

## Annex C - Climate Impact Assessment

### Commercial Rooftop Solar PV



Criteria	Score	Justification
GHGs	2	<u>Moderate, long-term positive impact.</u> This project will reduce GHGs by delivering renewable electricity to the buildings and to the grid. There is some increase in GHGs from manufacture, delivery, installation and recycling of solar panels (embodied carbon) but this is generally accepted as being lower than the carbon savings from decarbonising the grid (operational carbon) <sup>1</sup> . The Council sought to mitigate embodied carbon by asking contractors to account for this when selecting solar technologies. However, the overall carbon benefit is only 'moderate' as the scope of work does not include measures or financial incentives to reduce the overall energy use of the building. Additionally, the carbon benefits of battery storage (where this is proposed) are unclear.

<sup>1</sup> e.g. <https://www.carbonbrief.org/solar-wind-nuclear-amazingly-low-carbon-footprints/>

Air quality	0	<u>Not net change.</u> Increasing renewable energy generation reduces the use of fossil fuels for electricity generation which is responsible for air pollution. However, this impact is minor in the grand scale of the energy system and is counteracted in the short-term by the air pollution associated with the transportation of materials and contractor travel.
Sustainable transport	0	<u>No net change.</u> No impacts identified and no measures included in the tender specification to incentivise a shift towards active travel.
Land use change	0	<u>No net change.</u> Solar panels are roof mounted, not ground mounted, so there is no impact on land use.
Biodiversity	0	<u>No net change.</u> No impact unless panels are on roofs found to be used by nesting birds or bats. Biodiversity surveys will be undertaken where applicable.
Soil and waterway health	-2	<u>Moderate negative impact beyond the delivery location.</u> Mining and other processes relating to the manufacture of solar panels affects soil and waterway health in these mining and manufacturing locations.
Climate change adaptation and resilience	0	<u>No net change.</u> Though installing renewable energy reduces reliance on fossil fuels and supports tenants in being better prepared for phasing out fossil fuels, the project does not impact on adaptation to future climate impacts.
Energy use	0	<u>No net change.</u> We are displacing the energy currently used from one source to another but not changing the amount of energy used as energy efficiency measures or fossil free replacement heating systems were not incorporated into the project. There is a risk that the selected electricity price for tenants may increase energy use if the cost is significantly lower than their existing contracts but this is unknown at this stage. However, use of renewable energy is positive.
Sustainable materials	-2	<u>Moderate, short-term negative impact.</u> Solar panels are usually manufactured internationally so have significant embodied carbon. Many of the materials/metals used are not sourced sustainably but the Council does not have much influence over this. However, solar panel materials can be recycled at end-of-life (such as aluminium and glass) and panel recycling technology continues to improve so a high level of material recovery is expected by the time these panels reach end-of-life.

Waste	-2	<u>Moderate, long-term negative impact.</u> The production of solar panels will inevitably mean waste will be produced when they reach end-of-life. The Council included a requirement in the tender documentation for contractors to consider decommissioning and end-of-life, with 25-year product guarantees for the panels. It is therefore assumed that the solar panels will be repaired as needed and recycled at end-of-life, to mitigate the waste impact.
Food	0	<u>No net change.</u> No impact on food.
Health	0	<u>No net change.</u> Reducing air pollution from fossil fuel use will have a negligible impact on health at a local and national level given the scale of this project. Depending on sale agreements, the project may alleviate financial stress of some tenants by improving resilience to market fluctuations. To be updated following agreements.
Housing	0	<u>No net change.</u> No impact on housing.
Education	1	<u>Moderate, short-term positive impact.</u> Apprenticeship and/or training opportunities were included in the contractor's social value offering, alongside community engagement to provide information on the benefits of renewable energy. The final social value commitments are still to be agreed with the Council.
Built community	0	<u>No net change.</u> The addition of solar will not impact the sense of place, green space, or connectivity infrastructure.
Cultural community	0	<u>No net change.</u> This is not a community-based solar model and no other cultural impacts or benefits are anticipated.
Accessibility	2	<u>Moderate, long-term positive impact.</u> The project presents no barriers to access and may improve access to energy information as part of the metering and monitoring included in the work. Metering and monitoring will be available to tenants and the Councils. The Council will be funding the capital costs of the solar panels to remove the financial barrier to installing them.
Local economy and jobs	2	<u>Moderate, long-term positive impact.</u> The chosen contractor is based locally with 40+ staff in the Gloucestershire region and have stated they will aim to work with local suppliers and contractors where possible. Their social value proposals included providing training and apprenticeships to

		local workers. In providing lower, more stable energy costs to companies occupying the tenanted units, this project also aims to support the economic stability of those businesses.
Safety	-1	<u>Moderate, short-term negative impact.</u> There are health and safety risks associated with the work but these are mitigated by the contractor's health and safety practices, and the Council included this consideration in the tender criteria. There is risk of harm through the supply chain, associated with forced labour in the production of solar panels, and contractors have been asked to consider this. There is a risk of vandalism and this will be monitored post-project.
Democratic voice	1	<u>Moderate, short-term positive impact.</u> Tenants have been engaged throughout the process so far and will continue to be involved in the shaping of the project, particularly during the purchase agreement process.
Equity	0	<u>No net change.</u> No impacts on groups with protected characteristics.