

Towards a low-carbon building sector: The influence of skills provision on low carbon pathway scenarios

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**Abstract**

The UK has to fulfil challenging carbon reduction targets set out in the Climate Change Act with an 80% emission reduction by 2050. This reduction in GHG requires a transformation of all sectors, moving from a high carbon system to a low carbon and sustainable system. There is a rich literature in the modelling and estimation of so-called low carbon transition pathways that emulate the shift to a low-carbon economy. The technologies to successfully decarbonise the economy are to the most part readily available, however the technology uptake is somewhat uncertain and highly dependent on policy support, finance availability and industry development, which represent the model parameters.

This paper will explore the skill requirements for a low carbon transition in the building sector. Buildings account for over 1/3<sup>rd</sup> of total GHG emissions and offer the largest share of cost-effective opportunities amongst all sectors. However, these potentials have not been fully realised so far which is partly attributed to a lack of qualified workforce.

The skills shortage in the British building sector is well documented and not a recent phenomenon. Skills policies in place have mainly failed to develop a comprehensive understanding of the sector's skills needs and seem disconnected from the realities the industry is faced with. Since the current high carbon building sector is responsible for skills provision and development, it may not come as a surprise that the UK is facing skills shortages in low carbon building practices. The creation and development of skills is locked-in to complex organisational and institutional structures.

This paper argues that, in order to effectively upskill the workforce of the British building sector regarding a low carbon future, a multi-level governance approach is necessary, integrating energy and climate policy, labour market policy as well as supply chain strategies.

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A clear policy message is needed to un-lock the traditional high-carbon structures in order to foster the growth of the sustainable building sector. Uncertainties concerning the supply and demand of low carbon building measures would be reduced resulting in an investment in low carbon building skills and also a re-alignment of the existing low carbon building supply chain.

This paper further reviews and explores the significance of skills within the contemporary transition literature. It is argued that the effect of skill shortages is generally underrepresented and an attempt is made to estimate the likely impact of low carbon skills provision on transition scenarios with a view to carbon reduction targets, timelines and technology uptake using the building sector as a case study.