

# Barnfield Solar Farm Scheme

**Cabinet**

**Date: 15<sup>th</sup> March 2017**

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Author:	Cabinet Member for Strategic Planning and Sustainability, and Corporate Director, Economy Regeneration and Skills
Wards:	All
Locality Affected:	All
Parishes Affected:	All

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## **1. Purpose and Reasons**

- 1.1 This report sets out the plan to bid in response to a European Union (EU) funding call which, if successful, would provide match funding for a project to enhance the storage capacity of the Barnfield solar scheme and improve performance by matching supply and demand.
- 1.2 With the launch of the Vision for Swindon, the Council has committed to “improve infrastructure and housing to support a growing, low economy”. This report builds on the work for Pledge 2 of Swindon Borough Council’s Vision, which outlines that by 2020, the Council will “construct solar arrays on Council-owned land at Common Farm, Chapel Farm and a solar noise barrier along roads including the M4 at Wichelstowe”.
- 1.3 The project aligns with the Swindon Local Plan Policy IN4, which supports low carbon and renewable energy infrastructure contributing to Swindon’s renewable energy target and to growth in the local economy.

## **2. Recommendations**

### Cabinet is recommended to:

- 2.1 Authorise Corporate Director, Economy Regeneration and Skills, in consultation with the Cabinet Member for Strategic Planning and Sustainability, to submit a full application response to the European Regional Development (ERDF) Fund call for projects in the category of Low Carbon/Local Renewables Markets.
- 2.2 Authorise the section 151 Officer, in consultation with the Cabinet Member for Finance and Corporate Services, to invest up to £819,000 in the storage project attached to the Barnfield solar scheme, funded through the Commercial Investment Fund and subject to further due diligence around the financial and operating models being completed, the project demonstrating sufficient risk/reward by the date of investment and approval through the Commercial Investment Board and the Commercial CMAG group. This investment will act as match funding in the event of a successful bid to the European Regional Development Fund and is conditional upon this success.

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## 3. Detail

### Barnfield Solar Scheme and opportunity to enhance the project

- 3.1 On 7<sup>th</sup> December 2016, Cabinet approved the funding and construction of a 2.5MW ground mounted solar park on Council-owned land at the former Barnfield Landfill site, to be physically connected to the Waterside Depot by means of a private wire connection (Cabinet Minute 75, 2016/17 refers). Barnfield Solar farm is currently under construction and is due to complete by 31<sup>st</sup> March 2017.
- 3.2 As the off-taker for the power from this scheme could be Waterside Park, calculations have been undertaken to understand the disparity in supply and demand; it has been determined that the scheme would benefit from a battery storage facility and smart grid to create flexible power management, maximising usage at peak demand times.
- 3.3 The project would comprise development and implementation of an electrical battery storage unit, approximately 1.2MW / 2.4MWh in size, integrated with a smart grid control system. This infrastructure would connect 'behind the meter' at Waterside Waste Recycling Plant and would power the plant directly during hours of peak demand on the UK grid. Already scheduled to connect behind the meter at Waterside is a 2.5MWp solar PV generator, which would provide power to the plant during daylight hours, but is constrained in its ability to export ANY excess generation to the national grid due to overall grid capacity constraints. The smart grid system would permit increased output from the PV generator by using the excess generation to charge the battery storage allowing supply and demand to match better.
- 3.4 Public Power Solutions Ltd will deliver the scheme; this will involve securing planning permission and a grid connection offer, full OJEU procurement and, following tender award, management of construction through to commissioning. Once operational, there will be an ongoing operations and maintenance programme, which will need to be managed through the Council. The site will be within the boundary of the Waterside Waste Recycling Plan.
- 3.5 The project will reduce operational costs of the Waterside Waste recycling plant, which is producing Solid Recovered Fuel (SRF) from household waste in the Swindon area, vastly reducing the volume sent to landfill. Utilising battery storage in conjunction with a smart grid, it will create flexibility, interacting with and reducing the peak burden on the National Grid, also it will increase generating capacity of the installed PV infrastructure, increasing production of carbon free electricity.
- 3.6 The project programme will last approximately one year, and the storage unit will be operational in 2018. The project will have an operational life of a minimum 10 years, with warranties over that period. This is a demonstrable, large scale,

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energy storage project and smart grid system in conjunction with solar generation and waste recycling.

## European Regional Development Fund and European Strategic Investment Fund

- 3.7 In May 2014, the Swindon and Wiltshire Local Enterprise Partnership (SWLEP) developed and submitted its European Strategic Investment Fund (ESIF) strategy, to the European Union, in consultation with the Department for Communities and Local Government (DCLG) which acts as Managing Agent for the European Regional Development Fund and the European Social Fund.
- 3.8 The response to this document was the allocation to the SWLEP of £39m, to be matched with local public or private funding to create a £78m funding package, to deliver on the objectives set out by the European Union to promote economic growth through skills, innovation and low carbon projects. This funding was to be allocated through a set of themed calls for proposals; in December 2016, a call was published for projects to deliver projects to support the low carbon and renewable energy market by delivering innovative schemes which would enhance the generation of renewable energy and reduce greenhouse gas emissions.
- 3.9 Following the UK referendum result in May 2016 to request the UK Government to trigger Article 50 to withdraw from the European Union, the Government has committed to maintain funding for qualifying programmes by honouring ERDF contracts which are agreed prior to the UK's exit. Therefore, any departure from the EU would not affect this scheme as grant agreements would be completed in late 2017.
- 3.10 Swindon Borough Council has submitted an outline application to secure £546,000 ERDF funds to be matched by £819,000 from the Council to create a £1.365m project which would install battery storage and a smart grid control system to the Barnfield Solar Scheme. This would enable the storage of the excess energy generated by PV to be sold at peak times thus creating a viable commercial model and reducing pressure on the National Grid.
- 3.11 The project demonstrates innovation by utilising innovative battery storage technology in conjunction with a smart grid control system. This technology has been identified by the Department of Business, Energy and Industrial Strategy and National Grid as having a key role to play in enabling flexible networks.

## Next steps and timelines

- 3.12 The outline application for this project has been submitted to DCLG for an initial appraisal, alongside other projects responding to this call in the SWLEP area. The SWLEP ESIF committee will examine all outline applications and make recommendations to DCLG on projects which present the optimum value for money and strategic fit. In mid-April, after the ESIF Committee meeting, DLG will

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invite successful applicants to submit a full application; 12 weeks will be allowed for this process. Successful applicants will be informed in Autumn 2017 and the contracting process will begin.

## 4. Alternative Options

- 4.1 Barnfield Solar Scheme can progress in its original form and presents a viable financial option; however, there would be a missed opportunity in terms of adding value with increased flexibility to match supply and demand, while demonstrating innovation and increased impact.

## 5. Implications, Diversity Impact Assessment and Risk Management

### Financial and Procurement Implications

- 5.1 The financial benefit to this proposal is due to the battery solution being able to supply electricity to Waterside Park at lower rates than it currently pays, as well as being able to utilise itself the surplus generation from the PV installation.
- 5.2 In addition, the scheme would qualify for “Firm Frequency Response”, a mechanism to regulate the overall grid which the battery connect to (via PPS plant) and deliver an income stream for between 6 months and 2 years, at which point it would need to re-apply.
- 5.3 The business case for this investment assumes the investment is funded over 10 years with interest at 3.5% per annum. The project delivers a headline Internal Rate of Return of 7.4% and is projected to deliver a surplus of £222k over the same period over and above repayment of the loan. In addition to this, it is estimated that there will be an annual saving on the operating costs of the PPS plant of around £27k due to the lower electricity costs of supply.
- 5.4 A key variable to the project is around inflation on electricity prices which are difficult to accurately predict, but are generally expected to increase over the long term, and therefore has been modelled at 2.8% pa. The financial model has been tested removing all electricity inflation which reduces the Internal Rate of Return of this particular investment to 4.3%. However, as the electricity is sold to the PPS plant, and loss of income will be reflected in a saving to the PPS plant and is therefore offset.
- 5.5 State Aid is a relevant consideration as far as the proposed bid is concerned. This is because the Barnfield solar scheme is an economic activity in which the Council is engaging. The Council will therefore need to ensure that the financial support (funding) it is seeking, if approved, will not constitute unlawful state aid, so as to avoid the money being recovered from the Council. It is considered that funding for this type of scheme is authorised under the General Block Exemption Regulation II (GBER II) – article 1(1).

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- 5.6 Legal and Human rights considerations have been taken fully into account in compiling this report. It is considered that the proposals within this report are compatible with convention rights.

All Other Implications (including Staff, Sustainability, Health, Rural, Crime and Disorder)

- 5.7 Sustainability is key to this report and such implications are set out in the body of the report and in its recommendations. No other specific implications have been identified at this time.

Diversity Impact Assessment

- 5.8 A Diversity Impact Assessment has not been completed for this report. This is because it simply refers to a funding application for equipment in addition to an existing scheme.

Risk Management

- 5.9 Key risk at this stage is set out in the Financial and Procurement Implications section.

## 6. Consultees

- 6.1 The section 151 Officer, and the Director of Law and Democratic Services (Monitoring Officer) are consulted in respect of all reports.

## 7. Background Papers

- 7.1 None

## 8. Appendices

- 8.1 None

## 9. Key Decision/Decision in Cabinet Work Programme and Forward Plan

- 9.1 This is not a Key Decision and is included in the Cabinet Work Programme and Forward Plan for Month Year.