Update on Renewable Heat Target and Action – 2016

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In June 2015 the Scottish Government published its **Heat Policy Statement *Towards Decarbonising Heat: Maximising the Opportunities for Scotland*.** This sets out how Scotland might **use less energy for heat, and how low carbon heat can reach more householders, business and communities and a clear framework for investment in the future of affordable low carbon heat in Scotland in order to largely decarbonise the heat system by 2050.**

The Heat Policy Statement[1] and the *2020 Routemap for Renewable Energy in Scotland* replaces the Renewable Heat Action Plan, (which was updated in 2010, refreshed in 2011 and subsequently subsumed into the 2020 Routemap). An update on the Routemap was provided in September 2015.

The Climate Change (Scotland) Act 2009 (CCA) requires Scottish Ministers to report regularly on the progress towards meeting the target to deliver 11% of non-electrical heat demand from renewable sources by 2020. This complements the energy efficiency target to reduce the total final energy consumption in Scotland by 12% (against a base line of the average energy consumption in 2005-07), and underpins our ambitious climate change targets including an 80% minimum reduction in greenhouse gas emissions by 2050 and a world leading 42% reduction by 2020.

This report fulfils the requirement in the Climate Change (Scotland) Act 2009 to report on the Renewable Heat Action Plan.

Progress Towards the Renewable Heat Target

2015 has seen the largest annual increase in renewable heat output since measurement began in 2008/09 – up by over 1,100 GWh in a single year. In 2015 an estimated **1.504 GW of renewable heat capacity** was operational in Scotland, producing an estimated **4,165 GWh of useful renewable heat**. This represents a **47% increase** in renewable heat capacity and a **37% increase** in heat generated from renewable sources compared with 2014. The majority of the increase came from large commercial sites and installations supported by the RHI, though significant increases in the number of microgeneration installations were also seen.

2014 is the most recent year that data for non-electrical heat demand is available, and this was published at the end of September 2016. Therefore progress is shown using a range of heat demand scenarios for 2015. These **estimates suggest that in 2015 Scotland produced enough heat from renewable sources to meet between 5.3% and 5.6% of non-electrical heat demand.**

This is an increase on **2014, for which renewable heat generation equated to 3.8% of Scotland's non-electrical heat demand, up from 2.3% in 2013.**

[1] The Heat Policy Statement was preceded by the draft Heat Generation Policy Statement, 2014 and the Draft Outline Heat Vision and Draft Heat Deployment Options Guidance

The **majority of the increase came from large commercial sites and installations supported by the RHI**. (Total capacity of large installations increased by 45% between 2014 and 2015, while output increased by 27%). Micro heat capacity also increased by 44% between 2014 and 2015.

This data is drawn from the *Renewable Heat in Scotland, 2015* report, to be published by the Energy Saving Trust on 7 October 2016, which provides further detail. A copy of this report can be found by searching for "Renewable Heat in Scotland 2015" at http://www.energysavingtrust.org.uk/resources/reports.

Update on Action

The Heat Policy Statement reiterated our heat hierarchy: reducing the need for heat through energy efficient buildings; supplying heat more efficiently and at least cost to consumers, such as development of district heating and the use of unused excess heat through heat recovery; and then using low carbon and renewable heat. All three aspects of the hierarchy have relevance to the renewable heat target. Both reducing the demand for heat and increasing the useful heat provided increase the percentage of renewable heat provided. Efficient supply systems such as well-designed and operated district heating can help to deliver renewable heat produced to more users.

The Policy Statement retains our ambition to achieve 1.5 TWh of Scotland's heat demand to be delivered by district or communal heating.

New and emerging initiatives include designating energy efficiency as a National Infrastructure Priority; the Low Carbon Infrastructure Transition Programme (LCITP) launched in March 2015, with £76 million over the first 3 years; and a support programme for local authorities to develop a strategic approach to district heating, managed by the Heat Network Partnership (HNP).

The Heat Policy Statement updates and replaces the Renewable Heat Action Plan (RHAP), published in November 2009, and the action points set out in the three subsequent updates. The following table sets out some of the recent activity and key actions contained in the Heat Policy Statement of particular relevance.

Activity	**Progress**
Improve accuracy of data used in calculating the heat target and progress towards meeting it	In June 2013 Energy Saving Trust (EST) published an update on progress towards the renewable heat target with an improved methodology proposed by Scottish Government for reporting on the target, developed in consultation with stakeholders. The 2014 report (published in October 2015) used aggregated RHI data provided by UK Government for the first time, to give a more comprehensive picture of renewable heat capacity and useful renewable heat output and a more robust time series of data back to 2011. The Heat Network (Metering and Billing) Regulations 2014 implement the requirements in the Energy Efficiency Directive (EED) with respect to the supply of distributed heat, cooling, and

	hot water. Enforcement of this regulation will provide a further source of data which may improve estimates of renewable heat. Information on how much heating is supplied through shared heat networks in the UK is currently expected to be published at the end of 2016.
Develop a heat map for Scotland	The methodology informing the Scotland Heat Map was amended in 2015 in order to incorporate official statistics on energy consumption to provide a more robust estimate of heat demand. DECC sub-national statistics data on gas and electricity consumption was combined with census data to create an alternative measure of heat demand for every Data Zone in Scotland. The individual address level estimates were then scaled to match the alternative estimate. By combining benchmarking and official statistics, the updated methodology allows data users greater confidence when using the data at larger geography scales. Energy supply data has also been updated in the Heat Map to include more data on historic hydropower sites, large power stations and incorporated updated datasets from data providers such as Energy Savings Trust Renewable Heat Database. The new data provides a more complete picture of Energy generation in Scotland. To date, feedback from stakeholders confirms a wide and useful application. Using the heat map as a foundation, the Heat Network Partnership has undertaken a series of workshops in 2015 for local authorities to support them through a structured process to develop district heating strategies. A 'district heating opportunity tool' has been developed in conjunction with local authorities to integrate with the Scotland Heat Map data to evaluate user-defined areas' suitability for district heating. Local authorities are reporting that they and their consultants are using the heat map to identify potential projects.
Establish Heat Network Partnership for Scotland	The Heat Network Partnership for Scotland (HNP), established in 2013, is working closely with a number of projects on the technical, financial and procurement aspects of heat networks and with local authorities on the strategic development of district heating. Most recently across 2015-16 the HNP has delivered: • A local authority strategy support programme (est. June 2015) guiding participating local authorities through the process of developing a district heating strategy with examples of other local authorities activities and various workshops including on planning, energy masterplanning and how to use the opportunity assessment tool provided. 29 local authorities participated in the programme, covering: heat mapping, opportunity assessment, planning, delivery structures and stakeholder engagement. Due to its popularity, Resource Efficient Scotland is now working, with support from other

	HNP partners, to continue to support a strategic approach to heat through to 2017, integrating this with the support they offer on feasibility studies. • Working in close collaboration with the HNP, the Scottish Government is also a key partner in Stratego, a €2 million EU funded (Intelligent Energy Europe) project that runs between April 2014 and November 2016. The project has worked with the 7 local authorities who are members of the Scottish Cities Alliance to support development of strategic approaches to district heating. Experiences from across the European partners in Stratego will be compiled over the duration of the project, particularly on uses of heat maps, capacity building and application of business models during project delivery. Best practice reports relating to these topics will be published in November 2016. Scottish Government have committed a further £7 million in 2016-17 to district heating loans, adding to the £10 million already committed though the District Heating Loan Fund. The HNP assisted in implementing the District Heating Action Plan. An Update on the District Heating Action Plan published in 2015, alongside the onward framework set out in the Heat Policy Statement, showed 19 of the 23 actions were complete and the remainder on-going or under review.
Undertake research into the potential for deep geothermal heat in Scotland	Following the report published in November 2013 into the Potential for Deep Geothermal Energy in Scotland a Geothermal Energy Expert Group was established in Autumn 2014 to provide advice for the development and implementation of geothermal heat, or heat and power. In response to recommendations from the Expert Group, the Low Carbon Infrastructure Transition Programme (LCITP) launched the Geothermal Energy Challenge Fund (GECF) for feasibility studies exploring the technical feasibility, economic viability and environmental sustainability of the geothermal resource in Scotland. In Summer 2015, over £234,000 was offered to 5 projects and 4 projects in Fife, North Lanarkshire, Aberdeen City and Aberdeenshire accepted the grant offered. Almost £180,000 was subsequently made available to these 4 projects and the related feasibility reports have now been published. A technical appraisal of the reports has been undertaken, and a further grant of £37,000 has been awarded to University of St Andrews in August 2016 for development work at the geothermal hot sedimentary aquifer project at Guardbridge in Fife. In addition, following feedback on their unsuccessful GECF application, Clackmannanshire Council received funding of £19,000 through LCITP for a geothermal feasibility study at Forrestmill. This work was completed in March 2016.

Publish a Scottish-specific chapter for the National Comprehensive Assessment	*The National comprehensive assessment of the potential for combined heat and power and district heating and cooling in the UK* (NCA) was published in February 2016. By working with UK Government to produce a Scottish specific chapter the Scottish Government has increased understanding of where the opportunities for heat network development and CHP exist. The NCA was a requirement of Article 14 of the EU Energy Efficiency Directive 2012.
Progress the goals of the Low Carbon Infrastructure Transition Programme	The Low Carbon Infrastructure Transition Programme (LCITP) supported by European Structural Funds, was launched in March 2015. LCITP is a Scotland-wide, collaborative cross-sector Project Development Unit with a budget of £76 million until 2018. LCITP focuses on accelerating the development of low carbon infrastructure projects to investor readiness stage. To date, LCITP has provided financial support to 46 low carbon projects covering a wide range of technology; 20 of these projects are focused on or include elements of low carbon heat. LCITP also has launched a series of Calls targeting specific technologies and low carbon sectors. • Under the **Water Source Heat Pump (WSHP) Challenge Fund**, launched in October 2015, two projects, the Queens Quay Development (Clydebank) and the University of Glasgow's Western Campus Development, were each awarded LCITP support of £75,000. The business cases for these projects are undergoing review by LCITP. • The **Transformational Low Carbon Demonstrator Invitation for Financial Support,** launched in July 2016, is designed to encourage innovation of both project design and business models, along with aggregation and acceleration of large scale transformational low carbon infrastructure projects in Scotland. The Invitation makes available financial support for up to 50% of the total capital value of the project (up to a maximum of £20 million), a number of low carbon heat projects have submitted an Expression of Interest with Invitations for full applications issued in October 2016.
Continued support and promotion of the domestic and non-domestic Renewable Heat Incentive (RHI) while concomitantly	Scottish Government actively promotes the GB wide Renewable Heat Incentive (RHI) scheme. In the 2015 Autumn Statement the UK Government announced the continuation of the RHI scheme to 2020/21. It noted an increase in funding to £1.15 billion by 2020/21. The Scottish Government is keen to maximise the take-up of the RHI to the benefit of Scottish households and businesses. Toward this end, and additional to the LCITP and DHLF (see above), the Scottish Government:

Work to increase householder awareness of, confidence in and uptake of small scale heat generation technologies	• continues to fund an interest-free Home Energy Scotland Renewables Loan Scheme for householders via the Energy Saving Trust. In 2015-16 financial year the Home Energy Scotland Renewables Loan (HESRL) scheme supported 759 renewable system applications with a value of £6.602 million. • a non-domestic energy efficiency (NDEE) procurement framework has been established through LCITP, along with a NDEE Support Unit which is expected to launch in October 2016 to further accelerate public sector projects. • provides loans of up to £100,000 for the installation of resource efficiency measures, and renewable energy technologies through our Resource Efficient Scotland SME loans scheme. Since inception it has successfully financed over 800 projects resulting in estimated heat and electricity energy savings of 296 GWh, carbon savings of 114,000 tCO2 and financial savings of over £32 million. • continues to support the Resource Efficient Scotland (RES) advice and support programme, which has delivered one-to-one support to over 1,400 organisations since 2013. The UK Government's recently proposed changes to the Renewable Heat Incentive has resulted in some uncertainty among Scottish businesses, with delays to capital investment until clarity is given. Despite this, Scotland continues to punch above its weight in its share of both domestic and non-domestic RHI accreditations. Domestic RHI: • As at 31 August 2016, under the **domestic RHI** there were over 11,039 accreditations for Scotland to date, accounting for **20% of all accredited installations GB-wide, well above pro-rata**. • Air Source Heat Pumps (ASHPs) account for nearly half of all domestic accredited installations in Scotland, with biomass accounting for a third of the uptake. The greatest activity has been in Highland, South Lanarkshire, and Dumfries and Galloway and demand is anticipated to continue to be strong across Scotland. Non-domestic RHI: • As at end of August 2016 there were 2,839 non-domestic RHI accredited installations in Scotland, accounting for 19% of all accredited installations GB-wide. The Scottish Government is committed to working with stakeholders to consider how micro-generation can play a bigger role in the decarbonisation of heat. As part of this effort:

	• The Energy Saving Trust organised a workshop in June 2016 to identify the key barriers facing the microgeneration industry in Scotland; • Home Energy Scotland Specialist Advisors provided 1,625 in-house visits during 2015-16 financial year, with 35% of these households committing to install or having already installed renewable systems and solid wall insulation (SWI). • Green Homes Network, has over 1,200 members, as of end 2015-16 financial year. As part of the Scottish Manufacturing Action plan (*A Manufacturing Future for Scotland*), published February 2016, public sector organisations in Scotland are working together to deliver the actions set out in the Plan's industrial energy efficiency and decarbonisation workstream – promoting and co-ordinating action to support energy intensive industries make the transition to lower-carbon forms of production, including through investment in energy efficiency and heat recovery. The Group's work is being supported by the information and decarbonisation pathways outline in the report, Industrial Decarbonisation and Energy Efficiency Roadmaps to 2050: Scottish Assessment. This work is also informing the development of the national infrastructure priority for energy efficiency (Scotland's Energy Efficiency Programme), which will include actions to support energy intensive industries to realise further energy efficiency and heat recovery opportunities.
Designation of energy efficiency as a National infrastructure priority and development of Scotland's Energy Efficiency Programme (SEEP)	The Infrastructure Investment Plan reaffirmed the designation of energy efficiency as a National Infrastructure Priority. The cornerstone of this will be Scotland's Energy Efficiency Programme which will commence in 2018 with substantial annual public funding. It will be a co-ordinated programme to improve the energy efficiency of homes and buildings in the commercial, public and industrial sectors with an estimated overall investment of up to £10bn. The Programme for Government 2016-17 (PfG) committed over half a billion pounds to SEEP over the next four years, setting out a clear commitment to develop this very significant energy efficiency and low carbon heating generation programme with substantial annual public funding. Scottish Government are working with councils to pilot integrated action on domestic and non-domestic energy efficiency with investment of over £9 million of funding in 11 local authorities to support pilots in 2016-17 with further funding being made available next year. A summary list of the pilots to date can be viewed at http://news.scotland.gov.uk/News/Action-on-fuel-poverty-2c06.aspx.

In partnership with the Fuel Poverty Forum, implement the forum's workplan	This year we are allocating £113 million to tackle fuel poverty and improve the energy efficiency of homes across Scotland. This year our money will be used to help install energy efficiency measures, including solid wall insulation, in over 14,000 homes and will build on the over 1 million energy efficiency measures delivered to almost 1 million Scottish households since 2008.

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