

Civic Hub Solar Carports Investment Decision

To: Environment & Sustainability

Meeting Date: 11th March 2021

From: Steve Cox, Executive Director Place & Economy

Electoral division(s): Warboys and the Stukeleys

Key decision: Yes

Forward Plan ref: 2021/029

Outcome: To reduce 720 tonnes of carbon emissions over 30 years and generate 40% of electricity demand on site for the new Civic Hub from renewable energy.

Recommendation: The Committee is asked to:

- a) Agree the investment case for the installation of solar carports at the Civic Hub in Alconbury as set out in paragraph 2.2.1 of the report;
- b) Note the key project risks set out in section 2.3 of the report; and
- c) Delegate authority to the Executive Director of Place and Economy and Chief Financial Officer, in consultation with the Chair of the Environment & Sustainability Committee and the Green Investment Advisory Group, to sign a contract with Bouygues Energies & Services for the construction and operation of the project conditional on a planning approval and the final business case demonstrating a positive Net Present Value.

Officer contact:

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1. Background

- 1.1 In May 2019, Cambridgeshire County Council declared a Climate and Environment Emergency and committed to the development of a Climate Change and Environment Strategy (CCES) which was approved at Full Council in May 2020. This strategy includes mitigation of climate change and the use of the Council's assets to generate clean energy.
- 1.2 The design of the Civic Hub includes solar panels on the roof and air source heat pumps to reduce energy usage from grid electricity. Adding the solar carports will increase the volume of electricity generated from low carbon technologies to meet approximately 40% of the onsite electricity demand and support clean energy for the EV chargers. In February 2020 Commercial & Investment Committee agreed a development budget for the solar canopies over the car park to further improve the carbon footprint of the building to offset the use of grid electricity.
- 1.3 A visual of the project is attached as Appendix 1. The project comprises a double-bay carport system, with four rows of solar carports. These rows are positioned on every other cluster of parking bays, resulting in an even distribution across the car park area and following the curved layout design of the car park. The installation of the car ports will be undertaken in a phased approach. It is likely to take 10 weeks to complete the installation, assuming all interface works have been completed in advance. A high-level draft programme is attached as Appendix 2.
- 1.4 The outcome of this decision will be to reduce 720 tonnes of carbon emissions at the new Civic Hub through onsite renewable electricity generation and to deliver this project concurrently with the fit-out phase and early stages of the phased move into the Civic Hub.

2. Main Issues

2.1 Status of Project Development Work

2.1.1 Planning.

A full planning application was submitted in December 2020. Pre-planning application advice was taken, and at the pre-planning enquiry with both Cambridgeshire County Council and Huntingdonshire District Council planning officers, no major challenges or reasons for objection were identified. The outcome of the planning decision is expected in April 2021.

2.1.2 Integrating the design with the main Civic Hub build.

To minimise impact on the Civic Hub build programme and to maximise opportunities to save money on the solar carport project, the integration of the two projects has required careful management. Regular discussions have been held between the contractors for both projects (Bouygues for the solar carports and RG Carter working on the Civic Hub) to identify the opportunities where the projects interface, to deliver key interventions early where necessary and to prevent aborted works which would need to be undone later in the programme. For example, foundations for the solar car ports were dug ahead of the new car park being laid as was the ducting works to enable the solar canopies. In addition,

consideration to external lighting and landscaping design has come ahead of the installation of the solar car ports.

2.1.3 Costs already committed on the project.

In July 2020, Commercial and Investment Committee supported upfront costs for integration works required ahead of an investment decision accepting that these costs were at risk. The foundation, ducting and electrical works have totalled £246,529. The cost for the solar carport groundworks has been higher than for other similar projects currently under development. This is due to particularly challenging ground conditions on site resulting in higher costs, and is an issue also experienced by the main Civic Hub project.

2.1.4 Grid connection.

The project has been designed and scaled to maximise electricity use on site by modelling the forecast electricity demand for the site. This has meant that the grid connection for the Civic Hub has not required an upgrade but a simple witness test.

2.2 Investment Case for the Project

2.2.1 Business case.

A summary of the base business case is set out in Table 1.

Table 1

Construction cost to complete project	-£611,311
Net Present Value of energy savings over 30 years	£811,781
Net Present Value of operating costs over 30 years	-£57,817
Net Present Value of loan interest	-£117,101
Total expected NPV for completing project	£25,552

2.2.2 Net Present Value.

The NPV figures above are based on a discount rate of 4.86%. That's derived from the standard Council methodology, combining the PWLB interest rate for a 30-year loan of 2.05% and predicted inflation of 2.75%. Note that PWLB interest rates have been going up quite sharply since the start of January (from 1.32% to the current 1.78%) and there is a risk that this trend will continue.

2.2.3 Development costs.

Table 1 sets out the expected NPV for completing the project. These figures do not take into account costs already incurred at risk on the project – in particular to provide foundations suitable for the solar carports, as part of the overall Alconbury construction programme. The total costs incurred so far are £347,000. These costs cannot be recovered at this stage, whether or not the project is completed and have therefore been

treated as 'sunk' costs and excluded from the above.

2.2.4 Return on investment.

The project does not offer a commercial return but covers its costs and delivers environmental benefits mostly through carbon avoided from grid electricity.

2.3 Key Risks

2.3.1 Interest rate rises.

As identified in paragraph 2.2.2, PWLB borrowing interest rates have increased recently and it is possible a further rise could take place prior to the project commencing. Each 0.1% increase in the interest rate would reduce the NPV of the project by £15,500.

2.3.2 Lifecycle costs.

The only allowance for lifecycle costs relates to the inverters as the expected lifetime of solar panels and other elements is over 30 years. However, it remains possible there will be a need to make some lifecycle replacements for particular components that are not covered by manufacturers' guarantees.

2.3.3 Electricity prices

BEIS electricity price forecasts have been used in the financial case. Actual savings could be higher or lower depending on the actual levels of future inflation.

2.4 Other Dependencies

2.4.1 In addition to planning consent, the following steps must be completed before construction can commence:

- Any pre-construction planning conditions must be discharged ahead of work starting on site. Efforts are being made to minimise these wherever possible, as this could impact significantly on the construction programme.
- The signing of construction contracts.

2.5 Construction & Operation.

2.5.1 Draft construction contracts for the carport element of the project have been prepared with the Council's energy delivery partner Bouygues Energies & Services. However, these will only be signed on receipt of a planning approval and a final business case that provides a positive NPV.

2.5.2 The installation of the solar carports will be undertaken by Bouygues, the Council's energy delivery partner under the Refit 3 Framework. Under this arrangement a guarantee for the volume of electricity generated by the scheme is applied and is called an energy performance contract

2.6 Alignment with the Civic Hub construction programme

2.6.1 To align with the existing Civic Hub construction programme, this project will start in parallel with the fit-out phase of the Civic Hub. It will be necessary to sign a works contract with Bouygues in the Spring of 2021 to enable the purchase of materials and equipment to start on-site in Summer 2021.

2.6.2 The delegated authority to proceed to contract would be subject to the final business case showing a positive net present value.

3. Alignment with corporate priorities

3.1 A good quality of life for everyone

There are no significant implications for this priority.

3.2 Thriving places for people to live

The ambitions of the Council to support the development of clean energy projects will reduce carbon emissions and help mitigate the impact of climate change on our communities. The solar carport will enhance the environmental performance of the Civic Hub as a flagship building.

3.3 The best start for Cambridgeshire's children

There are no significant implications for this priority.

3.4 Net zero carbon emissions for Cambridgeshire by 2050

The project will reduce carbon emissions by 720 tonnes over 30 years, reducing the carbon footprint of the Civic Hub site and increasing the level of on-site renewable energy.

4. Significant Implications

4.1 Resource Implications

The report above sets out details of significant implications in section 2.2.3. In the event that the Committee decides not to invest in the project, the £347,000 sunk development costs (including the substructure works and other costs incurred during the development of the Investment Grade Proposal) would not be recovered from and must be paid through revenues. There are also staff resourcing costs for property and other services, integrating this work with the Civic Hub build.

4.2 Procurement/Contractual/Council Contract Procedure Rules Implications

The installation of the foundations and other enabling works have been undertaken by R G Carter under a variation to the existing contract for the Civic Hub. The costs have been validated by Faithful and Gould cost managers. The construction of the solar carport aspect

of the project will be delivered under the Council's existing Refit 3 Framework contract with Bouygues Energies & Services.

4.3 Statutory, Legal and Risk Implications

Planning determination for the project is expected mid-April. If planning consent is not secured, this will prevent the construction of the project starting on site, as planned. The solar carport project can be delivered more cost effectively by dovetailing with the Civic Hub programme. It also minimises disruption to site users moving into the office and maximises availability of the car park.

Covid-19 disruption may lengthen equipment lead times. To manage this, Bouygues are exploring options to combining the procurement of the solar modules with other projects to maximise the timeframe for availability and achieve economies of scale.

4.4 Equality and Diversity Implications

There are no significant implications within this category.

4.5 Engagement and Communications Implications

There are no significant implications within this category.

4.6 Localism and Local Member Involvement

Regular updates to the Civic Hub Project Board have been provided to ensure Councillors are briefed on progress and an overview of the scope of the was provided to each of the local Parish Councils close to Alconbury.

4.7 Public Health Implications

There are no significant implications.

4.8 Environment and Climate Change Implications on Priority Areas:

4.8.1 Implication 1: Energy efficient, low carbon buildings.

Status: Positive

Explanation: The scheme represents further investment into generating clean electricity to offset the usage of grid electricity, acting to decarbonise the national grid and enhancing the Civic Hub as a flagship building.

4.8.2 Implication 2: Low carbon transport.

Status: Positive

Explanation: A proportion of the electricity generated by the solar carports will be used to charge electric vehicles (EVs) on site offsetting the use of grid electricity.

4.8.3 Implication 3: Green spaces, peatland, afforestation, habitats and land management.

Status: Positive

Explanation: Soft landscaping is included within the scope of the project, which includes a shade tolerant planting mix beneath the solar car ports.

4.8.4 Implication 4: Waste Management and Tackling Plastic Pollution.

Status: Neutral

Explanation: No impact on waste management or tackling plastic pollution.

4.8.5 Implication 5: Water use, availability and management.

Status: Neutral

Explanation: No impact on water use, availability, or management. The potential impact on drainage has been mitigated through integration works to the Civic Hub.

4.8.6 Implication 6: Air Pollution.

Status: Positive

Explanation: The project will be generating clean energy which offsets grid-supplied electricity, the majority of which is produced by burning fossil fuels. In principle the reduction in gas and oil consumption reduces production of air pollutants in particular NOx.

4.8.7 Implication 7: Resilience of our services and infrastructure and supporting vulnerable people to cope with climate change.

Status: Positive

Explanation: The project increases the volume of electricity generated from renewable energy technology, thereby reducing reliance on grid infrastructure.

Have the resource implications been cleared by Finance? Yes

Name of Financial Officer: Sarah Heywood

Have the procurement/contractual/ Council Contract Procedure Rules implications been cleared by the LGSS Head of Procurement? Yes

Name of Officer: Gus de Silva

Has the impact on statutory, legal and risk implications been cleared by the Council's Monitoring Officer or LGSS Law? Yes

Name of Legal Officer: Fiona McMillan

Have the equality and diversity implications been cleared by your Service Contact? Yes

Name of Officer: Elsa Evans

Have any engagement and communication implications been cleared by Communications? Yes

Name of Officer: Simon Cobby

Have any localism and Local Member involvement issues been cleared by your Service Contact? Yes

Name of Officer: Emma Fitch

Have any Public Health implications been cleared by Public Health?

Yes or No

Name of Officer: Kate Parker

If a Key decision, have any Environment and Climate Change implications been cleared by the Climate Change Officer?

Yes

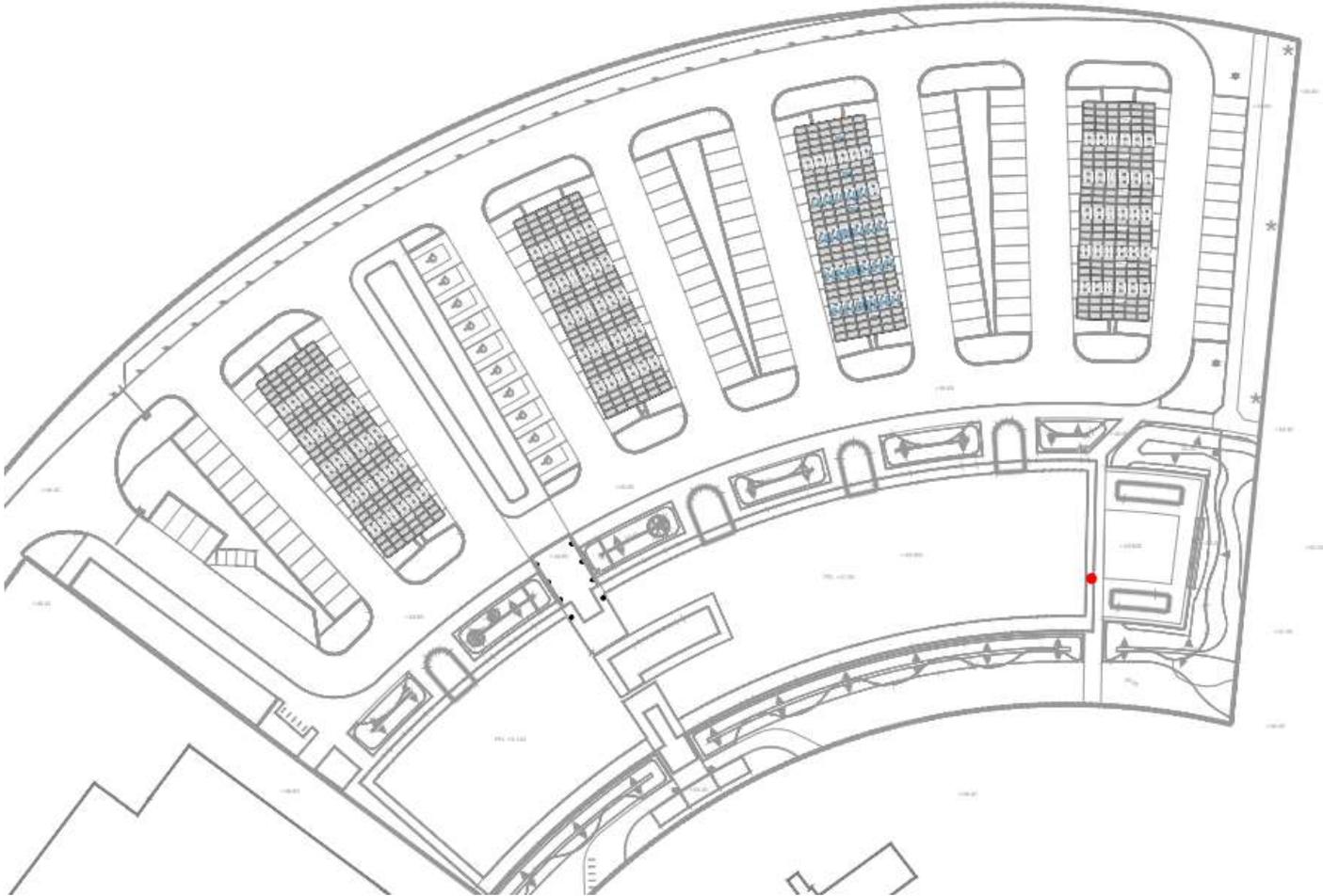
Name of Officer: Emily Bolton

5. Source documents guidance

[Outline business case and request for a development budget, Commercial and Investment Committee Report, February 2020](#)

[Integration works with the Civic Hub required, Environment and Sustainability Committee paper, July 2020](#)

Appendix 1: Solar carport layout:



Appendix 2: High-level (draft) Programme:

Activities	01/03/2021	08/03/2021	15/03/2021	22/03/2021	29/03/2021	05/04/2021	12/04/2021	19/04/2021	26/04/2021	03/05/2021	10/05/2021	17/05/2021	24/05/2021	31/05/2021	07/06/2021	14/06/2021	21/06/2021	28/06/2021	05/07/2021	12/07/2021	19/07/2021	26/07/2021	02/08/2021	09/08/2021	16/08/2021	23/08/2021	30/08/2021	06/09/2021	13/09/2021	20/09/2021	
Pre-Contract																															
IGP Finalisation	█	█	█																												
IGP Review & Revisions				█	█																										
E&S Committee		█																													
Approvals						█	█																								
Contract Finalisation					█	█	█																								
Contract Sign-off								█																							
Planning Determination	█	█	█	█	█	█	█																								
Pre-Construction																															
Pre-construction Conditions Discharge								█	█	█	█	█	█	█	█	█															
Off-Site Mobilisation								█	█							█	█	█													
Pre-construction Design								█	█	█	█																				
Long-Lead Equipment Order								█	█	█	█	█	█	█	█	█	█														
Construction Phase																															
Possession of Site*																															
On-Site Mobilisation																															
Construction																															
Stage 1 Commissioning																															
Demobilisation																															
Commissioning / Handover																															
Snagging / Latent Defects																															
G99 Witness Test																															
Stage 2 Commissioning																															
Soft Landscaping																															
Works Completion																															

* Subject to completion / handover of main Civic Hub build