PURPOSE OF REPORT

To present a finalised draft of the Outer Hebrides Energy Strategy.

COMPETENCE

1.1 There are no legal or other constraints to the recommendations being implemented. The costs associated with commissioning the audit of energy supply and demand in the Outer Hebrides will be funded from Departmental Budgets.

SUMMARY

2.1 The development of an Outer Hebrides Energy Strategy is included as an action within the ‘Outer Hebrides Economic Regeneration Strategy 2012-2020’. A consultative version of the Outer Hebrides Energy Strategy was developed in January 2014 and, following a consultation exercise, a final draft is appended to the Report.

2.2 The strategy provides a framework within which to draw together a range of diverse but inter-related strands of activity, allowing us to clarify and monitor progress on the energy-related aspirations of the Comhairle and its Community Planning partners. Its overarching objectives are to maximise the economic benefits of renewable generation to the Outer Hebrides, increase our self-sufficiency in meeting our energy needs, and address levels of fuel poverty in the islands.

2.3 Following comments on the consultative draft by the Comhairle’s Energy Member Officer Working Group, the document was circulated to the following organisations:

- HIE (Core and Outer Hebrides)
- Skills Development Scotland
- Lews Castle College
- Community Energy Scotland
- Hebridean Housing Partnership
- Scottish Natural Heritage
- Stornoway Port Authority
- Comhairle Development Services
- Comhairle Economic Development
- Tighean Innse Gall

2.4 There was a good level of engagement with the consultation and some high quality feedback was received and incorporated into the final draft. In particular, the Fuel Poverty aspect of the proposed strategy has been strengthened.

2.5 The Energy Unit has concurrently commissioned a comprehensive audit of energy supply and demand in the Outer Hebrides. This piece of work is currently being carried out by Element Energy and the resulting report will provide a valuable energy baseline for a range of Energy Unit tasks: local, national and European. The finalised Outer Hebrides Energy Audit (2014) will act as an Appendix to the published version of the Outer Hebrides Energy Strategy.

RECOMMENDATION

3.1 It is recommended that the Comhairle approve the finalised version of the Outer Hebrides Energy Strategy.

Contact Officer John Cunningham, jcunningham@cne-siar.gov.uk, ext 211397
Appendix Outer Hebrides Energy Strategy (Finalised Draft)
OUR VISION

By 2030, the Outer Hebrides will be a key contributor to decarbonisation targets in Scotland, the UK and Europe. 500MW of commercial Onshore Wind generation will be in place, complemented by 50MW of Community generation. The seas around the Outer Hebrides will be producing Renewable electricity at commercial scale from wave power together with fixed and floating wind turbine installations, and a thriving Off-Grid sector will be generating energy from alternative sources for heat, light and transport, demonstrating increased innovation and self-sufficiency in meeting our energy needs.
1. INTRODUCTION

The Outer Hebrides is in the enviable position of being home to some of the best Renewable Energy resources in the world. Current estimates project a realisable 6.5GW of Renewable electricity from the Outer Hebrides, including a massive 4.8GW Wave Energy resource. There is currently 555 MW of contracted Renewable generation in place in the islands, comprising a mixture of onshore wind and marine energy proposals, and including a nationally significant level of community owned generation.

The Outer Hebrides therefore offers the potential to make a significant contribution to the renewable energy industry in Scotland. However, this vision is constrained by poor Grid connectivity. At present, the Outer Hebrides is served by a 22MW Radial Connector from the UK Grid with no export capacity. In order to export the hundreds of Megawatts of electricity which will be generated on and around these islands, a new 450MW Radial Connector to the UK Grid is proposed, with additional export capacity required in the longer term, once Marine Energy technologies mature.

In addition to these opportunities, there are a range of inherent challenges facing the Outer Hebrides. The islands have long been dependent on imported fuel as an energy source. Rising oil prices, below average incomes, and relatively poor housing conditions, along with an extreme weather regime, have resulted in the islands experiencing the highest levels of fuel poverty in the UK.¹ This strategy therefore seeks to support a range of measures to impact on the cost and security of our energy supply, addressing high levels of fuel poverty through energy efficiency measures, pursuing local electricity supply opportunities, and supporting off-Grid innovation and increased self-sufficiency in meeting our energy needs by promoting developments in Energy Storage, District Heat initiatives and micro-generation.

Harnessing our renewable resources would allow the Outer Hebrides to become a key contributor in supporting the low carbon agenda in Scotland, the UK and Europe, helping to reduce CO2 emissions and slowing the progress of climate change. While the Outer Hebrides contribution to the process of climate change is small, the impact on the islands as a result of climate change will be considerable. The Outer Hebrides is recognised for the strength and quality of its natural and historic environment. However, increased sea levels and storm intensity will have a disproportionate impact on our environment and how we live and work, so we have a vested interest as an island chain in promoting sustainable development and reducing our carbon footprint. Efforts to harness our renewable resources will need to ensure the respective needs of the economy and the environment are complemented rather than compromised, supported by a strong spatial planning and consenting framework.

The proposed radial connector offers a transformational opportunity for the fragile economy of the Outer Hebrides, enabling about £2 billion of private sector investment. Inevitably, a significant proportion of this investment will go to specialised suppliers and contractors whose products and services are not available in the islands, but a key objective of this strategy is to capture as much of this investment value for the islands as possible. This will mean mobilisation of the island Supply Chain, promotion of the opportunities and the development of trust and cooperation with developers seeking to invest.

The return for the islands from this process will be in the form of ‘Community Benefit’, paid to the local community on a per MW installed basis by developers, together with potential community buy-in opportunities into some of the onshore wind developments, and an unprecedented demand for island labour in all areas of the Supply Chain – manufacture / fabrication, installation, operation, maintenance, and research and development. At a wider level, supporting the continued development of the flourishing community renewable sector in the islands will open up new income streams for investment into these communities.

¹ Fuel Poverty is the situation where more than 10% of a household’s income is spent in heating the home.
2. STRATEGY IMPLEMENTATION

Policy Context
This strategy is informed by a number of related policy documents.

- The Outer Hebrides Community Planning Partnership (OHCPP) has signed up to the ‘Outer Hebrides Climate Change Declaration’ (2012) which has committed us to a year on year reduction in carbon emissions of 3% a year. This is reinforced in the Comhairle’s own Corporate Strategy 2012-2017 and Carbon Management Plan 2013-2015.
- The Council’s involvement in the ISLEPACT project led to the development of an Islands Sustainable Energy Action Plan (2011) with the target of at least 20% reduction in carbon emissions by 2020.
- These local targets are mirrored at national and EU level. The Scotland 2020 targets contained within the 2009 Climate Change Act contain a target for a reduction of 42% in carbon emissions.
- The Scottish Government’s ‘Economic Strategy’ identifies renewable energy as one of six key sectors offering significant potential for future economic growth. This is mirrored at a local level within the Outer Hebrides Economic Regeneration Strategy 2013-2020, in which ‘Energy’ is identified as one of the 7 key sectors for the Outer Hebrides.
- The priority areas, actions and targets within this strategy directly link to those relating to renewable energy (from an economic development perspective), fuel poverty and reduced carbon emissions as contained within the OHCPP’s Single Outcome Agreement 2012-2023, the aforementioned Outer Hebrides Economic Regeneration Strategy and the Comhairle’s Corporate Strategy.

Measuring Progress
The Outer Hebrides Energy Audit (Element Energy, 2014) has provided an up to date baseline for carbon emissions, energy supply and demand in the islands. This is reinforced by targets contained within the Single Outcome Agreement and the Economic Regeneration Strategy.

In assessing the impact of this strategy, progress will be measured in relation to the following indicators:

- Reduction in carbon emissions in line with 2020 targets.
- Reduction in fuel poverty from current baseline of over 70%
- 500 MW of on-shore wind energy consented or operational by 2020.
- 50 MW of community-owned generation consented or operational by 2020.
- 50 MW of marine energy consented or operational by 2025.
- Volume of electricity exported from the Outer Hebrides to the main UK electricity Grid.

Implementation
Implementation of the actions will be led on a partnership basis by the Comhairle and HIE, working with other key stakeholders from the public and private sector, in particular Skills Development Scotland (SDS), Lews Castle College (LCC), Community Energy Scotland (CES) and Energy North. This will be done through the framework of the OHCPPs Economy Outcome Group and the reporting mechanism which already exists through this structure. In respect of the fuel poverty and energy efficiency objectives of this strategy, implementation of these actions will be taken forward through the framework of the Outer Hebrides Energy Efficiency Forum.

3. Outcomes and Actions

Our Priority Outcomes are:
- A 21\textsuperscript{st} Century Electricity Grid
- A Supportive Environment For Developers
- A Well Developed And Coherent Supply Chain
- A Thriving Community Energy Sector
- Reduced Levels Of Fuel Poverty
- A European Exemplar For Energy Innovation

We have identified a set of actions to enable us to support these priorities:

<table>
<thead>
<tr>
<th>Priority Areas</th>
<th>Actions to Support</th>
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<tbody>
<tr>
<td>A 21\textsuperscript{st} Century Electricity Grid</td>
<td>• Work with Transmission Owners and Operators, Government, Regulators and Developers to deliver a 21\textsuperscript{st} Century Electricity Grid for the Outer Hebrides.</td>
</tr>
<tr>
<td>A Supportive Environment For Developers</td>
<td>• Promote the Outer Hebrides as the location of choice for Renewable Energy developers.</td>
</tr>
<tr>
<td>A Well Developed And Coherent Supply Chain</td>
<td>• Work with the local Supply Chain to target effort and build capability</td>
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<td></td>
<td>• Implement skills and training provision specific to the Outer Hebrides energy sector.</td>
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<td></td>
<td>• Engage with the National Renewable Infrastructure Plan process to support fabrication and maintenance sites in the Outer Hebrides.</td>
</tr>
<tr>
<td>A Thriving Community Energy Sector</td>
<td>• Support continued growth in the Community Energy sector</td>
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<td>• Ensure communities achieve maximum benefit from renewable schemes.</td>
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<tr>
<td>Reduced Levels Of Fuel Poverty</td>
<td>• Support the reduction of fuel poverty in the Outer Hebrides through the development and delivery of energy efficiency measures.</td>
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<td>• Support micro-generation and district heat initiatives as offering scope to meet the heat and power needs of domestic and non-domestic consumers.</td>
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<td></td>
<td>• Pursue local electricity supply company opportunities.</td>
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<tr>
<td>A European Exemplar For Energy Innovation</td>
<td>• Support research and innovation in Renewable and Alternative Energy.</td>
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<td></td>
<td>• Learn from best practice and experience in other island and peripheral communities.</td>
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The existing Outer Hebrides Grid is connected to the national network through a 22MW Radial Connector running from the nearest point of the Main Interconnected Transmission System (MITS) at Fort Augustus. The Connector runs from Fort Augustus to Ardmore in Skye then on, subsea, to Lochcarnan (South Uist) and Stockinish (Harris). From Stockinish, the Connector runs overland to the main demand centre in Stornoway. Since peak island demand is circa 29MW, diesel generation is required at Stornoway and Lochcarnan to top up imported load. Although 21.5MW of community generation is contracted to the island DISTRIBUTION network on an interim basis, there is no capacity for export of Renewable electricity on the TRANSMISSION network.

With 555MW of Renewable electricity consented and contracted to Grid, the Transmission Owner for the North of Scotland, Scottish Hydro Electric Transmission (SHE-T) is developing proposals for a new 450MW HVDC Radial Connector which will run, underground then subsea, from MITS at Beauly to Gravir on the East coast of Lewis. An AC Connector will then run overland from Gravir to Stornoway. Before authorising investment in this infrastructure, OFGEM require to be convinced of the need for this Radial Connector. Because the total cost of the proposed Radial Connector must be recovered from developers using the link over its lifetime, forecast Transmission Network Use of System (TNUoS) charges for the islands are prohibitive and threaten to undermine the viability of island wind farms. The Comhairle and its partners continue to engage vigorously with Transmission Owners, Government and Regulators to ensure that electricity market incentives for renewable energy generation take account of this Transmission Charge overcost for island developers. A completion date of 2019 is anticipated for this Radial Connector.

The Comhairle and its partners will continue to explore longer term Grid solutions for the time when Marine Energy technologies mature and become commercial. This will involve engagement in the Irish Scottish Links on Electricity Study (ISLES) process which proposes a high capacity, subsea HVDC ‘backbone’ running from the Outer Hebrides, down the West coast of the United Kingdom and through the Irish Sea with landfall near areas of UK demand and, possibly, in the European mainland.

A SUPPORTIVE ENVIRONMENT FOR DEVELOPERS

Action - Promote the Outer Hebrides as the location of choice for Renewable Energy developers.

Marketing and promotion of the Renewable Energy resource, expertise and Supply Chain potential of the Outer Hebrides is crucial. To develop this, the Comhairle and its partners will maintain an Outer Hebrides presence at key industry events and networks. Promotional materials will continue to be developed for distribution to industry and interested parties, with a particular focus on the Marine Energy potential over the short to medium term.

The Outer Hebrides Renewable Group (OHRG), comprising representation from the Comhairle, HIE, Scottish Government, The Crown Estate, DECC, OFGEM, SNH, National Grid, Scottish Hydro Electric Transmission and island developers will continue as a key meeting place for all interested parties. The OHRG will continue to lobby vigorously at all levels for the Energy interests of the Outer Hebrides. The May 2013 DECC report on the relative economics of island renewables established that the main projects driving the requirement for a transmission link faced different technology risks and cost profiles than mainland projects and that, despite these factors, it is still in the best interests of UK consumers to connect the Outer Hebrides to enable a cost effective contribution to low carbon generation targets. In the short term, the OHRG will continue to contribute to efforts to de-risk the procurement and construction of the 450MW Western Isles Radial Connector. In the longer term, the focus of the Group will move towards opening up the considerable potential of the Marine Energy sector West of Hebrides.
A WELL DEVELOPED AND COHERENT SUPPLY CHAIN

**Action - Work with the local Supply Chain to target effort and build capability.**

Economic opportunities arising from Energy can be identified at three levels – fabrication; research; and, the wider supply chain – with the level and nature of the opportunity varying in the short, medium and longer term. There is a need to get the balance right between maximising local economic impact during construction phases and ensuring longer term benefits through operation and maintenance activities associated with Energy projects.

The major Supply Chain opportunity in the short to medium term (2015 to 2019) revolves around the construction of major onshore Wind Farms such as Beinn Mhor Power (Eishken, Lewis) or Stornoway Wind Farm. Key Supply Chain sectors which will benefit from this intensive period of activity will include civil engineering, construction, electricals and fabrication, with a small proportion of research activity. As proposals for Wave Energy develop in the longer term (2019 to 2030), there will continue to be significant local opportunities in fabrication, assembly and marine engineering while the demand for research and development activity will accelerate rapidly.

In order to position local businesses to compete for work that is likely to become available, the Comhairle and HIE will coordinate and support the interface between the local supply chain and developers, ensuring that information on timescales, requirements and standards is communicated. Energy North, as the trade organisation for Energy in the North of Scotland, will play an important supporting role in the continued development of the local supply chain.

**Action – Implement skills and training provision specific to the Outer Hebrides Energy sector.**

The existing Energy skills base in the Outer Hebrides is heavily weighted towards traditional construction, civil engineering and heavy fabrication activities. There is also a high level of experience in the energy industry both in the North Sea and further afield. With a skilled workforce already working across energy sectors, active STEM and youth awareness programmes, and with an engineering resource able to move into renewables over the next few years, the Outer Hebrides could be well placed to support the industry.

While opportunities will continue to develop in fabrication and engineering, it is likely that a new set of skills will be required as the Renewable Energy sector rolls out. A focus will be required to ensure that the range of skills is available to support the potential onshore and marine renewable boom, long term operations and maintenance, as well as the wider supply chain needs of marine services, environmental monitoring, project management and R&D. The growing demand from the oil and gas sector across the Highlands and Islands may present particular challenges to this.

The Highlands and Islands regional skills strategy (H&I SIP), linking to the wider National Skills Investment Plan for Energy, will be the principal vehicle for meeting this objective, supporting appropriate engagement with industry and a quantified assessment of future skills demand and job opportunities.

Engagement with industry will be used to ensure visibility of future job opportunities for local people and will be a key component of informing careers guidance and the development of appropriate skills provision.

The Comhairle and its partners, including Lews Castle College UHI, will work with SDS to develop a skills framework, building on existing work across the energy sector, which will include Skills conversion courses for workers in relevant sectors and ongoing retraining/up-skilling for the renewables sector, delivery of education programmes, including the Junior Saltire Prize linked to STEM, to promote awareness, and understanding of career opportunities.
**Action – Engage with the National Renewable Infrastructure Plan process to support fabrication and maintenance sites in the Outer Hebrides.**

Recognising that Arnish Yard is the principal fabrication site for Energy in the Outer Hebrides, and one of the leading sites in Scotland, the Comhairle and its partners will engage with HIE, SDI and Scotland’s National Renewable Infrastructure Plan to ensure that Arnish Yard is suitably resourced and promoted as an attractive fabrication base.

Stornoway Port is a key infrastructure site for the sector in the west of Scotland, with the range of port services complementing the offer at Arnish, and being part of the overall offer presented by HIE in its promotion of the Arnish site. The Comhairle and its partners will continue to support the Port Authority on its proposals for the further development of the Port in relation to energy supply chain services. At a wider level the Comhairle and its partners will build on the recently published ‘Outer Hebrides Ports & Harbours Study’ to identify fabrication, operation and service bases which might effectively support the nascent Marine Energy industry. Particular consideration will be given to the concept of a single, multi-purpose base which might usefully support a range of Marine technologies deployed in Hebridean waters.

**REDUCED LEVELS OF FUEL POVERTY**

**Action - support the reduction of fuel poverty in the Outer Hebrides through the development and delivery of energy efficiency measures**

The Outer Hebrides have the highest rate of Fuel Poverty in the UK, a prevalence of ‘hard to treat’ properties and an aggressive climate. Fuel poverty in the islands results from poor energy efficiency, high fuel costs and low incomes. The regression rate for improved houses is very high. There has been significant investment in energy efficiency measures across the housing stock and continued intervention is required. The Comhairle and its partners in the Outer Hebrides Energy Efficiency Forum will continue to support energy efficiency and insulation interventions suitable to the profile of properties in the Outer Hebrides.

**Action - Support micro-generation and district heat initiatives as offering scope to meet the heat and power needs of domestic and non-domestic consumers.**

Promoting small scale renewable devices offers another mechanism with which to tackle fuel poverty, and to reduce carbon emissions and reliance on imported energy. The Comhairle and its partners will examine barriers to micro-generation for domestic and non-domestic premises and seek to encourage uptake at domestic, community and business uptake, working in partnership with Community Energy Scotland and the Energy Advisory Service. The distributed nature of properties in rural communities of the Outer Hebrides does not lend itself to developing district heat systems. However, where clusters of properties exist there is potential for investigating the scope for district heat systems.

**Action - Support the retail of locally generated electricity to island consumers.**

The Comhairle, and other partners, are exploring the creation of a vehicle to allow the Outer Hebrides community to purchase a share in local electricity generation. The ultimate objective is the supply of local energy to local customers through the creation of a community owned Energy Supply Company (ESCO), or similar vehicle. This would allow electricity to be retailed to the local market at a competitive price, and bring additional benefits to the local economy and community-owned generators. The key consideration in this process will be a reduction in the high levels of Fuel Poverty being experienced in the islands. Subject to the findings of detailed business planning, this ESCO may set out as a ‘Licence Lite’ Junior partner to a Senior Energy company. Over time, it is anticipated that the Outer Hebrides Energy Supply Company will become a trading organisation in its own right.
A THRIVING COMMUNITY ENERGY SECTOR

**Action – Support continued growth in the Community Energy sector.**

The Comhairle and its partners will continue to support community generators as they seek to develop schemes which will benefit their own communities. The Comhairle will work with Community Energy Scotland to provide advice and assistance to community organisations seeking to deliver Renewable Energy aspirations.

**Action – Ensure communities achieve maximum benefit from renewable schemes.**

Our approach will be informed by recent Scottish Government *Guidance on Good Practice Principles for Community Benefits from Onshore Renewable Energy Developments* (April 2014).

The Comhairle and its partners will support the continued development of Western Isles Development Trust (WIDT) as an independent vehicle for the disbursement of Community Benefit accruing from local Energy deployments, and will seek to maximise the benefits achieved through investment by WIDT.

The Comhairle and its partners will continue to lobby for the retention of seabed lease revenues in respect of Energy related activity in the Marine environment around the Outer Hebrides. At present, all revenues leak out of the local economy to the UK Treasury where they are of little use to the fragile communities hosting Marine Energy deployments.

A EUROPEAN EXEMPLAR FOR ENERGY INNOVATION

**Action – Support research and innovation in Renewable and Alternative Energy.**

The long-standing vision of the Outer Hebrides as an ‘Energy Innovation Zone’ will continue to be implemented, with the development and application of Renewable and Alternative Energy processes offering an opportunity to meet the needs of communities, public sector and businesses within the Outer Hebrides. The research base at Lews Castle College UHI, the growing number of local, private sector research organisations, and work being carried out through Community Energy Scotland, can all play a key role in this.

Particular areas of focus will include marine research, hydrogen, energy efficiency, energy storage and smart grids. Research and demonstration projects, and taking them to the next stage of application, will aspire to reduce reliance on imported energy, enhance the distribution of locally generated electricity and heat, and meet work towards achieving ‘Zero Carbon Islands’ status.

The Comhairle is exploring the utilisation of biomass boilers across its property estate and this may open up sufficient scale to develop a longer term biomass supply and distribution chain across the islands.

**Action – Learn from best practice and experience in other island and peripheral communities.**

Through working closely with the other Scottish island authorities, Orkney and Shetland, and strong links with peripheral and island communities as a result of Comhairle involvement in a range of European projects and networks, there are opportunities to learn from experience and emerging best practice in other areas.
The Comhairle will continue to maintain a leading profile on island Energy matters in Europe, recognising the benefits which have already been accrued from participation in European networks and projects such as ISLENET, ISLEPACT, WISE and BEST. The Comhairle will continue to lead the prestigious ISLENET European Island Energy network and will work closely with partners throughout Europe on the delivery of the objectives of this Strategy.

REFERENCES

Outer Hebrides Climate Change Declaration 2012
Comhairle nan Eilean Siar Corporate Strategy 2012-2017
Outer Hebrides Islands Sustainable Energy Action Plan (2011)
Outer Hebrides Economic Strategy 2012-2020
Outer Hebrides Single Outcome Agreement 2012-2023
Outer Hebrides Local Development Plan 2012 and Supplementary Guidance
Government Economic Strategy (Scottish Government, 2011)