Raasay

Community Climate Change Action Plan

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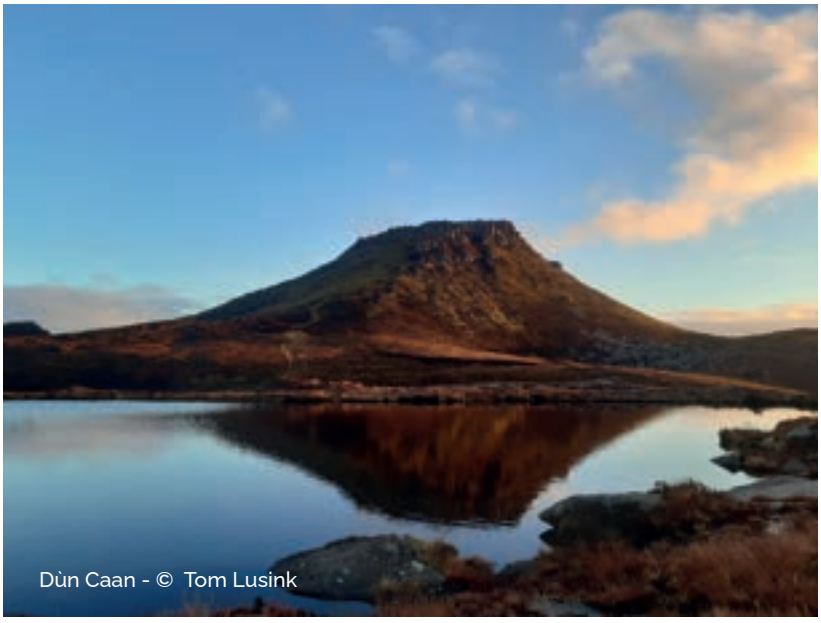
May 2023

Carbon Neutral Islands



Dùn Caan - © Tom Lusink

Carbon Neutral Islands RAASAY

Community Energy Scotland

The Islands Scotland Act 2018 NAN EILEAN

Scottish Government Riaghaltas na h-Alba

RAASAY DEVELOPMENT TRUST

About the plan

The Carbon Neutral Islands (CNI) project is a Scottish Government Programme for Government commitment that aims to demonstrate the climate-resilience and low carbon potential of islands. This Community Climate Action Plan (CCAP) is a community record of existing knowledge and data, and prioritises key actions towards achieving a carbon neutral and sustainable future. This action plan is a 'living document' owned by the Raasay community, which can be reviewed and amended to reflect the progress made on our decarbonisation journey.

Raasay Development Trust (RDT), the local community anchor organisation for the Carbon Neutral Islands Project on Raasay, employs two community development officers who have led on the development of this plan. RDT are a charitable trust established to sustain a diverse range of community assets and develop projects with the aim of improving the island's infrastructure, delivering benefits to islanders, and improving the welfare and sustainability of the community. The trust consists of a board of volunteers working with local development officers.

The Scottish Government commissioned Community Energy Scotland to act as the key delivery partner for the initial phase of the project. A key aim from government is to ensure the community is at the heart of the project. Community Energy Scotland was chosen given their previous experience of engaging with communities and delivering community-led projects.

Acknowledgements

This plan would not have been possible without the support of our key project partners:

Community Energy Scotland (CES) is Scotland's only national charity dedicated to supporting communities across Scotland to develop their own decarbonisation & renewable energy projects. They have supported us in carrying out our energy and transport carbon audit, providing community outreach expertise, networking opportunities, shared learning and facilitation of training opportunities, as well as support in the production of this action plan.

Scottish Communities Climate Action Network (SCCAN) provided a range of training to CNI Community Development Officers (CDOs) and representatives from steering groups and anchor organisations to equip the project members with the skills and confidence to deliver effective engagement events in the island communities.

Sniffer have led on the components of the work on climate resilience and adaptation, including support to prepare climate and coastal change assessments and working with live scribes to create visualisations of island specific issues.

CNI Community Development Officers, Rosie and Tom, would also like to thank the following organisations for their contribution to the development of this Community Climate Action Plan:

- The Raasay Community & Steering group
- Raasay Community groups
- Skye and Lochalsh Housing Association
- Raasay Community Hall
- Scottish Islands Federation
- Youth Scotland
- Highlands and Islands Enterprise
- The other Carbon Neutral Island communities, Local Businesses, Highland Council and CDOs from Barra, Cumbrae, Hoy, Islay and Yell.

Fossil © Ross Gillies

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1. Executive Summary

The Carbon Neutral Island (CNI) project is a Scottish Government Programme for Government commitment focusing on the islands of Raasay, Barra, Cumbrae, Hoy, Islay and Yell to support them to become carbon neutral by 2040. In this first phase of activities, wide ranging baseline carbon audits were carried out for each island which identified key carbon sources and sinks with the aim of stimulating discussion and engagement with the local community. These discussions have helped to identify and shape the key community priorities presented in this island-led action plan in an effort to lower emissions and improve resilience on Raasay.

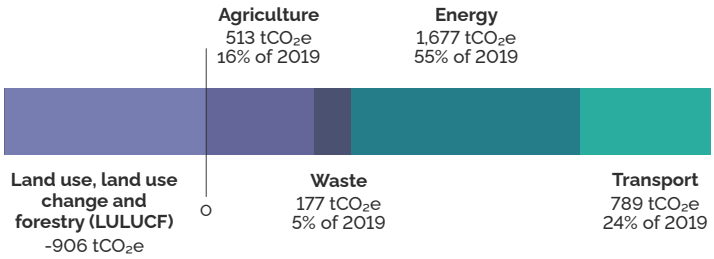
Top priority actions

The actions from the community consultation and engagement events have been split into various sections within this report, however below are the top 5 ranked projects which the community felt most strongly about being delivered as part of the plan:

1. **Insulating and retrofitting houses**
2. **Feasibility into meeting island's food needs locally**
3. **Feasibility into Renewable Projects**
4. **Encourage Biodiversity & Sequestering Environments**
5. **Encourage improved public transport accessibility**

Carbon Audit Overview:

2019 emissions by sector



The graph above gives an overview of estimated emissions from each of the audited sectors: land use, land use change, and forestry (LULUCF); agriculture; waste; energy; and transport. The largest source of emissions come from the energy sector, followed by transportation. Managed land under LULUCF is considered to act as a sink overall, though uncertainties in this sector are significantly higher than for other sectors. Blue carbon habitats (saltmarsh and seagrass in Scotland) are eligible for inclusion in the UK Greenhouse Gas inventory, however significant evidence gaps currently prevent this. A link to each audit report can be found in the appendix at the end of the report.

Next steps

This plan is the first phase of Raasay's detailed exploration into lowering the GHG emissions of the island in order to benefit the quality of life and resilience of our community. It is important that the community continue to review the plan and its actions, as well as adapt it to take into account any changes within the community over time.

Immediate actions which are noted as important for the community following this plan include:

- Allocating lead roles and responsibility for each priority action in order to start pursuing them
- Develop an investment strategy aimed at costing the community climate change action plan and at identifying finance that can be channelled towards the implementation of the Plan.
- Ground truthing of the land use audit and blue carbon habitat assessment
- Ensuring that the implementation of the Plan is driven by the island community and its success does not rely on volunteer action.

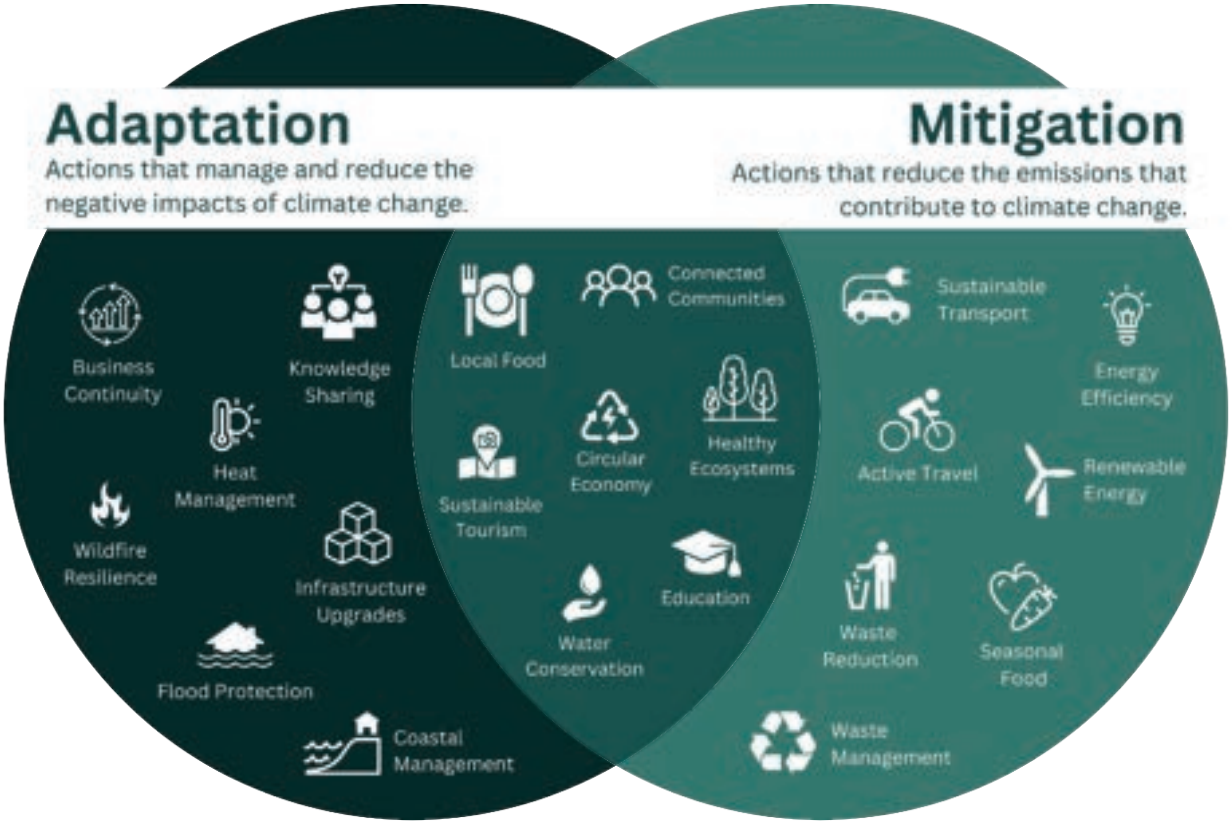
2. Raasay and the Climate Emergency

2.1 Climate Change

Climate change and nature loss are amongst the greatest threats facing our planet. Small, low-lying islands are under threat from climate change and predicted rising sea-levels. Climate change is expected to increase instances of flooding and coastal erosion, whilst simultaneously negatively affecting water supply, food production, health, tourism and accelerating habitat depletion. Scotland has declared a climate emergency and stepped up its climate action and commitments through Scotland's 2019 Climate Change Act – calling for net zero greenhouse gas emissions by 2045. Scotland's climate change legislation also ensures we prepare and adapt to the impacts which are already locked in, including rising sea levels and more extreme weather.

2.2 Benefits of Decarbonisation

While the overall aim of decarbonisation is to address global climate change, at a local level there are direct benefits from community climate actions. Benefits can include reducing costs for households and businesses, healthier people and places and new opportunities for employment and skills development.
This plan aims to address the need for both adaptation actions that manage and reduce the negative impacts of climate change, and mitigation actions that reduce emissions that contribute to climate change. Figure 1 illustrates that adaptation and mitigation often overlap, and both are needed to help reduce risks from changes in climate and weather and increase community resilience.



Adapted from Highland Adapts, available at: https://highlandadapts.scot/

2.3 Island Environment

The Isle of Raasay is situated between the Isle of Skye and the mainland, a 25-minute ferry connection to Sconser, Skye is a lifeline to the island. The name Raasay – or Ratharsair in Gaelic – has Norse origins. It is believed to mean the 'Island of the Roe Deer' but may also come from tidal race islands. Despite its modest size of 13 miles in length and 3 ½ miles across at its widest, there is great diversity in scenery which represents much of the scenery found in the Highlands. Various geological formations are found here including Torridonian sandstone and Gneiss with striking limestone cliffs found on the east coast. A long extinct volcano, Dùn Caan, is the tallest peak of the island at 444m that gives spectacular views to Skye the mainland, and on a clear day – all the way to the Western Isles

A rugged and bare landscape can be found here with few trees, covered in heather, boggy areas, lochs and rocky outcrops. The woodlands on the island consist of ancient temperate rain forests containing birch & hazel - possibly some of the oldest forests in Scotland - and planted monocrop plantations mainly of Sitka Spruce and Larch.

Raasay's variety of landform and conditions gives home to a rich array of flora and fauna, with 3641 species recorded (NBN Atlas, 2021)

Raasay has had people living on the island from as far back at the pre-historic period. Following the MacLeod's support to hide Bonny Prince Charlie in 1746, all buildings on the island were burned to the ground. At the time, the island population was spread across the island, making use of the pieces of better ground. The population of Raasay spiked from its usual 400-500 people to over 1200 in the early 1800s. This was followed by clearances and limited access to land until the Raasay Land Raids of 1922, when the Board of Agriculture for Scotland bought the island for £18,000. The population dipped to 152 in 1972 (MacLeod, 2002).

The majority of the population is now living at the South-West end of the island, around the mining village of Inverarish and Raasay House, the former seat of the MacLeod's of Raasay. The community owns Raasay House, various parcels of land including a community walled garden, shop, Development Trust, Renewables Company, and more to support the future of the resident population.

The impact of humans on this landscape initially seems insignificant but a closer look tells a different story. Red deer and sheep graze the islands expanses, along with abandoned settlements, there is also a disused iron ore mine dating back to WW1. While much of the soils are acidic peat rich there has not been significant extraction of this. Some small-scale forestry operations have taken place. Today a community owned hydro scheme operates using the Inverarish and Mine Burns and supplies power to the grid.

The influence of the Atlantic Ocean and the Gulf Stream creates a mild maritime climate. The summers on Raasay are mild and winters are wet and windy. Year round, rainfall is above the Scottish average (Nature Scot, 2019). The figure below shows climate projections for Raasay that have been modelled by JBA consulting on behalf of Adaptation Scotland based on the Representative Concentration Pathways 8.5 – high emission scenario.

Raasay House - © David Carslaw 2023

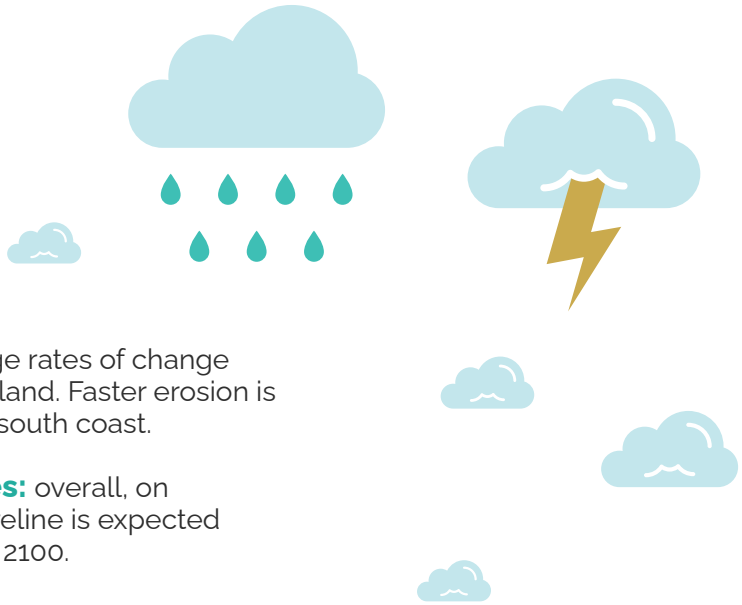
Raasay Climate Predictions

Historic: Annual average rainfall for the past 15 years has been above the historic average.

Future changes: rainfall will intensify annually. Winters may become wetter, and summers only slightly wetter by 2100.

Historic: Annual average temperatures for the past 20 years have been above the historic average.

Future changes: Mean air temperatures will increase across all seasons. By 2100 there could be an increase of up to 5.4 °C in the summer.



Historic: The number of storms, wave heights and intensity has been relatively consistent in the past.

Future changes: Peak wave height is expected to increase. Intensity may increase as these are sustained over longer durations in 2060.

Historic: Average rates of change vary across the island. Faster erosion is observed on the south coast.

Future changes: overall, on average, the shoreline is expected to retreat 10m by 2100.

Historic: 60% of records of annual average mean sea level between 2010 and 2015 were above the historic annual average.

Future changes: sea levels will rise. This could be up to 1m by 2100.

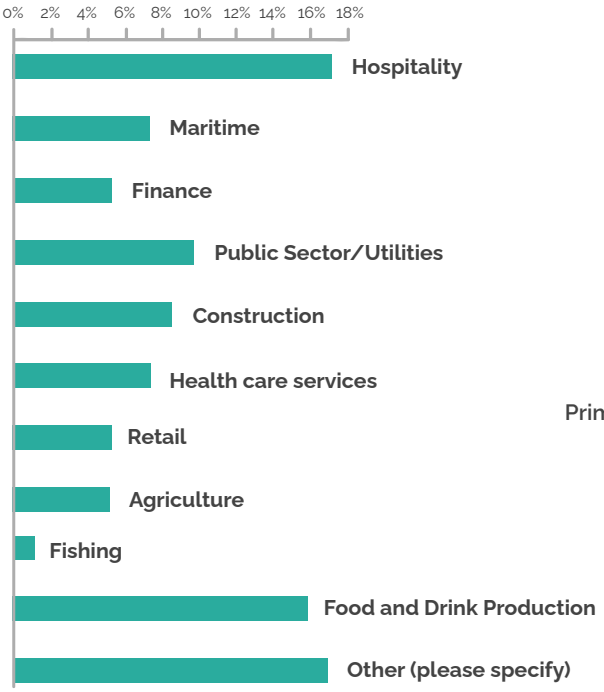
Time to adapt!

These changes will result in **impacts which will affect people, infrastructure and ecosystems on Raasay**

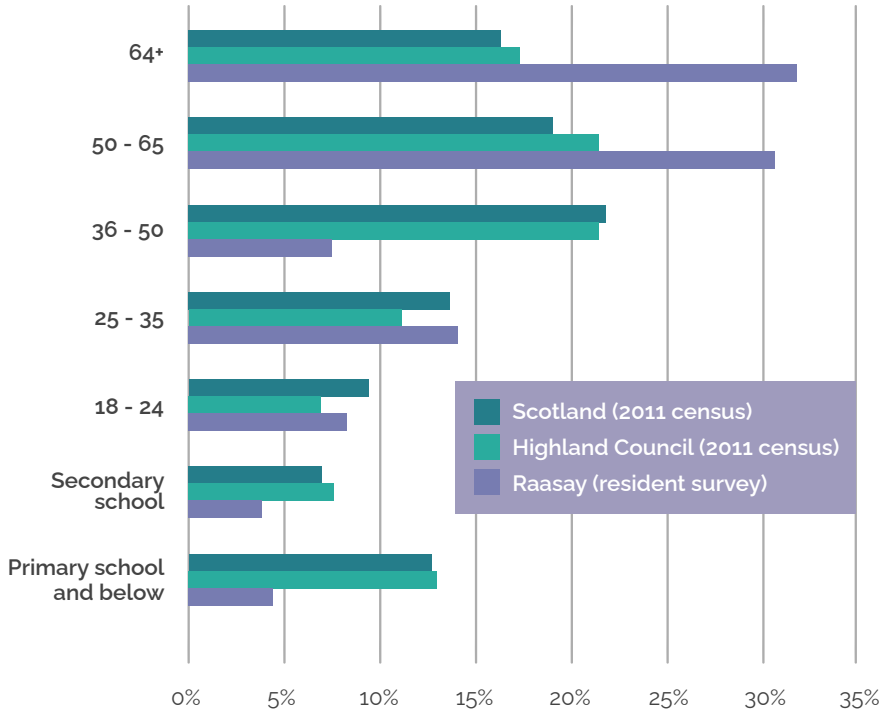
Developing an understanding of climate projections and the challenges we will face is central to Raasay's ability to **adapt and become more resilient to climate change.**

2.4 Island Demographics

Employment Sectors



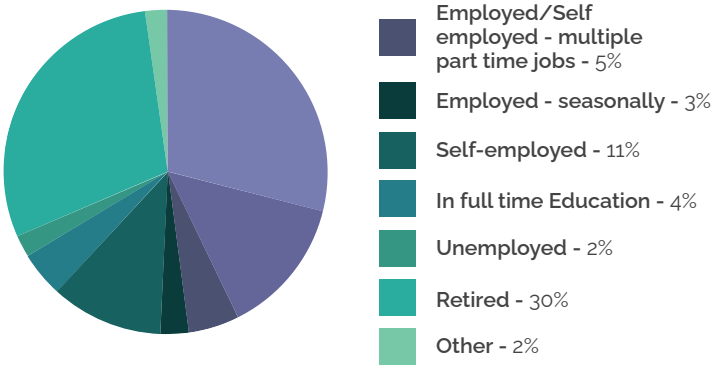
Demographic age profile

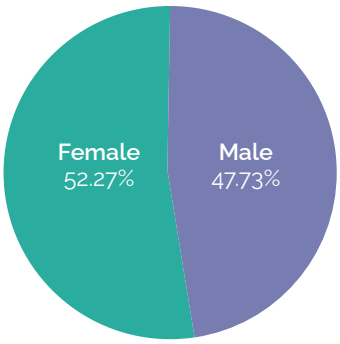


Island population: 179

Population: 179
Area: 6,231 ha (24 sq mi)

Employment status





The demographics of Raasay have changed significantly since 2011 with the percentage of residents over 50 almost doubling and under 18 and 36-50 proportion decreasing by over half. The number of residents able to speak Gaelic has also decreased from 2011 from 35% to 17% (National Records of Scotland 2011 and Household Survey, 2023).

The main industries on the island are Hospitality and Food and Drink Production. There is a high retired population on Raasay and a low unemployment rate. 90% of residents have access to work on Raasay with the rest travelling off island for work. (Household Survey, 2023)

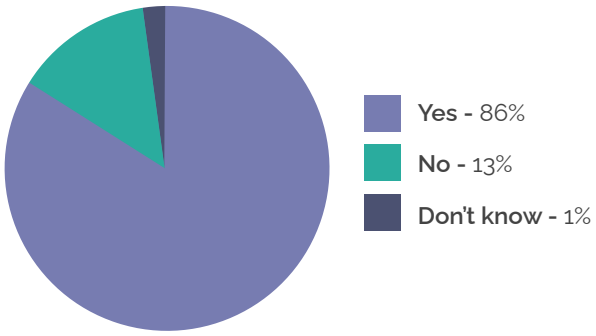
The island's tourism and manufacturing industry has expanded with the addition of the local distillery in recent years. With reference to the 2011 census, the percentage employed in education has decreased along with those employed in retail and trades. More residents are working from home or online. Historically fishing & subsistence farming would have sustained the population, more recently, the land and agriculture industry has changed to larger scale crofting and game keeping.

2.5 Housing

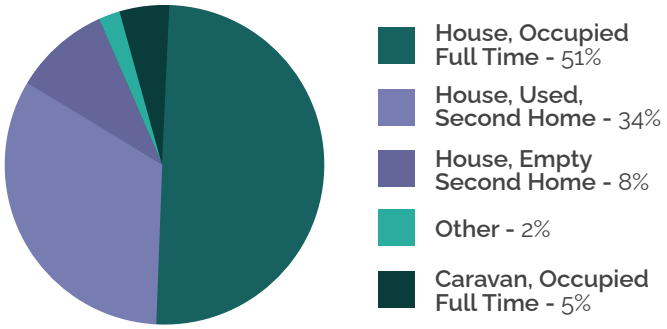
Access to housing on Raasay has been identified as an issue for many years. During the residents' household survey, lack of affordable housing was highlighted as the main barrier to young people moving to the island, along with access to land and childcare. In 20% of households, there is someone looking for housing, 9% of households are living in caravans, and holiday and empty homes make up 46% of the housing stock.

Home Energy Talk © Katharine O'Driscoll

Everyone in our household is adequately housed



Accommodation Stock Use



Abandoned house, North Raasay © Tom Lusink

3. The Carbon Neutral Islands Project

In May 2022 the Cabinet Secretary for Rural Affairs and Islands announced the six Scottish islands to be supported by the Carbon Neutral Islands project: Hoy, Islay, Great Cumbrae, Raasay, Barra and Yell. The CNI project includes one island from each of the local authority areas with responsibility for islands in Scotland.

More widely, the CNI project will help to deliver key commitments in the National Islands Plan (2019) and the National Performance Framework (2007), create island-based jobs, and support islands to adapt to the negative effects of climate change.

The project aims to align with wider net-zero and decarbonisation efforts and will contribute to the Scottish Government's statutory target to reach net zero by 2045.

3.1 What is Carbon Neutral?

The Project considers carbon neutrality akin to net zero. Accordingly, a carbon neutral island is an island where the greenhouse gas (GHG) emissions (captured as CO2 equivalent) are in balance with the sinks. Sinks can be natural resources capable of absorbing CO2 (trees) or technological solutions that do the same thing (carbon capture and storage). Carbon neutrality is to be achieved by 2040, five years prior to Scotland as a whole.

The Project will look at carbon neutrality as broadly as possible in line with the Scottish Government's updated Climate Change Plan list of sectors:

- Electricity
- Buildings
- Transport
- Industry
- Waste and the Circular Economy
- Land Use, Land Use Change and Forestry (LULUCF)
- Agriculture
- Negative Emissions Technologies

In addition, the project will also include a blue carbon component which will support Scotland to refine its nationwide methodologies in this field.

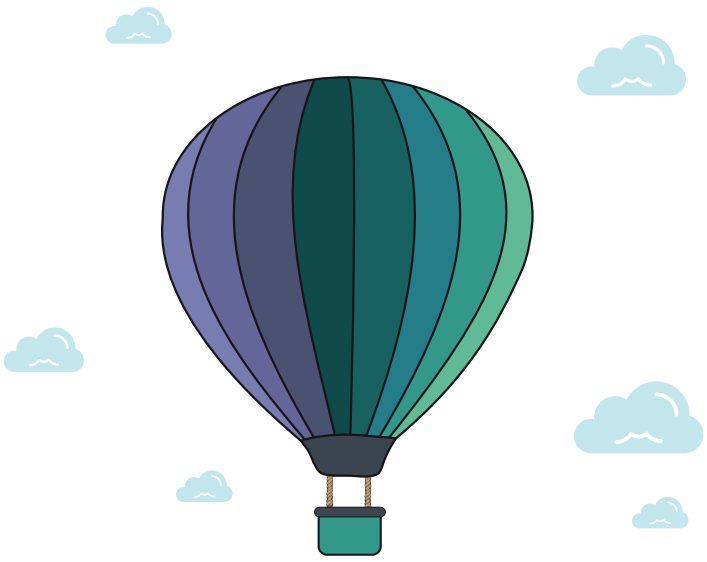
3.2 Drivers underpinning the Carbon Neutral Islands Project

The CNI project is underpinned by the following key drivers: alignment, justice and inclusion, and replicability.

Alignment: The project aims to align with existing island-based climate change efforts and to avoid duplication. The first step towards this was a study which mapped existing island-based climate accounting exercises, projects and funding sources.

Justice and inclusion: The project will support islands to become carbon neutral in a just and fair way. To ensure this, the project will consider the recommendations of the Just Transition Commission (2019). Fairness will be promoted through an effective bottom-up participatory process driven by the six island communities.

Replicability: The work is being completed to standardised and agreed methodologies wherever possible in order to allow replication and direct comparison. All Scottish islands will benefit from the project through knowledge sharing of good practice from the implementation of the project. The six islands will act as 'Lighthouse Communities' for other Scottish islands and as catalysts for net zero action across Scotland.



A tonne of CO2 would look like a filled hot air balloon

3.3 Aims for the CNI Islands

Whilst the overarching theme of the project is climate resilience, the project aims to improve quality of life, create employment and improve the sustainability of the community whilst delivering community lead climate action. All Scottish islands will benefit from the project through the sharing of good practices coming from the implementation of the project. The six islands will act as catalysts for net zero action across Scotland.

3.4 An Island Led Approach

On Raasay the CNI project is led by an island steering group of community representatives who identified Raasay Development Trust (RDT) as the anchor organisation. RDT is funded by the project to employ two local CNI Community Development Officers (CDO) – Tom Lusink and Rosie MacLeod Macinnes. The CDOs are the link between the Steering Group, the Community, and the external agencies involved in the project, supported by Community Energy Scotland (CES).

The CDOs have worked closely with the technical team at CES to ensure local data informs the initial carbon audit, detailed in Section 8, which includes work by external consultants. The carbon audits, along with climate and coastal change assessments by Adaptation Scotland and JBA Consulting, are tools to help identify and highlight potential key areas for decarbonisation, mitigation and adaptation actions. However, the actions within the Community Climate Action Plan look beyond the data to reflect the island community's priorities for a flourishing carbon neutral future.

East Coast Cliffs © David Carslaw Photography

The Community Climate Action Plan (CCAP) helps the community record existing knowledge and data, prioritise key projects and schedule actions towards a carbon neutral and sustainable future. The CCAP is a 'living document' owned by the Raasay community, which can be reviewed and amended to reflect the progress made on the island's decarbonisation journey.

Map from, The Isle of Raasay, Robert B Malloy, 1975

4. Carbon Audits

To inform discussions of community priorities for climate action and track progress towards these goals, carbon audits have been completed to establish a representative baseline for each island. The audits quantify greenhouse gas (GHG) emissions sources and sinks for the key sectors – Energy; Transport; Waste; Agriculture and Land-Use, Land-Use Change and Forestry (LULUCF). A Blue Carbon 'Habitat Suitability Study' has also been developed. The Scottish Blue Carbon Forum defines blue carbon as the carbon captured and stored in marine and coastal ecosystems that accumulates over long timescales through natural processes (e.g. photosynthesis). It is thanks to the cooperation of local residents and businesses that this exercise has been possible.

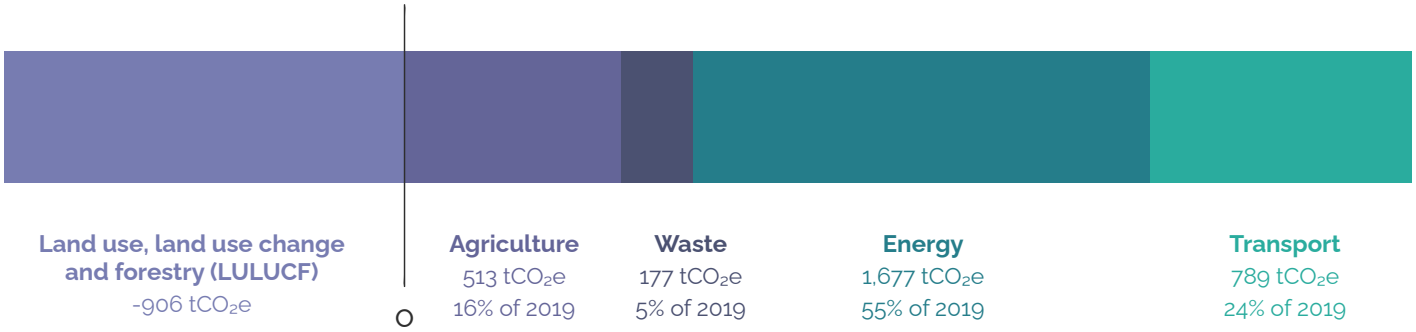
4.1 Methodology Overview

The audits for energy, transport, waste, agriculture and LULUCF follow the Greenhouse Gas Protocol (2021) Global Protocol for Community-Scale Greenhouse gas inventories, which is itself aligned with IPCC (2019) guidelines. A methodology for blue carbon is being developed that will be used to calculate habitat extent and estimate carbon stores and annual sequestration rates. Detailed methodologies for each sector are provided in the respective carbon audit reports.

4.2 Key Findings

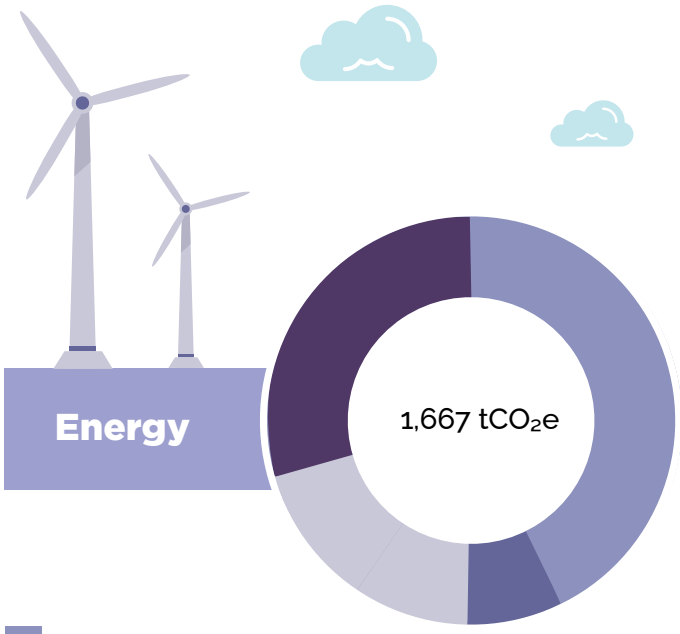
The graph below gives an overview of estimated emissions from each of the different sectors, including LULUCF; Energy; Transport; Agriculture; and Waste. This is intended to provide a snapshot of the current level of emissions on the Isle of Raasay. While the analysis contains estimates and uncertainties, it helps to indicate the scale and pattern of emissions across each sector. The carbon audits are one of the tools to help inform discussion and decision-making as the community tracks a pathway forward. A more in-depth analysis of each of these sectors, can be found in the respective carbon audit reports.

2019 emissions by sector



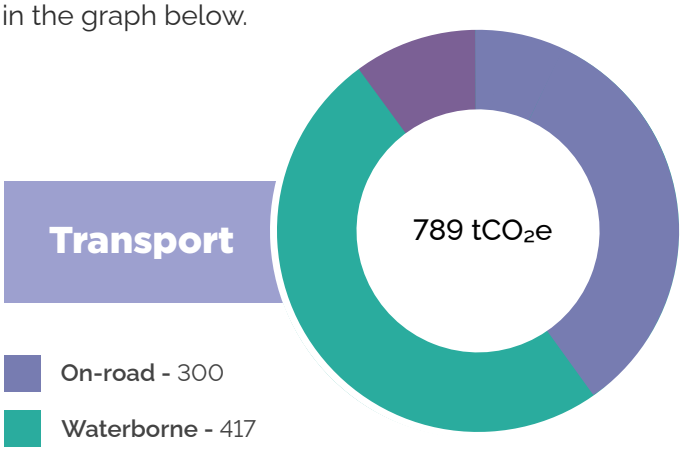
4.3 Energy & Transport

The largest source of emissions on Raasay come from the energy sector, which is dominated by the burning of fuels to provide heat both in residential and non-domestic settings. The use of electricity accounts for around 27% of emissions. The figure below shows a breakdown of emissions from the energy sector.



- **Residential -** 708
- **Agriculture, forestry & fishing -** 137
- **Commercial & Institutional -** 293
- **Manufacturing industries -** 529

The transport sector includes emissions from on-road traffic as well as ferries departing the island. Waterborne transport accounts for around 53% of emissions in this sector predominately due to the fuel powering the ferry, while around 38% of emissions come from on-road vehicles. The other 9% comes from other transport such as off-road vehicles and private boats shown in the graph below.

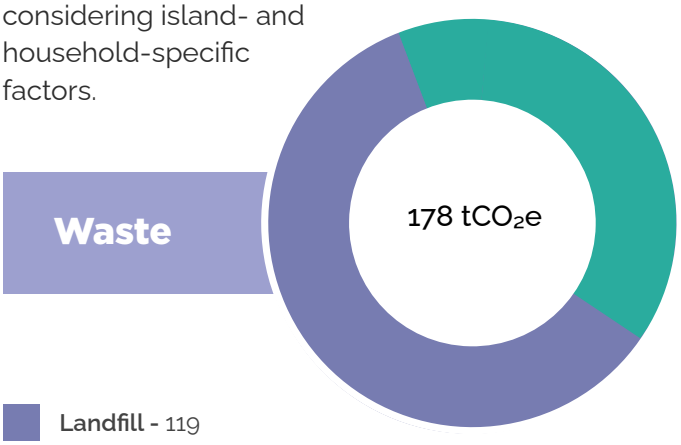


- **On-road -** 300
- **Waterborne -** 417
- **Other -** 72

4.4 Food and Waste

The following graph expresses the emissions from the treatment of waste and excludes the emissions associated with transport and fuel production from waste. Emissions from the waste sector do not consider households which use alternative waste treatment pathways. Of these, landfill accounts for 67%, while wastewater treatment and disposal accounts for 33%.

Emissions related to food have not been assessed yet and is something that the project will look at going forward. Emissions are based on average waste composition figures for Raasay waste data. The figures would therefore benefit from considering island- and household-specific factors.

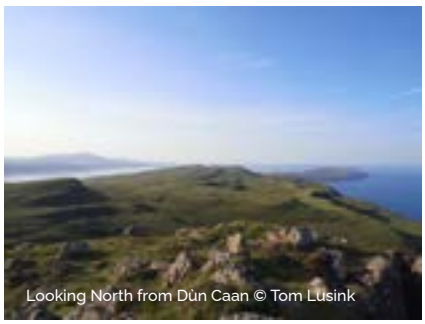


- **Landfill -** 119
- **Wastewater treatment and disposal -** 59.1

Wastewater and landfill fall under scope 3 as they are exported off island for treatment.

One tonne of CO2 is roughly equal to:

3400 miles in a petrol car


Looking North from Dùn Caan © Tom Lusink

1/5 of an average household's annual heating oil use

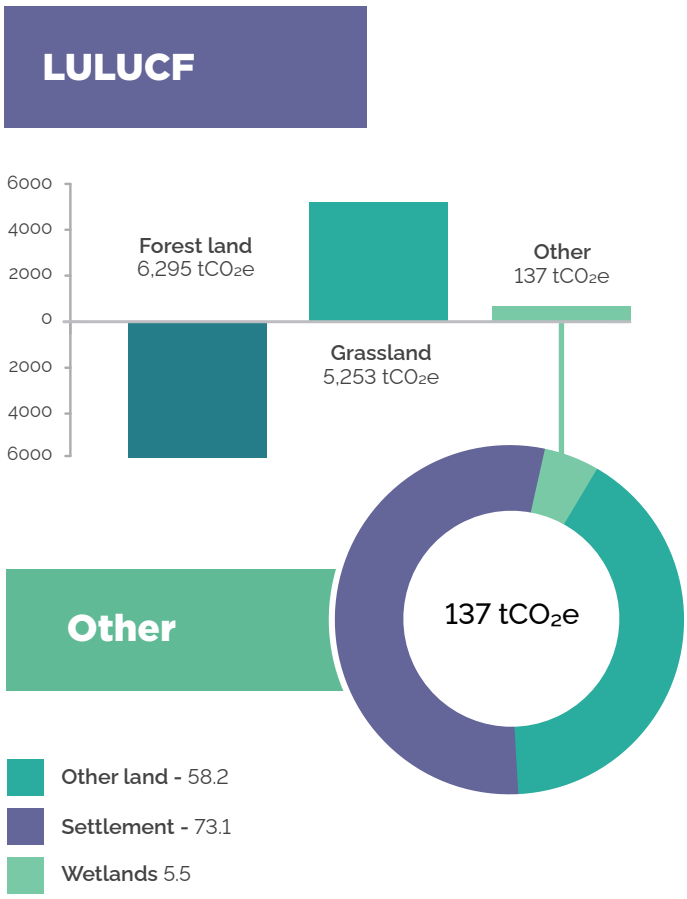
burning 14 sacks of household coal

4.5 Land Use, Land Use Change and Forestry

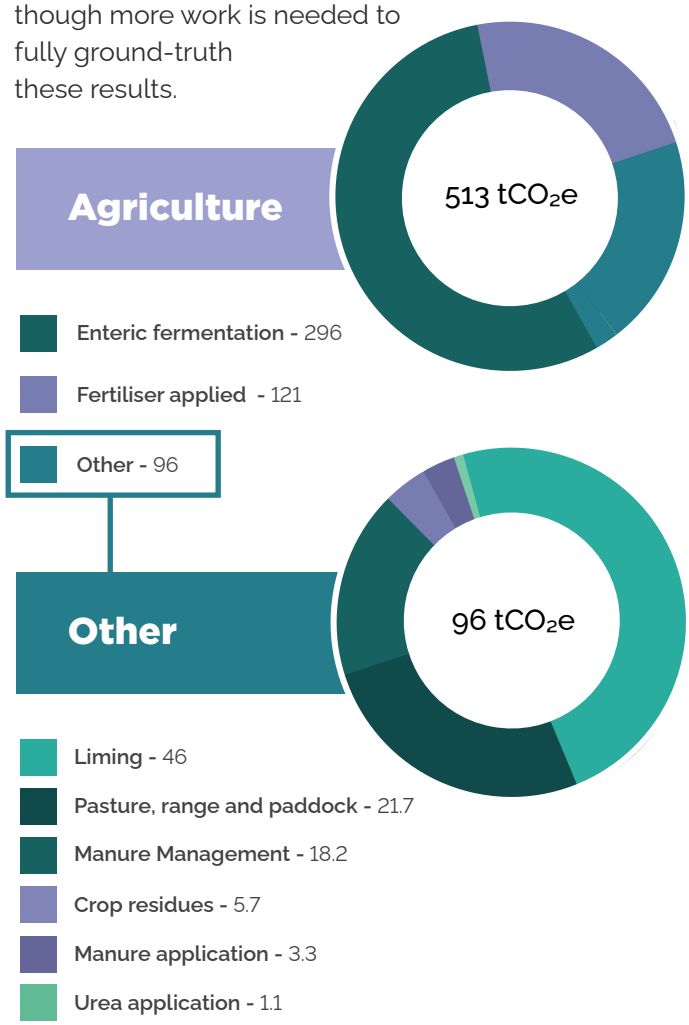
An initial desk-based assessment of LULUCF has been carried out which considers both current land use as well as land use change over time. Managed land is defined by the IPCC as land where communities intervene in land-use for ecological, economic, and social purposes. As such, all land on the six CNI islands is viewed as managed, in line with national and international guidelines.

Uncertainties in the LULUCF sector are significantly higher than for other sectors, which is the case at both national and local levels. The habitats considered need further examination and it is important that the information is ground-truthed to verify the findings.

In general, these are the topics residents feel the least knowledgeable about and it is important that the project works to increase understanding of the importance of these habitats on a carbon neutral island. This project will look to improve on the data and more research will be conducted into land-use change on Raasay.



The main sources of emissions within this sector are due to changes in carbon stocks from converting forest to grassland, and carbon pools from grassland soils. Forest land acts as an important carbon sink and this sector is carbon negative overall, highlighting the value of protecting woodlands. These figures reflect the best available data, though more work is needed to fully ground-truth these results.



Within the agriculture sector, the main source of emissions arises from enteric fermentation, which are those deriving from the digestive system of ruminant livestock. Other land management practices such as applying inorganic fertiliser, liming, and the decomposition of manure under anaerobic conditions also have an impact. These figures reflect the best available data and use local livestock numbers, but more work is required to verify findings.

4.6 Blue Carbon

Adler & Allan were requested by Community Energy Scotland to develop a 'Habitat Suitability Study' to derive models of potential blue carbon sites as part of the Carbon Neutral Islands Project.

The report dated March 2023 provides distribution maps of potential locations of existing blue carbon habitats on and around Raasay. The results are only an indication of potential habitats and need to be validated before an assessment of carbon stocks and the potential for sequestration in waters surrounding Raasay can be estimated. Further work will be necessary in this area.

5. Areas for Actions

The following sections reflect the themes of the carbon auditing process, and areas the community have identified as priorities for action. During consultation with the community the ideas were ranked from most to least important per category. For a category with 7 ideas, a vote for most important scored 7 points and the least important scored 1 point. The resulting scores were used to prioritise the actions. The ideas in the tables below are starting points and further exploration and refinement of the ideas is needed.

The actions have been categorised using the following timeframes:

Categorisation	Timeframe
Short Term, S	0-1 Years
Medium Term, M	1-5 Years
Long Term, L	5+ Years

5.1 Energy

Heating is the most energy dense sector on Raasay. Stoves & Open fires, oil boilers and storage heaters are the most common heating systems and due to the general poor quality of housing efficiency it takes a lot of energy to heat houses sufficiently.

The household survey revealed that approximately only one third of year-round residents' properties have sufficient wall, floor or roof insulation and half of properties have issues with damp. It also showed that 54% of households are rationing their purchase of heat. Currently, an in-depth study is being undertaken into housing quality on the island in collaboration with Skye and Lochalsh Housing Associations Energy Advice team. This study assesses a house's performance on temperature and humidity, recording the amount of energy consumed and compares the results to the Scottish standards for comfortable living.

A small number of households connected to the grid on Raasay have solar panels, however the majority of on island generation comes from the community hydro schemes and wind turbines at the water treatment works. There are two hydro turbines with a combined rating of 137kW, but the grid connection is currently constrained to 50kW. Work is ongoing through Raasay Community Renewables to look at alternative local uses for the constrained energy.

Energy	Description	Points	Term
Insulating and retrofitting houses	• Help organise collective groups wishing to retrofit. Help with sourcing contractors, accommodation etc. • Look into ways to make retrofit more accessible. • Create a new build/retrofit pack that outlines the main regulations for Passivhaus and EnerPHit standards and steps involved and info on skilled tradespeople that can do the work locally. • Spread awareness of funding opportunities available. • Help collectively organise smart meter installation.	212	M
Feasibility into Renewable Projects	Solar - community solar farm whether on land or on people's roof Wind - community wind turbine Other - could be biomass or any other renewable form	164	M-L
Study into tackling grid constraints and using energy locally	Looking into what other communities have done, selling energy generated locally, how to use the electricity produced locally, utilising mines for compressed air storage, smart storage solutions and appliances etc.	159	L

cont.

Energy	Description	Points	Term
Upskill local people	This project could look into funding for people to do training courses, encouraging apprenticeships etc.	123	L
Community hall energy efficiency	Fix the community halls ground source heat pump and repair drafty leaking doors and windows to improve building energy efficiency.	120	S
Feasibility into village and nearby areas district heating scheme	Suggestions that could be explored include utilising the mines for heat pumps, fuelling the scheme using the islands waste etc.	108	L
Sheep's Wool Insulation	Feasibility into a sheep's wool insulation plant on Raasay	94	M

Tackling the energy efficiency and ventilation of housing was by far the most popular project. The bigger projects suggested were voted on as feasibility studies which can then be taken forward if they are viable.

5.2 Transport

Raasay is serviced by the M.V.Hallaig, a hybrid electric ferry, which runs between Raasay and Sconser. The journey takes 25 minutes each way and with the exception of Sunday, goes back and forth nine times a day. As there is no public transport on Raasay, car ownership amongst residents is high. Around 15% of households have someone with special transport needs and just under 20% of households have said there are journeys they would like to make but cannot due to inaccessible or unaffordable transport. During consultation, the lack of public transport connections on Skye linking up with the ferry was highlighted as the main barrier to using public transport making it inaccessible for many residents.

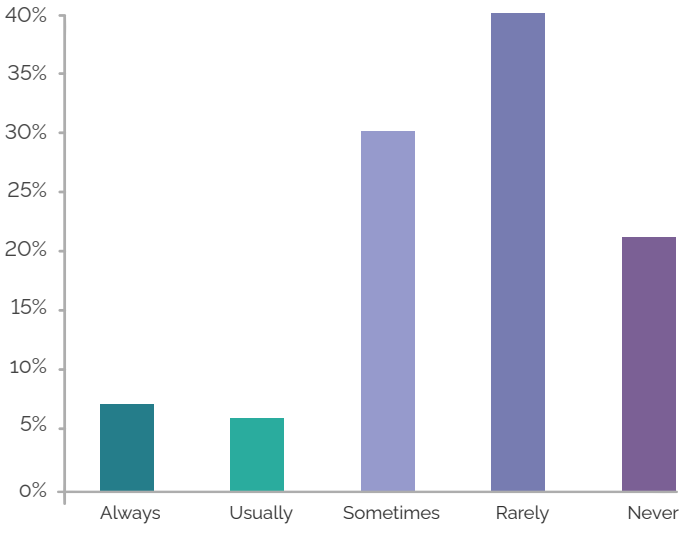
The dangerous condition of the roads on Raasay and the lack of upkeep and maintenance of verges and ditches was highlighted throughout consultation. These concerns have been raised with the community council and the CNI project will follow any progress and support work that improves infrastructure and adaptation. Road quality was raised as a barrier to electric vehicles being adopted and bad drain maintenance has already caused flooding on the island.

Transport	Description	Points	Term
Encourage improved public transport accessibility	Promote and encourage improved public transport accessibility on Skye which connect better with ferry times.	187	L
Feasibility into community mini-bus	Investigate community bus options. Uses could include: • Locals taxi • Shop transport • Tourism in the summer	160	S

cont.

Transport	Description	Points	Term
Mobility Hub Feasibility	Investigate a mobility hub in conjunction with Sconser. This would provide a central place with community vehicles giving access to greener and cheaper travel.	157	L
Explore decarbonising Tourist Travel	Decarbonise tourist travel on the island e.g.: • Look into creating more parking in Sconser to reduce cars brought over. • Increasing information regarding travel distances on the island. • Encouraging car sharing between tourists.	125	M-L
Implement a system for local Car share and E Bikes	Set up a system for local car sharing and E bike use. This could be through an app, building bike storage etc. This action could also expand and contribute to decarbonising tourist travel.	120	S
Feasibility into Water Taxi	Feasibility study and carbon impact assessment of implementing a water taxi between Portree and Raasay. This would reduce travel time, personal vehicle usage and increase accessibility to after school activities and services off island for those without a car. To be taken forward by the CNI project, the taxi would need to reduce the islands carbon footprint.	120	M
Quiet Routes HITrans Development	Assist with HITrans Quiet Routes development to create more accessible active travel routes such as improved walking paths.	102	S

How often does your household use public transport



Looking North over the East Coast © Tom Lusink

5.3 Food and Waste

Through the community survey it was clear that residents would like to have access to more locally grown food. 41% of households are currently producing some sort of food for personal consumption and residents also overwhelmingly supported the idea of a community fridge to reduce food waste. Use of on-island recycling facilities (blue bins and bottle bank) were high however the use of any other form of recycling available off island was low.

A Freedom of Information request to the Highland Council revealed that in 2022 Raasay waste was equivalent to approximately 3 arctic lorries full of recycling, 4 arctic lorries full of refuse waste and 2 skips of glass.

Raasay Waste

Recycling
32.9 Tonnes

Sent to Suez in Aberdeen and Northumberland; Cireco in Fife, Hamilton's in East Lothian and Biffa in West Lothian. Material is then separated and sent the various fractions to onwards destinations for reprocessing or further sorting.

Refuse waste
98.62 Tonnes

Sent to Highland Council's landfill site at Seater in Caithness until December 2022. This year residual waste is being sent to Viridor's Energy Recovery Facility in Dunbar.

Glass
6.7 Tonnes

All glass was sent to Sibelco near Motherwell for colour separation.

Waste	Description	Points	Term
On island recycling facility	An on-island recycling facility to include recycling points for clothes, soft plastics, pill packets, glass to sand crusher, batteries, electrical equipment etc. with an organised drop off to Skye.	135	S
Feasibility into eco-friendly waste treatment	Ask Scottish Water/SEPA to address the untreated sewage from the village, cottages and mill place being disposed directly into the sea. Look into more environmentally friendly waste treatment options that might pose a solution.	115	M-L
Island Repair Shed	Create a space for a community repair shed. A communal space where skills can be shared and promote the reuse of materials and equipment to reduce waste.	113	S
Study how we can reuse and recycle more locally	Investigate how we can increase reusing and recycling of materials locally. This would include researching how Deposit Return Scheme (DRS) will have an impact on community plans for local recycling and local community cooperation.	103	S

Food	Description	Points	Term
Make more Community spaces	Creating more community spaces (or expanding existing ones) which could include: • Infrastructure (polytunnel, beehives, apple press) for rent. • Community growing spaces. • Possible hydroponic and heated poly tunnel growing which could be powered by renewables and available for community or commercial growing.	119	S-M
Feasibility into meeting island's food needs locally	Look into potential for food self-sufficiency on island. This could increase food security and access to locally grown food while reducing our environmental impact: • Local meat processing • Land use	119	M-L
Skye Abattoir	Look into the food mile and carbon savings a local Skye Abattoir would make. Promote the community's willingness to see this establishment set up.	106	M-L
Explore seaweed food production	Look into developing seaweed food production in Raasay waters to increase seawater quality and potentially generate food or income for the island.	88	S-M
Hot composting and Wormery	Hot composting and wormery to allow for composting of cooked food waste.	70	S
Community Fridge	A community fridge is a short-term project that will also be implemented. During the household survey, residents expressed huge support for the idea, and it will expand on the already existing food swap boxes at the community shop.	70	S

Old mine vent building © Tom Lusink

Overlooking Inverarish & Suisnish © David Carslaw Photography

5.4 Land Use and Blue Carbon

Land & Blue Carbon	Description	Points	Term
Encourage Biodiversity & Sequestering Environments	Identify and support Sequestering & Biodiversity opportunities, such as improving habitats on land and around the coast: • Increasing wildlife. • Kelp forests/creating reefs. • Work to express the community's opposition to dredging and bottom trawling.	131	M-L
Community Owned Forest	Community owned forest land which could enable: • Planting of native trees. • Sustainable harvesting of wood for community use. • Planting of foraging species or fruit trees.	127	M-L
Explore making land available for community ownership	Investigating increasing land availability for growing/crofting/forest crofting	114	M
Indigenous knowledge mapping	Investigating historical uses of land and marine environments: • Investigating self-sufficiency in previous generations and what they grew. • Mapping and collating local indigenous knowledge on management practices traditional to Raasay.	82	S
Peatland Restoration	Categorising peatland conditions across the island then creating and carrying out a restoration plan	71	S-M

5.5 Community Resilience

Some of the actions suggested during the community engagement process were focused more on community resilience than specifically on lowering carbon. The community still views these as important and this project will run alongside and engage with RDT's five-year development plan. The two organisations will work together to implement relevant projects and avoid the duplication of work. RDT have committed to including the top three projects from this report and other broader CNI outcomes in their development plan. Meetings between CNI, RDT and other community groups will take place post March 2023 to identify the best route to achieve the project aims and who should lead on what elements of both plans. During the consultation there were ideas generated that didn't quite fall under the project scope and have been passed onto RDT for input into the development plan. These include:

- Approach housing developers to build houses.
- Get land for self–build from department of agriculture.
- Make commercial units that would be available for rent.
- Community laundry facility/drying rooms to help relieve damp within homes.

5.6 Community Ranking of Project Ideas

Community members were asked to rank their top 3 projects across all of the categories as a way of gauging what projects were the most important to the community overall.

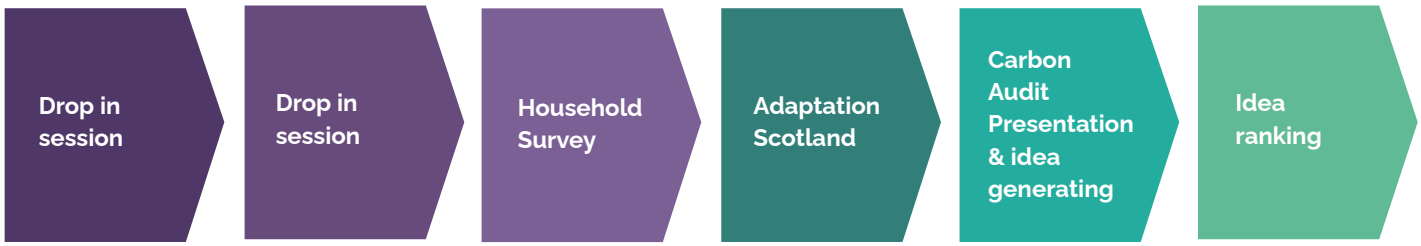
Project	Points
Insulating and retrofitting houses	43
Feasibility into meeting island's food needs locally	17
Feasibility into Renewable Projects	13
Encourage Biodiversity & Sequestering Environments	12
Encourage improved public transport accessibility	11
Feasibility into community mini-bus	10
Make more Community spaces	10
Explore seaweed food production	10
Study into tackling grid constraints and using energy locally	9
Community Owned Forest	8
On island recycling facility	8
Skye Abattoir	8
Repair Shed	6
Feasibility into Water Taxi	5
Explore making land available for community ownership	4
Mobility Hub Feasibility	4
Study how we can reuse and recycle more locally	4
Upskill local people	3
Feasibility into village and nearby areas district heating scheme	3
Implement a System for Local Car share and E Bikes	3
Feasibility into eco-friendly waste treatment	3
Community Hall Energy Efficiency	2
Decarbonising Tourist Travel	2
Indigenous knowledge mapping	1
Quiet Routes Development	1
Peatland Restoration	0
Sheep's Wool Insulation	0
Hot composting and Wormery	0

5.7 Personal Action

Individual behaviour is hugely important to tackling climate change and reducing our carbon footprint. This will be an important part of the message moving forward and is vital to the success of many of the above projects.

6. Community Engagement

Engagement Timeline



There have been multiple community engagements over the past 6 months to promote the CNI project within the community and generate ideas for this action plan. Engagement events were advertised through the local residents' Facebook page, the community shop and the notice board. Events were well attended, and the household survey was completed by 86% of households.

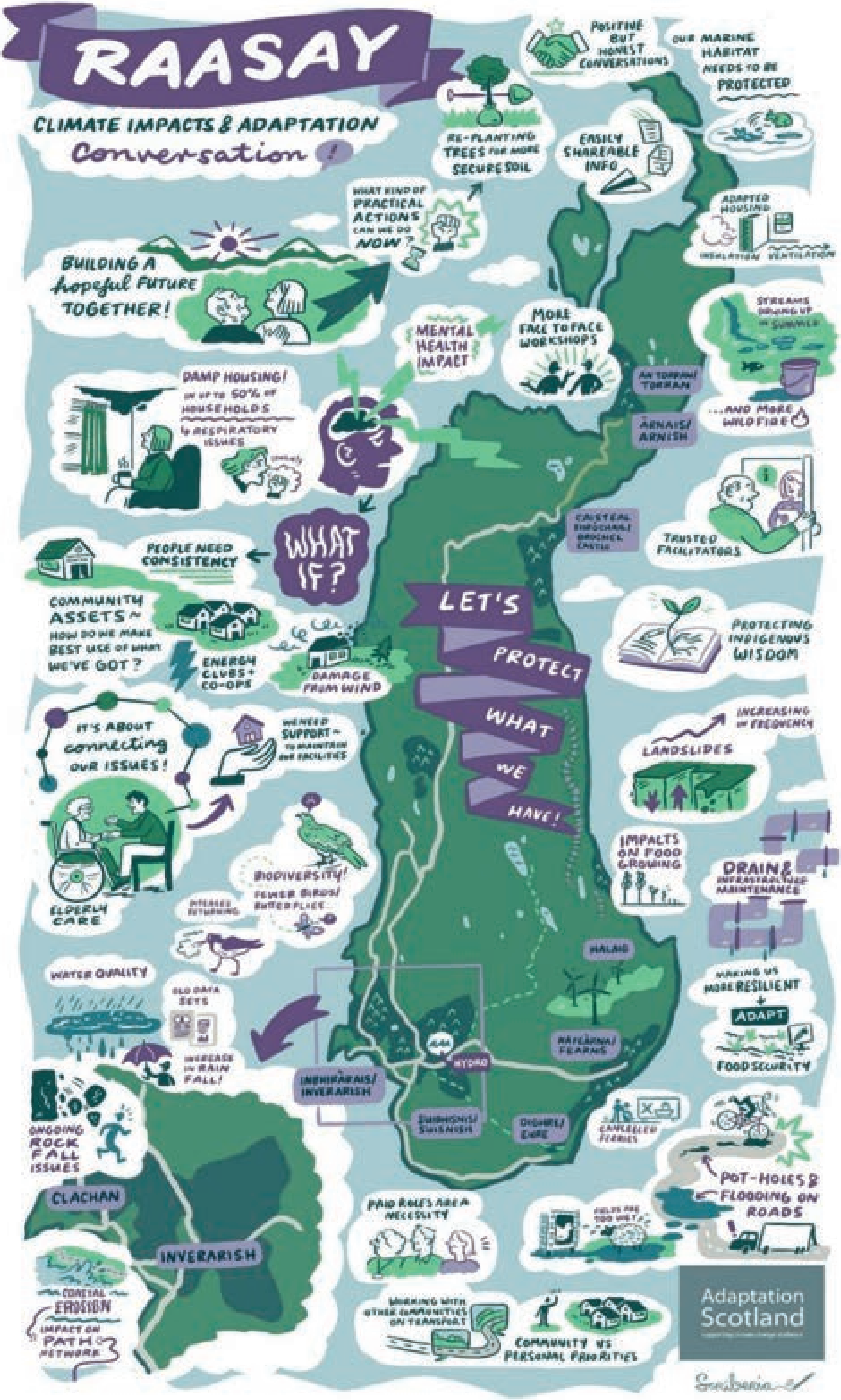
Drop-in sessions – The community were informed of the project and residents were asked to think about and discuss questions surrounding sustainability and ideas for the project. 6 residents attended the first drop-in session and 11 came to the following session. Household Survey – This survey was commissioned by the Carbon Neutral Islands Project and Raasay Development Trust. It covered a range of issues relevant to achieving Net Zero and the Island's overall sustainability, feeding into the Community Climate Action Plan and Raasay Development Trust's local 5-year Development Plan. The survey was hosted using an online platform giving people the option to fill it out by themselves.

One to one Engagement – The CDOs have been a direct link to anyone wanting to find out more about the project, ask questions or discuss their ideas - with the officers actively encouraging discussion where possible. Around half of the survey responses were collected in person, going door to door. This has resulted in a considerable amount of unrecorded engagement in the form of casual conversations while collecting responses, these conversations have given a great sense of community needs to the CDOs while also being a good way to communicate the project's aims.

Adaptation Scotland workshop – A few members of the community with different skills, interests and knowledge were invited to take part in an adaption workshop run by SNIFFER to discuss the potential impacts of climate change on Raasay and how we adapt to these changes. The session was recorded by a live scribe in a piece of artwork to be used for further discussion with the wider community.

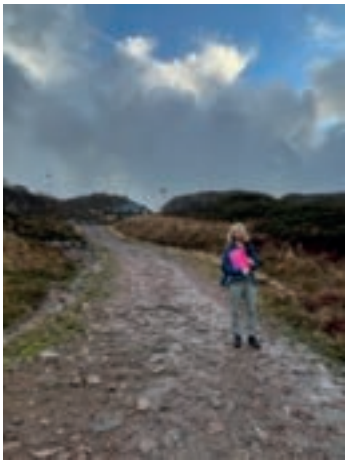
CDOs from Barra, Raasay, Hoy, and Yell meet Cabinet Secretary for Rural Affairs and Islands Mairi Gougeon at Holyrood in Jan 23

Scrapdeal looking North © Ross Gillies


RAASAY
CLIMATE IMPACTS & ADAPTATION
Conversation !
POSITIVE BUT HONEST CONVERSATIONS
OUR MARINE HABITAT NEEDS TO BE PROTECTED
RE-PLANTING TREES FOR MORE SECURE SOIL
EASILY SHAREABLE INFO
WHAT KIND OF PRACTICAL ACTIONS CAN WE DO NOW ?
ADAPTED HOUSING
INSULATION
VENTILATION
BUILDING A hopeful FUTURE TOGETHER!
MENTAL HEALTH IMPACT
MORE FACE TO FACE WORKSHOPS
STREAMS DRYING UP IN SUMMER
...AND MORE WILDFIRE
AN TORRAN/ TORRAN
ÀRNAIS/ ARNISH
DAMP HOUSING!
IN UP TO 50% OF HOUSEHOLDS
& RESPIRATORY ISSUES
CAISTEAL BHROCHAILL BROCHEL CASTLE
TRUSTED FACILITATORS
WHAT IF?
PEOPLE NEED CONSISTENCY
LET'S PROTECT WHAT WE HAVE!
COMMUNITY ASSETS ~ HOW DO WE MAKE BEST USE OF WHAT WE'VE GOT ?
ENERGY CLUBS + CO-OPS
DAMAGE FROM WIND
PROTECTING INDIGENOUS WISDOM
IT'S ABOUT connecting OUR ISSUES!
WE NEED SUPPORT ~ TO MAINTAIN OUR FACILITIES
INCREASING IN FREQUENCY
LANDSLIDES
ELDERLY CARE
BIODIVERSITY!
FEWER BIRDS/ BUTTERFLIES...
IMPACTS ON FOOD GROWING
DRAIN & INFRASTRUCTURE MAINTENANCE
WATER QUALITY
OLD DATA SETS
INCREASE IN RAIN FALL!
HALAIG
MAKING US MORE RESILIENT
ADAPT
FOOD SECURITY
INBHIR ÀRAIS/ INVERARISH
HYDRO
FEARANN/ FEARNS
ONGOING ROCK FALL ISSUES
SUISNISH/ SUISNISH
DIGHBE/ EYRE
CANCELLED FERRIES
CLACHAN
POT-HOLES & FLOODING ON ROADS
PAID ROLES ARE A NECESSITY
FIELDS ARE TOO WET
INVERARISH
COASTAL EROSION
IMPACT ON PATH NETWORK
WORKING WITH OTHER COMMUNITIES ON TRANSPORT
COMMUNITY VS PERSONAL PRIORITIES
Adaptation Scotland

Carbon Audit Presentation and idea generating – The initial findings of the three Carbon audits were presented to the community and it was followed by a discussion on how Raasay could move towards a more sustainable future and net zero targets. There were four tables covering Energy, Transport, Land Use & Blue Carbon and Food & Waste. At each table there was a 15-minute facilitated discussion where the community recorded their ideas. The event was attended by 38 people.

Idea Ranking – This second engagement event was used to prioritise the ideas. Participants were asked to fill out a q-sort and rank the projects in each category from most important to least important. A q sort is a ranking system in which all the ideas (27 total) are provided to the participant, they are then asked to place them in order of most important to least important within their categories. This provided a focus for the carbon neutral islands project going forward and highlighted the themes within the project that were most important to the community. The event was attended by 35 people over the afternoon and evening sessions.



Community Climate Festival: At the end of March 2023 a Festival was organised to celebrate the community and CNI project and promote low carbon sustainable living. The festival had various workshops with themes all relating to Island environment and sustainability.


CNI Team © Katharine O'Driscoll


Festival Hall © Katharine O'Driscoll

Festival sign © Katharine O'Driscoll


Biodiversity Talk
© Katharine O'Driscoll


The Forge © Katharine O'Driscoll

7. Next Steps

The CNI project will proceed to cost the implementation of the climate change action plan and it will develop a community investment strategy to help fund the actions where necessary.

What: This Action Plan is a tool for the whole community to use in order to ensure the long-term sustainability of the island, its people and its ecosystems. While some of the actions are already clearly defined others may need further discussion to understand what is needed to achieve the desired outcome.

Who: While the CCAP is intended to benefit the whole community, specific actions will require a range of different actors. These include:

- Individuals within the community
- Community organisations
- Private businesses
- Local Authorities
- Statutory Bodies
- Scottish (and wider) Government
- Other networks of interested parties and communities
- Most actions will require the different actors to collaborate, and building partnerships will be an important part of the process, along with a potential need to influence others.

How: It is important that actions are led by and for the community. This will likely involve leading on immediate actions, taking advantage of any potential "quick wins" available, working on longer plans and investment strategies and exploring opportunities for collaborations which will allow the Raasay community to lead, and work with others, to begin making tangible progress towards their own local vision of a decarbonised future. The CDOs have been an integral part of this project and its progress.

The resources required to deliver on this vision are likely to be substantial, and the Investment Strategies will consider and describe in detail how best to utilise funding from different sources including:

- Local and external sources
- Existing public funding
- Public-private partnership
- Private investment

When: Having identified the timescale for each action it will be important to map out a timeline for implementation. Some actions may be achieved quickly while others may take longer and require different stages of activity.

8. Review of Actions

The Community Climate Action Plan is a living document that will be updated as the project progresses. The aim is to review the CCAP twice a year to ensure the document remains up to date. The review process will be an opportunity for the community to reflect on what needs to be added or amended in the CCAP to reflect the progress made in implementing the actions and any changes in the island's circumstances.

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Website	https://raasay.com/carbon-neutral-islands/

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(Accessed:17/03/2023)

14. Appendix

The following reports are available on the Carbon Neutral Islands Raasay homepage, available at: https://raasay.com/carbon-neutral-islands/

• Raasay Household Survey, Carbon Neutral Islands Raasay and Raasay Development Trust, February 2023

• Energy and Transport Carbon Audit, Community Energy
Scotland, March 2023

• Land-Use, Land-Use Change and Forestry (LULUCF), and Waste Carbon Audit, Aether, March 2023

• Blue Carbon Carbon Audit, Adler and Allan, March 2023

• Climate and Coastal Change Assessment, Adaptation Scotland and JBA Consulting, February 2023

Notes

Carbon Neutral Islands 2023

Raasay