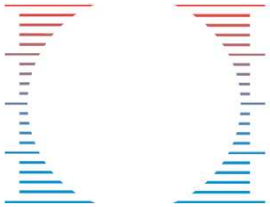


Centre for
Climate Change
Economics and Policy

www.cccep.ac.uk

Skills Constraints and Low Carbon Transitions

Nick Jagger

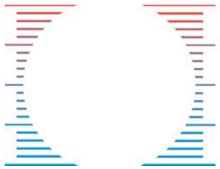
E·S·R·C ECONOMIC & SOCIAL RESEARCH COUNCIL

Living With Environmental Change

Munich RE

LSE THE LONDON SCHOOL OF ECONOMICS AND POLITICAL SCIENCE

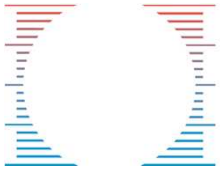
UNIVERSITY OF LEEDS



Centre for
Climate Change
Economics and Policy

Outline

- Impact of skills shortages
- Generic skill constraints
- Low carbon specific constraints
- UK responses to these constraints
- Implications



Centre for
Climate Change
Economics and Policy

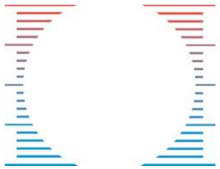
Consequences of Skills Shortages

- Increased costs
- Time overruns
- Reduced competiveness
- Reduced employment
- Lack of consumer confidence

Centre for
Climate Change
Economics and Policy

Generic Skills Constraints

- Short termism
- Labour market structure and flexibility
- Appropriability of employees' skills
- Negative spillovers



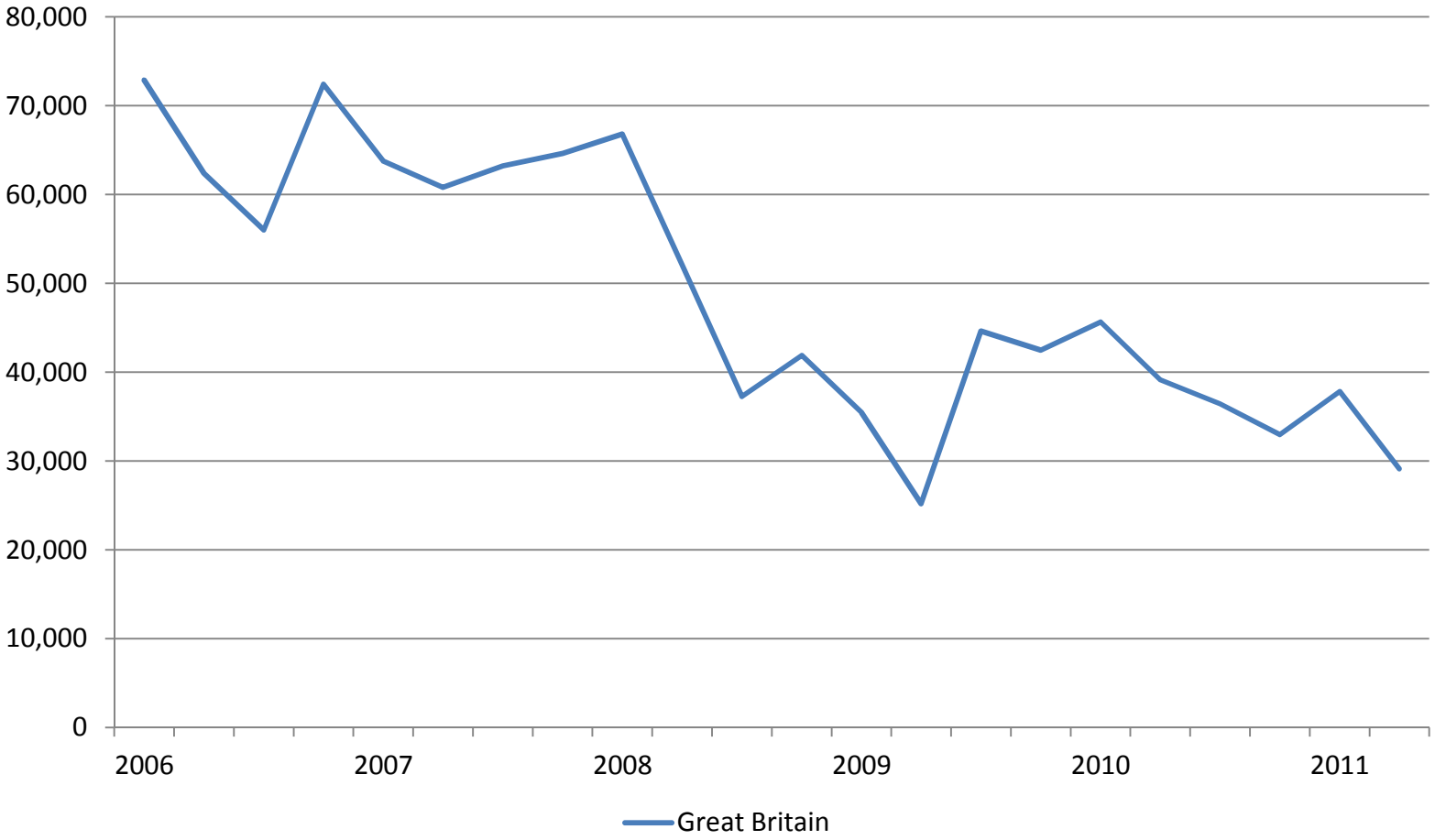
Centre for
Climate Change
Economics and Policy

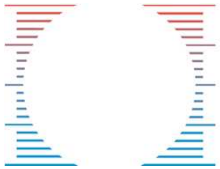
Short Termism

- Long term planning and investment in training and plant are avoided
- Construction sector highly driven by the business cycle
- Current recession leading to labour and skills shedding
- As well as a drop in skills shortages

Centre for
Climate Change
Economics and Policy

Housing Approvals – Planning Permissions

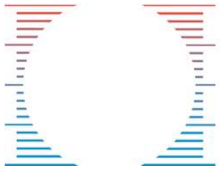




Centre for
Climate Change
Economics and Policy

Labour Market Structure and Flexibility

- Consequence of short-termism and lowest cost tendering
- Very fragmented industry with sub-contractors replacing employees
- Employers less likely to train their sub-contractors



Centre for
Climate Change
Economics and Policy

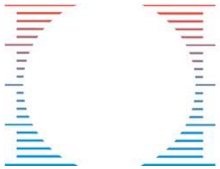
Consequences of Short Termism

- UK construction dominated by SMEs – 93% of the 200,000 UK firms with less than 13 people
- Much of the sector especially those engaged in building repair and retrofit considered ‘cowboys’
- Concentration on existing skills requirements less focus on future

Centre for
Climate Change
Economics and Policy

Appropriability of Skills

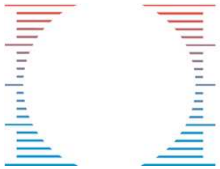
- Traditionally argued that employers only provide firm-specific training
- However employers do provide some certified generic training to employees
- Employers views about payback for low carbon skills critical
- Larger firms more willing to risk training at least some employees



Centre for
Climate Change
Economics and Policy

Consequences of Appropriability

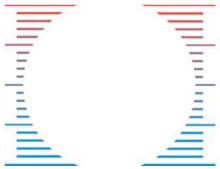
- Employers reluctant to take on apprentices or to train
- Training becoming individual rather than corporate responsibility
- ECITB and CITB having problems getting sufficient employers to sponsor their subsidised apprenticeship places



Centre for
Climate Change
Economics and Policy

Negative Spillovers

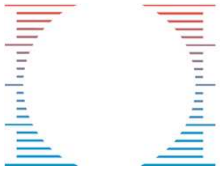
- Skills shortages in other sectors draw resources away from critical low carbon investments
- Inter sectoral spillovers limit knowledge of impending shortages and limits responses



Centre for
Climate Change
Economics and Policy

Examples of Negative Spillovers

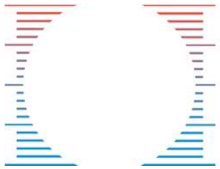
- Increasing oil prices has led to increased activity in the North Sea and internationally for UK based oil and gas workers
- Leading to increased employment demand by the sector and increased wages
- It was hoped that the oil and gas sector would provide those needed to install offshore wind turbines



Centre for
Climate Change
Economics and Policy

Responses to Generic Constraints

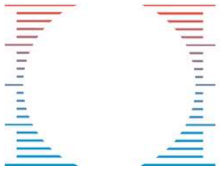
- Generic responses
- Increase time horizons and certainty
- Lack of training generally seen as a market failure and worthy of intervention
- Sector based LMI and levies
- Subsidised training and licensing



Centre for
Climate Change
Economics and Policy

Low Carbon Specific Constraints

- Risk and uncertainty
- Novelty of the technology
- Scale and granularity
- Embeddedness and inertia



Centre for
Climate Change
Economics and Policy

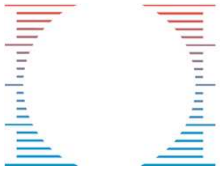
Risk and Uncertainty

- Uncertainty over government policies and technologies
- Demand for predictable future work stream for training investments
- Similar methods used to assess renewables and training investments

Centre for
Climate Change
Economics and Policy

Consequence of Risk

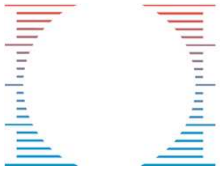
- Training for solar electric installations has taken a large set-back as a result of the FIT changes
- Domestic and especially local wind turbine capability held back by planning uncertainties



Centre for
Climate Change
Economics and Policy

Novelty and Innovation

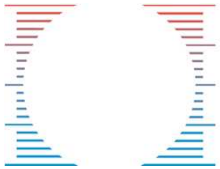
- Reluctance to invest in novel skills or more usually novel combinations of skills
- Construction sector struggles with innovation
- Inappropriate or inaccurate installations can lead to customer aversion and increased costs



Centre for
Climate Change
Economics and Policy

Scale and Granualarity

- Large units are geographically dispersed and more likely to be one off
- This requires a geographically mobile workforce
- The absence of an incumbent workforce leads to on the job training problems



Centre for
Climate Change
Economics and Policy

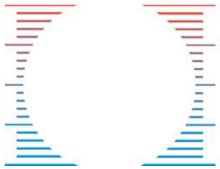
Consequences of Scale

- Industrial disputes common at large sites
- Nuclear new build will require up to 38% of all concreters and 30% of rebar fixers
- Similar problems supplying welders and pipefitters for NNB

Centre for
Climate Change
Economics and Policy

Embeddedness and Inertia

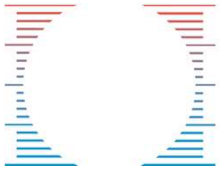
- Commitments to existing technologies and existing skill sets lead to inertia
- CCGTs are well proven with known costs and low skill needs to install
- In the absence of other factors always safer to proceed with the known



Centre for
Climate Change
Economics and Policy

Consequences of Inertia

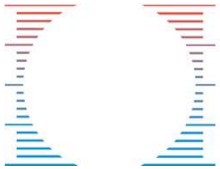
- Training for current skill needs rather than future skill needs
- Absence of skills slow the pace of innovation and adoption of new technologies



Centre for
Climate Change
Economics and Policy

Responses to Low carbon Specific Constraints

- Institutional and legislative frameworks
- Feed in tariffs
- Subsidised training
- Skills Councils and Academies
- Licensing



Centre for
Climate Change
Economics and Policy

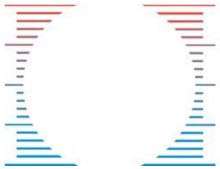
Conclusions (1)

- Recession causing a Government reliance on information and nudges
- Licensing a growing response but unsure about stringency
- Microgeneration more akin to construction establishment size and training predilections

Centre for
Climate Change
Economics and Policy

Conclusions (2)

- Various forms of information, market and governance failures leading to potential skills shortages
- Need for a wider low carbon skills body beyond the three Sector Skills Councils of the Green Deal Skills Alliance



Centre for
Climate Change
Economics and Policy

Thanks – n.s.b.jagger@leeds.ac.uk