

# Local Energy Plan for Brae



July 2018

Plan Summary

## A Local Energy Plan for Brae

This Local Energy Plan has been developed to enable the Brae community to look at its existing and future energy needs in terms of power, heat and transport and determine where it sees priorities for action.

It has been created by the community, rather than being developed for them by other bodies (e.g. local authorities or National Government).

The development of the plan is supported by Delting Community Council and has been led by a steering group of residents and representatives from Local Energy Scotland, Home Energy Scotland and Shetland Islands Council.

The Local Energy Plan provides a start in the community's engagement with its energy needs. It offers a focus for immediate opportunities that can be developed in the short term. It also provides scope for longer term planning for further changes in the future.

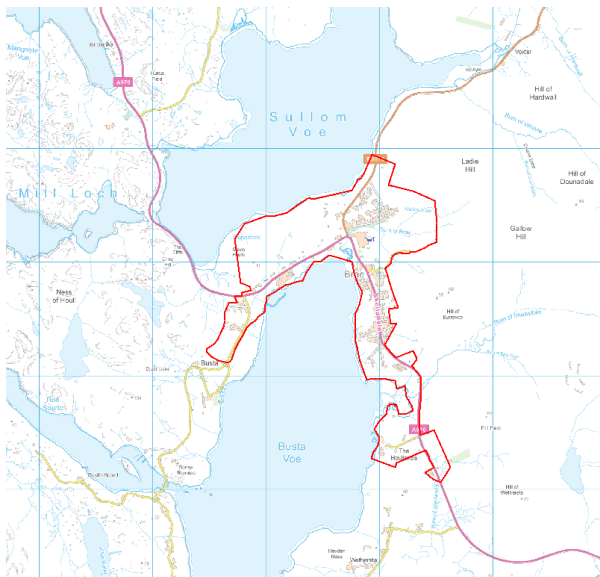


## A 'Whole System' Approach

Our energy needs, and how these are met reliably, cost effectively and without long term environmental consequences, are one of the key considerations for every community.

For this reason the present and future energy needs of a community are most usefully considered in a 'whole system' approach. In this way the overlapping impacts of how we use power, heat and transport can be considered at the same time, rather than in isolation.

In order to apply a 'whole system' approach there needs to be a study boundary to provide a primary area of focus. This does not exclude the linkages with neighbouring areas or opportunities that may be nearby.



## A Community Plan

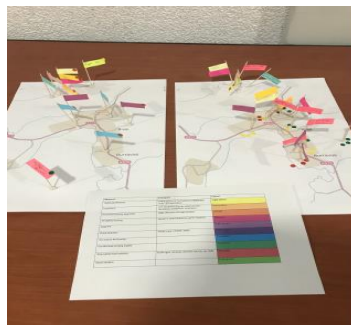
One of the key aims in developing the plan for Brae was to understand the community's needs and aspirations in relation to energy. These have been sought by a combination of:

- working with a local steering group
- workshop sessions with local volunteer ambassadors
- an online survey (receiving a total of 64 responses)

### Community Views

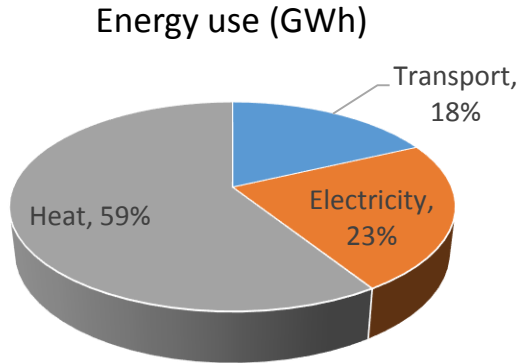
Feedback showed that the community:

- are keen that the Local Energy Plan supports the wider aims of economic resilience, education, good health and well being
- wish to raise awareness of sources of support for energy efficiency in homes and businesses
- encourage the use local renewable resources (where practical) to generate local energy needs
- are interested in alternative fuelled vehicles (both cars and larger vehicles)



## Energy Use for Brae

The annual estimated total energy demand is shown here.



Source	Annual Energy Use (GWh/yr)	Annual Carbon Emissions (tCO <sub>2e</sub> /yr)
Domestic, <i>of which:</i>	14.7	5,221
Electricity	4.4	1,697
Heating	10.3	3,514
Transport	4.7	1,306
Non-Domestic, <i>of which:</i>	6.8	2,466
Electricity	1.7	526
Heating	5.1	1,940
<b>Total (All Sources)</b>	<b>26.2</b>	<b>8,993</b>

## Challenges to address

In meeting the energy needs of Brae a number of challenges have been identified:

### High levels of fuel poverty

The North Mainland (Brae) has an average fuel poverty rate at 58% (Shetland Islands Council, 2016)

### Inefficient energy consuming housing

88% of dwellings are assessed as being in least efficient rating bands

Almost 65% of dwellings are of timber-frame design

### Predominance of electric heating

67% of dwellings use electric heating; 20% use heating oil

These are fuels with expensive tariffs for households

### Grid constraint for larger local generation assets

Present capacity limits the size of local generation, such as wind turbines, that can be connected to the local grid

### High vehicle ownership

83% of the population are economically active and typically travel to work by car

Over a third of residents in Brae have access to two or more cars/vans

## Proposed Actions – Energy Efficiency

Action	Description	Timescale
<b>Promote energy efficiency and opportunities for support in demand management and resource efficiency</b>	Raise awareness among community in Brae of existing support services available to homes and businesses	Short
<b>Provide support and advice around tariff switching</b>	Offer support and advice to households and businesses regarding electricity tariff switching and maintaining awareness of changes to tariffs in the market	Short
<b>Heating oil club</b>	Promote idea of heating oil club	Short
<b>Continue programmes of fabric improvements and insulation within residential property</b>	Seek funding for ongoing improvement works to insulation and building fabric	Medium

## Proposed Actions – Energy Generation

Action	Description	Timescale
<b>Small scale wind</b>	Explore community opportunity for collective install of turbines	Medium
<b>100 kW wind turbine East of Brae</b>	Explore opportunity for community to become involved in proposed scheme. Discuss with developer potential to supply School and Care Home with output power from the turbine	Short / Medium
<b>Small scale hydro</b>	Carry out feasibility study to assess scope for micro hydro schemes	Short / Medium
<b>Seek to use heat pumps as primary heat source</b>	Seek designs for new build dwellings that use heat pumps as the primary heat source alongside high levels of insulation and fabric. Encourage consideration of air/ground source heat pumps for use in extensive retrofit refurbishment work	Short / Medium
<b>Geothermal heating system</b>	Seek to undertake a feasibility study to look at the potential resource and system design that would be feasible	Medium

## Proposed Actions – Transport

Action	Description	Timescale
<b>Car Club development</b>	Seek opportunity to develop an Ultra Low Emission Vehicle (ULEV) car club. In first instance this may be part of wider Shetland Islands Council scheme	Short / Medium
<b>Hydrogen vehicle development</b>	Explore potential for local hydrogen supply produced via wind turbine fed electricity to provide fuel for hydrogen vehicles	Short / Medium
<b>Electric vehicle development</b>	Explore local opportunities to extend charging point network via local generation. Potential community investment in vehicles (private cars, community mini bus, light goods vehicles)	Medium

## Proposed Actions – Smart Energy Systems

Action	Description	Timescale
<b>Hill of Westersta (proposed wind turbines)</b>	Discuss proposal with local developer. Explore how local demand might be met by turbines reducing constrained output	Short
<b>Smart grid development</b>	Seek understanding of potential development of localised grid management system. Initial exploratory talks with Scottish & Southern Electricity Networks regarding appropriate smart meter designs to be rolled out	Medium

## Further Information

The detailed final Local Energy Plan is available within the community.

A copy of the plan is available for download at:

[www.localenergy.scot/what-is-local-energy/local-energy-plans/brae-local-energy-plan/](http://www.localenergy.scot/what-is-local-energy/local-energy-plans/brae-local-energy-plan/)

The development of the plan has been funded as part of the COBEN project (**CO**munity **BEN**efits of Civic Energy), an EU Interreg (North Sea Region) funded programme with fifty per cent match funding through the Scottish Government's Community and Renewable Energy Scheme (CARES). CARES is delivered by Local Energy Scotland. Technical support and plan development has been undertaken by Wood Environment & Infrastructure Solutions UK Limited. Community consultation support has been provided by Beyond Green Advisors Limited.



