

SPRINGBOARD SOLUTIONS

**Alternative routes to funding
mass market energy efficiency**



Executive summary

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The Problem

Mass market energy efficiency measures are needed for net zero, energy security and cutting bills.

Attempts to introduce public funding or regulation sufficient to cover that need have not yet resulted in success.



The Solution

But there are multiple avenues for funding energy efficiency **without putting requirements on households, adding to taxpayer spend, or increasing household debt.**

These are - enhanced cashback schemes, loyalty schemes, lender requirements, Energy as a Service, grid level auctions, regional tenders, and planning compensation.

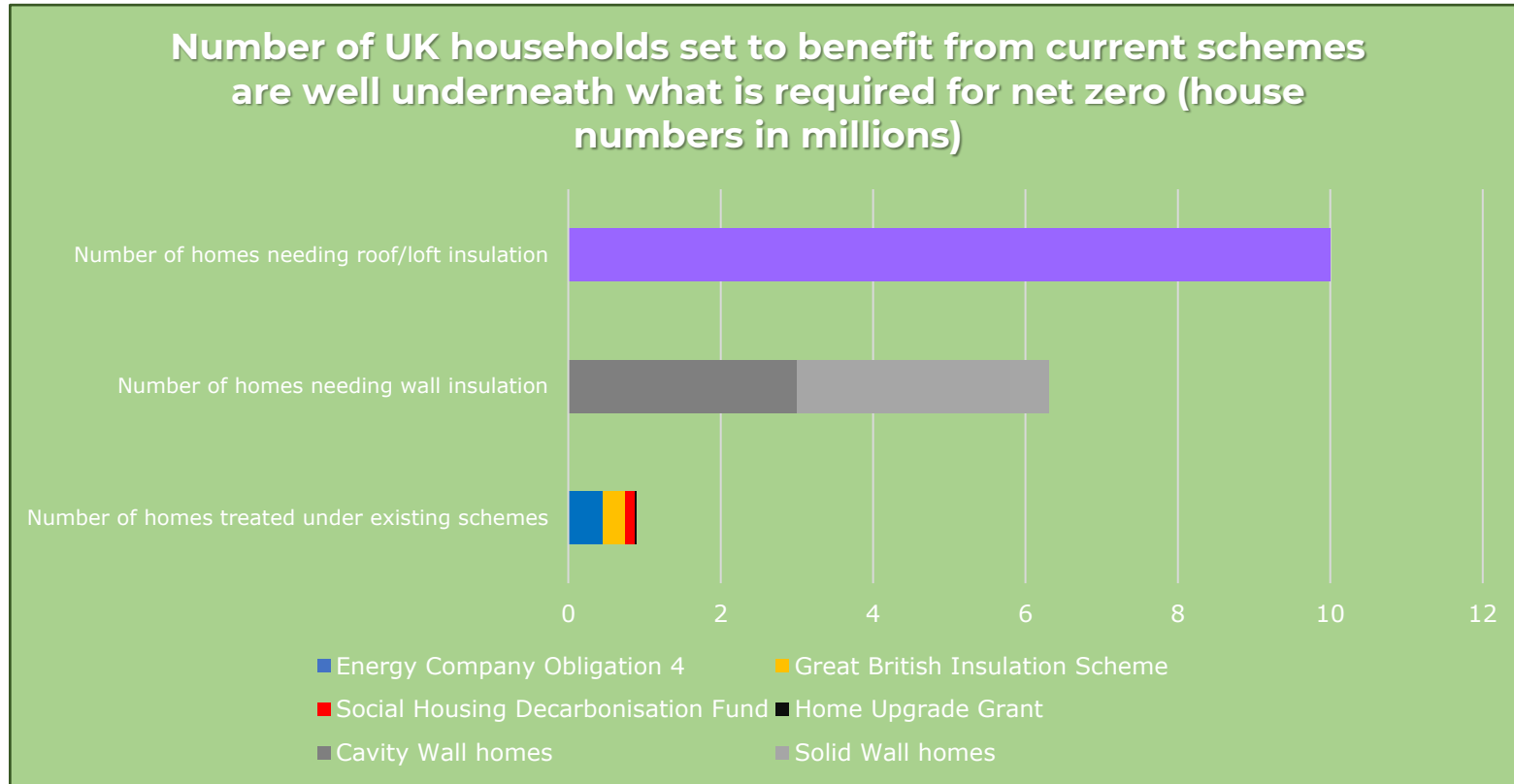


Next steps

Government has an essential role in leading and convening lenders, energy suppliers, grid operators and others to unlock these options for the wider public.

Energy efficiency is stalling

Installing insulation in UK homes alongside widespread heat pump deployment is critical to meeting climate targets by 2035, increasing energy security by reducing our dependence on imported gas, and reducing household bills. Yet 10 million roofs, 3 million cavity wall properties, and 3.3 million solid wall properties require insulating to get to net zero. Existing subsidy programmes are essential to tackling poorer households, but only scratch the surface of this. The lack of action is particularly acute in middle- and higher-income households. There is little policy currently to scale up the private market for energy efficiency, but this report details further actions the government can take to build innovative new approaches.



Triple solutions – energy efficiency will;

- *Reduce emissions:* 89 million tonnes of CO₂e comes from heating buildings.
- *Increase energy security:* Insulating all buildings could reduce gas imports approx. 15%.
- *Reduce household bills:* Inefficient households were £400-900 worse off in 2022/23.

Building fabric insulation needed for net zero

What is building fabric?

Building fabric refers to the 'shell' of a building where the inside and outside meet, such as the roof, walls and floor. The Return On Investment (ROI) is the time required for the average energy bill savings to equate or exceed the initial cost of installing the measure (all prices correct as of March 2024).

Loft insulation

Cost: £880-1200*

ROI: 2-3 years*

Number needed: 10 million (including both first time installs and top-ups).

Potential heat reduction: Up to 25% of building heat demand.

Solid Wall Insulation

Can be delivered via Internal Wall Insulation (IWI) or External Wall Insulation (EWI).

Cost: £12000 (EWI)/£7500 (IWI)**

ROI: 31 years/19 years**

Number needed: 3.3 million (for properties largely built before the 1920s).

Potential heat reduction: Up to 33% of building heat demand.

Cavity Wall Insulation

Cost: £1000-4600

ROI: 7-10 years

Number needed: 3 million (for properties largely built after the 1920s).

Potential heat reduction: Up to 33% of building heat demand.

Floor insulation

Cost: £4700***

ROI: 58 years.***

Number needed: 3.4 million.
Potential heat reduction: Up to 10% of building heat demand.

*For first time loft install.

**Based on a semi-detached home only.

***For suspended floors only.



Solutions are there, but we need faster action

With a greater uptake of energy efficiency needed, two options are either a wider subsidy programme or household regulations.

A subsidy programme to the scale required would likely reach a minimum of £55bn over the course of ten years. While there are already public sector investments of billions of pounds in energy efficiency, competition for infrastructure spending is likely to be very high, and public finances will be under great pressure.

A way round this is Minimum Energy Efficiency Standards for both the Private Rented and Owner Occupier sectors. If coupled with the latest innovative green finance methods, this could involve homes not having to pay upfront for costs for retrofit. However, this would need extensive regulation that could take a number of years, and has attracted criticism around household choice.

The ADE strongly supports both of the above approaches, and would like to see further action in these areas. However, given the urgent need and current slow progress on both approaches, we propose a range of enabling policies that could function independently of the above.

What's more – we can do it in a way that **doesn't put requirements on households or increase taxpayer spending.**



Finance abounds beyond households and taxpayers

Two substantial sources of funding exist that have been largely untapped for energy efficiency so far. The first of these include alternative forms of Green Finance. This is private sector funding from banks and other financial institutions in the form of cashbacks, loans and other methods that can be used for energy efficiency. Many market products exist from high street banks, but the market is currently nascent due to low awareness and demand. The potential however is vast, with up to £21bn spent by UK homes on other improvement works in 2021.

The second of these is electrical grid and market finance. With home heating electrifying in future years, the UK grid is currently investing to upgrade the relevant infrastructure for this additional demand. But investing in energy efficiency would reduce that demand to begin with, ultimately saving money in the worst affected areas of the grid, which would no longer need to reinforce network infrastructure. The estimated cost of grid upgrades to accommodate the electrification of heating is approximately £20bn.

Both areas are relatively nascent, but need a new mechanism to connect the finance to the household. This reports looks at the following seven methods for utilising this funding, in a way that **does not** increase costs to households or the taxpayer.

“Alternative funding for energy efficiency exists – policy just needs to connect it to homes more creatively.”

The seven solutions we cover in this report include:

- 1) Enhanced cashback schemes
- 2) Loyalty scheme
- 3) Lender standards
- 4) Energy as a Service
- 5) Grid level auctions
- 6) Regional tendering
- 7) Planning compensation

1 Enhanced cashback schemes

What's the idea? Suppliers offer to install loft insulation for free to their customers, paid for via enhanced cashback schemes from lenders.

How does it work?

Existing energy suppliers offer customers on new and existing tariffs the opportunity to install loft insulation into their home. This would be done via a quick, simple questionnaire on the supplier website to ascertain if the house is the right type for a first-time loft insulation or loft insulation top-up to more modern standards of 270mm thickness. The supplier would go to the lender of the building to claim a variable cashback reward £880-1200 for the loft insulation install. This would be to cover the full cost of the loft insulation, the average of which is the above values (depending on home type).



1 Enhanced cashback schemes

Why does it work?

Several lenders already offer some cashback schemes for loft insulation (typically £500). The Bank of England have found that less energy efficient properties are an indicator of higher mortgage arrears. Properties in arrears cost lenders £13.6bn at the end of 2022. Funding this cashback scheme for owner occupied mortgages for 3.4mn loft insulation installs would cost lenders £3-4bn. This would enable mortgaged homes to unlock an estimated £0.8-1.5bn in income annually, which could be available for mortgage repayments. These benefits could therefore pay for themselves for lenders in the mid-term, with a payback of less than 4 years. Lower energy bills are also more likely to impact credit score, leading to fewer rejected mortgages. Banks therefore have an investment incentive to use loft insulation as a way of ultimately saving money, leading to less risky lending and higher returns. Other measures are less likely to be profitable under this option, given higher upfront install costs.

For suppliers, being able to clearly advertise their ability to save households money and offer free home improvements would be a major publicity pull. If one or a small group of suppliers did this, this would be a competitive advantage. Early movers would likely attract significantly more customers, and the lack of upfront investment by the supplier would mean they would therefore get some of the benefits of the bank's investment. Additionally, with most big energy suppliers now providing heat pumps directly to customers, this would be an enabling step for that transition.

For households, this would be an instant win, with no cost at all, with a radically simplified process for install.

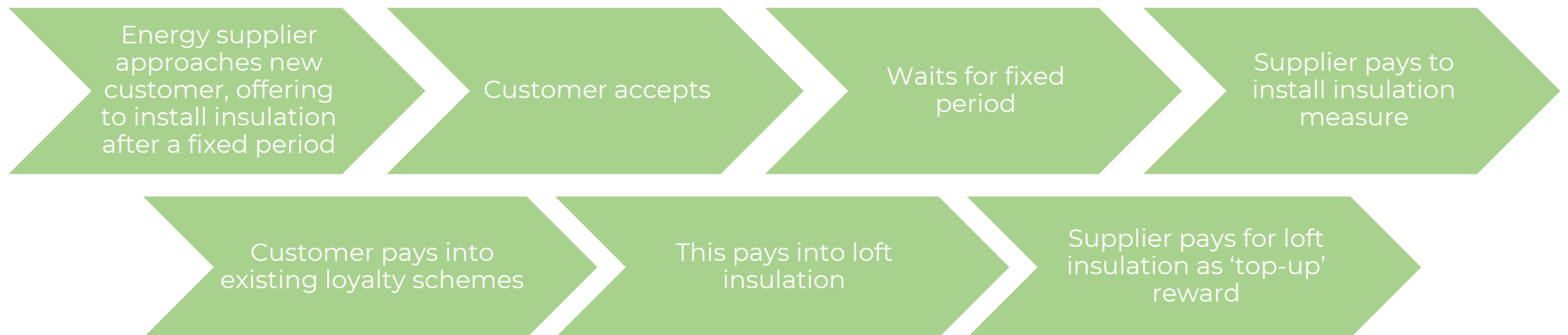
If these schemes are successful, this could start a domino effect, with suppliers and banks offering these products offering better prices and deals for customers, therefore incentivising others in the market to do the same.

2 Loyalty scheme

What's the idea? Suppliers fund installation of loft insulation as a reward for customers staying with them for a fixed period of time.

How does it work?

Unlike Option 1, this would remove the banks from the equation, and suppliers commit to fund loft insulation themselves if a household stays with that supplier for a specific period of time. Loyalty schemes have been introduced from suppliers relatively recently, such as Octopus's 'Octoplus' scheme in September 2023 and EON's 'EON Next Plus' scheme, also in 2023. Cash discounts on bills are already part of both schemes, and are encouraged by rewarding helpful behaviours, such as engaging with flexibility schemes. Alternatively, this could be a 'top-up' or additional product to these existing loyalty schemes.



2 Loyalty scheme



Why does it work?

By providing a longer-term incentive and reward for staying with the supplier, while it will cost suppliers the installation, it could pay for itself if it incentivises the customer to stay with that supplier. A competitive edge could also be introduced, with other energy suppliers not wanting to miss out on potential strategies that could assist with increasing their customer numbers.

Equally, many energy suppliers are increasingly turning to heat pump services. But two thirds of homes are not at present interested in getting a heat pump, with concerns over effectiveness and cost being top priorities. Suppliers providing insulation visibly and affordably to reduce heating needs could therefore be a substantial boost alongside future heat pump uptake, and future investment in the industry.

3 Lenders standards

What's the idea? Lenders would compete with each other to increase the energy efficiency of their housing portfolio, ultimately following a mandatory standard.

How does it work?

Lenders would compete with each other in a voluntary target standard for an average of EPC Band C in their housing portfolio by 2030, potentially with a mandatory standard via regulation coming in line at a later date. Non-compliance with the mandatory standard would result in penalties, with that funding going towards energy efficiency improvements. This approach has already been proposed in the government's *Improving Home Energy Performance through Lenders* consultation from 2020. This would incentivise lenders to invest in their properties' energy performances, boosting other options in this report such as Option 1.

Lenders need to hit minimum requirement

Lenders approach homeowners to carry out insulation work OR Lenders integrate energy efficiency into new finance, product transfer, or re-mortgaged.

Lenders hit targets

3 Lenders standards

Why does it work?

This has the advantage of leveraging more funding from lenders than option 1, however the less targeted approach would result in considerably higher overall costs for lenders, with the original consultation looking at lender spends of £10,000 per household. However, this still allows a much greater range of enabling energy efficiency measures in owner occupied homes without any spend by the households themselves. Lenders have the advantage of interacting with homeowners at critical trigger points, such as re-mortgaging, where there may be greater opportunities for home retrofit (such as in-between moves), or where households may already be working through long term finances, tying in more closely with conversations around longer term energy savings.

Lenders being required to factor in the energy efficiency of their properties more closely into their financial decision making will help integrate it into financial decision making. Equally, giving a competitive incentive to stay ahead of their rivals in other areas can lead to a 'race to the top' for better energy deals. A portfolio of energy efficient homes will benefit lenders, as these homes are not only less risky assets, but will also have homeowners with lower fixed costs, potentially allowing for lower mortgage arrears. All of the above can build on existing lender commitments, such as EPC targets from NatWest and Nationwide which already exist for 2030.

4 Energy as a Service

What's the idea? The supplier installs a full package of measures, including insulation, a heat pump, battery and solar PV, with a monthly fee paid back over 20 years. This actually saves the household money overall, as the utilisation of smart tariffs lowers the cost of energy more than the fee, with no upfront cost.

How does it work?

Energy as a Service (EaaS) is being trialled in the UK currently, in the UK's Green Home Finance Accelerator (GHFA). The GHFA is a government funded competition to design and trial financial innovation for low carbon technologies for homes. This takes a different approach to households paying for electricity and heat, by paying for a monthly fee, which is more than offset by a smart tariff maximising of system flexibility, solar generation, and energy savings. This monthly fee is paid back over 20 years, with the fee staying with the property, and an early termination fee applying for leaving the contract early. Other variations include different versions of this model exist, including with different measures in place, and for different levels of retrofit.

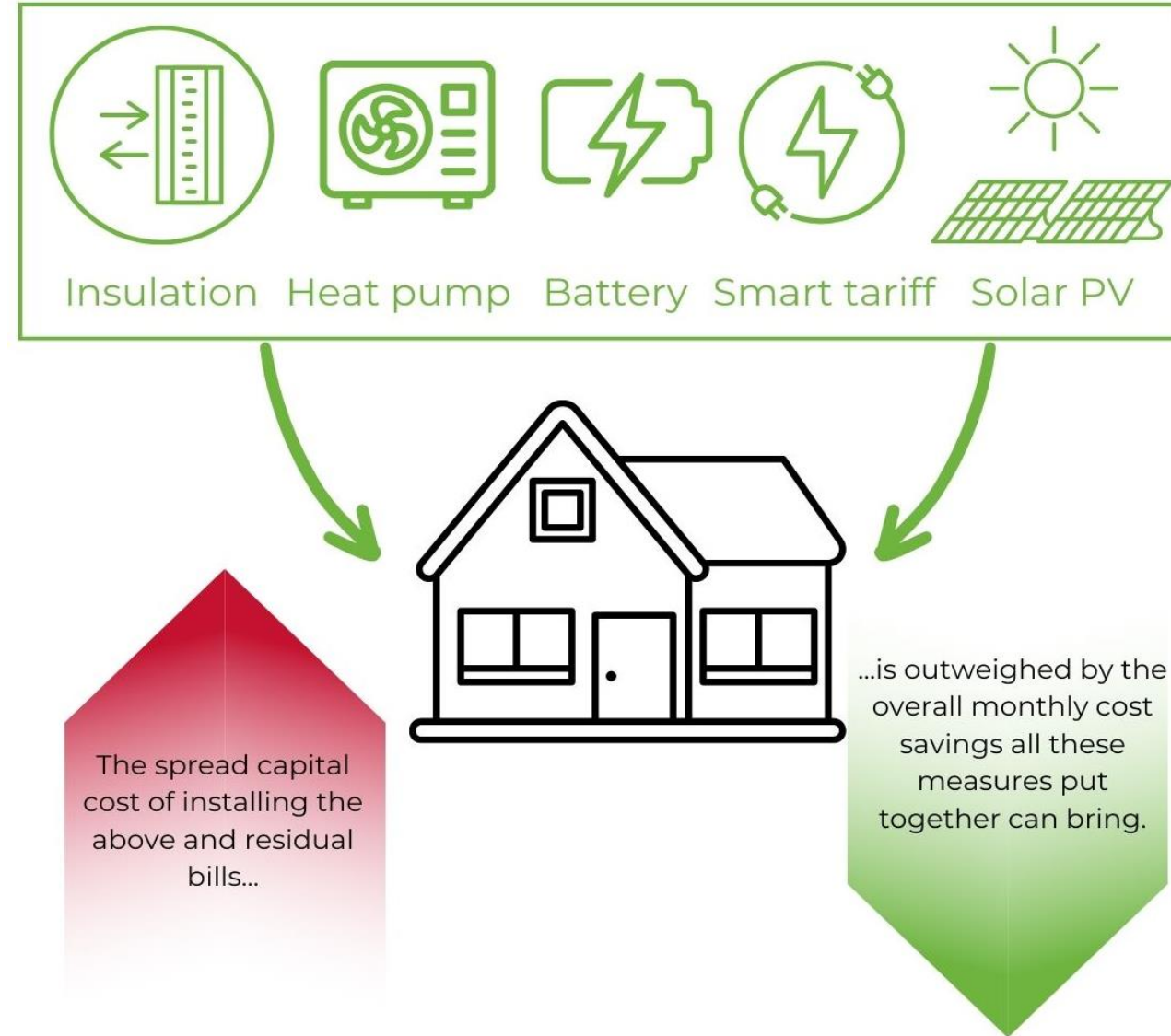


4 Energy as a Service

Why does it work?

Effectively, the cost savings of EaaS for the households outweighs the monthly fee, meaning that although the household is technically paying for the upgrades, they save money in doing so, and immediately. The supplier meanwhile receives a steady, fixed and secure income from the fee, thus ensuring that both suppliers and households benefit financially from EaaS.

It also has multiple cross-sector benefits for the direct decarbonisation of heat (via air source, ground source and shared ground loop heat pumps), and the power grid through the additional focus on household flexibility. It will have a much bigger direct impact for the households involved, with households having much greater flexibility of how they use their electricity, through the use of solar and storage. This is crucial, as previous efforts to introduce a more limited Heat as a Service (HaaS) suffered in part through a lack of ability to provide those wider system benefits.




5 Grid level auctions

What's the idea? Grid operators would hold auctions for funding demand reduction via energy efficiency, in a similar way it does to secure capacity elsewhere in the energy system.

How does it work?

Integrated Resource Planning (IRP) involves grid operators planning for future system demand. IRP enables comparisons in cost between upgrading the grid and reducing demand on the grid via energy efficiency, allowing utility companies to see the value in reducing home demand instead of potentially investing elsewhere. The National Energy System Operator (NESO) is a public body that is responsible for overseeing the planning and restructuring of the future energy system. This could include IRP.

Given the IRP process above could showcase the financial attractiveness of energy efficiency for the grid, this investment of public money would pay for itself over the long run in the same way due to cost savings from lower grid reinforcement work. Aggregating buildings for efficiency gains in areas with the most expensive reinforcement costs could compete in auctions for funding.



The NESO holds an annual auction for 'Retrofit Market' payments.

Suppliers and specialist providers bid into the auction

The most cost-effective bids are accepted.

Suppliers or specialist providers deploy energy efficiency measures.

Households receive immediate benefits from these measures at no cost .

5 Grid level auctions

Why does it work?

The cost to reinforce the grid to transport more electricity is estimated to be up to £22bn by 2030. Likewise, the system operator needs to manage grid constraints to ensure security of supply and the cost of this management could rise to £4bn by 2030. NESO has a legal duty to secure the system in the most cost-effective way, and energy efficiency retrofit has been found to be a competitive option from IRP results in the USA. Therefore, energy efficiency being able to compete on a level playing field with grid upgrades, flexibility, storage, renewables and so on, simply allows energy efficiency to gain support in the same way. Auction processes have brought substantial benefits and high investment to other parts of the energy system. It could also help the current energy efficiency supply chain scale up, since competing for grid funding provides a revenue source outside of government subsidy schemes, and an additional element of business security.

Household energy bills would be lower under this model, both for households receiving the insulation upgrades, but critically for homes overall. This is because the electricity system charges for maintaining both local and national parts of the electricity system are currently paid via fixed costs on energy bills. This means that without installing energy efficiency, these charges will be higher in order to account for costly grid upgrades.

Energy suppliers or other specialist providers will still have a role to play as administrators for installing this energy efficiency, acting as an intermediary in a similar way to previous options in this report. They would receive similar benefits (including lower system charges themselves) and provide the customer-facing part of the relationship.

6 Regional tendering

What's the idea? Network operators invest in energy efficiency at a more local level to avoid costly upgrades later.

How does it work?

Option 5 looked at energy efficiency funding at a national level. However, the Distribution Network Operators (DNOs) split the UK electricity grid across 6 operators, and therefore have responsibilities for securing electricity supply on a regional basis. The DNOs currently tender for demand flexibility, and some can include energy efficiency within this. However, tenders that incorporate energy efficiency are at early stages.

Given a more localised knowledge of specific parts of their network which are under strain, such as a concentration of heat pump switchovers in a residential area, DNOs could utilise this expertise through energy efficiency tenders. By avoiding network reinforcement, deploying energy efficiency measures become cost-effective. Suppliers or specialists would provide the customer-facing relationship.



6 Regional tendering

Why does it work?

The needs of DNOs to upgrade their infrastructure is different to national needs, sometimes with particular streets, neighbourhoods or substations at risk. Therefore, energy efficiency can have a more direct impact under this option than others. Moreover, at this level, there is greater existing pressure to consider energy efficiency from Ofgem through regulatory requirements. DNOs are incentivised to explore demand side flexibility tenders as an alternative to infrastructure upgrades. Merging this with energy efficiency could allow a swifter uptake of retrofit measures.

The Retrometer project, currently being trialled by DNO Electricity North West, aims to get a clearer indicator of the saved electricity from energy efficiency measures from real world metering, allowing the savings from retrofit to be directly compared to what homes would have been using and demanding from the grid without the retrofit. This is a critical step forward since it can lead to more accurate investment decisions. DNO UK Power Networks is also considering further action for energy efficiency by the end of the decade.

Through this approach, households could see more localised options and options could be tailored to certain streets and areas in specific need of support.

Suppliers and other specialist providers have an intermediary role, as with the previous option, and could bid into DNO tenders themselves, with additional knowledge and information. The more localised scale of the DNO tenders may be particularly useful for insulation installers who work locally and have specialist knowledge of the area. Local authorities may also benefit from this more granular approach, especially given the additional benefits of energy efficiency on health and fuel poverty reduction.

7 Planning compensation

What's the idea? Homes near new electricity pylons and associated infrastructure could receive energy efficiency measures as compensation.

How does it work?

The move to net zero will entail at least a 50% increase in electricity demand by 2035, necessitating new grid infrastructure and upgrades such as new pylons and overhead lines. For households near these projects, there is likely to be a visual impact and construction linked disruption. A way of alleviating this is to provide a certain range of energy related benefits so that households are compensated for the disruption. This could involve a series of home upgrades to households in specific locations, as well as a variety of measures beyond home insulation.



7 Planning compensation

Why does it work?

As with other options, grid constraints cost £0.5-1bn per year currently, and this will rise to £2-4bn per year by 2030. NESO has a legal duty to ensure grid stability in a cost-effective manner. Equally, community protests could increase the overall price tag for necessary infrastructure. Through National Grid's Community Grants programme, grants of up to £20,000 are awarded to community organisations that are affected by the grid's construction activity, in addition to energy efficiency funding elsewhere. The Connected for Warmth programme is another scheme where National Grid has given £10mn to private companies to install loft and cavity wall insulation measures. This also ties in with the recent government consultation on further community benefits for areas affected by new or upgraded grid infrastructure, and its continuing policy development of a potential framework this year.

As with previous work on onshore wind, making sure the local communities receive some benefit from the disruption is key to inclusion and empowerment of those communities. By receiving lower heating bills from insulation, this at least ensures that affected communities are receiving a form of financial compensation. Expansion of the Community Grants programme or a similar programme for communities affected by new or expanded infrastructure could be introduced for a domestic level, prioritising energy efficiency.

What does this mean?

Energy efficiency urgently needs new approaches for scaling up in a wider private market. These seven options do not **put requirements on households or increase taxpayer spending**.

Alternative finance exists for energy efficiency, but it requires options like the seven in this report to unlock it.

Equally, the main barriers to larger energy efficiency uptake, such as lack of funding, lack of incentives, and low awareness, are addressed through these options.

Government has a critical role to play in developing these options further through political leadership and facilitation. The Government must convene, communicate and in some cases mandate lenders, suppliers and grid operators to enable the above options. The market needs political leadership for connecting all elements of these options for a path forward.

Our recommendations for Government are therefore that 1) interventions on retrofit advice are required, 2) new and expanded trial and pilot schemes are required, 3) new requirements on lenders are needed, 4) new requirements on suppliers and specialist providers are needed, 5) new requirements on grid operators are needed.

The ADE is ready to assist policy makers and others with overcoming barriers, and engage in further research and conversation.

Recommendations

1) Interventions on retrofit advice are required.

Information on retrofit schemes, such as cashback opportunities, is not reaching households. The government has a key role to play in both making sure that alternative finance provisions are therefore at the front of existing consumer advice on reducing energy bills, and the creation of a new body that provides bespoke advice for England and Wales. Home Energy Scotland provides much of this advice in Scotland, and the creation of a similar body in England and Wales that can advise on areas such as cashback schemes and EaaS would go one step further in bringing these to a wider market.

2) New and expanded trial and pilot schemes are required.

Trials for enhanced cashback schemes and loyalty schemes, either as part of the Green Home Finance Accelerator or a separate policy, should be introduced. Findings from the current trial of Energy as a Service need close monitoring. Pilot trials with each DNO should be introduced for energy efficiency.

3) New requirements on lenders are needed.

The government has a leading role to play in connecting lenders with suppliers and therefore a wider market under enhanced cashback schemes. For lenders standards, the government must publish its response to the lenders consultation, setting out timeframes for voluntary and mandatory minimum requirements. This needs to add a clear price cap for lenders to stabilise the market, whilst also narrowing the scope of options to insulation.

4) New requirements on suppliers and specialist providers are needed.

Suppliers and specialist providers need to be further incentivised to act as intermediaries for all the above options, as lenders and grid operators are not front-of-mind stakeholders for the public to engage with. The government must work with suppliers and specialist providers, in particular under loyalty schemes and Energy as a Service, to encourage greater exploration of loyalty schemes and helping EaaS to become more widespread.

5) New requirements on grid operators are needed.

Government should oblige the NESO to consider IRP, and consult on setting up a national scale 'Retrofit Market' auction. Requirements for DNOs to add energy efficiency into either existing tenders or create dedicated ones should be introduced. Fabric efficiency for individual households should be introduced under the existing Community Grants programme, and funding for Connected Warmth should be expanded and extended. This should also be integrated into the government's further policy development in this space.



References and image credit can be found in the document accompanying this report.

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In addition to the written materials listed above, we have also consulted with our members and wider stakeholders, and their insights and knowledge have also greatly contributed to our findings.



The Association for
Decentralised Energy