

STANGROUND SOLAR PV AND BATTERY STORAGE PROJECT – IGP STAGE 1 UPDATE

To: **Commercial and Investment Committee**

Meeting Date: **21 June 2019**

From: **Executive Director, Place and Economy**

Electoral division(s): **All**

Forward Plan ref: **N/a** *Key decision:* **No**

Purpose: **To provide a progress update on Stage 1 of the Investment Grade Proposal development process for this project and seek approval to proceed to Stages 2-4.**

Recommendation: **The Committee is asked to:**

- a) Note the findings of the Stage 1 work; and**
- b) Approve progression to Stages 2-4 of the Investment Grade Proposal (IGP); and**
- c) Approve the drawdown of £365,912 for project development, internal costs, planning permission and other fees for completion of these IGP stages.**

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1. BACKGROUND

- 1.1 At the 14 September 2018 Commercial & Investment Committee meeting, a development budget for the first stage of an Investment Grade Proposal (IGP) for energy projects at Stanground and Woodston closed landfill sites was granted¹. These two sites were selected as the most promising (in terms of topography, proximity to electricity grid connection points and local large energy users) for energy projects, from a review of five closed landfill sites across the county. A development budget of £150,000 for each site was approved².
- 1.2 The IGP development is split into four stages to obtain the maximum level of certainty and security at the earliest stage of the development, in terms of cost and commitment and to create a decision gateway between stages. This report covers the IGP Stage 1 findings for Stanground (a 2.25 MW solar farm plus battery energy storage project). Stage 1 includes:
- outline design;
 - receiving pre-application planning advice;
 - an initial application to the Distribution Network Operator for a grid connection;
 - engagement with potential Power Purchase Agreement customers; and
 - managing the key project risks and viability.
- 1.3 The report also requests a decision on proceeding to Stages 2-4 of the IGP development for the Stanground project, with an additional budget to cover the work in these stages. A separate report on the Woodston project will be provided later in the year.

2.0 MAIN ISSUES

Developing outline designs

- 2.1 The original concept for this project was for a battery energy storage system plus solar farm connected to the local electricity grid. This would sell electricity into the wholesale market and provide grid balancing and stabilisation services from the battery. This remains the central case recommended to be taken forward to Stage 2 – 4, noting the battery market risks and opportunities explored in the Commercial and Investment Committee paper entitled 'Battery Energy Storage System Market Opportunity & Risk' also on this Committee agenda.
- 2.2 Design and modelling has also considered a solar PV only option which could be developed, with or without 'enabling battery infrastructure' to allow the battery storage to come online later, once revenues and the business case become clear.
- 2.3 Initial outline design to support pre-planning and grid connection feasibility studies has been completed, comparing options for mounting design, solar panel type and layout, shortlisting the most promising options for detailed modelling. Modelled electrical output from the solar PV has improved slightly from the original business case. A range of battery energy storage

¹ Outline Business Cases for Clean Energy Projects at Woodston and Stanground Closed Landfills

² 14th September 2018 C & I Committee Decision Statement

capacity and discharge rate options have been set up in the model, for further investigation in future Stages.

Pre-Planning Advice

- 2.4 Pre-planning discussions have taken place with Peterborough City Council (the determining authority). Written advice has been received providing constructive guidance on the scope of ecology works, planting for screening, site boundary treatment and preferred construction access routes. No major concerns have been raised with the proposals.
- 2.5 A Preliminary Ecological Assessment (PEA) has identified the need for specific surveys for Great Crested Newts, breeding and nesting birds and bat activity. As there is a seasonal window for these surveys, these have commenced to ensure they can be completed in 2019 ahead of a full planning application (at Stage 3 of the IGP).

Grid Connection

- 2.6 The outline business case presented to Committee in September 2018 identified that a key risk to the project was securing a grid connection in a constrained area of the network. Initial engagement with UK Power Networks (UKPN) the Distribution Network Operator (DNO), identified costs of £22 million to connect the project to the electricity grid for an unconstrained connection. This cost was not viable for the project and UKPN advised the Council to apply for a Flexible Distributed Generation feasibility study to estimate the costs of a constrained connection. The resulting estimate for a flexible connection is £720,000 with 4.5% curtailment (the proportion of electricity generated that cannot be exported and sold). This connection cost is well below the £1.58m assumed in the original outline business case, helping to offset the impacts of curtailment.

Power Purchase Agreement (PPA) Customer Engagement

- 2.7 For the base case modelling, all electricity is assumed to be sold into the wholesale market rather than direct to a PPA customer. Power Purchase Agreements (PPAs) can produce a better return on investment than selling directly at a wholesale tariff. There are three large businesses close to the Stanground project. To date, one of these businesses has indicated that they are not interested in a PPA, but discussions with the other companies are still to be opened.
- 2.8 The Energy Investment Unit is currently reviewing its future energy buying strategy post 2020. Options being explored under any new procurement arrangements include corporate PPAs, which would increase the value of electricity the Council generates, and Demand Side Response (DSR), which would generate revenue by flexibly operating energy assets. This is still under exploration. If these mechanisms are available and can be applied to the project, they offer a lower risk / lower return approach than the PPAs described in paragraph 2.7 above.

Updated Business Case Modelling

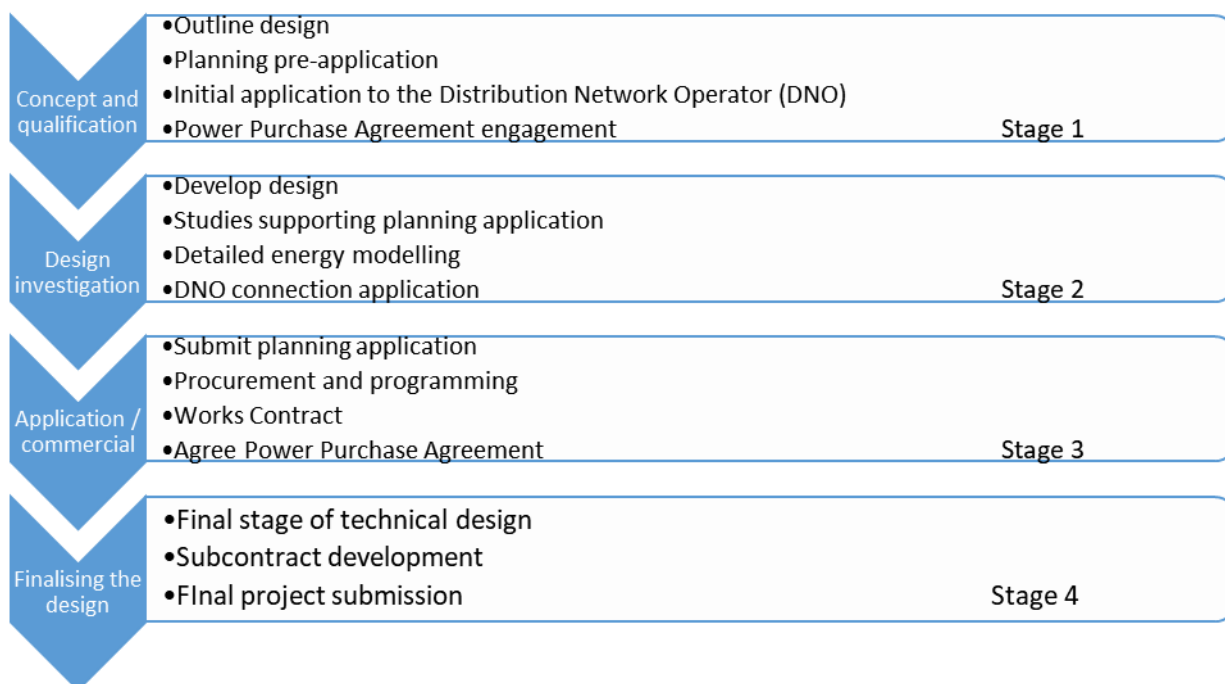
- 2.9 Business Case modelling for the solar PV element of the project has been updated to reflect the preferred solar PV outline design options. The solar PV only modelling results are summarised below.

Option	Payback	Internal Rate of Return (IRR) over 25 years
Solar PV only	19 years	3.4%
Solar PV + corporate PPAs	15 years	5.8%
Solar PV + direct sales PPA	11 years	9.6%

- 2.10 A solar PV project without battery storage only looks commercially attractive if it is possible to secure a PPA customer or increase the value of the electricity through optimising the buying and selling of energy through corporate PPAs. The project will continue to be developed with a battery storage element for the additional opportunities this provides. As discussed in the 'Battery Energy Storage System Market Opportunity & Risk' report referred to in paragraph 2.1, it is not currently possible to model battery revenues, but we are confident that a market will exist to support new battery storage projects.

Next stages

- 2.11 The diagram below outlines the scope of work for the stages of the IGP development, this report seeks approval to proceed to stages 2 - 4.



Stage 2-4 budget requirements

2.12 Spend to date on Stage 1 and budget requirements for Stages 2-4 are set out below.

IGP Stage	Indicative timescale	Revenue Budget	Capital Budget
Stage 1 (spent or committed)	Completed	£5,365	£65,298
Stage 2	July – March 2020	£9,111	£162,915
Stage 3	April– September 2020	£7,476	£107,616
Stage 4	October - December 2020	£3,139	£95,381
TOTAL		£25,090	£431,210

2.13 Approval is requested to draw down a further £366k of capital funding to develop the project through stages 2 to 4 as set out above. Drawing down of £20k of revenue funding, which will be provided within the Transformation Fund allocation agreed by GPC in May, is also requested. The total additional drawdown is £386k. The project budget agreed by Capital Programme Board in November 2018 included £459k for project development so the resource requirements set out above are in line with those previously approved. These estimates include an element of contingency so actual costs may be slightly lower. As discussed in paragraph 4.1, if on completion of the IGP it was decided not to progress this project, the above development budget would be a sunk cost that would need to be offset against revenues from the wider portfolio of projects.

2.14 We will report on spend against the above budgets and progress under each Stage in EIU's quarterly reports to C&I Committee.

3.0 ALIGNMENT WITH CORPORATE PRIORITIES

A good quality of life for everyone

3.1 There are no significant implications for this priority.

Thriving places for people to live

3.2 There are no significant implications for this priority.

The best start for Cambridgeshire's children

3.3 There are no significant implications for this priority.

4.0 SIGNIFICANT IMPLICATIONS

Resource Implications

4.1 If, following the development of the detailed business case, the Council decides not to invest in the project at all, the funding for the development of the detailed business cases will have been paid. A buffer to protect against the failure of any individual project is managed through the development of a portfolio of projects. The current proposition is to offset any sunk costs against the revenues generated from the wider programme of energy projects on our assets, excluding the schools and corporate building energy projects.

4.2 There are no implications for Information and Communications Technologies or data ownership.

- 4.3 Impact on human resources: The costs for County Council staff involvement to deliver the project are included in the requested budget draw down.
- 4.4 Sustainable Resources: The project's goal is to generate low-carbon electricity, generate an income for the Council and provide solutions to the grid capacity problems experienced across Cambridgeshire.

Procurement/Contractual/Council Contract Procedure Rules Implications

- 4.5 Our engineering contractor on this and other energy projects, Bouygues Energies & Services, was procured under a mini-competition run under the Refit 3 Framework. As the Framework does not expire until April 2020, there are no significant implications from a procurement or contractual standpoint.

Statutory, Legal and Risk Implications

- 4.6 The County Council is developing the project on a commercial basis and providing commercial services to the electricity grid and electricity customers, therefore no state aid applies. In discussion with Ofgem, it is confirmed that the Council would be exempt from statutory requirements to become a licensed electricity generator or supplier under the Electricity Act 1989 by virtue of being a small generator and small supplier³.

Equality and Diversity Implications

- 4.7 There are no significant Equality and Diversity implications.

Engagement and Communications Implications

- 4.8 The project has engaged fully with Peterborough City Council officers and local councillors.
- 4.9 Three community outreach sessions were delivered during January 2019 at Stanground Academy. Twenty three community members attended the sessions and three local councillors providing local insights and concerns ahead of the submission of a planning application. Local residents have received leaflets describing the project and posters have been fixed to the Stanground site fencing. Articles in Peterborough Today newspaper and energy trade press have been published and presentations to neighbouring parish councils at Orton Longueville (7th February), Orton Waterville (20th February) and Farcet (5th March) have been delivered.
- 4.10 Further community engagement activity will be conducted in Stages 2-4. In particular as part of the planning application development at Stage 2 a consultant will be procured to deliver a series of community engagement events.

Localism and Local Member Involvement

- 4.11 Local Members for Stanground South were consulted ahead of public outreach in the community and detailed discussions with officers at Peterborough City Council. The Peterborough City Council Local Plan supports renewable and low carbon energy projects which produce energy. The Local Plan also provides guidance on projects sited on contaminated land which will be followed as part of the Full Planning Application.

Public Health Implications

- 4.12 Development of the site will need to ensure that the capping layer of the closed landfill is not breached and that no pollution pathways are created. This will be managed at stage 2 of the IGP through geotechnical surveys to inform design of mountings/footings for solar

³ Electricity (Class Exemptions from the Requirement for a Licence) Order 2001, SI 2001 No.3270 Schedules 2 & 4

panel racks and battery storage containers.

- 4.13 The project will generate high voltage electricity. Designs must therefore include security fencing and CCTV cameras relaying images to a central control room to deter unauthorised access to the site.

Implications	Officer Clearance
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 LGSS Law?	Yes Name of Legal Officer: Debbie Carter-Hughes
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: Jo Shilton
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 Name of Officer: Stuart Keeble

Source Documents	Location
1 Outline Business Cases for Clean Energy Projects at Woodston and Stanground Closed Landfills	1. https://tinyurl.com/yyqvpcwz
2 14th September 2018 C & I Committee Decision Statement	2. https://tinyurl.com/y6bvwbpl
3 The Electricity (Class Exemptions from the Requirements for a Licence) Order 2001	3. http://www.legislation.gov.uk/uksi/2001/3270/contents/made