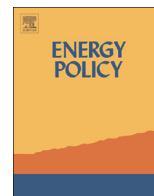




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Financing the UK power sector: Is the money available?

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HIGHLIGHTS

- Power investment need to scale up compared to historical trends, but is achievable.
- Traditionally, low-cost finance has been through bonds and shares of large utilities.
- Utilities are suffering high debt, reduced demand, and suppressed prices.
- Policy interventions to scale-up investment are reviewed.

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ABSTRACT

The UK power generation sector faces a major new round of investment: the coincidence of asset retiring and ambitious goals for decarbonisation is not unique, but is particularly acute in the UK. The UK government has put in place a raft of new policies that seek to promote new, low carbon investment and ensure security of supply. The traditional channel for financing the sector has been through large utility companies, but this now looks challenging for various reasons. The UK therefore offers an interesting case study on several counts; the scale of the challenge, effectiveness of new policies, and the availability of alternative finance. We find that the link between the finance sector and the electricity sector is not 'broken', but the flow of money to the sector is threatened by the current weakness of the utilities' business model. This paper compares estimates of the scale of investment required in the UK with historical investment rates. It summarises contemporary finance industry views of conditions and trends, and potential policy interventions that might be needed to bridge the investment gap. The potential for channelling institutional investor funds directly into energy assets is reviewed.

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1. Introduction

Capital investment in the UK electricity sector in the coming two decades will need to be far higher than the previous two decades (Ofgem, 2010b). This is driven in part by planned retirement of existing plant, creating a need for new capacity. This retirement profile is partly due to lower than average levels of new investment during the course of the 2000s (Fig. 1). It has been significantly accelerated by the retirement of coal plant as a result of the EU Large Combustion Plant Directive and Industrial Emissions Directive (Environment Agency, 2013). Most of the UK's fleet of nuclear plant is also reaching the end of its life, and is due to close over the next decade.

The second factor driving up investment requirements is the

transition to low-carbon forms of generation. This is being driven by the need to meet EU targets for renewables (DECC, 2011a, 2011b) and UK carbon targets (CCC, 2010). Both nuclear and renewable energy are significantly more capital intensive than unabated fossil fuel plant, increasing the requirement for upfront funding.

The UK therefore faces a particular and interesting set of challenges with regards to whether new policies (DECC, 2013) designed to incentivise both new capacity to ensure security of supply and to deliver substantial investments in low carbon generation will be able to secure new investment at the pace and scale required. The UK must expand renewables (and wind power in particular) very substantially to meet the EU Renewables Directive, and is committed to building new nuclear power stations. This coincidence of asset replacement and strong decarbonisation goals makes the UK an important case study internationally and this paper explores the relationship between policies, market structure and investment flows that are of international significance.

The most important factor that determines whether or not

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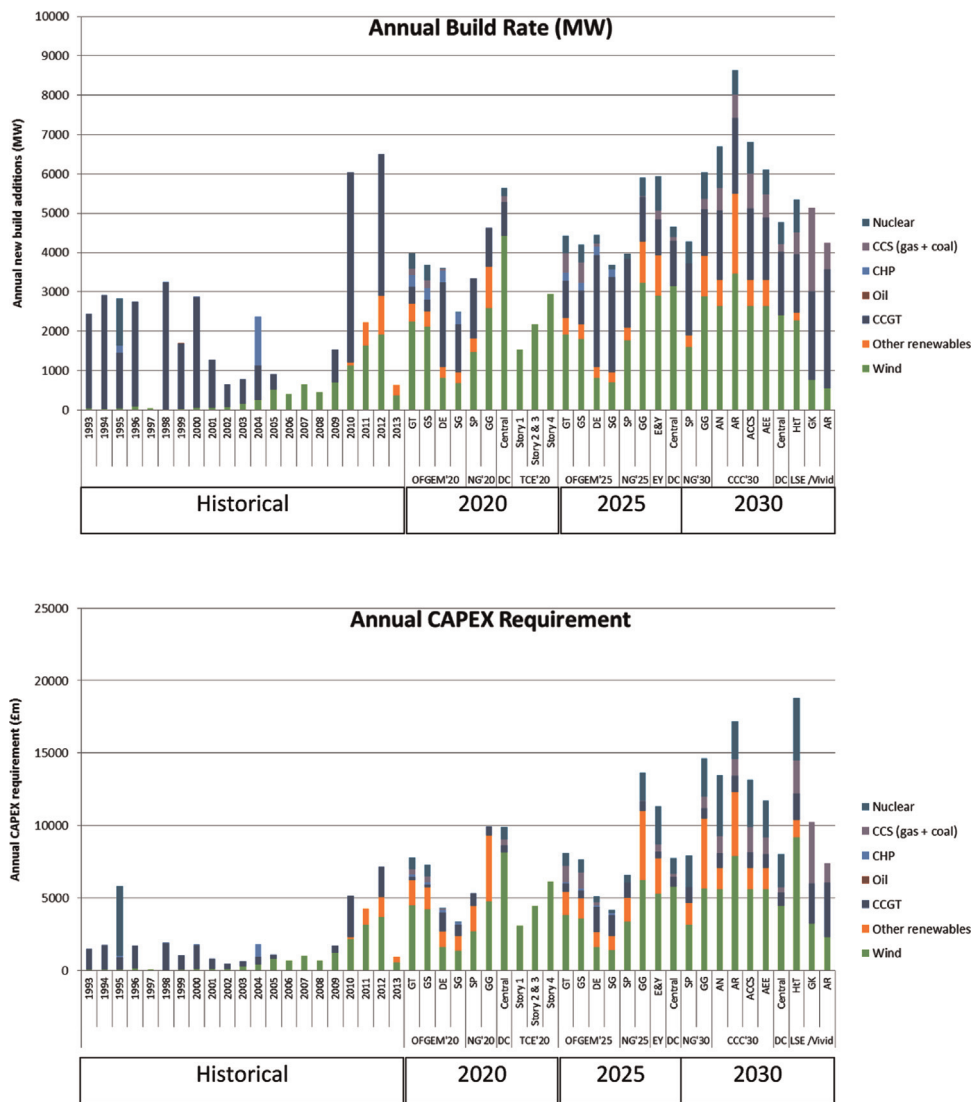


Fig. 1. Comparing historical and projected build rates (MW) and CAPEX (£m).

these investments are achievable is the underlying business case, i.e. the fundamentals of the electricity market, and the details of any subsidy regimes. Whilst this forms an essential backdrop, this is not the primary focus of this paper. Instead, the paper focuses on an important secondary and enabling factor; whether or not there are constraints to capital flows into the sector that could jeopardise these investments.

The paper considers investment in UK power generation with the aim of understanding whether sufficient finance is available. As explained in Section 3, concerns have arisen about an 'investment gap'.

If there is an investment gap, this implies that there may be market failures. These may arise either on the 'demand side' (i.e. financial flow channelled into hard asset investments), or on the 'supply side' (i.e. how the finance sector makes funds available to the energy sector). The paper therefore explores the following three areas:

1. What is the evidence that there is an investment gap, and what is the scale of this gap?
2. What mechanisms are currently used for channelling finance into capital assets, and what failures might be arising on the 'demand side'?
3. What is the scale of available finance, how does the finance

sector allocate these funds to the energy sector, and what failures might be arising on the 'supply side'?

After presenting the results of these investigations in Sections 3–5, Section 6 of the paper discusses potential options for how the investment gap could be closed. Section 7 then draws conclusions and policy implications.

2. Methods

2.1. Introduction

The research that informs this paper uses three methods: a targeted rapid evidence assessment that draws upon the authors' experience in systematic reviews; a simple spreadsheet model; and semi-structured interviews informed again by the authors' experience using this approach in other contexts. We discuss each in a little more detail below.

2.2. Literature review

To address the size of the investment gap (Section 3), the first step was to carry out a literature review, drawing on the authors'

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