



Achieving growth within the UK's Domestic Energy Efficiency Retrofitting Services sector, practitioner experiences and strategies moving forward



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ABSTRACT

The adoption of the UK Green Deal policy provided an unprecedented change within the policy arena of domestic retrofit. Government financial support present within previous policy regimes was reduced and private industry was enlisted to provide finance, delivery mechanisms and management schemes for national domestic low carbon retrofit. Consequently, the **Energy Efficiency Retrofit Services (EERS) sector** needed to grow capacity and deliver retrofit at a larger scale.

This research focuses on assessing the present EERS sector industry and its strategy to increase retrofit activity. This paper provides findings from on the ground interviews with UK EERS sector practitioners with relation to their experience of working with the Green Deal, and also their suggested strategies progressing forward now the Green Deal is no longer operational.

Key findings suggest that UK EERS sector practitioners were unprepared to professionally deal with the expectation of the Green Deal, in terms of business administration and also dealing with the policy itself. Moving forward an emphasis is suggested which focused on training, to enable an increase in EERS sector capabilities, and to also enable an improvement of the quality and variety of work completed. Additionally, findings detail the requirement for enhanced communication between clients and policy administrators, to increase clarity in policy implementation and stakeholder expectation.

1. Introduction

To meet UK climate change targets of 80% residential property carbon reduction by 2050 from the 1990 baseline (Boardman, 2012; Fawcett, 2014; Killip et al., 2014), the UK housing stock requires extensive retrofitting of energy saving measures (Eames et al., 2014). In the past, retrofit policy strategies have centred on 'low hanging fruit' to boost the performance of buildings, via increased loft insulation for instance (Rosenow and Eyre, 2014). The effect of this strategy is the production of an Energy Efficiency Retrofitting Services (EERS) sector landscape whereby property enhancements have scarcely scratched the surface of potential improvements (Gooding and Gul, 2015; Dowson et al., 2012; Kelly, 2009). This differential between achieved energy savings and possible energy savings has resulted in a sizeable performance gap within the UK housing sector (Barr et al., 2005; Pelenu and Cruickshank, 2012).

To increase the volume of installed retrofit measures, the UK government of early 2013 launched the loan scheme the Green Deal (GD) and also a new version of the Energy Company Obligation (ECO), obliging energy providers to fund energy efficiency improvements to

assist home owners and tenants to reduce property carbon emissions and running costs (Rosenow and Eyre, 2013). The GD was designed to be a loan scheme finance device which did not need public subsidy, but offered members of the public the opportunity to commence retrofit projects at a large scale. The policy itself was positioned at the head of the government's political strategy, with the label of 'flag-ship' being applied to the scheme. This illuminated the fact that policy makers were positioning policies which enable sustainable development, at the forefront of governance.

In particular, the government placed the GD within a raft of other measures, designed to enable energy security, and the concept of protecting consumers against the volatility of energy prices. This movement to enhance energy security is stated to be due to supply risks from severe weather, terrorist threats, technical failure, industrial strike action, domestic fuel reserve decline (DECC, 2015), along with an obligation to meet carbon emission reduction targets. The result of these factors means the GD was positioned as one method of many, targeted at creating a situation whereby energy demand is reduced via efficiency, and of this reduced demand a wider variety of energy sources are drawn upon. Therefore energy efficiency and retrofit sits within a

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wider discourse change focused on deregulation and liberalisation, enabling a variety of strategies to provide and save energy.

More specifically in the case of the GD, there is a focus on consumers, generating a dynamic market for businesses, and therefore fostering a low carbon economy, alongside the reduction of fuel poverty and carbon emissions. In placing responsibility for policy delivery in the hands of the private EERS sector, the GD shows that to an extent liberalisation and deregulation of the energy sector was intended (Pettifor et al., 2015). This freedom for businesses to prosper was resultant from the recognition that the market for energy efficiency measures could grow from £8.25bn in 2007 (DECC, 2012, p31) to a potential of £58bn in 2013.

Operational until mid-2015 (Briggs, 2014; Rosenow and Eyre, 2016), the GD aimed at permitting the opportunity to retrofit properties with energy saving measures, without the need for upfront payments, via pay as you save finance mechanisms (DECC, 2010). Repayments for the retrofit upgrades were envisioned to be generated via on bill payments post installation. The GD relied upon 'the Golden Rule' to ensure that the value of any energy saving generated by the improvements, was no less than the repayments for the measures (Guertler, 2012). ECO operated alongside the Green Deal in aiming to tackle carbon saving and fuel poverty simultaneously. ECO fitted in with the GD by offering measures that did not meet the Golden Rule assessment; this positioned ECO to deliver less cost effective measures (Rosenow and Eyre, 2012), which suited low income households, and those in fuel poverty (Guertler, 2012).

The Green Deal was intended to have a high level of impact, via the provision of 14 million property retrofit schemes by 2020 (DECC, 2011). However, in practice the policy significantly failed in achieving any notable result level. In actuality approximately 6000 properties per year received a scheme of retrofit works under the Green Deal, meaning about 14,000 properties were retrofitted during the policy's operation period (January 13–March 16) (DECC, 2016). Plus, in comparison to predecessor policies, the Green Deal resulted in substantially lower carbon savings. Per year, the predecessor policies of the Carbon Emissions Reduction Target (CERT) and the Community Energy Savings Programme (CESP) delivered approximately 68 MtCO₂ in savings over the lifetime of measures (DECC, 2010), compared to the GD's 0.4 MtCO₂ of savings (NAO, 2016; Rosenow and Eyre, 2016).

During the operational period of the Green Deal, a high reliance upon the EERS sector was present, which has continued since its demise. This reliance is due to a need to promote retrofit whilst limiting demands upon the public purse. The importance of private industry increasing retrofit activity is high, as an estimated half a million retrofits will need to be realised yearly with minimal government support, to reach 2050 carbon reduction targets (Killip, 2008a, 2008b). To facilitate this rate of change, the EERS sector therefore needs to embrace an adaptive approach towards policy, enabling large scale modifications to supply chain strategies (Gooding and Gul, 2015; Lowery, 2012; Energy Saving Trust, 2010).

The challenge to change the level of retrofit activity however, has been stated as too great for the EERS sector to tackle (Genovese et al., 2013; Gooding and Gul, 2015; Koh et al., 2012). Reasoning for this is that the sector has been classified as a subsector of the traditional construction industry (Genovese et al., 2013). This status means that in effect the EERS sector has been considered fragmented and embryonic (Goldman et al., 2010), with businesses being characterised as small in size and restricted in geographic coverage. Therefore, for a retrofit policy to succeed, business capability needs to be taken into account (Genovese et al., 2013; Killip, 2011).

This paper firstly outlines the key characteristics of the EERS sector, along with challenges facing practitioners. Secondly, this paper introduces the methodological approach utilised here, followed by an identification of key themes emergent from interviews with EERS sector practitioners. The themes are in particular; the ways in which the EERS sector has responded to producing retrofit at scale, and areas

where policy and the EERS sector need to realign expectations to increase retrofit implementation. Finally a discussion section details the findings from data collection, and possible resultant lessons to be learnt. Due to the source of data being from on the ground EERS sector practitioners, a focus is made on emphasising strategies for practitioners and policy to best interact and boost retrofit activity.

2. The EERS sector

High levels of heterogeneity within the construction industry, mean characterising and grouping differing areas of the industry is not a simple task. When considering energy efficient retrofit for instance, the businesses and individuals operating within the sector are not necessarily separate to more mainstream construction activities. The level of variability and flexibility needed to provide retrofit measures, means many EERS sector members are involved in conventional construction as well as energy efficiency practices (Dunphy et al., 2013; Genovese et al., 2013).

Activities within the sector include the design and construction of properties and refurbishment schemes, the implementation of low carbon materials and technologies, the maintenance of energy efficient measures and also the facilitating of behavioural change. Stakeholders undertaking these processes include individuals in both the public and private sectors; include government organisations, construction companies, contractors, engineers, architects, designers, suppliers etc. As stated, due to the lack of clarity in generating boundaries to the sector, being recognised as a sub-sector of the general traditional construction industry has limited research into the industry (Genovese et al., 2013; Goldman et al., 2010).

Previous studies show (Goldman et al., 2010; DTZ, 2009) that the majority of companies functioning within the sector are small to medium sized (SMEs), with 10 or fewer employees. This trend of smaller operation is also present within the general building improvement and maintenance industry (Killip, 2008a, 2008b), influencing the fact that retrofit projects are mainly conducted on an individual basis. This type of operation discourages larger businesses from sector involvement, due to economies of scale being difficult to produce, with heterogeneous projects requiring substantial management and organisation costs (Mundaca, 2007). Low large-scale business investment may also be driven by a lack of government funded initiatives growing demand, initiatives which could be transformative in advancing EERS sector performance (Killip, 2013). High levels of sector fragmentation and dispersal may also limit larger business involvement (Genovese et al., 2013). Existing strategies to address this fragmentation include cooperative style groups of SME retrofit businesses; cases include RetrofitWorks based in South East England, and the national group of independent businesses named SNUG (Fawcett et al., 2014a, 2014b). These demonstrate the supply chain acknowledges that modifications to business formation to enable increased retrofit levels are required.

What is evident therefore is that market forces are producing advances within the operating styles of the EERS sector, but assistance from government policies is still required to meet carbon reduction targets. It is considered that the innovation within the EERS sector and wider 'Green Economy,' is occurring at an insufficient rate to produce retrofit at scale (Stewart, 2015). Therefore the role of policy is required more than ever, to incentivise and to enable a transition to produce a low carbon society (Dowson et al., 2012). This in turn means that innovations within the EERS sector need to encourage purposive action to influence both businesses and consumers (Stewart, 2015). This required progress of the EERS sector, to some commentators may seem uncharacteristic for an industry emergent from the construction sector traditionally labelled as conservative (Keegan and Turner, 2002). However, the sector has displayed innovation, with progression occurring within the areas of design and consultancy (Fawcett et al., 2014a, 2014b; Winch, 2003), along with construction project based innovation taking place when temporary groups of practitioners come

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