

Social Housing Net Zero Heat Fund: Q1 2022

December 2022

Introduction

This document produced by the Energy and Climate Change Directorate in the Scottish Government summarises the projects supported by the Social Housing Net Zero Heat Fund.

The Social Housing Net Zero Heat Fund offers capital grant funding to support social housing landlords across Scotland to install zero emission heating systems and energy efficiency measures.

The fund also provides resource support to enable the building of a pipeline of investment ready projects in future years, further accelerating investment in energy efficiency and zero emission heat in social housing.

The document includes a series of one-page summaries for each of the projects supported by the Scottish Government through the Social Housing Net Zero Heat Fund. In future this scheme will be managed by Heat and Energy Efficiency Scotland, which launched in October 2022.

For questions relating to the projects summarised in this document or fund enquiries, please direct these to netzerosocialhousing@gov.scot.

Social Housing Net Zero Heat Fund

Project Title: Moray Council off-gas electrification of heat

Project Organisation:

Moray Council

Technology type(s):

Air Source Heat Pump; Solar PV; Batteries

Location:

Moray Council

Grant value:

£1,349,849

Predicted completion date:

30/11/2022

Project description:

Replacing existing heating systems in 121 properties with combination of ASHP, solar PV and battery storage.

This project across Moray will be focussed on renewable generation and electrification of heat with a holistic whole energy systems approach. Up to 121 socially rented properties will have a combination of measures depending on property size and archetype.

The low carbon technology combination will replace a range of inefficient heating systems including solid fuel(coal) back boilers, electric panel heaters and electric storage heaters and so would have a significant impact in reducing the risk of fuel poverty with the communities and improving householder comfort.

The project will address the problem of decarbonising heat in smaller, hard to treat domestic properties and schools where an air source heat pump wouldn't be technically or economically feasible. Infra-red panel heaters would be powered using the electricity generated from the solar PV arrays, with the batteries allowing for more localised benefit and therefore the decarbonisation of heat.

Tenant advice and support as well as tariff and supplier switching support will be provided to ensure householders understand the new systems and how to get the most out of them/ Advice on how the systems interact with each other and how to maximise PV generation and ensure maximum efficiency of the heating systems will be provided through a range of communication methods.

Project Title: Carron Estate ASHP Heat Network Project

Project Organisation:

NG Homes

Technology type(s):

Air Source Heat Pump; Solar PV

Location:

Glasgow City Council

Grant value:

£3,695,187

Predicted completion date:

30/07/2022

Project description:

Installation of ASHP system to replace existing electric wet system in 314 homes in tower blocks.

This project will see NG Homes installing ASHPs into seven tower blocks in the Springburn area of Glasgow, North of Glasgow City Centre. There are four 16-storey high –rise tower blocks and three 9-storey tower blocks situated on the Carron Estate.

The 314 dwellings within the blocks have a mixture of ‘old’ inefficient electric storage and electric wet systems, which are expensive to run.

The project plan to install a Commercial-Grade Mitsubishi Ecodan CAHV Monobloc Air Source Heat Pump (ASHP) system which will be connected to an underground district heat network that will serve all seven blocks. The heat network will be pre-insulated pipework connected to insulated steel risers through each of the blocks. Insulated copper pipework will form the lateral pipework into each of the dwellings.

The system will benefit from the installation of solar PV onto three of seven blocks.

Project Title: Moray and Aberdeenshire Heat Pumps 2021

Project Organisation:

Osprey Housing

Technology type(s):

Air Source Heat Pump

Location:

Moray and Aberdeenshire

Grant value:

£342,441

Completion date:

30/05/2022

Project description:

Replacing existing heating systems in 61 properties with air source heat pump & radiator system.

All the properties contained within this project currently have a heating system consisting of storage heaters in the main living areas (hall, lounge, kitchen) and panel heaters elsewhere. These systems utilize a dual rate tariff, and hot water is also heated with the off-peak electricity. There is no access to the gas network from any of these sites.

The project will replace these systems with an air source heat pump and radiator system, which will have a radiator in each room, and will be controlled by a room thermostat and programmer. This system will include a new hot water cylinder, also heated by the air source heat pump

These properties have been selected for this project as there has been concerns repeatedly raised by tenants regarding the effectiveness and the affordability of the current heating systems. A year long project monitoring the energy usage of these homes, and recording tenants' experiences was carried out to verify these concerns.

Project Title: Decarbonisation and Renewables Demonstrator Project

Project Organisation:

Dumfries and Galloway Housing Partnership

Technology type(s):

Air Source Heat Pump; Solar PV; Batteries.

Location:

Dumfries and Galloway

Grant value:

£1,481,340

Predicted completion date:

30/08/2022

Project description:

Replacing solid fuel heating in 101 properties with combination of ASHPs solar PV panels and battery storage.

The project involves upgrading 101 solid fuel properties through the installation of ASHPs, solar PV panels and battery storage technology to decarbonise heat provision.

The project has been designed to ensure those most likely to be in or at risk of fuel poverty and living in properties that are the least energy efficient are included. The tenant group comprises elderly individuals within rural and remote areas- a demographic that would benefit considerably from a reduction in utility bills and access to a greater discretionary income.

The insight gained from this pilot will allow Dumfries and Galloway Housing Partnership to take forward a long-term plan of decarbonisation.

Project Title: Hebridean Heat Pumps

Project Organisation:

Hebridean Housing Partnership

Technology type(s):

Air Source Heat Pump

Location:

Comhairle nan Eilean Siar

Grant value:

£1,503,448

Completion date:

30/04/2022

Project description:

Replacing storage heating systems and inefficient electric boiler systems with new ASHP central heating systems.

HHP upgraded 192 properties previously heated by storage heating or inefficient electric boilers in houses and flats with new air source heat pump systems.

Both heating systems have had issues with affordability and controllability. Those with storage heating are on restricted meters, which makes it difficult to switch suppliers. The non-heating tariff is excessive which exacerbates the problem. Systems have been problematic and costly since installation and are not low carbon.

The Air Source Heat Pumps are intended to both reduce carbon emissions and through reduction in energy use and give tenant's more control over heating their homes.

Project Title: Falkirk Council – Off-Gas Villages – Energy Efficiency Programme

Project Organisation:
Falkirk Council

Technology type(s):
Air Source Heat Pump; Solar PV; Batteries

Location:
Falkirk Council

Grant value:
£298,273

Predicted completion date:
30/11/2022

Project description:
Installation of ASHP, Solar PV and Battery storage into 28 properties.

This project will see 28 properties, across four rural villages, benefit from upgrade of existing heating systems with a highly energy efficiency system that incorporates Air Source Heat Pump Technology alongside Solar PV and Battery Storage.

The technologies installed will include the Vaillant aroTHERM range ASHPs with the VRC 700 weather compensating controller. The solar PV panels installed will be the Trina Residential Solar Panels (310w) SOFAR Solar Energy Storage Inverter ME3000SP; and Battery. The ME3000SP is an AC coupled bi-directional battery converter. ME3000SP helps to achieve optimal usage of renewable energy. The Trina Solar Residential Module integrates various technologies like half-cut and multi busbar (MBB) cells. MBB can shorten over 50% of the current conduction distance and thus lower the internal ribbon resistance loss.

Project Title: Rural Stirling off-gas electrification of heat

Project Organisation:

Rural Stirling Housing Association

Technology type(s):

Air Source Heat Pump; Solar PV; Batteries

Location:

Stirling Council

Grant value:

£486,357

Completion date:

18/07/2022

Project description:

Replacing the existing heating systems in 30 properties with a combination of air source heat pumps, solar photovoltaics and battery storage.

The project focuses on renewable generation and electrification of heat with a holistic whole energy systems approach. 30 social rented properties around Aberfoyle will have energy efficiency measures installed, depending on the property size and archetype.

The low carbon solution replaces a range of inefficient heating systems including solid fuel(coal) back boilers, electric panel heaters and electric storage heaters ensuring significant impact in reducing fuel poverty and improving householder comfort.

The project addresses the problem of decarbonising heat in smaller, hard to treat domestic properties and accelerating the decarbonisation of heating in off gas properties.

Project Title: 107 Niddrie Road Project

Project Organisation:
Southside Housing Association

Technology type(s):
Air Source Heat Pump

Location:
Glasgow Council

Grant value:
£128,618

Predicted completion date:
30/07/2022

Project description:

Retrofit of 8 tenement flats to Passive Haus (EnerPHit) standard.

This project applies Passive Haus principles to the retrofit of eight pre 1919 sandstone tenements in the south side of Glasgow.

All 8 flats were acquired by Southside Housing Association and provided a unique opportunity to progress a deep retrofit. The project aims to assess the scalability and replicability and share lessons learned for Scotland's wider pre-1919 tenement stock.

The project saw the installation of insulation and air tightness measures alongside triple glazed windows. Air source heat pumps were installed on in the 4 lower storey flats with the upper 4 flats remaining on gas and project will collect data about how they compare. Waste water heat recovery systems have been installed to capture and recycle the heat in water from baths, showers and the kitchen sink and alongside mechanical ventilation with heat recovery.

To learn wider lessons for tenement retrofit, the project is being thoroughly evaluated by a research partnership resourced by the Scottish Funding Council.

Project Title: Heating Upgrades – Bank Street, Alloa

Project Organisation:

Ochil View Housing Association Ltd

Technology type(s):

Air Source Heat Pump

Location:

Clackmannanshire Council

Grant value:

£25,767

Predicted completion date:

30/11/2022

Project description:

Replacing existing heating systems in 5 properties with an ASHP & radiator system & installation of internal wall insulation.

This project will install ASHPs in 5 properties in Alloa replacing the existing electric storage heating with ASHPs.

The project will also involve the installation of internal wall insulation to all properties which are traditional sandstone buildings with no existing insulation. By combining these measures, the Ochil View HA aim to significantly improve the energy efficiency of these properties.

Project Title: Orkney Social Housing Project

Project Organisation:
Orkney Islands Council

Technology type(s):
Air Source Heat Pump

Location:
Orkney Islands Council

Grant value:
£183,869.90

Predicted completion date:
30/11/2022

Project description:

Replacing the existing heating systems in 16 properties with Air Source Heat Pumps systems.

The project will look at replacing the old oil and solid fuel wet central heating systems with modern air to water heat pumps. The properties are either semi-detached bungalows or two-story semi-detached houses spread over Orkneys' Mainland and one outer island.

With no mains gas on Orkney heat pumps are a good option for replacing old outdated heating systems to provide improved comfort and efficiency for householders. The installation of heat pumps also helps move these properties to a zero emission heating solution. The project allows the Council to tackle the remaining oil and solid fuel heating systems in the housing stock, move further towards the electrification of Orkney's heating system and meet climate change aspirations.

Project Title: DGHP Cavity Wall Insulation

Project Organisation:

Dumfries and Galloway Housing Partnership

Technology type(s):

Cavity Wall Insulation ("Fabric First" Energy Efficiency only project)

Location:

Dumfries and Galloway Council

Grant value:

£327,525

Predicted completion date:

31/08/2022

Project description:

Installing cavity wall insulation (CWI) across 397 properties within DGHP's housing stock

This project comprises the extraction of defective cavity wall insulation and CWI re-fill across 397 gas and electrically-heated properties within DGHP's housing stock. The programme forms phase 1 of a longer-term programme designed to improve the fabric of 700 properties, ensuring a "fabric first" approach that will be critical in enabling future investment in low carbon heating solutions.

The project has been designed to ensure those most likely to be in or at risk of fuel poverty and living in properties that are the least energy efficient are included. The vast majority of the initial homes selected for intervention are failing the current Energy Efficiency Standard for Social Housing (EESH) (with an average SAP band of 53) and are located within areas with high levels of deprivation. The tenant group comprises vulnerable and elderly individuals within rural and remote areas.

DGHP will work with Warmworks who will manage all customer communication and engagement, including the provision of energy and tariff changing advice delivered to tenants as part of an end-to-end service designed to improve the use of management of heat in the properties.

Project Title: Waverley HA EESSH Fabric Upgrades Programme

Project Organisation:

Waverley Housing Association

Technology type(s):

Cavity Wall Insulation; Underfloor Insulation; Loft insulation ("Fabric First" Energy Efficiency only project)

Location:

Edinburgh

Grant value:

£140,000

Completion date:

31/06/2022

Project description:

Installing "fabric first" energy efficiency measures into 56 properties, enabling future investment in low carbon emission heating

The project involves the installation of fabric improvement measures allowing tenants to benefit from energy savings. The initial address list comprises 21 of Waverley Housing's least energy efficient properties – those with an EPC rating of E or F – with an additional 35 homes being targeted for underfloor insulation.

Waverley HA intent to use the Q-Bot system for properties where underfloor insulation is recommended. Q-Bot is a robotically-applied foam insulation system which reduces disruption and is particularly apposite for vulnerable tenants.

Waverley HA will work with Warmworks who will manage all customer communication and engagement, including the provision of energy and tariff changing advice delivered to tenants as part of an end-to-end service designed to improve the use of management of heat in the properties.

Project Title: Aberdeenshire Council - Steps to Net Zero for Hard-to-Treat Properties

Project Organisation:
Aberdeenshire Council

Technology type(s):
High retention storage heater; internal wall insulation; solar PV

Location:
Aberdeenshire Council

Grant value:
£2,523,860

Predicted completion date:
30/11/2022

Project description:
Upgrading of 120 hard to treat properties with Internal Wall Insulation, High Retention Storage Heaters and Solar Panels

The project represents the scaling up of an existing Aberdeenshire Council programme for carrying out works to void properties. These are all hard to treat properties, typically with stone cladding making both External and Cavity Wall Insulation unsuitable. Internal Wall Insulation is therefore the appropriate option for insulating walls.

The properties included are all vacant properties owned by Aberdeenshire Council, in locations across Aberdeenshire. They comprise a mix of houses and flats. All are properties for which the appropriate approach to wall insulation is IWI.

The current heating system in each home includes a mix of electric storage heating and oil and gas fired central heating. Energy efficiency measures will include internal wall insulation, loft insulation, under-floor insulation room-in-the-roof insulation double or secondary glazing.

High Heat Retention Storage Heaters and – where applicable to the property - Solar PV will be installed alongside the energy efficiency measures wherever the existing system is in need of replacement.

Project Title: Net Zero Heat Project, Kirkbank, Auchmithie

Project Organisation:

Angus Housing Association

Technology type(s):

Air Source Heat Pump

Location:

Scottish Borders Council

Grant value:

£550,149

Completion date:

06/05/2022

Project description:

Upgrading 32 properties through the installation of air source heat pumps (ASHPs), solar photovoltaic (PV) panels and battery storage technology.

The project upgraded 33 properties through the installation of air source heat pumps (ASHPs), solar photovoltaic (PV) panels and battery storage technology to decarbonise the heat provision in these homes and bring further benefits to tenants in terms of utility bill savings. The properties were heated by inefficient, traditional storage heating systems and twin immersion dublo hot water cylinders, which all tenants had said were expensive to run.

The project had been designed to ensure those most likely to be in or at risk of fuel poverty and living in properties that are the least energy efficient are included. The homes selected for intervention are failing the current Energy Efficiency Standard for Social Housing (ESSH) and are located within a rural area; resulting in additional travel spend to allow householders to access vital amenities, further exacerbating the difficulties tenants face in heating their homes. To ensure the newly installed heating systems perform as effectively as possible, underfloor insulation was installed where required.

This project was the initial phase in Angus Housing Association's drive to contribute towards Scottish Government's fuel poverty and net zero targets. The insight gained from this pilot will allow them to take forward a long-term plan of decarbonisation, with tenant outcomes at the centre of their considerations.

Project Title: BISF properties upgrade: Newarthill & Newmains

Project Organisation:

North Lanarkshire Council

Technology type(s):

External Wall Insulation ("Fabric First" Energy Efficiency only project)

Location:

North Lanarkshire

Grant value:

£275,500

Predicted completion date:

30/03/2022

Project description:

Installation of External Wall Insulation into 20 properties with poor energy ratings

This project aimed to improve energy efficiency measures in non-traditional semi-detached hard-to-treat BISF properties.

BISF properties are steel constructed 3-bedroom semi-detached house types. Property type is steel framed with the steel sitting within the wall cavity with plasterboard lining to the internal walls. Original roof finish was profiled asbestos cement which has been replaced as part of previous works by the council.

The property type is recognized as suffering from poor energy efficiency with EPC recorded as low as band E and original external wall values assessed as being between 1.48-1.68W/m²k. The properties are all heated by gas condensing boilers with individual TRVs on radiators and house thermostat. Proposal relates to 20 properties receiving external wall insulation improving the u-value of the walls to 0.17 and retrofit solar PV.

As well as pre and post EPCs, the project will involve each property being contacted by council staff to ensure residents are aware of how to most effectively use their heating systems in addition to receiving their current energy tariff and the provision of advice on how to prevent condensation advice based on the increased energy efficiency of the properties.

Project Title: Mackenzie Garden's Zero Emission Heating Project

Project Organisation:

Grampian Housing Association

Technology type(s):

Air Source Heat Pump; solar PV

Location:

Aberdeenshire

Grant value:

£306,534

Predicted completion date:

15/12/2022

Project description:

Upgrade 23 properties through the connection to a commercial Air Source Heat Pump Heat Network alongside the installation of solar photovoltaic panels and battery storage.

The project will see a zero-emission, Commercial Air Source Heat Pump installed in a housing scheme in Turriff, Aberdeen. It will be connected to individual properties via a heat network. The scheme comprises of 23 dwellings, all social housing tenants.

Additional Energy Conservation Measures (ECMs) will also be installed as part of a PAS2035 retrofit programme including Solar PV Panels; Battery Storage; Cavity Wall insulation; and Loft insulation.

The technology option identified, seeks to not only reduce carbon emission but expects to reduce tenants' energy bills. In addition to the ECMs due to be installed, a dynamic metering and billing system and thermostatic heat controls will also be installed.

Solar energy will be stored and used to reduce energy costs for tenants, with any excess energy been fed back into the grid or provisioned for use in other GHA housing stock nearby.

The system design will also consider the potential for adding additional properties in the future, with the ASHP system designed to allow heat pump modules to be added.

Project Title: Cairn Housing Association – Whole House Retrofit

Project Organisation:

Cairn Housing Association

Technology type(s):

Air Source Heat Pump; solar PV; battery storage

Location:

Highland

Grant value:

£92,813

Predicted completion date:

30/11/2022

Project description:

Installation of energy efficiency measures to Enerphit standards in 2 properties

This project will install ASHP, solar panels, battery storage into 2 properties which will provide a zero carbon heating and hot water solution throughout.

Currently, both houses have a mix of storage heaters and panel heating, along with a hot water cylinder in a cupboard upstairs which provides hot water via immersion. Additionally, energy efficiency measures will be installed, which will take properties to EnerPhit standard which is the Passivhaus standard for renovated buildings.

These properties were built in the 1950s of traditional construction but irregular cavity width with no wall insulation.

Cairn Housing Group will also work with Changeworks to provide independent monitoring and evaluation to gauge the thoughts and experiences of the tenants throughout the project.

Project Title: Cairn Housing Association – Communal Ground Source Heat Pump

Project Organisation:

Cairn Housing Association

Technology type(s):

Ground Source Heat Pump; solar PV;

Location:

Perth & Kinross

Grant value:

£456,184

Predicted completion date:

30/11/2022

Project description:

Installation of Ground Source heat pump array for 35 properties

This Project will install a communal Ground Source Heat pump array for 35 mixed properties. The project will involve replacing the old electric storage heaters that are currently in place with a new wet radiator system. A feasibility study has been completed and is based upon removal of the current heating system and replacement with a ground source heat pump solution to meet the full heating and hot water load required. The project also includes Solar PV for the bungalows and a full glazing upgrade for all properties.

Cairn HG will work in partnership with Changeworks to deliver all stages of the project. Changeworks will provide overall project management, procurement support and an engagement strategy as well as technical support and specification with reference to ground source heat pumps. Changeworks will also provide tenant support, monitoring and analysis of system performance through a dedicated monitoring & evaluation team.

Project Title: Installation of high heat retention storage heaters, solar panels and battery storage to Cliffview Court Arbroath and St Drostans Court Brechin

Project Organisation:
Angus Council

Technology type(s):
High Retention Storage Heaters; solar PV; Batteries

Location:
Angus

Grant value:
£212,326

Predicted completion date:
30/11/2022

Project description:

Installation of High Heat Retention Storage Heaters and other energy efficiency measure into 26 properties

Angus Council will install high heat retention storage heaters, solar panels and battery storage into 26 properties. These buildings are all end/mid terraced bungalows which currently have electric storage heaters installed.

The project has been developed as a direct response to issues raised by tenants, who reported inefficient heating systems and the increased costs of heating their homes.



© Crown copyright 2022



This publication is licensed under the terms of the Open Government Licence v3.0 except where otherwise stated. To view this licence, visit nationalarchives.gov.uk/doc/open-government-licence/version/3 or write to the Information Policy Team, The National Archives, Kew, London TW9 4DU, or email: psi@nationalarchives.gsi.gov.uk.

Where we have identified any third party copyright information you will need to obtain permission from the copyright holders concerned.

This publication is available at www.gov.scot

Any enquiries regarding this publication should be sent to us at

The Scottish Government
St Andrew's House
Edinburgh
EH1 3DG

ISBN: 978-1-80525-367-9 (web only)

Published by The Scottish Government, December 2022

Produced for The Scottish Government by APS Group Scotland, 21 Tennant Street, Edinburgh EH6 5NA
PPDAS1211062 (12/22)

W W W . g o v . s c o t