



Glasgow City Council

**Net Zero and Climate Progress Monitoring
City Policy Committee**

**Report by George Gillespie, Executive Director of Neighbourhoods,
Regeneration and Sustainability**

Contact: Gavin Slater Ext: 78347

Item 4

23rd May 2023

UPDATE ON GCC SOLAR PV INSTALLATION PROGRAMME

Purpose of Report:

To provide Committee with an update on the plans to install photovoltaic solar generation on the Glasgow City Council estate.

Recommendations:

The Committee is asked to:

- 1) Note the contents of this report;
- 2) Note the capital funding available and plans to maximise the benefits of match funding
- 3) Note the proposed phased approach to installation, including the progress towards delivering phase 1 and preparations for future phases.
- 4) Note that further updates will be provided to Committee on an annual basis.

Ward No(s):

Citywide: ✓

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

1. Introduction

- 1.1 Solar photovoltaic (PV) power generation on the Council estate represents an opportunity to achieve reductions in carbon emissions and cost associated with the Council's electricity usage. Whilst the national grid is progressing towards decarbonisation, use of zero emission local generation at the point of consumption will accelerate the city towards its net-zero carbon by 2030 target.
- 1.2 A phased program to install PV generation will be initiated across the Council estate on suitable properties. This program will build upon the previous solar PV installations across the estate and will contribute to reducing the carbon emissions associated with GCC electricity use as well as providing significant cost savings. The project was presented to the meeting of the Climate and Sustainability Board on the 28th March 2023, where the Board noted its approval.
- 1.3 GCC currently operates 33 PV arrays located on rooftops with varying generation capacity as measured in kilowatt peak¹ (kWp). The number of installations, and therefore generation capacity, has risen in recent years. In 2016 around 285,000 kilowatt hours ²(kWh) of PV generation was recorded, rising to approximately 616,000 kWh in 2022.
- 1.4 This project focusses on the provision of PV installation on the GCC estate and runs parallel to the work undertaken on [Developing a Community Energy Framework](#), a paper on which was presented to Committee on 11 April 2023.

2 Funding

- 2.1 The PV installation project will seek to maximise the generation capacity achievable, and therefore the emission reductions and financial benefits, through use of the available £2 million in GCC capital funding.
- 2.2 Funding will be enhanced by use of match funding from Salix, a non-departmental public body, wholly owned by the Government. Salix administers funds on behalf of the Department for Energy Security and Net Zero, the Welsh and Scottish Governments, and the Scottish Funding Council. In Scotland this match funding may be provided to help the public sector to decarbonise through deployment of renewable energy.
- 2.3 Salix have agreed in principle to match fund 50% of costs. Once the total phase 1 costs are confirmed through the completion of the tender process, the Salix value will be agreed. Negotiations are also ongoing to potentially utilise up to 75% Salix match funding for future phases.
- 2.4 Increased PV efficiency and electricity costs have reduced the effective payback period for PV installation to an average of 5 years, as calculated within the Salix Compliance Tool and Business Case for projects, though this is

¹ The maximum amount of power produced under standard laboratory test conditions, which broadly equate to bright sunshine.

² A measure of electrical energy equivalent to a power consumption of one thousand watts for one hour.

dependent on individual site factors. The technology is designed to operate in excess of 25 years. Following payback of funding, this provides a significant period of zero cost generation, reducing ongoing electricity costs, with potential revenue generation through export of unused power to the national grid further hedging against energy costs.

2.5 The most favourable return on financial investment arises from on-site utilisation of the electricity generated rather than paid export to the grid. The potential for inclusion of battery storage at each site will also be explored within feasibility assessments.

3 PV Installation – Phase 1

3.1 NRS Sustainability have identified those GCC owned, or long term leased buildings for which PV feasibility studies have been completed. To secure installation within the financial year, eight sites with feasibility studies have been identified for inclusion in Phase 1 of the project. Criteria for inclusion include:

- completed feasibility studies
- electricity consumption levels within the buildings to maximise local usage of generation
- engagement with Corporate Asset Management and Arms-Length External Organisations, where appropriate, to confirm location suitability.

3.2 The eight buildings identified for Phase 1 and the proposed PV installation capacity at each are shown below:

Building	Proposed capacity in kilowatt peak (kWp)
Kelvin Hall	600
Dalmarnock Primary School	130
Camstradden Primary School	50
Haghill Primary School	50
St Bernard's Primary School	50
Glasgow Scientific Services (Colston Lab)	48
Mallaig Rd Day Care Centre	32
Muirhead Rd Day Care Centre	32

3.3 Phase 1 is expected to cost in the region of £1.3M and funded via a combination of GCC capital funds and Salix match funding and achieve a total proposed installation capacity of just under 1,000kWp. This in turn will lead to estimated electricity cost savings of £250,000 per year at current electricity prices and based on 100% local consumption of generated electricity. The exception to this is Dalmarnock Primary School where 80% of the generation is expected to be locally used with 20% available for export. An Initial Procurement Assessment (IPA) has been completed and approved by NRS Finance as well as a Statement of Requirements (SoR) in respect of Phase 1. This sets out in detail the objectives, requirements and outcomes expected and will inform the production of tender specifications for the project.

- 3.4 The Scotland Excel Framework will be considered for the procurement of all phases of the PV installation program, beginning with Phase 1. Timescales for delivery of Phase 1 will be finalised with the Corporate Procurement Unit (CPU) and an agreed program of installation. Award of the tender and commencement of the contract is expected to be September 2023 (subject to market conditions).
- 3.5 The council will continue to incorporate all current legal measures including the Scottish Government guidance contained in SPPN 3/2020 “Reducing the risk of human trafficking and exploitation in the performance of public contracts”^[1] in delivering the procurement workplan for the PV Installation programme.

4 PV Installation – Future Phases

- 4.1 Pre-feasibility assessments have been undertaken on approximately 200 GCC buildings. A desktop study has been completed for each building and provides a high level analysis of the feasibility of the installation of a PV array.
- 4.2 These will be updated with the full feasibility assessments, which will provide clear advice on viable array options, installation considerations and provision of a work package containing design and installation information. The procurement process is underway to undertake full feasibility studies on 50 of these locations, detailed in Appendix A. This will be used to inform the prioritisation of buildings in future phases.
- 4.3 Once the feasibility work is complete and costed for delivery, further funding will be sought. This is likely to comprise Salix funding, a proportion of GCC capital funds and potentially additional funding from the GCC Central Energy Efficiency Fund.
- 4.4 A further seven locations have been identified as priority locations for Phase 2 of PV installation based on the same factors as used for Phase 1. These will be prioritised dependent on feasibility study outcomes. Proposed Phase 2 buildings and potential PV installation capacity at each are shown in the table below:

Building	Proposed capacity in kilowatt peak (kWp)
Emirates Arena	1,400
Tollcross Leisure Centre	340
Bellahouston Leisure Centre	250
Gorbals Leisure Centre	230
Springburn Leisure Centre	180
Glasgow Museum RC	160
Royal Concert Hall	140

- 4.5 Phase 2 is expected to cost in the region of £2.7M and funded via a combination of GCC capital and Salix match funding and achieve a total proposed installation

^[1] <https://www.gov.scot/publications/reducing-the-risk-of-human-trafficking-and-exploitation-in-the-performance-of-public-contracts-sppn-3-2020/>

capacity of around 2,700kWp. This in turn will lead to estimated electricity cost savings of £500,000 per year at current electricity prices and based on 100% local consumption of generated electricity. Discussions are ongoing with Salix to explore the potential for this match funding to meet 75% of the costs.

5 Next Steps

- 5.1 GCC will work with procurement to publish and award the tender for Phase 1 of the project in the timeframe detailed in section 3.4, to achieve PV installation and the benefits of local zero emission generation as quickly as possible. The procurement of updated feasibility studies will also be undertaken for a significant proportion of additional candidate properties to inform future phases.
- 5.2 GCC will work with Salix both to finalise the match funding for Phase 1 and maximise the match funding available for future phases.
- 5.3 GCC will review all locations with the intent to maximise financial and carbon emission benefits from the Council estate and use the information obtained to help further inform site identification as part of the community energy framework.
- 5.4 GCC will work with internal and external stakeholders to ensure proper management and oversight of the project through to delivery and implementation. This will include ensuring issues such as local grid capacity, building ownership status and condition, warrants and permissions are fully considered.

6. Policy and Resource Implications

Resource Implications:

Financial: There are no direct financial implications arising from the report.

Legal: The report raises no direct legal issues.

Personnel: GCC Sustainability, ALEOs, Corporate Asset Management will all have involvement in project initiation, development and operational aspects.

Procurement: Procurement resources will be required for the tender process.

Council Strategic Plan: Contributes to Grand Challenge 3 - *Fight the Climate Emergency in a Just Transition to a Net Zero Glasgow* and Mission 2 - *Become a net zero carbon city by 2030*

Equality and Socio-Economic Impacts:

Does the proposal support the Council's Equality Outcomes 2021-25? Please specify.

Not directly. However reducing the Council's utility costs and liability may free up financial resources that could be focused on the Council's equality objectives.

What are the potential equality impacts as a result of this report?

No significant impact.

Please highlight if the policy/proposal will help address socio-economic disadvantage.

Financial benefits to the Council and increased employment opportunities represent positives in this respect.

Climate Impacts:

Does the proposal support any Climate Plan actions? Please specify:

This project provides a specific response to action 17 of the Climate Plan. Also contributes to many of the actions within the Climate Plan, including actions 3, 6 and 49.

What are the potential climate impacts as a result of this proposal?

A reduction in carbon emissions relating to the electricity usage in buildings through use of zero emission generation.

Will the proposal contribute to Glasgow's net zero carbon target?

By reducing emissions relating to the electricity usage of buildings, this project will have a direct positive impact on Glasgow's net zero carbon target.

Privacy and Data Protection Impacts:

Not directly applicable to this report.

7. Recommendations

7.1 The Committee is asked to:

- 1) Note the contents of this report;
- 2) Note the capital funding available and plans to maximise the benefits of match funding
- 3) Note the proposed phased approach to installation, including the progress towards delivering phase 1 and preparations for future phases.
- 4) Note that further updates will be provided to Committee on an annual basis.

Appendix A:

Locations of Updated Full PV Solar Feasibility Studies for Future Phases

Sites	Address
Avenue End Primary School	290 Mossvale Road, Glasgow, G33 5ny
Bankhead Primary school	66 Caldwell Ave, Glasgow, G
Bellahouston Leisure Centre	31 Bellahouston Drive, Glasgow, g52 1HH
Castlemilk Pool	137 Castlemilk Drive, Glasgow, G45 9UG
Castlemilk Sports Centre	28 Dougrie Rd, Glasgow
Castleton Primary School	70 Dougrie Rd, Glasgow, G45 9NW
Corpus Christie RC Primary School	179 Pikeman Road, Glasgow, G13 3BH
Eastbank Primary School	80 Gartocher Rd, Glasgow, G32 0HA
Easterhouse Sports Centre	12 Auchinlea Rd, Glasgow
Emirates Sport Stadium	1000 London Road, Glasgow, G40 3HG
Scotstoun Stadium arena	Danes Drive, Glasgow
Glasgow National Hockey Centre	Glasgow G40 1 HB
Gorbals Leisure Centre	275 Ballater Street, Glasgow, G5 0YP
Greenfield Park football	127 Duror St, Glasgow
Hazelwood School	50 Dumbreck Ct, Glasgow, G41
Holyrood Sports Centre	110 Dixon Rd, Glasgow, G42 8BA
Langside Primary School	233 Tantallon Rd, Shawlands, Glasgow G41 3JW
Maryhill leisure Centre	Gairbraid Ave, Glasgow
Palace of Art Sports Centre	1121 Paisley Rd W, Bellahouston, Glasgow G52 1EQ
Petershill Sports Centre	30 Adamswell St, Glasgow G21 4DD
Pollock Civil Realm	Pollok Civic Realm, 2EN, Cowglen Rd, Glasgow G53 6EW
Scotstoun Primary School	21 Duncan Ave, Glasgow G14 9HN
Shawlands Primary school	1284 Pollokshaws Rd, Shawlands, Glasgow G41 3QP
Springburn Leisure Centre	Kay St, Glasgow
St Joseph's RC Primary School	39 Raglan St, Glasgow G4 9QX
Riverside Primary school	Govan Road Campus, 635 Govan Rd, Govan, Glasgow G51 2AQ
Sunnyside Primary School	1 Powrie St, Glasgow G33 5LA
Thornwood Primary School	11 Thornwood Ave, Glasgow G11 7QZ
Tollcross swimming pool	Wellshot Road, Glasgow
Whitehill swimming pool	Onslow Dr, Glasgow
Yoker Sports centre	2 Speirshall Terr, Glasgow
Glasgow Museum Resource Centre	Woodhead Rd, Glasgow
Gartcraig Depot	City, Glasgow G33 2SH

Darnick Street CBG HQ	Darnick St Glasgow
Polmadie Depot	Polmadie Road Glasgow
Blochairn Recycling Fac	Blochairn Rd, Glasgow G21 2RL
Daldowie Training Centre	2 Daldowie Garden Centre, Uddingston, Glasgow G71 7SN
Fruit Market	City Property Markets, Blochairn Market Complex, 130 Blochairn Rd, Glasgow G21 2DU
Cardonald Primary school	1 Angus Oval, Glasgow G52 3HD
Barmulloch Primary School	305 Forge St, Glasgow G21 2AH
Battlefield Primary school	44 Carmichael Pl, Glasgow G42 9SY
Knightswood Community Centre	201 Alderman Rd, Glasgow G13 3DD
Sandaig Primary school	31 Burnmouth Rd, Glasgow G33 4SA
St Philomena's RC Primary School	35 Robroyston Rd, Glasgow G33 1EA
Saint Rose of Lima Primary School	295 Mossvale Rd, Glasgow G33 5QS
Eastmuir School	211 Hallhill Rd, Glasgow G33 4QL
Drumchapel Swimming Pool	199 Drumry Rd E, Glasgow G15 8NS