

Green Heat in Greenspaces (GHIGs)

A project proposal within the ParkPower Programme

Context

greenspace scotland is inviting interest from Scotland's public and third sectors to become a partner in a new project proposal. The proposed project is achievable as a desktop exercise without the need for staff travel or site visits. As such, current travel restrictions and home working arrangements do not limit its progression or delivery.

The impetus for the proposal stems from the broad array of organisations looking to develop their plans for climate mitigation and carbon reduction. To date the role of public land and, in particular, open spaces has been largely under-played and there are data gaps in a number of areas in relation to its potential. We have seen significant interest from many land owners in understanding the extent to which an organisation's greenspace portfolio can offer a significant positive contribution. To some degree this has emerged as a result of work led by greenspace scotland over the last 18 months on the ParkPower programme. This culminated in the publication of a series of reports and data outputs in February and March 2020 including a well-attended ParkPower Conference.

While work to date has considered a wide range of appropriate green energy solutions suited to greenspace sites, it is the potential of low carbon heat, both in terms of its supply and transmission, that has emerged as the dominant opportunity. There are many reasons for this as detailed in our reports. Urban greenspace is highly suited to a range of heat pump technologies supported by District Heat Networks (DHNs) to transport heat to nearby points of demand. Scotland is current positioned in the relegation zone of all EU countries for low carbon heat capacity so there is an urgent need to address this space and its many challenges.

Recent discussions have focused on gaining a strategic understanding of the potential of an organisation's greenspace portfolio to address the low carbon heating (and cooling) requirements of its building assets. This would allow an organisation to: (1) provide data-driven evidence to understand heat supply capacity and potential for demand offsetting to feed directly into strategy development – in the case of local authorities into Local Heat and Energy Efficiency Strategies (LHEES) and Open Space Strategies; and (2) identify the most promising target sites for pioneer projects where progress can be made through a standard phased process (see Figure 1).



Figure 1: Typical project development process Source: [District Heating Scotland website](#)

greenspace scotland recently started work with Glasgow City Council and City of Edinburgh Council to review their portfolio of public parks and playing fields to identify a subset that have the strongest opportunities for low carbon heat development. This proposal will utilise learning from this project and all previous ParkPower projects. However the underlying technical specification of this proposal is based on using the more detailed and comprehensive dataset of greenspaces based on the Ordnance Survey Mastermap Greenspace product, originally developed with greenspace scotland (see Figure 2).

How much of our urban area is greenspace?

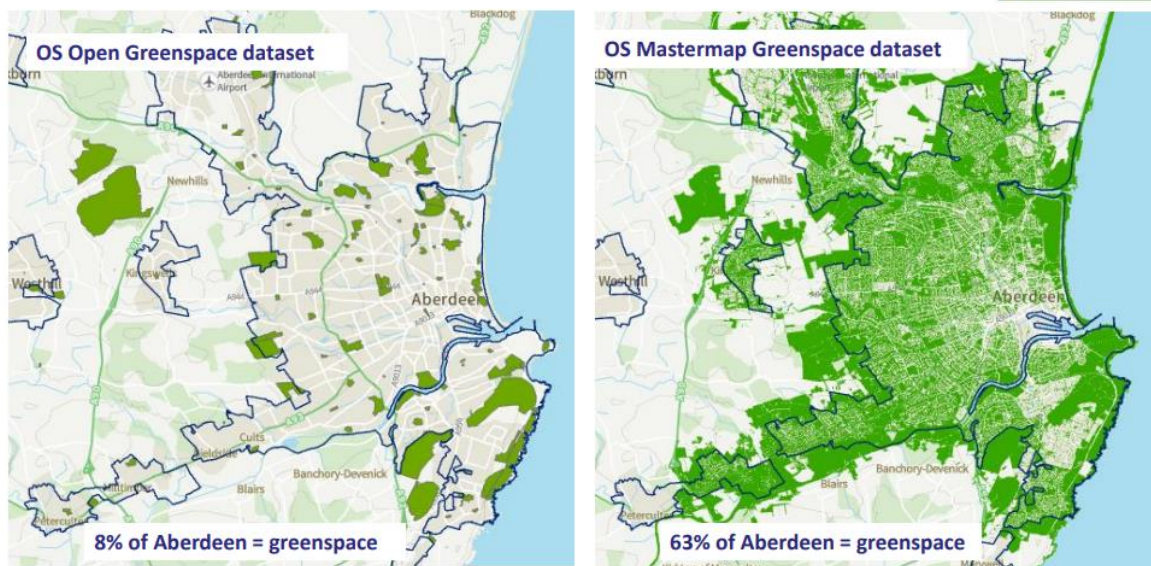


Figure 2: A comparison of OS Open Greenspace data with OS MasterMap Greenspace data for Aberdeen City.

It is anticipated there would be two categories of project partner:

1. **Core partners** – local authorities or other public or third sector bodies with greenspace portfolios. They would be fully involved in the project, receive access to all outputs including a custom report for their area, and would contribute match funds.
2. **Advisory partners** – these organisations would be invited to relevant workshops and presentations and kept up to speed on project developments. There would be no expectation of contributing funds and they would receive access to generic outputs.

Proposed Outputs

This proposal is based around the analysis of a range of Scotland-wide datasets, in particular building level data for Scotland's 'Heat Map', to develop a range of outputs including:

1. A custom report for each core partner highlighting the potential low carbon heat supply capacity from all greenspace in their area, the potential cumulative carbon saving, the 20 most promising sites that offer short-term opportunities and the 20 most promising sites offering longer-term opportunities. The report will provide guidance on use of the output resources for inclusion in strategies, generic financial estimates for typical projects at small/medium/large scales, detail how sites can be progressed and any risks, highlight typical timescales and any key future deadlines and outline options for sourcing third party funds.
2. An automated reporting tool allowing users to generate reports of one or more greenspace sites highlighting their potential for low carbon heat generation in terms of low carbon heat supply capacity and long-term carbon savings. Importantly it will highlight which sites offer the most promising opportunities allowing organisations to scope and short-list their property assets. Users would be able to select a group of sites and apply filter functions to specify the optimal subset of sites that meet key criteria. For example, users could select all greenspace sites within the city of Perth

and generate a report for the 5 (or 10) most promising sites in terms of potential carbon reduction. Report outputs will be printer quality and include maps and summary text for each site together with a summary of all sites selected. Outputs would be provided with associated user support documentation. The proposal is to develop the tool for Scotland using national datasets. It would be made available online but only to core partners. There would need to be discussion with core partners as to whether the tool could be made available to other parties in future and if so, how any benefit would be shared. As a charity and social enterprise, greenspace scotland is open to different models and would want to ensure all core partners are comfortable with any future model.

3. The key GIS dataset allowing the classification and prioritisation of all greenspace sites across Scotland would be made available in a suitable format to all core partners allowing them to undertake their own custom analyses and reporting internally.
4. Technical Methodology report explaining the data management and analysis process.
5. Summary Scotland report to be published publicly and disseminated through mainstream media and other appropriate networks highlighting the potential of greenspace sites to supply and transmit green heat nationally.

Summary

The proposal is taking a collaborative, strategic approach to assessing the low carbon heat potential of multiple greenspace portfolios. It is looking to encapsulate specialist engineering knowledge from an industry leading consultancy in low carbon energy solutions to support decision-making by officers and managers within public or third sector organisations. It is built on the principle of pooling a larger group of partners to share cost. We have not set a defined limit for the number of core partners but our objective is to secure at least 10. If this is not possible then the project may still be viable with a smaller number. As an approach it offers considerably better value than each organisation progressing a project like this independently. Not only will it provide a custom report per core partner, it also seeks to bridge the evidence gap by providing an online decision-support tool and underlying data to allow organisations to undertake their own, flexible reporting. It will provide actionable intelligence for strategy development and enable officers working across energy, sustainability, planning, greenspace management, housing, property and other services to identify 'demonstrator' projects. It is these early stage, pioneering solutions that will give organisations the confidence to develop more significant local energy systems.

Some organisations in more rural areas have expressed concerns that such a project would be appropriate in their context. Our response has been that more rurally focused organisations face many of the same challenges as their urban counter-parts in terms of decarbonising their energy systems. While overall cumulative demand for heat may be lower, there will still be demand 'hotspots'. Our project outputs are intended to assess sites relative to others in the area, not against national comparators, and should therefore ensure that local opportunities are identified. In remoter areas many heat consumers may also lie off the mains gas grid and therefore their heating costs are likely to be significantly higher. These locations are often considered to be 'in the front line' for the adoption of more affordable low carbon heat solutions.

28th April 2020

We are happy to share our funding application to MCS Foundation to any organisations looking to become 'core partners' in this proposal. This includes a breakdown of project budget, full project timetable, key milestones and risk register. Please let me know if you would like a copy.

More information on the ParkPower Programme can be found at:

<http://www.parkpower.org.uk>