

RENEWABLES CASE STUDY:

Edinburgh City Council, Saughton Park

Allocated funds £482,107



THE ASK

City of Edinburgh Council are undertaking a £7m restoration of Saughton Park. The restoration will provide high quality facilities and create a focal point for a wide range of people and activities.

The Council wanted to work out how they could reduce the energy costs associated with running the park. Any savings could be reinvested back into the park to secure:

- Affordable venue hire for community groups
- Lower energy costs for the café tenant
- Free or low-cost activities benefiting the 24,000 people living in the local catchment area



THE PROJECT

The Council wanted to install a micro-renewables system which would allow Saughton Park and its community facilities to be operated off-grid. This was part of a strategy to:

- Future-proof the park's energy system
- Ensure security of supply
- Protect against future cost increases of grid electricity prices

The park's refurbishment also needed to be compatible with the Council's pledge for the city to be carbon neutral by 2030.

THE SOLUTION

The park's proximity to the Water of Leith river offered an ideal opportunity to harness hydropower to meet the energy demands of the site's buildings. In fact, the weir running through Saughton Park had previously supplied both water and energy to 17 mills, breweries and other works in Gorgie – beginning in 1790. This meant that the project also offered a fittingly low carbon tribute to Scotland's industrial revolution.

The Council worked with Arcus Consultancy to design a closed-loop, low-carbon energy solution – the first of its kind in any UK park. The system is made up of a 39kW Archimedes Screw on the Water of Leith, and provides all the electricity the park needs, including two ground source heat pumps which heat the park's buildings. Any spare electricity generated is sold back to the grid, providing the Council with extra revenue for running the park.

Initially, project development was halted due to a lack of funding, despite the project team trying several funding routes. The Council eventually applied to the GEF; requesting £482,107 to support the purchase and installation of the Archimedes Screw. The application was approved, and the project went ahead.

THE OUTCOME

The Archimedes Screw was successfully installed and began generating low carbon electricity on 12 February 2020.

The Council attributed the project's success to strong leadership, involvement of a wide range of stakeholders, and securing community buy-in at an early stage. The project team received significant political support too, as this project was seen as a statement of the Council's ambition to create a greater focus on sustainability within the visitor economy.

THE BENEFITS

Since it began operating in February 2020, the hydro scheme has generated 70,500kWh of low carbon electricity, saving the equivalent of 10,970kg of carbon dioxide. Over the 25 years the hydro scheme is expected to run, it's estimated to generate 5,000MWh of electricity and save 1,800 tonnes of carbon dioxide emissions.

The Council also expects to save £15,000 a year on energy costs for running the park. This money will be reinvested into improving the park and providing benefits to the local community.

How this project serves the GEF aims

Putting the planet and people first

The hydro scheme has generated 70,500kWh of low carbon electricity, saving the equivalent of 10,970kg of carbon dioxide.



We're already making an impact, and will continue to do so

Due to the energy savings it has made, the project has secured its role in the Council's pledge for Edinburgh to be carbon neutral by 2030. These benefits will continue into the future.



We must keep evolving

The closed-loop, low-carbon energy solution developed with Arcus Consultancy is the first of its kind in any UK park. This will help to set a precedent for future projects of a similar nature.



Support where it's needed most

The money saved on energy costs will be spent on improving the park, and in-turn, benefitting the local community.



1. Councillor Donald Wilson, Guy Jefferson, Director of Customer Service, SP Energy Networks, and Shona Nelson, Chairperson at Friends of Saughton Park at the launch of the Saughton Park project, August 2020.

2. Café and social facilities at Saughton Park.

3. The refurbished winter gardens at Saughton Park.



RENEWABLES

Key findings

Through analysis of the projects monthly reporting, we were able to identify the following key findings:

Early and direct engagement with suppliers is necessary to understand costs and any future cost uncertainty.

Community engagement can be extremely beneficial for gathering project support.

There are significant amounts of legal, regulatory, technical and other challenges, as well as various items of bureaucracy to contend with, including funder requirements. Seeking expert help is key.

There are numbers of experts who can support in the development of energy plans, feasibility studies and installations.

The inflexibility on the FiT deadline is a significant barrier for small community groups trying to complete such complex projects on time.

