

# **Low Carbon Infrastructure Transition Programme: March 2023**

**Energy and Climate Change Directorate**

**April 2023**

## Introduction

This document produced by the Energy and Climate Change Directorate in the Scottish Government summarises the projects supported by the Low Carbon Infrastructure Transition Programme (LCITP).

Launched in 2015, the LCITP was a collaborative partnership led by the Scottish Government, working with Scottish Enterprise, Highlands and Islands Enterprise, Scottish Futures Trust and Zero Waste Scotland. The programme aimed to stimulate commercial interest and investment and maximize Scotland's vast potential in the low carbon sector whilst contributing to the positive progress of the Scottish Government in reducing Scotland's Greenhouse gas emissions. The LCITP is now closed to new applications.

The document includes a series of one-page summaries for each of the capital projects supported by the Scottish Government through the LCITP.

For questions relating to the projects summarised in this document or fund enquiries, please direct these to [LCITP@gov.scot](mailto:LCITP@gov.scot).

# The Low Carbon Infrastructure Transition Programme: Capital Projects

## Blackwood Grey Fleet to Green Fleet Project

Project Organisation:

**Blackwood Care Homes**

Technology type(s):

**Rooftop solar system and battery storage system**

Location:

**Blackwood's Broom Court Care Home, Stirling**

Grant value:

**£122,758**

Completion date:

**March 2017**

Project description:

The project provides a best practice example of both behind-the-meter renewables and energy use in the UK care sector. The micro-energy system installed at each site consists of a solar photovoltaic system and home battery arrangement. Residents have achieved reduced energy bills and the national grid has benefitted from reduced loads at a local level.

## Nova Innovation REStore Demonstrator Project

Project Organisation:

Nova Innovation

Technology type(s):

Lithium-ion battery storage system and charger with switching and control system

Location:

Cullivoe Harbour, Shetland

Grant value:

£286,606

Completion date:

31/07/2018

Project description:

The system connects an array of Tesla powerpack systems to the Nova Innovation Shetland Tidal Array and builds on top of the Nova InnovateUK Energy Storage project which trialed a similar system in a lab environment.

The new technology increased the carbon free tidal energy generation from the Shetland Tidal Array by 94,188kW per year, displacing the energy required from the diesel generating Lerwick Power Station. The technology also smooths out the output from the tidal array and is estimated to have increased energy production by 12% and provided carbon savings of approximately 82 tonnes CO<sub>2</sub>e per year.

# Tackling Fuel Poverty and Grid Balancing with Smart Electric Storage Heat

Project Organisation:

Engie

Technology type(s):

Dynamo control technology fitted to existing electric storage heaters

Location:

Glasgow Housing Association Charles Street Development, Glasgow

Grant value:

£420,000

Completion date:

31/08/2018

Project description:

Engie retrofit electric storage heaters in Glasgow Housing Association properties with Dynamo control technology which allowed charging at specific times to suit heating needs. Each room of the property was fitted with a VSTAT room temperature sensor to control the temperature in each room, as well as considering outside weather conditions. VCharges (now OVO Energy) software platform vNet remotely connects storage heaters enabling the energy company to react to changes in system demand and supply and therefore provide additional grid balancing services. Retrofitting the existing electric heaters has resulted in energy bill reductions for end consumers of up to 30% and carbon savings of 2661.7 tonnes CO<sub>2</sub>e pa if a 20% energy reduction is achieved.

## Dundee Low Carbon District Energy Hub

Project Organisation:  
Dundee City Council

Technology type(s):  
District heat network (ground source heat pumps) and solar energy array

Location:  
Caird Park, Dundee

Grant value:  
£3 million

Completion Date:  
30/09/2018

### Project description:

The project installed three ground source heat pumps at the Caird Park site. These heat pumps are powered by electricity generation from a gas CHP unit and provide heat to three buildings at the new Regional Performance Centre for Sport site.

A new Energy Hub was built housing the central control panel and back up gas boilers which generates 100% of its electrical energy demand. 85% of the site's heat demand comes from renewable sources. Solar panels were placed on the roofs of the Energy Hub and new Regional Performance Centre for Sport. The solar thermal system has a heat output of 50kW. Total carbon savings are estimated at 536 tonnes CO<sub>2</sub>e per year or 13,400 tonnes CO<sub>2</sub>e over the course of the project lifetime (25 years).

# SHARC Wastewater Heat Recovery Bandwith Demonstration Project

Project Organisation:

SHARC Energy Company

Technology type(s):

SHARC Energy systems – sewage heat recovery

Location:

Aqualibrium Leisure Centre, (Argyll and Bute)

Grant value:

£517,516

Completion date:

30/09/2018

Project description:

SHARC Energy Company installed a SHARC Energy sewage heat recovery system using a water source heat pump to transfer heat from wastewater into the clean water steam which then heats Aqualibrium Leisure Centre. In addition to the SHARC units, sewer diversion and wet wall excavations and installations took place.

The project is estimated to provide carbon savings of 43% when using brown grid electricity compared to using the existing boiler plant. The calculated total carbon savings from the project are 541 tonnes CO<sub>2</sub>e.



# Fair Isle Unified Low Carbon Electricity Storage and Generation Project

Project Organisation:

Fair Isle Electricity Company

Technology type(s):

Wind turbines, PV solar array, energy storage system, new high voltage system, new diesel generators for back-up power and control system

Location:

Fair Isle

Grant value:

£1.5 million

Completion date:

31/10/2018

Project description:

The following technologies were installed on Fair Isle alongside back-up diesel generators: three new 60kW class type 1 wind turbines; three new solar PV arrays with combined total peak output of 45kW; battery storage and flywheel; new high voltage system; new diesel generators to provide back-up power and redundancy; control system and associated ancillaries. The project serves several users such as Fair Isle Bird Observatory, Scottish Water Treatment Works and Fair Isle Airport and Harbour. Previously, residents relied solely on the diesel system which switched off at night. The project has provided the 55 residents of Fair Isle with stable 24-hour power since the system went live in October 2018.

## Glenrothes Energy Network

Project Organisation:  
Fife Council and RWE

Technology type(s):  
Heat network using steam produced from a CHP (combined heat and power) biomass plant

Location:  
Glenrothes, Fife

Grant value:  
£8.559m

Completion date:  
April 2019

### Project description:

The heat network utilises steam produced from the RWE CHP biomass plant to provide heat to a range of customers including a theatre complex, 33 homes comprising very sheltered housing, 9 business units and Fife Council's corporate headquarters.

The project demonstrates the potential of unused existing infrastructure for heat networks, with the heat output from the RWE Markinch Biomass plant repurposed for district heating. It also demonstrates how the relative strengths of the public and private sectors can be combined through partnering, in tackling climate change. Back up boilers help to cope with peak demand.

# The Stirling Renewable Heat Demonstration Project

## Project Organisation:

Stirling Council, Scottish Water Horizons and FES

## Technology type(s):

Heat network, fuel cell, heat recovery system, heat pump

## Location:

Forthside, Stirling

## Grant value:

£2.1 million

## Completion date:

August 2019

## Project description:

The project installed a new energy centre and district heat network in the Forthside area of Stirling providing low carbon heat to multiple end users such as The Peak Leisure Centre, Forthbank Stadium, Enterprise House and St Modan's High School. The project combines a fuel cell, heat recovery system from Stirling Wastewater Treatment Plant (WWTP) and heat pump to supply heat for the new district heat network.

The project has carbon savings of approximately 381 tonnes per year, a reduction of 30% compared to BAU. Fifty four percent of these savings are as a result of the decarbonisation of heat going to the district heat network and 46% are due to the decarbonisation of electricity powering the WWTP.

## Scottish Power Renewables Grid Forming Algorithm Pilot

### Project Organisation:

Scottish Power Renewables, in partnership with Siemens Gamesa Renewable Energy and Scottish Power Energy

### Technology type(s):

Algorithm connected to a wind farm with 23 turbines and 69MW installed capacity

### Location:

Dersalloch wind farm in South Ayrshire

### Grant value:

£547,000

### Completion date:

November 2020

### Project description:

The project trialed new grid forming technology (Virtual Synchronous Machines) to regulate the frequency and voltage of the power output of Dersalloch wind farm in South Ayrshire. This formed a stable network island and keeps the electricity system balanced, utilising the 69MW output at Dersalloch to restore blacked out sections of the transmission network. This created a sustainable alternative to fossil fuel use in creating a stable electricity system. Estimated carbon savings to the grid from using wind power for Black Start restoration at Dersalloch as an alternative to previous fossil fuel methods are 51.3 million kg CO<sub>2</sub>e per kWh.

# Aviva Low Carbon Infrastructure Project

Project Organisation:

Aviva

Technology type(s):

1.8 MW solar carport with battery storage (700-900 MWh per year) and 50 electric vehicle charging stations

Location:

Pitheavlis building – Aviva Perth office

Grant value:

£1.506 million

Completion Date:

30/05/2021

Project description:

The RenEnergy solar array installed generates enough energy to allow the site to be able to go off-grid and the battery will power the site for five hours each day.

Approximately three quarters of the solar generated energy is used on site, with about a quarter being stored in the Tesla batteries supplied by Tesla.

Fifty electric vehicle charging points were installed for Aviva employees to use which can potentially save 209,241 kg CO<sub>2</sub>e if all spaces are used twice a day. This represents a relative reduction of 80% compared to baseline emissions.

## Queens Quay and Clydebank District Heating Network

### Project Organisation:

West Dunbartonshire Council

### Technology type(s):

Two 2.65MW water source heat pumps, District Heating Network (DHN)

### Location:

Queens Quay by the River Clyde, on the site of the former John Brown Shipyard, Clydebank

### Grant value:

£6.1 million

### Completion date:

October 2021

### Project description:

The project constructed an energy centre housing two 2.65MW water source heat pumps which extract heat from the adjacent River Clyde basin. It also houses a gas-fired backup boiler to provide additional peak demand when required. Initial carbon savings from the project are approximately 409 tCO<sub>2</sub>e in the first year but this is expected to increase to as much as 5705 tCO<sub>2</sub>e by 2040 when more connections are added and the grid decarbonises. The project provides socioeconomic benefits for 1000+ new and existing homes (social and private housing), local businesses, new amenities such as the £14 million care home, £19 million health centre, Clydebank Town Hall & Library and the planned connection of the Golden Jubilee Hospital.

# Scotland Kickstarter High-Power Electric Vehicle Charging Station with Solar Generation Project

Project Organisation:  
Fastned UK Limited

Technology type(s):  
Four 300kW electric vehicle chargers with PV solar canopy

Location:  
Palace Grounds, Hamilton

Grant value:  
£389,292

Completion date:  
31/03/2022

Project description:  
Fastned installed four 300kW EV chargers serving eight bays under a solar canopy at the Palace Grounds site in Hamilton. The project had originally intended to install EV chargers at five sites across Scotland, but was re-scoped to one site at Palace Grounds in Hamilton due to the recent COVID-19 pandemic.

## Generation 5 – Early Years Nursery Programme

Project Organisation:  
Glasgow City Council

Technology type(s):  
Air source heat pump, solar PV and rainwater harvesting

Location:  
Four new build nurseries in Glasgow: Broomhill, Tollcross, Carntyne, Cuthbertson

Grant value:  
£329,313

Completion date:  
30/09/2022

### Project description:

The Generation 5 – Early Years Nursery Programme ensures that four new Early Years Facilities align with Glasgow City Council's carbon reduction ambitions. At each of the four Early Years Centres, air source heat pumps were installed to deliver low carbon heating to the new buildings and solar PV was installed to provide renewable electricity. Metering was installed to monitor the efficiency of the heat pump systems and the generation of PV. Rainwater harvesting was also installed at two of the sites: Broomhill and Cuthbertson.

It is expected that these four projects will achieve a total carbon saving of approximately 29,972 kgCO<sub>2</sub>e pa compared to business-as-usual scenarios.



# BODYHEAT

## Project Organisation:

The Clydeside Initiative for Arts Ltd

## Technology type(s):

Ground source heat pumps, thermal storage

## Location:

SWG3, Glasgow

## Grant value:

£283,479

## Completion date:

October 2022

## Project description:

BODYHEAT uses an integrated energy system to utilise the heat produced by event goers at arts venue SWG3. Heat pumps provide heat and cooling to the two largest event spaces, heat to the foyer, underfloor heating in the large event space (to directly replace gas boilers) and heat to the new graffiti studio. Thermal storage is provided by the closed-loop ground-source borehole array. This project has improved the energy efficiency and decarbonised the heating and cooling of the facility. The project held a launch event in SWG3 on 05/10/2022 to showcase the technology to stakeholders.

# Glen Mhor Heat Project

Project Organisation:

Glen Mhor Ltd

Technology type(s):

Energy centre with 1MW water source heat pump

Location:

Glen Mhor Hotel, Inverness

Grant value:

£1,401,500

Predicted completion date:

Spring 2023

Project description:

The project will install and commission a new energy centre which will house a 1 MW water source heat pump and use water from the River Ness to supply heat to the Glen Mhor Hotel in Inverness. It is hoped that additional connections to the heat network may be feasible in the future, such as connecting a planned Brewery and Visitor Centre development at the hotel as well as a nearby Church of Scotland and social housing development. However, none of these connections have been confirmed at this stage.

The project is expected to reduce emissions by approximately 730 tonnes CO<sub>2</sub> pa and commission in Spring 2023.

# Mackie's Limited Low Carbon Biomass / Absorption Chilling Refrigeration System Project

Project Organisation:

**Mackie's**

Technology type(s):

**Biomass boiler and absorption chiller**

Location:

**Westertown Farm, Aberdeenshire**

Grant value:

**£2,053,000**

Completion date:

**Spring 2023**

Project description:

The project will install a low carbon, energy efficient absorption chilling system using ammonia, a natural refrigerant gas, and heat from connected biomass boilers. The effect is one of 'chilling with heat'. It is anticipated that the system will reduce Mackie's of Scotland's refrigeration-related electricity needs by up to 80%. This is Scotland's first fully working and commercial sized biomass/absorption chilling demonstrator plant, the success of which Mackie's and the Scottish Government hope to use to demonstrate to other companies with refrigeration needs, such as the Scottish fish, meat and dairy processing industries.

# Replacement ASHP Heating Project

Project Organisation:

Maryhill Housing Association

Technology type(s):

Air source heat pump installation

Location:

Various mini multi blocks in Maryhill, Glasgow

Grant value:

£1,538,799

Completion date:

30/03/2023

Project description:

The project will install air source heat pump replacement heating systems at 11 'mini multi' housing blocks owned by Maryhill Housing Association in the North of Glasgow, supplying low carbon heat and hot water. The project demonstrates the ability of air source heating systems in medium-rise social housing blocks and acts as an exemplar for other housing providers who own and maintain similar stock.

The project is expected to reduce carbon emissions by approximately 610,574 tonnes of CO<sub>2</sub>e compared to the existing electric storage heaters.

## AMIDS District Heating Network

Project Organisation:  
Renfrewshire Council

Technology type(s):  
Treated water converted into ambient heat directed through underground network and upgraded using heat pumps

Location:  
Paisley, Renfrewshire

Grant value:  
£3,136,968

Predicted completion date:  
March 2023

### Project description:

Renfrewshire Council is developing a state-of-the-art, low carbon heating network at the Advanced Manufacturing Innovation District Scotland (AMIDS) including the National Manufacturing Institute Scotland (NMIS) and the Medicines Manufacturing Innovation Centre. The first of its kind in Scotland, the fifth-generation renewable energy network works by directing treated water into a new energy centre, where low temperature heat is extracted and channelled through a 3.7km underground pipe loop. Heat pumps at each building upgrade this heat to suitable levels for heating and hot water.

The network provides a cost-effective route to low carbon heating, an attractive proposition for major manufacturers locating at AMIDS and over time, it will fund its own running and maintenance, being future-proofed to supply further developments nearby.

## Smart Solar and Storage Project

Project Organisation:  
Aberdeenshire Council

Technology type(s):  
Energy system with solar PV and smart aggregated battery storage

Location:  
Aberdeenshire

Grant value:  
£2,137,500

Predicted completion date:  
March 2023

Project description:  
The project installed and commissioned an integrated energy system, incorporating solar PV and smart aggregated battery storage. This will provide energy to 500 homes and deliver load balancing services to The National Grid.

The project commissioned in March 2023.

## Abbey Ecosse

Project Organisation:

Abbey Ecosse

Technology type(s):

Energy system comprising an anaerobic digestion plant, biogas engine, peak demand biogas boiler, EV chargers, electrical storage and grid export.

Location:

Forss Energy and Business Park, Thurso

Grant value:

£1,111,975

Predicted completion date:

March 2023

Project description:

The Project will install and commission an integrated low carbon energy network, which comprises of a combination of an anaerobic digestion (AD) plant providing heat and power to the site; biogas gas engine; peak demand biogas boiler; type 2 electric vehicle charging; electrical storage and grid export. The Old Poultny Distillery will provide by-products to the AD plant for the generation of biogas. EV charging points will be used by commuters between Thurso and establishments such as Dounreay Nuclear Facility as well as by tourists utilising the North Coast 500 route.

It is estimated that the project will achieve carbon savings of 130,612 kgCO<sub>2e</sub> pa, representing a 86% reduction relative to business as usual.

# Scottish Borders Council Electric Vehicle Charging Infrastructure

Project Organisation:

Scottish Borders Council

Technology type(s):

Electric vehicle charging and solar PV

Location:

SBC headquarters, Newton St Boswells

Grant value:

£473,066

Predicted completion date:

March 2023

Project description:

The project will install an additional 64 electric vehicle chargers at its headquarters and depot site in Newton St Boswells to reduce the council's reliance on diesel and petrol fuelled vehicles. Also included as part of the smart grid project was the installation of solar panelling across the Old School Building & the Vehicle Maintenance workshop which will offset the additional energy consumption created by these new chargers.



# Dundreggan Rewilding Centre Sustainable Energy Programme

Project Organisation:

**Trees for Life**

Technology type(s):

Air source heat pumps, solar PV, batteries, electric vehicle charging points

Location:

Dundreggan Estate, Glenmoriston, IV63 7YJ

Grant value:

**£280,360**

Predicted completion date:

**31/03/2023**

Project description:

The Dundreggan Rewilding Centre Sustainable Energy Programme will improve energy efficiency and provide low carbon energy to the Dundreggan Estate. This will decarbonise the estate's heat and electricity consumption by commissioning air source heat pumps, solar PV, batteries and electric vehicle charging points as well as installing energy efficiency measures.

## Torry Heat Network, Phase 1

Project Organisation:  
Aberdeen City Council

Technology type(s):  
Heat network, Energy from Waste (EfW)

Location:  
Torry, Aberdeen

Grant value:  
£5,787,234.53

Predicted completion date:  
22/06/2023

### Project description:

The project will construct a new district heating network, distributing heat from a Heat Distribution Facility at Tullos Recycling Centre and a heat offtake at the new Energy from Waste plant at Tullos. The project will link to the existing HeatNet district heat network to provide additional connections to domestic, local authority and third sector customers.

LCITP funding is granted for the construction of the new district heating network infrastructure, and the construction of the undertrack rail crossing, enabling district heat network pipework to be routed between Greenwell Road and Tullos Primary School.

## Upper Achintore

Project Organisation:

Link Group

Technology type(s):

Air source heat pumps, zoning controls, thermal efficiency measures, electric vehicle charging points

Location:

Upper Achintore, Fort William

Grant value:

£812,013

Predicted completion date:

30/09/2023

Project description:

The project will utilise low carbon heating and energy efficiency measures within 82 new-build houses at Upper Achintore, Fort William. This will consist of air source heat pumps with zoning controls and windows with high thermal resistance. The project will also prepare the housing development for electric vehicles by installing charging point ducting and an upgraded electricity supply.

# Firbush Outdoor Centre Water Source Heat Pump Project

Project Organisation:  
University of Edinburgh

Technology type(s):  
Water source heat pump

Location:  
Firbush Outdoor Centre, Loch Tay

Grant value:  
£307,768.31

Predicted completion date:  
31/03/2024

## Project description:

The project is part of the wider regeneration of the 50-year old Firbush Outdoor Centre, owned and operated by the University's Sports & Exercise faculty.

A water source heat pump will be installed within a new purpose-built plant room, using heat from Loch Tay. This will serve new wet heating systems (radiators and underfloor heating) as well as providing domestic hot water to the main accommodation building. The site is off the gas grid and the installation of a water source heat pump will replace existing electric heating systems.

## SP Energy Networks Re-Heat

Project Organisation:  
SP Distribution PLC

Technology type(s):  
Air source heat pumps, smart controllers and thermal storage

Location:  
East Ayrshire, East Dunbartonshire and the Highlands

Grant value:  
£1,266,000

Predicted completion date:  
30/07/2023

### Project description:

The project will install air source heat pumps, thermal storage and smart controllers in approximately 100 rural or semi-rural homes across 3 council areas in Scotland: East Ayrshire, East Dunbartonshire and the Highlands. The project will demonstrate how storage and smart controls can reduce the peak demands of heat pumps on energy networks. It is hoped that the demonstrator project will help to facilitate a quicker transition to low carbon heat by reducing the extent to which energy networks require upgrading. SP Distribution PLC is working alongside E.ON Energy Solutions Ltd and delivery partner Derryherk Ltd to deliver the project. Carbon savings of 192 tCO<sub>2</sub>e pa for the 100 houses excluding energy efficiency measures are predicted after its commissioning in July 2023.

## North Lanarkshire Council - Dykehead Road

Project Organisation:  
North Lanarkshire Council

Technology type(s):  
Air source heat pumps, solar PV and electric battery installations

Location:  
Dykehead Road, Airdrie

Grant value:  
£183,330

Predicted completion date:  
Summer 2023

### Project description:

The project will install low carbon space and water heating systems, renewable electricity generation and storage to 19 new-build homes as part of North Lanarkshire Council's New Build Housing Programme. The homes will be part of the social rented stock on Dykehead Road, Airdrie. Each home will be fitted with enhanced sustainability measures namely an air source heat pump and hot water tank in place of a gas combination boiler, 4kW photovoltaic array and 13.5kW battery storage.

The project is expected to produce carbon savings of 10,871.7 kgCO<sub>2</sub>e through the implementation of these enhanced sustainability measures in the 19 new-build homes.

Construction has begun and the project is due to commission in Summer 2023.

# Zero Carbon Affordable Homes

Project Organisation:

LAR Housing Trust

Technology type(s):

Shared-ground loop heat pumps and thermal storage

Location:

Fountainbridge, Edinburgh

Grant value:

£128,283

Predicted completion date:

20/08/2023

Project description:

The project will install a shared group loop array heating system with ground source heat pumps and high efficiency heat batteries to serve 14 properties (10 affordable flats and 4 houses) in Fountainbridge, Edinburgh. The 10 flats included in the project will then be made available for mid-market rent.

The project is predicted to produce carbon savings of 47,560 kg CO<sub>2</sub>e when compared to business-as-usual scenarios when it commissions in August 2023.

# Blar Mhor ASHP Housing Development Project

Project Organisation:  
The Highland Council

Technology type(s):  
Air source heat pump heating systems

Location:  
Fort William

Grant value:  
£1,237,206.38

Predicted completion date:  
13/04/2023

## Project description:

The aim of the Blar Mhor ASHP Housing Development project is to install, commission, operate and demonstrate air source heat pump heating systems at 117 new-build social housing properties in Fort William. Low carbon heating and hot water will be supplied to these households, delivering lower energy bills and an estimated carbon emission reduction of 85.55 tonnes of CO<sub>2</sub> in the first year of operation compared to the use of LPG.

This project will provide a platform to demonstrate air source heat pump heating systems at a new-build social housing development in an off-gas grid location, acting as an exemplar for other housing providers who own and maintain similar stock.



# Edinburgh Airport Low Carbon Energy System

Project Organisation:

**Edinburgh Airport**

Technology type(s):

9.7 MW of solar PV, 1.5 MW electric battery storage and 40 electric vehicle charging points

Location:

**Edinburgh Airport**

Grant value:

**£2,167,000**

Predicted completion date:

**July 2023**

Project description:

The Edinburgh Airport Low Carbon Energy System will reduce the carbon footprint of the airport by commissioning an integrated energy system consisting of 9.9 MW of solar PV, 3.7 MW electric battery storage and 40 electric vehicle charging points.

# Glasgow Harbour

## Project Organisation:

Peel NRE Developments Ltd

## Technology type(s):

Water source heat pumps, high efficiency back up boilers and heat network infrastructure

## Location:

Glasgow Harbour Development

## Grant value:

£5,100,000

## Predicted completion date:

January 2024

## Project description:

The project will install two 1.5MW water source heat pumps which will supply low carbon heat via a heat network. The heat network will serve the Glasgow Harbour Development, notably Yorkhill Quay and Therme spa. The project will commission 15.2MW of high efficiency boilers to meet peak loads. The development is planned to consist of a mix of commercial, residential and leisure end users who will be offered low carbon heat at a competitive rate.

# Millerhill Low Carbon District Heating Project

Project Organisation:

Midlothian Council

Technology type(s):

Construction of energy centre and heat network using heat from the Millerhill Energy from Waste Plant

Location:

Shawfair, Midlothian

Grant value:

£7,407,000

Predicted completion date:

31/03/2024

Project description:

The Project will install an exemplar low carbon district heating network at the new, emerging town of Shawfair which uses heat from the Millerhill Energy from Waste plant to deliver heat to the first plots of the Shawfair development. This initial network will be capable of expansion into the wider Midlothian, East Lothian and Edinburgh areas. The new joint venture ESCO between Midlothian Council, Vattenfall Heat UK and Midlothian Energy Limited has now been established and will lead on securing relevant heat off-take and supply agreements with the relevant parties and establishing an appropriate and a tiered tariff structure for end users.

## The Halo Kilmarnock

### Project Organisation:

The Halo Kilmarnock Ltd

### Technology type(s):

Shared ground array with ground source heat pumps; air source heat pumps; solar PV and smart controls

### Location:

Hill Street, Kilmarnock

### Grant value:

£1,281,992

### Predicted completion date:

16/08/2024

### Project description:

The project will provide low carbon heating and electricity generation to a total of 138 homes in the Halo Kilmarnock development. Ninety six homes will be heated by ground source heat pumps which utilise a shared ground array and forty two homes will be heated by air source heat pumps. Solar PV and smart controls will be installed to optimise system efficiency and allow remote controlling of the heat system. The project is estimated to produce carbon savings of 280 tCO<sub>2</sub>e pa compared to business-as-usual gas boilers in the properties.

## Granton Waterfront Western Villages

### Project Organisation:

The City of Edinburgh Council

### Technology type(s):

District heating system using air and water source heat pumps; solar PV, energy efficiency improvements and enhanced utilities with smart controls for metering and billing

### Location:

Granton Waterfront Development, North Edinburgh

### Grant value:

£4,102,801.20

### Predicted completion date:

31/08/2024

### Project description:

The project will deliver low carbon heat to 444 new-build properties in the Granton Waterfront Western Villages development through the use of nine external air source heat pumps, seven water to water heat pumps and a district heating pipe network to each apartment block. Each property will also be fitted with solar PV, enhanced utilities and fabric improvements.

The predicted carbon savings from the project are approximately 317.8 tonnes CO<sub>2</sub> pa- when compared to a gas heating system.



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