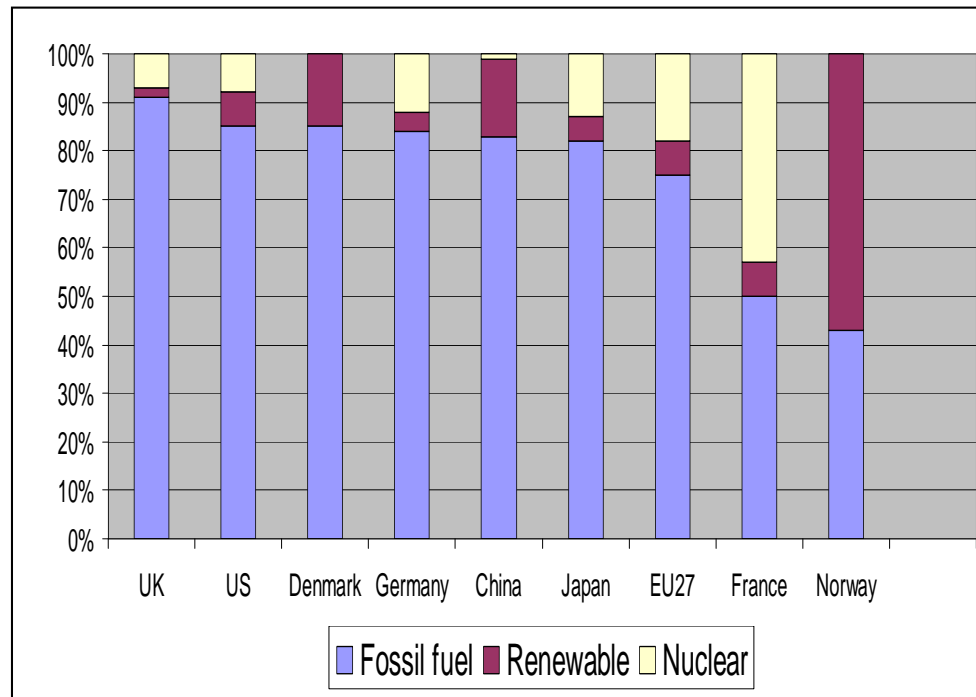
- Procurement and finance accessible only to slow-moving, larger organisations (least well equipped to provide efficient and responsive local solutions)
- Incentives instinctively supply side – technology-biased and rationed
- Regulations create oligopolies where none would naturally exist- for example in micro-generation and energy efficiency technologies and installation of retrofit measures

Local authorities and RSLs can partly get round these issues....but it is very hard

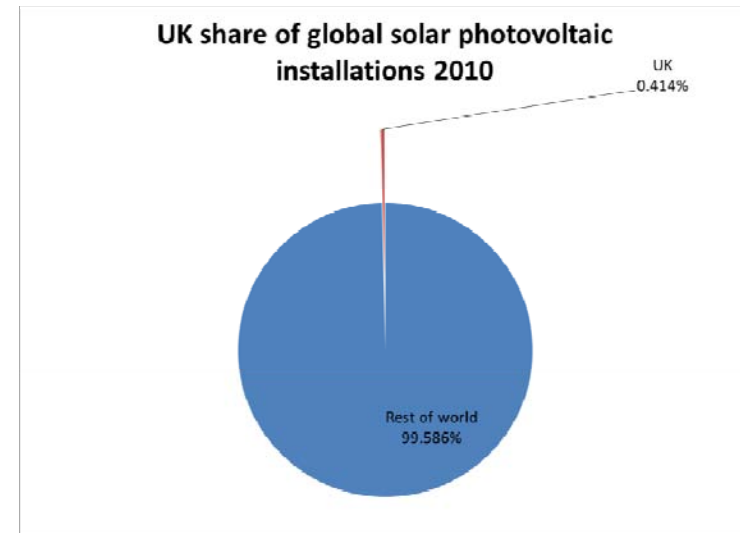
The consequence is that we are a decade behind our competitors and paying for it every day



Comparative primary energy mixes



Sources IEA, EU





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