Report

Greater Gwent Cremation Joint Committee

Part 1

Date: 11/10/2023

Subject **Community Energy: Solar PV at Gwent Crematorium**

Purpose The purpose of this document is to seek approval for the installation of a 33.75kWp solar panel array on the roof of Gwent Crematorium via a Community Energy delivery route.

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Summary

This document outlines the proposal to install a 33.75 kWp solar panel array on the roof of Gwent Crematorium via a Community Energy delivery route. While NCC operates and manages the Crematorium, pays the bills, and therefore also reports on the associated carbon emissions, Torfaen County Borough Council owns the building.

All Welsh Local Authorities have the target of becoming carbon net zero by 2030 in line with Welsh Government guidance. The solar array could generate up to 26.33 MWh of electricity annually, with all 26.33 MWh of this being used on site, resulting in energy bill reductions of circa £970/yr. The scheme is expected to realise annual carbon savings of 9.9 tonnes CO2e, which would help to decarbonise the estate of Newport City Council (NCC) and the area of Torfaen County Borough Council (TCBC).

Further benefits include zero capital input from NCC or TCBC, the community energy group would install, manage, and maintain the operation of the solar array, an ability to self-supply 15% of the current electricity demand on site with solar-generated electricity, and a positive image of the Councils being generated from the installation of the scheme, showing a commitment to meet carbon reduction targets and the ability to work collaboratively to do so.

Proposal **To proceed with installation of 33.75 kWp solar panel array at Gwent Crematorium**

Action by Joanne Gossage on behalf of Eloise Laity and NCC Carbon Reduction Team

Timetable Immediate

This report was prepared after consultation with:

- Joanne Gossage – NCC Service Manager Environment & Leisure
- Torfaen County Borough Council Energy Manager
- Torfaen County Borough Council Planning Department
- Newport City Council Legal Representative
- Newport City Council Head of Finance

Signed *Eloise Laity*

Background

In line with NCC's aspiration to achieve carbon net zero by 2030, this document sets out a proposal for Egni Coop to install rooftop solar PV at Gwent Crematorium, Tre-Herbert Road, Cwmbran, NP44 2BZ.

The proposal is for the installation of a 33.75 kWp solar array, involving 91 PV modules and 1 Solar Edge inverter, across the two flat roofs and the central pitched roof, as shown in Figure 1.

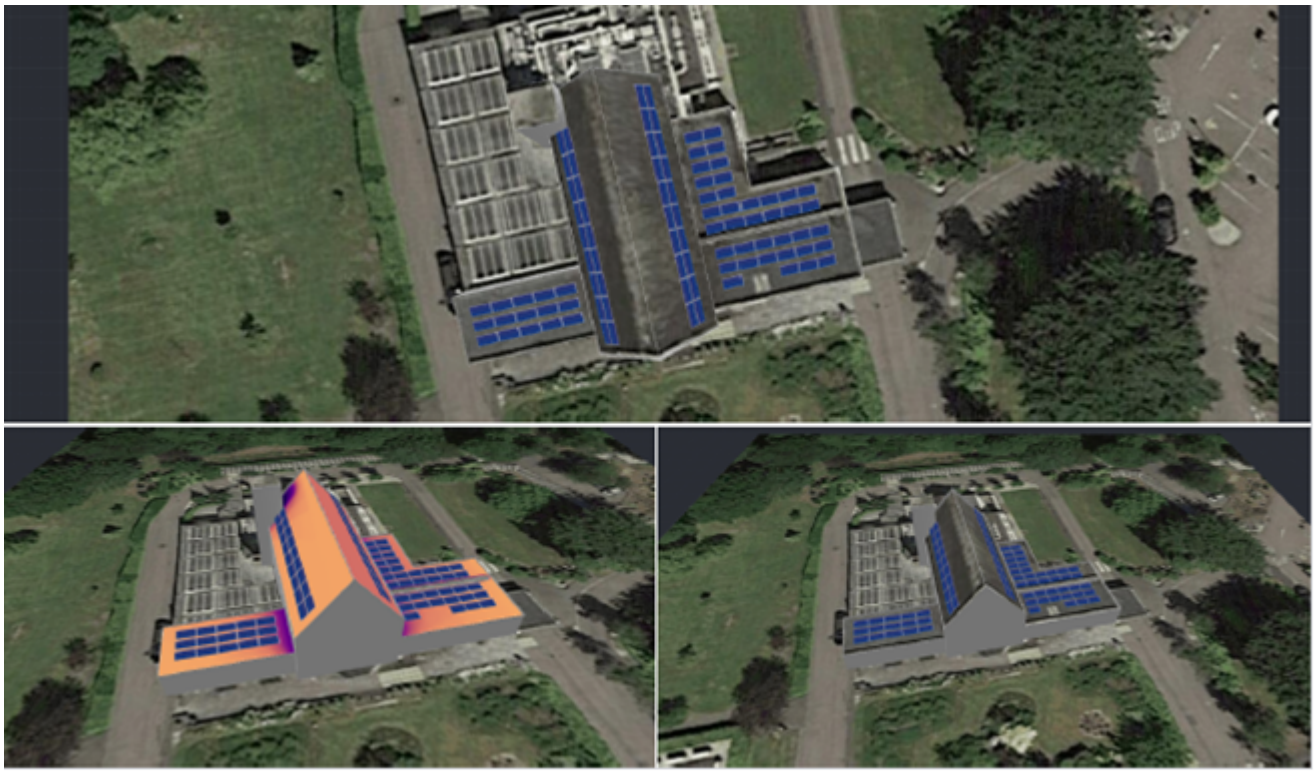

Figure 1: Design for Rooftop Solar PV at Gwent Crematorium

The installation would be undertaken by Egni Cooperative (Egni Coop), a Community Energy Group based in South Wales. In 2020, NCC's Carbon Reduction Team entered a Procurement with Egni Cooperative, to install rooftop solar PV on numerous Council sites. Since then, they have installed rooftop solar PV across 31 sites, including schools, residential care homes, the Regional Pool & Tennis Centre, and the Geraint Thomas National Velodrome of Wales. Gwent Crematorium has been proposed as the last of this phase of works. However, while NCC operates and manages the Crematorium, pays the bills, and therefore also reports on the associated carbon emissions, Torfaen County Borough Council owns the building.

The process of Community Energy works by leasing the building's roof space and entering into a Power Purchase Agreement (PPA) with Egni Coop, whereby the site can buy the solar-generated electricity at a discounted price to market electricity. Egni Coop install the solar panels and own the equipment outright. As a result, they are responsible for operating and servicing the equipment for the duration of the lease (21 years). Egni are also responsible for the delivery of the project and engaging with stakeholders, the community, and the lead installer, who in this case would be ICE Solar. Please note that the system would be owned by Egni Coop with ICE Solar acting as their contractor, as chosen by them.

At the end of the 21-year lease, the site has three options:

1. Buy the panels from Egni,
2. Enter into another lease agreement,
3. Ask for the panels to be removed.

Solicitors from all sides have been in discussion and the following has been proposed:

- Roof space lease between Egni Cooperative and Torfaen County Borough Council
- PPA between Egni Cooperative and Newport City Council
- Side agreement between Newport City Council and Torfaen County Borough Council (to remove liabilities from TCBC and to give them the option to buy the panels at the end of the lease).

If, for whatever reason, the asset cannot fulfil the 21-year lease, the landlord would usually be expected to buy the panels at the depreciated value or transfer the panels to another building. The cost of the panels depreciates 4% each year. However, in this situation, TCBC are the landlords and so a note on this process can be written into the side agreement to determine who would take ownership of this process.

As stated, the PPA enables site to buy the generated electricity from Egni Coop at a discounted price compared to market electricity. Any excess energy generated by the panels is exported and sold by Egni to the grid, helping to further decarbonise the wider area. If the solar-generated energy doesn't meet site demand, the site can draw additional electricity from the grid, as normal.

Egni Coop are responsible for the installation of the panels and will work closely with staff members on site and within the relevant Councils to ensure disruption to the operation of the site is minimised. These details will be arranged at the point of installation. Egni Coop will be the client from a CDM perspective. They are also responsible for appointing a Principal Designer & Principal Contractor for the project, who will be ICE Solar in this case. Roof surveys and necessary feasibility work to be conducted before any works are progressed. If the roof structure is not suitable, the work will not progress.

Egni Cooperative and their contractors, ICE Solar, have confirmed that the designs fall within Permitted Development, however, a Lawful Development Certificate (LDC) application has been submitted and is currently with TCBC's Planning Department (Reference: 23/P/0598/CEA). In addition, designs and plans will have to be agreed by both TCBC and NCC (including Newport Norse), and a landlord consent application approved.

There is zero upfront cost to NCC or TCBC, with the only ongoing cost on NCC to purchase the solar-generated electricity from Egni Coop. However, this model still enables the Council to save money, as higher rates would be paid to its existing electricity supplier. It is expected that the solar array could generate up to 26.33 MWh of electricity annually, with all 26.33 MWh of this being used on site. This equates to an annual energy cost reduction of £974 and annual carbon savings of 9.9 tonnes CO2e, helping to decarbonise the estate of Newport City Council and the area of Torfaen County Borough Council. In 2022/2023, 9.9 tonnes CO2e would have been equivalent to 0.2% of NCC's total carbon emissions from all building electricity.

Egni Coop would be responsible for the ongoing maintenance of the panels and for performing the statutory checks, including fire risk assessments and inspections. If, for any reason, the panels need to be removed for works to be undertaken on the roof, Egni will remove the panels free of charge, up to three times for the term of the lease. If panels need to be removed more than this, the cost will fall on NCC or TCBC. Again, this will need to be discussed and written into the side agreement between NCC and TCBC. The use of specified Solar Edge inverters means that the system can be isolated from the rest of the building and can be set up to turn off in the event of a fire, reducing risk.

Egni Cooperative were set up in 2013 by Awel Aman Tawe, a community renewable energy charity. The group has over 20 years of experience researching, developing, and delivering renewable energy projects at a local level. Egni Coop are funded and supported by groups such as the Cooperative Membership Community Fund, the Nature save trust, Renew Wales, Wales Co-operative Centre, and the Development Bank of Wales, amongst others. Their co-op share offer also gives people the chance to invest their money towards a more sustainable future and providing a chance for interest on their investment. In addition, any surplus made, goes back into climate change education in schools.

Procurement has already been undertaken and received internal NCC sign off at the start of the phase. If approval for this scheme is given, NCC's Carbon Reduction Team will work with Egni Coop and TCBC to progress the installation.

An alternative option to this scheme is to do nothing. However, in 2022/2023 Gwent Crematorium used 178,776kWh of electricity, equating to 67 tonnes of CO2e (using Welsh Government reporting methodology). Doing nothing will increase the risk of not meeting carbon reduction targets as demand for this electricity is not expected to change over the next few years. Electricity costs have seen a rise in recent years and while long term electricity prices are difficult to predict at this time, large decreases in unit rate prices are not expected to occur.

Another option is to deliver the scheme "in-house", whereby TCBC or NCC would fund and deliver the scheme themselves. At this point it is not clear who would be responsible for this as TCBC owns the building but NCC manages it, pays the bills, and is therefore responsible for the carbon emissions. Further conversations and agreements would be needed to explore this option. A table showing a comparison between this delivery route and the community energy delivery route is shown in Table 1.

Table 1: Comparison between In-House and Community Energy Delivery Routes

Delivered In-House	**Delivered by Community Energy Route**
NCC/TCBC responsible for install	Egni Coop responsible for install
NCC/TCBC responsible for associated maintenance and management costs for lifetime of panels	Egni Coop would be responsible for the maintenance and management of the panels for the duration of the lease
Officer resource required to install panels and manage the maintenance and management	Egni Coop would project manage and be the client from a CDM perspective
Requirement to procure and source solar panels and associated equipment	Quick delivery route due to Egni Coop and their installers having solar panels ready
Requirement to procure and source structural surveys, grid connections, and designs	Egni Coop would be responsible for undertaking structural surveys, grid connections, and designs
Requirement to secure circa £36,956 funding	Zero upfront cost to NCC/TCBC
Annual maintenance costs of £500	No ongoing maintenance costs
In the first instance, any savings made will need to be used to pay back any borrowing. A payback period of 39 years is predicted.	100% savings are kept from year 1
No realisation of education benefits or community share benefits	Dedicated Education Officer provided by Egni. Community Share benefits.
TCBC or NCC would own the panels outright	Option for TCBC or NCC to own the panels after 21 years

Financial Summary (Capital and Revenue)

As stated, the scheme would require **zero capital input** from NCC or TCBC with the only ongoing cost being on NCC to purchase the solar-generated electricity from Egni Coop.

The proposed scheme would result in NCC purchasing the solar-generated energy from Egni Coop for 21 years using the model below:

- BAU - Business as Usual (no PV solar & continued grid electricity purchase) - typical price per unit that NCC is projected to pay in 2024 is 36p.

- Offer A - is an anticipated discount of 10% discounted off the standard NCC rate, 32p based on the expected 36p/unit in 2024.

Assuming 26,330 kWhs of electricity will be consumed by site, the total cost to NCC of purchasing this green energy over 21 years is calculated below (ignores inflation).

Model	Units purchased (per year)	Purchase price (£ per unit)	£ Value of solar energy purchased (per year)	Total Value over 21 years (£)	Savings over BAU over 21 years (£)
BAU (units from grid)	26,330	0.36	£9,479	£199,055	0
Offer A (units from PV)	26,330	0.36*0.90	£8,531	£179,149	£19,905

Risks

This model has been used to install rooftop solar PV across 31 sites, including schools, residential care homes, the Regional Pool & Tennis Centre, and the Geraint Thomas National Velodrome of Wales. Procurement was signed off internally by NCC at the start of the project and Gwent Crematorium is being proposed as the last of this phase of works.

Risk Title / Description	Risk Impact score of Risk if it occurs* (H/M/L)	Risk Probability of risk occurring (H/M/L)	Risk Mitigation Action(s) What is the Council doing or what has it done to avoid the risk or reduce its effect?	Risk Owner Officer(s) responsible for dealing with the risk?
Financial failure of the community energy group	H	L	Council can have the panels removed or take ownership of the panels	NCC Legal/TCBC Legal
Roof not being viable causing a risk to project delivery	M	L	Egni Coop will commission structural surveys ahead of any works taking place.	NCC Carbon Reduction
ACM presence causing a risk to project delivery	M	M	Asbestos reports will be sent and assessed by Egni Coop's contractor. A clear route will be proposed, and further surveys requested, if required.	NCC Carbon Reduction
Financial savings not being realised	L	L	Setting a unit rate 10% lower than at grid electricity rates ensures guaranteed savings compared to business as usual. Carbon Reduction team will be processing/validating any payments that go from site for electricity therefore they will know exactly how much is being saved based on the electricity being used by the solar panels.	NCC Carbon Reduction

			Newport Council will have access directly to the generation data in order to validate the amounts on the invoices	
Experience of Principal Designer & Principal Contractor to deliver scheme of this size	M	L	Experienced installers who have installed on numerous NCC sites already.	NCC Carbon Reduction/H&S
Disruption to site as scheme is delivered	M	M	Work will be carried out when suitable for site, work areas will be clearly designated and fenced off, all relevant checks will be carried out on site personnel. Any scaffold work should take place at a time most suitable for site. Chosen installation company has experience working with all types of Local Authority buildings.	NCC Carbon Reduction
Site Access	M	M	Principal Designer will put forward most appropriate site access plan. Site access plan will be signed off by key stakeholders during pre-construction site meeting	NCC Carbon Reduction
Equipment lead time, delay could hold up installation programme	L	M	Equipment delivery should not be a problem as installation company is already working on number of other projects across UK using the same materials. Principal Designer has not suggested this would be an issue at all	NCC Carbon Reduction
Increased insurance premium of buildings	H	L	Lease agreement details how the tenant (supplier) would cover the increase building insurance premium (Clause 9.3)	NCC Carbon Reduction/TCBC Legal
Access for ongoing maintenance	H	L	Where practicable, inverters will be mounted in an outdoor area in close proximity to the solar array, with good access to allow for future replacements. Inverters should not be mounted in direct sunlight, i.e. unshaded south facing wall.	NCC Carbon Reduction

* Taking account of proposed mitigation measures

Options Available and considered

A. Option 1: Do nothing

The Councils could choose to not install the solar PV and continue as is, noting that electricity costs are expected to continue to rise and risk not meeting carbon reduction targets.

B. Option 2: TCBC or NCC to fund and install the solar PV

At this point it is not clear who would have to fund and install the panels; TCBC or NCC, but the Councils would have to fund the capital work themselves. If a loan was agreed, savings would have to be used to pay the loan back, a payback period of 39 years is predicted. Councils would

incur significant maintenance and management costs, grid application fees, and officer resource would be required.

C. Option 3: Enter into a contract with Egni Coop to install circa 33.75 kWp of solar PV on the roof of Gwent Crematorium.

   Allow the Community Energy group to install the solar array, minimising risk to TCBC and NCC. Procurement has already been undertaken. The rooftop solar array would reduce site energy costs, reduce demand on local grid infrastructure, and reduce carbon emissions. This option would involve entering into an agreement with a Egni Coop who would be responsible for the design, installation, and ongoing maintenance of any solar PV for a 21-year lease.

Preferred Option and Why

The preferred option is *Option 3: Install circa 33.75 kWp of solar PV on the roof of Gwent Crematorium*.

Approval of Option 3 would allow for the installation of circa 33.75 kW of solar PV on the roof of Gwent Crematorium.

The scheme itself would deliver the following benefits:

- Further decarbonisation of NCC and TCBC, assisting in Organisational and National carbon targets.
- Support Welsh Government's Low Carbon Pathway targets of 70% of energy consumed in Wales to be from Welsh renewable-generated energy by 2030.
- Support Welsh Government's targets for all new renewable projects to have an element of community ownership by 2020 and for 1GW of capacity to be in community ownership by 2030.
- Ability to self-supply 15% of the current electricity demand on site with solar-generated electricity
- Zero financial input from NCC or TCBC
- Potential annual energy bill reductions of circa £970
- Potential annual carbon savings of 9.9 tonnes CO2e
- 100% savings realised from year 1
- A positive image of the Councils will be generated from the installation of the scheme, showing a commitment to meet carbon reduction targets and the ability to work collaboratively to do so.
- Egni Coop would provide community engagement and links to community energy organisations
- Investment of officer resource much-reduced vs delivering projects in house.
- The Council would also benefit from free structural surveys, grid applications and design work.

Comments of Chief Financial Officer

The report recommends that the Council enters into the Power Purchase Agreement for 21 years to secure carbon reduction and some modest budget savings, for no up-front costs and ongoing maintenance related costs. The Council's commitment is for 21 years. This is the final project in a long running programme.

There is a long commitment involved here, which is required for the provider to recover its own costs and make any profits linked to the commercial risks being taken. The Committee's attention is drawn to the fact that the panels would need to either be purchased, at the depreciated value, or transferred to another building, if the 21-year commitment cannot be fulfilled. Whilst it is unlikely that this scenario would materialise, it is important that the Committee are aware of this in order to make a fully informed decision. Should this situation arise, there would be a financial impact that would need to be afforded by the relevant party, at that point.

Comments of Monitoring Officer

The comments of the Chief Financial Officer highlight a key consideration, namely that the consequences of withdrawing from the agreement early need to be considered. The Council should also consider how the proposed agreement may affect the Council's/TCBC's ability to carry out maintenance to the crematorium site during the 21-year term, for example, if repairs to the roof are needed.

In addition, the Council should be aware of and consider the potential implications of the insolvency or a change of ownership of Egni Coop. In particular, it would be beneficial to have confirmation that any new owner of Egni Coop or any successor organisation to it would be bound by the same contractual provisions as the original contractor.

With regard to insolvency, there are 2 considerations which are of particular relevance, given the length of the contract and the generally volatile nature of the energy industry:

1. The contract will provide that the panels are owned by the contractor. Therefore, if the contractor becomes insolvent and is liquidated, the ownership of the panels would pass to the liquidator; it may be difficult to enforce any contractual provision preventing this; and
2. In the event of the contractor becoming insolvent, any subsequent liquidation or winding-up process would probably release the contractor from its contractual obligations under the proposed agreement. This may affect the amount paid for electricity generated by the solar panels and the provision of ongoing maintenance. The Council may wish to consider what its options would be in this scenario.

If Newport City Council is responsible for insuring the building, the Insurance section should be consulted to ascertain whether the Council's insurer needs to be consulted or informed of the proposed works.

It would be advisable to ensure that the contract requires that so far as possible, works and maintenance under the contract are carried on outside of the crematorium's operating hours so as to prevent disruption and distress, having regard to the sensitive nature of the site. Regard should also be had to the need to preserve the visual appearance of the site whilst the works are being carried on.

It is noted that a Certificate of Lawful Proposed Development has been applied for and it would be advisable to await the issue of such a certificate before entering into the contract.

Head of People, Policy and Transformation

In preparing this report, the sustainable development principle of the Wellbeing of Future Generations (Wales) Act 2015 has been considered by balancing short-term needs with the long term. There are no human resources implications arising from the report.

Consultation

Due to timing, consultation with Ward Members has not yet occurred. The Carbon Reduction Project Officer will happily consult with Ward Members in due course.