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Can urban greenspaces act as low carbon boilers?

A new research project launched this week by greenspace scotland will explore how we can transform our urban landscapes to support a low carbon future. [Green Heat in Greenspaces](#) (GHIGs) builds on greenspace scotland's ground-breaking ParkPower project bringing together half of Scotland's councils together with a wide range of public sector bodies to explore how urban greenspaces can support a Scottish low carbon heat transition.

Scotland is facing a major challenge to decouple its dependence on carbon-rich fossil fuels to heat its homes and businesses. For decades it has relied largely on a centralised mains gas grid to meet the needs of approximately 80% of its households. As a consequence, the supply of heat has become the single biggest culprit for carbon emissions across our society. Scotland is poised to miss its 2020 government target for supplying 11% of heat demand from low carbon sources; with estimates suggesting we are stuck nearer 6% making future targets even more challenging.

John Maslen, greenspace scotland's ParkPower programme manager said:

"To have any chance of achieving our world-leading decarbonisation ambitions Scotland needs to surge up the low carbon heat league table of European nations to escape its current position in the relegation zone. Climate scientists and the Scottish Government appear to be on the same page - heat needs a radical overhaul. The big unanswered question is "how?" We believe that generating heat from urban greenspace using heat pumps and supplying this to buildings through a network of pipes has a key part to play in any solution."

The use of heat pumps to take heat from the ground, from water sources or from the air is a well-worn 'pathway' in countries like Sweden and Austria where installations are widespread. One key challenge facing both heat pumps and other heat projects that, to a large extent, differentiates them from electricity projects, is the cost of transport; it is expensive to transport heat over long distances. The viability of heat schemes is optimised by generating heat in close proximity to where it is needed. Heat demand is, of course, highest within our urban centres. Unfortunately, space in these locations is at a premium. While fossil fuel based heating solutions have tended to require minimal space, their green counterparts are generally more space hungry. We need to find open space in our towns and cities that could be used for new low carbon heat solutions.

The new research project launched this week aims to address this issue head-on. **Green Heat in Greenspaces** or "**GHIGs**" will explore how areas of greenspace across Scotland can contribute to transforming the urban landscape of the future to one based on low carbon heat. This is the first time Ordnance Survey's most detailed mapping of urban greenspaces has been used to assess the heat potential of specific sites. Already this data has highlighted the true scale of the opportunity: far from being dominated by grey space, analysis shows our cities to be largely green, with coverage at over 60% in cities like Aberdeen and Edinburgh.

The project is led by greenspace scotland as part of its ongoing ParkPower programme and will be supported by low carbon energy specialists Ramboll.

Paul Steen, head of the energy team at Ramboll comments:

"Our work on the ParkPower programme to date clearly demonstrates that urban greenspace can play a critical enabling role in the generation and transmission of low carbon heat. The GHIGs project will allow us to explore its full potential Scotland-wide, short-list candidate sites and feed evidence into wider strategic energy planning."

GHIGs has secured support from a wide range of partners across the public and third sectors including half of Scotland's 32 local authorities, Improvement Service, Scottish Environment Protection Agency, Scottish Enterprise, NHS Scotland, Scottish Land Commission, Architecture & Design Scotland, Historic Environment Scotland, sportscotland, Strathclyde University and Zero Waste Scotland. GB-wide organisations like the British Geological Survey and Ordnance Survey are also contributing specialist expertise.

The outputs from the project, due in early 2021, will enable us to assess the scale of opportunity across Scotland and provide greenspace owners with data to identify the most promising sites to progress. With the Scottish Government expecting the public sector to lead the way in terms of decarbonising its building assets, most organisations are looking at ways to make significant cuts to the carbon emissions of their buildings. The project will also feed into strategic work, supported by the Scottish Government, to aid Local Authorities in the production of a consistent set of nationwide plans to guide investment into low carbon heat and energy efficiency and help bring vacant and derelict land back into use.

Julie Procter, Chief Executive, greenspace scotland said:

“This exciting project will allow us to evaluate the scale of contribution that Scotland’s greenspaces can make towards our low carbon heat transition. The number and range of partners involved in GHiGs demonstrates the widespread interest across the public sector in optimising use of their land assets to address decarbonisation objectives. It is imperative we find a way to balance the potential value of these sites as community-scale boilers with their equally vital roles in supporting our health, amenity and education.”

Notes:

1. **greenspace scotland** is an independent charitable company. Our goal is that everyone living and working in urban Scotland should have easy access to quality greenspace which meets local needs and improves their quality of life. We work with a wide range of local and national partners to support the planning, development and sustainable management of greenspaces and green networks as a key part of the infrastructure of our towns and cities. www.greenspacescotland.org.uk @greenspacescot
2. Scotland has ambitious targets for renewables and a strong track record on renewable electricity, particularly wind power, but according to the Scottish Government’s (2019) ‘[Annual Compendium of Scottish Energy Statistics](#)’ it has the worst record in Europe in terms of the proportion of heat generated from renewable sources. The latest [Scottish Government statistics](#) suggest Scotland is significantly short of its 2020 target of 11%.
3. Scottish Government policy encourages local authorities to develop energy masterplans to set out how they intend to meet their targets for heat and energy efficiency. To date **Local Heat and Energy Efficiency Strategies** (LHEES) have not had a methodology for assessing and linking the potential for public land assets to supply low carbon energy and district heating networks.
4. greenspace scotland’s [ParkPower project](#) demonstrated that public parks offer unique opportunities for hosting renewable low carbon energy solutions due to their extensive land area close to sources of heat demand from housing and business. The [Green Heat in Green Spaces \(GHiGs\)](#) project will explore the potential of the wider urban greenspace portfolio.

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