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Democratic Services Section
Legal and Civic Services Department
Belfast City Council
City Hall
Belfast
BT1 5GS

8th May, 2026

MEETING OF THE CLIMATE AND CITY RESILIENCE COMMITTEE

Dear Alderman/Councillor,

The above-named Committee will meet in the Lavery Room - City Hall and remotely via Microsoft Teams on Thursday, 14th May, 2026 at 5.15 pm, for the transaction of the business noted below.

You are requested to attend.

Yours faithfully,

John Walsh

Chief Executive

AGENDA:

1. **Routine Matters**

   (a) Apologies

   (b) Minutes

   (c) Declarations of Interest

2. **Scaling Rooftop Solar PV in Belfast (Pages 1 - 6)**

3 **Restricted Item**

(a) District Heat Network Update (Pages 7 - 26)

CLIMATE & CITY RESILIENCE COMMITTEE

Belfast City Council

Subject:	Scaling Rooftop Solar PV in Belfast
Date:	14th May 2026
Reporting Officer:	John Tully, Director Organisational and City Strategy
Contact Officer:	Claire Shortt, Monitoring, Learning and Reporting Officer and Odhran Crolly, Energy Systems Advisor

Restricted Reports

Is this report restricted? **Yes** ☐ **No** ☒ x

Please indicate the description, as listed in Schedule 6, of the exempt information by virtue of which the council has deemed this report restricted.

Insert number ☐

1. Information relating to any individual
2. Information likely to reveal the identity of an individual
3. Information relating to the financial or business affairs of any particular person (including the council holding that information)
4. Information in connection with any labour relations matter
5. Information in relation to which a claim to legal professional privilege could be maintained
6. Information showing that the council proposes to (a) to give a notice imposing restrictions on a person; or (b) to make an order or direction
7. Information on any action in relation to the prevention, investigation or prosecution of crime

If Yes, when will the report become unrestricted?

After Committee Decision	☐
After Council Decision	☐
Sometime in the future	☐
Never	☐

Call-in

Is the decision eligible for Call-in? **Yes** ☒ x **No** ☐

1.0	**Purpose of Report/Summary of Main Issues**
1.1	To provide an update on the progress on solar PV.
2.0	**Recommendation**
2.1	The Committee is asked to note that: I. there are currently 1,311 domestic solar PV installations across Belfast contributing a total of 8.6 MW of renewable electricity against a potential generation of 1.1GW; II. 24 council buildings have been assessed (desktop) for their potential to host rooftop solar PV including five buildings which have had a more in-depth site assessment; III. one of these assessments was used to secure €51,120 from the Shared Island Fund to install solar PV on Donegal Pass Community Centre which reduces carbon emissions by 13 tonnes CO2e/kWh annually saving £7000 per year; IV. an Expression of Interest will be submitted to GB Energy to secure capital funding to support the installation of solar PV on selected Council buildings and to extend an interactive solar map developed in partnership with the Department for the Economy and GIA to create a web-based information portal to enable businesses and residents to see how much money they can save by installing solar PV; and V. further market testing and modelling of a rooftop solar portfolio PPA business model has demonstrated the potential to provide generators with an export revenue (encouraging them to size solar systems to maximise available roof space and thereby increase total solar deployment) and enable local businesses to access competitively priced renewable electricity.
3.0	**Main report**
	Background
3.1	Solar PV represents the main opportunity for generating renewable energy within the city boundary due to the abundance of rooftops across the City. However, rooftop generation is still quite low in Belfast - there are currently 1,311 domestic solar PV installations across Belfast contributing a total of 8.6 MW of renewable electricity to the local supply. However, the potential generation is around 1.1GW. Rooftop solar Photovoltaic (PV) is therefore identified as a low regret option for decarbonisation in the Local Area Energy Plan (LAEP).
3.2	**Analysis of rooftop solar PV potential of selected BCC buildings** Belfast City Council (BCC) has been involved in a number of studies which have sought to assess the potential solar PV generation on selected buildings across the City. In December 2022, 11 of BCC's high consuming buildings were included in a DfE funded study whereby Gordon Ingram Associates (GIA) analysed the solar PV potential of over 50 properties (both domestic and non-domestic) in the Belfast area.
3.3	In 2023, Belfast City Council partnered with Cork City Council on a Shared Island funded feasibility study that assessed the solar PV potential on a number of high consuming council sites in both Cork and Belfast. In Belfast, the potential solar PV generation for a further 10 council owned buildings was estimated against the electricity consumption for each building.

3.4	Five buildings were also assessed in more detail through site visits including City Hall and Duncrue. In all, 24 council owned buildings were included across the three studies.
	Installation of rooftop solar on Donegall Pass Community Centre
	The results of the studies were then used to complete a joint application with Cork City Council last summer to access capital funding to install solar PV on one community centre in Belfast (Donegall Pass Community Centre) and two in Cork (Fairhill Fairfield Community Association and St. Vincent's Hurling and Football Club). These community buildings were selected due to their high potential solar PV generation and high energy consumption levels identified in the earlier study. A further application secured additional funding to install batteries to store excess electricity generated during times of high generation and low usage.
3.5	The panels have the potential to generate 37,898kWh/year against a current energy consumption of approximately 19,000kWh/year (ie the panels will produce approximately double the amount of energy currently used). This reduces carbon emissions in the city by approximately 13 tonnes CO2e/kWh annually (equivalent to charging a smart phone 120,000 times) and will save around £7000 per year on the electricity bill. The aim is to use the Donegal Pass Community Centre to test the solar array and battery storage and explore its potential on other council sites across the estate. Since installation, the site has not used any electricity from the grid on 85% of the days (46 days out of 54 days).
3.6	**Web-based portal for analysis of rooftop generation potential**
	DFE has also funded GIA to undertake a second phase of research into the solar PV potential of properties within the UP2030 area which represents 79% of the total roof-space within the wider City Centre designated boundary and 29% of Belfast's total electricity consumption per year. This project analysed an amalgamation of roof tops to see if it was possible to identify areas of high generation potential across 862 blocks of buildings located within 25 Data Zones in Belfast which included a mix of both domestic and non-domestic properties. 23 of the 25 Data Zones assessed in this project were located within the Botanic District Electoral Area (DEA) of Belfast while the remaining two Data Zones were located in the Court DEA. Botanic and Court DEAs geographically represent 25 of the 35 DEAs located within Belfast City Council's City Centre boundary (outlined in the Local Development Plan).
3.7	The total installation sizes estimated as part of this project are subject to further on-site detailed assessments, such as structural assessments, system configuration assessments, and mounting kit layout assessments. The results demonstrate the potential application of this methodology to develop a web-based information portal to enable businesses and residents to see how much money they can save by installing solar PV.

3.8	**Funding opportunity: GB Energy** The Climate Team is partnering with the Energy Manager and GIA to submit an Expression of Interest to GB Energy to extend the solar PV potential map across the city and also to avail of capital funding to install solar PV panels on high consuming sites within the Council estate. Money saved (from reduced energy costs) can be used to fund other local community initiatives such as longer opening hours, local employment opportunities and new resources.
3.9	GBE funding is available to local government, other public sector organisations and community energy groups to unlock key projects and deliver pipelines of local renewable energy projects. GBE is dedicating up to £1bn throughout the rest of the Spending Review period, with N Ireland included as recipients. In N Ireland, GBE will work with the Northern Ireland Executive to design a tailored approach that reflects its energy landscape and ambitions in its upcoming Community Energy Policy Framework.
3.10	**Scaling rooftop solar through a portfolio Power Purchase Agreement (PPA)** Under the recent Innovate UK project 'Enhancing Low Carbon Heat Networks', research and modelling were undertaken by the Energy Systems Catapult to understand the opportunity and appetite for a business model which aggregates excess solar generation in Belfast and sleeves it across the local electricity network to an off-taker, facilitated by a portfolio manager and a licensed energy supplier.
3.11	The Portfolio PPA business model was developed in the previous phase of funding from Innovate UK. The basic concept is to incentivise the owners of buildings with large rooftops to install rooftop solar, so that excess generation can be aggregated into a portfolio and dispatched through a PPA agreement to a single off-taker.
3.12	The model has the potential to provide generators with an attractive, reliable export revenue stream, encouraging them to size solar systems to maximise available roof space and thereby increase total solar deployment. At the same time it would enable local businesses to access competitively priced renewable electricity.
3.13	This work examined its attractiveness to stakeholders, its feasibility in practice, and its potential commercial viability. This work also included a legal review of the business model, a hackathon with innovators and two workshops with suppliers. These activities are intended to give confidence to a potential 3rd party investor. The aims of the study were to:

	1. understand how the business model could operate in practice, speaking with the stakeholders essential to its implementation (eg virtual power plant operators, traditional PPA providers, aggregators, energy suppliers etc), 2. estimate the potential annual surplus solar generation available in Belfast, and to test whether the value proposition could be mutually beneficial to both the supplier and the energy centre.
3.14	A mini-'hackathon' was organised to explore how innovators in the market could deliver the model and improve the commercial viability. Reverve Energy were judged to have the most applicable solution by the panel made up by BCC and project partner officers. The solution put forward is to co-locate battery storage at the generation sites in order to capture surplus wind energy overnight. This method allows for a profile to be built with 70% wind and 30% sun, which closely matches the heat network demand profile.
3.15	The Reverve business model finances, installs and operates the solar and storage assets and recover the capital costs over time. Because Reverve would between the generator and offtaker, as intended by the Portfolio PPA model, they can make a margin in multiple revenue streams allowing value to be shared with all parties. With this model, electricity could be supplied at £0.14-0.15p/kWh, however barriers still remaining with clarity around the need for sub-metering, contractual terms and site recruitment.
3.16	The key findings are summarised below. 1. The top 100 non-domestic buildings in Belfast (by excess generation capacity) could host 95MW of solar PV, generating approximately 68GWh of annual surplus electricity. Most of this potential is concentrated in warehouses, shops, and education buildings. 2. Oversizing rooftop PV systems can yield payback periods broadly comparable to conventional self-consumption systems, while delivering significantly higher net present value. It can also offer an indicative PPA price of 13.8-18.7p/kWh for the heat network. 3. There is cross-sector interest in the Portfolio PPA model, but stakeholders also highlighted barriers. These include grid constraints, contractual complexity, high development and transaction costs, middle layer fees, the challenge of multi-party value sharing. 4. innovators in the energy sector could help improve the commercial viability of the model through asset diversification and portfolio-wide coordination in the model. Market ready solutions capable of supporting these requirements already exist.

3.17	To progress the model towards delivery, ESC recommend that BCC explores the potential for a proof-of-concept pilot to provide a more robust evidence base to inform whether and how the Portfolio PPA could be scaled across Belfast. The pilot would focus on identifying and progressing a shortlist of priority buildings with the most potential to generate surplus solar power and then undertaking a detailed financial assessment of the Portfolio PPA for the shortlisted sites.
3.18	This pilot would allow the Council to test the model at a practical scale, validate key technical and commercial assumptions, and confirm whether surplus solar can be aggregated and supplied in a way that is commercially viable. The assessment of potential off-takers could also be widened beyond the heat network. Determining which off-taker offers the most complementary demand profile to the anticipated surplus generation would help mitigate imbalance risk and improve the commercial viability of the model.
4.0	**Financial and Resource Implications** None at present **Equality or Good Relations Implications/Rural Needs Assessment** None
5.0	**Appendices – link to map** Belfast Solar Opportunities Map V2.0

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