

SCRUTINY COMMISSION FOR RURAL COMMUNITIES	Agenda Item No. 4
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Report of the Executive Director - Strategic Resources

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DEVELOPMENT OF GROUND MOUNTED SOLAR PHOTOVOLTAIC (PV) PANELS (SOLAR FARMS) AND WIND TURBINES

1. PURPOSE

- 1.1. To provide a review of the current business model compared to the original business case, financial model and implications of the delay in the planning applications.

2. RECOMMENDATIONS

- 2.1. The Commission is asked to consider this report and feedback any comments.

3. LINKS TO THE SUSTAINABLE COMMUNITY STRATEGY

- 3.1. The project supports delivery of the Council's Environmental Capital ambitions by producing 'green energy' through the use of renewable technologies. The proposed developments will maximise energy output as well as balance environmental and community concerns whilst contributing a significant reduction of the Council's carbon footprint.
- 3.2. In addition, the energy generated can be sold to create a new and significant source of revenue to the Council that will help to close the Council's funding gap and protect its ability to continue in the provision of front line services. The Medium Term Financial Strategy approved by Full Council in March 2013 included the income generated by these proposals. If the schemes do not proceed, then the budget deficits forecast in future years will worsen.
- 3.3. The project will generate significant amounts of renewable power which can be used by the Council to safeguard its budgets against future electricity price rises and uncertain energy price inflation.
- 3.4. The project will also create new funding opportunities for local community projects to support the sustainable communities' agenda.

GLOSSARY OF TERMS

Energy Service Company (ESCO):	An ESCo is a vehicle dedicated to sourcing and delivering energy related services
Blue Sky Peterborough (BSP):	The Council's ESCo that will act as the delivery vehicle for all renewable energy and energy efficiency projects
Renewable Obligation Certificate (ROC):	Designed to encourage the generation of power from eligible renewable sources. Different to FIT, it places an obligation on licensed electricity supplier to source an increasing proportion of electricity from renewable sources.
Watt / Kilowatt (kW) / Megawatt (MW):	A measure of the size of a power plant, also referred to as "capacity" of the plant.
Power Purchase Agreement (PPA):	A contract between two parties defining the commercial terms for the sale of electricity generated. Along with FIT and / or ROC, it is the main agreement that defines the revenue and credit quality of a generating project.

4. BACKGROUND

- 4.1 A report was presented to Cabinet on 5 November 2012. The Cabinet considered the report along with recommendations made at the joint meeting of the Sustainable Growth and Environment Capital Scrutiny Committee and Scrutiny Commission for Rural Communities held on Friday 2 November. Cabinet resolved to:
- 4.1.1. Note the updated strategy for the development of renewable energy parks at each of the three council owned agricultural sites (America Farm, Morris Fen and Newborough farms) since the report to Cabinet dated 10 July 2012, in respect of ground mounted solar photovoltaic panels and wind turbines;
 - 4.1.2. Approve the proposal to submit planning applications in respect of development of ground mounted solar photovoltaic panels;
 - 4.1.3. Note that, subject to planning permission being received for ground mounted solar photovoltaic panels, an option for the delivery of the project is to use an existing framework agreement with Mears Ltd, which was approved under a decision by the Cabinet Member for Resources (reference Solar Photo-voltaic (PV) Panels Framework Agreement - JAN12/CMDN/002). However, the City Council retains the option to invite tenders for the work from other suppliers;
 - 4.1.4. Note that, subject to the outcome of necessary studies and continued negotiations, a further report will be brought back to Cabinet for consideration prior to submitting planning applications for wind turbines;
 - 4.1.5. Welcome the support of scrutiny;
 - 4.1.6. Request officers work with rural communities and key stakeholders in formulating proposals for a planning application and consider how their suggestions can be incorporated into the development of the solar project, as far as is possible without restricting the viability of the project overall;
 - 4.1.7. Note that in relation to determining the appropriate amount and range of community funds resulting from the developments, there is no agreed national or local tariff for such contributions. The level of contribution will be negotiated based on the type of development (wind or ground mounted) and the overall scale of the development.
 - 4.1.8. Request officers submit a further written update to the Cabinet and scrutiny members of a further analysis of the financial proposals and contingency arrangements but notes that the figures are considered appropriate for the purpose of the decision today, also noting that the financial appraisal has been subject to due diligence by Deloitte and Davis Langdon, An AECOM Company.
 - 4.1.9. Confirm that:
 - a) The potential for integrating some form of farming with renewable energy generation is already under consideration as part of the proposals. (Please refer to section 5.1).
 - b) The sensitivities around the two sites near America Farm (Oxney Grange and Flag Fen) will be taken into detailed consideration as part of the planning process. Please refer to section 5.2

5. KEY ISSUES

Solar Farms

- 5.1 Duel Use – The Council is currently exploring the viability of allowing certain types of farming in and around the solar panels, once they are installed.
- 5.1.1. The Fraunhofer Institute for Solar Energy conducted publicly available research into the viability of growing crops in and around a solar farm. Their findings identify an optimal growing zone between the strings of panels that lend themselves to growing the following crop types: rape, rye, oats, potatoes, salads and spinach – where soil and weather conditions allow. Limiting factors as to the type of crop grown are; the height of crop shading the panels and hence affecting their economic performance and risk of damage to the panels arising from harvesting. The Council is currently awaiting advice on the minimum distance required between panels in order to accommodate movement of farm vehicles for harvesting.
- 5.1.2. An alternative, as set out in the planning application, is to plant low growing grass in and around the solar panels and to allow sheep to graze on the land. Sheep provide a profitable opportunity to incorporate a marriage of an ongoing agri-business with the production of energy. In order to accommodate sheep, a system must be designed with a clearance of no less than 80cm or 31.5 inches. This is to ensure that the animals can comfortably walk underneath the installation to seek shade and eat the grass under and around the panels. A required design feature is to ensure that wiring is protected from the sheep, which is typically accomplished by a simple conduit. Furthermore, this approach serves two additional purposes: control of weeds underneath and between the panels without the need for herbicides and forms part of a wider ecological mitigation and biodiversity enhancement strategy.
- 5.1.3. The Council will assess the impact of both options on any resulting reduction in capacity of the plant and the subsequent loss of ROC revenue verses income generated from crop cultivation.
- 5.2 Planning - The Council submitted three planning applications for solar farms in December 2012. Since the submission, the Council has worked towards resolving a number of key issues raised by the Local Planning Authority (LPA) and its statutory consultees. Morris Fen went to planning committee on 17 June 2013 but was deferred following a request by one of the statutory consultees, English Heritage, for further detailed survey work to be undertaken before the application could be determined. Further upfront archaeological work has also been requested for the other two sites. It should be noted that the land required for the proposed developments represent less than a third of the Council's land bank and less than a quarter of one percent of the agricultural land in Peterborough.
- 5.3 Tenant Farmers - A review of the tenancies of farmers was undertaken to establish how to progress the development proposals with the least impact to them. This allowed for the consideration of the timescales around land assembly, notice periods required, what alternative packages could be offered in compensation to the tenants as well as the loss of income to the Council. A review of the impact of the requested additional archaeology field work was also undertaken. All tenant farmers have been notified of the potential disruption from the required archaeology field work and informed that they can farm for at least a further year. All farmers wishing to continue farming have been offered packages, which allow for farming on other land within the Council's ownership or compensation where applicable. These have not been finalised at this stage but it is anticipated that completion will happen once planning applications have been determined.
- 5.4 Biodiversity - The key habitat loss is the arable farmland itself, which is used by birds for foraging and nesting. The current ecological mitigation strategy is to establish neutral grassland beneath and between the panels and enhance the existing habitat at the edges of the sites including field

margins, hedgerows and woodland by planting wildflower/grass seed mix and a considerable length of screening made up of hedgerows and trees. This is the preferred ecological mitigation strategy as it not only compensates for loss of the arable habitat by replacing it with neutral grassland but also benefits a number of protected species such as badgers, bats and water voles, providing a new and enhanced habitat for animals and insects such as bees, butterflies and invertebrates.

- 5.5 Due to the “local controversy and media interest” surrounding the proposals, the Secretary of State has signalled his intention to call in the proposed solar farms if approved by the Planning Committee. Should the call-in happen, this could delay the project by up to one year, increasing the costs significantly due to the delay resulting in a drop in ROC banding. However, the impact of the reduced ROC would, at least, be partly mitigated by the continuing reductions in the cost of solar panels.
- 5.6 The Department of Communities and Local Government (DCLG) has issued new guidance on the impact of large-scale solar farms on local communities.
- 5.6.1 Although the Guidance reinforces that planning authorities should plan solar developments with sensitivity and careful consideration, it does not create any new powers for either local communities or planning authorities to “veto” solar generation developments and it does not prevent the development of solar farms on grades 1-3 agricultural land.
- 5.6.2 On the other hand, the Guidance emphasises that the views of the local community should be taken into consideration, giving substantive details of how the visual impact of large-scale, ground-mounted solar generation should be mitigated in the planning approval process.
- 5.6.3 Because the Guidance will be given material consideration by the planning authority, the Council will ensure that each substantive element of the Guidance is fully dealt with as part of its planning application.
- 5.6.4 Overall, the Guidance appears to reflect existing practice, and does not appear to create any new or previously unanticipated requirements for the Council.

Wind Farms

- 5.7 As a result of planning risks associated with large scale wind applications, the Council sought pre-application advice from the Local Planning Authority on the likely acceptance of its proposals.
- 5.8 The Local Planning Authority determined a number of areas of concern, including the cumulative visual impact and ensuring sufficient buffer zones between the turbines and nearby residential properties.
- 5.9 The Council continues to conduct all relevant surveys and studies required for the planning application submission, which will aim to address all concerns raised by the LPA. These include the continuation of bird surveys to provide two years data. In addition, a meteorological mast will be installed to measure both average onsite wind speeds and allow for the monitoring of background noise levels in around the proposed sites.

6 IMPLICATIONS

6.1 The impact of items 5.1 to 5.6 has reduced the quantity of solar and wind (in MW) which can be built on the three proposed locations. It has also delayed their potential operational date (i.e. when the solar farms are built and generating power).

6.2 **Table 1:** Overall change in MW capacity

LOCATION	November 2012 position	August 2013 position
America Farm	8MW	7.2MW
Newborough Farm	49MW	49MW
Morris Fen	27MW	25.5MW
Total	84MW	81.7MW

6.2.1 Table 1 illustrates the Council's adapted plans in response to the Local Planning Authority and Natural England recommending buffer zones around the proposed locations to protect residential amenity, local wildlife and enhance biodiversity.

6.3 **Table 2:** Overall change in operational dates

LOCATION	November 2012 position	August 2013 Best Case position	August 2013 Worst Case position
America Farm	January 2014	January 2015	February 2016
Newborough Farm	March 2015	January 2016	December 2016
Morris Fen	December 2014	July 2015	October 2016

6.3.1 The principal impact on the best case position of the solar programme is due to the increased archaeological field work requested by English Heritage to establish whether there is anything of archaeological interest that could be disturbed by the proposed solar farms.

6.3.2 In the worst case position of the solar programme, the delay is due to the potential call in by the Secretary of State and his Department of Communities and Local Government (DCLG) would entail a public inquiry review of the proposals. The conservative forecast duration for a public inquiry is approximately one year.

6.3.3 The August 2013 worst-case position will impact the income stream of the proposed solar farms; they will all drop to a lower ROC banding (see below). However, this will be mitigated by continued reductions in the capital cost of purchasing the PV panels, which are becoming increasingly less expensive.

- America Farm from 1.4ROC to 1.3ROC
- Newborough Farm from 1.3ROC to 1.2ROC
- Morris Fen from 1.3ROC to 1.2ROC

6.4 **Table 3:** Indicative financial summary for the development of the solar farms only. The financial summary presented below reflects the impact of the delays and forms part of the analysis undertaken in line with the medium term financial plan.

6.4.1 Capital cost has reduced due to further reductions in installation rates, the reduced MW installed and additional costs being included (e.g. land drainage levy).

6.4.2 Operating costs (including interest) have reduced due to the reduction in MW installed.

6.4.3 Total income has reduced due to the drop in ROC value and the use of market tested PPA prices.

6.4.4 Net Income in the best case increases due to inflationary increases around the ROC rate.

	November 2012	August 2013 Range of Positions***
MW Installed	84MW	81.7MW
Capital Cost (to be borrowed)	£141.3m	£102.9m
Operating Costs (covered by income generated once operational)	£107.4m	£103.4m - £106.1m
Interest	£86.2m	£75.5m - £79.3m
Total Expenditure *	£334.8m	£281.9m - £288.3m
ROC Income	£124.9m	£121.1m - £125.1m
PPA Income	£240.6m	£192.4m - £199.1m
Total Income	£365.5m	£317.5m - £320.2m
<i>Loss of Farm Land Rental Income</i>	<i>£2.9m</i>	<i>£3.0m - £3.1m</i>
<i>Net Income</i>	<i>£30.7m</i>	<i>£28.9m - £32.6m</i>
<i>Net Present Value **</i>	<i>£17.7m</i>	<i>£14.1m - £16.1m</i>

* Note this figure does NOT represent the total sum borrowed by the Council

** Discount rate 6.0875%

*** Range presented covers best and worst case scenarios of operational dates

6.5 The Community Benefit Fund (CBF) has not been included as it is commercially sensitive.

6.5.1 The Council is currently deciding how best to treat the difference in power generated between a solar farm and a wind farm in terms of a community benefit fund (the latter generates more power in a year than the former; therefore the amount of revenue generated is more from a wind farm and hence there is sufficient surplus to pay for the CBF).

6.5.2 It should also be noted that, whilst developers of wind farms do apportion some of the revenue generated to a CBF, many developers of solar farms do not.

7 CONSULTATION

7.1 The Council will continue to work with individual residents, the Newborough Landscape Protection Group (NLPG), the local MP and other stakeholders to assess alternative solutions brought to its attention.

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