An Exploration of Home Renewable Energy on Scottish Islands

RIPEET
Responsible energy transition

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An Exploration of Home Renewable Energy on Scottish Islands

The decarbonisation of Scottish homes is necessary to meet targets for mitigating climate change. However, Scottish islands face unique challenges, with an energy mix vastly different to the national average, high rates of fuel poverty, transportation and supply chain issues, and a diversity of local and regional circumstances which negates any one-size-fits-all policy.

This research investigated household options for the utilisation and production of renewable energy in Scottish island communities. A total of 117 responses were received from householders residing on Scottish Islands. Though not all identified their location, 40 specified a location in the Outer Hebrides. The islands resident survey was targeted at various online social media groups related to island communities. The online survey remained open for 10 days during June/July 2023.

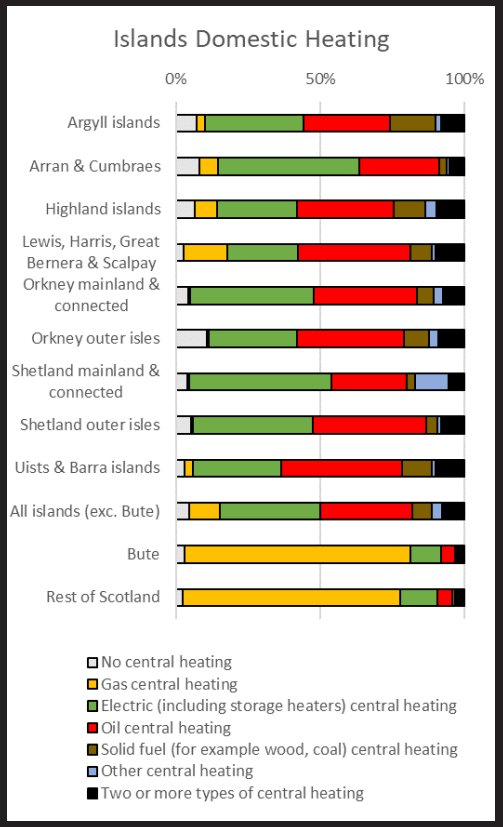
Through interviews and surveys with a range of stakeholders and communities, pros and cons were explored for the current emphasis on standard technology options, and for the future pathways for innovative and alternative technologies.

Barriers to uptake were identified, and differences between circumstances at all scales were evident.

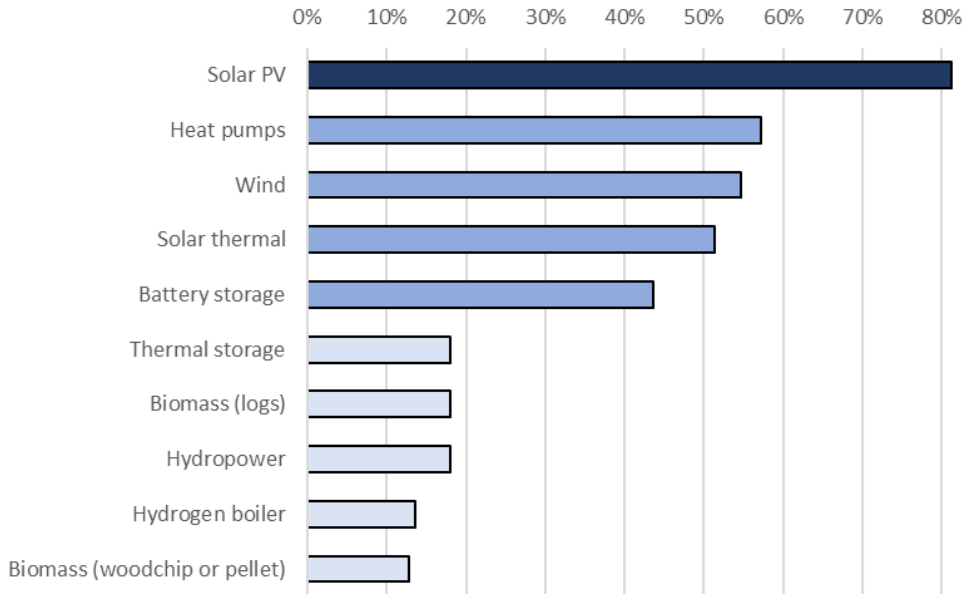
The main barriers are economic, but the solutions are not merely financial. A range of issues confront individuals and communities, from installer availability to housing fabric, which, if ignored risks exacerbating inequalities

The future of technology rollout, housing stock improvements, and policy to guide them, is a complex issue.

Options exist for community collaboration and innovation to meet these challenges, and islands need to be empowered to define their own decarbonisation pathways.



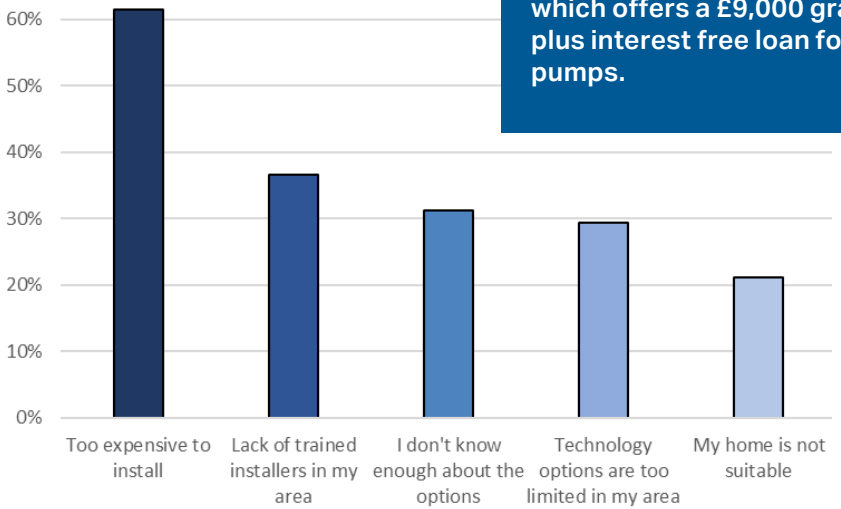
What technologies are island households interested in?



- \+ Solar PV is by far the technology that most households are interested in.
- \+ Heat pumps, wind, solar thermal, and batteries were also popular.
- \+ There were minor regional differences, such as slightly less interest for heat pumps in the Outer Hebrides

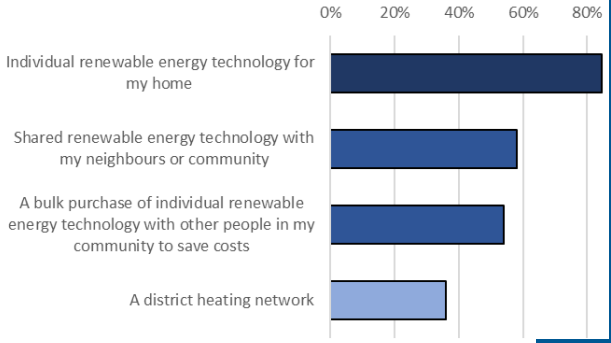
What is stopping households installing?

+ Installation cost is a major barrier
+ Access to installers is also an issue



Most households were unaware of funding. Some were also misinformed.

The most relevant funding is the HES grant and loan scheme, which offers a £9,000 grant plus interest free loan for heat pumps.

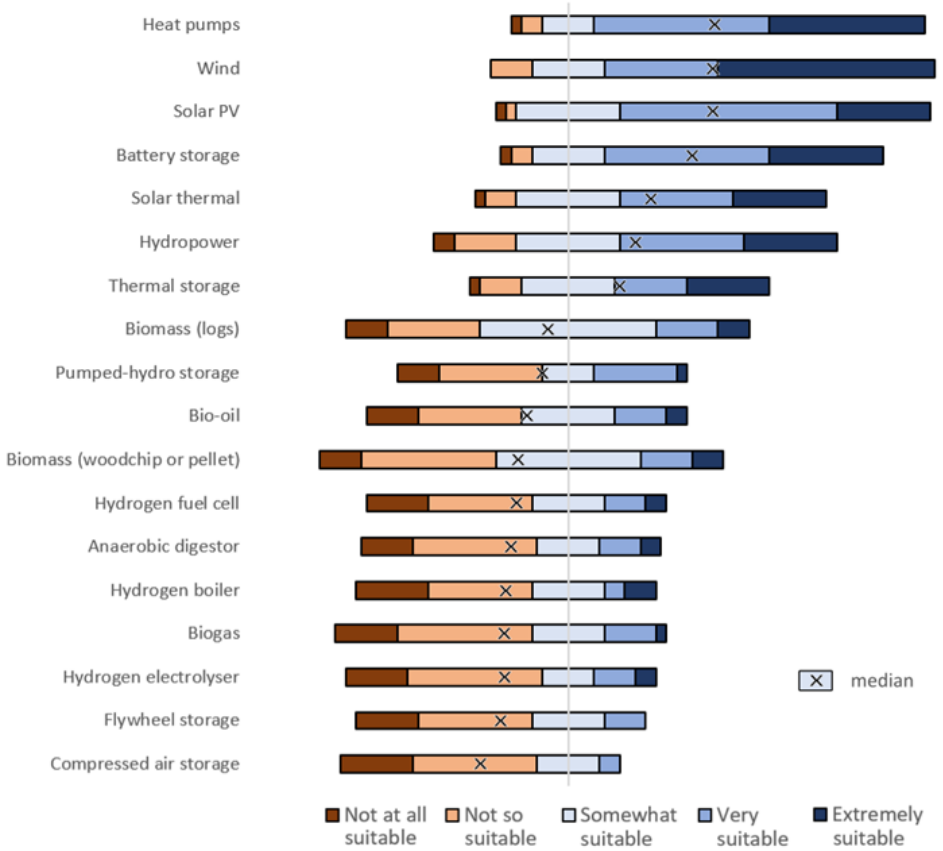


What is stopping households installing?

+ Most were interested in individual technologies for their homes.
+ More than half would be interested in some form of community collaboration, either sharing a renewable resource, or as part of a group purchase of individual technologies to save on costs.

Island home renewable energy — according to stakeholders*

*Energy Organisations, Installers, Housing Associations, Community Development Organisations, Local Authorities.

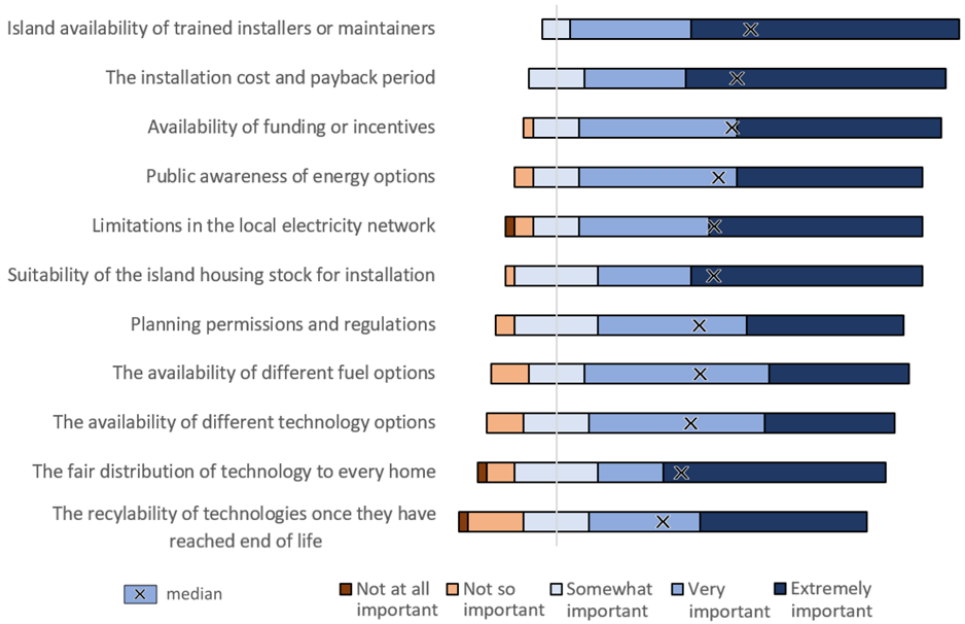


Technology suitability for Island homes

Heat pumps, wind, solar PV, and battery were typically seen as most suitable

Important considerations for island homes

There are many important considerations. But the island's access to installers and the installation costs were frequently highlighted.



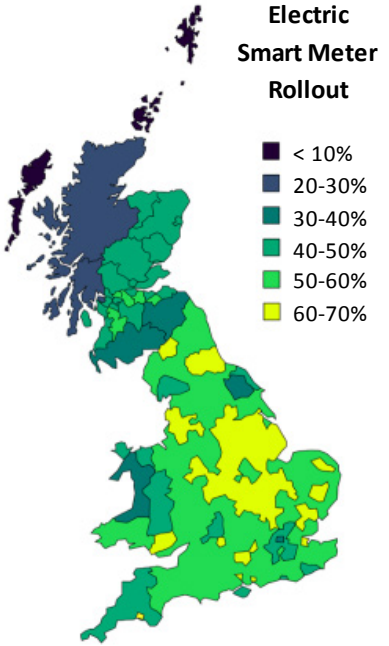
"Installers are the main bottleneck here at the moment. Installers and money."

"Any installer, whatever they're doing, whether it's insulation or renewables, they will have difficulty getting qualified tradespeople"

Key Learnings...

The 'Standard' Tech

+ Broadly, there is a preference and understanding for what have become fairly established technologies, such as solar PV, air-source heat pumps, battery, and wind.
+ Air-source heat pumps appear to have become the standard direction, with current funding efforts directed to increasing their uptake. Heat pumps were generally rated highly in surveys and interviews, particularly by those having installer / contractor experience.
+ Smart meters are becoming increasingly important for UK homes. But the Highlands and Islands are currently being left behind.
+ However, for all technologies, and for heat pumps in particular, the fabric of the housing stock becomes crucial, and major challenges exist to those homes which do not conform. Furthermore, the economic and policy landscape is not favourable for innovation beyond the 'standard tech', and some homes may be channelled into a pathway that is not as suitable, rather than being supported to explore options which could be much better.



The Economics £££

+ Installation costs are a significant obstacle.
+ Generous incentives exist, such as HES' grant and loan scheme for installation of heat pumps.
+ Different island circumstances such as installer access and housing stock suitability, mean that costs can vary widely. We need to identify where communities are falling through the gaps in one-size-fits-all island approaches.

Supply Chain Issues

+ Supply chain issues are more around trained contractors rather than any materials or technology.
+ The need for installer accreditation adds another layer to the issue - the additional time and expense needs to be worth if for the contractor.
+ Where off-island installers are required, extra expense is an issue.
+ Many pointed to transport issues—ferries in particular.
+ Even when installation is achieved, there are the prospects of ongoing maintenance.

"Heat pumps alone don't benefit us if we don't have support to get the houses up to an acceptable level of energy efficiency first."

Community Collaboration

+ Community collaboration in general was popular.
+ Opportunities for bulk purchase could help communities to spread costs.
+ There are challenges with community co-ordination and over-reliance on bottom-upvolunteers.
+ Some members of the community may be less able to participate.

Under some circumstances, new fossil fuel options can still be cheaper and more preferable to renewable options.

This highlights a major challenge for island decarbonisation that it is still subject to global energy markets.

RIPEET - Responsible Energy Transition
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