



Glasgow City Council

Executive Committee

Report by Councillor Alistair Watson, Executive Member for Sustainability and Transport

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Item 5

5th March 2015

Pollok Country Park Micro Hydro-electric Scheme – Renewable Energy

Purpose of Report:

To introduce to the Committee a proposal for a hydro-electric scheme to be located within the sawmill at Pollok Country Park and seek approval for use of this asset.

Recommendations:

Following referral from the Sustainability & Environment PD Committee at its meeting held on 4 February 2015, it is recommended that Committee:

- agree the existing infrastructure of the sawmill can be used for a renewable energy scheme, and;
- approve the development of this project.

Ward No(s):

Citywide: ✓

Local member(s) advised: Yes No consulted: Yes No

1 Background

- 1.1 This mid-nineteenth century former sawmill, located in Pollok Country Park, is a 'B' listed building currently classed as being 'At Risk' in the 'Buildings at Risk Register for Scotland'¹. It is located near Pollok House, adjacent to the stable block.
- 1.2 Originally the sawmill had a wooden water wheel to drive equipment such as bench saws and lathes, much of which survives, however, this was replaced in the late 19th Century with vertical axis turbines which generated electricity.
- 1.3 In 2013 a pre-feasibility study was undertaken to determine whether there was potential to replace the existing, non-functioning turbines at Pollok Sawmill.
- 1.4 The report suggested a micro-hydro scheme would be viable, providing both financial and carbon savings.
- 1.5 In August 2014, after a quick quote procurement exercise, the City Council engaged Wallingford Hydro Solutions (WHS) to undertake a full feasibility study to allow a business case to be developed.
- 1.6 The study explored the technical feasibility of the scheme, the legislative and policy constraints and began the stakeholder consultation process with the Scottish Environment Protection Agency (SEPA).
- 1.7 A key consideration of the study was to identify a suitable customer for the electricity generated by the scheme. Connection to either the Burrell Museum (Glasgow Life) or Pollok House (National Trust for Scotland – NTS) were both explored in depth.
- 1.8 Planning consent is not required in order to establish a hydro scheme at this location.
- 1.9 The proposal has been presented to the Carbon Management Board, a multi-service group which is chaired by the Executive Director of Land and Environmental Services and attended by the Assistant Director of Finance and the Director of Sport & Special Projects, Glasgow Life (amongst all other parts of the Glasgow Family).

2 Findings of Study

- 2.1 One option is to direct the energy created to Pollok House. Although Pollok House is owned by the City Council it is on a long-term lease to the National Trust for Scotland (NTS).

¹ <http://www.buildingsatrisk.org.uk/details/908254>

- 2.2 Installation of the turbines and connection to Pollok House would cost, at current prices, £246,000.
- 2.3 The electricity generated could power the equivalent of 50 homes for a year² and is estimated to meet in the region of 8% of the House's annual consumption.
- 2.4 The Scottish Government has confirmed the use of the GCC Central Energy Efficiency Fund (CEEF) to pay for this project. This means that the project can be delivered at no capital cost to the Council which is welcoming.
- 2.5 Revenue from sale of the electricity as it relates to Pollok House and the current rate of Feed-in Tariff equates to £47,600 a year. This gives a 5.17 year payback, as well as carbon offsetting.
- 2.6 Another option would be to direct the energy to the Burrell Collection. The Burrell Collection, however, may be closing for a period of time.
- 2.7 Discussions will continue at the Carbon Management Board and the cross Council group taking forward the welcoming and ambitious plans for the Burrell Collection and the wider local environment as to the potential of sourcing energy from the hydro scheme as part of any refurbishment plan.
- 2.8 It may be that this project can help deliver a sustainable energy solution as part of any refurbishment for the Burrell Collection as part of its refurbishment programme. The 2 groups referred to in paragraph 2.7 will help to drive this forward as appropriate.

3 Proposal

- 3.1 It is expected that, with the appropriate approvals, the proposed hydro scheme could be operational in late 2015.
- 3.2 The initial supply, therefore, should go to Pollok House. The NTS could purchase electricity at a reduced rate whilst the City Council repay the investment.
- 3.3 Close working will ensure due consideration will be given of a connection to the Burrell Collection. This hydro project will feed into the refurbishment project of the Burrell and can help play a significant role in developing a sustainable approach to energy for the facility.
- 3.4 Early indications are £35k would be required to change the supply and connection point, however, investment in the scheme would largely have been repaid and the carbon savings would contribute to the Council's all-important 2020 reduction target with an expected pay back of around 7 years. This will be reported back as necessary.

² Based on an average annual electricity consumption of 4,000 kWh. Taken from DECC's 'Energy Consumption in the UK (2014)' Report, Published in July 2014.

4 Next Steps and Project Timescales

- 4.1 Continue to engage with the NTS to establish an agreement to supply.
- 4.2 Integrate the project into plans for Pollok Country Park via the Pollok masterplan and Carbon Management Groups.
- 4.3 A phase 1 habitat survey is to be conducted along the agreed connection route.
- 4.4 A procurement specification will be written to allow market engagement to begin.
- 4.5 Stakeholder consultation will continue in parallel with the above activity and include consultation of appropriate community interest groups local to, or with an interest in, Pollok Country Park.
- 4.6 It is LES' aim to be in a position to begin installation in the summer of 2015 to make use of the lower water levels.

5 Policy and Resource Implications

Resource Implications:

<i>Financial:</i>	Minimal impact. Project capital costs will be in the region of £250k which can be repaid by the revenue from the scheme over a 5-year period.
<i>Legal:</i>	Legal has been consulted and will continue to be involved throughout procurement and supply arrangements.
<i>Personnel:</i>	Existing resources are based within LES. Specialist hydro-electric consultants are in place.
<i>Procurement:</i>	Significant input required from procurement, particularly in relation to installers.

Council Strategic Plan: A sustainable city – a reduced carbon footprint.

Equality Impacts:

<i>EQIA carried out:</i>	No
<i>Outcome:</i>	N/A

Sustainability Impacts:

<i>Environmental:</i>	Production of a consistent, renewable energy source will offset consumption of carbon intensive grid electricity resulting in a reduction in emissions.
<i>Social:</i>	Limited social impact, however, this will provide an additional attraction of historical and sustainability interest. The proposal would not have any detrimental effect on any future development of the sawmill building.
<i>Economic:</i>	Both potential schemes will provide pay backs in 5.7 years Pollok House and potential 7 years for the Burrell.

6 Recommendations

6.1 Following referral from the Sustainability & Environment PD Committee at its meeting held on 4 February 2015, it is recommended that Committee:

- agree the existing infrastructure of the sawmill can be used for a renewable energy scheme, and;
- approve the development of this project.

**BRIAN DEVLIN
EXECUTIVE DIRECTOR
LAND & ENVIRONMENTAL SERVICES
5 March 2015**