
Report to Council

Date of Meeting: 30th November, 2023

Subject: Regional Energy Masterplan and Local Energy Efficiency Strategy

Report by: Pete Leonard, Strategic Director, Place

1.0 Purpose

- 1.1. This report seeks approval of the draft Stirling and Clackmannanshire Regional Energy Masterplan both as a strategic plan to take Clackmannanshire towards achieving net zero energy systems by 2045 and to satisfy the requirements of the Scottish Government's Local Heat and Energy Efficiency Strategy (LHEES) Statutory Order 2022.

2.0 Recommendations

Council is asked to:

- 2.1. Approve the draft Regional Energy Masterplan.
- 2.2. Agree that the Regional Energy Masterplan will be reviewed, updated, and brought to Council every 5 years.
- 2.3. Note that obligations of the LHEES statutory order have been fully met within the content of the Regional Energy Masterplan.

3.0 Background

- 3.1. The Stirling and Clackmannanshire City Region Deal, approved and signed in February 2020, included funding to develop a Regional Energy Masterplan (REM) for the Stirling and Clackmannanshire Council areas.
- 3.2. On Thursday 19th August 2021, Clackmannanshire Council unanimously passed a motion declaring a climate emergency and subsequently commenced the development of a comprehensive Climate Change Strategy. The new strategy delivers a framework which ensures that all strategic decisions, budgets and approaches to planning decisions are in line with a shift to net zero greenhouse gas emissions by 2045
- 3.3. Integrated Energy Solutions (IES) were appointed as the primary consultant and Ricardo as the stakeholder engagement consultant working on the REM and work

began in April 2022, largely around creating a digital twin model and undertaking stakeholder engagement. The shaping of the strategy document followed, utilising data from the model and feedback from formal interactions with stakeholders.

- 3.4. A statutory order mandating local authorities to develop LHEES was commenced in May 2022. This required all local authorities to prepare a LHEES by the end of 2023. The Scottish Government has provided funding for 1.5 FTE officers within the Energy and Sustainability team to help manage the data associated with the REM alongside project management work. The process for employing these temporary officers is underway.
- 3.5. A consultation draft of REM was put out for public consultation from 3rd August to 27th September 2023.
- 3.6. Scottish Government endorsed the REM and the associated LHEES obligations on 7 November 2023.

4.0 Considerations

Recognition of Climate Emergency

- 4.1. Following Council unanimously passing a motion declaring a climate emergency, the Council's Energy and Sustainability commenced the development of a comprehensive Climate Change Strategy.
- 4.2. The Strategy identifies the magnitude of our carbon emissions reduction challenge and it sets out a framework for achieving our net zero targets. This includes ways of aligning major decisions, budgets and approaches to planning decisions with a shift to net zero greenhouse gas emissions.
- 4.3. Specific emission reduction opportunities have been allocated into six areas to aid the development of a thematically based Climate Emergency Action Plan:
 - Energy, Heat and Buildings
 - Low-carbon Transport
 - Waste, Recycling and the Circular Economy
 - Biodiversity, Carbon Storage and Agriculture
 - Adaptation, Planning and Organisational Capacity
 - Economic Development and Sustainable Procurement
- 4.4. These themed strategic plans are currently being developed and will articulate more specific action plans, principally targeting low-carbon activities, nature enhancement, and adaptation measures. These plans will be delivered in an inclusive manner, recognising the need to grow our economy and improve outcomes for those most in need. The REM will deliver on the first of the six themes, Energy, Heat and Buildings.
- 4.5. The Climate Change strategy has had extensive consultation involving local Councillors, area forums, private and public stakeholders and service leads. Feedback has been very supportive and positive.

- 4.6. The Climate Change Strategy is now in the process of having a Strategic Environmental Assessment carried out prior to the presentation to Council in early 2024 for approval.

Regional Energy Masterplan

- 4.3 The REM is a comprehensive document that seeks to map out a route to net zero within measured time periods. Its primary approach considers our energy use and needs in three contexts: 1- to mitigate the need for energy use by employing energy efficiency measures across our buildings and energy systems; 2- To manage our heat systems in the most efficient low carbon manner; 3- To generate energy in the most efficient low carbon way, respecting the need to create resilient and local solutions. Finally the plan considers how best essential carbon emissions can be mitigated by carbon sequestration plans.
- 4.4. In formulating the REM, a digital twin model has been developed to simulate various scenarios. Modelled scenarios are largely based on mandatory targets set by Scottish Government. Officers are being trained to use the model for future predictions and project business case development work.
- 4.5. The draft delivery plan has been developed with consideration of carbon reduction related targets, and weighted factors within each work stream. The delivery plan is split into 5 year phases, and shows the proposed projects with associated costs, Carbon Dioxide (CO₂) reductions, and responsible parties highlighted. Projects will have to be considered against available funding via comprehensive business cases and subsequent approval processes.

A Measured Approach towards Achieving Net Zero

- 4.6. In line with the Council's Climate Emergency plan, the key intention of the REM is to achieve net-zero energy. Recognising that energy systems will inevitably incur CO₂, appropriate tree planting and sequestration has been considered throughout the document.
- 4.7. Being able to measure performance, prioritise and communicate to relevant stakeholders is vital to efficient delivery. Key performance indicators have been aligned with the objectives and outcomes of the REM, and these will feed into the Climate Emergency Action Plan and its reporting mechanisms.
- 4.8. The aim is to allow as much information and data to become as available as possible (respecting data privacy rules) to allow all parties to participate in the collective challenge to work towards net zero.
- 4.9. Each proposed project has a cost, potential funding streams, and an estimated CO₂ saving. This allows the impact of projects to be measured, and used to more accurately plan future projects.
- 4.10. Utilising the model, which is built on various datasets for validation and accuracy purposes, the residual emissions have been projected at 67ktCO₂e in a best case scenario. The worst case scenario has been projected at 180 ktCO₂e.
- 4.11. The best case scenario would require approximately 3.2 million trees to be planted in order to sequester this amount of CO₂e. The worst case scenario would require approximately 8.6 million trees to be planted in order to sequester this

amount of CO₂e. The variance in the best/worst case scenarios is the result of many varying factors in delivering the intentions of the Regional Energy Masterplan.

- 4.12. Re-wilding of landscapes such as peatlands could also be undertaken to improve sequestration, although this is slightly harder to quantify.

LHEES

- 4.13. In May 2022 Scottish Government commenced a statutory order (The Local Heat and Energy Efficiency Strategies (Scotland) Order). This order mandates that local authorities must develop prescriptive local heat and energy efficiency strategies, and have these approved by the 31st December 2023. Officers have worked closely with Scottish Government officials in aligning our REM with the guidance advocated by Scottish Government for developing LHEES. Government officials have had a number of meetings with council officers over the last year and are comfortable that the draft REM meets the obligations of the statutory order. Scottish Government officials have commended Clackmannanshire and Stirling Councils on their comprehensive approach towards developing energy master planning, stating that the approach is exemplary.

Next Steps

- 4.14. Officers will refine the delivery programme in tandem with Scottish Government Officials and look to refine the business cases for the delivery of prioritised projects. Scottish Government recognises the priorities around energy efficiency and heat management and project business cases will be developed accordingly. Resultant projects and work functions will come through the necessary approval channels.

Consultation and Findings

- 4.15. Initial stakeholder engagement involved reaching out to a total of 208 key stakeholders from various sectors across the region.
- 4.16. Ricardo led the stakeholder engagement and analysis, which helped establish the vision; objectives; outcomes and associated KPI's. Feedback also provided specific considerations which are included in the relevant sections of the masterplan.
- 4.17. Following stakeholder engagement a public consultation ran from the 3rd of August to the 27th of September. All community councils in Stirling and Clackmannanshire were notified and offered face to face meetings. Additionally, all 208 stakeholders were re-engaged to comment on the draft masterplan.

4.18. Key themes which were raised from the public consultation were:

- More ambitious targets and delivery plan (5 responses)
- Heat networks utilising waste heat and coordinating with other development opportunities (5 responses)
- Maximise renewable generation opportunities without impacting historical sites (4 responses)

- Community ownership potential (4 responses)
- Funding issues, opportunities and appropriate signposting (4 responses)
- Maximising tree planting, minimising tree removal, and manage planted areas appropriately (4 responses)

Responses were predominantly positive, with some voicing potential issues or concerns. We have addressed these comments and indicated where in the document they have been addressed in the appendices of the Regional Energy Masterplan. Below are some examples of comments and responses from the key themes identified above:

| Comment | Response | Theme |
|--|---|--|
| <p>Having read the time frames felt that in certain instances the target time frame to be too long ie Non Domestic buildings to be low carbon heating by 2038, this should be targeted a lot sooner.</p> | <p>We agree with this sentiment. The REM has been developed in line with national targets set by the Scottish Government, but these are not targets to aim for so much as deadlines. Any work that can be done before this should be done so.</p> <p>Both councils have set themselves a tighter deadline than the national targets for decarbonisation of all council specific emissions (2040 for Clackmannanshire Council). We will also strive to drive forward works ahead of targets. A note has been added to the REM to reflect this sentiment in Targets & Key Performance Indicators (KPIs).</p> | <p>Should have more ambitious targets and delivery plan</p> |
| <p>In Appendix V, we noted that in several of the proposed heat networks, industrial sites are listed as consumers of heat (for example, p. 209), despite being mentioned elsewhere as potential sources of heat (i.e. capturing waste heat from existing industrial activity). While the report notes that the waste heat potential and availability at these sites is currently undetermined, we believe that the potential for these industrial sites to be contributors (almost certainly in excess of their level of consumption) to heat networks should be emphasised in this section</p> | <p>Thank you for your suggestion, the energy hierarchy favours using industrial waste heat as a vital resource, and have further highlighted throughout the REM (see District Heating, and Ongoing Actions). The reason for not highlighting this further in Appendix V is largely due to engagement that has already been carried out with the industrial sites involved, along with the modelling used to enable comparison of networks which didn't account for waste heat.</p> | <p>Heat networks utilising waste heat and coordinating with other works</p> |
| <p>1. Council buildings, Schools, peak, leave lights on all the time, car park lights do not need to be on at night. Turn off</p> <p>2. All roofs fitted with Solar, with an agreed payment plan to help all households benefit.</p> <p>3. Council car parks also School car parks covered in solar panels.</p> <p>4. More wind turbines, you now have more small and effective turbines available, stop blocking on planning</p> | <p>1. Whilst both councils aim to carry out environmentally responsible behaviours in all buildings under council control, including turning off lights, there are some situations where this is unfortunately not possible. For example there are security concerns around lighting levels that must be taken into account.</p> <p>2. Stirling Council has the highest levels of solar PV on council housing roofs in the country & Clackmannanshire is developing plans for more in the future on both domestic and non-domestic buildings, so we agree that renewables on roofs are an excellent idea and have already put a lot of resources into making this happen where possible. Of course it is not possible for solar panels to be installed on all roofs for a number of reasons, such as orientation or structural limitations.</p> <p>3. We agree that this is an excellent measure where financially and practicably feasible. There are a number of restrictions, such as grid capacity, site restrictions and school ownership.</p> | <p>Energy efficiency</p> <p>Maximise renewable generation opportunities without impacting historical sites</p> |

| | | |
|--|--|--|
| | <p>Clackmannanshire Council are looking into development opportunities, and both councils are working together to share knowledge and experience.</p> <p>4.The National Planning Framework 4 (NPF4) which was published in early 2023 sets out the overarching national planning policy. This new framework addresses most of the previous issues around planning for renewables, wind turbines included. This is mentioned in the actions and delivery plan of the REM, and further detail can be found in Policy 11 of the NPF4.</p> | |
|--|--|--|

5.0 Sustainability Implications

5.1. The REM aligns with the Councils aims to meet its sustainability, climate change and biodiversity duties.

6.0 Resource Implications

Staffing

6.1. The Regional Energy Masterplan is led by officers within the Energy and Sustainability team. Scottish Government funding has been provided to employ 1.5 FTE members within the Energy and Climate Change team to manage the data associated with the REM and to assist in the development of the teams project management work.

6.2. Additional officer time from across the council and key partners will be required to support as projects progress.

6.3. Delivery of the work set out in the plan will be considered on a case by case arrangement with spending decisions being taken in accordance with Council protocol.

6.4. Financial Details

6.5. The Council’s General Services Revenue and Capital budget sets out a focus on green investment to support the Council’s journey to Net Zero and it should be noted that our Climate Change Strategy includes a framework to ensure that all strategic decisions, budgets and approaches to planning decisions are in line with a shift to net zero greenhouse gas emissions.

6.6. The Energy and Sustainability team will maximise income by seeking appropriate funding and investment opportunities to deliver projects. All of which will be presented to Finance for approval and also to Council for updates and approval where required.

6.7. The full financial implications of the recommendations are set out in the report. This includes a reference to full life cycle costs where appropriate. Yes

6.8. Finance have been consulted and have agreed the financial implications as set out in the report. Yes

7.0 Exempt Reports

7.1. Is this report exempt? Yes (please detail the reasons for exemption below) No **X**

7.0 Declarations

The recommendations contained within this report support or implement our Corporate Priorities and Council Policies.

(1) **Our Priorities** (Please double click on the check box)

| | |
|--|---|
| Clackmannanshire will be attractive to businesses & people and ensure fair opportunities for all | X |
| Our families; children and young people will have the best possible start in life | X |
| Women and girls will be confident and aspirational, and achieve their full potential | X |
| Our communities will be resilient and empowered so that they can thrive and flourish | X |

(2) **Council Policies** (Please detail)

8.0 Equalities Impact

8.1 Have you undertaken the required equalities impact assessment to ensure that no groups are adversely affected by the recommendations? Yes **X**
No

9.0 Legality

9.1 It has been confirmed that in adopting the recommendations contained in this report, the Council is acting within its legal powers. Yes **X**

10.0 Appendices

10.1 Please list any appendices attached to this report. If there are no appendices, please state "none".

Appendix 1 – Regional Energy Masterplan

Due to its size, Appendix 1 will be sent to members under separate cover.

11.0 Background Papers

11.1 Have you used other documents to compile your report? (All documents must be kept available by the author for public inspection for four years from the date of meeting at which the report is considered)

Yes **X** (please list the documents below)

Climate Change Strategy

Author(s)

| NAME | DESIGNATION | TEL NO / EXTENSION |
|-----------------|--|---------------------------|
| Lawrence Hunter | Energy and Sustainability Strategy Officer | 452681 |

Approved by

| NAME | DESIGNATION | SIGNATURE |
|--------------|----------------------------|---|
| Emma Fyvie | Senior Manager Development | 452577 |
| Pete Leonard | Strategic Director Place |  |