



**ISLANDS DEAL: ISLANDS CENTRE FOR NET ZERO (OUTER HEBRIDES)
AND ENERGY UPDATE**

Report by Depute Chief Executive

PURPOSE

- 1.1 The Report seeks to update Members on the first year of the Islands Deal funded project, the Islands Centre for Net Zero and subsequent developments and Energy plans in the Outer Hebrides, with a focus on Uist and Barra.

EXECUTIVE SUMMARY

- 2.1 The Islands Growth Deal is a £100 million Programme jointly funded by both UK and Scottish Government. It is a 10-year package of investment that will seek to drive economic growth and the creation of sustainable jobs across Shetland, Orkney and the Outer Hebrides. The Islands Deal was developed by Comhairle nan Eilean Siar, Orkney and Shetland Island Councils together with their partners in the public, academic, business and community sectors.
- 2.2 The first project approved in April 2023, as part of the Islands Growth Deal portfolio was the Islands Centre for Net Zero (ICNZ) which is a pan-island innovation centre that will support our Islands to become lighthouse communities in the energy transition by exploring, trialling and accelerating solutions to decarbonisation that have replicability and application worldwide, generating GVA and green jobs for the Islands.
- 2.3 The Outer Hebrides will receive a total of £5m to be delivered through the Islands Centre for Net Zero Outer Hebrides (ICNZ OH) to support innovative decarbonisation research and project initiatives that are pertinent to our Islands.
- 2.4 As a key partner of the ICNZ, Comhairle nan Eilean Siar has been involved in the development and management of the ICNZ at Programme and local level and has ensured synchronisation with the Comhairle's Energy Strategy, with a view to leverage Uist and Barra energy opportunities through the ICNZ OH.

RECOMMENDATIONS

- 3.1 **It is recommended that the Comhairle note the Report and continue to support the work of the Islands Centre for Net Zero (Outer Hebrides) and its delivery plans, in coordination with the Comhairle's Energy Strategy for Uist and Barra.**

Contact Officers: John Cunningham, Strategy Manager
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Background Papers: None

IMPLICATIONS

- 4.1 The following implications are applicable in terms of the Report.

Resource Implications	Implications/None
Financial	None
Legal	None
Staffing	None
Assets and Property	None
Strategic Implications	Implications/None
Risk	The Islands Deal Programme and all Projects have a Risk Register in place that is reviewed continuously
Equalities	None
Corporate Strategy	Directly relates to the Corporate Strategy 2022-2027 commitment to “Deliver the development Projects associated with the Islands Deal”
Environmental Impact	Aim of Island Centre for Net Zero is support a range of decarbonisation initiatives across the Islands.
Consultation	None

BACKGROUND

- 5.1 A suite of sixteen projects across the Island regions have been developed by Comhairle nan Eilean Siar, Orkney and Shetland Island Councils, together with their partners in the public, academic, business and community sectors. Following the signing of the Heads of Terms, appropriate Governance has been established within the islands Deal Programme Management Office and Project leads have been progressing with Outline Business Cases (OBC), that are required to be developed in line with HM Treasury ‘Green Book’ standards. This has been an iterative process, involving multiple rounds of feedback from both Governments and subsequent amends but has ultimately led to robust OBCs.
- 5.2 Upon full approval of all OBCs and Islands Deal Governance, the Full Deal Agreement was officially signed by the three Islands Councils and UK and Scottish Government at an Event in Orkney on 20th January 2023. The Agreement confirms investment across the approved Project OBCs over 10 years and will support the attraction of an additional £293m match funding to our Islands. Projects will progress throughout the 10-year Programme following compilation and approval of Full Business Cases (FBC) from both Governments.

ISLANDS CENTRE FOR NET ZERO - PROGRAMME

- 6.1 The £16.5m Islands Centre for Net Zero (ICNZ) is the first Project within the Islands Deal to receive approval for their Full Business Case, in April 2023. It has been established through interdisciplinary partnership with the three Islands Deal Local Authorities, EMEC, Community Energy Scotland, UHI, Herriott Watt University and Aquatera. It is this pan-island partnership approach that will enable the ICNZ to establish an innovation centre that will support our Islands to become lighthouse communities in the energy transition by exploring, trialling, and accelerating solutions to decarbonisation that have replicability and application worldwide, generating GVA and green jobs for the Islands.
- 6.2 The key aims of the ICNZ are to provide support to accelerating the Islands to achieve net zero ahead of the rest of the UK, whilst creating new green jobs within the Islands and enabling the generation of new enterprises and revenue streams, which includes stimulating growth across the supply chain. Through delivery of these aims, it is intended that the Centre will eventually become an internationally linked and recognised innovation centre, producing transferrable results beyond our three island groups.

- 6.3 The Centre aims to build capacity for a Just Transition in our Islands through the development of a number of tools that can be utilised across the Islands: The ICNZ 'Toolbox'. These Tools will be used to research and trial a selection of impactful and innovative decarbonisation projects, with the ability to leverage in additional resource over the 10-year life of the Programme. The 'Toolbox' comprises of the following:
- **Data Exchange** – The ICNZ Data Exchange will deliver a modern computing, knowledge transfer and data resource facility to manage the Carbon measurements of the three Islands regions. Its primary base will be within the ICNZ in Orkney, with local access points available virtually in Shetland and the Outer Hebrides ICNZ's and across all participating Community Networks.
 - **Transition Lab** – This 'tool' will be managed by the University partners of the Centre with the aim to better develop the ways to understand the problems of transitioning to low carbon energy and develop solutions to key themes that are specific to Islands, such as buildings, transport, energy and environment.
 - **Demonstration Zones** – These Zones will support the trailing of decarbonisation technologies, which will enable the acceleration of our pathways to the energy transition with solutions for Market through demonstration of Technical Readiness Level (TRL) and Commercial Readiness Index (CRI). Barra and Vatersay have been identified as a well-suited location for demonstration projects due to the geographic features of the Island and recent track record of community organisations and the wider community engaging with energy and climate development and research such as the Carbon Neutral Islands (CNI) Project.
 - **Islands Community Action Network (iCAN)** – This Network will comprise of community organisations across the three Island areas who will engage, and support their communities to participate, with the ICNZ. The network will include twelve Community Resource Centres based within anchor community organisations, supporting the outreach and education work of the ICNZ, providing opportunities to access the Data Exchange and support the mobilisation of decarbonisation at community level.
 - **Island Accelerators** – The Accelerator 'tool' aims to leverage additional financial and technical resources that may be required to accelerate transition project development. This resource will be available to communities and businesses undertaking decarbonisation projects in the Outer Hebrides.
- 6.4 Since its inception in April 2023, the ICNZ has been cognisant of their 10-year profile and has therefore taken time to establish strong foundations upon which to deliver this innovative Project. Outputs to date includes staff recruitment, governance processes and the early establishment of the Data Exchange and Community Action Networks. ICNZ has also been successful in supporting securement of a number of different funding sources to bolster added value achieved through the Centre and held a successful pan-island 'Open Day' event at the end of 2023.

ISLAND CENTRE FOR NET ZERO (OUTER HEBRIDES)

- 7.1 As part of the ICNZ delivery, an allocated amount of £5m is available to support the implementation of the Centre in the Outer Hebrides. However, the current FBC approval accounts for only £1.68m towards the Outer Hebrides, with the remaining £3.32m still to be approved following submission of a subsequent FBC appendix, pertinent to addressing decarbonisation plans within our region through capital developments.
- 7.2 Over the course of the last year, the ICNZ OH has followed the Programme lead, and spent time on recruitment and governance procedures to ensure appropriate foundations. The Centre has been

purposeful in its appointment of an Islands-wide spread of resource, with the ICNZ Manager located in Stornoway, a Community Officer based in Uist and a further staff resource in Barra being utilised. Reflective of its partnership delivery, the ICNZ OH Manager and Community Officer are employed by Community Energy Scotland, the additional staff resource Officer hosted by Coimhearsachd Bharraidh agus Bhatarsaidh and the final pending position of Research and Development Coordinator will be employed by UHI North, West and Hebrides, to be based anywhere in the Outer Hebrides.

- 7.3 Whilst the ICNZ Programme is managed by a Steering Committee, which ICNZ OH partners feed into, there is also a more local-led strategic group, the ICNZ OH Project Board, that is inclusive of key stakeholders from public, private, Community and third sectors in the Outer Hebrides: Community Energy Scotland; Nature Scot; Highlands and Islands Enterprise; Hebrides Energy CIC; Tagsa Uibhist; Coimhearsach Bharraidh agus Bhatarsaidh; UHI North, West and Hebrides; and Comhairle nan Eilean Siar, who are responsible for Chairing the Group. This representative group provide strategic input and oversight of the delivery of the ICNZ OH, providing an informed and collaborative approach.
- 7.4 Since establishment of the Team, much time has been spent networking with existing partner groups and organisations in the decarbonisation sector to determine a clear overview and complimentary service within the sector enabling the ICNZ to add value at a more strategic level in our Islands. Members of the iCAN and potential Community Resource centres have begun to be identified with early interest primarily from groups in Uist and Barra, although further work to ensure a more spinal geographical spread in our Islands continues to be underway.
- 7.5 UHI North, West and Hebrides (UHI NWH) key role within ICNZ OH will be in relation to delivery of the Data Exchange and Transition Labs in the Outer Hebrides, with a view to researching and trialing innovative decarbonisation solutions that are specific to our Islands. The UHI NWH Campuses will also provide a physical access point for the Centre in Stornoway and Barra, with clear synergies between ICNZ and Carbon Neutral Islands (CNI) able to be capitalised upon. Initial works are underway to explore how the existing Learning Centre in Barra could be restructured to provide an access point and workspace for ICNZ staff and partners.
- 7.6 As part of the Transition Lab and Demonstrator Zone processes, capital funding allocation from the core ICNZ OH allocation is in the process of seeking FBC approval to support the establishment of a Hydrogen Skills and Innovation Centre, to be based at the Creed Park in Lewis. This pilot initiative, aimed at trialing technology, whilst growing skills in a new green energy sector that is of wider benefit to our Islands strategic energy plans, is a prime first project to support as it fully aligns with the key aims of the ICNZ OH.
- 7.7 The Hydrogen Skills and Innovation Centre (HSIC) is also being delivered in partnership with UHI NWH, which will support replicability and enhanced rollout potential, further increasing its reach and sustainability. Whilst not involved in the direct delivery of the Project, the ICNZ OH continue to add value through its representation on the HSIC Project Board and will be focussing on creating opportunities for learnings from the HSIC to be shared across the Outer Hebrides and exploring the scope for Hydrogen Generation in Uist and Barra.

ICNZ OH FUTURE PLANS – UIST AND BARRA

- 8.1 Following the successful Open Day held in December 2023, outcomes of the Event have been reviewed and utilised to support the development of a Delivery Strategy for the ICNZ OH in its early years. This work has also been done with a view to recognise and add value to the existing compliment of climate change and decarbonisation activists that are already undertaking important work and is inclusive of literature reviews of Energy and Climate consultations and Community strategies from across the Outer Hebrides; this includes Local Energy Plans from Uist and Barra and Vatersay and the Barra and Vatersay Community Climate Action plan produced during the CNI Project.

- 8.2 Through these consultations and reviews, there are several commonalities highlighted across the Uists and Barra which relate to decarbonisation opportunities in domestic energy, community engagement and environment. As the domestic sector is one of the largest sources of carbon emissions in the Outer Hebrides, whilst simultaneously hosting residents that endure some of the highest rates of fuel poverty in the country, addressing these challenges has unsurprisingly emerged at the fore.
- 8.3 In partnership with key local organisations, ICNZ OH will be committing to the exploration of domestic decarbonisation by trailing and monitoring the impact of a full range of energy efficiency and renewable interventions on the various housing types in our Islands, that are not necessarily accounted for accurately at national level. This work will be used to produce clear, accessible information for residents of the Outer Hebrides.
- 8.4 In co-operation with partner islands, the ICNZ OH will also seek to address an increased rollout effort of smart meters, with a view to prioritising those on Total Heat Total Control (THTC) energy tariffs affected by the planned radio teleswitch frequency off in June 2025.
- 8.5 To support community education and engagement in relation to addressing key decarbonisation efforts, a networked approach to waste reduction and circular economies in the Uists and Barra will be focused on with a view to providing scalable interventions and learning opportunities to wider Communities. This work will align with the Comhairle's current development of waste solutions for Uist and Barra and look to reduce emissions from additional waste streams within the Islands.
- 8.6 As Peatland is consistently recognised as the largest source of emissions in carbon auditing across our Islands, there remains significant opportunity to investigate peatland restoration and management options, especially in cognisance of the impact future large-scale infrastructure projects will have on this resource.
- 8.7 More recently, an Event has also been held at Cnoc Soillier in Daliburgh with attendees from Uist and Barra joining online and in person. This event focussed on the emerging priority projects for ICNZ OH and the iCANs and also featured a panel discussion on decarbonisation challenges in Uist. The outcomes from this meeting will also be reflected in the upcoming ICNZ Strategy and once finalised, it will be available publicly.
- 8.8 Whilst the ICNZ have kept a relatively low profile over its initial year, much work has been progressed behind the scenes and the ICNZ OH are confident that staff presence and growing community engagement and strategic coordination across Uist and Barra, will lead to a number of projects emerging locally.

OUTER HEBRIDES NET ZERO FOUNDATIONS

- 9.1 As part of the Islands Accelerator tool, the Comhairle was successful in securing additional funding to appoint a dedicated two-year resource to exploring the non-technical barriers relating to the establishment of a local energy supply Company in the Outer Hebrides, as part of the Outer Hebrides Net Zero Foundations Project, funded by Innovate UK.
- 9.2 The Net Zero Innovation and Delivery Officer has been in post at the Comhairle since September 2023 and will be supporting ICNZ OH efforts in smart meter rollouts, with a view to increasing availability and detail of data to inform collective future plans in achieving commercial local energy supply. A pan-island approach in relation to the feasibility of an Islands-tariff is also being supported by the Outer Hebrides Net Zero Foundations project.

ENERGY UPDATE – UIST AND BARRA

- 10.1 In February 2024, and following a period of extensive stakeholder engagement, SSEN Distribution submitted their proposal for a 'Whole System Solution' (WSS) for the Outer Hebrides. Under SSEN Distribution's new Price Control Period, known as RIIO-ED2 and running from 2023 to 2028, the Distribution Operator is permitted to apply to OFGEM for funding to deliver a WSS which will facilitate Net Zero and support Security of (Electricity) Supply for the islands.
- 10.2 The WSS looks at future demand, continued island resilience, decarbonisation of the on-island diesel fleet and subsea cable asset condition. The current WSS, which is the subject of this update, will be refined through 2024 with a view to submission of a final WSS in January 2025.
- 10.3 In developing the WSS, SSEN Distribution scoped a long list of 32 options, refined to a short list of 14 options deemed to be technically feasible. The short-listed options underwent detailed Cost Benefit Analysis and SSEN Distribution finally selected Option 18 as the most suitable option for Uist and Barra.
- 10.4 Through this assessment process, the existing subsea cable between Ardmere (Skye) and Lochcarnan (South Uist) was assessed to be C2 Critical (the Criticality Index has four ratings, C1 to C4, with C1 having the highest consequences of failure) and HI5 Health (the Health Index has five ratings, HI1 to HI5 with HI5 at the end of serviceable life and requiring immediate intervention). The Security of Supply assessment for this cable suggests that, should the feed from Ardmere be lost, supply will be sustained by diesel generation at Lochcarnan and Barra with contractors estimating a two-year period for the subsea cable to be restored. The consequences of cable failure for community generators could be very significant given recent experience in Lewis where community generators were unable to export product for the nine months of subsea cable outage.
- 10.5 The Whole System approach being embraced by SSEN Distribution involve a blending of traditional Distribution, traditional Transmission, use of new technologies, greater use of flexibility and decarbonisation / re-powering of diesel generators.
- 10.6 Whole System Solution Option 18, as selected for the Uist and Barra network, involves:
- a new DUNVEGAN (SKYE) TO LOCHCARNAN subsea cable / overhead line;
 - a new HARRIS TO CLACHAN subsea cable / overhead line; and,
 - a new, secondary, ARDMORE (SKYE) TO HARRIS subsea cable.
- Cables deployed will be 300mm² for Dunvegan to Lochcarnan and Harris to Clachan compared to 95mm² for the existing Ardmere to Lochcarnan cable and 500mm² for the secondary Ardmere to Harris cable, matching the recently installed cable. This arrangement is expected to cater for demand growth to 2050.
- 10.7 The benefits of Option 18 include a shorter subsea route, less price impact for customers and a lower carbon footprint from manufacture and installation. Potential limitations include an anticipated consenting challenge for the overhead line section between Dunvegan and the subsea cable landing point at Loch Pooltiel.

DELIVERY PLANS

- 11.1 In terms of project delivery, consents will be applied for during 2025 with installation planned for 2026/27. The provision of a new link across the Sound of Harris will connect the Lewis and Harris network with the Uist and Barra network for the first time. Mindful of capacity constraints on the new 1.8GW Lewis to Beaulieu Transmission Link, this arrangement *may* allow new generation in Uist and Barra to be transmitted to Lewis for export via Lewis to Beaulieu. This opportunity will be followed up with SSEN Distribution by Comhairle Officers.

- 11.2 The Uist and Barra Community Energy Forum will meet during April 2024, under the leadership of the Comhairle with Community Energy Scotland providing the secretariat. These new developments in network configuration could provide a new impetus for the Uist Local Energy Plan which will be taken forward by the Forum.
- 11.3 The Comhairle continues in dialogue with Marine Scotland and Crown Estate Scotland over the long-range opportunity for Green Hydrogen production in Uist and Barra, powered from a new round of Offshore Wind with product exported by ship. These plans are at the exploratory stage at the moment with much work to be done on viability, consenting (onshore and offshore), stakeholder engagement, access to land and identification of offtake but the long-term vision is for the Net Zero Hub in Lewis to be replicated in Uist and Barra at some point during the 2030's.
- 11.4 High level coordination of these relevant workstreams through the ICNZ OH, the Comhairle and the Net Zero and Delivery Officer remit allow to collaborate efforts on technical and non-technical issues pertaining to the feasibility and deliverability of our Islands planned local renewable energy and decarbonisation strategies.

CONCLUSION

- 12.1 Following a foundational first year, the ICNZ OH is now ready to start establishing its decarbonisation position within the Outer Hebrides, with a focus on piloting innovative projects in the Uist and Barra and more strategic co-operation developments with Shetland and Orkney in the coming years. Alignment with the Comhairle's Energy team will be ongoing to research opportune pathway projects that will support enablement of the long-term energy plans in the Uist and Barra in relation to grid and renewable energy options.
- 12.2 SSEN's proposal to replace the existing Ardmere (Skye) to Lochcarnan subsea cable with three new subsea cables will considerably strengthen the resilience of the Uist and Barra network, connecting it to the Lewis and Harris network for the first time in history. While larger capacity cables might theoretically allow export of new renewable energy generation through Skye to Grid at Fort Augustus, the capacity bottlenecks on that line are well documented.
- 12.3 These significant changes to the Uist and Barra electricity network mean that plans previously stymied by an over capacity, closed network could now become a reality through a renewed, open network. The Uist and Barra Community Energy Forum will meet during April 2024 to consider these opportunities and to look again at how the objectives of the Uist Local Energy Plan can be taken forward on a collaborative basis in alignment with ICNZ OH's Strategy Plans, providing a collective and multi-solution approach to decarbonisation across the Uists and Barra, and the Outer Hebrides as a whole.