

Energy Policy Effectiveness: Domestic Energy Retrofitting - Designing effective policy

Event summary May 2018

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1 Introduction - Dr Mark Winskel, University of Edinburgh

The Energy Policy Effectiveness fellowship, which is part of the work-programme of ClimateXChange. Today's event follows on from an introductory event held at ECCI in June 2017 on the role of evidence and evidence review in energy policy. The presentations from that earlier event, and a short summary, are available from: www.climateexchange.org.uk/research/projects/energy-policy-making-understanding-effectiveness-and-the-role-of-evidence/

The past two years have seen an intense period of energy policy development in Scotland, with the publication of the Scottish Energy Strategy and Climate Change Plan. This is continuing with the new Climate Change Bill, Energy Efficient Scotland Route Map and Fuel Poverty Bill. This context suggests an increasing need for evidence review research to inform policy development. The CXC Energy Policy Effectiveness fellowship is a multi-year project which will conduct a number of evidence reviews to inform Scottish energy policy; the first year has involved a review of evidence on how public policy can promote homeowner spending on domestic energy retrofitting.

The review report, presentations from the launch event and a blogpost are available at: www.climateexchange.org.uk/research/projects/private-household-investment-in-home-energy-retrofit-reviewing-the-evidence-and-designing-effective-public-policy

2 Evidence Review findings - Niall Kerr, University of Edinburgh

How public policy can effectively promote homeowner investment on domestic energy retrofitting ([see slides](#)).

Historically, retrofit support policy has focused on 'low hanging fruit' measures (in terms of being cost effective and minimally disruptive). Policy support measures have also often (understandably) targeted low income or vulnerable households.

But as the scale of the interventions needed rises with overall energy and climate policy ambition, wider sections of society and different types of homes will become involved. Our new report is about leveraging private investment in retrofit. The emphasis here is on private home owners, but the findings also have relevance to the private rental sector.

A mix of high-level policy drivers are involved: decarbonisation, fuel poverty, employment, energy security and improved health. There is also a mix of private homeowner drivers to invest in retrofit: lower energy bills, improved home comfort, environmental and health concerns. Because of these joint objectives there are typically joint public and private contributions to the cost of retrofit.

The new Energy Efficient Scotland routemap has a ballpark £10bn required spend on domestic retrofit, but less than £1bn of actual public funds are available over next 4 years.

Our evidence review identified a series of policy challenges related to retrofit:

Leverage: the ratio of private to public investment. UK public grant schemes and tax incentives have produced much less leveraged private investment than loan schemes. But loans are not suitable to everyone, nor to all improvements.

- *Additionality*: the extent to which policy supports 'additional' retrofit or whether the households are 'free-riding'. We can expect different additionality levels for different measures. Boilers will need replaced and thus subsidy schemes for more efficient boilers may see high levels of free-riding. Insulation is supplementary, so less likely that people would go ahead without subsidy. Whilst policy programmes may not support fully additional retrofit it is important to note that they will also likely involve positive spillovers of retrofit that is not supported specifically by the programme. Additionality is very difficult to measure accurately, and with intangible spillovers, overall policy impact can be difficult to quantify.
- *The need for a mix of policy signals: carrots, sermons and sticks*. Grants and tax incentives versus low interest loans. The latter less common or attractive, but achieve higher leverage ratios. Information based policies seen as supportive of policy rather than leading retrofit. Regulation is also important, in setting minimum replacement standards, extension or renovation requirements. There is a much larger market for general home refurbishment than energy retrofit, so it's important to target the former as a means of achieving the latter. Whole house retrofit projects are beneficial but often impractical. A more realistic way forwards is to draw up a 'whole house plan' that then gets implemented over time.
- *The overall policy package*: an effective policy package requires some consistency and stability (as well as flexibility), perhaps supported by dedicated 'revolving' funds and a long term political commitment. A long term issue is how to make loans (which offer more leverage than grants) more attractive to homeowners.

Panel discussion and Q&A

The panel included: Dr Aaron Gillich, London South Bank University; Dr Alice Owen, University of Leeds; Professor Jan Webb, University of Edinburgh and Niall Kerr, University of Edinburgh.

Issues raised by the panellists and the wider attendees included:

The report was welcomed in bringing together a broad range of issues and international research on retrofit. The focus on the 'able to pay' sector was also welcomed as this tends to receive relatively little attention.

Policy in this area can suffer from either a 'one-size-fits-all' approach, or an overly-narrow emphasis on economic efficiency. There is a need for policy to better reflect the diversity of homes and households. Different households have very different levels of willingness to go into debt to finance home retrofit.

Given the comprehensive nature of the targets, and thinking more about cost socialisation rather than private household leverage, is there any real overall societal advantage to mobilising private expenditure, alongside the disadvantages, given the nature of the Scottish building stock (with many common stair flats, often no common ownership).

The panellists were then asked to identify their 'top three' policy measures. The issues identified here included:

- Address retrofit supply chain workforce training: upskilling and investing
- Framing policy evaluation around specific policy objectives, and use research to fill in data gaps for future policy steps.
- Subsidise the intermediaries and advisors – especially, the retrofit equivalent of the mortgage adviser. Make these people readily accessible to homeowners, e.g. at Ikea.
- Co-benefit. In UK context there is precious little evidence that energy retrofit makes a difference to the value of your property. However, having something highly visible (such as external wall insulation) starts to change neighbourhood norms and expectations.
- Tell the story well, and through that narrative, engage with every property owner in Scotland e.g. 'The Great Scottish Makeover'
- Focus on regulation and building standards, and adequately fund building standards enforcement and compliance.
- Offer a long term policy commitment so as to give confidence to homeowners and suppliers. Policy cliff edges can quickly kill off both. That said, the switch from grants to loans always involves a cliff edge.

3 Other research perspectives on domestic retrofit policy

Dr Aaron Gillich, London South Bank University ([see slides](#))

The US Better Buildings Neighbourhood Program (BBNP) was a national programme with a national target (15% energy cost savings per home) but local implementation; it resulted in 41 versions of the same programme – a natural experiment

From this, Aaron identified' 5 pillars of retrofit'

1. Overall programme design / market position. Avoid duplication and leverage participation at the portfolio level.
2. Homeowner engagement. It is important to distinguish between *marketing* i.e. print, radio, TV etc. which are only good to get you in the door, and *outreach* i.e. personal customer engagement strategies, such as Community Based Social Marketing (CBSM).
3. Workforce engagement. This is increasingly recognised in retrofit programmes. Success is associated with word-of-mouth and through contractor networks. The UK Green Deal programme offered some training, but mainly around the mechanics of the programme rather than workforce fundamentals.
4. Financing and incentives. This is still the biggest barrier of all – a rule of thumb is that measures still on average need 25% of cost to be subsidised. Incentives can be calibrated to provide a kick-start.
5. Data and evaluation. Evaluation is often the most under-resourced part of support programmes. At the same time, there is a danger of data fatigue – don't collect data that isn't useful.

Dr Alice Owen, University of Leeds ([see slides](#))

Alice has spent a lot of time talking to builders and builders' merchants about why they do and don't address energy efficiency. They often have good reasons *not* to get involved.

Conventionally, the buildings supply chain is linear – but if the builder is at the centre, they need to be supported by local and national policy.

Tendering: small firms want to deliver good quality work which brings further work to them, rather than them having to go out and find new work.

Manufacturers see building trades as a key constraint on new product development and use. Innovation often isn't very important – a very small proportion of new products find their way to the buildings' supply chain.

Merchants select stock on their understanding of local activity, and what they think local trades are using. They get immediate feedback on whether their products are useable by the builder – but there is no equivalent feedback on whether this has achieved a low carbon outcome.

Alice emphasised three key roles for policy:

1. Local flexibility. Make sure key decision makers and suppliers are understood in a local market.
2. Regulate for *outcomes*, not processes or inputs. Small construction firms welcome regulation, as it supports a level playing field and punishes 'cowboy builders'.
3. Make local building control an *advisory* as well as *enforcement* service, and reinvigorate its role.

Dr Faye Wade, University of Edinburgh ([see slides](#))

Faye is now working closely with the Scottish Government as a ClimateXChange Research Fellow, providing a social impact assessment of the Energy Efficient Scotland local pilots. Previously, Faye has studied the personal stories of home heating installers – those fitting central heating controls.

Her research here showed, for example, that installers tend to draw on their own personal experience to suggest that central heating programmers shouldn't be used, and homeowners should instead simply rely on the central thermostat to regulate the house temperatures

Her work has also highlighted the interlinked nature of supply chains. Proactive, integrated and aware supply chains are key to effective home retrofit.

Plumbers merchants could play a greater advisory role, given that they already advise installers on the appropriate technology to put in a building.

4 Wider energy policy and evidence / research aspects.

Lynn Forsyth, Scottish Government ([see slides](#))

Lynn outlined the new Energy Efficient Scotland (EES) routemap, currently out to public consultation. The EES programme needs to be socially and economically sustainable over time. The early emphasis in the EES routemap is on energy efficiency and retrofit. The Scottish Government will be reviewing overall routemap progress mid-2020s, and will turn more attention on decarbonising heat supply at that time, taking into account decisions on the future of the GB gas grid made by the UK Government.

A Fuel Poverty Definition and Strategy Bill (previously titled the Warm Homes Bill) will be passing through the Scottish Parliament later this year.

Dr Rob Gross, Imperial College and UK Energy Research Centre

After the 2015 UK general election there was a wholesale slashing of UK energy support programmes. There may have been good reasons to curb some support programmes, but we have been left in a situation where, in some key areas of energy policy, what was removed has yet to be replaced.

At the same time there are now some signs of a positive policy approach, such as parts of the Clean Growth Strategy and innovation support funding – and the more pessimistic expectations of the abandoning of key parts of energy policy at the UK level have not come about. Overall, though, there is a lack of a coherent UK strategy that will deliver against fifth carbon budget. The UK Government acknowledges this, and is hoping for innovation to solve many of the more difficult energy systems problems.

Systematic evidence reviews can make for quite ‘dry’ or inaccessible reading. There is a need to provide something that is new, captures attention, doesn’t equivocate – perhaps even in the face of equivocal evidence. For those conducting evidence reviews, it’s important to consider the intangible elements of storytelling and narrative, in reflecting on the international evidence base (UK research-policy links can be quite parochial). It’s also important to identify what can add value at the right time in policy development. Sometimes academic rigour has to be put on hold.

Finally, there is a continuing need to ‘speak truth to power’. Evidence reviews can bring uncomfortable policy deficit issues to the fore, such as on regulation, skills/supply chain, the need for policy consistency (rather than another new initiative) and human capital (i.e. the capability to deliver policy ambitions at the local level).

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