Reducing energy consumption in community facilities

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Action Renewables background

- Registered charity since 2003
- Charitable objectives include
  - *Promotion of energy efficiency and renewable energy*
  - *Advance the education of the public in energy efficiency and renewable energy by increasing awareness of the benefits of reducing carbon emissions and of promoting effective ways to make such reductions*. https://actionrenewables.co.uk/charity/
- Commercial subsidiary Action Renewables Energy Trading
- Agent for small scale generators (e.g. solar PV)
- Energy trading – green certificates from renewable generators
- Large scale generator admin services e.g. large turbines, grid connection applications.
- Consultancy projects for clients including feasibility studies and energy audits/action plans.

Overview

- Energy management first steps
- Identifying energy reduction:
  - Building fabrics
  - Electricity
  - Heating
  - Energy management / behaviour
- Sources of support/resources

First steps to annual reviews

- Assess current situation – gather energy data
- Get commitment from senior leaders/ committee/ board – could be providing resources/ funds
- Identify high energy users
- Plan, prioritise
- Take action- includes no and low-cost measures
- Review progress over specific period and annually

Energy reduction opportunities - Building fabric

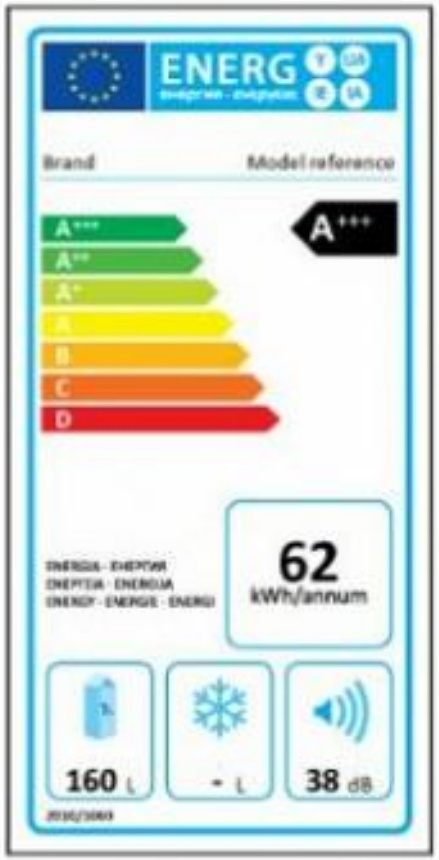
- Seal gaps around windows and doors
- Insulate building attic/roof
- Wall insulation – cavity wall/internal/external insulation
- Floor insulation (disruptive, but consider if other refurbishment work is to be undertaken)
- Install double glazing
- Thermal imaging survey

Energy reduction opportunities - Electricity

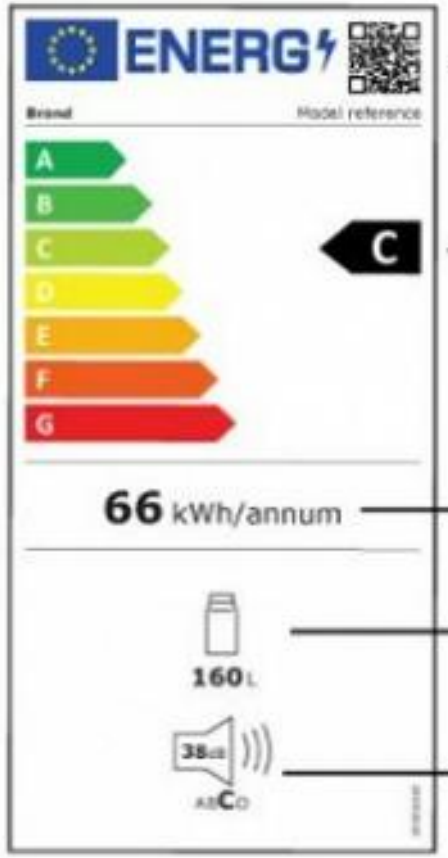
- Install energy efficient lighting – replace e.g. T12 and T8 fluorescent tubes
- Install occupancy/day light sensors
- Check timers when seasons change
- Check appliances are switched off, defrost freezers
- Check age of appliances, develop asset register of equipment and appliances, policy for replacement with A rated appliances
- Time controls on appliances e.g. water boilers
- Check tariff with supplier
- Renewable electricity – e.g. solar photovoltaic (PV)

Energy labels on appliances

Old label



New label



The QR code gives access to more information on the model

The rescaled energy efficiency class for this fridge, an A+++ in the previous label

The annual energy consumption of this fridge is calculated with refined methods

The volume of the fridge expressed in liters (L)

The noise level measured in decibels (dB) and using a four classes scale

The energy labels for a fridge without freezer

Energy reduction opportunities - Heating

- Replace old oil fired boilers – e.g. if over 15 years old
- Replace with condensing boiler
- Switch from oil to natural gas
- Heating controls – improve time scheduling, install room thermostats, zoning, TRVs, time controls on electric hot water tanks
- Point of use hot water heaters
- Insulation of pipework
- Renewable heating systems (biomass boilers, heat pumps)

Energy management / behaviour

- No cost actions
  - Set up an energy team/champion – depending on size of organisation. Look for people who have an interest/understanding. Student members, intern projects etc.
  - Set up an energy management programme
  - Set up a weekly energy monitoring process
  - Carry out site walkaround checks
  - Training of selected staff in energy conservation techniques
  - Operate an energy awareness programme
  - Display energy consumption of the building on notice boards, help improve staff awareness of energy.
  - Include energy in committee/board meetings as an agenda point
  - Report on annual energy performance

Ongoing practical energy management: Checklist

Heating	Lighting	Appliances/equipment
Are heating timers set correctly?	Are lights turned off in unoccupied rooms/areas?	Are computers left on overnight/at weekends?
Are thermostats set to correct time?	Are lights turned on when daylight is sufficient?	Do printers utilize double sided printing?
Has the boiler been serviced annually?	Are occupancy sensors working?	Is equipment labelled so users know how to switch off?
Are there an obstructions to radiators?	Are switches clearly labelled?	Are fridge freezers defrosted at least once/year?
Is pipe insulation intact?	Are external lights timed appropriately?	Are fridges set to correct temperature? (5 degrees)
Is heating and AC on at same time?	Are light fittings clean?	Are other appliances switched off when not in use e.g. audio visual equipment
Are portable heaters being used?		Do water boilers have appropriate timers set?
Any areas too warm or draughty?		Take electric meter reading
Are blinds/curtains closed at end of day/evening?		

Support and Resources

- Northern Ireland Sustainable Energy Programme (NISEP)

https://www.uregni.gov.uk/files/uregni/documents/2023-05/NISEP%20List%20of%20Schemes%202023-2024.pdf

4. Non-Priority – Commercial

Scheme Name	Scheme Description	Target Customers	Scheme Manager and Application Details (if appropriate)
Commercial Energy Saving Scheme	**Technology measures:** ▪ **Grant of 20%** towards the installation of Boiler Replacement, Induction Hobs, Heat Pumps, Heat Recovery, Infrared Heaters, Intelligent Heating Controls, Air Leak Detection, LED Lighting, Solar PV, Steam or Heated Dryer, Turbo Blower, Variable Speed Technologies, and Voltage Optimisation.	This scheme is targeted towards all businesses in Northern Ireland.	**Power NI Energy Ltd** Apply to: Power NI Tel: 0788 0081182 or 0755 1008477 Email: Energysaving@powerni.co.uk

Under the programme, we fund small scale energy generation, initially through solar PV installations. Action Renewables will retain full ownership of the solar system and we will cover all installation and maintenance costs. Action Renewables will invoice the customer pro-rata for electricity generated from the solar panels at a reduced cost compared to grid electricity.

The programme is open to applications from community groups, social enterprises, amateur sports clubs and non-profit organisations.

We will open the programme in the next financial year.
Solar PV Programme - Action Renewables

PV Installation Criteria

All projects supported must be in Northern Ireland.

- In 2022/23 there will be maximum of 12 projects.
- Only open to the charity sector who either own or have a long-term lease on their building. Long term being defined as 5+ years.
- If the applicant is a charity it must be a registered charity in Northern Ireland.
- Applicant must satisfy a feasibility study with a baseload demand greater than 12kW.
- Agree to install a **12kW PV on target property – 3 phase commercial connection**.
- Applicant must sign a rental agreement with Action Renewables.
- If your building is rented or leased, then the landlord must agree to the project. An agreement must also be signed with the landlord in the event of a change of end user or if the landlord sells the property.
- Agreement to proceed and install is at the discretion of the Management and Board of Action Renewables.

Installations will be selected on a first come/first served basis.

Support and Resources

- Lottery fund - National Lottery Awards for All Northern Ireland | The National Lottery Community Fund (tnlcommunityfund.org.uk)
- Power to switch: https://powertoswitch.co.uk/energy-grants/ Allows you to compare tariffs for electricity and gas, free service. Blog posts on energy saving.
- NI Housing Executive: https://www.nihe.gov.uk/community/ni-energy-advice Energy efficiency advice
- Action Renewables: https://actionrenewables.co.uk/ Renewable energy information, blog posts, domestic generators advice.
- Microgeneration Certification Scheme (MCS): https://mcscertified.com/consumers-communities/ explains RE technology, lists MCS approved installers.
- NI Direct: Renewable energy information https://www.nidirect.gov.uk/articles/support-generate-your-own-electricity

Support and Resources

- Centre for Sustainable Energy- Energy survey for community buildings (cse.org.uk)
- AR PV support programme - Solar PV Programme - Action Renewables

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