The voice of the energy industry

Warm Homes Fund: Call for Evidence

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Submitted via email to warmhomesfund@energysecurity.gov.uk.

About Energy UK

Energy UK is the trade association for the energy industry, representing companies investing billions of pounds to secure our country's current and future energy needs.

From growing start-ups to major electricity generators, grid and infrastructure developers and energy suppliers, our members are driving change across power, heat, transport and flexibility.

We provide a collective voice for the sector working with governments, regulators, charities and other organisations to provide crucial insight that shapes policy, offers solutions and promotes best practice.

Our broad view across the whole system supports evidence-based positions which are not tied to particular technologies, and are focused on delivering strategic benefits for people, businesses and the economy.

We champion initiatives such as our Vulnerability Commitment, which pushes suppliers to go beyond regulation to support customers with additional needs, and TIDE, the industry's drive for greater inclusion and diversity. Through our Young Energy Professionals Forum, we support the development of future leaders.

We are equally committed to our team and are proud to be recognised as a 'Platinum' Investors in People employer.

Executive Summary

The Warm Homes Fund (WHF) could be a critical element of the Warm Homes Plan's success. If it is to make a meaningful difference to achieving the plan's ambitions, it must focus on complementing existing support provided by the Warm Homes Plan capital investments. There are limited applications of the Warm Homes Fund that both meet the technical requirements of the Financial Transactions funding model and provide material support to end customers. The WHF should therefore target heat networks financing schemes and support for non-domestic decarbonisation, as well as support for social housing decarbonisation. There are fewer options to support domestic low-income households in the private rented and owner occupier sectors using the WHF, as consumer loan products are less suitable to support these

households. They should therefore be adequately supported within the Capital Delivery (CDel) allocation for low-income households.

The Warm Homes Plan (WHP) sets out an ambitious strategy for the deployment of heat networks. However, it included insufficient policy and regulatory support to realise this growth. Heat network developers struggle to access affordable capital due to high levels of equity investment in the sector, relatively high-risk profiles due to a lack of demand assurance, and extended time periods between construction and the network achieving a mature revenue stream where a large volume of customers are connected.

The WHF should therefore be used to invest in reducing the cost of capital for heat network developers, and providing funding structures that align with development timelines, to enable more networks to be built out. Without this, large public sector buildings, non-domestic buildings, and multi-occupancy high-rise buildings in densely-populated town and city centres have fewer available pathways to decarbonise and options to access more stable energy bills. The consultation proposes to develop Property-Linked Finance, deploy equity investment in large-scale infrastructure projects such as 'Strategic Heat Mains', and create the Heat Network Catalytic Fund, and these should all be priorities for the WHF.

The WHF should also be used to provide support to small to medium-sized businesses (SMEs) to decarbonise and transition away from gas. There is currently very little support available to these businesses in the WHP or broader policy landscape, and they face significant barriers in accessing technical support and finance to adopt low-carbon technologies.

Support could be provided through aggregating SME decarbonisation investment across a portfolio to help reduce overall risks and crowd in a wider range of lower cost private and institutional finance. Monitoring, and replicating where appropriate, the interventions of the European Investment Bank to advance energy efficiency projects by SMEs would be suitable applications of the WHF.

The NWF has partnered with a range of commercial lenders to help lower the cost of finance to social housing providers through the provision of guarantees. This has the objective of crowding in more private investment into the decarbonisation and future-proofing of social housing. This model has proved to be successful, and could form the blueprint for financing heat decarbonisation strategies across the social rented sector. This could include support for upgrading existing heat networks to improve reliability, efficiency and customer experience in line with the forthcoming Heat Networks Technical Assurance Scheme (HNTAS). The Heat Network Efficiency Scheme provides capital support to the sector, but the cost of meeting these upgrades is expected to exceed the funding available.

Consultation response

Section 1: Warm Homes Fund strategic case, aims and scope.

Question 1: Do you agree with our assessment of the strategic opportunities, challenges and risks presented by warm homes financial transactions? Please provide evidence to support your response.

Energy UK supports the assertion in the consultation that the upfront cost of electrification is a challenge for all energy customers. The WHF must help to address this. Switching from an energy system based on fossil fuels to one based on electricity is an infrastructure investment that will yield long-term dividends, including lower bills, a more efficient system, stronger national energy security, and progress on decarbonisation.

The reference to consumer finance being a key area of intervention for the Fund is very welcome. Unsecured finance for low-carbon technologies is often prohibitively expensive to be attractive for many customers. However, it must be acknowledged that Capital Delivery Financial Transactions (CDeL FT) may have limited impact in this market, with CDeL investment far more likely to be a material catalyst through direct interest rate subsidies of commercial loans.

With the right policy framework in place, Energy UK analysis finds that households living in a range of houses or flats that are typical of those on middle incomes would be able to save up to 64% on their energy bill through installing a combination of clean heat, solar PV, and a battery, and insulation in some cases. This analysis found that, in some instances, households using finance products to fund these installations yield net annual savings as soon as the products are installed and while they are still paying off the loan.

Finally, the consultation describes the challenges associated with deploying Financial Transactions capital and designing policy interventions that meet the criteria of this policy solution. The £5 billion Financial Transactions proportion of the total £15 billion funding must be deployed effectively to meet the ambitions of the Plan.

Question 2: What evidence is there on the factors that most significantly limit the uptake of green finance?

Consumer finance

Although growing, the market for unsecured green home products is nascent, with a limited range of options compared to the green mortgage market. Growth has mainly been driven by not-for-profit lenders (e.g. community lenders and credit unions) and specialist lenders, with larger lenders being more cautious with their offering. These

products typically include tight restrictions (such as using a certain manufacturer or installer) or have high interest rates.

The availability of green finance is limited, in part, due to the potential liabilities that lenders are exposed to as a result of Sections 56, 75 and 140 of the Consumer Credit Act (CCA).

All of the potential levers for unlocking demand for household green finance at scale, and its provision by lenders, that are listed in the consultation would help address these barriers, including: improving advice and information, offering more flexible repayment models, ensuring protections for consumers, and coordinating with supply chain initiatives that improve installation quality and reduce hassle for households.

Strengthening the consumer protections framework for green home improvements will mitigate some CCA-associated risks to lenders, but not remove them entirely.

A Government-backed insurance product that protects lenders against Section 140a claims, or mass event Section 56 and 75 claims pertaining to green home retrofit finance would more comprehensively remove risk for lenders. A Government-backed guarantee would enable more finance products to be brought to market without eroding consumer protections. The Government should work with lenders and consumer groups to develop this proposal in more detail.

Heat networks

Capital investment is needed to significantly increase the pace and scale of heat network development if the sector is to meet 7% of space heating demand by 2035 and 20% by 2050. Analysis by the Heat Networks Industry Council finds that realising this ambition would see £5 billion investment in the UK by 2030 and £100 billion by 2050. However, barriers to investment are driving up the cost of development capital, and ultimately the cost of low-carbon heat to consumers, putting these targets at risk.

Heat networks are typically funded through equity funding which increases lifetime costs of projects. Without significant demand assurance, such as agreed heat supply contracts, heat networks are high risk investments. At the same time, they require patient capital that can fund development well in advance of the network reaching revenue maturity. Affordable finance with the right funding structure is therefore difficult for developers to acquire. The WHF should therefore be used to support heat network developers access low-cost debt financing.

This intervention alone would not close the gap between the cost of low-carbon heat and gas prices, and further barriers to development that need to be removed are explored in response to question 65.

Question 3: What wider loan or equity-based interventions in the warm homes market could unlock demand at scale?

No response.

Question 4: How should the Warm Homes Fund ensure that it includes an offer suitable for those on low incomes? Any information on specific models is encouraged.

Supporting low-income households

£600 million of the £5 billion Warm Homes Plan funding commitment for low-income households will be delivered in the form of Financial Transactions.

This funding could be deployed through the provision of low-cost loans to social housing providers to support the installation of low-carbon technologies. The loan would be paid back over a number of years. Some may take the option to supplement this with a standing charge to consumers, where the investment is being used to fund the installation of communal heating systems such as shared ground loops (SGLs) and heat networks. Social housing providers using the funding to install solar and batteries can also establish new revenue streams through aggregating flexible demand.

Supporting the provision of energy-as-a-service should be considered, as this would support the decarbonisation of heat and installation of flexible low-carbon technologies, while generating a return on investment, satisfying the Financial Transactions criteria.

Delivery models

Delivery models for this particular pot of funding should be sensitive to the fact that:

- It takes time for area-based schemes to achieve scale, especially where local authorities are working in partnership with the private sector. Energy UK held two workshops on the future of the Energy Company Obligation (ECO) in 2025, convening Local Authorities, suppliers and other key stakeholders, and all participants agreed that partnership working was necessary for area-based delivery but would takes years to establish successfully.
- Leveraging the capacity of the private sector as a delivery partner will help enable area-based delivery. This could include utilising the institutional knowledge and experience that energy suppliers have of delivering low-income schemes and utilising data on energy debt to target interventions.

Energy debt

In the last three years alone, total energy debt and arrears in the energy retail sector have more than doubled. Official figures suggest the total value now stands at nearly £4.5 billion. Energy UK's analysis shows that the true figure is around £5.5 billion.

The scale of this crisis requires the urgent implementation of a comprehensive energy debt mitigation strategy delivered jointly by Government, Ofgem, energy suppliers and debt advice agencies. The strategy must incorporate improving targeted support, debt write-off, enhancing data sharing, modernising regulation, and widely communicating the benefits of smart pay-as-you-go (PAYG). This should also include utilising WHP capital expenditure and CDeL FT to install low-carbon technologies in low-income homes to help alleviate debt and provide enduring lower bills for households living in fuel poverty.

Question 5: Do you agree with the proposed overarching aims of the Warm Homes Fund? Please provide evidence to support your answer.

Energy UK supports the overarching aims of the Warm Homes Fund.

It is important to note that any investments into the supply chain must be suitably matched with measures that boost demand in kind, to ensure that supply does not outpace demand.

For example, the WHP has an ambitious target to ensure that 70% of heat pumps bought in the UK in 2035 are manufactured domestically. For manufacturers to meet this target they require a stable and growing demand pipeline in order to invest in expanding factory capacity and training operatives.

Similarly, heating engineers will be incentivised to upskill to deliver low-temperature and low-carbon systems if they are being asked by customers to fit and maintain them. A high level of demand is required for a heating engineer to justify the direct and indirect costs in undertaking training.

Question 6: Do you agree with the proposed technology scope and are there any technologies missing that you think the Fund should focus on? Please provide evidence to support your response.

Energy UK does not support local network upgrades being in scope of the Fund.

Distribution Network Operators (DNOs) have established mechanisms to raise funding to carry out local network upgrades to enable demand-side electrification. The outcome for the latest electricity distribution price control framework (ED3), Ofgem's five-year regulatory price control framework for DNOs, is expected to see them receive generous allowances for investment in these upgrades. Furthermore, as the consultation describes, DNOs have alternative routes to accessing low-cost

finance. The Fund should therefore be used to provide finance where it is less readily available, or there is market failure.

The technology scope could also be expanded to include low-cost fabric efficiency measures and enabling works for clean heat systems, for example radiator and pipework upgrades.

A key principle of the Fund should be technology neutrality. Households and building owners need to be supported to have a clear comparison of options where multiple different technologies may be plausible in the move towards decarbonisation and lowering bills. It is therefore important that the Fund provides viable commercial funding structures for all technologies in scope. For example, specific interventions in the social housing sector should include funding for communal and individual technologies to ensure that asset managers assess the full range of decarbonisation solutions available to them.

Question 7: What is the extent to which the Warm Homes Fund could support additional measures in new build social and affordable housing? Please describe how the resulting benefits could be realised from Warm Homes Fund investment.

The Fund should focus on retrofit as fuel poor households live in existing buildings. Retrofitting low-carbon technologies is more expensive than installing them in a new building. There has been significant market failure in terms of slow decarbonisation progress in existing buildings in comparison to new build homes, as these will now be subject to the Future Homes Standard.

Question 8: Do you agree with the proposed list of activities the Warm Homes Fund could support and are there any other types of activities that should be supported?

Energy UK agrees with the proposed list of activities.

It is welcome that both domestic and non-domestic customers are in scope. The Warm Homes Plan sets out minimal direct regulatory or subsidy support for non-domestic customers to decarbonise and access more stable energy bills. The WHF should help to plug this gap in support.

Question 9: What barriers in the current finance landscape prevent non-domestic and mixed-use buildings from investing in low carbon technologies?

Key barriers facing small to medium-sized enterprises (SMEs)

An Energy UK-led review of policies that support business decarbonisation finds that SMEs, in particular, need greater support to acquire technical knowledge around

decarbonisation and energy efficiency options as this would help empower them to take investment decisions.

SMEs lack technical knowledge and capital, and require tailored support to help them reduce energy bills and cut carbon. This should include free audits and better access to capital, building on national schemes such as the Business Energy Scotland scheme and local schemes that help businesses cut running costs, such as the London Mayor's Business Climate Challenge. Business Energy Scotland, run by Energy Saving Trust, provides a free technical survey and report on options to cut carbon and save money through investing in energy-efficient systems, equipment, building fabric improvements and renewable heat technologies. Interest-free loans up to £100k and cashback grants of up to £30k are available. The scheme has helped participating businesses cut energy bills by up to 60% and carbon emissions by as much as 90%.

Smaller companies may struggle to find the capital to invest in efficiency and low carbon technologies even if they would save them money. They may not be sufficiently credit worthy to access commercially attractive loans or energy-as-a-service models, or may find the interest too expensive.

The landlord-tenant split incentive issue is a key barrier given most non-domestic and mixed user buildings are rented. Innovative models are emerging that enable businesses to take some assets with them, for example solar and storage, but these remain limited in application due to the site specific, bespoke nature of most low-carbon technologies.

Reforms to non-domestic Energy Performance Certificates (EPCs) need to be implemented alongside introduction of a performance-based policy framework so that landlords, tenants and investors get accurate information on both the quality and actual energy and carbon performance of buildings.

Key barriers to heat network deployment to non-domestic buildings

For non-domestic buildings converting from gas boilers to clean heat solutions, the investment case for savings can be hard to identify and clarify – especially given gas boilers remain cost competitive, though prices can be extremely volatile

For customers located in dense urban areas, a non-domestic connection to a heat network can be a powerful tool to expand networks with "anchor-points" of high demand. However, the spark gap makes it difficult for heat networks that are fully or partly run on electrical systems to compete with gas boilers. Heat network operators are non-domestic customers of electricity and are therefore subject to the highest electricity prices in the International Energy Association.

Across all technology types, the key barrier is that the investment case for electrification does not always stack up in terms of delivering savings for non-domestic customers, and this is hampering greater lending in this space as payback periods are too long or non-existent. High non-domestic electricity prices in the UK relative to other countries negatively affect the investment case of electrification for non-domestic buildings. This is compounded by recent increases in network charges for these customers.

Through heat network zoning, local government engagement and industry action, areas will be designated where heat networks will be the best and cheapest low-carbon heating solution. Taking this work forward will be to the benefit of both domestic and business consumers, significantly increasing private sector investment through clarity on where networks will be implemented. The Strategic Spatial Energy Plan (SSEP) and forthcoming Regional Energy Spatial Plans (RESPs) should prioritise heat network development in constrained areas and consider opportunities for businesses demand side response on a regional basis.

Making clean heating schemes work for SMEs

Schemes such as the Boiler Upgrade Scheme need to work for SMEs. Small non-domestic applications <45kWth are in scope, however, there is a lack of communication from the Government to the non-domestic sector about the current scheme. Suitable applications could be identified via energy bills or the EPC register. Another barrier to SME uptake is the requirement to own the building, making it difficult for tenants to decarbonise their heating system. Landlords are less likely to take it up because they don't benefit from any resulting energy bill savings.

Models such as energy-as-a-service or Property-Linked Finance may provide the most cost-effective, reliable and cost-secure solution for SMEs.

Providing a clear pathway for non-domestic buildings

Clarity is urgently needed on buildings policies, for example whilst there has been clarity on the technical requirements for the Future Buildings Standard (FBS) for new commercial buildings, the retrofit market is significantly larger and there still hasn't been clarity on non-domestic Minimum Energy Efficiency Standards (MEES). There also needs to be amendments to non-domestic permitted development rights and development of consistent local guidance to drive investment in low-carbon buildings and make installing low-carbon technology easier.

Clarity is also needed on next steps on the phase-out of fossil fuel heating in the SME sector to drive the heat pump market, although dates will need to be reassessed given how much time has passed since the previous Government consultation.

There needs to be a wider use of local authority powers to enforce energy efficiency standards and heat decarbonisation through planning and zoning requirements, for example the London Plan pushes for zero-carbon developments, with stricter energy and sustainability requirements than national standards.

Clarification of smart metering requirements.

Many businesses have multiple meters with multiple contracts, so getting permission to access data that proves the business reduced or increased its usage as a result of measures installed is hard to acquire. This makes financing difficult as banks need accurate data to offer low-cost finance for investments in energy efficiency and low-carbon technology. It also creates issues for businesses wishing to participate in demand side response markets. Government and Ofgem should work with industry to develop a comprehensive and simplified approach to smart meter installations and smart data utilisation in non-domestic buildings.

Question 10: How could the Warm Homes Fund address these gaps with repayable finance where the government makes a return?

Many of the investments required are small but capital intensive and represent a high risk at an individual level as some will result in savings while others won't. Aggregating them across a portfolio could help reduce overall risks and crowd in a wider range of lower risk, lower cost private and institutional investment.

The European Investment Bank (EIB) is investing in funds to advance energy efficiency projects by SMEs. The co-financing platform is projected to mobilise almost €400 million including private-sector capital for the deployment of technologies such as LED lighting, insulation, heat pumps, rooftop solar systems and electric-vehicle charging stations across several EU countries.

It is welcome that the consultation refers to exploring opportunities for Property-Linked Finance, as this could help to overcome investment barriers for commercial buildings.

Question 11: Should government focus non-domestic funding on one or more of the following groups:

A) Voluntary, Community, Social Enterprise Sector (VCSEs)

B) Small and Medium Businesses (SMEs)

C) Hospitality and Retail Sector

D) Other non-domestic sectors

The challenge with providing support to the non-domestic sector is that owing to the infinite variability of businesses and their energy demands, no two non-domestic

customers are the same. This makes it challenging to put forward policy approaches that are sufficiently broad to capture enough businesses in scope, but effective enough to make a meaningful difference.

Switching from a gas heating system to a low-carbon technology is not currently an option for many businesses. This is because the high capital cost of switching technologies in a non-domestic building can be prohibitive, and the high cost of non-domestic electricity in the UK makes the return on investment negative or too low.

An intervention that supports non-domestic customers needs to account for both the capital costs and operational costs of investing in energy efficiency or low-carbon technologies and clean heat.

The Government should consider utilising the WHF to provide specific support to SMEs as there is currently very little support available to them and they face significant barriers accessing technical support and finance.

Question 12: Do you agree with the proposed list of groups that the Warm Homes Fund may support and are there any other groups which should be supported?

Energy UK agrees with the proposed list.

However, Energy UK does not support DNOs being in scope as they have established funding streams by which to raise finance for existing responsibilities. The most impactful way in which DNOs can support the energy transition is by upgrading the networks in line with demand. The ED3 framework provides them with ample scope to raise funding to deliver on these objectives.

Clarification is also required that new and existing heat network customers are in scope of WHF funding, rather than just heat network developers, operators and suppliers as a separate group.

Section 2: Investing across the value chain (Innovative use cases and target groups to maximise impact)

Section 2A: Owner-occupiers

Question 13: How do you think the Warm Homes Fund could best support owner-occupiers to invest in home upgrades?

Developing the green finance market, alongside cutting electricity prices, is the most effective way of creating a pathway from a market for clean heat and low-carbon technologies that is driven by Government subsidy, to one that is self-sustaining. Analysis by Energy UK finds that reducing electricity prices and providing low-cost cost finance would enable the Boiler Upgrade Scheme grant to be reduced to £3,200

by 2030, while maintaining a lifetime cost that is more attractive than purchasing a new gas boiler.

£1.7 billion of the £5 billion Financial Transactions allocation in the WHF has already been ringfenced to support delivery of low-cost loans for consumers accessing low-carbon technologies, however an approach for effectively utilising this money to unlock additional consumer loan uptake has not yet been shared with industry.

Question 14: How are financial institutions currently using EPCs to inform their financial products, and are there any other implications of the use of EPCs for financial products that we should consider?

The Ministry for Housing, Communities and Local Government has recently made available as-built data, or the detailed survey data, that is used to produce Energy Performance Certificates (EPCs) for homes across the UK.

This is a useful and insightful dataset for reporting requirements and will help inform lenders of suitable measures for a property. It has been welcomed by advice providers in the retrofit space as enabling customers to have confidence in the decisions they are taking. This data also enables modelling to be undertaken to manage uncertainty around impacts on building performance and bills.

It will be important to monitor the impact of this data release on how lenders develop their products for customers.

However, it should be noted that none of the schemes in the Warm Homes Plan should be contingent on having an up-to-date EPC, as this can be a barrier to entry for customers. Furthermore, with EPC reform underway, linking outcomes from funding to EPC changes could slow down delivery at a time when gas prices are increasing and customers need help to electrify more than ever.

Question 15: How could the loans scheme be designed to encourage new products or entrants into the market?

The Financial Transactions mechanism can be used to help lower the cost of capital for smaller lenders. However, it is less well placed as a funding arrangement to provide direct interest rate subsidies on green finance products, which would be a more impactful intervention to raise demand. Research by MCS finds that 63% of households could be encouraged to use financing options to make energy efficiency changes to their home if they were provided with a 0% interest rate.

Question 16: What loan attributes (e.g. lower interest rates, stronger consumer protection, an easier customer journey, more innovative finance products) would be most valuable to expand in the market?

Low interest rates are the most important barrier for unlocking greater consumer uptake of green finance products. Innovative finance products such as salary sacrifice, energy-as-a-service and Property-Linked Finance can also help to spread the capital cost of installation. It is important that these products are subject to fair and robust consumer protections given the relatively recent introduction of these funding mechanisms into essential services such as heat.

The Green Finance Institute has identified the following ways in which lenders manage risks for unsecured products, and these are important attributes to consider in expanding the finance market:

- Quality assurance schemes
- Sales validation schemes
- Partnerships
- Insurance models

The combination of these factors helps lenders navigate the unique challenge of the market while maximising opportunities for growth and impact.

The Government has most policy control over strengthening the consumer protections framework that underpins green home improvements and can do this by:

- Improving the availability of independent advice to equip consumers with appropriate information. This should be provided by the Warm Homes Agency.
- Strengthening routes to redress and simplifying the consumer journey by making redress facilitation for all clean heat, low-carbon technologies and fabric measures a clear remit of the Warm Homes Agency.
- Increasing consumer awareness of quality marks and Government-backed schemes that are representative of accredited installers, and encouraging them to verify any installer's credentials.
- There needs to be a strict mechanism by which only MCS-accredited installers can deliver work that is subsidised by the Government.
- Avoiding a reliance on EPC assessments to demonstrate impact or demonstrate eligibility for schemes. EPCs are an unnecessary barrier to households accessing support to retrofit and do not bring additional benefits to the consumer while opening up potential issues of fraud.

Interventions such as these would help to partially address risks to lenders such that they are exclusively managing the financial risk of offering green finance, rather than the risk of technology failure.

However, the CCA continues to pose restrictions on lenders' appetite to offer additional unsecured finance products in the market, due to potential liabilities arising

from Sections 56, 75 and 140a. With CCA reform of these complex provisions on hold in the near-term, a Government-backed guarantee solution could protect lenders from liabilities associated with these three sections of the Act without eroding consumer protections.

Question 17: Would Property Linked Finance (PLF) support the draft Warm Homes Fund aims, when could benefits be realised, and what risks need to be considered? Please give evidence to support your answer.

Energy UK strongly supports the inclusion of Property-Linked Finance (PLF) in the scope of the Warm Homes Fund, initially for enabling non-domestic buildings to invest in decarbonisation and energy saving measures.

PLF crowds in private capital to enable access to affordable and long-term funding for environmental improvements for buildings by linking the finance to the property. The payment obligations transfer to the new owner when it is sold.

This is particularly helpful for the commercial sector, where landlords will retain ownership of the property while turnover in tenancy may be high. This helps to overcome the barrier of a split incentive between landlord and tenant.

PLF is most commonly used as a funding mechanism in the US, and the Government should assess the learnings of its implementation internationally to inform UK policy design. There is a need to implement legislative changes to enable PLF, and this is explored in more detail in response to question 20. However, this means that PLF will take time to develop and implement in the UK.

Question 18: Is there a need for finance here, and what are the barriers that prevent the private sector from filling it?

The Green Finance Institute suggests that there are a range of UK public finance organisations that could facilitate PLF, and that these institutions should play a vital catalytic role in the early stages of the PLF market. For example, “a credit enhancement guarantee for early PLF transactions could improve pricing while data on the performance of PLF transactions is gathered.”

Question 19: How could government finance address this gap with repayable finance where government earns a return? Where possible, please describe how this model could work.

No response.

Question 20: What are the wider policy barriers that may need to be overcome to realise the benefits from PLF? Please consider any specific areas of law, regulation or other policy which may need to change.

Enabling conditions that are required to make PLF a success in the non-domestic sector include:

- The introduction of Local Land Charges as enabling legislation or Restrictions on Title
- Separate Utility (Retrofit as a service) where the PLF is treated like a utility bill
- Utility Under Insolvency Act – treating the PLF like a subscription
- Amendments to the BIDs regulations – a PLF-focussed BID where properties pay an extra tax to the BID to fund works.

Enabling PLF would require legislative change and its potential benefits should therefore be balanced against speed of implementation.

Section 2B: Landlords and tenants

Question 21: What barriers and opportunities do private landlords encounter when accessing loans or investing in warm homes upgrades for their properties and how could the Warm Homes Fund help them overcome these barriers?

In private landlord-owned multi-occupancy buildings where there is a mixture of tenancies and owner-occupier models, the Fund could be best utilised to overcome challenges that lie beyond, but inclusive of, the capital cost of decarbonisation. For example, where greater degrees of coordination and intervention are required than individual credit arrangements.

Funding deployed from the WHF to landlords of buildings such as these could help overcome some of the challenges of multi-occupancy, and some of the failings in the market that have so far not delivered solutions for these properties. Driven by new minimum energy efficiency standards for the private rented sector, landlords may require innovative financing products to deliver whole building upgrades.

Decarbonising multi-occupancy buildings is complex but they represent a significant share of dwellings, especially in town and city centres. Research by LCP Delta finds that decarbonisation of heat in multi-occupancy buildings represents a major opportunity for suppliers and developers to innovate and shape the next phase of the heating transition.

Question 22: What are the barriers that affect the ability for social housing providers to invest in warm homes upgrades? And how could the Warm Homes Fund support?

A specific heat decarbonisation programme within social housing is required to futureproof the building stock and protect tenants and providers from high and volatile energy bills. Focussing energy efficiency regeneration investment in social housing on heat decarbonisation and improving heating efficiency will have the

biggest impact on customers' bills compared to investments in fabric measures. The comparative payback periods have been exemplified by the Energy Savings Trust.

A heat decarbonisation strategy for the social rented sector needs to ensure that an appropriate technology is identified for the building that will reduce costs for the individual tenant, but also minimise the demand that the building is placing on the grid. This will reduce energy system costs for all customers and improve affordability.

A transition that sees large numbers of boilers replaced with inefficient direct electric heating, for example, is one in which the Government will struggle to meet its bill reduction ambitions or secure widespread public support.

Social housing decarbonisation should therefore prioritise replacing direct electric heating with more efficient technologies. Of the 2.4 million electrically heated homes in the UK, 24% are living in fuel poverty, twice the UK average.

Electric heaters are significantly more costly to operate than gas boilers, and highly inefficient compared to other technologies, such as heat pumps. This places significant financial burden on tenants, and strain on the grid.

The Warm Homes Fund should expand and improve on the guarantee arrangements that the National Wealth Fund has agreed with a range of commercial lenders to offer lower-cost finance to social housing providers.

Financial Transactions as a funding framework are less suitable for supporting low-income households in the private rented and owner-occupier sectors, as these households are not suitable for consumers loans, and are not represented by a larger entity like a social housing provider. It is therefore critical that the CDel funding elsewhere in the Warm Homes Plan delivers energy bill reduction measures to these groups.

The social housing sector is particularly important for building the market for communal heating systems such as SGLs and heat networks. Ensuring increased uptake of clean heat in this sector will be critical for developing supply chains and driving down costs in these sectors.

Question 23: What risks or unintended impacts should government consider if using public finance to incentivise above-minimum warm homes standards in new-build social and affordable housing?

No response.

Question 24: Would revenue and savings sharing models support the draft Warm Homes Fund aims, when could benefits be realised, and what risks need to be considered? Please give evidence to support your answer.

Energy UK supports the inclusion of these models.

The Octopus Energy Tenant Power revenue sharing model has been trialled with North of England-based housing association Together Housing Group. This tariff has been offered to 1,500 social homes, and delivered £200 annual energy bill savings for these households.

Homes fitted with solar panels and a compatible battery system can harness their own renewable energy. Any excess solar energy generated is stored in the battery and sold back to the grid when demand is highest, helping to balance the grid and generate revenue.

Question 25: Is there a need for finance here, and what are the barriers that prevent the private sector from filling it?

No response.

Question 26: How could government finance address this gap for revenue and savings sharing schemes, with repayable finance where government earns a return? Where possible, please describe how this model could work.

The Warm Homes Fund could address this gap for revenue and saving sharing schemes through providing a loan to social housing providers who can then repay the loan over a long term (e.g. 25 years). The loan will cover the cost of installing the technology (for example paying an energy supplier, or installing a Heat Interface Unit and paying the connection charge to a heat network) as well as potential further costs such as optimising the battery on an enduring basis. This will maximise bill savings through charging the battery at low cost periods, and ensure that all excess solar electricity generated is utilised and exported for the highest possible return.

The social housing provider can make a return by recouping its investment through a tenant service charge and export savings from battery optimisation. Profit will also be self-perpetuating once the initial development takes place, and the social housing provider can then re-invest those funds to further solar and battery installations in more homes across its portfolio, creating equivalent returns in the longer term. The tenant will still receive a proportion of the savings in terms of seeing a reduction in their energy bills.

Question 27: What are the wider policy barriers that may need to be overcome to realise the benefits from revenue and savings sharing schemes? Please consider any specific areas of law, regulation or other policy which may need to change.

No response.

Question 28: Are there differences in Housing Association property ownership structures (i.e. direct development, partnerships or joint ventures) or any other factors that would affect the ability of those social housing owners to take on a loan?

No response.

Section 2C: Local government

Question 29: Would area-based investment funds support the draft Warm Homes Fund aims, when could benefits be realised, and what risks need to be considered? Please give evidence to support your answer.

An area-based scheme has the potential to drive economies of scale, tailor delivery to local need, and nurture trust through community collaboration. It can also unlock opportunities for strategic alignment with wider policy including heat network zoning, Local Area Energy Plans and ED3.

The National Wealth Fund distributes finance to regional governments delivering capital-intensive energy projects across the UK. With additional funding from the WHF, and distributed by the NWF, combined authorities could deliver local and strategic investment plans through directing finance into the private sector, delivering strategic energy infrastructure and area-based schemes.

Question 30: Is there a need for finance here, and what are the barriers that prevent the private sector from filling it?

No response.

Question 31: How could government finance address this gap with repayable finance where government earns a return? Where possible, please describe how this model could work. Please also consider whether financing for retrofit could be meaningfully combined with existing local investment funds.

No response.

Question 32: What are the wider policy barriers that may need to be overcome to realise the benefits of local investment funds? Please consider any specific areas of law, regulation or other policy which may need to change.

Given the leading role that Local Authorities will take in any area-based energy scheme, this activity may be constrained by ongoing consolidation of local government and, in many areas, limited resources and capabilities.

Local authorities would need additional resource and capacity to fulfil the role of being a coordinator of a local investment fund, bringing together broad strands of

policy into one coherent strategy, including heat network zoning, low-income support, and MEES enforcement.

One of the biggest challenges for area-based projects is aligning demand drivers for a wide range of housing and building tenancies. The introduction of the Private Rented Sector and Social Rented Sector MEES helps provide demand drivers for these building types. The introduction of MEES in the privately rented non-domestic sector would further align the objectives of these building owners.

Owner-occupiers can be incentivised to participate in area-based schemes through accessing favourable prices for technologies, which can be achieved through economies of scale. Customers participating in these schemes will also benefit from a supported install journey that incorporates a trusted party such as the local authority, and a degree of familiarity where neighbours are having the same upgrades. Area-based schemes that harness the strengths of the private sector, such as energy suppliers and installers, in delivery models means they are well placed to develop and market attractive customer propositions that engage owner-occupiers.

Question 33: Would blended financing support the draft Warm Homes Fund aims, when could benefits be realised, and what risks need to be considered? Please give evidence to support your answer.

The reference in the consultation to public-private partnerships is welcome, and the opportunities for these to create large, mixed capital vehicles capable of mobilising investors. In particular, the reference to the potential for Great British Energy (GBE) crowding in private investment to benefit local communities with new energy assets is welcome.

GBE is primarily a mechanism for funding generation and storage, including local energy infrastructure, although its scope has already been extended through purchasing solar for schools and hospitals. The Government should consider extending its scope further to incorporate heat networks, where the heat network materially reduces generation requirements as part of the project it is linked to. GBE as a shareholder in projects such as these would produce a mixed capital vehicle that would engage local communities and help ensure that the full benefits of new community generation are extracted and shared, including low-cost waste heat that will help to bring down bills.

Question 34: Is there a need for finance here, and what are the barriers that prevent the private sector from filling it?

Blended finance solutions that reduce the Weighted Average Cost of Capital (WACC) for heat network projects can improve the viability of many developments, helping unlock £100 billion investment in the UK heat networks sector by 2050.

Government funding vehicles can take on a higher level of risk than private finance providers and charge a lower interest rate. This improves commercial viability and end cost to consumers while still generating a return and fulfilling the CDeL FT requirements.

Question 35: How could government finance address this gap with repayable finance where government earns a return? Where possible, please describe how this model could work.

No response.

Question 36: What are the wider policy barriers that may need to be overcome to realise the benefits of blended finance? Please consider any specific areas of law, regulation or other policy which may need to change.

No response.

Section 2D: Electricity market participants

Question 37: What are the barriers and constraints on distribution network operators (DNOs) receiving finance and how could they use the Warm Homes Fund to help deliver the draft aims?

Energy UK does not support DNOs accessing finance through the WHF. As the consultation states, DNOs already receive low-cost financing through their status as low-risk monopolies.

Question 38: What are the barriers and constraints on Gas Distribution Networks receiving finance and how could they use the Warm Homes Fund to help deliver the draft aims?

The discussion in the consultation regarding how gas distribution networks (GDNs) need to work strategically with electricity networks, facilitating the installation of clean heat to deliver gas network disconnections is welcome. Taking a strategic approach to this will help reduce overall transition costs, and a coordinated approach means that no consumer is left behind.

GDNs could participate in area-based decarbonisation projects that are being financed by the WHF to enable a strategic approach to disconnections.

There is less merit in GDNs accessing the WHF outside of co-ordinated area-based approaches as there will be fewer instances where a large-scale disconnection is required without corresponding coordination by the local authority.

Question 39: What are the barriers and constraints on energy suppliers receiving finance, and how could they use the Warm Homes Fund to help

deliver the draft aims? Are there specific balance sheet requirements or policies such as the Ofgem Price Cap that inform your view?

The reference to energy suppliers' important role in the energy transition as the most visible and accessible point of entry for customers into the energy industry, and its ongoing transformation, is welcome. Energy suppliers have developed institutional expertise, supply chains and skills in the low-carbon technology and green home improvement sector. The WHP strategy, and by extension the WHF, should capitalise on this capability to deliver the rollout of low-carbon technologies.

The cost of financing is an important factor to consider. Energy supplier financial resilience requirements are highly demanding. It is not accurate to characterise their risk based on pre-Ofgem reforms, and while risks remain, the more important outcomes are overall cost in discovery through to delivery and evaluation.

Energy UK encourages a market-based approach to delivery to encourage efficiency savings. We have significant concerns about the preoccupation with cost of finance over the overall cost and value of the delivery model.

The ability to reach customers and ensure that they are capitalising on measures by changing the way energy is used mean that suppliers have an ability to unlock savings through tailored tariffs. Not including suppliers in WFH schemes would be a missed opportunity to benefit customers.

The Government would need to consider what would happen to the loan should a Supplier of Last Resort (SOLR) event happen, for example whether the Government would lose the investment, or if the debt would need to be adopted by the gaining SOLR. This could destabilise the market, and pass debt onto customer bills.

There would not be an impact from a Default Tariff Cap (DTC) perspective as any customer taking on a service funded by the loan would not be supplied by a default tariff but a flexible time-of-use tariff that is not subject to DTC requirements.

It is understood that there are no financial resilience requirements that would be inconsistent with suppliers receiving support from this fund.

Meanwhile, there is an ever-growing imperative to help all energy consumers to electrify their demand, to support UK energy security and to provide protection from volatile fossil fuel prices.

Innovative financing to reduce the spark gap

The most effective mechanism for driving an increase in electrification is reducing the price of electricity. This will send the strongest market signal, and promote greater adoption of clean heat.

A long-term and ambitious approach is to take the remainder of the Renewables Obligation (RO) and Feed-in Tariff (FiT) costs off electricity bills. If there isn't sufficient fiscal capacity to move this into taxation, then the WHF could be used to create a funding scheme that temporarily removes costs from bills. They would then be paid back over an extended time period, for example 20 to 30 years.

This intervention would reduce the spark gap, drive investment in clean heating technologies and help achieve WHP targets.

The European Commission's AccelerateEU Communication includes guiding principles and templates for member states protecting citizens and economies from energy price increases. Consistent with the intervention of spreading out costs on electricity bills to send effective price signals, one of these measures includes: "Introduce progressive retail prices and ensure that intervention in retail price settings foster savings and the switch from gas to electricity, and reward demand-response flexibility".

Question 40: Would the energy as a service models outlined (or any others, including those emphasising consumer-led flexibility) support the draft Warm Homes Fund aims, when could benefits be realised, and what risks need to be considered? Please give evidence to support your answer.

Energy UK supports the objectives around increasing the availability of energy-as-a-service financing structures. The upfront capital costs of low-carbon technologies are prohibitive for many households, and spreading the cost through Third Party Ownership or subscription-based models is a constructive way forward. The Government should explore how to support these models through existing schemes, such as the Boiler Upgrade Scheme while retaining strong consumer protections.

The focus on energy-as-a-service to enable consumer-led flex is welcome, as this will help households access significant energy bill reductions, while keeping costs down for the energy system as times of peak demand are reduced.

Research by Citizens Advice shows that subscription models can improve the overall performance of heating systems, as problems with heat pumps can often be related to issues during the installation. Therefore, a contract of ongoing maintenance helps identify and fix any running problems associated with the system.

In terms of risks, it should be noted that there are few examples of this type of agreement currently available on the market, and therefore the level of consumer demand for this way of paying for energy is not clear. This may benefit from additional consumer research to ascertain the level of demand for this type of contract.

The consultation speaks to the poor reputation of previous schemes. Citizens Advice notes that the negative experience consumers had of schemes such as 'rent a roof' underlines the importance of avoiding further reputational risk to the industry. Consumer protections for energy-as-a-service models must be robust to mitigate the risk of further detriment.

The European Commission's AccelerateEU Communication includes guiding principles and templates for member states protecting citizens and economies from energy price increases. Consistent with the intervention of promoting energy-as-a-service, one of these measures includes: "Introduce targeted fiscal incentives and/or financial support, including social leasing for vulnerable households, to rapidly roll out easy-to-install clean and efficient technologies, such as plug-in batteries, PV panels, heat pumps and high-performance windows".

Question 41: Is there a need for finance to support the growth of particular energy as a service models and what are barriers that prevent the private sector from filling it?

Research commissioned by Energy UK and One Home found that the most common reason why households did not improve the energy efficiency of their homes was due to concerns over cost.

Helping consumers to spread out the cost of measures through arrangements such as energy-as-a-service will help overcome this barrier.

E.ON, Heatio and the Energy Systems Catapult undertook a pilot study for energy-as-a-service models with funding from the Green Home Finance Accelerator. In the project's final report, there are a number of key market failures that require further action from Government in this space. This includes:

- Institutional capital remains cautious in the absence of proven risk and return profiles for long-term service-based models. This reinforces the need for transparent, real-world pilots and robust performance monitoring to build investor confidence in long-term energy service models.
- Building public-private delivery frameworks. Scaling retrofit finance will require repeatable models that combine private capital, digital infrastructure and Government backing, underpinned by clear performance and accountability standards. This is essential to delivering consistent quality, manage risk, and attract sustained investment.

Financial Transactions providing finance that is at an appropriate price and suitably long-term for innovative companies will be essential to trial more energy-as-a-service models, as these companies struggle to secure debt finance. For example, the British Business Bank may be limited in its appetite to lend to small businesses that are then

lending credit to customers. The risk is very high, especially for low-carbon technologies that are in the innovator or early adopter phase of uptake.

Energy-as-a-service to support SGLs

Low-cost finance to support the development of SGLs could be particularly helpful. The typical 'funded offer' from SGL operators sees the network developer/operator fund the installation of communal infrastructure upfront in return for a fixed standing charge to access the network. This model is working well in the new build sector (both private and social) but remains challenging, largely due to financing costs, in the retrofit market.

The difference of a few percentage points in interest rate over a 40-year return on investment period makes a huge difference in the monthly costs household will need to pay. At present the economics of this model in retrofit remain challenging, and the WHF has potential to help here by reducing financing costs. This model has the benefit of the loan remaining with the SGL operator rather than individual consumers, removing the barrier of complexity and perceived financial risk for consumers.

Energy-as-a-service for the public sector

Steps should be taken to make it easier for energy and heat to be provided as a service to public sector buildings where several barriers persist. For example, the longer-term leases often required for these services would be counted against the NHS Capital Resource Limit, which would subject NHS estates to a complex business approval processes.

Additionally, the Private Finance Initiative introduced complexity to the ownership and operational landscape of NHS estates. This in turn introduces legal complexities around lease length and landlord liabilities, limiting the feasibility of energy-as-a-service. The Government should consider how public sector organisations can be supported to navigate this process and unlock energy-as-a-service.

Resolving these issues can provide significant financial savings for the public sector and help to meet ambitious public sector decarbonisation targets in tightly constrained fiscal and financial environments.

Question 42: How could government finance address this gap for energy as a service models, with repayable finance where government earns a return? Where possible, please describe how this model could work.

No response.

Question 43: Is there an opportunity for government to buy equity in companies that offer energy as a service, including solar subscription services?

There is opportunity for equity-based investments. This could work well for SGL deployment where the Government, funded by the WHF and via an appropriate investment vehicle, takes a stake in heat network infrastructure with an aim to secure profit or return on investment.

However, this opportunity would need to be balanced against the risk that this discourages private investment into the sector.

The Government should explore this option further with industry.

Question 44: What are the wider policy barriers that may need to be overcome to realise the benefits from energy as a service models? Please consider any specific areas of law, regulation or other policy which may need to change.

Energy system barriers

To support further innovation in the energy retail sector, particularly in the energy-as-a-service space, the Government should work with industry to continue the smart meter rollout, monitor the implementation of market-wide half hourly settlement, and support innovation in the energy retail sector. A competitive retail market, underpinned by proportionate outcomes-based regulation, will encourage retailers to develop the products that consumers need to make the most of new products and services, and the changing energy system.

Consumer protection barriers

Citizens Advice notes the need for a consumer protections framework to underpin Third-Party Ownership models, ensuring that consumers receive ongoing maintenance and installation, so that they are not paying for faulty or suboptimal systems over an extended number of years.

There also needs to be clarity for consumers around where the money is going, and how much of their subscription is covering the installation versus the ongoing charges for operation and maintenance.

It is important that consumers are informed about the terms of the commitment that they are taking on, and that appropriate protections are in place for the lifetime of the contracts. Robust affordability criteria are also essential to protecting consumers from going into debt as a result of these contracts.

Heat network regulations

SGLs are facing a growing regulatory burden, which is adding significantly to costs of installation. A typical high-rise project must deal with Building Safety Act, environmental permitting, MCS, PAS2030, heat network regulations, and soon the

Heat Networks Technical Assurance Scheme (HNTAS). It is critical government looks to rationalise some of these and take a proportionate approach to new regulations.

Similarly, for city-scale heat networks, a complex landscape of regulatory governance for heat networks risks an inconsistent and duplicative approach that will harm investor confidence. The Ofgem consumer protections framework and forthcoming HNTAS, to be managed by the Department for Energy, Security and Net Zero until a Code Manager is nominated, are both important for a modern market. However, these regulations, combined with the unique approaches that local authorities will each adopt in fulfilling the Zone Coordination Body role, together make for a complex landscape that city-scale, low-carbon heat networks must navigate.

E.ON, Heatio and the Energy Systems Catapult undertook a pilot study for energy-as-a-service models with funding from the Green Home Finance Accelerator. In the project's final report, there are a number of key regulatory barriers identified to the market offering more of these kinds of products. This includes:

- Full-service contracts resembling energy-as-a-service remain unclassified under Financial Conduct Authority (FCA) rules, raising concerns around consumer credit, capital treatment and compliance.
- How energy tariffs could be reliably structured and maintained over a 20 to 25 year period given market volatility. High electricity prices are a serious hindrance to making progress in this sector, as businesses struggle to estimate their returns and prove to lenders that they will be able to repay the business loan, and it is challenging to accurately model customers' energy bill savings over an extended period.

Question 45: Would loans to enable network connections support the draft Warm Homes Fund aims, when could benefits be realised, and what risks need to be considered? Please give evidence to support your answer.

Energy UK supports the discussion in the consultation around the need for a more proactive approach to electricity network upgrades to help reduce instances where customers are waiting highly variable and unpredictable amounts of time for enabling works, such as unlooping, fuse upgrades or network upgrades. This would drive a more planned approach to network upgrades and improved customer journey.

It is positive that DNOs will be expected to have ambitious, evidence-based programmes of proactive unlooping, ready for large-scale rollout, and that these programmes will effectively be targeted at properties that are likely to electrify sooner within the ED3 price control from 2028 to 2033.

Energy UK did not support DNOs playing a greater role in enabling the uptake of low-carbon technologies in Ofgem's recent consultation, as they are not consumer-facing entities. The best way they can support the transition is through upgrading the electricity network in line with their investment plans.

The WHF could help enable this programme of rapid electrification through devising finance packages for organisations that are adjacent to DNOs, such as independent connection providers, iDNOs. However, this would have to be subject to coordination from DNOs for the specific goal of facilitating rapid electrification, and enabling the programmes of unlooping and other enabling works.

Question 46: Is there a need for finance here, and what are barriers that prevent the private sector from filling it?

No response.

Question 47: How could loans to enable network connections address this gap, with repayable finance where government earns a return? Where possible, please describe how this model could work.

No response.

Question 48: What are the wider policy barriers that may need to be overcome to realise the benefits from loans to enable network connections? Please consider any specific areas of law, regulation or other policy which may need to change.

No response.

2E: Manufacturing and supply chain

Question 49: How could bulk purchasing support the draft Warm Homes Fund aims, when could benefits be realised, and what risks need to be considered? Please give evidence to support your answer.

The Warm Homes Plan has an ambitious but achievable target for 70% of the heat pumps installed in the UK in 2035 to be manufactured domestically.

UK-based heat pump manufacturers can scale-up output in response to demand. The introduction of the Future Homes Standard will provide a baseload demand for clean heating technologies that will enable capacity to increase in the sector, as the retrofit market grows.

Bulk purchasing will help support healthier order books for UK-manufactured low-carbon technologies. This will help to justify greater investment in expanding capacity and recruiting more operatives. However, it is critical that adequate consumer demand-side policies are introduced to ensure that bulk purchased technologies are

installed quickly, and do not become redundant due to technological advancement or changes to product standards and regulations.

Local authority schemes that enable bulk purchasing of technologies, such as Solar Together, have proved successful, and similar approaches should be trialled for batteries and clean heating technologies. Not only do these schemes enable a favourable price for the technology, but they also offer economies of scale that help to bring down the cost of installation per household, while increasing consumer confidence as neighbourhoods can navigate upgrades by supporting and advising one another.

Government should also introduce schemes that combine technical support and finance to build demand across SMEs for energy efficiency and low-carbon upgrades. Coordinated procurement frameworks could then be used to help enable these retrofit and decarbonisation measures at scale – lowering costs and speeding up delivery.

The Warm Homes Fund could be used to support investment in supply chains across the range of low-carbon technologies. This may be better suited to domestic applications where low-carbon technologies are more standardised.

It is not clear, however, who would procure the bulk orders. Local authorities may be well placed to do this if they are coordinating area-based decarbonisation projects. Care would need to be taken to ensure that demand is sufficient to prevent stockpiling of components leading to higher costs.

Clean heat supply chain investment through the WHF, building on the £90 million allocations made under the Heat Pump Investment Accelerator grant, would further support the sector.

Any increase in supply must be met with sufficiently ambitious demand-side drivers, such as reducing the cost of electricity and introducing stronger regulatory drivers.

Question 50: Is there a need for finance here, and what are the barriers that prevent the private sector from filling it?

No response.

Question 51: How could government finance address this gap with repayable finance where government earns a return? Where possible, please describe how this model could work.

No response.

Question 52: What are the wider policy barriers that may need to be overcome to realise the benefits of bulk purchasing? Please consider any specific areas of law, regulation or other policy which may need to change.

No response.

Question 53: How could equity investment support the draft Warm Homes Fund aims, when could benefits be realised, and what risks need to be considered? Please give evidence to support your answer.

The Warm Homes Fund should consider equity investment opportunities to enable the delivery of its heat network ambitions, particularly through investment in projects such as 'strategic heat mains'.

Strategic heat mains are large transmission pipes that deliver waste heat from generators outside of town and city centres into areas of high demand. District heat networks then distribute this heat to connected buildings, helping to improve commercial viability as lower-cost heat is offered to potential customers.

A key barrier to deployment of strategic heat mains is access to affordable and patient capital, and the WHF should plug this gap. Strategic heat mains, much like district heat networks, are projects with development timelines of multiple years before they reach revenue maturity. This means that the capital to fund the construction is required well in advance of any significant revenue being generated from connected buildings. There are also low levels of demand assurance due to a lack of regulation in the non-domestic private rented sector and high cost of low-carbon heat preventing stronger mandatory connection requirements under heat network zoning.

Government equity investment into strategic heat mains, and connected district heat networks, could be appropriate in a scenario where elements of the project are split up across multiple owners and investors. The Government could acquire initial parts of the project using the WHF, which it then later sells on, releasing equity to be deployed elsewhere.

An alternative approach is a guarantee product, where the Government is underwriting the risk of connection and demand volume for a project such as a strategic heat main over a long-term period, such as 15 years. This would reduce the cost of capital for developers by reducing the risk profile for investors.

Question 54: Is there a need for finance here, and what are the barriers that prevent the private sector from filling it?

The private sector offers limited financing opportunities for infrastructure projects, such as the strategic heat mains. The upfront capital investment required is

significant while revenue will only be secured at volume much later into the scheme as a critical mass of district heat networks start to connect to the mains pipe, and then buildings connect to the networks in turn. This means that a patient investor model is needed in a sector that remains quite high risk due to poor demand assurance.

The NWF has identified heat networks as a strategic priority for its investment portfolio, but has made limited interventions in the market to date. It is challenging for the NWF to lend into the heat networks sector directly due to its competing requirements around being profit-making, crowding in finance and plugging gaps in market failings. Furthermore, its minimum ticket size of £25 million is typically too large to fund heat network development. Its interventions to date have prioritised public-private partnerships due to its less strict criteria around lending to local authorities. It may be that strategic heat mains offer an investment opportunity for the NWF that aligns with its strategic priorities while surpassing the minimum £25 million threshold, and the NWF should explore this with industry.

Question 55: How could government finance address this gap with equity where government earns a return? Where possible, please describe how this model could work.

No response.

Question 56: What are the wider policy barriers that may need to be overcome to realise the benefits of equity investment? Please consider any specific areas of law, regulation or other policy which may need to change.

The cost of capital for strategic heat mains and district heat network can be brought down with stronger demand assurance for future heat network connections. The heat network zoning regulations fail to require buildings to connect if the cost of heat will be more expensive than existing sources. While they can require a building to connect, they stop short of requiring the building to purchase heat from the network. This is because the Energy Act does not provide the powers for mandatory connection and supply. It is right that building owners should not be required to pay more for low-carbon heat, and the Government must work with industry to tackle the high cost of low-carbon heat in order to ensure that zoning can deliver greater demand assurance.

The objectives of zoning are to secure economies of scale and provide the lowest-cost decarbonisation pathway for densely populated, high-demand buildings, but these are held back by a framework that fails to deliver mandatory connections and mandatory supply.

Government equity investment that accepts a higher risk profile, for example where it is providing capital at a rate that matches the additional risk private investors see from some lack of demand assurance, could have a similar effect on project financing as directly providing demand assurance. This is because reducing the WACC significantly can help to reduce the end cost to consumers. This should be cautiously explored with WHF mechanisms.

Question 57: How could loans for skills and training support the draft Warm Homes Fund aims, when could benefits be realised, and what risks need to be considered? Please give evidence to support your answer.

Low-cost loans to cover the direct and indirect costs of training would help support the upskilling of the supply chain and facilitate the clean heat transition.

The WHF could seek to provide additional financing options for gas engineers who are looking to upskill or diversify into the low-carbon heating sector, building on the Heat Training Grant.

Currently, three-day, short training courses consist of around 20 guided learning hours and cost around £695, meaning the existing £500 Heat Training Grant (HTG) covers approximately 70% of the cost. Vaillant finds that engineers incur losses of £251 to £450 per day while undergoing training. This is owing to indirect costs such as travel and lost revenue. It is also linked to how the training is currently delivered, which is quite inflexible and done all in one go across three days on average.

However, it should be noted that these courses are typically insufficient in equipping installers with skills and practical knowledge to smoothly become MCS-certified engineers and enter the workforce. There are ongoing conversations around the introduction of advanced pathways that evidence practical competence and include mandatory external assessment and Skills Test alignment. These are expected to have a higher cost, and longer duration, and will make the current funding band of the HTG inadequate.

As such, the WHF can provide further support by offering low-cost loans for installers so that they can undertake training with confidence, and without it affecting their cashflow or taking a loss.

These financing options should not just be available to the installer workforce, since low-cost loans could help workers across the economy who are considering requalifying for a new career in clean heat, helping to meet the costs of courses, training and accreditation, while avoiding a loss of income.

This finance could be available on the basis of a delayed repayment timeframe such that installers only start repaying the loan once they are already benefitting from the skills they have gained.

To further support jobs and skills, the Warm Homes Fund could provide finance to employers that are looking to cover the costs of taking on an apprentice, and that are not covered by provisions within the Apprenticeship Levy. Grant support for SMEs taking on an apprentice aged 16-24, provided by the Department for Work and Pensions, is welcome. However, the £2,000 grant represents a very small fraction of the total cost of employment, and this cost is a significant barrier for smaller employers looking to invest in skills. These costs arise from:

- Cost of employment – wages, reduced productivity and supervision.
- Finding the right candidate.
- Finding the right local course for them.
- Indirect costs such as covering transport and accommodation.
- Investment in tools and equipment, which employers must currently fund themselves.

Utilising the WHF to deliver interventions in the jobs and skills space would lead to greater productivity in the economy and more highly skilled operatives in the Warm Homes sector who can command strong wages and benefit from a greater degree of resilience.

Question 58: Is there a need for finance here, and what are the barriers that prevent the private sector from filling it?

No response.

Question 59: How could government finance address this gap with repayable finance where government earns a return? Where possible, please describe how this model could work.

No response.

Question 60: What are the wider policy barriers that may need to be overcome to realise the benefits of skills loans? Please consider any specific areas of law, regulation or other policy which may need to change.

No response.

Section 2F: Heat networks

Question 61: How could the Warm Homes Fund support the market growth of heat networks as set out in the Warm Homes Plan?

The WHF can play an effective role in supporting market growth in the heat networks sector, and it is important that a proportion of the Fund is indeed targeted at heat networks in order to achieve the growth trajectories as set out in the Warm Homes Plan.

The WHF must plug the gap left by the NWF which has not succeed in lending at scale into the heat networks sector, despite this being a strategic priority area for the Fund.

Lowering the cost of finance through interventions such as the Heat Network Catalytic Fund will help improve heat network competitiveness and reduce end costs to consumers.

Heat network investors typically seek a high level of demand assurance, in the form of supply contracts, to be willing to finance projects. However, owing to the high cost of low-carbon heat from heat networks, driven by high capital and operational costs relative to a gas boiler counterfactual, demand assurance and revenue certainty is hard to acquire.

It is important to note that interventions that lower the cost of finance to heat network developers, such as the Heat Network Catalytic Fund, will help to lower the cost of low-carbon heat, but it will not close the gap to gas completely. Further support, including regulatory change, is required, and this is explored in more detail in response to question 65.

Expanding the WHF heat networks definition to include 5th generation networks

The definition of heat networks provided by the consultation excludes 5th generation heat networks such as ambient networks and SGLs. It is important that the Government recognises these forms of network, as they typically operate different commercial models than centralised heat networks.

SGLs and many ambient networks do not produce heat centrally but rather supply ambient temperature heat to individual heat pumps in homes. As such, ongoing running costs for such networks are minimal, and the return on investment is made entirely through standing charges, rather than heat or consumption charges. Additionally, these networks have typically not featured prominently in either heat pump policy or heat networks policy. As a result, deployment levels remain low and supply chains underdeveloped. It is important, therefore, the WHF removes barriers to this form of heat network deployment.

Question 62: Would investment in heat networks – whether for connection costs, compliance with Heat Network Technical Assurance Scheme requirements, capital support – contribute to the draft Warm Homes Fund aims? When could benefits be realised, and what risks need to be considered? Please give evidence to support your answer.

Energy UK supports all of the applications of the WHF listed in the consultation, and would encourage all of them to be in scope.

Heat Network Catalytic Fund

Energy UK strongly supports the inclusion of this proposal by the Green Finance Institute, and believes that it should be prioritised within the allocation of the WHF.

Heat network developers also need better access to patient, low-cost debt finance that spreads out the capital cost of development and accommodates the time it takes for the network to reach revenue maturity.

Without financial support such as this, heat networks will struggle to achieve viability and the goals and ambitions for the sector as set out in the WHP will not be achieved.

Heat Networks Technical Assurance Scheme (HNTAS):

Energy UK welcomes the consultation's consideration of options to address the funding challenges posed by HNTAS for heat network operators, especially for social housing providers, local authorities and not-for-profit entities that own and operate heat networks. The reference in the consultation to the Government exploring options to support the sector to invest in the necessary upgrades, while protecting consumers from unaffordable price rises, is welcome.

The current £15 million of annual support provided by the Heat Network Efficiency Scheme (HNES) is insufficient to support the desired level of upgrades across the sector to meet HNTAS compliance, which could reach up to £15,000 per household.

Mirroring the approach for social housing decarbonisation, whereby the NWF provides guarantees to commercial lenders offering low-cost loans to social housing providers to support retrofit beyond Government grant funding, could be a fruitful way of spreading out the cost of these upgrades to avoid rapid and unaffordable increases to leaseholders' and tenants bills.

Connection costs for households

Loans to households are welcome, but it is important that they are integrated as part of area-based, or large-scale projects. Singular loans for households to connect to heat networks will not significantly turn the dial for supporting this class of infrastructure investment. A more impactful intervention would be to extend the Boiler Upgrade Scheme eligibility to include heat network connections. Energy UK has recently communicated the need for this in its consultation response to Government on the scheme.

Energy UK would consider this potential lever to be a lower priority for the Fund than the other applications listed in the consultation.

Question 63: Is there a need for finance here, and what are the barriers that prevent the private sector from filling it?

The consultation is right to state that the WHP objectives for heat networks are at risk without further intervention from Government, due to the cost of capital, high operational costs, driven by high non-domestic electricity prices, and significant delay in construction and a mature revenue profile when the network reaches maturity. This means that low-carbon heat networks cannot compete on price with the gas boiler counterfactual.

Urgent policy intervention is required to retain a £100 billion investment opportunity for the UK, where heat networks are delivering 20% of space heat demand by 2050 (as reported by the Heat Networks Industry Council).

Question 64: How could government finance address this gap with repayable finance where government earns a return? Where possible, please describe how this model could work.

The proposed blended debt financing model developed by the Green Finance Institute is a creative mechanism for a range of government funding bodies to configure their products to potentially support new city-scale heat network development. In that proposed model, the Government would ultimately see a return on successful projects from debt products, while shouldering a slightly higher level of risk to crowd in private investment.

Question 65: What are the wider policy barriers that may need to be overcome to realise the benefits from the outlined investments into heat networks? Please consider any specific areas of law, regulation or other policy which may need to change.

Strengthen heat network zoning

Improve the extent to which heat network zoning supports demand assurance by prioritising designation of zones that are more likely to offer competitive prices with the gas boiler counterfactual. Initiating a staged roll out process such as this, with low-carbon heat networks only introduced in viable areas where the gas counterfactual can be matched, would demonstrate the benefits case before further zones are designated. For example, this could be locations where there is a high-quality waste heat source available to provide low input prices, or where a network is being supplied by a strategic heat main.

Regulatory alignment

Adopt a complimentary and outcomes-led approach to heat networks regulation that integrates regulatory oversight.

Integrated governance would include close collaboration between the Zoning Coordination Body and the HNTAS Assessor to ensure that achieving technical

compliance enables and accelerates development rather than decelerates it. Integrated governance would also include heat networks in zones not being subject to pricing regulation that is additional to the Ofgem Fair Pricing Framework.

Ensure that the Future Homes and Buildings Standards both support heat networks. The Home Energy Model must accurately measure the efficiency and carbon output of a heat network so that they can compete on a level playing field in the housing sector with other clean heat technologies.

HNTAS in its design must also be proportionate and streamlined in terms of the number of KPIs that a network must meet, and allow a degree of self-certification on more minor aspects of the technical standard.

Reducing non-domestic electricity prices

The Government should take action to reduce non-domestic electricity prices to incentivise electrification and the switch to clean heat. The WHP sets out the Government's intentions to make electrification the rational choice for non-domestic customers, and it must ensure that heat network operators are in scope of any future subsidy arrangement that seeks to help non-domestic customers with the operational and capital costs of switching to low-carbon technologies.

Introduce minimum energy efficiency standards for the non-domestic sector

There are currently no regulatory drivers for non-domestic privately rented buildings to decarbonise. This leaves commercial tenants exposed to volatile fossil fuel prices. It also means that low-carbon heat networks are required to compete on price with gas.

Minimum energy efficiency standards (MEES) for non-domestic buildings would promote decarbonisation, insulate commercial tenants against volatile prices while providing greater demand assurance for the development of large-scale heat networks.

Open up flexibility markets

Ensure that heat networks can effectively participate in flexibility markets, such as the capacity market, and can access cheaper day ahead prices. Flexibility markets that are more accessible for heat networks to participate in do not run every day. This means that there is limited revenue to merit the investment case in delivering flexible capacity. New measures that help increase accessibility to flexibility markets need to work for heat networks. There is not enough current demand in the right places to absorb additional generation, and this is an issue that heat networks are well placed to help manage.

Section 2G: Community Energy

Question 66: How would investments in community energy projects (including generation and flexibility) or community buildings support the draft Warm Homes Fund aims, when could benefits be realised, and what risks need to be considered? Please give evidence to support your answer.

Community energy projects could be purpose built, including as part of WHF projects, or could be a community stake in other existing developments. Both approaches can help assist towards the aims of the Fund, as these can scale technologies and reduce bills.

However, this is dependent on the type of community energy development and how these are implemented and managed. Poorly managed projects can cost communities unnecessarily, and this is likely to be the key risk here.

Equally, community energy projects tend to be concentrated in already more affluent areas, so encouragement of these types of projects should be made in areas at high risk of fuel poverty to ensure that the benefits are fairly distributed.

Energy UK supports inclusion of heat networks and SGLs as a key parts of community energy projects to ensure that communities are accessing the benefits of all aspects of community generation.

Question 67: Is there a need for finance in community energy, and what are the barriers that prevent the private sector from filling it? Please also specifically consider how government financing can support building upgrades in the community sector.

No response.

Question 68: How could government finance address this gap with repayable finance where government earns a return? Where possible, please describe how this model could work.

No response.

Question 69: What are the wider policy barriers that may need to be overcome to realise the benefits of community energy? Please consider any specific areas of law, regulation or other policy which may need to change.

No response.

Section 2H: Other use cases

Question 70: What other potential use cases are there for the Warm Homes Fund? Please provide details of how these might work, and evidence to support your suggestion.

No response.