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Foreword

The decarbonisation of heat represents one of the most significant and pressing challenges on the net zero journey. With the UK targeting 600,000 heat pump installations annually from 2028, and the Scottish Government aiming for 1 million households to have zero emission heating systems by 2030, we need to, collectively and inclusively, turn this ambition into action.

SSEN has a critical role in enabling the UK's net zero ambitions, and that of the 3.8m households and businesses we serve. We are ready to invest in our network and smart solutions to accommodate the rapid increase in demand borne from the extensive electrification of heat and transport.

The Climate Change Committee (CCC) has advised net zero heat action targeted at the fuel poor could lift 75% out of fuel poverty by 2030. This is an opportunity that must be seized in a critical decade for the UK's journey to net zero.

There are opportunities to create long-term sustainable jobs by supporting zero emission heating and sustain supply chains in an industry that will become increasingly important. Electricity networks connect communities across the UK, and as we invest to meet this challenge, we are working to ensure opportunities are shared and accessible.

We understand that we don't have all the answers, and it is only through learning from and engaging with our stakeholders, innovating, empowering communities, and working with other energy networks to take a Whole Systems approach, that we can secure the UK's net zero ambitions in an equitable and fair manner.

That's why we are launching this consultation to ensure the communities and stakeholders we serve can shape our approach to heat decarbonisation and the principles we will embed on this journey. We want to ensure our strategy reflects the needs of, and is supported by, our stakeholders.

Achieving the UK's decarbonisation targets will require collaboration, coordination and decisive action. Over the course of the next regulatory price control period (RIIO-ED2) heat pump and low-carbon technology uptake is forecast to rapidly increase. Government, regulator and industry actors will need to work together to ensure policy and regulatory arrangements are aligned to net zero ambition. We've set out our view of what these priority actions should be in the draft strategy.

I look forward to reading your views and supporting your ambitions as we work together to address the challenge of decarbonising heat.

Chris Burchell

Managing Director

Scottish and Southern Electricity Networks

Executive Summary

Heat is responsible for around 18% of the UK's annual carbon emissions.¹ It is critical that action is taken now to give the UK a realistic chance of reaching its net zero targets. In 2020 85% of UK households used gas for heating,² and those that are in off gas grid areas are more likely to be living in fuel poverty. The challenge of decarbonising heat and alleviating the pressures felt by those living in vulnerable situations must come hand in hand.

This Heat Strategy reflects that there is no one-size-fits-all approach that will work and there is a great deal that we do not yet know about the journey to net zero. Therefore we focus on the principles that we believe will be critical in delivering the required network developments on the basis of a **fair transition**, at a pace the challenge demands. Under each of the principles we highlight the activity we have undertaken, plan to take and the areas we believe will be critical in delivering on our principles.

We are committed to supporting the communities we serve make informed decisions about their net zero journey and to target our investment accordingly. There are a range of low-carbon technologies that will play a role in this journey, and greater clarity on the role for hydrogen and deployment of other alternatives will support a cost-effective transition, and allow targeted investment in the network.

The UK's electricity networks must prepare for significant new demand, borne from both an increased role for electricity in heat and transport. This presents both challenges and opportunities, and it is in this context we are launching this consultation.

The four principles SSEN proposes embedding to deliver a fair transition to decarbonised heat are:

- Actively engaging with stakeholders
- Understanding our stakeholders' needs, views and ambitions
- Supporting cross-industry coordination
- Collaborating to deliver whole system planning

- Learning from projects, data and stakeholders
- Monitoring and forecasting low-carbon heat uptake
- Preparing our network for a range of LCTs
- Applying industry bestpractice

- Investing and innovating to deliver net zero
 - Embedding heat and vulnerability as key themes in our ED2 innovation strategy
 - **Delivering** a smarter network
 - Tailoring our connections offer

- Empowering communities
 - Connecting people and communities to their net zero future.
 - Making opportunities accessible
 - Advocating for local, net-zero investment

1. CCC (2020) Progress Report to Parliament

2. Statista (2021) UK heating methods

Executive Summary

Our distribution areas face distinct challenges that we need to account for in this transition, and our principles provide the foundation from which these can be met. However, action needs to be accelerated at a pace that the net zero challenge demands. This will only be achieved through the UK and Scottish Governments (listed under 'Government'), Ofgem, and industry working together. This Strategy concludes therefore with **eight actions**, to turn the heat on the decarbonisation journey, further information is available on page 27.

Government	Regulator	Industry
Incentivise energy efficiency and low- carbon heating delivery as markets develop and mature	Enable flexible, timely and efficient investment, in line with local and regional ambitions	Make time of use tariffs accessible for zero emission heat technologies
Ensure the costs of the transition to decarbonised heat are managed fairly	Support a 'one-touch' approach to network investment in RIIO-ED2	Support open data to deliver a cost effective transition

Collaborative action	
Support local communities having sufficient resource and capacity to devise and deliver plans	Develop geographical roadmaps for heat pump uptake

SSEN's role in decarbonising heat



Delivering a safe, secure and reliable supply of electricity

SSEN is a Distribution Network Operator (DNO) and is responsible for providing a safe, secure and reliable supply of electricity to over 3.8m homes and businesses that connect to our networks.

Supporting, coordinating and leading collaboration across industries

Ensuring our network is ready to meet the UK Scottish Government net zero aspirations and that of our customers, in a smart, cost-effective and timely manner.

Engaging with our stakeholders

Working with the communities we serve to understand, innovate and deliver the network they require to decarbonise heat, whilst supporting vulnerable customers. We will coordinate with other networks, in a Whole Systems approach, on how zero carbon heat will be achieved

Ensuring value for money

As a regional monopoly SSEN is regulated by and through the price controls that Ofgem sets. These price controls are set to manage the risk and cost between participants in the energy system.

Neutrally facilitating the uptake of low-carbon technologies

Efficiently investing in our network to accommodate the increased demand net zero entails, within the confines of the regulatory price control. Supporting customers to connect their zero emission heating systems to our network in an efficient, transparent and timely manner.

1. Introduction

Through our two licenced electricity distribution network areas, Scottish Hydro Electric Power Distribution (SHEPD) and Southern Electric Power Distribution (SEPD) we deliver power to over 8m people in 3.8m homes and businesses in the north of Scotland and central southern England.

Ensuring our networks are developed in a reliable and efficient way to enable net zero, that the opportunities created are shared, and the transition is managed in a fair and equitable manner are SSEN's key priorities. The concurrent challenges of decarbonising both transport and heat will require significant and extensive electrification, with the CCC forecasting that demand on electricity networks could treble by 2050.

SSEN has a statutory obligation to invest, manage and operate our network in an economic and efficient manner, maintaining security of supply. There is a significant amount of uncertainty on the route to net zero, and it is in this context that SSEN has developed its heat strategy principles, to ensure our actions embed the values of a fair transition and are responsive to change.

We are consulting on our heat strategy to ensure the **principles** we plan to apply are supported by our stakeholders. This document outlines **challenges** that need to be addressed, **opportunities** that will be created, and the **action** we have taken and will take to support a fair transition to decarbonised heat.

SSEN is part of SSE, a UK-listed company that operates across the energy sector and its activities and investments contribute around £9bn to the UK economy every year.

We are a Fair Tax Mark and Living Wage accredited company, committed to paying the right level of tax at the right time, and supporting fair pay throughout our supply chain.

SHEPD 780,000 homes and businesses connected 37% of houses off gas in Mainland Scotland 95% of houses off gas Scottish Islands 28.3% **SHEPD** of households in fuel poverty in comparisons to 25% for Scotland overa **7,500** heat pumps today, **500,000** expected by 2050 if the UK meets net zero¹ **SEPD** 3.1m homes and businesses connected 16% off gas grid customers 9.3% of households in fuel poverty in comparison to 10.3% overall for England. 9,000 heat pumps today, SEPD 2m expected by 2050 if the UK meets net zero¹

- 1 data based on Future Energy Scenarios work undertaken by REGEN, available online $\underline{\text{here}}$.
- 2 Vivid Economics (2019) Accelerated Electrification.

This is a critical decade for the decarbonisation of heat

UK makes net zero commitment

The UK installs 30,000 heat pumps 278,000 Scottish households have a renewable or low emission heating system UK and Scottish Governments publish respective Heat Strategies

Heat Electrification partnership launched – pg8 Project RESOP publishes its conclusions pg14

BEIS/Ofgem expected to publish new Smart Systems Plan Fossil fuel boilers banned in new homes

LHEES implemented across Scotland

UK Gov to support delivery of 'Hydrogen Neighbourhood' Future Homes
Standard expected
to be implemented

Zero emission heating systems to account for **50%** of new systems being installed in Scotland

64,000 homes install renewable heating systems annually in Scotland

Over 670,000 heat pumps expected to be located in SSEN distribution

areas

UK committed to spending **2.4%** of GDP on Green Finance and Innovation Heat pump installations in SSEN distribution areas expected to be over **140,000** annually

● 2019 **●** 2020

© 2021

• 2022

6 2023

o 2024

6 2025

RIIO ED2

02026

62027

• 2028

62029

• 2030

UK Government commits to **600,000** annual heat pump installations from 2028

17,000 heat pumps in SSEN distribution areas

85% of UK households are heated with gas

Green Homes Grant scheme to end

Expanded Warm Home Discount scheme to provide an extra £4.7bn of support to low-income and vulnerable households until 2026.

All new buildings in Scotland will be required to use zero emission heating systems.

Funding for fossil fuel heating systems to be phased out in Scotland

UK Government led **£240m** Net Zero Hydrogen programme concludes **126,000** zero emission heating systems deployed in Scotland.

Energy Company Obligation (ECO) to conclude

Social Housing Net Zero Heat Fund to close in Scotland. **600,000** heat pumps installed annually across the UK

UK Government considering proposals for **2.8m** privately rented homes to meet a minimum of EPC band C by

2028

At least **50%** of Scotland's building stock is heated using zero emissions systems

Deadline for all rented non-domestic buildings in the UK to have a Energy Performance Certificate (EPC) of Band B

Over **1** million homes in Scotland to have zero emission heating systems

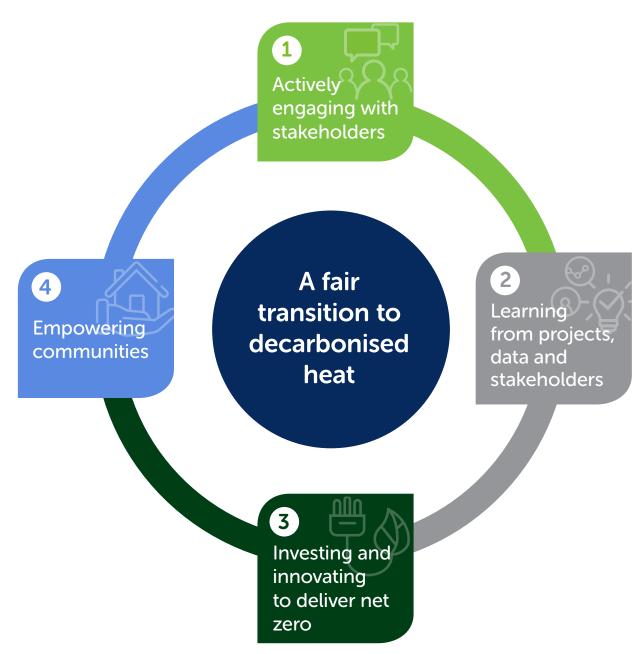
2. SSEN's proposed heat strategy principles

SSEN's vision is to enable the secure, fair and equitable transition to decarbonised heat, in the context of our role as a DNO and for the communities we serve.

Reaching net zero will require extensive electrification of the way we heat our homes. It will require utilising technologies such as heat pumps, smart storage heating and heat networks. Hydrogen will also have a key role to play in this journey. We recognise that there is no "one-size-fits-all" approach that will meet the needs of the different environments where homes, businesses and communities are located.

We understand we don't have all the answers, and are committed to engaging with our stakeholders to understand how the UK will meet its ambitions for decarbonising heat. In the process we will apply the following four principles to support our network being prepared for a fair transition to decarbonised heat.

The Strategy takes these principles and the actions we are taking to support them in turn, before turning to the challenges on the journey to decarbonised heat. We want to hear your views to ensure these are the right principles to support a **fair transition to decarbonised heat**.



Actively engaging with stakeholders

Engaging effectively with stakeholders helps our business to make better decisions.

It helps us to identify issues facing the wider energy industry and where we can collaborate to solve problems or take advantage of new and emerging opportunities in the transition to decarbonised heat. It is critical we actively engage with the communities we serve, policymakers, the regulatory, industry groups, charities and special interest groups to help inform our future plans and ensure we can continue to provide a safe and reliable supply of electricity.

As we transition to a net zero system the customers we serve will have different needs and motivations. Drivers will range from personal choice, to policy interventions at a governmental level. Understanding these drivers will be key in monitoring and preparing the network for a zero emission heating system. Through our engagement with stakeholders we take these different drivers into account and understand the nuances in this transition.

You said, we did

SSEN is committed to taking a 'You said, we did' approach to delivering for the communities it serves. Our stakeholders help shape the decisions we take and ensure the service we provide matches the needs of the households, businesses and communities we serve. As we transition to a net zero energy system we will continue to apply our commitment to taking a You said, we did approach.

SSEN is acting to:

Understanding our stakeholders' needs, views and preferences

The transition to net zero heat and a smarter electricity system will have different impacts for our stakeholders. The difference could be due to circumstance, location and access to services or technological improvements. We are acting to understand and accommodate these differences to ensure the net zero heat transition works for the customers we serve and benefits from the views of our stakeholders. Through our stakeholder engagement programme our approach to net zero and network investment is being shaped by the needs views and preferences of our stakeholders.

Support, coordinate and lead collaboration across industries

Through ENA working groups addressing topics such as low carbon technologies we are working with other energy networks to understand challenges and share intelligence on best practice. We are establishing partnerships to drive forwards coordinated planning and investment in low carbon heating and the impacts for the network. Collaboration will be key in managing this transition in a cost-effective manner, and ensure SSEN is responsive to the needs of our stakeholders.

Delivering whole system planning

We are working across energy networks and other vectors including Water, Telecoms, Transport, Government and more to understand existing constraints, opportunities and long-term development plans to ensure best use of existing infrastructure and to coordinate investment in way that supports net zero and delivers value to customers, now and in the future. Whole system planning combines electricity, gas, transport, head and a wider range of Government, regulated networks and community stakeholders to provide a better understanding of infrastructure delivery.





Actively engaging with stakeholders

Scottish Heat Electrification Partnership

In February 2021 the Scottish Government published its Draft Heat in Buildings Strategy, setting out its plans to take to reduce the carbon emissions of its heating sector.

To support these efforts SSEN is joining the Scottish Government-led initiative, the Heat Electrification Partnership. Alongside Scottish Power Energy Networks SSEN will work to identify potential opportunities and local challenges, to understand risks to communities, and the timely sharing of constructive information.

The purpose of the initiative will be to look for opportunities, and coordinate projects that help answer some of the challenges that Scotland faces in decarbonising its heat. This partnership will run concurrently with the Strategic EV Partnership, in recognition of the significant and at times distinct challenge the net zero transition poses for both areas.

The Heat Electrification Partnership is seeking to understand how increased demand on the network from decarbonising heat can be managed in an efficient, secure and inform investment decisions. cost-effective manner.

Next steps: The partnership is developing a detailed evidence base to support SG heat decarbonisation policy making, provide input to DNO ED2 business plans, and wider electricity distribution and transmission network development.

KEY LEARNING: industry and governments must work collaboratively to coordinate plans and investment if we are to secure a fair and equitable transition to net zero.



"In order to take our collaboration with the DNOs further we are setting up a new Heat Electrification Partnership with them to work together to understand the scale, pace and location of network investment needed, build the evidence for the right investment decisions for Scotland and ensure compatibility with delivery and deployment plans."

Draft Heat in Buildings Strategy (2021) Scottish Government





Learning from projects, data and stakeholders

The transition to a net zero heat system will only be successful if it is coordinated, collaborative, sustainable and delivered in an equitable and fair manner.

We will remain open minded to how ambitious targets will be delivered and will remain open minded and continually learn from the projects we undertake, the data we capture and our stakeholder engagement. Clarity on the coordination of heat decarbonisation as a whole, and on specific technology pathways, will enable an efficient approach to preparing and developing the network."



SSEN is acting to:



Monitor and forecast low-carbon heat uptake

We use data analytics to determine both current and future network constraints on our networks. This supports our preparations and understanding of LCT uptake and planning for optimum investment to avoid constraint, and provide the capacity needed for the future. By utilising low cost LV substation monitoring equipment we can track LCT uptake and new demand. As we prepare for significant growth in LCTs on both our networks during the remainder of RIIO-ED1, and into RIIO-ED2, we recognise the important role LV monitoring can play in supporting the transition to Net Zero, combined with other data sources such as smart meters. We are ramping up our activities in this space, and we are looking to install c. 11,000 LV monitors as a minimum during RIIO-ED2, covering c. 9% of our network.

Working with Regen to develop our Distribution Future Energy Scenarios we undertake annual projections for EV, heat technologies and solar PV uptake, required to meet net zero. The data is broken down to a street-by-street level to understand impact and guide investment, and are available

We have established data sharing agreements to provide better sight of heat pump uptake and will continue to use data to support existing and establish new arrangements with parties across industries.

Make our network design tools responsive to LCT uptake

With many different technology options to consider, it is important to understand the impacts of these technologies. For example, we need to build a profile of heat pump users to determine how their patterns of energy use will affect the electricity network. We are undertaking various trial projects to learn more about the demand profile and operation of the network for each technology and update our network design tool to optimise design works.

Apply industry best practice and learn from stakeholders

Through the ENA-led Open Networks programme we support the sharing of industry best practice and the lessons learnt from industrywide projects. This coordination ensures that cost is minimised for the customers energy networks serve, and efficiencies are secured. Understanding that we do not have all the answers means remaining open whilst engaging with and learning from our stakeholders.

Learning from projects, data and stakeholders

4D Heat

4D Heat analysed an off-gas grid area on the Isle of Skye, to explore the ability of flexible demand from heat to absorb wind power that otherwise would have been decreased through constraints. Constraints currently cost GB households around £500m per year. Modelled using a whole system view, the goal for 4D Heat was to make better use of clean power without increasing costs for the ESO, DSO or end consumer.

By linking heat with curtailment the project was able to demonstrate how the DSO transition can deliver cost-effective solutions, based upon electric heating systems.

4D Heat has provided clear recommendations to supporting the evidence base for smart domestic controls, which will be an essential tool to support low carbon heat. It highlighted opportunities within DSO reform to improve accessibility to data to give flexibility providers long-term visibility of constraints. By adopting a 'market enabling' role for innovation, the wind industry can be encouraged to explore new market mechanisms and consider residential demand side flexibility and time of use tariffs.

KEY LEARNING: industry and governments must work collaboratively to coordinate plans and investment if we are to secure a fair and equitable transition to net zero.



An Electric Heat Pathway: Looking Beyond Heat Pumps



SSEN, with Maxine Frerk, founder and director of Grid Edge Policy, investigated the opportunities associated with storage heaters as part of the heat decarbonisation mix. Used in UK homes and businesses for decades, storage heaters draw electricity from the grid when prices are lower and retain it for use during the day. This means that modern storage heating can be a viable option for households on low incomes and at risk of fuel poverty, to reduce the cost of their energy bills.

As the UK moves towards a more flexible energy system, where low carbon technologies have the potential to communicate with the network operator and supply energy back to the grid when needed, storage heaters have an interesting potential role. DNOs may be able to determine the timing schedules for storage heaters in constrained areas that would otherwise need expensive reinforcement. These messages are currently sent over what is known as the Radio-Teleswitch System (RTS) using the long wave radio infrastructure provided by the BBC. This is due to be decommissioned in 2022 and RTS meters set to be displaced by smart meters, meaning new arrangements will need to be put in place to give DNOs the ability to control local heating loads.

The <u>report</u> produced by Maxine Frerk of Grid Edge Policy recommended a series of industry actions to include Storage Heating as part of the energy mix.

KEY LEARNING: electric heating can help balance the network through diversity and flexibility, and end users must be supported to optimise the use of this technology.

Investing and innovating to deliver net zero heat

As we develop our understanding of the heat decarbonisation transition we will implement innovations to support a cost-effective transition.

We are already adapting, and our ED2 business plan will reflect the targets identified by government, and we will continue working with Ofgem and other DNOs on the regulatory arrangements for 2023-2028 that enable this investment. Making best-use of technological advancements and continually seeking to improve the service we provide to the customers we serve is a priority for SSEN.



SSEN is acting to:



Embed heat and vulnerability as key themes in its ED2 innovation strategy

To support the inclusive transition to a smart grid from now and during our next price control, heat and vulnerability will be key topics in our innovation portfolio. We will allocate innovation funding to look at unique regional challenges and identify suitable ways to help balance the network through diversity and flexibility whilst building in safeguards to protect customers in vulnerable situations, as part of our ED2 vulnerability strategy.

Deliver a smarter network, managing demand in a collaborative and costeffective manner

As part of the net zero heat journey SSEN is demonstrating its ability to act as a Distribution System Operator (DSO). We are actively delivering a range of projects to support the implementation of innovations as Business As Usual (BAU). These projects include Local Energy Oxfordshire (LEO) with project partners the Low Carbon Hub, Oxford University and EDF among others, and Heat 4D alongside National Grid. Innovations that create opportunities for energy storage could be potentially significant for heat pumps. Owners will have the opportunity to utilise their heat pump to play an active role inavoiding constraint and network reinforcement, balancing the system and receiving payment in the process from market participants.

Tailor our connections offer to stakeholder needs

We have three key areas of focus that will help in tailoring our connections offer to stakeholders. Firstly we are utilising flexible solutions such as Active Network Management (ANM) to alleviate constraints and help customers connect to our networks quicker and at lower cost. Secondly all SSEN customers are now able to access flexible connections, and in 2021 we aim to offer a demand and energy storage flexible connections where there are thermal constraints. Through this process customers are able to check the 'Status' of their property and its ability to support low carbon heating uptake. Thirdly we are developing an automated quote system to speed up the process of receiving a quote, which will ease the process for those exploring and understanding their options when it comes to adopting a LCT such as a heat pump.

Investing and innovating to deliver net zero heat

Project Local Energy Oxfordshire (LEO)

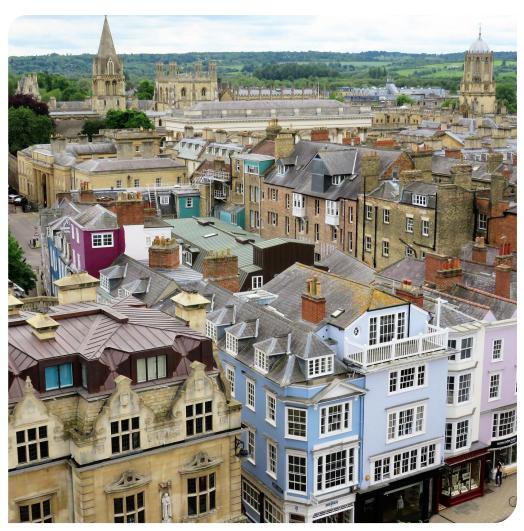
LEO seeks to understand how an increased demand for electricity, largely from the electrification of heat and transport, can be managed in a cost-effective and secure manner. SSEN is one of nine partner organisations working together as LEO undertaking a variety of trials focusing on the three pillars of the project - 'People', 'Technology' and 'Markets'. It is one of the most ambitious, wideranging, innovative, and holistic smart grid projects ever conducted in the UK. It aims to establish to manage this transition while encouraging households to engage interactively with the energy system in new ways which will benefit themselves and their communities.

A vital part of LEO is the use of new technologies, one of these being GIS mapping. The project has built an 'Integrated Land Use Map' which brings together, at a neighbourhood level, a number of different sources of geospatial data. This new tool is enabling SSEN to; identify locations for smart grid and capacity testing; plan how to optimise the use of existing infrastructure for transport and new heat technologies such as heat networks and heat pumps; establish potential locations for low carbon energy generation.

Understanding these options and collectively bringing them together could allow more flexibly to help balance supply and demand. In turn, this sort of flexibility can then be bought and sold in a market environment to offer benefits to the local community such as targeted energy efficiency programmes to reduce energy demand.

This is also helping us to identify where heat assets in a geographical area could be collectively brought together and used more flexibly to help us balance supply and demand. This sort of flexibility can then be bought and sold in a market environment and bring potential benefits to those taking part. LEO is enabling and is an example of the Whole Systems approach that SSEN will increasingly be taking to meet our customers' needs.

KEY LEARNING: Engaging with stakeholders to understand opportunities for flexibility and diversity to balance the network in a smarter way.





















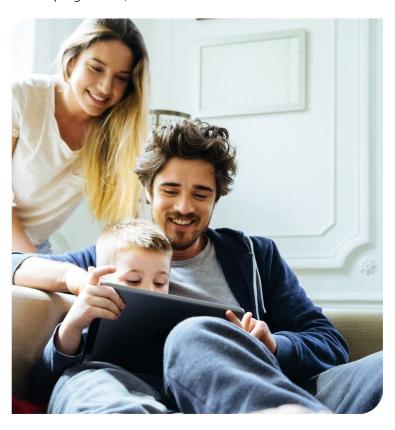




Empowering the communities we serve

We are committed to working with our stakeholders toward a cost-effective and secure transition to decarbonised heat.

We are doing this through sharing low-carbon technology uptake forecasts, understanding and removing barriers to individuals taking an active role in the whole energy system, and working with communities to develop Local Network Plans. These plans, and engaging with the local community helps to deliver efficient investment in infrastructure through identifying where there is need, and developing robust, data-driven evidence.



SSEN is acting to:



Connect people and communities to their net zero future

We are developing regional network plans with the help of local stakeholders to incorporate their objectives and priorities for achieving net zero through heat, transport and energy efficiency. The plans gives local communities a voice and instrumental role in securing a cost-effective net zero transition. Our Standardised Data for a Local Green Recovery Project is looking at how data can be shared, especially in areas where local government boundaries and DNO boundaries are not aligned, and the range of network data required to support measures to stimulate green recovery from the impact of COVID-19.

SSEN is also working to provide clear heat maps highlighting capacity for new electric heating based on local, and will seek to provide monthly updates to allow stakeholders to easily see network constraints.

As part of our RESOP project, we are developing a tool which will allow stakeholders to test the impact of a range of technologies on the local network. This will highlight where network investment may be required and help communities make informed decisions about their route to net zero.

Spread opportunities and make these visible and accessible

The pace of the transition to decarbonised and electrified heat is dependent upon having the requisite skills within the workforce. This represents a significant opportunity to create long-term, sustainable careers in communities across the UK. In a <u>report</u> commissioned by the Local Government Association, Ecuity Consulting found that in 2018 there were 185,000 full-time workers in England's low-carbon and renewable energy economy. In 2030 this could rise to 694,000 and rise to over 1.18m by 2050. SSEN strongly supports the Green Bursary and building the supply chain to deliver the UK's objectives.

Advocate for net zero investment

SSEN is engaging with Ofgem to ensure the next regulatory price control supports strategic investment and enables critical infrastructure to be prepared for the UK's net zero ambitions. Our stakeholders have indicated they want us to invest ahead of a network experiencing an issue. Future proofing and aligning increases in capacity with net zero will support a 'one touch' approach and avoid unnecessary future expenditure.

Empowering the communities we serve

Regional Energy System Optimisation Planning (RESOP)

RESOP is developing a whole system planning tool that can incorporate the LCT objectives and drivers for local authorities and businesses in order to assess the impact of those plans on the local electricity and gas network. Whole systems planning combines electricity, gas, transport, head and a wider range of Government, regulated networks and community stakeholders to understand the whole picture. The tool will be able to model likely outcomes of future scenarios, thereby supporting better informed local decision making.

To fully decarbonise heat and transport, better information is needed to ensure network operators can act to accommodate new demand. Equally, low carbon technologies have a valuable role in helping to balance the network by providing flexibility at key times. RESOP will allow the best whole system solution to be developed, taking into account a wide range of assets and infrastructure, to meet the needs of the city whilst delivering best value for communities.

The RESOP tool will be instrumental in giving local communities a greater say in their energy future and helping to accelerate the decarbonisation of heat and transport. Whilst providing evidence for the DNO to investment in the network in advance to facilitate these changes.

SSEN, Scotland Gas Network (SGN) and Dundee City Council have partnered with Baringa and Energy System Catapult on the RESOP Project, to develop a tool that will support Dundee's net zero ambitions. Dundee City council will be the trial tool location with an aim to roll out the tool more widely to other local authorities.

This project is due to complete towards the end of 2021.

KEY LEARNING: The value of partnership and a whole system approach to ensure the best value for money for customers.





Well justified network investments

Engagement, Data, Optioneering, Whole system costing Effective Local Energy Plan in every community

Affordable decarbonised systems

3. Overcoming barriers to decarbonising heat

Securing a fair and equitable transition to decarbonised heat requires identifying opportunities and risks, making the former accessible and implementing mitigation strategies for the latter. Supporting customers, communities and industries decarbonise will require a nuanced understanding of, and engagement with, the following issues.

Understanding financial barriers to energy efficiency uptake

Polling undertaken by Ecuity into SSEN's customers' view of low-carbon technologies suggests that there is a funding gap of around £1600 for the uptake of heat pumps based on consumer willingness to pay and the grant level for the average household. Ecuity's research suggests that while the cost of cavity wall insulation would be covered by a combination of grant and consumer contribution, there would be a small shortfall of £151 for loft insulation and a larger funding gap of £1,555 for solid wall insulation. SSEN works with third parties to provide free energy efficiency advice to our customers and the government grants to which they might be entitled.

Ensuring tenants, and individuals that do not own their home in which they live, are not left behind

Tenants face other barriers to installation, including frequently being unable to make significant changes to the property they are renting without landlord approval. The aforementioned research by Ecuity found 70% of respondents experienced additional barriers outside of cost to LCT or energy efficiency uptake. The financial and physical barriers associated with preparatory work were highlighted as the key challenges associated with installation. Moreover, living in a rental property was seen as a significant barrier by many. Government support schemes and incentivisation for the roll out of energy efficiency measures should take into account how different living arrangements can be accommodated. Clarity on how EPC targets will be met could also improve coordination of network investment. In RIIO ED2 we will undertake further work to support customers where we are best placed to do so.

Making connections accessible

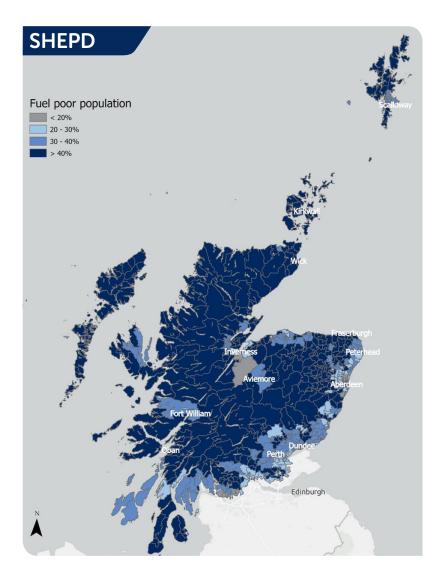
Customers rightly expect a simple and easy to understand process to support their shifting to a zero emission heating system. Negative consumer experiences can have a deleterious impact on uptake. SSEN is developing a self-service connection budget estimate tool to give a better understanding of the cost of adopting an LCT. Maintaining high levels of customer service is key. Companies should be able to provide customers with a seamless installation experience thanks to the provision of data on cut-outs and looped services, with proactive surveys carried out by SSEN in advance of any installation/deliveries.

Improving consumer awareness

Another significant barrier to decarbonising heat is a general low-level consumer awareness of low-carbon heating options. Research by the think tank Bright Blue revealed that only 42% of British people have heard of heat pumps. Worryingly this is highest scoring system in terms of familiarity. Government, industry and wider stakeholders need to do more to improve consumer awareness and understanding of the opportunities and benefits of zero-emission heating systems. Unless this issue is addressed it is unclear how the UK will meet its ambitious decarbonisation targets for heat.

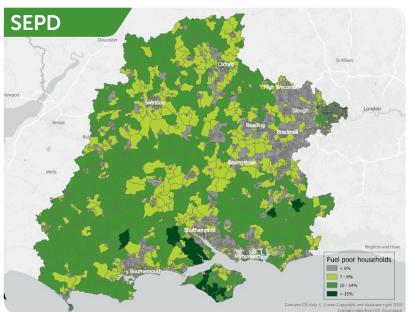
A consumer campaign and a strategy for improving consumer awareness should be a priority within the Scottish and UK Government approach to rapidly increasing zero-emission heat system uptake.

Overcoming barriers to decarbonising heat



Supporting those living in fuel poverty

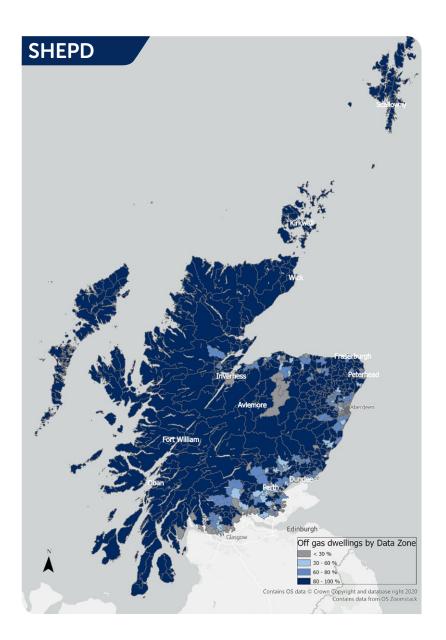
With over 28% of households in our Scotland, and 9% in England distribution areas living in fuel poverty ensuring they are supported to make the transition and do not bear the brunt of the cost, is a critical aim for SSEN. In 2019/20 we helped over 2,300 households and forged 51 partnerships with third parties to get people in difficult situations the support they need. Through utilising our **customer vulnerability mapping tool** we are able to identify areas where there are high levels of fuel poverty, and target our support accordingly. These maps show significant incidences of individuals living in fuel poverty in both distribution areas. In the transition to decarbonised heat there is an opportunity, according to the CCC, to lift 75% of people living in fuel poverty out of these conditions. SSEN is committed to working with the communities it serves to secure to turn this possibility into a reality.



To note

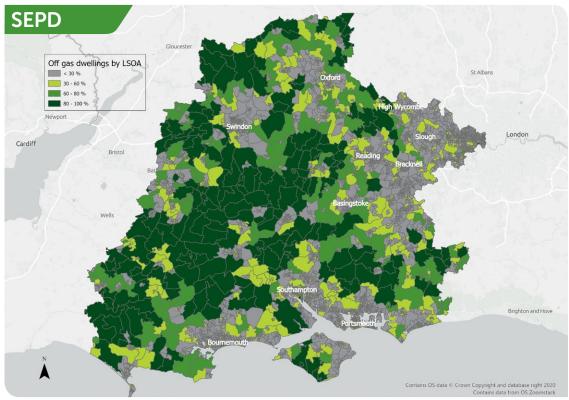
Fuel poverty is a devolved matter and different indicators are used in England and Scotland. The former uses a calculation known as Low Income High Costs (LIHC), while the latter measures by the percentage of household income used on maintaining an adequate standard of warmth. In these maps our SHEPD distribution areas is split into 'Data Zones' with a population between 500-1000, whilst SEPD is organised by Lower Super Output Area (LSOA).

Overcoming barriers to decarbonising heat



■ Finding the right solution for off gas grid areas

Off-gas grid households tend to have lower energy efficiency standards and as a result energy costs are higher. 37% of the households we serve on mainland Scotland are off gas and 95% on Scottish Islands. In our central southern England distribution area the figure is 16%. As we transition to decarbonised heat targeting the appropriate solution for these households must be a priority. Clearer direction from government in ensuring that costs do not fall disproportionately on households living in off gas grid areas is key. SSEN is engaging constructively with our stakeholders to understand and accommodate the solutions that off gas grid areas and households choose.



Overcoming barriers to decarbonising heat

Communities must be supported to make informed decisions

SSEN commissioned sustainable energy experts Regen to provide detailed forecasts of LCT uptake which can inform the investment required to accommodate extensive electrification. The data is made publicly available and are accompanied with a series of stakeholder engagement events to discuss the variety of options and potential scenarios that could be pursued.

The RESOP project (p.14) is an example of how SSEN are establishing whole system planning. A whole system approach to decarbonising heat - that brings together plans from electricity, gas, heat, transport, Government and others - will give customers the ability to understand the impact any proposed strategies will have on the network, and work with our colleagues to look at the optimum network solution.

In addition, SSEN explored the benefits of smart storage heating as an alternative to heat pumps through our An Electric Heat Pathway – Looking Beyond Heat Pumps research project. This project considered the emphasis placed on 'flexibility' in the low carbon energy system, and the role which could be played by electric storage heating. Approximately 90,000 customers use storage heating that uses Radio Teleswitching Service (RTS) which signals the heating systems to switch to a lower and higher price signal. RTS is due to be decommissioned by March 2023, we are investigating ways to ensure these customer have a suitable alternative which provides value.

Spreading opportunities created by a smarter and fairer electricity system

As smarter heating systems are rolled out there will be opportunities to manage peak demand and renewable curtailment in a smarter more efficient manner. Existing offerings and innovation is exploring the ability to offer and be rewarded for their heat or cooling flexibility services, trading with their supplier, National Grid or SSEN, responding to market signals issued at a national, regional or local level. Through key projects such as Local Energy Oxfordshire (LEO), SSEN is working with community groups such as the Low Carbon Hub to understand how communities can be engaged, and access the monetary as well as environmental benefits of providing network flexibility.

Supporting industries to decarbonise their heat

As we transition to a net zero economy, existing high carbon industries will have different low carbon pathways to reduce their heat and wider industrial emissions, most of which will require supporting enabling infrastructure to be in place. These plans are likely to impact the electricity networks either through direct electrification, or through indirect electrification with the use of 'green hydrogen' produced by using electricity to split water into hydrogen and oxygen.

Electrolysers will become an increasingly important part of the electricity system, both as a source of demand but also as source of flexibility at the GB system level and distribution level.

SSEN is keen to support the development of low carbon industrial clusters interacting with its networks to understand their low carbon pathways and ensure the associated infrastructure can be cost effectively integrated into the electricity system. To ensure the best outcome for electricity consumers and these industries, we will engage with the developing industrial decarbonisation roadmaps, gas distribution networks and different transport bodies to ensure our network plans can appropriately account for the emerging hydrogen demands in these clusters and in particular hydrogen trials emerging around Aberdeen and Southampton.

More widely, SSEN is strong supporter of securing a just transition for these high-carbon industries and ensure the communities which host these industries can transition out from high-carbon jobs and into good, green jobs by applying the 20 principles within <u>SSE's Just Transition Strategy</u>.

Challenges to decarbonising heat

Low Carbon Technology Uptake Scenarios

SSEN has worked closely with energy experts Regen, to forecast the uptake of LCTs as part of our Distribution Future Energy Scenarios. We engage with the communities we serve to support their development of Local Network Plans and Local Heat and Energy Efficiency Strategies.

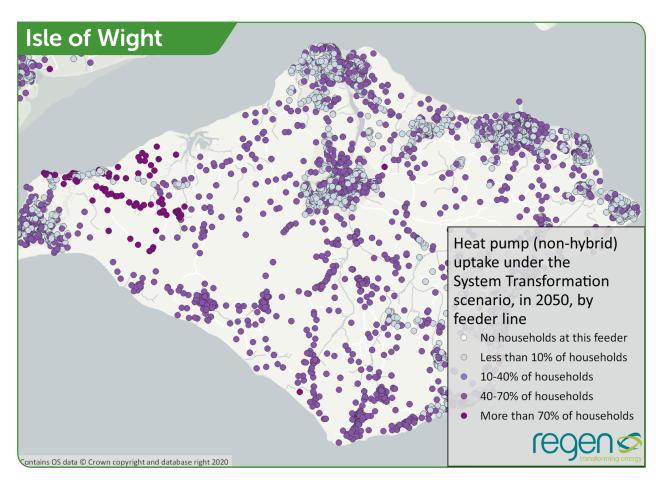
These reports help inform the decision making process and target investments where we expect to see increased demand on electricity network infrastructure. As well as heat pump uptake Regen also forecasts increases in EVs, solar panels and batteries, and provide a better understanding of the challenges and opportunities that will be created on the journey toward net zero at a local level.

The reports utilise National Grid's Future Energy Scenarios which set out forecast the impact of four different scenarios:

- Leading the Way the UK arrives at net zero by 2048.
- System Transformation The UK realises net zero by 2050 based on the rapid uptake of transmission-scale low carbon generation
- Consumer Transformation the UK realises net zero by 2050 based on the significant electrification of domestic heat and rapid uptake of EVs
- Steady Progression the UK misses its 2050 net zero target as current trends continue

The reports highlight the speed with which network infrastructure needs to be ready to accommodate the UK's electricity demand, are available online here.





Government interventions to support the rapid uptake of heat pumps and zero emission systems as outlined in the timeline are most closely aligned with the consumer transformation scenario. It provides clarity about the capacity that will be required and the pace with which this will have to be delivered. Ensuring we are enabled to deliver the required infrastructure during the current and future price control must be a key consideration of Ofgem and the UK and Scottish Governments.

SSEN has undertaken and is undertaking a series of projects and initiatives that informs our understanding of the heat decarbonisation challenge. This activity review provides a snapshot of our efforts, and the principles with which they align.



Actively engaging with stakeholders



Learning from projects, data and stakeholders



Investing and innovating to deliver net zero



Empowering communities

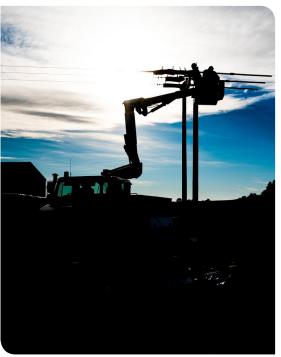
Project/Activity	About	Output	Key learning	Principles supported
Assisting Communities to Connect to Electric Sustainable Sources (ACCESS) Costs £420k Status: Complete	A collaborative project which Investigated the option of domestic flexibility by allowing a community to monitor and manage locally owned generation and storage heating demands within the parameters of an otherwise constraint network.	The project provided successful evidence that domestic flexibility is viable method to manage network constraints. This framework is now included in our connection offering and is used in multiple locations in the UK.	Regional network challenges and opportunities must be considered in the transition to decarbonised heat, which has an ability to balance the network through diversity and flexibility.	
Home and Well Status: Ongoing	The Home and Well programme brings together Hampshire and Isle of Wight Partnership of Clinical Commissioning Groups (CCG), Citizens Advice Hampshire, Southern Water and Portsmouth Water, to support individuals leaving hospital have clear information and access to benefits they are entitled to.	A cross-industry initiative that has highlighted to customers often temporarily entering vulnerable situations, the support they are entitled to, and how they improve their households resilience in emergency situations.	Providing a single point of contact for all utilities has helped target support, and made accessing this easier for customers. In the transition to decarbonised heat, where accessing support may be vital, this approach should where possible be replicated.	
Green City Vision Costs £151k Status: Complete	A collaboration with Wales and West Utilities and UK Power Networks this project investigated a range of energy solutions for heat and transport in Swindon Borough Council. The main objective of the project was to design a local energy plan for Swindon which was affordable, secure and green in order to meet the 2050 net zero targets.	The project modelled all energy demands for now and in the future to understand the impacts and energy flows of both the electric and gas network. A series of future scenarios considered all electric technology, maximum green gas technologies and a hybrid of both.	A whole system approach is needed to ensure all ambitions are include and the networks are ready for net zero.	
Northern Isles New Energy Solutions (NINES) Costs £34m Status: Complete	A collaboration with Shetland Islands Council, Hjaltland Housing Association and Shetland Heat Energy and Power. NINES replaced old inefficient storage and water heaters in 750 houses with modern 'smart' storage heaters which help to balance the electricity network.	This project deployed new technology on the network that will allow more small scale renewable generators to connect to the network and introduced a new commercial arrangements to encourage businesses to change the times at which they use most energy.	The importance of educating the tenants and end users in the 'proper' way to use any technology correctly to maximise it's use.	

Project/Activity	About	Output	Key learning	Principles supported
Electric Heat Pathways: Looking Beyond Heat Pumps report Costs £33k Status: Complete	SSEN, with Maxine Frerk, founder and director of Grid Edge Policy investigated the opportunities associated with storage heaters as part of the heat decarbonisation mix.	To understand the potential role for storage heating in a low-carbon future., and consumer motivations for moving away from electric storage heating technology.	Safeguards must be built in to protect the vulnerable customers. Educating end users in the 'proper' way to use technology is vital to optimise its use.	
Elgin Heat Pump Monitoring Costs £7k Status: Complete	Working with the University of Strathclyde, this project installed monitoring equipment to enable network requirements for feeders serving heat pump clusters.	Two winters of monitoring, data had been collected which lead to an assessment of diversified load.	Beginning to understand the load profiles for heat pumps.	





Project/Activity	About	Output	Key learning	Principles supported
Orkney Smart Grid Costs £500k Status: Complete	In collaboration with University of Strathclyde and Smarter Grid Solutions (SGS) exploring the issue of capacity constraints on the electricity distribution network which were limiting the potential for renewable generation developers to harvest the significant renewable energy resource on the Orkney Isles.	An innovative new Active Network Management (ANM) approach was devised to make better use of the existing network by instructing generators to control their output, in real time, to match the available network capacity.	Investigating local challenges and turning them into opportunities through flexibility.	
New Thames Valley Vision (NTVV) Costs £30m Status: Complete	Exploring opportunities for energy storage solutions, including hot thermal, cold thermal and battery storage in commercial premises. Cold thermal (Ice Bear) units were installed to shift the operation of commercial Air Conditioning condensing units from on-peak periods to off-peak periods on the LV network.	Monitoring and data had been collected to ensure opportunities for flexibility which lead to an assessment of diversified load.	Beginning to understand the load profiles for thermal storage and possible framework for flexibility.	
Whole System Growth Scenario Modelling Phase 1 Costs £225k Status: Complete (See RESOP pg 17)	An initial 'Whole System Growth Model' which was used to explore load and energy consumption growth associated with low carbon technology.	SSEN to hosted workshops with stakeholders to about the energy implications of local development plans, to ensure a safe, reliable and secure grid can be supported. The model allowed an initial view of local Development plans and how the requirements for investment to meet them.	A whole system approach plan aligned with data availability from our stakeholders. The importance of local energy plans.	





Project/Activity	About	Output	Key learning	Principles supported
Smart and Fair? research programme Status: Ongoing	Smart and Fair? is a research programme led by the Centre for Sustainable Energy, SSEN and WPD to investigate: the unfairness that could occur in a low carbon energy system as the UK transitions to net zero; the impacts it could have on vulnerable customers; the risk of negative social impacts on the zero carbon transition; and methods to ensure inclusivity so that no one's left behind.	By identifying how unfairness could be generated, industry and wider stakeholders can develop mitigating solutions.	The research programme has delivered an analytical framework and methodology for future assessments of the social impact of transitioning to a smarter energy system. It highlights the importance of safeguards being built in to protect the vulnerable customers and that suitable for suitable retail proposition for all customers to realise benefit in a just and fair manner.	
Funding four energy advisers with Citizens Advice Scotland Status: Ongoing	This is a first-of its-kind partnership to provide households across the north of Scotland with advice, financial help and energy efficiency measures. In the first year, advice relating to over £100,000 worth of financial gain has been provided to over of 500 people. The project is continuing into its second year with a new CAB region now being targeted.	To provide in-depth, holistic and bespoke energy advice as well as support in resolving billing issues, benefits checks and identifying loans, grants and incentives available, to those in areas of high fuel poverty.	Our engagement needs to be clear and targeted to ensure that there is broad awareness of support available and that this is easily accessed.	
LV Substation Monitoring Costs £1.2m + Status: Ongoing	Through our NIA innovation project 'Low Cost Substation Monitoring' we have managed to stimulate the market to produce devices that are significantly cheaper than previous monitors. This is while ensuring the functionality provides everything needed to allow us to understand exactly what is happening on a particular network, what the impacts are, and what the next steps should be to ensure customers can continue receiving a secure, reliable and cost-effective supply of electricity.	The ability to observe and react to fluctuations and significant increases in demand will be critical in supporting customers decarbonise their homes in a cost-effective manner. We have strived to find ways to reduce the costs of LV monitoring equipment to allow a larger rollout.	The substation monitors enable our engineers to react to communities adopting LCTs. It provides advanced warning of potential issues and supports a smooth net zero transition.	
Solent Achieving Value from Efficiency (SAVE) Costs £10.3m Status: Complete	Engaging over 8000 domestic customers in the Solent and surrounding area, the project trialled cost-effective measures for managing peak demand including: deploying energy efficiency technology, innovative engagement approaches, offering a financial incentive and coaching a community to support both social and network priorities.	The project found that electricity network demand could be reduced by 7% using LED lighting alone, and evidenced the critical role of customer engagement in driving behavioural change.	Energy efficiency is key. Consumer motivations for switching to low-carbon alternatives are varied and the cost incentive can at times be less effective than other approaches to stakeholder engagement. Trusted community members have a critical and influential role in driving these changes, and can alleviate the pressures of energy bills through low-carbon solutions	

Project/Activity	About	Output	Key learning	Principles sup	ported
Low Carbon Technology Uptake Scenarios Status: Ongoing	SSEN commissioned REGEN to produce forecasts aligned to National Grid's future energy scenarios to understand the local and network impact of the journey to net zero.	Aligned with our digitalisation and Open Data approach, we make these reports publicly available on our website, and run a series of stakeholder engagement events.	Regional network challenges and opportunities must be considered in the transition to decarbonised heat. These need to be	(a) A)	
Enabling households to access energy efficiency measures Status: Ongoing	SSEN is working with the Centre for Sustainable Energy (CSE) to support households overcoming barriers to installing energy efficiency measures in their home.	Small grants will pay for works such as loft clearances or removing furniture paid to a contractor undertaking the energy measure. The scheme aims to replicate the success of the SSEN scheme in Scotland run by Warmworks, with this scheme operating across SSEN's distribution network in England. It builds on a small pilot previously run for SSEN by CSE in the Wiltshire and Dorset area.	Households require support in accessing funding support to which they are entitled. Fabric first approaches will continue to be hindered unless this is addressed.	The second secon	



Project/Activity	About	Output	Key learning	Principles supported
Partnership with Home Energy Scotland (HES) and YES Energy Solutions (YES) Status: Ongoing	HES/YES provide impartial and expert energy efficiency advice to our customers as part of a free service.	This service has supported over 1000 households living in fuel poverty.	The importance of partnerships with trusted third intermediaries to reach customers in vulnerable situations, and ensuring those we have existing relationships with have access to free impartial advice.	
Flexibility in Great Britain Status: Ongoing	The Flexibility in Great Britain project will conduct in-depth analysis based on modelling, research and stakeholder interviews to investigate how different sources of flexibility across the heat, transport and power sectors can reduce overall system costs to consumers.	The project, led by the Carbon Trust and supported by Imperial College, will explore the business models required to deliver an integrated flexible system. It builds on influential Carbon Trust reports from 2016 which identified that the cost of a future energy system in Great Britain could be reduced by £40 billion with greater flexibility and the implementation of storage.	The project's findings will be published in early 2021 and are expected to inform energy system stakeholders and policy makers' work on net zero commitments, heat decarbonisation pathways and the rapid transition to low emission transport options. It is expected to set out how flexibility can reduce energy system cost.	





RIIO-ED2 and heat decarbonisation

The next regulatory price control period, which runs from 2023-2028, will be critical in achieving the UK and Scottish Government's heat decarbonisation ambitions.

We're currently developing our draft business plan, which is being informed by extensive collaboration and engagement with our customers and stakeholders. This draft plan will be published in July, after which, we'll continue to refine our proposals and undertake further engagement, ahead of submitting our final business plan in December 2021.

This consultation highlights key actions that we will take to support the cost-effective, secure and timely transition to net zero for the communities we serve:



Improving our IT systems to provide clarity on network capacity at a street level



Employing Open Data to facilitate whole system solutions and support informed decision making



Installing load monitoring at key points across our low voltage network



Enabling flexibility to be used at scale to improve the utilisation of existing network assets



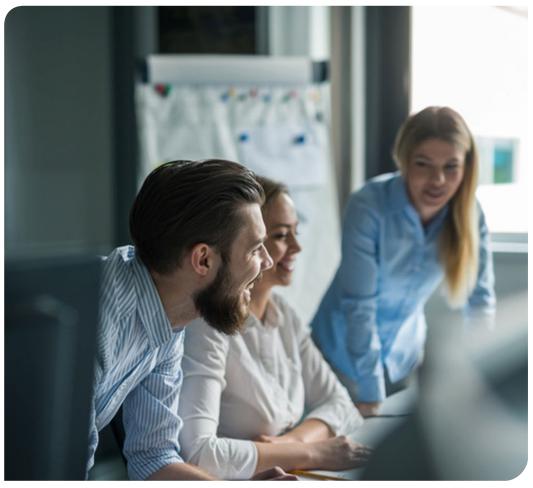
Investing efficiently in network reinforcement and flexibility services



Delivering with key partners to ensure efficient and effective local energy planning



If you'd like to help shape our plans for the next price control, please visit ssenfuture.co.uk or email YourED2Plan@sse.com.



5. Actions to accelerate the net zero transition:

The UK will only realise its net zero ambitions through policymakers and industry working together. Clarity on where and when action will be taken will support a cost-effective, secure and efficient transition. The following eight actions will accelerate this transition at a pace that the climate challenge demands.

Government



Incentivise energy efficiency and lowcarbon heating delivery as markets develop and mature

Providing markets and the industry certainty on long-term incentive support for rolling out energy efficiency and low-carbon heating measures can help provide clarity and bridge the gap between ambition and action. These programmes should be coordinated and promoted to ensure consumers are aware of and benefit from government support measures to decarbonise their homes.

Ensure the costs of the transition to decarbonised heat are managed fairly

It is critical that the opportunity is taken to alleviate rather than exacerbate fuel poverty during the transition to decarbonised heat. The transition to net zero will be capital-intensive and policy interventions should be reviewed to ensure these costs are fairly distributed and support targeted throughout this process. The upcoming review by the UK Government should clearly set out how these costs should be distributed in a progressive, rather than regressive manner.

Regulator



Enable flexible, timely and efficient investment, in line with local and regional ambitions

How and where the UK's ambitious decarbonisation targets will be met are still to be determined, however we know that efficient and timely investment in the network will be required to deliver net zero. It is therefore imperative that the next price control is agile and able to react to change and is an enabler rather than a blocker to local and regional ambitions. This should include recognition of where more ambitious net zero targets exist, particularly in devolved administrations.

Support a 'one-touch' approach to network investment in RIIO-ED2

The CCC has forecast that the transition to net zero could treble demand on GB electricity networks by 2050. Up to a third of reinforcement will be on underground networks in built-up areas, requiring civil works on streets around the country. Analysis for the CCC found that a "one touch" approach could avoid £34bn of unnecessary expenditure by 2035. Increasing network capacity on a "one-touch" basis, informed by network scenarios and enabled by coordinated policy decisions, is a low regrets option which will avoid unnecessary costs and disruption to consumers.

Industry



Households are able to access significant benefits through shifting to time of use tariffs. Smartly controlled heat systems have the ability to reduce household bills by up 12%, and could provide a strong signal for households to modify their heating loads. This could incentivise greener energy such as wind being used when available. Currently only a few energy suppliers offer a variable tariff that caters for heat pumps or load balancing energy storage. This could cause an unnecessary delay to the realisation of the full benefits of heat decarbonisation.

Support open data to deliver a cost effective transition

Open Data will be instrumental in supporting the transition to decarbonised heat in an efficient and secure manner. Access to good quality data can help target investment in advance of constraint and identify opportunities for companies in the zero emission heat sector. SSEN is piloting the sharing of data with trusted partners to progress the Open Data agenda, and welcomes industry participants to contact us to work together in securing a cost-effective transition to decarbonise heat.



Actions to accelerate the net zero transition

Collaborative action

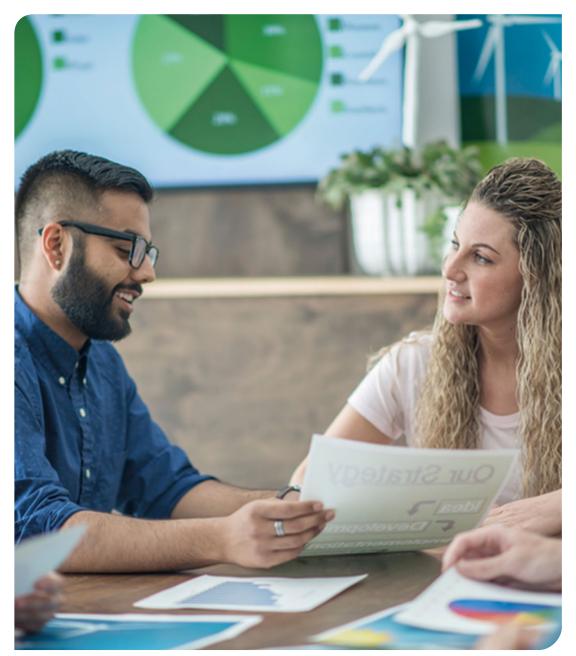


Support local communities having sufficient resource and capacity to deliver net zero plans

Local communities will have a key role in supporting the delivery of a net zero future, and can be supported to take an active role through Local Area Energy Plans (LAEPs), Local Heat Energy Efficiency Strategies (LHEES), and Local Network Plans. From our engagement a key emerging issue is the capacity that local authorities have to engage in this process. Governments should ensure that there is adequate resource and action taken to unlock this capacity to avoid areas moving at different speeds. These plans should be recognised by Ofgem within ED2 as providing a rationale for targeted investment. The energy industry should rollout the whole system planning tools and other means that help local areas understand and make informed decisions about their route to net zero and decarbonised heat.

Develop geographical roadmaps for heat pump uptake

A significant challenge that may hamper preparations for decarbonised heat is understanding where and when this demand will arrive. Locally led plans can inform geographical targeting and to specific groups that would benefit from extra support in this transition. Through government support, a flexible price control and industry coordination geographical roadmaps could unlock extra benefits including clustering. Clustering occurs when demand from low-carbon technologies is brought onto the LV network at the same or near time to one another. If it can be predicted clustering could reduce the cost of network reinforcement by about 12%. However, if it cannot be predicted in advance clustering could lead to an increase in network cost of approximately 29%. Locally-led plans should be supported to identify and secure these opportunities and reduce the cost of the net zero transition.



Your views

It's important our stakeholders help shape our approach to the decarbonisation of heat challenge, and how we secure a fair transition. SSEN is seeking your views and response to the following 10 questions:



- Do you agree with our approach to heat decarbonisation?
- What are the main barriers to the adoption of zero-emission heating technologies?
- What benefits of zero-emission heating would attract you to switch?
- Do you support the actions and principles we plan to embed to support heat decarbonisation?
- Does this strategy provide you with sufficient information about the actions we will take?
- 6 What further information would help you as a stakeholder?
- What innovations or best practices should we be investigating?
- What actions are required to secure a fair, equitable and inclusive transition?
- 9 Are there other actions the UK and Scottish Governments, Ofgem and industry should take to accelerate this transition?
- 10 Is there anything else you would like to add?

Please visit <u>ssen.co.uk/heat</u> to provide your feedback to this Heat Strategy Proposal

Next Steps

The UK's net zero target requires change, and rapid progress, in how we heat our homes and businesses.

Realising these targets will require engagement and collaboration with a wide range of stakeholders. Plans that benefit from local input and leadership provide a pragmatic means of turning ambition into action. The Prime Minister set out that by the end of the next regulatory price control period (2023-2028) the UK should be installing 600,000 heat pumps a year, a significant increase on the 30,000 installed in 2020. By 2030 the Scottish Government is aiming for over 1 million homes to have zero emission heating systems.

The challenge of decarbonising heat will run concurrently with decarbonising transport. This consultation will shape SSEN's approach and the principles we embed as we support the heat decarbonisation ambitions of the communities we serve.

Following engagement with our stakeholders we will published an updated strategy on the approach we will take in supporting a secure, fair and cost-effective transition at a pace the net zero challenge demands.



Your views are critical in delivering a fair transition to decarbonised heat

Please visit <u>ssen.co.uk/heat</u> to give your views on our Heat Strategy Proposal

Engage with us

For any queries or to request further information, please contact us on:



stakeholder. engagement@sse.com



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