How can I decarbonise and be more energy efficient

Transition Black Isle January 2024

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Development Officer

LOCAL ENERGY SCOTLAND

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About us

The Scottish Government's → Community and Renewable Energy Scheme (CARES) → delivered by Local Energy Scotland

Local Energy Scotland is a consortium comprising:

CHANGEWORKS.

ENERGY AGENCY

scarf ENERGISING COMMUNITIES

energy saving trust

Highland area

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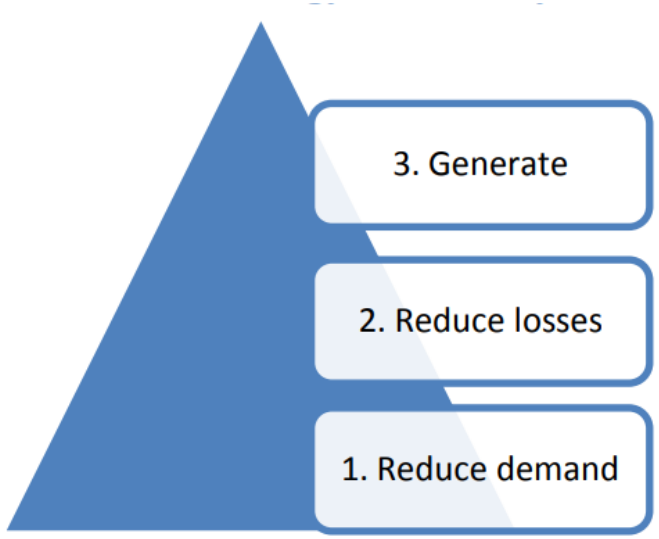
The Energy Hierarchy



Data from the Centre for Sustainable Energy: https://www.cse.org.uk/local-energy

The best way to reduce energy bills will depend on building age, type, and how much it is used.

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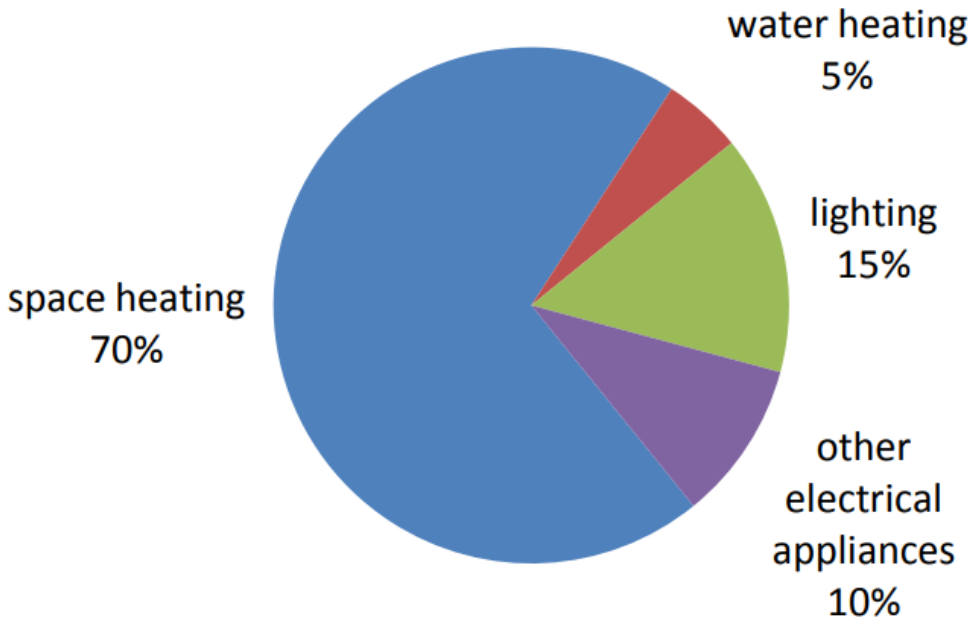
Energy use breakdown in a ‘typical’ community building



Data from the Centre for Sustainable Energy: https://www.cse.org.uk/local-energy

1. Reducing demand

Space and water heating

- Ensure timers, programmers and radiator valves are set correctly for buildings usage
- Insulate hot water pipework

Lighting

- Replace lights with LED bulbs
- Install timers and motion censors

Electrical appliances

- Replace old appliances with more energy efficient ones,
- Look into programmable on/off settings

2. Reducing losses:

Where is the most heat lost from in a typical gas heated, detached two story building?

35% of heat loss from the walls

25% of heat loss from the roof

18% of heat loss from windows

8% of heat loss from the floor

Improvements to the energy efficiency of your building fabric

- Draught proofing
- Secondary glazing
- Loft insulation
- underfloor insulation
- cavity wall insulation – possible in post war buildings
- Double glazed windows
- Internal / external wall insulation – typically required in pre war buildings

Increasing installation cost and disruption to building

3. Generate:

Installing Solar PV

- An unshaded, South facing roof is ideal for maximum electrical output.
- East or West facing roofs could still be considered, but North facing roofs are not recommended.
- A system facing East or West will yield around 15-20% less energy than one facing directly South.

Storing your own electricity: Batteries

- Batteries now have management systems enabling a multitude of potential applications.
- The key use for community buildings is to store excess generation from a solar system

Renewable heat generation: air heating

Heat Pumps will not be cheaper to operate than conventional heating systems in all circumstances. But for specific use cases they can be.

An electric heater has a Coefficient of Performance of 1. Therefore each watt of power consumed produces 1 Watt of heat.

Air source heat pumps have COP of 2 - 5, delivering 2 to 5 times the energy they consume.

How this will affect your energy bill will depend on:

- What system is being replaced.
- The design of the central heating system.
- The type of heat pump
- The average air or ground temperatures
- How your building is used

Renewable heat generation: water heating

- Solar hot water collectors are typically placed on South facing roof, or somewhere between East to West (but not North facing).
- Solar PV tends to be favoured as there is a wider variety of uses for the energy generated and they are simpler to install.

LOCAL SUPPORT

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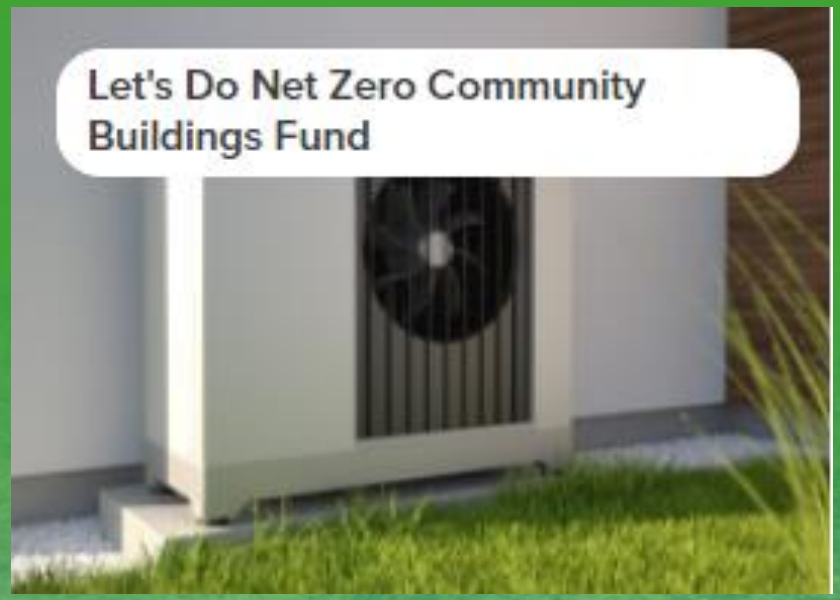
How we can help / current funding round

- Decarbonise community, charity and faith buildings.
- 80% of eligible costs up to a maximum of £80,000 per site.
- Heat, renewables and energy efficiency.
- Subject to funding open to March 2025.
- Projects have 12-months to complete following approval
- Development officer & technical support



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Eligible Buildings and applicants

Example buildlings:

- ✓ Village halls
- ✓ Community centres
- ✓ Community hubs
- ✓ Sports facilities
- ✓ Faith buildings.

- Constituted non-profit distributing community organisations, including organisations with charitable status, that are established and operating across a geographically defined community:
  - ✓ Scottish Charitable Incorporated Organisations (SCIO)
  - ✓ Private Companies Limited by Guarantee (CLG)
  - ✓ Community Benefit Societies (BenCom)
  - ✓ Community Interest Companies (CIC)
- Organisations that are constituted but unincorporated may also apply.

Eligibility: who can use the building?

The building should be used and occupied frequently.

Applicants must demonstrate (via its constituting documents) that:

- **anyone** in the community can use the space or
- that **no-one** is explicitly **excluded** from being able to use the building or
- the building is used by **vulnerable** or **defined groups** stated in the charity's objectives, for example children, women, refugees.

Fund Requirements

Heating requirement

- **You will be installing one of these core measures as part of your current project:**
  - ✓ Heat pumps (air, ground or water source) and heat distribution system including heat emitters, pipework and controls
  - ✓ Connections to a heat network

  or
- **Your building will already have one of the following:**
  - ✓ A heat pump (air, ground or water sourced) and heat distribution system including heat emitters, pipework and controls
  - ✓ A connection to a heat network
  - ✓ Direct electric (storage heating or electric boilers)
  - ✓ Biomass heating.

Improvements eligible for funding

Core measures

- A heat pump (air, ground or water source)
- A connection to heat network
- Solar photovoltaic (PV) panels (if the heating requirement has been met)
- Solar water heating (if the heating requirement has been met)

Add-on measures

- Energy storage – heat/ thermal or electrical
- Insulation – any loft, underfloor or cavity wall insulation
- Secondary glazing
- Draught proofing
- Replacement LEDs bulbs and for appropriate light fittings
- Smart controls.

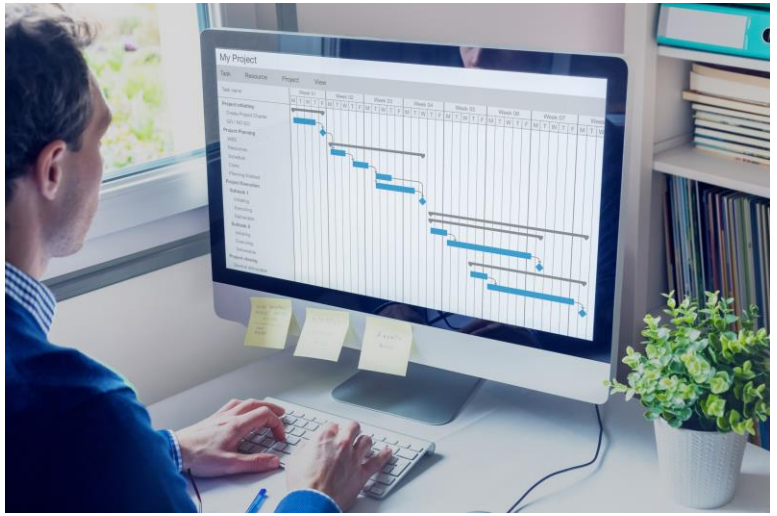
Eligible costs

Capital and installation costs

For example, the cost to install the ‘core’ renewable energy measures and the ‘add on’ energy efficiency and energy storage measures.

Project development costs

For example, building warrants, planning permission, grid connection, design and contractor appointment



CARES Net Zero Community Buildings

Project name: Loch Ness Hub

Technology: 5.2 kWp Solar photovoltaic (PV) system and a 7kW Air Source Heat Pump

Location: Drumnadrochit, Inverness-shire

CARES funding: £15,626 capital grant

Date installed/operational: March 2021

CARES Net Zero Community Buildings

Project name: Cairnlea Parish Church

Technology: 16kw Air Source Heat Pump

Location: Airdrie, North Lanarkshire

CARES funding: £14,180 capital grant

Date installed/operational: December 2021

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Working with contractors & Overcoming barriers to remoteness

- Know your project - tailor to your needs and what will meet them – demand/ scale
- Gather info to get the confidence to say no to things you don't want.
- Find the right people – expos, recommendations, throw the net wide
- Manage expectations – amount of time needed for installers to stay if in a remote area.
- Make it attractive - Other organisations and projects nearby installing? Offer accommodation/hospitality/storage space.
- Persistence is key!

NOT JUST FUNDING

- Technical advisors and consultants support
- Finding installers
- Our website is packed with resources including case studies, reports and downloadable guides
- Sign up to our newsletter!

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Other Funding

- **SP Energy Networks Net Zero Fund -** For communities based or operating within the SP Energy Networks Transmission areas in Scotland. Net Zero homepage.
- **Ofgem Energy Redress Scheme -** Innovation and Carbon Emission Reduction Funds Energy Redress Scheme
- **SCVO** Scottish Funding updates Funding – SCVO
- **Pebble Trust** Pebble Trust | Eligible Projects (thepebbletrust.org)
- **CoOp carbon innovation fund** Innovation-Fund-Guidance.pdf (coopfoundation.org.uk)
- **SSE Sus Dev Fund** Sustainable development fund | SSE Renewables
- **National Lottery** A simple guide to our funding programmes (In Scotland) – The National Lottery Community Fund Scotland Blog (bigblogscotland.org.uk) Scottish Landfund (partner with National Lottery)

Contact Us

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Thank you!

Any questions?

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