PETERBOROUGH CITY COUNCIL

SCRUTINY COMMISSION FOR RURAL COMMUNITIES

MONDAY 16 DECEMBER 2013
7.00 PM

Council Chamber - Town Hall

AGENDA

Page No

1. Apologies for Absence

2. Declaration of Interest and Whipping Declarations

At this point Members must declare whether they have a disclosable pecuniary interest, or other interest, in any of the items on the agenda, unless it is already entered in the register of members' interests or is a "pending notification " that has been disclosed to the Solicitor to the Council.

Members must also declare if they are subject to their party group whip in relation to any items under consideration.

There is an induction hearing loop system available in all meeting rooms. Some of the systems are infra-red operated, if you wish to use this system then please contact Paulina Ford on 01733 452508 as soon as possible.

Emergency Evacuation Procedure – Outside Normal Office Hours

In the event of the fire alarm sounding all persons should vacate the building by way of the nearest escape route and proceed directly to the assembly point in front of the Cathedral. The duty Beadle will assume overall control during any evacuation, however in the unlikely event the Beadle is unavailable, this responsibility will be assumed by the Committee Chair.

Committee Members:

Councillors: D Over (Chairman), D Lamb (Vice Chairman), D Sanders, D McKean, E Murphy, D Harrington and N Sandford

Substitutes: Councillors: S Allen, J R Fox and A Sylvester

Further information about this meeting can be obtained from Paulina Ford on telephone 01733 452508 or by email – paulina.ford@peterborough.gov.uk

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PETERBOROUGH CITY COUNCIL

MINUTES OF A MEETING OF THE SCRUTINY COMMISSION FOR RURAL COMMUNITIES HELD IN THE BOURGES & VIERSEN ROOMS, TOWN HALL, PETERBOROUGH ON 16 SEPTEMBER 2013

Present:	Councillors D Over (Chairman), D Lamb, D McKean, D Sanders, D Harrington N Sandford and E Murphy	
Officers in Attendance:	John Harrison	Executive Director – Strategic Resources
	Neal Kalita	Head of Energy Advisory – Davis Langdon
	Michelle Drewery	Renewable Energy Finance Manager
	Peter Heath-Brown	Planning Policy Manager
	Emma Naylor	Strategic Planning Officer
	Helen Turner	Lawyer
	Dania Castagliuolo	Governance Officer

1. Apologies for Absence

No apologies were received.

2. Declarations of Interest and Whipping Declarations

There were no declarations of interest.

3. Minutes of the Previous Meetings Held on 17 June 2013 and 15 July 2013

The minutes of the meeting held on 17 June and 15 July 2013 were approved as a true and accurate record.

4. Development of Ground Mounted Solar Photovoltaic (Pv) Panels (Solar Farms) and Wind Turbines

The Executive Director of Strategic Resources introduced the report which was presented to the Commission 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.

A report was presented to Cabinet on 5 November 2012 which was considered along with the recommendations made at a joint meeting of the Sustainable Growth and Environment Capital and the Scrutiny Commission for Rural Communities held on 5 November 2012. Cabinet confirmed that:

- The potential for integrating some form of farming with renewable energy generation was already under consideration as part of the proposals.
- The sensitivities around the two sites near America Farm (Oxney Grange and Flag Fen) would be taken into detailed consideration as part of the planning process.

Key Issues highlighted within the report were as follows:

- Dual Use – The Council was currently exploring the viability of allowing certain types of farming in and around the solar panels
- once they were installed

- Planning – The Council submitted three planning applications for solar farms in December 2012. Since the submission, the Council had worked towards resolving a number of key issues raised by the Local Planning Authority; Morris Fen went to planning committee on 17 June 2013 but was deferred following communities and local Government having formally written to the council and a request by one of the statutory consultees, English Heritage, for further detailed survey work to be undertaken before the application could be determined.
- 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. All tenant farmers had been notified of the potential disruption from the required archaeology field work and informed they could farm for at least a further year. All farmers who wished to continue farming had been offered packages which allowed for farming on other land within the Council's ownership or compensation where applicable.
- Biodiversity – The key habitat loss was the arable farmland itself which was used by birds for foraging and nesting. The current ecological mitigation strategy was to establish neutral grassland beneath and between the panels. This would provide and new and enhanced habitat for animals and insects.

The Council would continue to work with individual residents, the Newborough Landscape Protection Group, the Local MP and other stakeholders to assess alternative solutions brought to its attention.

The Commission was asked to consider the report and feedback any comments.

Observations and questions were raised and discussed including:

- Members requested further information on the alternative schemes available. *The Executive Director of Strategic Resources advised Members that the alternatives were aimed more towards a different delivery model and the potential financial and carbon benefits it may deliver to the Council if alternative locations were considered.*
- Members commented that there was some dispute over facts and figures within the report. *Members were informed that issues with facts and figures had not been highlighted to him and the Executive Director would be happy to discuss any issues with Members.*
- Members queried why the Council were going ahead with the Solar Photovoltaic Panels if the risks were great and the financial returns were not good. *Members were informed that the financial returns were within the broad range that was initially looked at which was still a sufficient return.*
- Members requested further information regarding dual use and the financial aspect of it. *Members were informed that dual use was still being investigated in terms of financial projections.*
- Members queried whether there was a limit which could be fed in to the grid and if this region was anywhere near that limit. *Members were advised that there had been direct engagement with the grid company and based on latest discussions the Council had allowed for large sums of money for grid upgrades.*
- Members queried whether the income for the farmer's estate would increase. *Members were advised that in terms of rental income the figures had allowed for an inflationary increase of what was believed to be 2.5% in the first few years rising to 3.5% thereafter, clarification would need to be sought on this.*
- Members queried what the lifespan of the Solar Panels would be and commented that they thought it would be more cost efficient to leave the land as farmland which would generate a stable income each year. *Members were informed that the lifespan of the solar panels had always been twenty five years and the degradation of power would be reduced from 20% to 80% by the end of the 25 year term.*
- Members were disappointed in the information presented in the report. The figures in the last report presented to the Commission were high level and indicative and not

suitable for public scrutiny. The report presented at this meeting appeared to be the same. *Members were advised that officers were only asked to give an update on figures and not a detailed cost report and an apology was given for any misunderstanding. The position was still that detailed costs would not be provided other than at the level which Cabinet had agreed could be publicly disclosed due to commercial confidentiality of the proposals.*

- Members requested the sunk cost of the project to date and how many more cost would be incurred to get full planning permission for the three sites. *Members were informed that the spend to date was 1.8 Million pounds.*
- Members queried what the projected sunk cost would be including costs of attending a public inquiry and the impact of the reduced power purchase agreement. *Members were advised that officers did not have this information to hand and this would be provided at a later date. With regards to the cost of the public enquiry those costs would mainly be the responsibility of the planning department.*
- Members were concerned about the cumulative impact of the wind turbines, especially around Thorney and whether there was a policy within the Council that could restrict the number of wind turbines an area could have. *Members were advised that the report only dealt with solar panels because there had been no change publicly for wind turbines. Issues around cumulative impact would be dealt with once the surveys were complete.*
- Members queried why information on community funds was commercially sensitive. *Members were advised that there was no precedent nationally regarding community funds being used on Ground Mounted Solar Panels although Community Funds could be used for Wind Turbines.*
- Members were concerned that in 4.1.3 of the report Mears Ltd was the selected supplier and suggested that as the work had been delayed the Council should try to find better value. *Members were informed that the report did not suggest that Mears would be used to carry out the work they were just mentioned as an option as they had an existing framework.*
- Members commented that the council had admitted that consultation with tenant farmers and the rural community had been inadequate and queried whether they could have confirmation that the intention was to remedy this with a new round of consultation including engagement in an open and transparent way. *Members were informed that if they could elaborate on what they believed was inadequate then officers would be happy to rectify the issues.*
- Members referred to Due Diligence in the report and wanted to know if it was available for members of the public to view. *Members were informed that any information that was available for view had been provided if a request had been made. It the information could not be released then people would have been informed of this.*
- Members referred to the grazing plan and asked if the Executive Director could prove that it was viable and would support the figures and requested a further report be presented to the Commission.
- Members requested confirmation that the council was willing to ignore advice from the Department of Communities and Local Government (DCLG) on the impact of large-scale solar farms on local communities which was set out in 5.6 of the report. *Members were informed that the DCLG guidance suggested that alternative areas other than agricultural land should be searched for to install ground mounted solar panels and it did not state that areas of agriculture could not be used.*
- Members asked for clarification on the loss of farm land rental income. *Members were advised that the loss of income would be £2.9m over 25 years inflating from today. The latest projection showed that after making the loss of £2.9m over 25 years it would generate between £29 – £32.*
- Members sought clarification on what consultation had taken place with the farmers. *The Executive Director advised that he would be happy to provide a written response with a list of what consultation had occurred.*

- Members were concerned why the financial information was commercially sensitive as there were no private contractors involved. *Members were advised that there was a lot of market sensitivity around negotiating and sales of products needed.*
- Members queried whether there was a danger of costs rising above the 1.8m already spent on the project. *Members were informed that costs would rise, therefore the project needed to be kept constantly under review. Short term costs were not hitting the Council's revenue budget.*
- Members requested confirmation that the other 99.75% of the land available for building solar farms had been assessed as the National Planning Framework insisted that a full assessment of all land must be undertaken before granting planning permission on grade 1 to 3 land. *Members were informed that at the start the council looked at all of its major land holdings and the selected land was the only land available to support ground mounted Schemes.*
- Members requested information on which reports had been commissioned in to ecological and biodiversity concerns and requested the release of all the unedited reports in to the public domain in the interests of transparency. *Members were advised that all reports which had reached the point of submitting the final application to planning had been made publicly available.*
- Members commented that section 5.4 of the report regarding biodiversity was to be commended and felt it was putting the right message out to the public.
- Members were given reassurance that bat surveys would be carried out as they were most at risk with wind turbines.
- Members commented that 4.1.9 of the report discussed the sensitivities around the America Farm site therefore why would it be taken in to account as part of the planning process.
- Members requested confirmation that the prices of the solar panels would continue to drop even though the EEC had agreed a lower price with Chinese manufacturers. *Members were advised panel prices had dropped but there was no security that prices would drop further.*
- Members requested confirmation that the figures shown in 6.4.4 of the report included the following:
    1. Grid connection
    2. Research and development costs that had been incurred since 2012
    3. Legal advice
    4. Consultation fees
    5. Archaeological Reports

  Members were informed that all of the above had been included within capital costs.
- Members sought clarification as to why the project had gone ahead without any initial consultation. *The Executive Director advised that he had acknowledged and apologised in November last year at the joint meeting of Sustainable Growth and Environment Capital and the Commission for Rural issues that consultation had not been adequate at the time and had attempted to address the situation since that time.*
- Councillor McKean requested that the report be rejected on the grounds that it had not provided the financial information requested from the Commission. He also requested that an extraordinary meeting be held as soon as possible to bring back to the Commission the missing financial information which would include, a three page lower level financial report for both Solar and Wind.
- A vote was taken to reject the report and have an extraordinary meeting, the commission voted in favour (3 in favour, 4 abstentions).
- Members commented that this was the largest project in Europe and involved a large financial contribution from the council and requested that an extraordinary meeting be held to discuss figures more accurately to give the Commission confidence that public money was being spent correctly. *The Chairman advised members that he would talk to the Executive Director of Strategic Resources after the meeting regarding timescales and workload.*

RECOMMENDATION

The Commission recommended that Cabinet reconsider going ahead with the Development of Ground Mounted Photovoltaic Panels and in doing that take into account the following:

- Alternative Plan B Option - Dual Use possibilities before any further planning application is submitted.
- An investigation of alternative land use other than agricultural land

ACTIONS

1. The renewable Energy Finance Manager would provide the Commission with the projected sunk costs including the impact of the reduced power purchase agreement.
2. The Commission agreed for the Executive Director of Strategic Resources to:
    a. Inform the Commission of the cost for Bluesky Peterborough's financial model to go to a public inquiry.
    b. Bring a separate report back to the Commission on Wind Turbines next year.
    c. Bring a report to the Commission on Dual Use including both proposals to a future meeting before the proposals were agreed.
    d. Provide a report on available land for the Ground Mounted Solar Panels.
    e. Liaise with Lee Collins, Area Manager Development Manager and obtain details around the sensitivities around the two sites near America Farm.
    f. Provide a report on the future of farms estate and tenant farmers

5. Neighbourhood Plans

The report was presented to the Commission at the request of the Chairman in light of the confusion over neighbourhood plans. The intention of the report was to clarify what neighbourhood planning was and its role within the planning system.

The Chairman specifically raised queries in relation to the definition of neighbourhood planning terms, Community Infrastructure Levi (CIL), the benefits of having a neighbourhood plan and the legality of neighbourhood plans. A presentation was delivered to the Commission and the following key points were highlighted:

- A neighbourhood plan was a plan that set out policies in relation to the development and the use of land. It could also include site allocations.
- A neighbourhood order was a statutory mechanism which automatically granted planning permission for a certain type or class of development.
- Plans and orders must meet basic needs and they need a majority vote at referendum to get adopted.
- Plan policies could be applicable to a whole neighbourhood area or just a specific part.
- Only one neighbourhood plan could be made for each neighbourhood area.
- A development could not be stopped.
- Most of the time and costs associated with the preparation of a plan/order were borne by the Parish Council/ Neighbourhood Forum
- A plan could take up to two years to prepare.
- **Local Plans** were Statutory Development Plan Documents (DPD's) prepared by Local Planning Authorities. The Peterborough Local Plan was a compilation of various DPD's
- **Parish/Village Plans** were plans prepared by Parish Councils as non-statutory plans, such plans carried no weight in reaching decisions on planning applications

Potential advantages of neighbourhood plans or orders:

- Effectively give communities a greater influence over planning in their area
- Facilitates development which was in line with local needs and priorities
- Strengthen community relations
- Become eligible for 25% of relevant CIL receipts compared to the 15% without a plan
- Orders could make the delivery of certain developments quicker and easier

Observations and questions were raised and discussed including:

- Members queried what the difference was between Village Design Statements and Neighbourhood Plans. *The Planning Policy Manager advised members that Village Design Statements were now called Parish Plans and they had no planning status whereas Neighbourhood Development Plans did.*
- Members queried whether existing projects were going to be carried over to the Community Infrastructure Levy (CIL) or if a Neighbourhood Development Plan was needed to be in place before they could be considered. *Members were informed that if the Council wanted to introduce CIL then there would be a decision making procedure to choose which of the existing projects they wanted to spend money on. The Strategic Planning Officer informed the Commission that if no plan or order was in place then the Parish Council would only be eligible for 15% of CIL funding instead of 25%.*
- Members were concerned that the distribution of funds would favour Parished areas and urban areas would lose out.
- Members commented that they had previously been advised that the Council provided villages with a Supplementary Planning Document (SPD) and they did not require any additional document to obtain CIL funding. *Members were advised that the new CIL regulations were decided by the Localism act which was enforced in April 2013*.

6. Use of Homecare Monitoring System – Update

The Chairman advised the Commission that due to unforeseen circumstances there was no officer present to present this report. The Commission agreed to defer this item to the next meeting on 18 November 2013.

7. Notice of Intention to Take Key Decisions

The Commission received the latest version of the Council's Notice of Intention to Take Key Decisions, containing key decisions that the Leader of the Council anticipated the Cabinet or individual Cabinet Members would make during the course of the following four months. Members were invited to comment on the Plan and, where appropriate, identify any relevant areas for inclusion in the Commission's work programme.

ACTION AGREED

The Commission noted the latest version of the Council's Notice of Intention to take key Decisions.

8. Work Programme

Members considered the Commission's Work Programme for 2012/13 and discussed possible items for inclusion.

ACTION AGREED

To enquire if it was possible to add the Educational Attainment of Primary Schools within the Educational Attainment for Rural Areas report which would be presented at the next meeting of the Scrutiny Commission for Rural Communities.

The meeting began at 7.00pm and ended at 9.30pm CHAIRMAN

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SCRUTINY COMMISSION FOR RURAL COMMUNITIES	Agenda Item No. 4
16 DECEMBER 2013	Public Report

Report of the Executive Director Resources

Report Author - John Harrison, Executive Director Resources
Contact Details - John Harrison, Executive Director Resources
Tel: 01733 452520
Email: john.harrison@peterborough.gov.uk

UPDATE ON PROPOSED GROUND MOUNTED AND WIND DEVELOPMENTS AT NEWBOROUGH, MORRIS FEN AND AMERICA FARM

1. PURPOSE

1.1 To provide a detailed update on the current business model compared to previous published models and the results of various studies and surveys that have since been carried out.

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.

4. BACKGROUND

4.1 Council presented the latest financial position on ground mounted PV energy parks at the Scrutiny Commission for Rural Communities on 16th September 2013.

4.2 A subsequent Scrutiny Commission for Rural Communities was held on 18th November 2013 where it was requested an extraordinary meeting be held on 16th December 2013 in order for the Council to present its position based on the feedback received.

4.3 Key Items requested and covered in this report include:

4.3.1 A report on Dual Use proposals.

4.3.2 A report on alternative available land for the Ground Mounted Solar Panels.

4.3.3 Obtain details on the sensitivities around the two sites near America Farm (Oxney Grange and Flag Fen) that would be taken into detailed consideration as part of the planning process.

4.3.4 A report on the future of the farms estate and tenant farmers.

4.3.5 Clarification on what consultation had taken place with the farmers and rural community and what further consultation is planned.

4.3.6 Information on which reports had been commissioned in relation to ecological and biodiversity concerns and requested the release of all the unedited reports into the public domain in the interests of transparency.

4.3.7 The Commission agreed for the Executive Director of Resources to provide a three page detailed breakdown of the top level figures supporting options for Solar Panels and Wind Turbines covering:

- Grid connection
- Research and development costs that had been incurred since 2012
- Legal advice
- Consultation fees
- Archaeological Reports
- Contingency

5.0 KEY ISSUES

5.1 Dual Use Proposals

5.1.1 Council asked AECOM to investigate further the potential for farming integration (dual use) at the three locations identified. AECOM commissioned an independent report by Dr. John Feltwell of the Wildlife Matters Consultancy Unit whose credentials include being a Chartered Environmentalist and a Chartered Biologist with a qualification in EU Law.

5.1.2 The report and AECOM's review of it are included in Appendix 10.1.

5.1.3 The findings conclude that it is feasible to integrate farming, either arable or grazing, or a joint farming package and that these practices will benefit the project in terms of increasing biodiversity, providing weed control around the panels and growing crops in between the strings of panels.

5.1.4 With regards to arable farming, the report believes that risk of damage to panels could be mitigated by allowing sufficient space between rows for farm workers and vehicles. The soil conditions and crop height will determine what is grown, with vegetables being the preferred option whilst wheat and red/blackcurrants are the least favourable.

5.1.5 The report also suggests other crops which could be grown including climbing fruit plants on security fences and fruit trees along hedgerows. These could be considered as part of the landscaping plan.

5.1.6 With regards grazing, the report suggests that sheep are the favoured stock with careful consideration taken into the breed. Shorter breeds are preferred and the stocking rate would be up to the competent farmer complying with welfare standards. Furthermore, the timing and rotation of grazing will need to be considered carefully to balance the biodiversity aims of the sites with the economics of sheep grazing

5.1.7 It should be noted that the Council has also commissioned a soil survey on each of the three sites that will be used to inform which option (arable / grazing / both) can be supported with the current condition of the land.

5.1.8 It should be noted that the Council has yet to assess the operational or economic constraints of dual use. It plans to do so as part of the planned consultation with the tenant farmers in the proposed Farms Estate Strategic Working Group

5.2 Alternative available land for the Ground Mounted Solar Panels.

5.2.1 The Council undertook a search of all of its land holdings as a first step towards identifying areas of land with the potential to accommodate large scale renewable energy development. It was decided early on in the process to exclude land not within council ownership i.e. the only alternative sites considered were those in the Council's ownership, because the additional costs and time involved in acquiring the land would be likely to have an adverse impact on financial returns and introduced too many risks to the project. Furthermore, the council does not own any land within urban areas suitable for this type of development.

5.2.2 The Council identified 6 possible sites within their ownership. These were:

- Nene Park,
- Sewage Farm, Hall Lane, Wittering;
- Splash Lane, Castor;
- America Farm;
- Morris Fen Farm; and
- Farms of Newborough.

5.2.3 Each site was assessed against a basic criteria set out below based on a desk top assessment.

Those sites that met the criteria underwent a more detailed feasibility assessment to identify the potential developable area, the type of renewable energy development, i.e. solar and wind, and the energy generation output.

- Land lease issues (i.e. length of leases);
- Size of the site (in terms of its viability for large scale renewable energy projects);
- Proximity to aviation sites;
- Presence of any designated protected, landscape, conservation and heritage areas;
- Proximity to settlements; and
- A high level assessment of flood risk.

5.2.4 Of the six sites identified and using the criteria stated in 5.2.3, the three sites that presented the most viable were America Farm, Morris Fen and Farms of Newborough.

5.2.5 The other three that were discounted were done so on the following basis: Nene Park and Splash Lane are subject to a 999 year lease to the Nene Park Trust and both have several significant special designations preventing any kind of development; Sewage Farm was too small an area to justify development.

5.2.6 In addition to sites, alternative technologies were considered. In response to comments raised by consultees during the pre-planning application consultation, straw burning was also considered.

5.2.7 It was concluded that solar and wind farms represented the best deal in terms of amount of MW per acre of land, i.e. the largest capacity plant for the least amount of land take. The findings for each technology are briefly set out below:

- Anaerobic Digestion: a 0.5MW plant would take around 2.5acres of land and cost around £1.5m / MW. However, the Council could not guarantee the quality and regular supply of feedstock since for an AD plant, consistent and regular feedstock is required to ensure that the plant operates at optimum yield. Furthermore, the Council could not be satisfied that there would be sufficient feedstock available for multiple AD plant installations. The Council believes that there may be potential for AD plant(s) in the future once the feedstock issue has been resolved. Additionally, the returns of an AD plant are not at the same level as that of other options considered.
- Biomass CHP: Similar to AD with regards the feedstock issue and investment returns.
- Straw burning: A straw burning facility of the same comparison would require a tonnage capacity in excess of 50,000 tonnes of straw to be annually produced. To deliver a similar amount of MW per acre of land, using the 900 acres, an average 116 heston bales / per acre would need to be produced. It should be noted that the average heston bale production of an acre is about 3 / acre, hence the land take would be significant (c.35,000 acres) to generate sufficient feedstock to power a facility of the same size as that proposed.

5.2.8 An extract from the publicly available planning documentation that covers in greater detail the selection process and why the other sites were excluded is available in Appendix 10.2. It should be noted that the assumptions stated above and in the report were correct when the assessment was performed.

5.2.9 More recently, the Council has also examined the potential for developing a solar farm on existing landfill sites.

5.2.10 Four zones were identified (A to D), however none of the sites proved to be suitable due to:

- sites had to be discarded due to land owner issues
- sites are small and fragmented in remote locations
- sites were judged too remote and far away from potential grid connection points

5.2.11 The desktop assessment is included in Appendix 10.3

5.3

5.3.1 **Sensitivities around the two sites near America Farm (Oxney Grange and Flag Fen)**

5.3.2 With respect to Flag Fen, following the submission of the planning application, the Local planning Authority (LPA) undertook a wide ranging consultation, including with its own Conservation Officer, Archaeological Officer and English Heritage (EH).

5.3.3 The initial comments by Peterborough City Council's Archaeologist raised no objections to the proposal and did not raise any specific concerns about the impact on the setting of Flag Fen, although she did require more field work information before making final comments.

5.3.4 The Council's Conservation Officer did not comment on the setting of Flag Fen as his remit is principally to comment on Listed Buildings rather than scheduled monuments.

5.3.5 English Heritage took the view that the harm that will be caused to Flag Fen would be less than substantial, but recommended that the application should be deferred until further archaeological assessments were undertaken for it to be able to fully assess its impact.

5.3.6 In accordance with the National Planning Policy Framework, it would then be up to the Local Planning Authority to assess the additional information and balance any potential harm against the wider public benefits arising from the proposal, which in this case comprises the development of renewable energy to address the impact of climate change.

5.3.7 Should the LPA conclude, in conjunction with EH and PCC Archaeologist, that the harm is significant and that it is not outweighed by wider public benefits, then the Council (as developer) would need to mitigate that impact.

5.3.8 With respect to Oxney Grange, the Council's Conservation Officer has stated that the setting of Oxney Grange has been impacted on over the past 20 plus years by the eastward expansion of Fengate Industrial area towards Oxney Grange Road. This has affected the open aspect of the Fenland around Oxney Grange and its agricultural relationship with the Fens.

5.3.9 The nearest distance from the site to Oxney Grange is approximately 900 m. The solar panels would be visible from Oxney Grange as part of the wider Fen landscape. Therefore, there would be a visual impact on the setting of the Listed Buildings, but that impact is not considered to be significant.

5.3.10 It is also important to note that the associated barns are no-longer in agricultural use because they have been converted to residential accommodation. Therefore maintaining the open agricultural landscape of the Fens around the barns becomes less important.

5.4 Taking the above into account, the Conservation Officer has, in accordance with the National Planning Policy Framework, weighed the impact on the Listed Buildings against the wider public benefits arising from the proposals and concluded that the wider public benefit would outweigh any harm to the setting of the Listed Buildings and has therefore raised no objections.

5.4.1

The Future of Council Farms Estate and Tenant Farmers

5.4.2 The estate is entering a period of potentially relatively rapid change. After many years of stability, all but one tenant is in their fifties or older and most tenancies are due to end within the next 10 to 15 years. Over the past few years a bank of land let on short-term agreements has been built up to allow the formation of new, better balanced holdings suitable for letting to new tenants.

5.4.3 Developing the estate to provide the sorts of benefits outlined above relies on finding suitable

tenants as well as a willingness of the council to support the estate

5.4.4 On re-letting of land, a balance can be struck between maximising rental income and social returns. The main focus of the estate is likely to remain letting as commercially viable enterprises. These may also provide social and environmental benefits if run by progressive tenants.

5.4.5 The standard of the fixed equipment on the estate is moderate with little having been invested by the council in the properties for the past 40 years. Some investment is required to bring the farms up to the standards required for modern food production. Funding of improvements could be achieved from rental income, albeit with a corresponding reduction in the annual return to the council. A strategy for such works would need to be planned to ensure a proper balance is struck.

5.4.6 The renewable energy project and the primary agricultural use of the estate are not mutually exclusive. The project provides a strong incentive for retention of ownership of the estate and sale of land following implementation of the project could seriously hinder the long-term management of the project. There is scope for significant agricultural use of land also occupied by solar arrays.

5.4.7 The most recent government report 'The Importance of the County Farms Estate to the Rural Economy' (November 2008), states that Local Authorities should develop the wider benefits of their holding with particular regard to renewable energy, local food, public access, education, employment and the broader rural economy.

5.5 There is scope for educational interpretation of the energy park alongside the agricultural element of the estate. Furthermore, the project could act as the catalyst for revitalisation of the estate.

5.5.1

Tenant farmers strategy and strategic working group

5.5.2 The Council asked its Farm Estate's Manager to develop a strategy to manage the tenant farmers affected by the proposals and also to scope out how the proposed strategic working group would work.

5.5.3 Several farm tenancies would be affected by the proposed development. Vacant possession of the land would be required for the development to proceed. Different approaches to gaining vacant possession of the affected land have been taken depending on the type and length of tenancy and individual tenant's circumstances.

5.5.4 The Council has made considerable effort to ensure that the tenant's core farming businesses are not unduly affected by the proposed scheme.

5.5.5 Where the core businesses would be affected, and the tenants have wanted to remain in farming, the tenants have been offered terms which would leave their businesses in better respective positions than if they remained farming under their current agreements.

5.5.6 There remains only one tenant who is not prepared to accept the Council's offers of alternative land and longer term security.

5.5.7 In the event of not all of the land being required for the scheme, the land affected by relocation and surrender agreements will be unencumbered by long-term tenancies, allowing the Council freedom to utilise the land as it wishes.

5.5.8 With regards the proposed strategic working group, the renewable energy project has highlighted the lack of community involvement in the estate. In particular there is limited tenant involvement in the strategic planning of the estate except on an individual farm basis and there has been no Councilor interest or involvement in the estate in recent years

5.5.9 It is proposed to set up a working group which would have a positive input into the agricultural aspects of the renewable energy project and into the wider strategic planning for the estate

The initial aims of the working group would be to:

- Provide a consensus for the agricultural management of the energy project
- Improve understanding of the farms estate by the Council and tenants, and consequently wider public

5.5.10
- Develop a clear strategic plan for the long-term management of the estate for adoption by the Council

5.6 Members of the Working Group would include representatives of the existing farm tenants, relevant council officers and Councilors. Contributions could be sought from outside bodies such as the relevant parish councils, the NFU, the Wildlife Trust and local residents

5.6.1

Clarification of Consultations to date and planned

5.6.2 The tables below are extracted from the Statement of Community Involvement document which details the consultations the Council has conducted to date. The full document is available in Appendix 10.4.

Public Consultations constituted the following modes of communication:

- Public exhibitions / drop-in sessions
- Dedicated proposal website
- Press releases and media briefings
- Information mailings
- Letters and email responses

5.6.3
- Council meetings open to the public

5.6.4 Exhibitions were held in high traffic areas and local venues in order to seek the views of the maximum possible number of residents.

5.6.5 On the stand there was opportunity for direct feedback via the website and a comments box. Postcards were Freepost return so as not to exclude people on a financial basis. Effort was also made to ensure materials were accessible including an audiobook and large A3 print version of the exhibition on the website.

Consultation event	Date
June 2012	
Letter sent to tenant farmers: notifying them of plans for a Renewable Energy Project	27 June 2012
Ward Councillor Briefing Session	29 June 2012
July 2012	
Cabinet Meeting	10 July 2012
August 2012	
National Farmers Union meeting	8 August 2012
Letter sent to tenant farmers: confirming status of their tenancy and the proposed timescale for development.	16 August 2012
Letter sent to America Farm tenant	28 August 2012
September 2012	
Letter sent to Stewart Jackson MP, Peterborough Constituency	3 September 2012
Newborough Landscape Protection Group meeting	4 September 2012
Letter sent to tenant farmers: schedule for site visits and survey work	18 September 2012
National Farmers Union meeting	20 September 2012
Letter sent to tenant farmers: notification of submission of a 'Screening Opinion' to the Local Planning Authority	20 September 2012
Media Briefing with Peterborough Evening Telegraph and BBC Radio Cambridgeshire	21 September 2012
October 2012	
Radio Cambridgeshire – Interview with Leader of Council	8 October 2012
Petition received from Cllr Harrington containing 613 signatories against the proposed development and potential future wind turbine development.	10 October 2012
Full Council Meeting	10 October 2012
Meeting with Cllr Harrington, Newborough Ward	11 October 2012
Meeting with Stewart Jackson MP	12 October 2012
Newborough Parish Council meeting	15 October 2012
Press release "Council leader meets residents to discuss Renewable Energy Project"	16 October 2012
One-to-one meetings begin with directly affected tenant farmers.	Late October 2012 (ongoing)
Briefing by the Project Team to a Ward Council member and	19 October 2012

5.6.6

Stakeholder Engagement including statutory consultees and stakeholders were also involved to identify and resolve specific issues that could affect the proposed developments.

Working meetings addressing largely technical matters and briefing sessions were held with stakeholders and local groups.

5.6.7

Events included:

• Meetings with directly affected tenants

• National Farmers Union meetings and meeting with the Tenant Farmers Association

• Councillor and MP briefing sessions

• Parish Council briefing sessions

• Pre-application meeting with the LPA

• Discussions/corresponding with statutory consultees - ongoing since August 2012 e.g. English Heritage, Natural England, Local Highway Authority, PCC Landscape Consultant).

• Meetings with newly formed local groups, including the Newborough Landscape Protection Group (NLPG) and the Newborough Young Farmers

local resident	
Letter sent to tenant farmers: notification of public release of plans and reports to inform the forthcoming Joint Committee Meeting (2 November)	25 October 2012
Press release "Cabinet asked to approve next stage of Renewable Energy Project"	29 October 2012
November 2012	
Briefing by the Project Team to Ward members	2 November 2012
Joint meeting of the Sustainable Growth and Environmental Capital Scrutiny Committee and the Scrutiny Commission for Rural Issues	2 November 2012
Cabinet Meeting	5 November 2012
TV interview on BBC Look East	6 November 2012
Media tour to a working solar farm	6 November 2012
Meeting with representatives from Newborough Landscape Protection Group and local Councillors	8 November 2012
Sustainable Growth and Environmental Capital Scrutiny Committee Meeting	19th November
Public consultation posters and postcards hand-delivered	w/c 19th November
Press release "Next phase of renewable energy project gets green light"	21 November 2012
Full-page public consultation advert in the Peterborough Telegraph	22 November 2012
Dedicated project website launched	23 November 2012
Public consultation: Peterborough Garden Park, Unit 8	24 November 2012, 10am–4pm
Public consultation: Peterborough Garden Park, Unit 8 (unmanned)	25 November 2012, 10am–4pm
Public consultation: Queensgate Central Square	26 November 2012, 9am-6pm (manned 12 noon - 5pm)
Public consultation: Queensgate Central Square (unmanned)	27 November 2012, 9am-6pm
Public consultation: Crowland Snowden Pavilion	28 November 2012, 4pm-8pm
Meeting with representatives from Newborough Parish Council, Project Team and Leader of the Council	29 November 2012
Public consultation: Bedford Hall, Thorney	29 November 2012, 4pm-7pm
Public consultation: Peterborough Town Hall, Bridge Street	30 November 2012, 9am-5pm
December 2012	
Public consultation: Newborough Village Hall	1 December 2012, 10am-2pm
Public consultation: Public tour to a working solar farm	1 December 2012, 9.45-10.30am
Public consultation: Eye Community Centre	2 December 2012, 4pm-8pm
Full Council meeting	5 December 2012
Thorney Parish Council meeting	10 December 2012
Meeting with Newborough Young Farmers, Ward Councillor, Project Team and Leader of the Council	11 December 2012
Meeting with Tenant Farmers Association	13 December 2012
Public consultation: Public tour to a working solar farm	17 December 2012

5.7

5.7.1

Details of reports commissioned in relation to ecological and biodiversity concerns

5.7.2 As part of the planning application, an environmental statement was provided which stated the results of the surveys conducted as part of the environmental impact assessment performed. Due to the size of these documents, these are not included in the appendices, but are available on the planning portal.

5.7.3 An ecological impact assessment has been undertaken which considered the effects of the proposed development on sites of nature conservation importance, habitats, plants (flora) and

animals (fauna). Particular consideration was given to potential effects on species and

5.7.4 habitats

which are protected by law or important (notable) for their inherent nature conservation value.

A Flood Risk Assessment (FRA) was required as the development site is located within Flood

Zone 3a (as defined by the Environment Agency and PCC Strategic Flood Risk Assessment (SFRA) and is therefore at high risk of fluvial or tidal flooding.

5.7.5 To manage any surface water run-off from the solar panels, switching station and access tracks, infiltration drainage will be designed in accordance with industry standards and grass will be established beneath the solar panels. Due to the nature of the proposed development, the limited human occupancy rates and the continual inspection and maintenance of flood defences the residual risk of flooding is assessed to be low.

5.7.6 Excavation of soil will be required during the construction of cable trenches and the foundations of the switching station building and ancillary structures. This will result in the sterilisation of a very small footprint of high quality agricultural soils and the generation of soil quantities that will need to be managed. During the operational lifetime of the development,
5.7.7 the agricultural soils within the development site could be managed as grassland and as a result its quality will improve.

It should be noted that additional soil surveys have been commissioned which the Council expects to have the results of, at the end of December 2013. Details can be found in Appendix 10.5.

5.7.8 A landscape and visual impact assessment was also carried out. Eight representative viewpoints were then identified in consultation with Peterborough City Council. The extent to which the existing view from each point would be altered by the Development was then evaluated. Photographs were taken from the eight agreed viewpoint locations during both summer and winter and illustrative photomontages were constructed from three of these viewpoints

5.7.9 There will be direct loss of open agricultural land within the development site for the duration of the proposed development and this is predicted to have a significant impact on the landscape. It is important to note however that this is reversible in the long term once the proposed development has been decommissioned. This issue like all other planning issues, needs to be balanced against the wider public benefits of delivering a renewable energy
5.7.10 scheme.

The design has been developed such that the loss of habitat is minimised and key elements such as existing vegetation and drains will remain intact. The proposed mitigation planting will be sympathetic to the existing landscape structure and character and enhance the
5.7.11 development site's appearance for future benefit.

With this mitigation in place, the proposed development is not predicted to have a significant effect on landscape character. It may intrude into existing views experienced by users of the
5.7.12 study area. None of the eight viewpoints or five property receptors assessed were predicted to experience significant residual effects.

A separate detailed Contamination Assessment Report was carried out and is included in Appendix 9.1 of the Environmental Statement which forms part of the planning application
5.7.13 and is publicly available on the planning portal.

In summary, the Environmental Statement has determined that there would be impacts on the local environment as a result of the proposed development but these are not considered to be significant or long-term. More details can be found in the Environmental Statement: Non-Technical Summary, which are on the planning portal.

Where impacts have been identified these have been mitigated as far as possible as part of the design in particular through the use of buffers from sensitive features such as residential properties and drains.

6. IMPLICATIONS

6.1 Detail Summary November 2012 to September 2013 position:

Option 1 All Solar, No delay scenario

	November 2012				September 2013 NO DELAY				Difference			
Ground Mount Solar	**AF Solar**	**NF Solar**	**MF Solar**	**Total**	**AF Solar**	**NF Solar**	**MF Solar**	**Total**	**AF Solar**	**NF Solar**	**MF Solar**	**Total**
MW Installed	**8.0**	**49.0**	**27.0**	**84.0**	**7.2**	**49.0**	**25.5**	**81.7**	**-1**	**0**	**-1.5**	**-2.3**
	£m	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**
Capital Costs	13.8	80.3	47.3	**141.3**	10.6	57.4	33.8	**101.8**	-3	-23	-13	-39
- Install Costs	12.0	73.5	40.5	**126.0**	6.5	44.1	23.0	**73.5**	-5.5	-29.4	-17.6	-52.5
- Grid Connection	1.5	5.0	5.0	**11.5**	1.8	4.0	4.3	**10.0**	0.3	-1.0	-0.7	-1.5
- Development Costs	0.3	1.8	1.8	**3.8**	0.4	1.8	1.1	**3.2**	0.1	-0.0	-0.6	-0.5
- Contingency					1.9	7.6	5.5	**15.1**	1.9	7.6	5.5	15.1
Operating Costs												
- O&M	7.2	45.2	24.7	**77.0**	6.6	46.1	23.8	**76.6**	-0.5	1.0	-0.9	-0.4
- Insurance	1.5	9.0	5.2	**15.7**	1.2	6.6	3.8	**11.5**	-0.3	-2.5	-1.3	-4.2
- Business Rates	1.1	6.9	3.8	**11.8**	1.0	7.2	3.7	**12.0**	-0.1	0.3	-0.0	0.3
									0.0	0.0	0.0	0.0
- Land Drainage Levy & Contingency					1.1	7.8	3.9	**12.8**	1.1	7.8	3.9	12.8
Interest	8.4	48.6	29.2	**86.2**	7.0	42.6	24.6	**74.3**	-1.3	-5.9	-4.6	-11.9
Total Expenditure	**31.9**	**189.9**	**110.1**	**331.9**	**27.5**	**167.9**	**93.7**	**289.1**	**-4.4**	**-22.1**	**-16.4**	**-42.8**
Income - ROC	11.8	72.3	40.7	**124.9**	12.02	75.25	40.0	**127.3**	0.2	2.9	-0.7	2.4
Income - PPA	22.8	139.3	78.4	**240.6**	17.1	115.9	61.5	**194.5**	-5.7	-23.4	-17.0	-46.1
Total Income	**34.6**	**211.6**	**119.2**	**365.5**	**29.1**	**191.2**	**101.5**	**321.7**	**-5.6**	**-20.5**	**-17.7**	**-43.7**
Net Project Income	**2.7**	**21.7**	**9.1**	**33.5**	**1.5**	**23.3**	**7.8**	**32.7**	**-1.2**	**1.6**	**-1.3**	**-0.9**
Loss of Rental Income	0.3	1.7	0.9	**2.9**	0.3	1.8	1.1	**3.2**	-0.0	0.1	0.2	0.3
Net Income to PCC	**2.4**	**20.0**	**8.2**	**30.7**	**1.3**	**21.5**	**6.7**	**29.5**	**-1.2**	**1.5**	**-1.5**	**-1.2**
Net Present Value	**1.6**	**10.9**	**5.2**	**17.7**	**0.7**	**10.2**	**3.9**	**14.8**	**-0.8**	**-0.7**	**-1.3**	**-2.9**

6.1.1 The contingency item under capital costs includes cover for:

- upward movement in the installation costs (such as needing to provide a particular frame specification such as black anodised and 2m in height)
- any potential uplift in grid connection costs
- any potential uplift in development costs which covers all adviser fees, cost of surveys such as archaeology, soil grading, council staff time, planning, procurement and development costs

6.1.2 The land drainage levy and contingency line within operating costs includes cover for:

- land drainage levy
- community benefit fund
- compensation to tenant farmers

6.1.3 The reasons for the reduction of the capital costs are:

- MW installed capacity has been revised downward to accommodate planning conditions around ecological buffer zones and grid connection substation placement
- Installation costs rates dropping from an initial £1.5m / MW to sub £1m / MW
- As a result of capital costs coming down, interest costs have revised down.

6.1.4 The reasons for the reduction in the forecast income are:

- ROC and PPA pricing are now based on market rates as of Q4 2013
- Community benefit fund rate now incorporated
- Higher assumptions for loss of rental income

6.1.5 Further detail of the individual plant cost breakdown is provided for in Appendix 10.6.

6.2 Detail Summary November 2012 to September 2013 position:

Option 1 All Solar, Delayed scenario

	November 2012				September 2013 DELAYED				Difference			
Ground Mount Solar	**AF Solar**	**NF Solar**	**MF Solar**	**Total**	**AF Solar**	**NF Solar**	**MF Solar**	**Total**	**AF Solar**	**NF Solar**	**MF Solar**	**Total**
MW Installed	**8.0**	**49.0**	**27.0**	**84.0**	**7.2**	**49.0**	**25.5**	**81.7**	**-1**	**0**	**-1.5**	**-2.3**
	£m	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**
Capital Costs	13.8	80.3	47.3	**141.3**	10.6	57.8	34.0	**102.4**	-3	-23	-13	-39
- Install Costs	12.0	73.5	40.5	**126.0**	6.5	44.1	23.0	**73.5**	-5.5	-29.4	-17.6	-52.5
- Grid Connection	1.5	5.0	5.0	**11.5**	1.8	4.0	4.3	**10.0**	0.3	-1.0	-0.7	-1.5
- Development Costs	0.3	1.8	1.8	**3.8**	0.4	2.1	1.3	**3.8**	0.1	0.3	-0.5	-0.0
- Contingency					1.9	7.6	5.5	**15.1**	1.9	7.6	5.5	15.1
Operating Costs												
- O&M	7.2	45.2	24.7	**77.0**	6.8	47.2	24.5	**78.4**	-0.4	2.0	-0.2	1.4
- Insurance	1.5	9.0	5.2	**15.7**	1.2	6.7	3.9	**11.8**	-0.3	-2.3	-1.2	-3.9
- Business Rates	1.1	6.9	3.8	**11.8**	1.1	7.4	3.8	**12.3**	-0.0	0.5	0.1	0.6
- Land Drainage Levy & Contingency					1.2	7.7	4.0	**12.8**	1.2	7.7	4.0	12.8
Interest	8.4	48.6	29.2	**86.2**	7.9	44.6	26.3	**78.8**	-0.5	-3.9	-2.9	-7.4
Total Expenditure	**31.9**	**189.9**	**110.1**	**331.9**	**28.7**	**171.4**	**96.5**	**296.6**	**-3.2**	**-18.5**	**-13.6**	**-35.3**
Income - ROC	11.8	72.3	40.7	**124.9**	11.42	71.04	37.9	**120.4**	-0.4	-1.3	-2.8	-4.5
Income - PPA	22.8	139.3	78.4	**240.6**	17.6	119.2	63.6	**200.4**	-5.2	-20.1	-14.8	-40.1
Total Income	**34.6**	**211.6**	**119.2**	**365.5**	**29.0**	**190.3**	**101.6**	**320.8**	**-5.6**	**-21.4**	**-17.6**	**-44.6**
Net Project Income	2.7	21.7	9.1	33.5	0.3	18.9	5.0	24.2	-2.4	-2.8	-4.1	-9.3
Loss of Rental Income	0.3	1.7	0.9	**2.9**	0.3	1.8	1.2	**3.3**	-0.0	0.1	0.3	0.4
Net Income to PCC	2.4	20.0	8.2	**30.7**	0.0	17.1	3.8	21.0	-2.4	-3.0	-4.3	-9.7
Net Present Value	1.6	10.9	5.2	**17.7**	0.2	7.9	2.4	**10.5**	-1.4	-3.0	-2.8	-7.3

When compared with the model in 6.1:

6.2.1 The contingency item under capital costs now includes additional costs for the public inquiry causing an uplift in the capital costs total.

6.2.2 Operating costs across the board have increased due to inflationary increase on these costs arising from the delayed completion.

6.2.3 Similarly, interest costs have increased due to upward inflationary pressure because of the delayed completion.

6.2.4 All of which contributes to an increase in the total expenditure by some £4.5m because of the delay to completion and public inquiry costs.

6.2.5 ROC income is down as the public inquiry delay (assumed to be a year) would result in the plant achieving a lower ROC banding.

6.2.6 PPA income is up because of inflation increases from the year delay.

6.2.7 However, the total income position of the project is down £1.7m when compared to the non-delay scenario in 6.1.

6.2.8 Further detail of the individual plant cost breakdown is provided for in the Appendix 10.7.

6.2.9 It should be noted that in the table above, America Farm is shown as breaking even (i.e. a Net

income of £0 to PCC) however, in the appendix, the actual position is a loss of £60,000.

6.2.10 This is a rounding error that is in the table above, whilst Appendix 10.7 shows the detailed position assuming that the contingency has to be used and hence the loss.

6.2.11 Profit and Loss Summary: All Solar, Option 1, No Delay

		1	2	3	4	5	6
Expenditure	**Total**	**2012.13**	**2013.14**	**2014.15**	**2015.16**	**2016.17**	**2017.18**
Capital Costs:	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**
- Install Costs	73.5	0.0	0.0	15.7	57.9	0.0	0.0
- Grid Connection	10.0	0.0	0.0	3.5	6.5	0.0	0.0
- Development Costs	3.2	1.1	0.8	1.3	0.0	0.0	0.0
- Contingency	15.1	0.0	0.0	4.1	10.9	0.0	0.0
Total Capital Costs	**101.8**	**1.1**	**0.8**	**24.6**	**75.3**	**0.0**	**0.0**
Revenue Expenditure:							
- O&M	76.6	0.0	0.0	0.0	0.9	2.3	2.3
- Insurance	11.5	0.0	0.0	0.0	0.1	0.3	0.4
- Business Rates	12.0	0.0	0.0	0.0	0.1	0.4	0.4
- Land Drainage Levy & Contingency & Contingency	12.8	0.0	0.0	0.0	0.1	0.4	0.4
Total Revenue Expenditure	**113.0**	**0.0**	**0.0**	**0.0**	**1.3**	**3.3**	**3.4**
Income:							
Income - ROC	127.3	0.0	0.0	0.0	2.3	5.5	5.5
Income - PPA	194.5	0.0	0.0	0.0	2.2	5.6	5.8
Total Income	**321.7**	**0.0**	**0.0**	**0.1**	**4.4**	**11.1**	**11.4**
Net Revenue Position	**208.8**	**0.0**	**0.0**	**0.1**	**3.2**	**7.8**	**8.0**
Financing Costs:							
Principal Repayment	101.8	0.0	0.0	0.0	0.3	2.2	2.3
Interest Costs	74.3	0.0	0.0	0.4	3.0	4.7	4.6
Total Financing Costs	**176.1**	**0.0**	**0.0**	**0.4**	**3.3**	**6.9**	**6.9**
Lost Income:							
Rental Income	3.2	0.0	0.0	0.0	0.1	0.1	0.1
Net Profit & Loss	**29.5**	**0.0**	**0.0**	**-0.4**	**-0.2**	**0.7**	**0.9**

6.2.12 Profit and Loss Summary: All Solar, Option 1, Delayed

	Total	1 2012.13	2 2013.14	3 2014.15	4 2015.16	5 2016.17	6 2017.18
Expenditure							
Capital Costs:		**£m**	**£m**	**£m**	**£m**	**£m**	**£m**
- Install Costs	73.5	0.0	0.0	0.0	15.5	58.1	0.0
- Grid Connection	10.0	0.0	0.0	0.0	3.0	7.0	0.0
- Development Costs	3.8	1.1	0.8	1.5	0.4	0.0	0.0
- Contingency	15.1	0.0	0.0	0.0	3.8	11.3	0.0
Total Capital Costs	**102.4**	**1.1**	**0.8**	**1.5**	**22.7**	**76.3**	**0.0**
Revenue Expenditure:							
- O&M	78.4	0.0	0.0	0.0	0.0	1.0	2.3
- Insurance	11.8	0.0	0.0	0.0	0.0	0.2	0.4
- Business Rates	12.3	0.0	0.0	0.0	0.0	0.2	0.4
- Land Drainage Levy & Contingency & Contingency	12.8	0.0	0.0	0.0	0.0	0.1	0.4
Total Revenue Expenditure	**115.4**	**0.0**	**0.0**	**0.0**	**0.1**	**1.4**	**3.4**
Income:							
Income - ROC	120.4	0.0	0.0	0.0	0.1	2.3	5.2
Income - PPA	200.4	0.0	0.0	0.0	0.1	2.5	5.9
Total Income	**320.8**	**0.0**	**0.0**	**0.0**	**0.2**	**4.8**	**11.0**
Net Revenue Position	**205.4**	**0.0**	**0.0**	**0.0**	**0.1**	**3.4**	**7.6**
Financing Costs:							
Principal Repayment	102.4	0.0	0.0	0.0	0.0	0.3	2.2
Interest Costs	78.8	0.0	0.0	0.1	0.4	3.1	5.0
Total Financing Costs	**181.2**	**0.0**	**0.0**	**0.1**	**0.4**	**3.4**	**7.1**
Lost Income:							
Loss of Rental Income	3.3	**0.0**	**0.0**	**0.0**	**0.0**	**0.1**	**0.1**
Net Profit & Loss	**21.0**	**0.0**	**0.0**	**-0.1**	**-0.4**	**-0.2**	**0.4**

6.2.13

6.3

6.3.1

Interest costs are incurred in early years but are small and therefore not apparent in the above tables.

Detail Summary November 2012 to September 2013 position:
Option 2: Solar and Wind, No delay Scenario

It should be noted that only solar farms are delayed and the wind farms are assumed not.

6.3.2

	November 2012						September 2013 NO DELAY						Difference					
Combined	**AF Solar**	**NF Solar**	**MF Solar**	**NF Wind**	**MF Wind**	**Total**	**AF Solar**	**NF Solar**	**MF Solar**	**NF Wind**	**MF Wind**	**Total**	**AF Solar**	**NF Solar**	**MF Solar**	**NF Wind**	**MF Wind**	**Total**
MW Installed	**8.0**	**31.0**	**18.0**	**27.0**	**9.0**	**93.0**	**7.2**	**37.0**	**26.5**	**12.3**	**6.2**	**89.2**	**-0.8**	**6**	**8.5**	**-14.7**	**-2.9**	**-3.8**
	£m	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**
Capital Costs	13.8	50.5	27.8	44.5	15.3	**151.9**	10.6	45.4	34.8	17.3	8.6	**116.7**	-3.2	-5.1	7.0	-27.2	-6.7	-35.2
- Install Costs	12.0	46.5	24.0	40.5	12.0	**135.0**	6.5	33.3	23.9	14.0	7.0	**84.6**	-5.5	-13.2	-0.1	-26.5	-5.0	-50.4
- Grid Connection	1.5	2.5	2.5	2.5	2.5	**11.5**	1.8	4.0	4.3			**10.0**	0.3	1.5	1.8	-2.5	-2.5	-1.5
- Development Costs	0.3	1.5	1.3	1.5	0.8	**5.4**	0.4	1.8	1.1	1.3	0.6	**5.1**	0.1	0.2	-0.2	-0.2	-0.2	-0.3
- Contingency							1.9	6.4	5.6	2.0	1.0	**17.0**	1.9	6.4	5.6	2.0	1.0	17.0
Operating Costs																		
- O&M	7.2	28.6	10.3	24.7	5.2	**75.9**	6.6	34.8	24.7	9.7	4.8	**80.7**	-0.5	6.3	14.4	-15.0	-0.3	4.8
- Insurance	1.5	5.6	2.2	4.9	1.2	**15.5**	1.2	5.1	3.9	1.9	1.0	**13.1**	-0.3	-0.5	1.7	-2.9	-0.2	-2.3
- Business Rates	1.1	4.4	6.6	3.8	3.3	**19.1**	1.0	5.5	3.9	6.5	3.2	**20.1**	-0.1	1.1	-2.7	2.7	-0.0	1.1
- Land Drainage Levy & Contingency							1.1	6.4	4.0	2.6	1.3	**15.3**	1.1	6.4	4.0	2.6	1.3	15.3
Interest	8.4	30.6	14.2	27.5	7.9	**88.6**	7.0	33.7	25.4	13.4	6.7	**86.1**	-1.3	3.1	11.1	-14.2	-1.2	-2.4
Total Expenditure	31.9	119.7	61.2	105.3	32.8	**351.0**	27.5	131.0	96.7	51.3	25.6	**332.2**	-4.4	11.3	35.6	-54.1	-7.2	-18.7
Income - ROC	11.8	45.8	34.8	40.7	17.4	**150.5**	12.02	56.82	41.6	43.1	21.6	**175.1**	0.2	11.1	6.8	2.4	4.2	24.5
Income - PPA	22.8	88.1	85.4	78.4	42.7	**317.5**	17.1	87.5	63.9	111.0	55.5	**335.0**	-5.7	-0.6	-21.5	32.5	12.8	17.4
Total Income	34.6	133.9	120.2	119.2	60.1	**468.1**	29.1	144.3	105.5	154.1	77.0	**510.0**	-5.6	10.4	-14.7	34.9	16.9	42.0
Net Project Income	2.7	14.2	59.1	13.8	27.3	**117.1**	1.5	13.3	8.8	102.8	51.4	**177.8**	-1.2	-0.9	-50.3	89.0	24.1	60.7
Loss of Rental Income	0.3	1.7	-	0.9	-	**2.9**	0.3	1.8	1.1	-	-	**3.2**	-0.0	0.1	1.1	-0.9	0.0	0.3
Net Income to PCC	2.4	12.5	59.1	12.9	27.3	**114.2**	1.3	11.6	7.6	102.8	51.4	**174.7**	-1.2	-1.0	-51.4	89.9	24.1	60.4
Net Present Value	1.6	7.1	26.4	**7.3**	12.1	**54.4**	0.7	5.8	4.3	36.0	18.0	**64.9**	-0.8	-1.3	-22.1	28.7	5.9	10.4

6.3.3

6.3.4

6.3.5

Total expenditure is down overall because:

- Total wind capacity has been reduced hence reducing the installation and Operation & Maintenance costs for the wind farms

- To maximise the potential energy generated, solar capacity has been increased leading to an increase in O&M costs

6.3.6

The contingency item under capital costs include:

- upward movement in the installation costs (such as needing to provide a particular frame specification such as black anodised and 2m in height) for the solar farms
- potential uplift in grid connection costs which are "front loaded" onto the solar farms and hence there is no grid costs for the wind farms.
- any potential uplift in development costs which covers all adviser fees, cost of surveys such as archaeology, soil grading, council staff time, planning, procurement and development costs

6.4

The land drainage levy and contingency line within operating costs includes cover for:

- land drainage levy
- community benefit fund where the wind and solar have different rates, the former generating more than the latter as wind farms generate more power on average than solar farms
- compensation to tenant farmers

Total income is increased overall because:

- the solar farms increase in capacity exceeds the reduction in capacity of the wind farms
- the reduction in wind farm capacity has been compensated somewhat due to the turbine size generating a more optimum performance yield at the wind speeds available

Further detail of the individual plant cost breakdown is provided for in Appendix 10.8.

Detail Summary November 2012 to September 2013 position:
Option 2: Solar and Wind, Delayed Scenario

		November 2012						September2013 DELAYED						Difference					
	Combined	AF Solar	NF Solar	MF Solar	NF Wind	MF Wind	Total	AF Solar	NF Solar	MF Solar	NF Wind	MF Wind	Total	AF Solar	NF Solar	MF Solar	NF Wind	MF Wind	Total
	MW Installed	**8.0**	**31.0**	**18.0**	**27.0**	**9.0**	**93.0**	**7.2**	**37.0**	**26.5**	**12.3**	**6.2**	**89.2**	**-0.8**	**6**	**8.5**	**-14.7**	**-2.9**	**-3.8**
6.4.1		£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m	£m
	Capital Costs	13.8	50.5	27.8	44.5	15.3	**151.9**	10.6	45.8	35.0	17.3	8.6	**117.3**	-3.2	-4.7	7.2	-27.2	-6.7	-34.6
	- Install Costs	12.0	46.5	24.0	40.5	12.0	**135.0**	6.5	33.3	23.9	14.0	7.0	**84.6**	-5.5	-13.2	-0.1	-26.5	-5.0	-50.4
	- Grid Connection	1.5	2.5	2.5	2.5	2.5	**11.5**	1.8	4.0	4.3			**10.0**	0.3	1.5	1.8	-2.5	-2.5	-1.5
	- Development Costs	0.3	1.5	1.3	1.5	0.8	**5.4**	0.4	2.1	1.3	1.3	0.6	**5.7**	0.1	0.6	-0.0	-0.2	-0.2	0.3
	- Contingency							1.9	6.4	5.6	**2.0**	**1.0**	**17.0**	1.9	6.4	5.6	2.0	1.0	17.0
6.4.2	Operating Costs																		
	- O&M	7.2	28.6	10.3	24.7	5.2	**75.9**	6.8	35.6	25.4	9.7	4.8	**82.4**	-0.4	7.1	15.1	-15.0	-0.3	6.4
	- Insurance	1.5	5.6	2.2	4.9	1.2	**15.5**	1.2	5.3	4.0	1.9	1.0	**13.4**	-0.3	-0.4	1.8	-2.9	-0.2	-2.1
	- Business Rates	1.1	4.4	6.6	3.8	3.3	**19.1**	1.1	5.6	4.0	6.5	3.2	**20.4**	-0.0	1.2	-2.6	2.7	-0.0	1.3
6.4.3	*- Land Drainage Levy& Contingency*							1.2	6.3	4.1	2.6	1.3	**15.4**	1.2	6.3	4.1	2.6	1.3	15.4
	Interest	8.4	30.6	14.2	27.5	7.9	**88.6**	7.9	35.3	27.1	13.4	6.7	**90.3**	-0.5	4.8	12.8	-14.2	-1.2	1.7
	Total Expenditure	31.9	119.7	61.2	105.3	32.8	**351.0**	28.7	133.9	99.6	51.3	25.6	**339.1**	-3.2	14.2	38.5	-54.1	-7.2	-11.8
	Income - ROC	11.8	45.8	34.8	40.7	17.4	**150.5**	11.42	53.64	39.4	43.1	21.6	**169.1**	-0.4	7.9	4.6	2.4	4.2	18.6
6.4.4	Income - PPA	22.8	88.1	85.4	78.4	42.7	**317.5**	17.6	90.0	66.1	111.0	55.5	**340.2**	-5.2	1.9	-19.3	32.5	12.8	22.7
	Total Income	34.6	133.9	120.2	119.2	60.1	**468.1**	29.0	143.7	105.5	154.1	77.0	**509.4**	-5.6	9.8	-14.7	34.9	16.9	41.3
6.4.5	**Net Project Income**	2.7	14.2	59.1	13.8	27.3	**117.1**	0.3	9.8	5.9	102.8	51.4	**170.2**	-2.4	-4.4	-53.2	89.0	24.1	53.1
	Loss of Rental Income	0.3	1.7	-	0.9	-	**2.9**	0.3	1.8	1.2	-	-	**3.3**	-0.0	0.1	1.2	-0.9	0.0	0.4
	Net Income to PCC	2.4	12.5	59.1	12.9	27.3	**114.2**	0.0	8.0	4.7	102.8	51.4	**166.9**	-2.4	-4.6	-54.3	89.9	24.1	52.7
6.4.6	**Net Present Value**	1.6	7.1	26.4	**7.3**	12.1	**54.4**	0.3	4.1	2.8	36.0	18.0	**61.1**	-1.3	-3.0	-23.7	28.7	5.9	6.7

When compared with the model in 6.3:

Total expenditure has increased because of:

- Interest costs increasing due to the delay of the public inquiry
- O&M and insurance costs have increased due to inflation over the duration of the delay

- Development costs have increased to cover the public inquiry

However in relation to the November 2012 position, this scenario represents an overall decrease in total expenditure.

6.4.7 In terms of total income this has decreased slightly due to a drop in the ROC banding for the solar farms. This has been compensated in part by the wind farm revenue generated and the inflationary uplift on the PPA for the solar farms over the duration of the delay.

Further detail of the individual plant cost breakdown is provided for in Appendix 10.9.

It should be noted that in the table above, America Farm is shown as breaking even (i.e. a Net income of £0 to PCC) however, in the appendix, the actual position is a loss of £60,000.

This is a rounding error that is in the table above, whilst Appendix 10.9 shows the detailed position assuming that the contingency has to be used and hence the loss.

Profit and Loss Summary: Solar / Wind , Option 2, No Delay

6.4.8

		1	2	3	4	5	6
Expenditure	**Total**	**2012.13**	**2013.14**	**2014.15**	**2015.16**	**2016.17**	**2017.18**
Capital Costs:	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**	**£m**
- Install Costs	84.6	0.0	0.0	16.0	47.6	21.0	0.0
- Grid Connection	10.0	0.0	0.0	3.5	6.5	0.0	0.0
- Development Costs	5.1	1.5	1.3	2.0	0.4	0.0	0.0
- Contingency	17.0	0.0	0.0	4.2	9.8	3.0	0.0
Total Capital Costs	**116.7**	**1.5**	**1.3**	**25.7**	**64.3**	**24.0**	**0.0**
Revenue Expenditure:							
- O&M	80.7	0.0	0.0	0.0	0.9	2.1	2.4
- Insurance	13.1	0.0	0.0	0.0	0.1	0.3	0.4
- Business Rates	20.1	0.0	0.0	0.0	0.1	0.4	0.6
Land Drainage Levy & Contingency	15.3	0.0	0.0	0.0	0.1	0.5	0.5
Total Revenue Expenditure	**129.3**	**0.0**	**0.0**	**0.0**	**1.2**	**3.2**	**3.9**
Income:							
Income - ROC	175.1	0.0	0.0	0.0	2.1	5.4	7.4
Income - PPA	335.0	0.0	0.0	0.0	2.0	5.8	9.0
Total Income	**510.0**	**0.0**	**0.0**	**0.1**	**4.1**	**11.2**	**16.4**
Net Revenue Position	**380.7**	**0.0**	**0.0**	**0.1**	**3.0**	**7.9**	**12.5**
Financing Costs:							
Principal Repayment	116.7	0.0	0.0	0.0	0.3	2.0	2.6
Interest Costs	86.1	0.0	0.0	0.5	2.8	4.9	5.4
Total Financing Costs	**202.9**	**0.0**	**0.0**	**0.5**	**3.1**	**6.9**	**8.0**
Lost Income:							
Loss of Rental Income	3.2	0.0	0.0	0.0	0.1	0.1	0.1
Net Profit & Loss	**174.7**	**0.0**	**0.0**	**-0.4**	**-0.2**	**1.0**	**4.4**

Profit and Loss Summary: Solar / Wind , Option 2, Delay

		1	2	3	4	5	6
	Total	**2012.13**	**2013.14**	**2014.15**	**2015.16**	**2016.17**	**2017.18**
Expenditure							
Capital Costs:		**£m**	**£m**	**£m**	**£m**	**£m**	**£m**
- Install Costs	84.6	0.0	0.0	0.0	14.6	70.1	0.0
- Grid Connection	10.0	0.0	0.0	0.0	3.0	7.0	0.0
- Development Costs	5.7	1.5	1.3	2.1	0.8	0.0	0.0
- Contingency	17.0	0.0	0.0	0.0	3.7	13.3	0.0
Total Capital Costs	**117.3**	**1.5**	**1.3**	**2.1**	**22.1**	**90.3**	**0.0**
Revenue Expenditure:							
- O&M	82.4	0.00	0.0	0.0	0.0	1.0	2.4
- Insurance	13.4	0.0	0.0	0.0	0.0	0.2	0.4
- Business Rates	20.4	0.0	0.0	0.0	0.0	0.2	0.6
- Land Drainage Levy & Contingency	15.4	0.0	0.0	0.0	0.0	0.2	0.5
Total Revenue Expenditure	**131.6**	**0.0**	**0.0**	**0.0**	**0.1**	**1.6**	**3.9**
Income:							
Income - ROC	169.1	0.0	0.0	0.0	0.1	2.7	7.1
Income - PPA	340.2	0.0	0.0	0.0	0.1	3.2	9.0
Total Income	**509.4**	**0.0**	**0.0**	**0.0**	**0.2**	**5.9**	**16.1**
Net Revenue Position	**377.8**	**0.000**	**0.0**	**0.0**	**0.1**	**4.3**	**12.2**
Financing Costs:							
Principal Repayment	117.3	0.0	0.0	0.0	0.0	0.3	2.5
Interest Costs	90.3	0.0	0.0	0.1	0.5	3.5	5.7
Total Financing Costs	**207.6**	**0**	**0.0**	**0.1**	**0.5**	**3.9**	**8.2**
Lost Income:							
Loss of Rental Income	3.2	**0.0**	**0.0**	**0.0**	**0.1**	**0.1**	**0.1**
Net Profit & Loss	**167.0**	**0.0**	**0.0**	**-0.1**	**-0.5**	**0.3**	**3.9**

6.4.9

6.5

6.5.1

6.5.2

6.5.3

6.5.4

6.5.5

6.5.6 Interest costs are incurred in early years but are small and therefore not apparent in the above tables.

Financial Model Robustness

6.5.7 The outputs presented in this report and in the appendices show how through the process of development, greater detail has been secured with regards pricing of power and incentives.

6.6 Council has also included a generous contingency to cover any unforeseen circumstances that may impact the development and the scheme remains viable.

6.6.1 In addition, the Council has responded to feedback from the Local Planning Authority and amended the scheme as evidenced by the reduction in capacity of the wind farms and the solar farm on America Farm.

6.6.2 The reduction in capacity has been mitigated somewhat by the fall in installation prices for both wind and solar technology of late. This has contributed to the ongoing viability.

6.6.3 With regards sensitivity analyses, Council continues to test the model on a regular basis covering areas such as price volatility around installation rates, power purchase, community benefit fund, indexation / inflation. All of which contributes to the continued robustness of the model.

6.6.4 The P&L positions provided for

- Option 1 delayed and non-delayed scenarios (see section 6.2.11 and 6.2.12)
- Option 2 delayed and non-delayed scenarios (see section 6.4.7 and 6.4.8)

6.6.5 Show that in the latter, the projects will start to be cashflow positive within year 4 of the development. In the case of the former, this is extended an extra year due to the hiatus in development activity whilst the proposals go through the public inquiry process.

Financial Risk: Market Volatility

6.6.6 Over the timeframe of the development of these schemes, the energy sector is likely to

experience volatility across the pricing of power and the incentive regime is due to change from ROC to Contract for Difference (CfD).

6.7

6.7.1 With respect to power price risk, as more renewable generation is built, the price of green power will experience greater competition and counterparties will likely revise their pricing terms both in price and length of contract.

6.7.2 To mitigate this particular risk, Council has been in commercial discussions with a variety of counterparties ranging from utility companies to green power companies to end users such as blue chip retailers. The pricing used in the model reflects the current market rates.

6.7.3 With respect to changes in the incentive regime, the CfD is still in its early days of inception and is not due to come into force until 2017, though this date is not fixed. At the same time, ROC will be phased out.

6.7.4 Developers of generating plant currently, such as the Council, will need to continuously monitor the regulatory landscape, and revise its financial models, in order to assess which incentive regime represents the best combination of stability and return.

Planned announcements to be made during the production of this report, by the Chancellor with regards the CfD pricing regime will be reviewed closely by the Council.

Planning Conditions Update: Archaeology

6.7.5 As part of the preplanning assessment of the three solar schemes, English Heritage asked the Council to carry out a set of archaeological assessments to better inform them of potential archaeology on site. Work commenced in October 2013 by Wessex Archaeology at Newborough and America Farm.

6.7.6 The intention was to combine the evaluation trenching and bore hole surveys to produce enhanced site interpretation and data. This was to provide PCC and English Heritage with sufficient baseline information on which to determine the significance of any heritage assets present within the sites and allow for a tailored mitigation strategy to be formulated.

6.8

6.8.1 The results at America Farm suggest whilst palaeoenvironmental deposits are present, anthropogenic activity is limited. There may be further evidence sealed within and below the palaeoenvironmental deposits. However, it is unlikely these will be affected during construction.

At Newborough, the investigation has uncovered evidence of probable prehistoric Roman settlement, medieval and post-medieval activity. The main focus of the archaeological interest lies to the north of Hill Farm where a small nucleated Roman farmstead has been found. A date is yet to be established for the potentially prehistoric features requiring further laboratory assessments by Wessex Archaeology. Council is waiting for an interim statement for the bore hole surveys by Wessex Archaeology.

6.8.2 The next stage of the archaeological investigations will be determined by PCC and English Heritage following meetings with them in January 2014. Additional details on the methodology used for the Archaeological Surveys can be found in Appendix 10.8

6.8.3 It should be noted that no archaeological surveys have been undertaken at Morris Fen as the Council is currently in discussions to see if access can be negotiated with the tenant. It is hoped this will be resolved early in the new year to enable Wessex Archaeology to complete the surveys.

Soil Surveys

6.8.4 Council is conducting soil surveys across the three sites (pending access negotiations for Morris Fen) to establish:

- The soil quality and what will happen to the soil quality (soil nutrient status) if the land is left

unfarmed for the next 25 years?

- What will happen to the soil quality (soil nutrient status) if the land continues to be intensively farmed for the next 25 years?
- Based upon the current soil quality, what do the farmers need to do to the land to farm it in its current state?

6.9 In order to minimise disruption to the farmers, the soil removed during the archaeology surveys where examined in accordance with:

6.9.1
- Soil Survey Field Handbook: Describing and Sampling Soil Profiles
- Soil Survey of England and Wales, Technical Monograph o. 5, 1976
- Soil Classification for Soil Survey
- Monographs on Soil Survey

6.9.2
- Butler, B E (1980) Clarendon Press, Oxford

Laboratory analysis may be required for soils from some sites. The reports outlining the results of these assessments for Farms of Newborough and America farm are due before the end of December 2014 so will be available in the New Year.

6.9.3

In addition, the tenant farmers association approached the Council in November 13 stating that they would be carrying out a similar soil assessment and asked to see the survey methodology that SES would be following. This was sent to them with the agreement that any survey they

6.9.4 conducted would be shared with the Council.

6.10

6.10.1

Planning Risk: Public Inquiry

6.10.2 The Committee will recall that in June 2013 the Secretary of State (SoS) wrote to the LPA indicating that he would consider 'calling in' for a public inquiry, the Morris Fen solar farm planning application should the Planning Committee be minded to grant planning permission.

6.10.3 The SoS would have 21 days in which to decide whether to call in the application. If, after that period, he did not call it in, planning permission could then be granted. If the application did get called in, then the decision would be made by one of the SoSs independent inspectors via a public inquiry process.

6.10.4

On average this could take up to 12 months before a decision is made. Given the interest shown by the SoS in the Morris Fen application, there is the possibility that he may decide to consider

6.10.5 calling in the remaining two sites.

The potential for call in is therefore a significant risk to the project but this has been factored into the financial model under the "delayed" scenarios presented earlier.

6.11 Planning Risk: Community Engagement

6.11.1 Council acknowledges that there is a section of the community that object to the proposals and who are supported by bodies such as the NFU.

Council will endeavour to continuously engage with the all stakeholders during the development process and has planned additional consultations prior to any planning addendums being

7.0 submitted.

7.1 As mentioned earlier, Council is creating a Strategic Working Group specifically for tenant farmers on its estate to not only engage with them about the energy park proposals but the future

8.0 sustainability of the estate both in terms of economics and environment.

8.1 Council is also putting significant effort into the assessment of alternative proposals brought to it

by stakeholders.

9.0

9.1 Proposals, such as Empower Community, which was brought to the attention of the Council by the Newborough Landscape Protection Group, have been ongoing and have included Empower Community assessing the Council's financial model. The focus of dialogue is now looking at how

9.2 both parties might collaborate.

9.3 **Legal Implications**

9.4 The decision of the Cabinet entitled Development of Ground Mounted Solar Photovoltaic (Pv) Panels (Solar Farms) and Wind Turbines - JUL12/CAB/059 authorised the further due diligence and studies around planning, environmental, technical and financial issues which form the subject-matter of this Report.

CONSULTATIONS

Consultation has been carried internally and with advisors in the preparation of this report.

NEXT STEPS

Will be determined by the outcome of the meeting.

BACKGROUND DOCUMENTS

America Farm Solar Planning Application: Reference 12 / 01904 / R3FUL

Morris Fen Solar Planning Application: Reference 12 / 01905 / R3FUL

Newborough Farm Solar Planning Application: Reference 12 / 01906 / R3FUL

16th September 2013 Scrutiny Commission for Rural Communities Report

10.0 APPENDICES

Appendix 1 - AECOM Dual Use Report

Appendix 2 - AECOM Alternative Sites – Planning Document Extract

Appendix 3 - ECH PV Potential on Landfill Sites

Appendix 4 - AECOM Statement of Community Involvement

Appendix 5 - AECOM Additional Survey – Archaeology / Soil Surveys Method Statement

Appendix 6 - PCC Individual PV Plant Cost Breakdown: Option 1 No Delay

Appendix 7 - PCC Individual PV Plant Cost Breakdown: Option 1 Delay

Appendix 8 - PCC Individual PV-WTG Plant Cost Breakdown: Option 2 No Delay

Appendix 9 - PCC Individual PV-WTG Plant Cost Breakdown: Option 2 Delay

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APPENDIX 1

AECOM Design + Planning
MidCity Place
71 High Holborn
London WC1V 6QS
United Kingdom
www.aecom.com

To	**Neal Kalita, Lee Collins & Michelle Drewery**
CC	**Rosie Vetter**
Subject	**Peterborough City Council Renewable Energy Project (PCC) Technical Note – Renewable Energy and Farming Integration**
From	**David Cassells**
Date	**13/11/21013**

Introduction

This Technical Note has been prepared in response to the Cabinet's resolution for the development of ground mounted solar photovoltaic (PV) panels (solar farms) and wind turbines; in particular on the integration of farming with renewable energy generation.

The note sets out AECOM's response to a report commissioned to provide independent advice on the feasibility of integrating farming with renewable energy generation. It also assesses the findings of the report against the Solar PV renewable energy proposals submitted to the LPA, and identifies potential issues, concerns and implications for the Proposals.

Background

At the Cabinet meeting held on 5 November 2012, Cabinet received a report seeking its approval to move to public consultation and final preparation stage culminating in the submission of planning applications for solar farms at America Farm, Morris Fen and the Farms of Newborough, all sites within the council's ownership and farming estate.

Cabinet considered the report and, amongst other things, requested that officers prepare a report assessing the feasibility of integrating farming with ground mounted solar.

AECOM was subsequently instructed by Peterborough City Council (PCC) to investigate the possibility of integrating farming and ground mounted solar on the aforementioned sites, and if the principle was deemed possible, suggest what types of farming would be suitable and complement the development, should planning permission be granted.

Farming Integration – Independent Report by Dr John Feltwell

It is important to note that in planning terms, the continued use of parts of each site for farming purposes (arable or grazing) does not require planning permission.

AECOM does not have a specific capability on farming techniques. Therefore, in determining the feasibility of farming integration, AECOM approached the National Farmers Union (NFU) to ascertain whether they were aware of any renewable energy generation and farming 'dual use' operations. The NFU advised that this kind of duel use operation is a relatively new concept in the UK but there are a few examples in Europe. Although the NFU considered that the principle was acceptable, they were not prepared to provide any assistance to PCC while their members were being affected by the renewable energy proposals.

Therefore, AECOM commissioned an independent report to investigate the feasibility of integrating ground mounted solar panels with either arable farming or grazing. This report, now referred to as "the Report" was prepared by Dr John Feltwell from 'Wildlife Matters'; a copy of which is attached at Appendix A.

The organization Wildlife Matters was set up in 1978 by Dr John Feltwell to further the work of conservation of the environment. As a consultant, John Feltwell is highly qualified in the disciplines of botany, zoology and EU law, and has published a number of books on the environment, ecology and conservation, and has extensive experience in the construction of solar farms in the UK.

A comprehensive review the Report is set out below.

Assessment & Consideration

The Report concludes that it would be economically beneficial and good for site biodiversity for PCC to have the solar sites grazed and cropped.

Area of land available for farming

Section 3 of the report discusses the constraints on a typical solar farm with regard to pursuing an integrated farming solution. The following points are noted:

- *Soil type is important as this can limit the stock or crops that can be used.* It is suggested that the results of the ongoing agricultural land classification survey may provide useful information in determining the soil type.
- *Areas around the edges of solar farms can become wildlife buffers.* This is expanded further in Section 4 of the report. The use of buffers has been central to the design of the three solar farms with buffers being provided in particular from drains (also incorporating the North Level Internal Drainage Board's requirements for access to their drains) and other features of biodiversity interest as well as areas which are difficult to populate with solar arrays. The Environmental Statements for the three solar sites outline habitat creation proposals within these buffers which are a key component of the mitigation and enhancement strategy. This strategy will form part of the Operational Environmental Management Plan (OEMP); and this Plan is to be secured by way of a suitably worded planning condition, should planning permission be granted.

It is the area outside of these buffers that can be exploited for grazing or arable farming. The section on arable farming provides further consideration for growing crops between the panels.

Grazing

The Environmental Statements currently refer to grazing as a potential option for controlling vegetation. If it is decided that grazing will be integrated with the generation of renewable energy the sites will need to be drilled six months prior to installation to ensure the vegetation is fully established prior to being shaded by the panels. Any grazing animal will not be introduced to the site until the installation is complete and the PV system is fully operational.

Which animals?

Section 11 of the Report discusses the stock that could be raised on the solar farms. From the table in Section 11.1, it is suggested that sheep grazing is preferable although llamas and apiaries could also be considered. The breed of sheep would need careful consideration and shorter breeds would be preferable as suggested in Section 8.9 of the Report.

Stocking rate

As Section 8.5 of the Report suggests, the stocking rate would be up to the competent farmer and would need to comply with welfare standards.

The biodiversity aims of the sites should also be taken into account when determining stocking levels. This would need to be set out in the OEMP. Section 8.13 refers to reduced stocking levels for sites which are important breeding areas for ground nesting birds. The sites do support birds which nest in open arable habitats therefore this may be relevant. However, it is uncertain if some birds would continue to use the sites if solar panels were in place and the habitat was changed from arable to grassland.

Protecting sheep and wiring

Appropriate controls would be put in place to prevent damage to wiring by sheep and in turn protect sheep from electrocution. All of the wires installed will be insulated and protected from animals, either via the specification of armored cabling or an appropriate cable conduit or duct. All elements of the PV mounting frame, cable ducts and associated metal work will be earthed for the purpose of lightning protection.

Timing / rotation of grazing

As suggested in Section 8.11, the timing and rotation of grazing will need to be considered carefully to balance the biodiversity aims of the sites with the economics of sheep grazing. Sections 8.12 and 8.15 discuss timing of grazing and rotation and these considerations would need to be set out in the OEMP alongside the biodiversity aims that will need to be achieved. In addition, AECOM has previously suggested a controlled paddock system which could be used to maintain structural diversity for biodiversity benefits. This could be considered alongside the rotation suggested in Section 8.15.

Arable farming

Land available for farming

The area of land within each site that could be used for arable farming has been calculated post construction. This is illustrated in the attached plan, Appendix B, which shows a typical section layout of the site, post installation, based on the drawings submitted with the planning applications. In detail, the gaps between the rows of panels are approximately 11.8m. Sufficient space will be required for the operator of the site to pass down either side of the panels (they will need to get in front and behind the rows) and for these purposes we have assumed a standard vehicle width of 2.5m. A 0.5m wide buffer was also included to protect the panels from damage by the vehicles. This would leave 5.8m wide area for arable farming between rows. Section 10.3 of the Report considers that this strip of land is *"sufficient to grow crops, subject to the soil being suitable, even though there will be some shading from the arrays to the south"* (shown as the red arrow in the attached plan).

Crop type

Section 10 of the Report considers which crops could be grown. Section 10.8 states that any crops grown would need to be restricted to a height of 0.7m to avoid to prevent overshadowing onto the panels. The table in Section 10.9 provides a list of crops which could be grown. Wheat and red/blackcurrants appear to be the least favorable options whereas vegetables seem to be preferred.

The Report also suggests other crops which could be grown including climbing fruit plants on security fences and fruit trees along hedgerows. These could be considered as part of the landscaping plan.

Risk of damage to panels

There is a risk of damage to panels from all crop types from both farm workers and vehicles if any of the listed crops are grown. Section 10.10 of the Report highlights that the turning and maneuvering skills of farmer operating the required farm machinery will be an important consideration as every effort will need to be made to avoid damage to the panels. This section also refers to narrow machines which could be used to work within the arable strips. Therefore through discussion and agreement with the farmer, it is considered that this risk could be managed.

Weed control

One point that Dr Feltwell's report does not address is that of weed control outside of the 5.8m arable strips, particularly if PCC do not wish to use herbicides. This issue would require careful consideration if arable farming between the panels was taken forward.

Impacts upon biodiversity gain

The key habitat loss is the arable farmland itself. This is likely to impact on farmland birds which currently use the sites 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[1]. 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.

If arable strips were put in place between the panels, this may be beneficial for the farmland birds, however, the habitat that would be created would be less optimal than the existing situation. Some farmland birds prefer open sites and may be deterred by the presence of the solar panels. They are likely to select adjacent fields for nesting and foraging.

The arable land could be managed for biodiversity gain, for example, by providing over-wintered stubble which would provide a food source for birds and small mammals during the winter[2]. Therefore it is considered that with appropriate management, additional land would not be required to mitigate for habitat loss. If arable farming between the strips is taken forward, Natural England and RSPB would need to be consulted on an alternative ecological mitigation strategy, including confirmation that additional land is not required to compensate for habitat loss, and this would need to be included in the ES addendums.

In addition, arable strips are unlikely to be as beneficial for protected species as neutral grassland therefore the overall biodiversity gain could be reduced from the preferred ecological mitigation strategy.

Conclusion

It is quite clear from this technical note and the Report, that it is feasible to integrate farming into the proposals using either option; arable or grazing, or by a joint farming package, and that these practices will benefit the Projects.

It is important to note however that neither the Report nor this note takes into consideration the potential operational issues such as site insurance; whether suitable insurance can be obtained for a solar farm site that incorporates farming is at this stage unknown. This and other operational issues can only be answered once it has been determined who will manage the sites.

[1] NB: Dr Feltwell's report refers to the security fence as the site boundary. This is not the case and areas outside of the security fence, which are within PCC's landownership, are integral to the ecological mitigation strategy.
[2] RSPB Farming for Wildlife: Over-wintered stubble (http://www.rspb.org.uk/Images/owstubble_england_tcm9-207535.pdf)

APPENDIX A: Farming Integration Report by Dr John Feltwell

'Farming Integration - The feasibility of solar PV renewable energy generation with either arable or grazing farming – with reference to Peterborough City Council's three solar farms.'

By

Dr John Feltwell, Wildlife Matters, Battle, East Sussex

1.0 Executive Summary

1.1 A review of the options indicates that it would be economically, sustainably and good for biodiversity for Peterborough City Council to have its solar sites grazed and cropped.

2.0 Introduction

2.1 This consultant was instructed by AECOM on behalf of Peterborough City Council to review the feasibility of the solar farms with arable and/or grazing in respect of three potential solar farms proposed by Peterborough County Council. It is understood that there is little published on the topic at the present time as it is a new concept.

3.0 The basic constraints on a typical solar farm

3.1 'Solar agriculture' has to work with the basic elements that are within a solar farm field which is essentially a farm field that reflects the different farming techniques that have been used for thousands of years.

3.2 The elements that farming on solar farms have to work with and around, on a typical solar farm field are a network of field(s), hedgerow(s), trees, ditches, streams, ponds. The original farm gate(s) access is also important, and sometimes insufficient for construction and on-going management.

3.3 The soil type is important, especially on marshy ground, which can limit what stock or crops can be used.

3.4 The soil grade is immaterial for solar farms though the tendency is to use poor grade soils, old airfields or other brownfield sites. There is also a move to use higher graded lands.[1]

3.5 The solar farm is really an open field with solar panels elevated off the ground on relatively small pedestals, leaving nearly all the field available for arable or stock. Depending on the proprietary type of solar arrays purchased at PCC they may be supported on either one or two pedestals per panel. There are always a few inverter buildings

[1] Roundtable conference on solar farms held at the National Trust headquarters, 17 September 2013.

(about 3x3m) and generators, but these occupy a very small footprint compared to the whole.

3.6 Around the edges of solar farms are often open grassy areas that become wildlife buffers.

4.0 How buffers work for nature conservation and arable

4.1 Buffers are areas of the field not used by the solar arrays, but are often ameliorated for wildlife.

4.2 One way or another the nature conservation on site revolves around buffers, where they can be accommodated and what can be done in them. In a sense each solar farm is different, but the principles of what can be done are explored here.

4.3 Buffers compliment the overall setting of the solar farm 'cushioning-it' into the countryside. If it sits well all its elements of nature conservation and grazing are harmoniously integrated with the solar arrays and the impact on the landscape is minimised.

4.4 There are three major areas that make up buffers,

i) around the edges
ii) between the array rows
iii) the oddly-shaped corners of fields or areas that are permanently like quagmires, that are difficult to populate with arrays.

4.5 The area under the arrays still remains green after construction and has some potential for agriculture, and the vegetation can grow up and through the gaps between each array panel. PCC are pursuing a non-chemical solution to vegetation control such as mowing or grazing.

4.6 Some companies put arrays right up to hedgerows, whilst others have a gap around the edges of the solar farm sufficient to drive around.

4.7 The nature conservation opportunities of buffers are great. Without any enhancements the buffer areas will sprout with vegetation immediately and will get out of control very quickly, sometimes with thistles, rushes and rough grasses (depending on what the soil and water content and disturbance of the land) which will trigger some means of control.

4.8 The abrupt change in land use from agriculture to solar farm is a benefit for nature conservation whether it is assisted by man or not.

4.9 How these buffer areas are exploited by farmers and how much is left for nature conservation are important considerations. The truth is that farming solar arrays is better for wildlife than the tradition of leaving headlands and beetle banks for wildlife since more acreage is available.

4.10 It is the commercialisation of these green buffer areas that is the subject of this report.

4.11 So what about the solar farm being a buffer as itself?

4.12 It could be said that the whole of the solar farm is a buffer with just the solar panels elevating above it. If left alone, or enhanced, the buffers contribute significantly to nature conservation and can assist colonisation of adjacent sites with wildlife.

4.13 Solar farm can also, *in toto,* be regarded as a buffer for any conserved area adjacent to the solar farm, for instance a Site of Special Scientific Interest (SSSI), ancient woodland or local wildlife site. Not only does the solar farm act as a buffer into which the wildlife of the adjacent habitat can infiltrate (almost immediately) but it saves the land from any other form of development (e.g. housing) for the next 20-30 years.

4.14 The oddly-shaped areas left on solar farms are perhaps the most interesting for nature conservation, as they are left for a variety of reasons such as

Reasons why marginal areas become buffer zones.
to avoid an area of archaeological interest,
to providing a 20m 'buffer' distance between the solar arrays and an ancient woodland or other nature conservation site,
to providing a 30m buffer for a badger set.
to avoid a high hedge or woods on south or west that gives shade
to give a good margin around an existing pond,
to working around the root protection area of a tree in the field,
to avoid marshy ground
to avoid a particularly tight corner
to create a 'generous' wildlife corridor[2]
to avoid drainage channels[3]

4.15 Whatever the nature conservation constraint, what is left is the area that can be exploited for arable or agriculture, though some of the protected features above can still be used for agriculture as before (when it was perhaps an intensively worked field).

4.16 The three PCC sites do have marginal areas and buffer areas around the margins that can be usefully used for nature conservation purposes.

[2] Community ownership of 7.8MW solar farm (Baden-Württemberg, Germany) May 2013. Renewables International, The Magazine. http://www.renewablesinternational.net/community-ownership-of-78-mw-solar-farm/150/510/62654/

[3] As per PCC's America Farm which has four main 'drains' crossing the site.

5.0 Addressing statutory body requirements, before considering farming use.

5.1 Generally speaking there are no constraints upon solar farms from statutory bodies after planning permission is granted, as Natural England (NE) would have channelled their views on wildlife via the Local Planning Authorities (LPA) and the LPA would have conditioned any nature conservation works that they deemed necessary. These conditioned works may have included such things as boxes for wildlife, hedge-planting with native species and the sowing of wildflower seed.

5.2 The grazing by animals is not often conditioned, if at all. However, the grazing by animals is regularly submitted as part of the planning application, and is presented as a dual use of the proposed solar farm, as electricity and sheep farming. The Environment Agency (EA) will have already made their consultations known to the LPA through the planning process for any watercourses, but rarely, if at all, are there conditions imposed to affect the solar farm, and which could affect arable or agriculture.

5.3 It is important to note that most (but not all) solar farms have gone through planning on the basis that a Site Environmental Management Plan (SEMP) has been drawn up which will have included any consideration for nature conservation. This is more likely, but not exclusively, on solar farms which have been the subject of Environmental Impact Assessments (EIA), or where the solar farm may have received more attention and searching questions from NE or EA, or both, because the potential site is close to an internationally important nature conservation site such as a Special Protection Area (SPA), Special Area for Conservation (SAC) or Ramsar site.

5.4 'Close' in this instance is regarded as being up to 15km from any EU site and generally affects sites that present potential grazing sites for wetland birds that are associated with SPAs[4].

6.0 Access is essential for services

6.1 There are two authorities that need access to the solar farm, whether it is stocked with animals or used for agriculture, the EA and the Fire Services. This consultant is informed by the Technical Department of AECOM that *'full access routes have been incorporated into the design for all three sites that will provide adequate access for both the EA and the fire service*.'

6.2 Watercourses (with or without water) are of keen interest for the EA for potential flooding implications, and for perpetual access considerations in the event of flooding, so there are implications on solar farms for access that have to be considered for arable and agriculture.

[4] Habitats Directive, 1992. Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora

6.3 Solar farms can burn[5] and do burn[6] so there is a need to permit access for the fire services though this is a rare event. If the solar farm is down in part to wheat in summer the effect of burning could be considerable.

6.4 The source of fire from possible electrical malfunction is not the only potential for fire, but there is a strong risk from grazing animals eating the leads that hang underneath the modules. It is clearly important to know if grazing will be part of the scenario before construction as it is easier to tie up the wires beforehand than after. Sheep feed and rest underneath solar farms and this consultant is not aware of any sheep causing fires on solar farms. On the contrary goats should never be run under solar farms as they would nibble everything and climb onto of the modules. This consultant is informed by the Technical Department of AECOM that '*The technical specification for the sites will require full conduit protection for all cables to prevent sheep or other wildlife from eating the cables*.'

6.5 Fire is clearly one item that needs to be considered on solar farms, if only for insurance purposes.

6.6 Watercourses (including ponds) are important to NE for the protected otters, protected Great Crested Newts, protected native crayfish and protected water voles but these species, properly considered in the planning process with suitable 'buffer' zones along the watercourses where necessary can live quite harmoniously with grazing and agriculture; as is the case of water voles at the Ebbsfleet solar farm in East Kent.[7]

6.7 NE, who provides advice as to how solar farms can be suitably created in the countryside[8], does not ordinarily have reasons to inspect waterways on solar farms.

6.8 Generally speaking there is plenty of space around and within a solar farm for wildlife to flourish. With the increasing trend to incorporate a suite of enhancement measures there needs to be a good balance between sheep stocking levels, and arable whichever way is chosen.

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[5] The Alternative Energy eMagazine. http://www.altenergymag.com/emagazine/2012/08/anything-can-go-wrong-on-a-solar-farm/1948. Lists 16 things that can go wrong on solar farms, including fire, under its item 'Anything can go wrong on solar farms')

[6] 650,000 solar panels declared fire risk http://www.solarpowerportal.co.uk/news/650000_solar_panels_declared_fire_risk_2356 They list 15 fires in Europe.

[7] Feltwell, J. 2013. Are photovoltaic solar arrays an influencing factor in avian mortality? The Newsletter of The Kent Field Club. February 20123. Number 77, p.18-27.

[8] Natural England, 2011. Solar parks: maximising environmental benefits. Natural England Technical Information Note TIN101. First edition 9 September 2011. On-line from www.naturalengland.org.uk.

6.9 PCC might consider providing controlled access to schools and colleges for educational purposes, and to serve the communities, to explain how local taxes have been used in implementing integrated solar, agriculture and biodiversity initiatives.

7.0 Biodiversity considerations

7.1 The biodiversity of a standard field used for growing a mono-crop such as wheat, oilseed rape, maize or field beans is species-poor.

7.2 Introducing solar panels into a field and not continuing with agriculture will result in an increase in biodiversity, but assisting the natural processes of plant succession will increase the biodiversity so that the original field will become biodiverse, or species-rich over time.

7.3 It has already been proven that solar parks can result in an increase in biodiversity, and can create new habitat (where before there might have been old military fields or intensive agriculture) that is then exploited by endangered plants and animals. [9]

8.0 Grazing

8.1 The management challenge is to get the balance right between promoting biodiversity and using the buffer areas for agriculture. Clearly growing crops and having grazing animals is not compatible on a solar farm unless the two are separated (by a simple wire fence) which is entirely feasible, and is being done on some farms.

8.2 There is a risk however that arable can hinder nature conservation objectives if over-done.

8.3 It is best to get the wildflower seeding established before grazing animals are put into a solar farm field as all biodiversity gains may be wiped out. The colour plan showing '*Best Practice Recommendations'* [10] as promoted in Germany, presents a vibrant and biodiverse habitat in a solar park within the countryside (showing otters, golden eagles, hares and squirrels). To this mix can be added grazers, carefully.

8.4 This consultant is informed by the Technical Department of AECOM that '*It is proposed that the sites will be drilled (assuming the sites will be used for grazing and not arable production) 6 months prior to the installation, to ensure the vegetation is fully established prior to being shaded by the panels. Any grazing animal will not be introduced to the site until the installation is complete and the PV system is fully operational.*'

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[9] German Renewable Energies Agency, 2010 Solar Parks – Opportunities for Biodiversity. Agentur fur Erneuerbare Energien http://www.unendlich-viel-energie.de/uploads/media/45_RenewsSpezial_Biodiv-in-Solarparks_ENGL.pdf

[10] http://www.unendlich-viel-energie.de/uploads/media/BiodivSolar_Best_practice_recommendations.jpg

8.5 The stocking rate for sheep on solar farms is up to the competent farmer and depends on the suitability of the existing habitat. Some solar farms do not have a water supply and one must be provided, the farmer being responsible to abide by defra's '*Code of Recommendations for the Welfare of Livestock: Sheep'* published in 2003[11]. The code does not stipulate the number of sheep per hectare, but it says:

> *'The number and type of sheep kept and the stocking rate and/or housing density should depend on the suitability of the environment, the capacity of the farm, the competence of the shepherd and the time available to carry out his or her duties. Good stockmanship is of paramount importance in all systems of sheep production.*

8.6 Sheep have been grazing solar farms for the last seven years, for instance in the city of Pocking (Lower Bavaria, Germany) (completed March 2006)[12], though it appears not to be a widespread practice.[13]

8.7 Shepherds with their flocks on solar farms can be seen on line on popular on-line sources of images, as well as[14], or for Germany.[15]

8.8 In the UK sheep grazing is often put down on the planning application as an option as the farmer may wish to continue with sheep grazing on the solar farm (if that was a previous land use, or as a future option). However that option has not always been taken up immediately so there are few examples. The issue of farming land use is not changed with solar, as it is often conditioned through the planning process to be returned to its former arable use, as inserting solar panels into a field is only a temporary measure, and sheep farming is a continuation of farming as normal.

8.9 The National Farmers Union (NFU) in their 2013 Conference told delegates that some farmers were being forced to register their solar

[11] Code of Recommendations for the Welfare of Livestock: Sheep'.2003. 28pp. http://adlib.everysite.co.uk/resources/000/015/571/PB5162.pdf

[12] Pocking. The world's largest photovoltaic solar power plant is in Pocking. http://www.solarserver.com/solarmagazin/anlage_0606_e.html

[13] The German Solar Industry Association has nothing on their website referring to grazing http://www.solarwirtschaft.de/en/media/browse/7.html

[14] Huff, J. (likely to be late 2011 or 2012) Solar Farm Grounds Management Vegetation Control. A blog by James Huff CEO, Abakus Solar USA http://www.abakus-solar.us/blog/solar-farm-pv-power-plant-grounds-management-vegetation-control/

[15] Pocking, *ibid.*

farms as industrial use, but suggested that the use of smaller sheep breeds would be suitable for continuation of farming methods.[16]

8.10 However, the preferable scenario for conserving the structure of the fabric of the habitat, and its flora, would be to have a shepherd on site with the sheep – a system which is more likely to happen on Continental Europe than the UK where the tradition is not widespread – to prevent over-grazing. If PCC choose the option of grazing they would need to ensure that the sheep are managed on site for short periods by an experienced livestock farmer.

8.11 A balance has therefore to be set between i) avoiding too much grazing, ii) nature conservation aims (especially if the site is open to the community from time to time – and needs to be biodiverse and look 'floristically nice') and iii) the economics of sheep farming on a solar farm. It is preferable to have an intermittent shepherd controlled grazing regime – in and out with sheep for short periods during the spring and summer, rather than putting sheep in all year which would destroy the habitat. It is appreciated that shepherding might be factor that is difficult to source in Peterborough. Stocking levels should err on the low to very low side, rather than high. Lambs could be put in for fattening for a few weeks during the summer.

8.12 According to the ADAS the following advice is given for the virtues of grazing at different times of the year.[17]

- *Light winter grazing which can increase bare ground allowing seeds, particularly from annuals, to germinate.*
- *Early spring grazing maintains areas of bare-ground and can check the growth and abundance of competitive herbaceous dicotyledons and grasses allowing seedlings to compete.*
- *Excluding grazing from mid-April to late-June will help annual flowering plants to set seed and help ground-nesting birds.*

8.13 Stocking levels for marshy ground (as the PCC sites appear to be) is recommended to be about 8 ewes/ha with ewes and lambs in early spring, or if it is, or the PCC sites become, '*an important breeding area for ground nesting birds, grazing should either be removed or at best reduced to 4 ewes/ha during mid-May and mid-July'*.(ADAS, 2009).

8.14 A successful integrated mix of the grazing and biodiversity enhancement would be economically viable. Remember that grazing is a vital part of the management of the site, and is a tool to obviate the

[16] NFU, 2013. Small sheep breeds solution to solar land use. http://www.fwi.co.uk/articles/01/03/2013/137937/small-sheep-breeds-solution-to-solar-land-use.htm

[17] ADAS, 2009. Management Guideline for Grassland in Environmental Schemes. http://www.eblex.org.uk/wp/wp-content/uploads/2013/04/managementguidelinesforgrasslandinenvironmentalschemes_210710-final-report.pdf

necessity to spray herbicide to control the rampant growth. PCC has opted for no chemical intervention. The correct balance will aspire to PCC's sustainability credentials as a 'sustainable city' and a UK Environment City'.

8.15 In an ideal scenario the sheep would be brought onto site at suitable times of the year to control the rampant growth of plants, perhaps before the spring growth and at the end of the summer to remove old stems and 'thatch'. Other options are available. Sheep could also be rotated around each of the three sites. Sheep could also be kept within certain quarters of each site by wire fences, so that all parts of each site are sequentially grazed.

8.16 Clearly there is a risk of electrocution that needs to be addressed. The defra code also says the following:

> *The law requires that sheep should have access to suitable feed in sufficient quantity and sufficient fresh, clean water each day. Ideally, water should be available at all times and most particularly during lactation. It is not acceptable to rely on the water content of feedstuffs, including roots.*

8.17 Agricultural management of solar farms is a new industry and very little is published on the subject, sufficient for James Huff, CEO Abakus Solar USA (who also install in Europe) to note that *'a google search for 'solar farm grounds management' did not yield any comprehensive data*.[18] James Huff mentioned that the sheep '*exist in a sort of symbiotic relationship'* with the PVs as they rest in the shade under the PVs and feed there as well, and continues..

> *Economically, a solar/sheep farm provides the investors with a multiple-use investment property that will not interfere with the agricultural zoning of a property and provides a secondary income stream.*

8.18 Huff states that sheep need to be protected from the solar wiring, and the wiring needs to be protected from the sheep; the best scenario at PCC would be for all wires to be within a conduit.

8.19 In the UK one major solar construction company, Lightsource started to introduce its '*Lightsource Grazing Policy'* across its sites in early 2013.[19] Lightsource says that '*the solar farm panel and infrastructure typically occupy about 30% of the total rented area'.*[20] This is the case where developers do have a space between arrays,

[18] Huff, J. *ibid.*

[19] Solar Power Portal. 18 February 2013. http://www.solarpowerportal.co.uk/case_studies/local_wildlife_left_undisturbed_by_devon_solar_farm_development

[20] Sheep grazing on Solar Farms. http://www.lightsource-re.co.uk/sheep-grazing-on-solar-farms/

as the PCC are proposing, but in some cases the arrays are sited very close together and not accessible by a tractor.

8.20 The norm across England and Wales is for static solar farms[21], and across Europe but there is at least one that has trackers (panels that move to track the sun), such as the Gabardan Solar Park[22] in southwest France. In these cases with moveable panels sheep grazing would not necessarily be appropriate or manageable.

9.0 Implications of decommissioning and how it relates to feasibility of PVs

9.1 Decommissioning the solar panels after 25 years is a cost factor that needs to be addressed at the planning stage, as commitments to recycle materials and abide by the WEEE Regulations[23] are important. Often these are proposed at the planning stage, and have to be addressed before planning permission is granted.

9.2 In the case of the three PCC sites the decommissioning expenses are factored into the purchase price from the suppliers.[24] In other cases the manufacturers of the panels agree to take the panels back as part of their recycling measures.[25]

10.0 Which crops?

10.1 The gap between each row of arrays can be harnessed for agriculture, as well as the buffer zones around the outside of the solar farm, as in Figure WM01.

Figure WM01 Cross section through a series of three solar arrays (Plan supplied by AECOM)

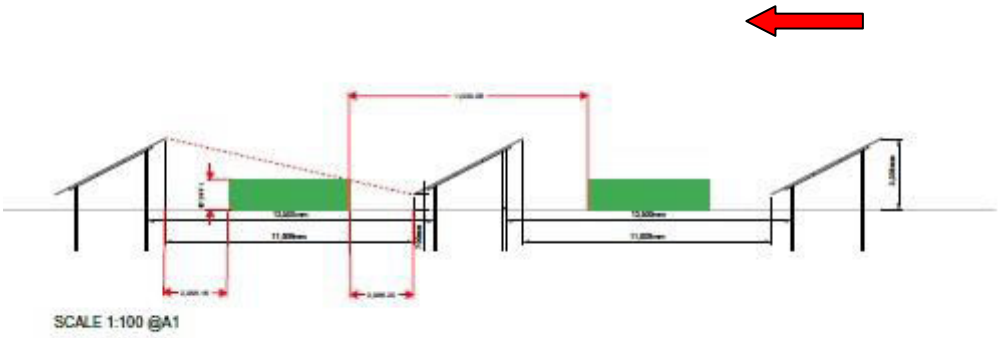
[21] However, a small solar farm at Scotland Farm, Dry Drayton, near Cambridge does track the sun and is claimed to be likely to be the first tracked solar farm in the England. 'Cambridge Farm has Solar Panels which turn to face the sun.' http://www.cla.org.uk/In_Your_Area/East/Regional_News_Archive/Renewable_Energy/Renewable_Energy/

[22] EDF Energies Nouvelles commissions 67.2MW plant in France utilizing First Solar panels http://www.pv-tech.org/news/edf_energies_nouvelles_commissions_67.2mw_plant_in_france_utilizing_first_s

[23] The Waste Electronic and Electrical Equipment Regulations 2006 aim to reduce the amount of WEEE being disposed of and require EEE producers to pay for its reuse, recycling and recovery.

[24] Freedom of Information Request, 2012. FOI-12-0726 http://www.peterborough.gov.uk/PCC/FOI/Docs/foi-12-0726-R.pdf

[25] Lieberose Solar Park (Germany) a juwi installation. http://www.juwi.com/solar_energy/references/lieberose_solar_park.html



10.2 The above plan shows a cross section through three solar arrays with the space available for growing crops coloured in green (5.8m wide for the movement of agricultural vehicles).[26]

10.3 This 5.8m wide central strip between each row is sufficient to grow crops, subject to the soil being suitable, even though there will be some shading from the arrays to the south (shown as red arrow above). This is balanced by the advantages of the panels facing southwards (as all solar farms are – but on these PCC sites the land is flat meaning that shading effects may be significant), and by a natural sprinkler system of water falling off the arrays on the south (low) side of the row when it rains. Although hydrological studies that this consultant has seen suggests that there will be no change in hydrology[27] of the site overall, sudden heavy precipitation may cause some soil erosion on crops which are growing in cultivated soil within the 'drip-zone', rather than a more stable grass mix. However, this is not regarded as an impediment to growing crops between arrays in the opinion of this consultant, as the watering is rather complimentary to the arable task proposed.

10.4 The type of solar panels has not yet been decided yet for the PCC sites (as this consultant is informed), so the water run-off rates and distribution will vary according to the type used. If small thin-films panels are used there are gaps between each panel through which water falls. If other types of panels are used there is a long unbroken slope down which the water runs and a large proportion of water falls off the lowest point of the arrays, on the south side.

10.5 The way that the solar arrays are arranged is that at the down slope of the arrays a lot of water is delivered, and at the back of the arrays there is only the incident rain that falls. This creates a micro-climate that under the arrays is shaded and sheltered but not sufficient to stop plant growth. The vegetation under arrays always grows.

[26] This is based a drawing submitted in the planning application as gaps between the panels being 11.8m and allowing for a standard vehicle width of 2.5m and allowing a 0.5mm wide buffer to protect the arrays from vehicles (from Instructions letter from AECOM).

[27] This consultant is not a hydrologist and this statement would need to be substantiated by a hydrologist.

10.6 Vegetables that could be grown between the arrays

10.7 The following is a non-exhaustive list of crops that could grow between the arrays.

10.8 The only restraint is that they must not reach higher than 700mm which is the height of the lowest point of the solar panels (to avoid obscuring the light that falls on the panels).

10.9 Farm machinery has a width of 5.8m to work to work with between each row, which will permit several rows of the following suggested crops.

VEGETABLE CROP	Advantages	Disadvantages
Turnips	Commercially attractive	Damage by workers
Beetroot	Commercially attractive	Damage by workers
Mangle worzels	Commercially attractive	Damage by workers
Parsnips	Commercially attractive	Damage by workers
Wheat (short varieties)	Commercially attractive	Need mini-harvester Damage by workers
Red & Blackcurrants	Commercially attractive	Needs more light than can be provided unless special low light tolerant cultivars available Damage by workers
Spinach	Commercially attractive	Damage by workers
Beet	Commercially attractive	Damage by workers

10.10 The land will need to be tilled, drilled and crops harvested, and access to the rows can be done using a regular tractor towing an appropriate appliance. Turning and manoeuvring by skilled drivers will be important issues to consider to avoid damaging assets. There are narrow machines suitable for being drawn between arrays. For instance the new Kverneland Accord has a telescopic frame which, with the flick of a button, can cultivate a three metre wide strip.[28] There is no need for the traditional wide machines used for agricultural work in large open fields.

10.11 If PCC wish to go organic to meet their sustainability goals then the ground would have to be left for two years to complete conversion and gain organic status. The economics and commercial benefits of the arable exercise along thin strips will have to be adjusted to take into consideration these effects.

10.12 Climbing plants on security fences

10.13 Crops that could be grown up security fences include the following. All solar farms have security fences and they can be used profitably for growing climbing plants; and they would have a dual advantage of helping to screen the solar farm. Having vegetation on the security fences would not have a negative effect on security, but would have a benefit in the landscape helping to providing a screen.

[28] *Farm Machinery*, October 2013, and see supplier, http://www.kvernelandgroup.com/welcome/

CLIMBING CROPS	Advantages	Disadvantages
Grapevines	Commercially attractive	None
Kiwi plants	Commercially attractive	None
Raspberry	Commercially attractive	None
Blackberries	Commercially attractive	None

10.14 Fruit trees along hedgerows

10.15 Screening by native trees and shrubs is nearly always done around solar farms (in gaps of existing hedgerows, or where hedgerows used to be), but there is an opportunity to plant orchard trees instead, as Habitat Aid suggests. [29] There are dwarf forms of nearly all top fruits available commercially, that have been selected for pots and on patios which will be ideal grown in rows in the ground between the arrays.

11.0 Stock that could be raised in the solar farm:

11.1 RSPB believes that grazing by sheep, chickens or geese should be acceptable on solar farms rather than spraying, mulching or mowing.[30] Lightsource have suggested llamas.[31]

ANIMAL STOCK	Advantages	Disadvantages
Apiaries	Commercially attractive. Secure within the perimeter fence; honey production for the community; pollination services provided for the community. Extra income for farmer, or for local beekeeper's society	None
Chickens	Possibly commercially attractive (need to trial them)	Messy birds; perching on struts on underside of panels; pecking wiring.
Geese	Commercially attractive Food; good for warning off Intruders (need to trial them)	Aggressive and a threat to on site workers
Ducks	Commercially attractive (need to trial them)	Need pond
Sheep	Commercially attractive	Can over-graze
Llamas	Commercially attractive	None known

11.2 The three solar farms proposed for PCC are probably committed to the layout design as supplied to this consultant. Much depends on the type of solar panels purchased. The proposals by Fire Energy for solar panels carried high above the ground on large pedestals would

[29] Solar Farms – Biodiversity Hotspots? Blog from Habitat Aid of August 19 2013. http://www.habitataid.co.uk/blog/

[30] Solar Power, RSPB Briefing, March 2011. RSPB 2011 Solar_power_briefing_tcm9-273329

[31] Lightsource display at Solar Energy UK at the NEC Birmingham, 10 October 2013.

appear to make available a significant amount of more field available for arable or grazing – see the photograph in their website.[32]

12.0 Cutting up the conservation cake on solar farms

12.1 Calculating the land use of the solar arrays compared to the total size of the farm estate is sometimes important to understanding how much of the land can be given over to arable, grazing, solar or biodiversity enhancement.

12.2 In the case of a site at Stradishall Airfield Solar Farm (Suffolk) developed by Lark Energy only about 30% of each acre of 150 acres of grassland would be occupied by PVs, '*allowing the natural wildlife and grassland to flourish*'.

12.3 For the PCC sites the security fence is tightly around the arrays, leaving the surrounding fields to be managed as before, and outside any enhancements that could be imposed via the planning process. There are no significant areas of open space within the solar farms proposed that could be used exclusively for arable or grazing; so arable and grazing can take place only between the arrays.

12.4 For the PCC sites which has drains their ecology can be managed and monitored via the SEMP (though outside they would not be subject to either). The advantage of managing the drains for nature conservation is that the fruits of the conservation efforts could tie in well with the initiative promoted by Buglife-The Invertebrate Conservation Trust [33](based in Peterborough) for B-Lines through the countryside.

13.0 How sustainable are solar farms, especially for arable and grazing?

13.1 The three PCC sites are tightly enclosed in a perimeter fence that offers little in the way of marginal areas for exploitation for a range of agricultural practices. All three sites can be grazed successfully between the arrays.

13.2 All three sites can support enhancements for biodiversity, and if they all support grazing, and some arable too, that would address 'sustainability' as being a worthwhile option and on its way of being fully addressed.

13.3 Sustainability is promoted at three different levels, internationally, nationally and locally; as the United Nation states sustainability is "meeting the needs of the present without compromising the ability of

[32] China's Fire Energy to build 50MW solar plant in France. Dated 5 October 2012. http://www.wantchinatimes.com/news-subclass-cnt.aspx?cid=1102&MainCatID=&id=20120510000081

[33] Buglife-The Invertebrate Conservation Trust, www.buglife.org.uk

future generations to meet their own needs".[34] From a national perspective the NPPF has a "presumption in favour of sustainable development", and at a local county or city level there are always local sustainable initiatives, for instance PCC have their own 2010 Policy G03: Building the Sustainable Infrastructure of the Future – so that conditions for business, service and community prosperity and growth are integrated with Policy EC04 which promotes biodiversity. [35]

14.0 Financial feasibility

14.1 This consultant is not a financial expert or economist but the following general principles would seem to be clear.

- PCC will be using the electricity generated from the solar parks to power their buildings thereby reducing their carbon footprint, whilst upholding principles of sustainability.

- That PCC can either graze or cultivate their solar farms to bring crops to the marketplace.

14.2 The payback time to cover the manufacturing energy and transportation can be expected to be less than a year if certain thin-film panels are used; so this is a variable factor depending on type of panel and location, see[36] for further information.

14.3 The' Energy Payback Time (EPY)' has been replaced by the 'Energy Yield Ratio (EYR)'[37] which is the ratio of energy delivered by a system over its lifetime compared to the energy used to make it. In Central Northern Europe the ratio is 4 over a lifetime of 20 years and more than 7 in a sunnier place like Australia (MacKay, 2013).[38]

14.4 As PCC is embarking on a non-chemical use on the three solar farms, it can be expected that higher expenses can be expected for managing the site in the first few years (until an organic system is

[34] General Assembly 42/187. Report of the World Commission on Environment and Development http://www.un.org/documents/ga/res/42/ares42-187.htm

[35] Peterborough City Council, 2010. Local Area Agreement 2008 - 2011 (2010 Refresh). http://www.gpp-peterborough.org.uk/documents/LAARefresh200910GPP.pdf

[36] NFU Response to 'Are Solar Panels Sustainable' (14 Nov 2012) in FARMING FUTURES, NOW PART OF CEUKF. http://www.farmingfutures.org.uk/blog/nfu-response-%E2%80%9Care-solar-panels-sustainable%E2%80%9D. It reports ' a payback of 2-3 years for Northern European deployment. Either way, the majority of competently-installed PV systems will pay back their energy cost at least 10 times, on a timescale that is very relevant to climate change mitigation.'

[37] B.S. Richards_, M.E. Watt. 2007. Permanently dispelling a myth of photovoltaics via the adoption of a new net energy indicator. Renewable and Sustainable Energy Reviews 11 (2007) 162–172. http://www.inference.phy.cam.ac.uk/sustainable/refs/solar/Myth.pdf

[38] MacKay, D.J.C., 2013. Sustainable Energy – without the hot air. http://www.withouthotair.com/c6/page_42.shtml

NB. All web sites accessed 20 Sept 2013 - 2 October 2013.

established if this is regarded as the way forward) as the cultivation of crops between the arrays does not lend itself to economy of scale as the small strips have to be managed individually.

15.0 Conclusions

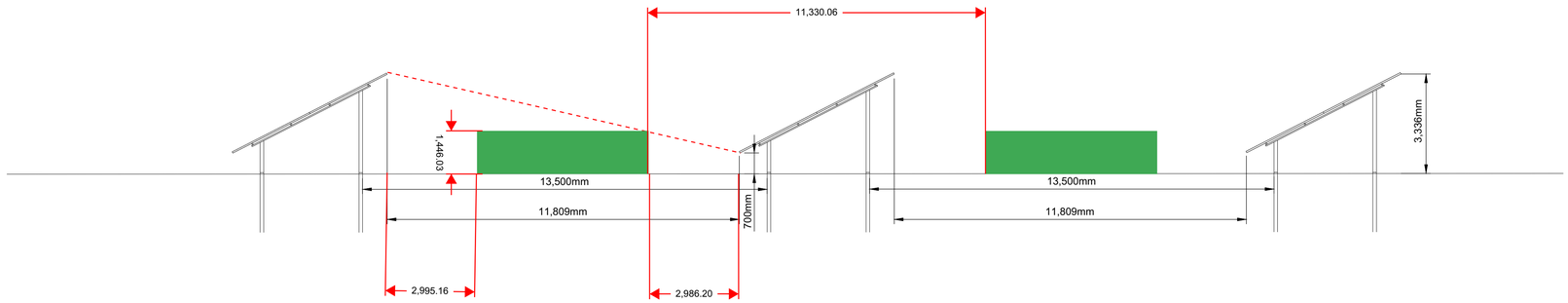
15.1 That PCC have many choices to commercially exploit their solar farms for agriculture.

Acronyms

EPY Energy Payback Yield
EYR Energy Yield Ratio
LPA Local Planning Authority
NPPF National Planning Policy Framework
PCC Peterborough County Council
RSPB Royal Society for the Protection of Birds
SEMP Site Environmental Management Plan
WEEE The Waste Electronic and Electrical Equipment Regulations 2006

Dr John Feltwell
Wildlife Matters Consultancy Unit
01424 830566 **Dated 14 October 2013**

APPENDIX B: Typical Cross Section Plan



SCALE 1:100 @A1

AECOM

PROJECT

PCC RENEWABLE ENERGY PROJECT

CLIENT

PETERBOROUGH CITY COUNCIL

Town Hall, Bridge Street
Peterborough, Cambs, PE1 1HG
01733 747474 tel DX 12310 Peterborough 1
www.peterborough.gov.uk

CONSULTANT

AECOM
MidCity Place, 71 High Holburn
LONDON, WC1V 6QS
+44 (0)20 7645 2000
+44 (0)20 7645 2099
www.aecom.com

NOTES

ISSUE/REVISION

I/R	DATE	DESCRIPTION

KEY PLAN

PROJECT NUMBER

60271594

SHEET TITLE

AMERICA FARM

SHEET NUMBER

60271594-S1-ENG-...

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APPENDIX 2

Summary of Alternative Sites

The following text has been taken from the *Planning Design and Access Statement* that was submitted alongside the Environmental statements and Planning Applications for the three solar schemes on the Councils estate to demonstrate the context in which these sites were selected.

The council turned its attention to the development of ground mounted solar and wind turbine renewable energy technologies, after discounting at this stage anaerobic digestion and biomass combined heat power technologies because on their own or combined, they will not generate the same level of power as solar and wind technologies. This is discussed in more detail below under 'Renewable Energy Technologies Assessment'. However, the intention is that the solar and wind could be enhanced in the future by the integration of other renewables.

The council therefore undertook a search of all of its land holdings as a first step towards identifying areas of land with the potential to accommodate large scale renewable energy development. It was decided early on in the process to exclude land not within council ownership i.e. the only alternative sites considered were those in the Council's ownership, because the additional costs and time involved in acquiring the land would be likely to have an adverse impact on financial returns and introduced too many risks to the project. Furthermore, the council does not own any land within urban areas suitable for this type of development.

The council identified 6 possible sites within their ownership.

These were:
(i) Nene Park,
(ii) Sewage Farm, Hall Lane, Wittering;
(iii) Splash Lane, Castor;
(iv) America Farm;
(v) Morris Fen Farm; and
(vi) Farms of Newborough.

Each site was assessed against a basic criteria set out below based on a desk top assessment. Those sites that met the criteria underwent a more detailed feasibility assessment to identify the potential developable area, the type of renewable energy development, i.e. solar and wind, and the energy generation output.

(i) Land lease issues (i.e. length of leases);
(ii) Size of the site (in terms of its viability for large scale renewable energy projects);
(iii) Proximity to aviation sites;
(iv) Presence of any designated protected, landscape, conservation and heritage areas;
(v) Proximity to settlements; and
(vi) A high level assessment of flood risk.

Nene Park (426 hectares)

This site is considered to be of a sufficient size, however, the development would be fragmented in order to generate significant output which would increase its visual impact. In addition, it is subject to a 999 year lease to the Nene Park Trust. Most of the site falls within the River Nene Functional Floodplain (Flood Zone 3b). This is considered to be a major constraint to any development on this site as flood mitigation measures would need to developed and agreed with the Environment Agency. Flood mitigation could involve raising the panels so that they are not submerged in the event of a flood. However, the site falls within the Nene Valley high amenity landscape area (Policy PP15 of the Adopted Planning Policies DPD) and therefore, it was considered raising the structures would have an adverse impact on the visual amenities of the area. Furthermore, the site is a County Wildlife Site and part of it is also located on Ferry Meadows Country Park, and on a designated Scheduled

Monument. It is also wholly within one of the 12 recently designated Nature Improvement Areas (NIA) in the UK.

It was therefore decided that this site was not suitable for large scale renewable energy development.

Sewage Farm, Hall Lane, Wittering (2 hectares)
This site is located a sufficient distance from Wittering Village, and the housing and employment allocation to the east of the site would mean that the visual impact on the landscape for solar development would be less of an issue. To the south of the site is an Area of Historic Landscape and Parkland and sites of national nature conservation importance (Sites of Special Scientific Interest (SSSI)). However, the site was considered to be of a sufficient distance away so as not to have an adverse impact on these designated sites. Overall, despite the apparent merits of this site, it was considered that the site is too small for a large scale solar renewable energy project and too close to RAF Wittering dwellings for wind energy development. For these reasons, the site was discounted.

Splash Lane, Castor (216 hectares)
This site is also subject to a 999 year lease to the Nene Park Trust. The main constraint to this site is archaeology, with significant parts of the site located on a Scheduled Monument. The site used to be a Roman settlement and was one of the major zones of extra Mural Suburban and Industrial Development. Vast quantities of Roman pottery has also been found. The site is also on Ermine Street which was the main road up to Lincoln City; again a Roman road. As a result, it was considered that the development of the site would not be acceptable or would require significant buffer zones to protected areas and therefore render it too small for large scale renewable energy. In addition, the site falls within the Nene Valley high amenity landscape area (Policy PP15 of the Adopted Planning Policies DPD) and is in the Floodplain. It is also part of a County Wildlife Site and Nature Improvement Area and most of the site is Grade 2 agricultural land. As such, this site was discounted.

America Farm: (35 hectares)
The site is not located within any landscape designations and there are no sites of known archaeology within the site boundary. However, the site is located near to the Flag Fen, part of which is a Scheduled Monument. The majority of the site is classified as Grade 1 agricultural land with small areas of Grade 2 and 3, however it was considered that a justification for the use of agricultural land could be demonstrated. The site is located within the Minerals and Waste Local Development Framework (LDF) safeguarded, however, as the proposal does not involve mineral extraction or waste management, there would be no impact on this safeguarded area.

America Farm has a single tenant farmer who has a lifetime tenancy that can be rescinded after 3 months after the grant of planning permission. The site is located approximately 1km to the north of the Nene Valley Washes Ramsar, SPA and SSSI which supports populations of wintering wildfowl and waders which are internationally important. Given this distance, it was considered that the potential for the site to be used by significant numbers of foraging wildfowl and waders is low. The site is traversed by a series of land drains and there are several farm buildings with the potential to support bats and barn owls. However, it was considered that the introduction of a buffer zone could protect any potential habitats.

Most of the site falls within the River Nene Functional Floodplain (Flood Zone 3b). This is considered to be a major constraint to any development on this site as flood mitigation measures would need to developed and agreed with the Environment Agency. Flood mitigation could involve raising the panels so that they are not submerged in the event of a flood however this will need to be investigated with the Environment Agency.

On balance, it was considered that the potential constraints could be overcome. Even with the introduction of buffer protection zones around identified habitats, the site would still be of a significant size to deliver a renewable energy development. Therefore, it was considered to take this site forward to detailed feasibility stage.

Morris Fen Farm (109 hectares)
There are 2 tenant farmers on this site; one with a year left on the lease and the other who has a lifetime tenancy that can be rescinded after 3 months of the grant of planning permission. The site is not located within any landscape designations, and although there is one site of known archaeology within the site boundary, (find spot of a prehistoric flint) this find spot itself was considered to be of negligible significance.

There is a 132kV over head line that crosses the site. It was considered that the cable could be buried. To the north of the site there is a high pressure gas main; a series of drains traverse the site; there are 5 residential properties on or adjacent to the site; and there is a pond on the site that has the potential to support great crested newts. However, it was considered that the introduction of a buffer zone could protect any potential habitats.

The site is located approximately 6km to the northwest of the Nene Valley Washes Ramsar, SPA and SSSI which supports populations of wintering wildfowl and waders which are internationally important. However, as with America Farm, it was considered that the potential for the site to be used by foraging wildfowl and waders is low.

The majority of the site is classified as Grade 2 agricultural land and the site is located within the Minerals and Waste Local Development Framework (LDF) safeguarded area. However, as with America Farm, it was considered that a justification for the use of agricultural land could be demonstrated and as the proposal does not involve mineral extraction or waste management, there will be no impact on this safeguarded area.

Most of the site falls within the River Nene Functional Floodplain (Flood Zone 3b). This is considered to be a major constraint to any development on this site as flood mitigation measures would need to developed and agreed with the Environment Agency. Flood mitigation could involve raising the panels so that they are not submerged in the event of a flood however this will need to be investigated with the Environment Agency.

On balance, it was considered that the potential constraints could be overcome, and therefore, it was decided to take this site forward to detailed feasibility stage.

Farms of Newborough (1066 hectares)
There are 6 tenant farmers affected all of whom are on a variety of leases. The site is also of a sufficient size for renewable energy development. The site is not located within any landscape designations however, there are several Scheduled Monuments within and in close proximity to the site boundary, and there are several non-designated archaeological sites within the site including medieval boundary stones and WWII defenses. It was considered that with careful design and siting, physical impacts can be avoided.

There is a series of drains that traverse the site and there is a pond on the site that has the potential to support great crested newts. However, it was considered that the introduction of a buffer zone could protect any potential habitats.

Most of the site falls within the River Nene Functional Floodplain (Flood Zone 3b). This is considered to be a major constraint to any development on this site as flood mitigation measures would need to developed and agreed with the Environment Agency. Flood mitigation could involve raising the panels so that they are not submerged in the event of a flood however this will need to be investigated with the Environment Agency.

The site is located approximately 6km to the northwest of the Nene Valley Washes Ramsar, SPA and SSSI which supports populations of wintering wildfowl and waders. It was considered that the potential for the site to be used by significant numbers of foraging wildfowl and waders is low.

All of the farms of Newborough that amount to 1066 hectares are classified as Grade 1 and 2 agricultural land while the application site, some 203 hectares, is classified as Grade 2 agricultural land. The site is located within the Minerals and Waste Local Development Framework (LDF) safeguarded area. However, as with America Farm and Morris Fen Farm, it was considered that a justification for the use of agricultural land could be demonstrated and as the proposal does not involve mineral extraction or waste management, there will be no impact on this safeguarded area.

It was therefore considered that the constraints associated with this site could be overcome and it was decided to take this site forward to detailed feasibility stage.

Renewable Energy Technologies Assessment
The Council, through the ESCo team, considered a range of renewable energy initiatives, including solar and wind farms, anaerobic digestion and biomass CHP plants. In response to comments raised by consultees during the pre-planning application consultation, straw burning has also been considered. It was concluded that solar and wind farms represented the best deal in terms of amount of MW per acre of land, i.e. the largest capacity plant for the least amount of land take. The findings for each technology are briefly set out below:

- Anaerobic Digestion: a 0.5MW plant would take around 2.5acres of land and cost around £1.5m / MW. However, the council could not guarantee the quality and regular supply of feedstock since for an AD plant, consistent and regular feedstock is required to ensure that the plant operates at optimum yield. Furthermore, the council could not be satisfied that there would be sufficient feedstock available for multiple AD plant installations. The council believes that there may be potential for AD plant(s) in the future once the feedstock issue has been resolved. Additionally, the returns of an AD plant are not at the same level as that of other options considered.

- Biomass CHP: Similar to AD with regards the feedstock issue and investment returns.

- Straw burning: A straw burning facility of the same comparison would require a tonnage capacity in excess of 50,000 tonnes of straw to be annually produced. To deliver a similar amount of MW per acre of land, using the 900 acres, an average 116 hesston bales / per acre would need to be produced.

It was therefore made clear in the 10th July 2012 report to the Council's Cabinet that "*To make significant inroads into the generation of renewable energy the council must now strategically focus on the delivery of large scale generation projects, in particular, off site wind and ground mounted solar projects*."

The alternatives considered may be added as the development progresses to supplement the current proposals, but for the reasons set out they are not considered to be a viable alternative.

The full *Planning Design and Access Statements* for the three sites can but found on the councils planning portal via the links below:

- America Farm:
- http://plandocs.peterborough.gov.uk/NorthgatePublicDocs/00881484.pdf

- Morris Fen:
- http://plandocs.peterborough.gov.uk/NorthgatePublicDocs/00881475.pdf

- Farms of Newborough:
  http://plandocs.peterborough.gov.uk/NorthgatePublicDocs/00881463.pdf

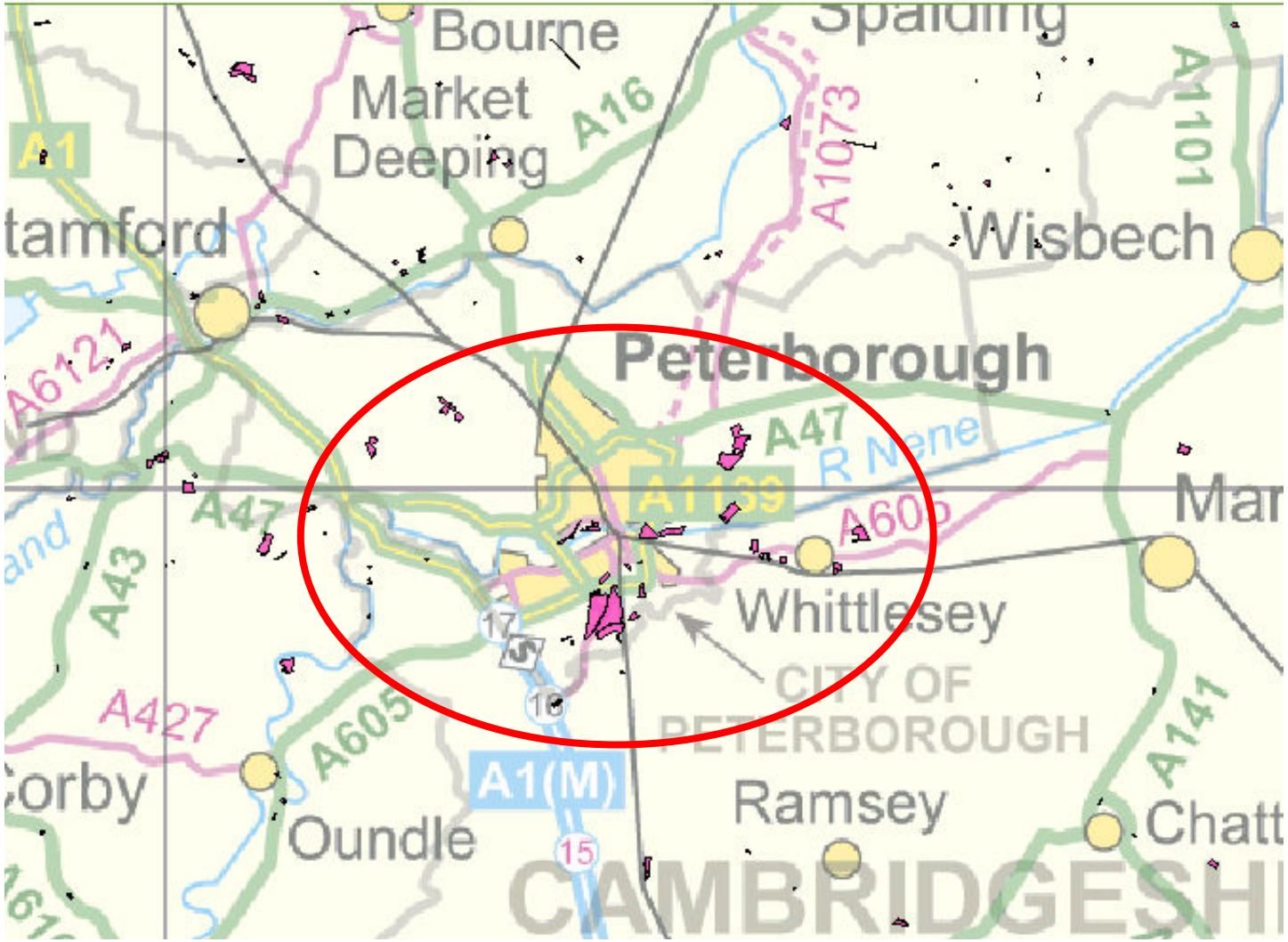
APPENDIX 3

PV capacity estimate on Peterborough land-fill sites

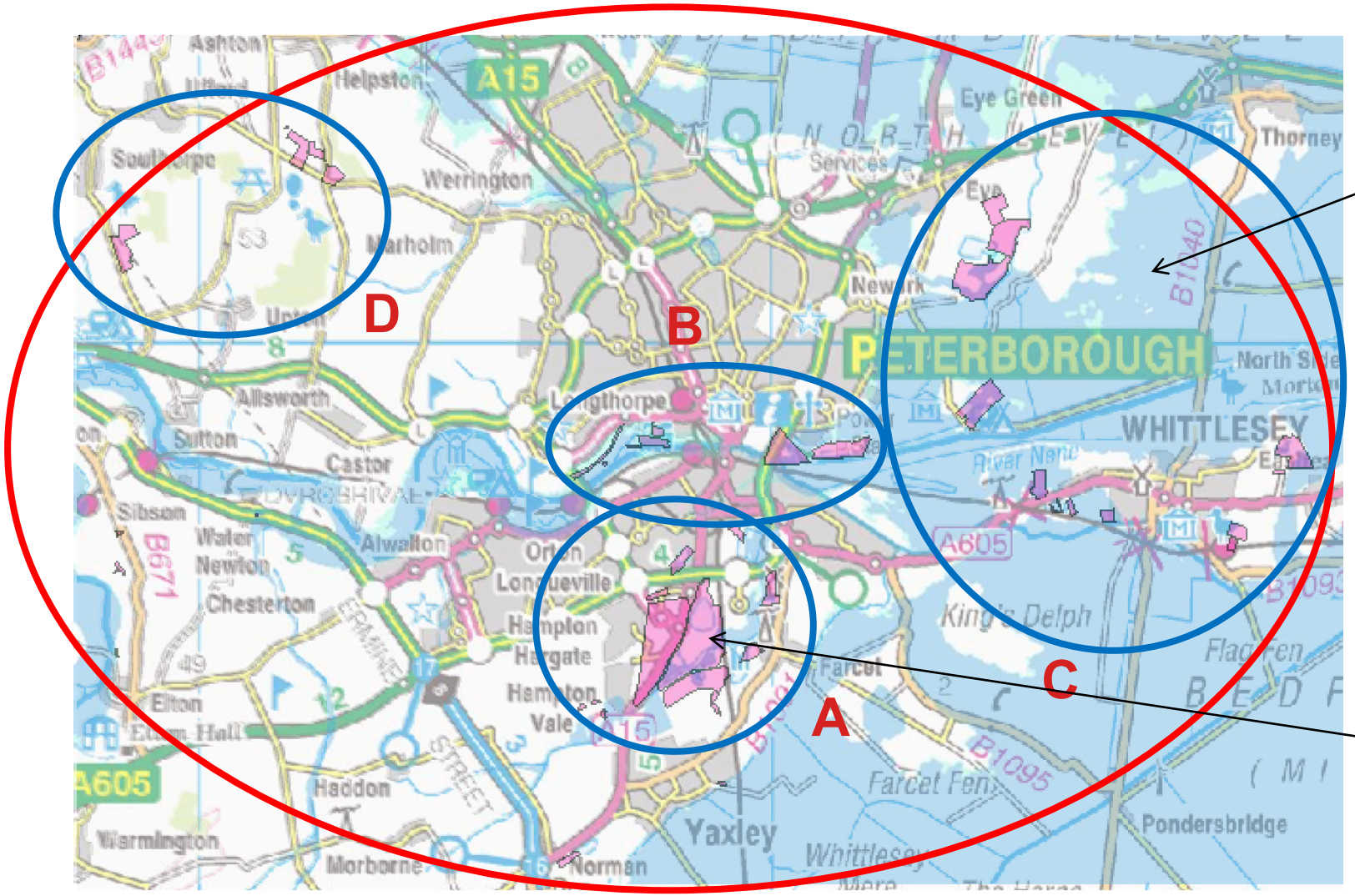
13th November 2013

EC HARRIS
BUILT ASSET CONSULTANCY
AN ARCADIS COMPANY

Area around Peterborough analysed



Area sub-divisions showing land-fill and flood zones



ZONE A useable areas

EC HARRIS BUILT ASSET CONSULTANCY
AN ARCADIS COMPANY

ZONE B – All sites in flood risk area

ZONE C useable areas

ZONE D useable areas

EC HARRIS BUILT ASSET CONSULTANCY
AN ARCADIS COMPANY

Preliminary capacity estimate

- Total numbers of useable acres* (areas highlighted green): **405 acres**

  * Comprises landfill areas in blue circles with the exception of:
    - flood zones (shown in blue on slide 2)
    - known public spaces (e.g. school grounds etc)

- Industry rule of thumb: 1MW requires 5 acres

- Total potential PV capacity across all sites (405/5): **81MW**

Assessment

- Zone A sites had to be discarded due to land owner issues
- Zone B sites all in flood zones
- Zone C sites are mostly in flood zone and the remaining non-flood zone bits are small and fragmented in remote locations
- Zone D sites judged too remote and far away from potential grid connection points

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APPENDIX 4

PETERBOROUGH CITY COUNCIL

RENEWABLE ENERGY PROJECT

AMERICA FARM
FARMS OF NEWBOROUGH
MORRIS FEN, THORNEY

Statement of Community Involvement

December 2012

PETERBOROUGH CITY COUNCIL

AECOM

Prepared by: 

Richard Jones
Associate Director

Checked by: 

David Cassells
Director

Approved by: 

David Cassells
Director

Rev No	Comments	Checked by	Approved by	Date
1		DC	DC	11/12/12
2		DC	DC	13/12/12

Website: http://www.aecom.com

Job No 60271594

Reference: Statement of Community Involvement
Date Created: December 2012

Contents **Page No.**

APPENDICES

1. Introduction

1.1. This Statement of Community Involvement (SCI) describes the pre-application consultation process that has been undertaken as part of the preparation of three planning applications.

1.2. Planning permission is sought for the installation of ground mounted solar PV farms at 3 sites; America Farm, Morris Fen and the Farms of Newborough, comprising the installation of photovoltaic panels, associated boundary fencing, security and CCTV cameras, site access and associated electrical infrastructure. Site specific details include:

- America Farm, with an installed power capacity of up to 8MW, including a switching station, inverter units and a transformer compound.

- Morris Fen (Thorney), with an installed power capacity of 27MW, including an electricity sub-station, inverter units and a transformer compound.

- Farms of Newborough, with an installed power capacity of 49MW, including inverter units, transformers and a switch building.

1.3. The Localism Act 2011includes a requirement that developers consult with communities on major and sensitive development proposals before submitting a formal application. Community involvement is thus seen as vitally important to planning and the achievement of sustainable development.

1.4. The council, as developer for these three sites, have actively engaged with the community, groups and organisations, and this will continue throughout the planning process. The council is aware that town planning shapes the places where people work and live and therefore affects everyone. Everyone should have the opportunity to play a role in how their local area is being developed.

Structure of this document

1.5. This Statement sets out:

Section Two: Planning policy context
The policy context for the consultation process

Section Three: Pre-submission and communication process
The methodology applied to the pre-application consultation process

Section Four: Outcomes of the consultation process
Summary findings from the key events held and consequent amendments to the schemes

Section Five: Conclusions
Summary of key points made

2. Planning Policy Context

The Localism Act 2011

2.1. Section 122 of the Localism Act 2011 introduces a new duty for developers to consult local communities before submitting certain types of planning applications and a duty to have regard to consultation responses. This applies where the proposed development is of a description specified in a development order, which is a secondary piece of Government legislation.

2.2. At present no development order has been created so there is technically no requirement to consult before these applications are submitted. However, the benefits of undertaking comprehensive consultation prior to submission of these applications have been recognised by the Applicant.

The National Planning Policy Framework (NPPF)

2.3. The NPPF was published in March 2012. In replacing all National Planning Policy Statements, the NPPF sets out the Government's policy on local spatial planning and consultation. Paragraph 66 of the NPPF states that:

> *"Applicants will be expected to work closely with those directly affected by their proposals to evolve designs that take account of the views of the community. Proposals that can demonstrate this in developing the design of the new development should be looked on more favourably."*

2.4. Specifically, the NPPF promotes good quality early pre-application discussions to ensure that applicants effectively engage the local community prior to application submission (paragraphs 188 to 190). This will result in improved outcomes for the community and will help to improve the efficiency and effectiveness of the planning application system. The NPPF highlights that the more issues that can be resolved at pre-application stage, the greater the benefits.

Planning and Compulsory Purchase Act 2004

2.5. The Planning and Compulsory Purchase Act 2004 emphasises the importance of involvement with the local community and stakeholders in the planning process. Consultation is recognised as a means of balancing competing interest groups and securing mutually compatible solutions and has thus underpinned the preparation of these applications.

Peterborough City Council: Statement of Community Involvement (5 November 2012)

2.6. At the local level, the Peterborough City Council: Statement of Community Involvement (SCI, 2012) forms part of the Peterborough City Council Local Development Framework and was developed following requirements detailed in the Planning and Compulsory purchase Act 2004 and the Localism Act. The purpose of an SCI is to outline planning authorities' standards for community involvement in the planning process and to identify the ways they will be achieved.

2.7. Peterborough City Council encourages pre-application consultation with communities on major planning applications. Communities should be able to raise issues for the developer to consider and make suggestions which could improve the development, increase benefits for the community and reduce its possible impact on the neighbourhood. The aim is for this to reduce

local opposition, increase chances of a timely and positive decision from the planning authority, and improve the quality of development that results.

2.8. The SCI particularly encourages prospective applicants to consult communities at pre-application stage for non-residential developments with a site area of two hectares or more. The SCI contains a guidance note on the approach to pre-application consultation by developers, encouraging developers to provide reasonable access to all information relating to community involvement undertaken, including details (not limited to):

- Advertising in the local paper;
- Events held;
- How feedback was dealt with and informed the development proposals;
- A summary of the feedback received.

Public consultation boards at Newborough Village Hall

3. Pre-submission consultation and communication process

3.1. This section outlines the approach taken in the pre-application consultation for the proposed developments. A comprehensive scheme of consultation has been undertaken since the project inception which has involved discussions with the relevant stakeholders and the wider community through a number of consultation events.

Public Consultation

3.2. The residents within the neighbourhoods surrounding the application sites and the wider city, together with local community groups, have commented on the proposals. This was achieved through a series of consultation techniques and events, including those listed below. The events were advertised through local media, postcards, posters and direct mail.

- Public exhibitions / drop-in sessions
- Dedicated proposal website
- Press releases and media briefings
- Information mailings
- Letters and email responses
- Council meetings open to the public

3.3. Exhibitions were held in high traffic areas and local venues in order to seek the views of the maximum possible number of residents. Peterborough Garden Centre and Queensgate have a combined estimated daily footfall of 54,000. On the stand there was opportunity for direct feedback via the website and a comments box. Postcards were Freepost return so as not to exclude people on a financial basis. Effort was also made to ensure materials were accessible including an audiobook and large A3 print version of the exhibition on the website. At the time of writing this Statement a total of 78 written responses had been received, of which 5 supported the proposed developments and the remainder either objected or did not state their view. A full transcript of all respondents is set out in the Appendices. Names and addresses have been removed.

Stakeholder Engagement

3.4. Statutory consultees and stakeholders were also involved to identify and resolve specific issues that could affect the proposed developments. Working meetings addressing largely technical matters and briefing sessions were held with stakeholders and local groups. Events included:

- Meetings with directly affected tenants
- National Farmers Union meetings and meeting with the Tenant Farmers Association
- Councillor and MP briefing sessions
- Parish Council briefing sessions
- Pre-application meeting with the LPA
- Discussions/corresponding with statutory consultee - ongoing since August 2012 (e.g. English Heritage, Natural England, Local Highway Authority, PCC Landscape Consultant). Further details are of these meetings are set out in the Environmental Statement
- Meetings with newly formed local groups, including the Newborough Landscape Protection Group (NLPG) and the Newborough Young Farmers

Consultation Events

3.5. The use of different consultation methods and event locations has provided multiple opportunities for members of the public and stakeholders to engage with the development proposals. The key events were as follows:

Consultation event	Date
June 2012	
Letter sent to tenant farmers: notifying them of plans for a Renewable Energy Project	27 June 2012
Ward Councillor Briefing Session	29 June 2012
July 2012	
Cabinet Meeting	10 July 2012
August 2012	
National Farmers Union meeting	8 August 2012
Letter sent to tenant farmers: confirming status of their tenancy and the proposed timescale for development.	16 August 2012
Letter sent to America Farm tenant	28 August 2012
September 2012	
Letter sent to Stewart Jackson MP, Peterborough Constituency	3 September 2012
Newborough Landscape Protection Group meeting	4 September 2012
Letter sent to tenant farmers: schedule for site visits and survey work	18 September 2012
National Farmers Union meeting	20 September 2012
Letter sent to tenant farmers: notification of submission of a 'Screening Opinion' to the Local Planning Authority	20 September 2012
Media Briefing with Peterborough Evening Telegraph and BBC Radio Cambridgeshire	21 September 2012
October 2012	
Radio Cambridgeshire – Interview with Leader of Council	8 October 2012
Petition received from Cllr Harrington containing 613 signatories against the proposed development and potential future wind turbine development.	10 October 2012
Full Council Meeting	10 October 2012
Meeting with Cllr Harrington, Newborough Ward	11 October 2012
Meeting with Stewart Jackson MP	12 October 2012
Newborough Parish Council meeting	15 October 2012
Press release "Council leader meets residents to discuss Renewable Energy Project"	16 October 2012
One-to-one meetings begin with directly affected tenant farmers.	Late October 2012 (ongoing)
Briefing by the Project Team to a Ward Council member and	19 October 2012

local resident	
Letter sent to tenant farmers: notification of public release of plans and reports to inform the forthcoming Joint Committee Meeting (2 November)	25 October 2012
Press release “Cabinet asked to approve next stage of Renewable Energy Project”	29 October 2012
November 2012	
Briefing by the Project Team to Ward members	2 November 2012
Joint meeting of the Sustainable Growth and Environmental Capital Scrutiny Committee and the Scrutiny Commission for Rural Issues	2 November 2012
Cabinet Meeting	5 November 2012
TV interview on BBC Look East	6 November 2012
Media tour to a working solar farm	6 November 2012
Meeting with representatives from Newborough Landscape Protection Group and local Councillors	8 November 2012
Sustainable Growth and Environmental Capital Scrutiny Committee Meeting	19th November
Public consultation posters and postcards hand-delivered	w/c 19th November
Press release “Next phase of renewable energy project gets green light”	21 November 2012
Full-page public consultation advert in the Peterborough Telegraph	22 November 2012
Dedicated project website launched	23 November 2012
Public consultation: Peterborough Garden Park, Unit 8	24 November 2012, 10am-4pm
Public consultation: Peterborough Garden Park, Unit 8 (unmanned)	25 November 2012, 10am-4pm
Public consultation: Queensgate Central Square	26 November 2012, 9am-6pm (manned 12 noon - 5pm)
Public consultation: Queensgate Central Square (unmanned)	27 November 2012, 9am-6pm
Public consultation: Crowland Snowden Pavilion	28 November 2012, 4pm-8pm
Meeting with representatives from Newborough Parish Council, Project Team and Leader of the Council	29 November 2012
Public consultation: Bedford Hall, Thorney	29 November 2012, 4pm-7pm
Public consultation: Peterborough Town Hall, Bridge Street	30 November 2012, 9am-5pm
December 2012	
Public consultation: Newborough Village Hall	1 December 2012, 10am-2pm
Public consultation: Public tour to a working solar farm	1 December 2012, 9.45-10.30am
Public consultation: Eye Community Centre	2 December 2012, 4pm-8pm
Full Council meeting	5 December 2012
Thorney Parish Council meeting	10 December 2012

Meeting with Newborough Young Farmers, Ward Councillor, Project Team and Leader of the Council	11 December 2012
Meeting with Tenant Farmers Association	13 December 2012
Public consultation: Public tour to a working solar farm	17 December 2012

Public Exhibitions and Drop-In Sessions: 24 November – 2 December 2012

3.6. The exhibitions and drop-in sessions held during 24 November to 2 December 2012 provided residents with the opportunity to view the plans and talk to members of the project team. During this period nine events took place, plus a tour to a working solar farm. Multiple exhibition venues were used in order to attract participants from as wide a catchment and range of demographic groups as possible.

3.7. Advertisements were placed in the local press and media to raise awareness of the exhibitions in the week prior to the events being held, as set out later in this section. Postcards were also sent to local residents within a catchment area of the proposed sites as set out later in this section.

3.8. The exhibitions consisted of eight boards that explained different aspects of the proposals and its role within the Council's wider renewable energy project, which involves undertaking studies to understand the potential for alternative types of renewable energy, such as wind turbines. It was made clear that the proposed developments are not affected by these ongoing studies, which would support any potential wind energy applications in the future.

3.9. The exhibition boards are shown in Appendix A and included information under the following headings:

- Peterborough Renewable Energy Project - introduction
- Potential types of renewable energy source
- Current activities and benefits to local people
- The three potential sites
- Your views count, have your say
- Planned development at America Farm
- Planned development at Morris Fen, Thorney
- Planned development at Farms of Newborough

3.10. The exhibition boards were accompanied by:

- 4 x A1-sized plans showing the proposed masterplans for each of the three sites (1:5,000), including one planned showing all three sites at a more strategic scale (1:20,000);
- Copies of the consultation 'postcard' (see Appendix C);
- Copies of the consultation booklet (see Appendix B);
- Public access to the project website, www.peterboroughrenewableenergy.org.uk;
- Video presentations explaining the proposed development and wider Renewable Energy Project.

Dedicated proposal website and email address

3.11. The project website www.peterboroughrenewableenergy.org.uk was launched on 23 November 2012 in order to provide easy access to information from a single source and to allow users to comment on the proposed development. The draft masterplans were posted to the website, along with the consultation booklet and a mechanism for residents and other stakeholders to provide feedback. This feedback was forwarded directly to the project team.

3.12. The applicant has also established a dedicated email address (renewables@peterborough.gov.uk) for all parties to use should they have any comments or enquiries. The consultation events were also advertised via email to those who registered to receive updates through this address.

3.13. Information including the benefits of the project, links to source reports and details of consultation events were posted on the website.

3.14. Information about the consultation events was also advertised via the Council's own website and through the use of social media.

Other Consultation Material

Consultation 'postcard' (Appendix C)

3.15. The postcard advertised the consultation events and project website, and outlined the headline details of the renewable energy project. A comment box was provided for consultee feedback via a Freepost address. Postcards were available at all consultation events and distributed as set out later in this section. Consultees could leave comments at the events or take the postcards away and post them back later.

Consultation 'booklet' (Appendix B)

3.16. An exhibition booklet was created as a 'pocket exhibition' to allow additional consultees to understand the proposals and partake in the consultation. The booklet was available in standard, large print and 'audiobook' versions. The standard version was made available at all public consultation events, and the alternative versions were available online.

Video interview presentations

3.17. Video presentations explaining the proposed development and wider Renewable Energy Project were made available on the proposal website and at consultation events. The video presentations sought to explain the proposal in more detail and were given by: Cllr Cereste (Leader of Peterborough City Council); Michelle Drewery (Project Manager, Peterborough City Council); Sam Mackilligin (AECOM). These were available on the project website.

Press releases and media briefings (Appendix F)

3.18. The Applicant prepared press releases at key milestones to inform the media and the public of the project's progress.

3.19. Media briefings have also been conducted with local newspapers and radio stations. Briefing notes have been prepared for the media, as well as a questions & answers' briefing note which has been updated at key milestones.

3.20. The Applicant also took part on a TV interview with BBC Look East.

Information mailings

3.21. Freepost postcards were hand-delivered to local residents with information on consultation events, the consultation website and postal feedback section. The catchment areas for these deliveries were approximately bounded as follows:

- *Newborough*: Bridge End, Willow Drove (northern boundary); Peterborough Road (eastern boundary); The Cat's Inn, Gunton's Road (southern boundary); Soke Road, east of St. Martin's Road (western boundary).
- *Crowland*: Broadway and Corporation Bank (northern boundary); Broadway (eastern boundary); A16 (southern boundary); the A16 and Peterborough Road roundabout (western boundary).
- *Thorney:* Junction of Crowland Road and English Drove (northern boundary); Park Crescent (eastern boundary); St. Mary's Close (western boundary).
- *Eye*: A47 (northern boundary); Beverley Court (eastern boundary); Eye C of E Primary School (southern boundary); A1139 (western boundary).

3.22. Consultation invite letters were also sent to all residents within a 1km radius of the proposed Development sites. Some additional residences beyond the 1km catchment were sent letters for the America Farm and the Farms of Newborough sites.

3.23. Both posters and postcards were also hand-delivered to the following village venues:

Location	**Advert/Poster**	**Postcards**
Newborough		
Newborough Pharmacy	Y	Y
Post Office	Y	Y
Newborough Village Hall	Y	Y
GP Surgery		Y
The Bull	Y	Y
Deighton & Smith		Y
Butcher	Y	Y
Florist		Y
Crowland		
Crown Inn	Y	Y
Crowland News & Food	Y	Y
FFY Days	Y	Y
Hollywood Hair Studio		Y
Parkinson's	Y	Y
Vet Savers	Y	Y
Helping Hand	Y	Y
Pick of the Bunch		Y
Italian shop		Y

Crowland Homes		Y
Millennium Pizza		Y
Pizza Giuliano		Y
Crowland Cancer Fund	Y	Y
Bridge Hardware		Y
Fridays Chip Shop	Y	Y
City & County		Y
China Palace	Y	Y
Spotty Dog Cat Rescue	Y	Y
The Stop	Y	Y
Thorney		
Rose & Crown	Y	Y
Ex Servicemen's Club	Y	Y
Post Office	Y	Y
Eye		
Eye Community Association	Y	Y
Eye Dental care		Y
Londis	Y	Y
Yamaha Centre	Y	Y
The Oasis		Y
Weldons		Y
Mirror Mirror	Y	Y
Car Centre		Y
Blue Boar		Y
The Spade		Y
Village Pharmacy	Y	Y
Nursery	Y	Y
Leeds Hall	Y	Y
Red Lion		Y
Kcarz	Y	Y
Knighton's Family Butchers	Y	Y
Barber		Y

3.24. Freepost posters and postcards were also hand-delivered to local businesses within the following Peterborough city centre catchment area:

- Westgate (northern boundary); Peterborough Cathedral (eastern boundary); Rivergate Shopping Centre (southern boundary); A15 (western boundary).

Stakeholder Engagement

3.25. Statutory consultees and stakeholders were involved to identify and resolve specific issues that could affect the proposed development. Full details are set out in the table shown previously in this section.

Meetings and correspondence with directly affected tenants

3.26. The process with the directly affected tenant farmers began with a letter from the applicant, which advised them of the emerging proposals and how they will be consulted going forward. Letters were then sent to tenant farmers at key project milestones as set out in the table shown previously in this section.

3.27. The applicant later hosted one-to-one meetings with the affected tenants, from late October 2012, to establish initial views and work to agree mutually-agreeable solutions where possible. The applicant also met with the Tenant Farmers Association to discuss the proposals and work towards mutually-agreeable solutions.

3.28. Negotiations with some tenant farmers are ongoing at the time of writing. Compensation includes offering land elsewhere on the Council's agricultural estate.

National Farmers Union meetings

3.29. As noted above, the applicant consulted with tenant farmers directly affected by the proposals. In addition to this, the applicant met with the National Farmers Union (NFU) early in the development process, in August and September. The purpose of these sessions was to brief the NFU on emerging information related to the development proposals, project timescales and background feasibility studies, as well as answer any questions they had, so that they were fully informed. This allowed the NFU to keep their affected members up to date and feed into the development process.

Councillor and MP briefing sessions

3.30. Briefing sessions where held separately with the MP for the Peterborough Constituency and Councillor for the Newborough Ward in October 2012. The purpose of these sessions was to brief the MP and Councillor on the emerging development proposals, as well as answer any questions they had where possible, allowing them to keep their constituents up to date and feed into the development process.

Local Interest Group Meetings

3.31. The applicant and project team met with the Newborough Landscape Protection Group early on in the proposal development process, on 4 September 2012. The purpose of the meeting was to brief this group on the emerging proposal and understand their concerns. Questions arising from this meeting were taken away and later responded to in writing. A copy of the questions raised and answers provided by the applicant is located in Appendix I.

3.32. The applicant again met with representatives from the Newborough Landscape Protection Group on 8 November 2012, along with local Councillors, to update the group and discuss their concerns.

3.33. The applicant also met with Newborough Young Farmers, along with a local Councillor, on 11 December 2012.

Parish Council meetings

3.34. Meetings were held with Newborough Parish Council and Thorney Parish Council. These were open meetings, meaning the public were able to attend. The sessions were held with Newborough Parish Council on 15 October and Thorney Parish Council on 10 December 2012.

3.35. The key aims of these sessions were to listen to concerns and respond to the questions raised by the tenant farmers, local Councillors and local residents.

Detailed discussion during a public consultation event

4. Outcomes of the consultation process

4.1. This section provides a summary of the main concerns raised during both the public and stakeholder engagement events outlined above. It also highlights the ways in which the proposed developments have been revised to take account of these responses, and the direct responses to the concerns raised.

4.2. Overall, many respondents recognised the benefit of renewable energy technology and the benefits of the approach to the wider population of Peterborough. However, many also expressed concern over the impact of implementing renewable technology locally and in particular, developing on prime agricultural land. The responses have sought to address the concerns, as set out below.

4.3. Detailed written feedback from the public consultation events are contained in Appendix G.

Public Consultation Outcomes	
Main concerns raised	**Response**
Principle of development It was generally considered inappropriate by consultees to use Grade I and Grade II Agricultural Land for non-agricultural uses and develop on land currently occupied by farmers, meaning they may lose their jobs and livelihoods.	All sites are Council-owned, currently farmed and subject to a number of Agricultural Tenancy Agreements. The Agreements have provisions in place for the landlord to take back land that is required for non-agricultural use, subject to the payment of compensation. The proposed developments support the Council in its long-standing aspiration to become the Home of Environment Capital and support the Sustainable Community Strategy. The three sites have been identified due to their potential to deliver the proposed developments and as they are in the ownership of the Council. Using sites that are not in Council ownership would make viability and deliverability more difficult and risky. No other credible alternative sites have emerged within the Council's ownership. The proposed development will affect tenant farmers as it will take arable land out of production. However, other forms of agriculture could still be undertaken such as sheep grazing and the potential for this is currently being explored. Furthermore, continuing farming within the margins and between the panels is also being considered. There is also the potential to offer alternative land to affected tenants in some circumstances, reducing the impact on their livelihoods. The applicant recognises that food security is a major issue, but equally important is energy security and at a local level, the need to close the Council's funding gap in order to maintain key frontline services such as Adult Social Care and Children's Services. The proposed development is therefore considered to be a benefit to

It was generally considered inappropriate to develop renewable energy parks without first retro-fitting all Council buildings with renewable energy technology. The effectiveness of solar power in Peterborough was questioned, given its climate.	Peterborough and its residents. The installation of solar photovoltaic (PV) panels has already been completed on a number of buildings around the city. However, because of the reduction in central government subsidies these smaller scale schemes are no-longer economically viable and will not significantly contribute to the Council's stated environmental objectives or help to reduce the financial pressures. Therefore it does not meet the Invest to Save Budget criteria set out in the 10 July 2012 Cabinet report. Nevertheless the Council continues to investigate whether prices of solar PV panels has dropped such that it may still be commercially viable to build out a second phase Solar panels work based on the amount of light available and do not require direct sunlight to operate, although this does help their efficiency. Therefore even when it is raining, cold or cloudy, as long as it is light outside then the solar panels will be working and effective.
Size of scheme It was generally considered that the Proposed Developments are too large. There was some concern that the height of the panels would be increased.	 The overall area across the three sites is considerably smaller than the original area of search and measures are proposed to mitigate the visual impact of the site, as set out below. There is a direct relationship between the size of the proposed development and its power output, meaning the aspired benefits of the scheme cannot be reached without such a development area. The solar panels have been designed at a height not exceeding 3.4 metres and planning permission is sought for the same.
Local impact Many respondents who live in close proximity to the proposed development sites are concerned about the visual impact of the proposals and the perceived impact on the characters of nearby villages/settlements and local heritage assets.	 As a result of consultation, the approach set out below will be adopted to mitigate the visual impact on local communities and in particular residential properties that would otherwise have immediate views of the site and for road users. *Native species rich hedgerow planting will surround most of the sites.* This will help assimilate the proposed development into the wider landscape and provide a visual buffer in both more immediate and longer views of the development sites. It will also provide nesting habitat for farmland passerine birds, foraging habitat for badger and birds and flight line and foraging habitat for bats. The hedgerow planting will be managed to maintain a more irregular form to reflect the existing landscape structure. *Bands of native woodland screen planting are proposed as appropriate to help screen the development sites from properties.*

	Rough grassland would be planted between and under the solar panels. Planting including native species rich hedgerow, native woodland screen planting, rough grassland and grassland buffers will be planted along wet and dry drains (10m and 5m respectively). Further details are set out in the Chapter 14 of the Environmental Statement: Summary of Mitigation. *To minimise the harm and potential impact on local communities, the proposed developments will also now be setback from some residential properties where appropriate and other receptors (such as major roads) by a minimum of 100 metres.* It is considered that visual impacts as a result of the proposed developments are very localised and the overall integrity of views will remain largely unaffected.
Local House Prices and compensation Local residents were concerned that house prices may be adversely affected by the scheme and expected compensation.	Although this is not a material planning consideration, the Council is discussing the proposal with residents in close proximity to the proposed developments and is looking into the issue of compensation.
Scheme benefits The accuracy of financial net income projections was questioned and it was suggested that they may be over-optimistic. Respondents from Crowland questioned how they would benefit from the scheme as they are not located within the Peterborough City Council boundary.	The financial modelling predictions remain at a high level and the financial model will be subject to further refinement as the wider project continues and negotiations take place. The modelling is based on the currently available data. For example, the income projections are based on the lower ROC (Renewable Obligation Certificate) tariff proposed by DECC (Department of Energy and Climate Change) of 1.5 ROCs per MWh. It also only uses the base rate of £38 per MWh as there is uncertainty around the additional trading element. The projections are not therefore considered to be based on an overly optimistic approach. Peterborough City Council is considering the impact to areas within the authority as well as neighbouring authorities and will respond once a decision is reached.
Environment and flood risk Some respondents considered that the scheme would have an unacceptable impact on local ecology, landscape and wildlife.	Solar installations are generally low-impact developments (minimal ground disturbance) and will not affect identified ecological areas The key habitat features of the development sites are the drains that border and traverse the site, and the grassland habitat on the banks of these drains. The ecology impact has been minimised by creating a 10m

	buffer from all wet drains and 5m buffer from all dry drains. The proposed developments provide an opportunity for creating habitats, which will enhance and complement the existing habitats. For example, grassland habitat will be established throughout the site, growing between and beneath the solar panels and the planting proposals include filling gaps in existing hedgerows so they are more dense and contain a greater mix of species than before. Field margins will also be protected by the buffer zones and planted with wild bird seed mixes, providing foraging habitat for birds and insects. Further details are set out in Chapter 14 of the Environmental Statement: Summary of Mitigation Specific questions were raised relating to the use of weed killer under the proposed solar panels. The site would need to operate within the realms of all environmental statutory requirements as set out by DEFRA and the Environment Agency. Other maintenance options will be explored such as grazing and/or grass cutting under the solar panels.
Some respondents considered that the scheme would raise the risk of flooding either on-site or in local settlements.	Flood Risk Assessments have been prepared and submitted alongside the planning applications. The Environment Agency has been consulted and their comments taken on board. The panels are raised above the ground and therefore will not obstruct the flow of water.
Restrictive covenants Some respondents questioned whether or not there were restrictive covenants on the sites, following prior allocation of the land to ex-soldiers following World War I for agricultural purposes.	The Council have not found any restrictive covenants on the sites.
Effect on aircrafts Some respondents were concerned that reflections from the solar panels could affect overhead aircrafts, particularly as the RAF and other bodies train in the area.	This issue has been discussed with the MOD safeguarding team and, following checks on the site locations, they have no significant concerns. It is expected that the MOD would be further consulted as part of the statutory planning application process.
Security There was some concern that the proposed developments would not have adequate security.	2.4metre galvanised security fences will surround the sites, with CCTV cameras at key locations. The planning application drawings show this in greater detail.
Communication Many respondents stated that the public consultation period was insufficient and not well advertised.	The pre-application public consultation has taken place since July 2012 and culminated in a 9-day public exhibition, with events held in the city centre and in proximity to all proposed development sites.

4.4. A number of other concerns have been raised by consultees that are not material planning considerations and not part of the planning process. They are not therefore listed here but include, for example, contractual arrangements with Mears.

Public consultation event at Newborough

5. Conclusion

5.1. The pre-application consultation and communication for the proposed developments have ensured a collaborative and inclusive process with both the public and key stakeholders. It has included regular communication and consultation has been tailored to meet the needs of each specific group, in particular:

- General public – public exhibitions/drop-in sessions with a wide variety of consultation material aimed at different audiences. Regular press releases at key project milestones;
- Directly affected tenants – detailed meetings
- Local Councillors and MP – briefing sessions and open meetings
- Community Groups – targeted meetings

5.2. This document has outlined the process that the applicant has undertaken in order to progress the proposed developments. It illustrates the substantial involvement which has taken place amongst a variety of stakeholders in relation to the development of the scheme. It also details how the responses and feedback received have been taken into account when developing the final design and layout of the proposed developments.

APPENDIX A

PUBLIC CONSULTATION EXHIBITION BOARDS

PETERBOROUGH RENEWABLE ENERGY PROJECT

Introduction

In 1992 Peterborough was made one of four UK Environment Cities. Since this time Peterborough City Council has worked hard to become more environmentally-friendly and is committed to becoming the UK's Home of Environment Capital.

What would it mean to become the UK's Home of Environment Capital?

The Council will need to deliver truly sustainable growth and ensure that Peterborough is cleaner, greener, healthier and more vibrant in the future.

Generating renewable energy locally is a key part of the Council's progress towards a more sustainable city.

What progress has been made so far?

Solar panels have been installed on the roofs of the Town Hall, the regional Pool buildings, local schools and the former Freemens building at Ivatt Way (Council-owned).

However, more is needed to reduce our carbon footprint, **support frontline Council services**, provide a long-term sustainable energy source and help to stabilise local energy prices.

Peterborough City Council therefore set up an Energy Services Company (ESCO) in 2011 to help deliver these benefits, by exploring opportunities for additional sources of renewable energy.

PETERBOROUGH RENEWABLE ENERGY PROJECT

AECOM

PETERBOROUGH CITY COUNCIL

POTENTIAL TYPES OF LOCAL RENEWABLE ENERGY SOURCES

Solar Energy

Solar energy is a totally silent and non-polluting way of generating electricity.

The effect on the environment and local views would be small.

Solar panels need little maintenance as they have no moving parts. They absorb light across semi-conductors to convert light energy into an electrical current. They do not need direct sunshine to work.

Wind Energy

The UK Government has signed up to an EU target of generating 20% of its energy from renewable sources by 2020. Wind energy is the most cost-effective way of achieving this. There are currently around 3,500 wind turbines in the UK.

Off-shore wind turbines are important, but they are more complicated and expensive to develop. To meet national targets and local aims, on-shore wind energy is important.

Other potential types of renewable energy

The Council will explore the potential to create energy from other renewable sources if solar and/or wind energy is not achievable, such as Anaerobic Digestion.

This is a process whereby organic waste is treated using natural bacteria. This produces a renewable energy known as biogas that can power electricity generators.

It also creates a residue called digestate, which can be used as a fertiliser and soil conditioner on farmland.

PETERBOROUGH RENEWABLE ENERGY PROJECT

AECOM

PETERBOROUGH CITY COUNCIL

CURRENT ACTIVITIES AND BENEFITS TO LOCAL PEOPLE

Peterborough City Council plans to develop three Renewable Energy Parks.

Since this scheme was announced in July 2012, a wide range of studies and surveys have been completed. Some of these include studies on the impacts of:

- Archaeology
- Aviation and radar impacts
- Wildlife
- Flood risk
- Landscape
- Noise
- Birdlife

These have been used to test the feasibility of the Renewable Energy Parks and to help create schemes that are sensitive to their surroundings.

What are the benefits of this project?

If developed, the project will lead to major benefits for local people and business:

- **They will provide a long-term sustainable energy source for the country.**
- **They will help meet the UK's renewable energy targets.**
- **They will support the council in reducing its carbon footprint by 100%.**
- **They will deliver in excess of £110 million innet income over 20 years to support frontline services such as care for children, vulnerable people and the elderly.**
- **They will provide for a 'community fund' to be set up for local projects to ensure money is put back into the local community.**

PETERBOROUGH RENEWABLE ENERGY PROJECT

AECOM

PETERBOROUGH CITY COUNCIL

THE THREE POTENTIAL SITES

The renewable energy proposals relate to three Council-owned sites around Peterborough, which are currently in use as farmland.

Since the project began, the Council has held detailed meetings with many stakeholders, including local and national groups, and the directly-affected tenant farmers.

The original area of investigation covered approximately 3,000 acres. Development is proposed on approximately 900 acres, which leaves approximately 70% of the farms untouched.

America Farm: key facts

- Located to the east of Peterborough
- 100 acres of flat, arable farmland
- The majority of the site is classed as Grade 1 and 2 agricultural land
- Potential to generate up to 8MW of electricity with solar panels
- Currently covered by a single tenancy agreement

Morris Fen, Thorney: key facts

- Located approximately 9km north east of Peterborough and 1km north of Thorney
- 266 acres of flat, arable farmland
- The whole site is classed as Grade 2 agricultural land
- Potential to generate up to 27MW of electricity with solar panels
- Currently covered by two tenancy agreements

The farms of Newborough: key facts

- Located approximately 5km north east of Peterborough and 1km south of Crowland
- 502 acres of land is planned for solar energy.
- Potential to generate up to 49MW of electricity with solar panels
- Currently covered by six tenancy agreements

PETERBOROUGH RENEWABLE ENERGY PROJECT

AECOM

PETERBOROUGH CITY COUNCIL

YOUR VIEWS COUNT, HAVE YOUR SAY

We would like to hear what you think about the Peterborough Renewable Energy Project.

Any views expressed, either positive or negative, will be summarised and presented to the Council as part of the solar energy planning applications.

It is important to remember that there are no final schemes at this stage.

Providing your thoughts now will help us to shape the final proposals and allow us to try to address any areas of concern before the applications are submitted. More detailed exhibitions are taking place locally to each development site.

If you would like to comment on the proposals, please fill out a **questionnaire** here today, or respond online at **www.peterboroughrenewableenergy.org.uk by midnight on Monday 3 Decmber 2012.**

Once the applications have been submitted, the Council will then undertake formal consultation with local residents and statutory consultees.

Thank you for attending the exhibition.

PETERBOROUGH RENEWABLE ENERGY PROJECT

AECOM

PETERBOROUGH CITY COUNCIL

PLANNED DEVELOPMENT AT AMERICA FARM

The site covers roughly 40 hectares (100 acres) of flat, arable farmland.

It is located east of the Fengate industrial area. A number of ditches run around and across the site. To the north of the site is America Farm Cottage and to the southeast is Northey Bungalows and Northey Farm.

The majority of the site is classed as Grade 1 and 2 agricultural land.

Proposal

Planning permission is sought for installation of a solar farm with an installed power capacity of up to 8MW, comprising the installation of photovoltaic panels, associated boundary fencing, security and CCTV cameras, site access and associated electrical infrastructure including electricity sub-station, inverter units and a transformer compound.

The key findings for America Farm are:

One tenant

America Farm is occupied by a single tenant. Development of this site would mean that the tenant could no longer farm the land. Options relating to compensation are being explored and discussed with the tenant.

No wind turbines

There are no wind energy proposals for this site because there are private dwellings within a 500m buffer zone.

Archaeology

There are no sites of known archaeology within the site boundary. However, the site is located near to the Flag Fen, part of which is a Scheduled Ancient Monument. We are in consultation with English Heritage to ensure they are satisfied with the scheme.

Ecology and Ornithology

The site is located approximately 1km to the north of the Nene Valley Washes Ramsar site, which is a Special Protection Area (SPA) and Special Site of Scientific Interest (SSSI) site. We are in consultation with Natural England to ensure they are satisfied with the scheme.

Flood risk

This site is in Flood Risk Zone 3, which means there is a 1% - 5% chance of the site flooding in any year. The solar panels would be raised up to 3.5 m off the ground and we are in consultation with the Environment Agency to ensure they are satisfied with the scheme.

PETERBOROUGH RENEWABLE ENERGY PROJECT

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PLANNED DEVELOPMENT AT MORRIS FEN

The site covers roughly 108 hectares (266 acres) of flat, arable farmland.

It is located 9km north east of Peterborough and 1km to the north of Thorney. Two private houses, along with surrounding vegetation, are located off Black Drove, which forms the southwest boundary of the site, and a golf course is located to the south of the site.

The whole site is classed as Grade 2 agricultural land.

Proposal

Planning permission is sought for installation of a solar farm with an installed power capacity of up to 8MW, comprising the installation of photovoltaic panels, associated boundary fencing, security and CCTV cameras, site access and associated electrical infrastructure including electricity sub-station, inverter units and a transformer compound.

The key findings for Morris Fen are:

Current tenants

Morris Fen has four separate tenancy agreements, three of which are held by the same family. Development would mean that Morris Fen could no longer be farmed for arable crops. Options relating to compensation are being explored and discussed with the tenants.

Archaeology

There is one site of known archaeology within the site boundary. This may indicate more activity in the area and so further studies may take place.

Thorney Lodge is adjacent to the site and is a Grade II listed building. The building itself will not be affected by the solar panels, but we are in consultation with English Heritage to assess the potential impact on the building's setting and to ensure they are satisfied with the scheme.

Bird and wildlife

The scheme would be set back from land drains, buildings and trees to avoid potential impacts on local wildlife. Studies are ongoing to understand if parts of the site support animals such as badgers, great crested newts or other reptiles.

Trees and landscape

The adjacent golf course is edged by mature trees and the solar panels would be set back by 30m. A design and mitigation strategy will be developed to help blend the development with the surrounding landscape.

Future potential for wind turbines?

The feasibility of wind turbines on this site will not be known until winter 2013, which is when the recently-installed 'met-mast' will finish testing local conditions such as wind speed. Public consultation will take place at this time.

We currently believe there is potential for up to three wind turbines. The potential addition of wind turbines does not affect the current solar energy plans.

Flood risk

This site is in Flood Risk Zone 3, which means there is a 1% - 5% chance of the site flooding in any year. The solar panels would be raised up to 3.5 m off the ground and we are in consultation with the Environment Agency to ensure they are satisfied with the scheme.

PETERBOROUGH RENEWABLE ENERGY PROJECT

AECOM

PETERBOROUGH CITY COUNCIL

PLANNED DEVELOPMENT AT FARMS OF NEWBOROUGH

Studies have concluded that only roughly 203 hectares (502 acres) are suitable for development. The main reasons for proposing a solar energy development here are:

- Development affects a small number of tenancies with short-term leases. 80% of the farms in the original area would not be directly affected;
- Development is considered least likely to contain significant archaeological findings;
- There is relatively little woodland and hedging, making development least likely to impact on local wildlife and ecology;
- Connection costs to the National Grid are lowest.

The site is located approximately 5km north of Peterborough and 1km south of Crowland. It is bounded to the south by the B1443 (Thorney Road) and the west by Peterborough Road South. The majority of the site is classed as Grade 2 agricultural land although there are some smaller areas of Grade 1 agricultural land.

Proposal

Planning permission is sought for installation of a solar farm with an installed power capacity of up to 8MW, comprising the installation of photovoltaic panels, associated boundary fencing, security and CCTV cameras, site access and associated electrical infrastructure including electricity sub-station, inverter units and a transformer compound.

The key findings are:

Future potential for wind turbines?

The feasibility of wind turbines on this site will not be known until winter 2013, which is when the recently-installed 'met-mast' will finish testing local conditions such as wind speed. Public consultation will take place at this time.

We currently believe there is potential for up to six wind turbines. Up to three of these would be outside of the current planning application boundary. The potential addition of wind turbines does not affect the current solar energy plans.

Current tenants

The combined wind and solar energy proposals would directly affect 6 tenants. One of the tenants would be minimally affected by a single wind turbine only, and another plans to retire next year. Options relating to compensation are being explored and discussed with the tenants

Archaeology

There are several sites of known archaeology within the site boundary. This may indicate more activity in the area and so further studies may take place.

Bird and wildlife

The scheme would be set back from land drains, buildings and trees to avoid potential impacts on local wildlife. The site is also within a 'species recovery area' for barn owls and there are a number of barn owl nest boxes present. A 50 metre minimum buffer would be applied from field margins with barn owl boxes to minimise disturbance.

Studies are ongoing to understand if parts of the site support animals such as badgers, great crested newts or other reptiles.

Trees and landscape

There are woodlands, trees and hedgerows within the site. The scheme is laid out to avoid these areas. A design and mitigation strategy will be developed to help blend the development with the surrounding landscape.

Flood risk

This site is in Flood Risk Zone 3, which means there is a 1% - 5% chance of the site flooding in any year. The solar panels would be raised up to 3.5 m off the ground and we are in consultation with the Environment Agency to ensure they are satisfied with the scheme.

PETERBOROUGH RENEWABLE ENERGY PROJECT

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APPENDIX B

PUBLIC CONSULTATION BOOKLET

PETERBOROUGH RENEWABLE ENERGY PROJECT

Consultation booklet
Pocket exhibition

November-December 2012

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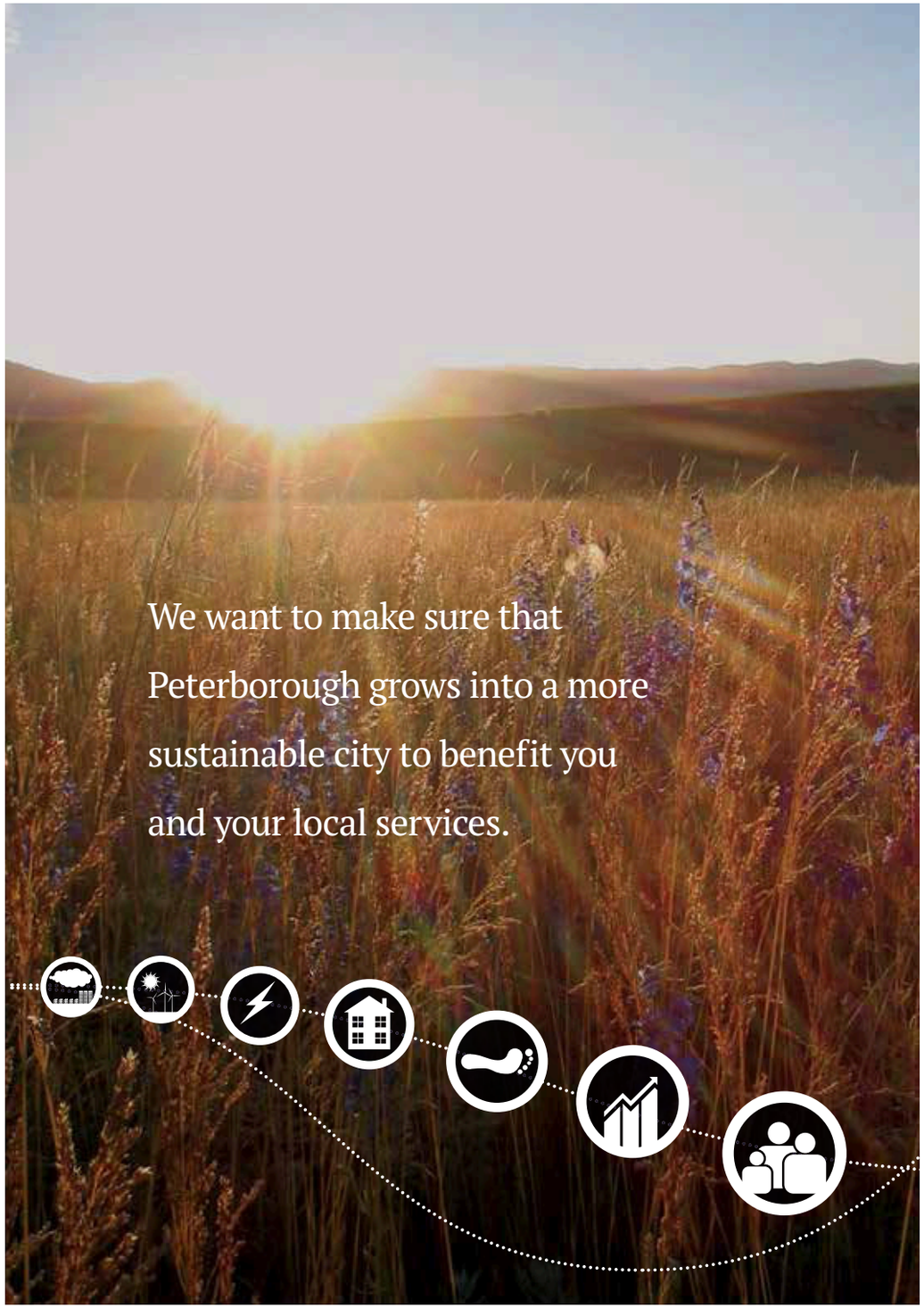
PETERBOROUGH CITY COUNCIL



Contents

This document is available in large print and audio verions
on www.peterboroughrenewableenergy.org.uk

INTRODUCING THE PROJECT

In 1992 Peterborough was made one of four UK Environment Cities. Since this time Peterborough City Council has worked hard to become more environmentally-friendly and is committed to becoming the UK's Home of Environment Capital. What would it mean to become the UK's Home of Environment Capital?

The Council will need to deliver truly sustainable growth and ensure that Peterborough is cleaner, greener, healthier and more vibrant in the future.

Generating renewable energy local is a key part of the Council's progr towards a more sustainable city.

What progress has been made so far?

Solar panels have been installed on the roofs of the Town Hall, the regional Pool buildings, local schools and the former Freemens building at Ivatt Way (Council-owned).

However, more is needed to reduce our carbon footprint, support frontline Council services, provide a long-term sustainable energy source and help to stabilise local energy prices.

Peterborough City Council therefore set up an Energy Services Company (ESCO) in 2011 to help deliver these benefits, by exploring opportunities for additional sources of renewable energy.

Solar Energy

Solar energy is a totally silent and non-polluting way of generating electricity.

The effect on the environment and local views would be small.

Solar panels need little maintenance as they have no moving parts. They absorb light across semi-conductors to convert light energy into an electrical current. They do not need direct sunshine to work.

Wind Energy

The UK Government has signed up to an EU target of generating 20% of its energy from renewable sources by 2020. Wind energy is the most cost-effective way of achieving this. There are currently around 3,500 wind turbines in the UK.

Off-shore wind turbines are important, but they are more complicated and expensive to develop. To meet national targets and local aims, on-shore wind energy is important.

Other potential types of renewable energy

The Council will explore the potential to create energy from other renewable sources if solar and/or wind energy is not achievable, such as Anaerobic Digestion.

This is a process whereby organic waste is treated using natural bacteria. This produces a renewable energy known as biogas that can power electricity generators.

It also creates a residue called digestate, which can be used as a fertiliser and soil conditioner on farmland.

Peterborough City Council plans to develop three Renewable Energy Parks.

Since this scheme was announced in July 2012, a wide range of studies and surveys have been completed. Some of these include studies on the impacts of:

- Archaeology
- Aviation and radar impacts
- Wildlife
- Flood risk
- Landscape
- Noise
- Birdlife

These have been used to test the feasibility of the Renewable Energy Parks and to help create schemes that are sensitive to their surroundings.

What are the benefits of this project?

If developed, the project will lead to major benefits for local people and business:

They will provide a long-term sustainable energy source for the country

They will help meet the UK's renewable energy targets

They will support the council in reducing its carbon footprint by 100%

They will deliver in excess of £110 million in net income over 20 years to support frontline services such as care for children, vulnerable people and the elderly

They will provide for a 'community fund' to be set up for local projects to ensure money is put back into the local community

The renewable energy proposals relate to three Council-owned sites around Peterborough, which are currently in use as farmland.

Since the project began, the Council has held detailed meetings with many stakeholders, including local and national groups, and the directly-affected tenant farmers.

The original area of investigation covered approximately 3,000 acres. Development is proposed on approximately 900 acres, which leaves approximately 70% of the farms untouched.

America Farm: KEY FACTS

- Located to the east of Peterborough
- 100 acres of flat, arable farmland
- The majority of the site is classed as Grade 1 and 2 agricultural land
- Potential to generate up to 8MW of electricity with solar panels
- Currently covered by a single tenancy agreement

Morris Fen, Thorney: KEY FACTS

- Located approximately 9km north east of Peterborough and 1km north of Thorney
- 266 acres of flat, arable farmland
- The whole site is classed as Grade 2 agricultural land
- Potential to generate up to 27MW of electricity with solar panels
- Currently covered by two tenancy agreements

The farms of Newborough: KEY FACTS

- Located approximately 5km north east of Peterborough and 1km south of Crowland
- 502 acres of land is planned for solar energy.
- Potential to generate up to 49MW of electricity with solar panels
- Currently covered by six tenancy agreements

POTENTIAL DEVELOPMENT AT AMERICA FARM

The site covers roughly 40 hectares (100 acres) of flat, arable farmland and is located east of the Fengate industrial area. The majority of the site is classed as Grade 1 and 2 agricultural land.

Proposal

Planning permission is sought for installation of a solar farm with an installed power capacity of up to 8MW, comprising the installation of photovoltaic panels, associated boundary fencing, security and CCTV cameras, site access and associated electrical infrastructure including a switch station, inverter units and a transformer compound.

The key findings at America Farm are:

One tenant

America Farm is occupied by a single tenant. Development of this site would mean that the tenant could no longer farm the land. Options relating to compensation are being explored and discussed with the tenant.

No wind turbines

There are no wind energy proposals for this site.

Archaeology

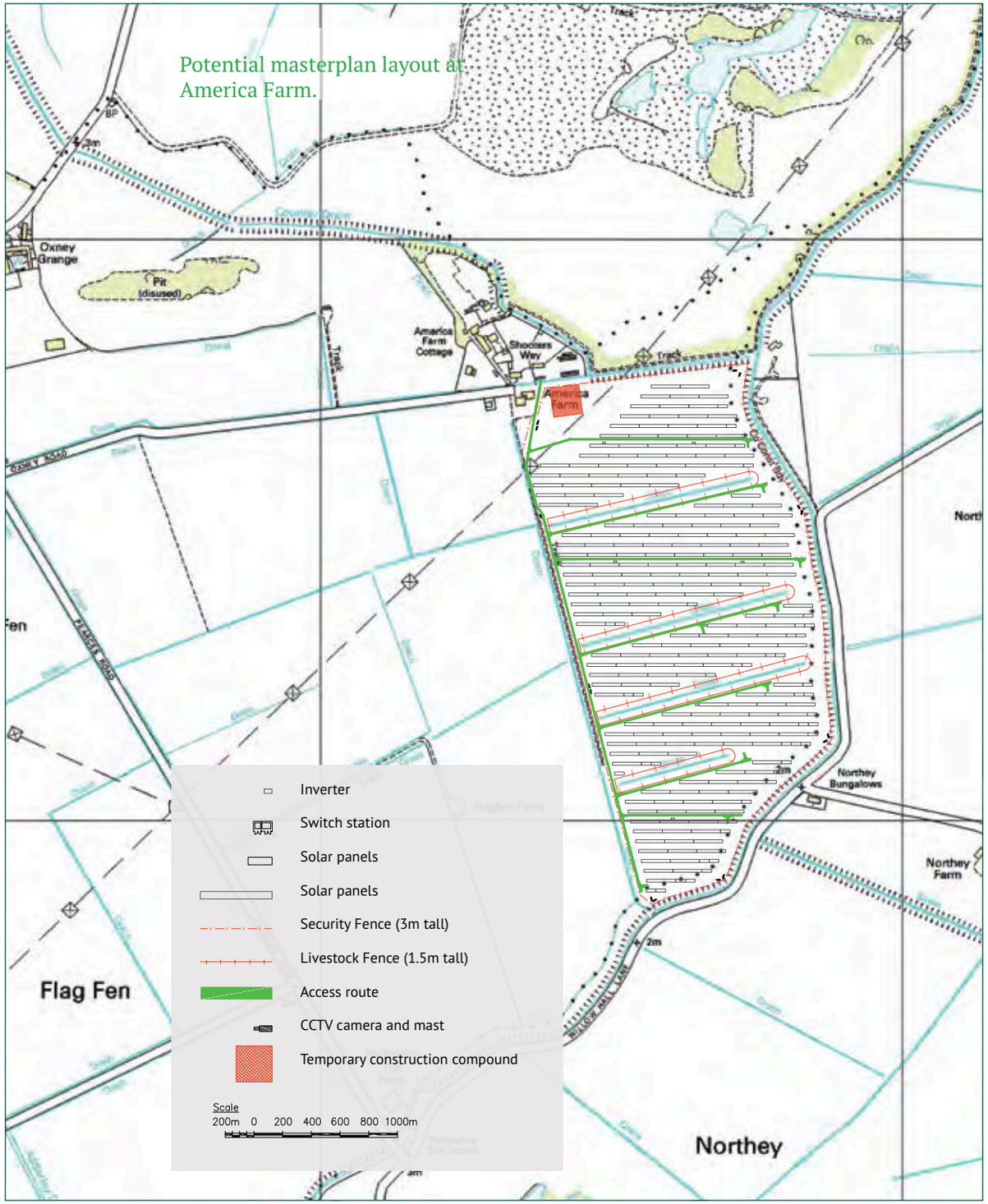
There are no sites of known archaeology within the site boundary. However, the site is located near to the Flag Fen, part of which is a Scheduled Ancient Monument. We are in consultation with English Heritage to ensure they are satisfied with the scheme.

Bird and wildlife

The site is located approximately 1km to the north of the Nene Valley Washes Ramsar site, which is a Special Protection Area (SPA) and Special Site of Scientific Interest (SSSI) site. We are in consultation with Natural England to ensure they are satisfied with the scheme.

Flood risk

This site is in Flood Risk Zone 3, which means there is a 1% - 5% chance of the site flooding in any year. The solar panels would be raised up to 3.5m off the ground and we are in consultation with the Environment Agency to ensure they are satisfied



Potential masterplan layout at America Farm.

POTENTIAL DEVELOPMENT AT MORRIS FEN, THORNEY

The site covers roughly 108 hectares (266 acres) of flat, arable farmland and is located 9km north east of Peterborough and 1km to the north of Thorney. The whole site is classed as Grade 2 agricultural land.

Proposal

Planning permission is sought for installation of a solar farm with an installed power capacity of 27MW comprising the installation of photovoltaic panels, associated boundary fencing, security and CCTV cameras, site access and associated electrical infrastructure including inverter units, electricity sub-station and a transformer compound.

The key findings at Morris Fen are:

Current tenants

Morris Fen has four separate tenancy agreements, three of which are held by the same family. Development would mean that Morris Fen could no longer be farmed for arable crops. Options relating to compensation are being explored and discussed with the tenants.

Bird and wildlife

The scheme would be set back from land drains, buildings and trees to avoid potential impacts on local wildlife. Studies are ongoing to understand if parts of the site support animals such as badgers, great crested newts or other reptiles.

Flood risk

This site is in Flood Risk Zone 3, which means there is a 1% - 5% chance of the site flooding in any year. The solar panels would be raised up to 3.5m off the ground and we are in consultation with the Environment Agency to ensure they are satisfied with the scheme.

Trees and landscape

The adjacent golf course is edged by mature trees and the solar panels would be set back by 30m. A design and mitigation strategy will be developed to help blend the development with the surrounding landscape.

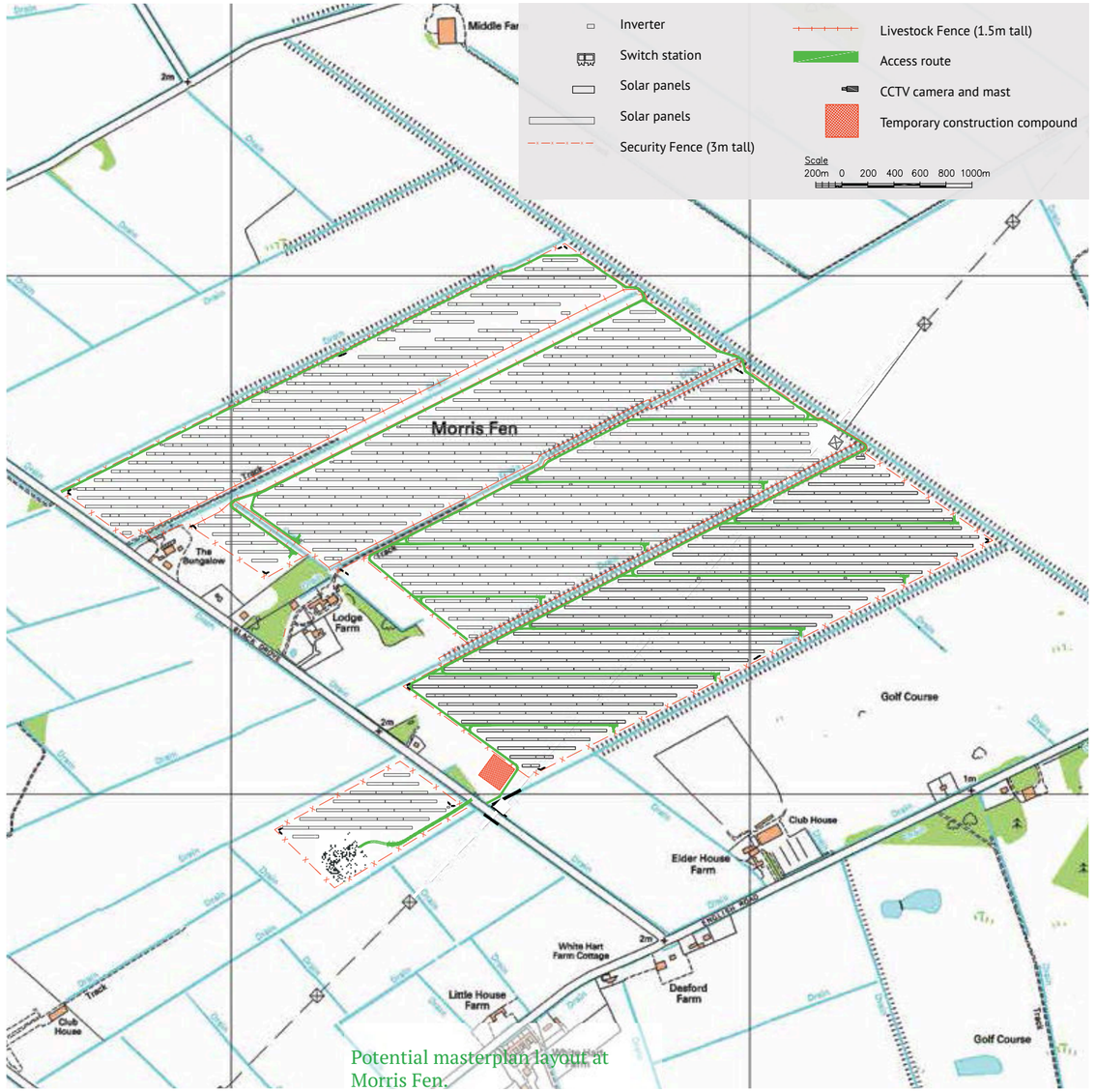
Future potential for wind turbines?

The feasibility of wind turbines on this site will not be known until winter 2013, which is when the recently-installed 'met-mast' will finish testing local conditions such as wind speed. Public consultation will take place at this time.

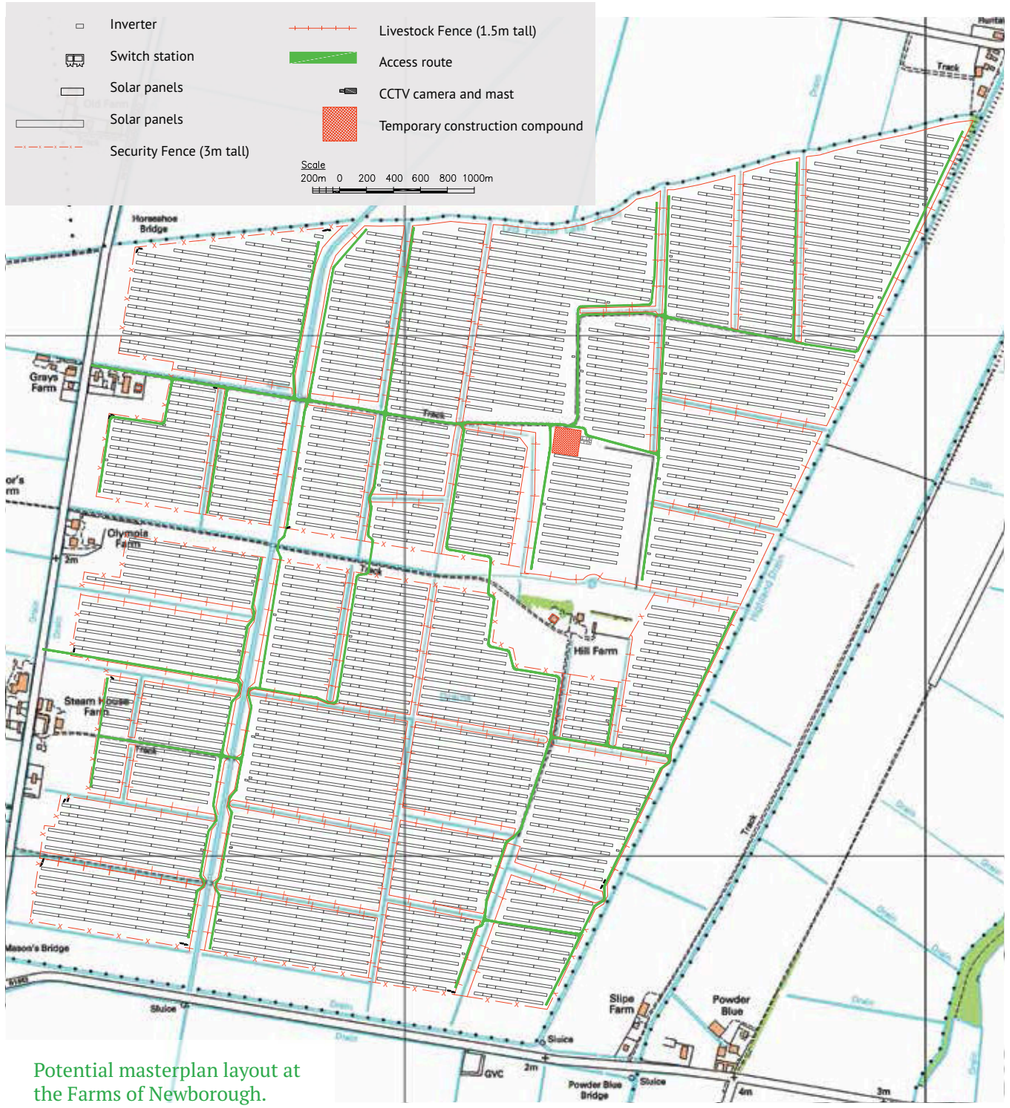
We currently believe there is potential for up to three wind turbines. The potential addition of wind turbines does not affect the current solar energy plans.

Archaeology

There is one site of known archaeology within the site boundary. This may indicate more activity in the area and so further studies may take place. Thorney Lodge is adjacent to the site and is a Grade II listed building. The building itself will not be affected by the solar panels, but we are in consultation with English Heritage to assess the potential impact on the building's setting and to ensure they are satisfied with the scheme.



Potential masterplan layout at Morris Fen.



Potential masterplan layout at the Farms of Newborough.

POTENTIAL DEVELOPMENT AT THE FARMS OF NEWBOROUGH

Studies have concluded that approximately 203 hectares (502 acres) are suitable for development. The main reasons for proposing a solar energy development here are:

- Development affects a small number of tenancies with short-term leases. 80% of the farms in the original area would not be directly affected;
- Development is considered least likely to contain significant archaeological findings;
- There is relatively little woodland and hedging, making development least likely to impact on local wildlife and ecology;
- Connection costs to the National Grid are lowest.

The site is located approximately 5km north of Peterborough and 1km south of Crowland. It is bounded to the south by the B1443 (Thorney Road) and the west by Peterborough Road South. The majority of the site is classed as Grade 2 agricultural land although there are some smaller areas of Grade 1 agricultural land.

Proposal

Planning permission is sought for installation of a solar farm with an installed power capacity of 49MW, comprising the installation of photovoltaic panels, associated boundary fencing, security and CCTV cameras, site access and associated electrical infrastructure including a switch station, inverter units, transformers and a switch building.

The key findings at the Farms of Newborough are:

Future potential for wind turbines?

The feasibility of wind turbines on this site will not be known until winter 2013, which is when the recently-installed 'met-mast' will finish testing local conditions such as wind speed. Public consultation will take place at this time.

We currently believe there is potential for up to six wind turbines. Up to three of these would be outside of the current planning application boundary. The potential addition of wind turbines does not affect the current solar energy plans.

Current tenants

The combined wind and solar energy proposals would directly affect six tenants. One of the tenants would be minimally affected by a single wind turbine only, and another plans to retire next year. Options relating to compensation are being explored and discussed with the tenants.

Archaeology

There are several sites of known archaeology within the site boundary. This may indicate more activity in the area and so further studies may take place.

Bird and wildlife

The scheme would be set back from land drains, buildings and trees to avoid potential impacts on local wildlife. The site is also within a 'species recovery area' for barn owls and there are a number of barn owl nest boxes present. A 50 metre minimum buffer would be applied from field margins with barn owl boxes to minimise disturbance. Studies are ongoing to understand if parts of the site support animals such as badgers, great crested newts or other reptiles.

Trees and landscape

There are woodlands, trees and hedgerows within the site. The schemeis laid out to avoid these areas. A design and mitigation strategy will be developed to help blend the development with the surrounding landscape.

Flood risk

This site is in Flood Risk Zone 3, which means there is a 1% - 5% chance of the site flooding in any year. The solar panels would be raised up to 3.5 m off the ground and we are in consultation with the Environment Agency to ensure they are satisfied with the scheme.

YOUR VIEWS COUNT, HAVE YOUR SAY

We would like to hear what you think about the Peterborough Renewable Energy Project.

Any views expressed, either positive or negative, will be summarised and presented to the Council as part of the solar energy planning applications.

It is important to remember that there are no final schemes at this stage.

Providing your thoughts now will help us to shape the final proposals and allow us to try to address any areas of concern before the applications are submitted. More detailed exhibitions are taking place locally to each development site.

If you would like to comment on the proposals, please fill out a questionnaire here today, or respond online at **www.peterboroughrenewableenergy.org.uk** by midnight **on Monday 3 Decmber 2012**

Once the applications have been submitted, the Council will then undertake formal consultation with local residents and statutory consultees.

renewables@peterborough.gov.uk
www.peterboroughrenewableenergy.org.uk

APPENDIX C

PUBLIC CONSULTATION POSTCARD

Freepost Plus
RTBS-GTRG-SJEK

Renewable Energy Project
Peterborough City Council
Town Hall
Bridge Street
PETERBOROUGH
PE1 1GF

AECOM

PETERBOROUGH CITY COUNCIL

PETERBOROUGH RENEWABLE ENERGY PROJECT

Peterborough City Council is hosting public consultation events about their plans to develop three Renewable Energy Parks in the **Morris Fen (Thorney), America Farm and Newborough areas.**

We want you to have your say on our emerging plans.

This scheme was first announced in July and a wide range of studies are now complete. The original area of investigation covered approximately 3,000 acres of council-owned land. As a result of the feasibility studies, development is now only proposed on 900 acres, which leaves around 70% of the farmlands untouched. The scheme will affect nine tenants and detailed compensation talks are taking place.

What are the benefits of the solar and wind energy parks at these three sites?

- They will provide a long-term sustainable energy source for Peterborough and the rest of the country.
- They will help meet Peterborough's and the UK's renewable energy targets.
- They will support the city council in reducing its carbon footprint by 100%.
- They will deliver in excess of £110 million in net income over 25 years to support frontline services such as care for children, vulnerable people and the elderly.
- They will provide for a 'community fund' to be set up for local projects to ensure money is put back into the local community.

We will also be offering a tour of a local solar farm for interested parties to visit on **Saturday 1 December** starting at 9.45am with a duration of up to 45 mins. Please register your interest in attending a tour by emailing **renewables@peterborough.gov.uk**

The consultation events will be held at:

Peterborough Garden Park, Unit 8
Saturday 24 November, 10am - 4pm
Sunday 25 November, 10am - 4pm

Queensgate Central Square
Monday 26 November, 9am - 6pm
Tuesday 27 November, 9am - 6pm

Crowland Snowden Pavilion
Wednesday 28 November, 4pm - 8pm

Bedford Hall, Thorney
Thursday 29 November, 4pm - 7pm

Peterborough Town Hall, Bridge Street
Friday 30 November, 9am - 5pm

Newborough Village Hall
Saturday 1 December, 10am - 2pm

Eye Community Centre
Sunday 2 December, 4pm - 8pm

If you are unable to attend, you can still contribute online at the address below, or detach, fill in and return this Freepost™ postcard.

Every reply we receive before **Monday 3 December** will be considered as part of the emerging plans.

If you would like to stay updated, please provide your details below:

Your Email:

☐ **Please tick here** to receive updates on this project and other environmental issues in the Peterborough area.

For further information please visit www.peterboroughrenewableenergy.org.uk

Comments

APPENDIX D

PUBLIC CONSULTATION POSTER

PETERBOROUGH CITY COUNCIL

AECOM

We want to make sure that Peterborough grows into a more sustainable city to benefit you and your local services.

To do this we are exploring the potential for renewable energy developments.

Come along and visit our exhibition to understand and influence our emerging thoughts and current activities at:

Peterborough Garden Park, Unit 8
Saturday 24 November, 10am - 4pm
Sunday 25 November, 10am - 4pm

Queensgate Central Square
Monday 26 November, 9am - 6pm
Tuesday 27 November, 9am - 6pm

Crowland Pavilion/Parish Hall
Wednesday 28 November, 4pm - 8pm

Bedford Hall, Thorney
Thursday 29 November, 4pm - 7pm

Peterborough Town Hall, Bridge Street
Friday 30 November, 9am - 5pm

Newborough Village Hall
Saturday 1 December, 10am - 2pm

Eye Community Centre
Sunday 2 December, 4pm - 8pm

We will also be offering a tour of a local solar farm for interested parties to visit on **Saturday 1 December** starting at 9.45am with a duration of up to 45 mins. Please register your interest in attending a tour by emailing **renewables@peterborough.gov.uk**

The Consultation Portal where you can view plans and comment online will open on Friday 23 November.
www.peterboroughrenewableenergy.org.uk

APPENDIX E

PUBLIC CONSULTATION NEWSPAPER ADVERT

PETERBOROUGH CITY COUNCIL

AECOM

We want to make sure that Peterborough grows into a more sustainable city to benefit you and your local services.

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We will also be offering a tour of a local solar farm for interested parties to visit on **Saturday 1 December** starting at 9.45am with a duration of up to 45 mins. Please register your interest in attending a tour by emailing **renewables@peterborough.gov.uk**

www.peterboroughrenewablenergy.org.uk

APPENDIX F

PRESS RELEASES

16/10/12

Council leader meets residents to discuss Renewable Energy Project

Leader of Peterborough City Council Councillor Marco Cereste attended a meeting of Newborough Parish Council last night to discuss a 25-year plan to deliver renewable energy which could generate in excess of £100 million for taxpayers and reduce the city's carbon footprint.

Councillor Cereste was asked to attend the meeting at Newborough Village Hall by Newborough Parish Council to talk to residents, farmers and other interested groups about the plans, which are currently at a very early stage.

At its meeting in July Cabinet approved the commencement of feasibility studies to initially assess whether the areas identified were suitable for the development of an energy park.

At the meeting last night Councillor Cereste was able to update the audience following the conclusion of these studies. The audience heard that:

• Initial results of the feasibility studies show that only 900 out of the 3,000 acres and that only nine out of 22 farm tenants could potentially be affected.

• One-to-one meetings regarding compensation options with those tenants who could potentially be affected begin today (Tuesday 16 October).

• The initial feasibility studies will be presented to Cabinet on Monday 5 November and subject to approval, a week-long public consultation period will begin on Wednesday 7 November. Details will be announced closer to the time.

Councillor Cereste said: "These proposals have the potential to bring to the city over £100 million in net income over the next 25 years, helping us to support our growing and ageing population. This project also supports our aspiration to be the UK's Environment Capital and demonstrates our commitment to reducing our carbon footprint by investing in renewable energy.

"We are keeping people at the forefront of our minds throughout the consideration of the Renewable Energy Park – the people who currently work the land as well as the people who will need our continued support for social care, housing and public health throughout the two decades. This is a decision about long-term benefits for the citizens of Peterborough, not about any short-term gains."

Ends.

Peterborough City Council's Cabinet will be asked to approve the next phase of a renewable energy project which could generate in excess of £100 million net income to support council services and reduce the city's carbon footprint.

In July Cabinet approved the outline proposal for the development of renewable energy parks at three council-owned agricultural sites at America Farm, Morris Fen in Thorney and at farmland at Newborough.

At a meeting on Monday 5 November 2012 at Peterborough Town Hall, Cabinet members will consider the results of initial feasibility studies carried out at the sites, which will establish the two most viable configurations of the energy parks (principally solar PV) and the overall capacity of the energy parks proposed.

The studies concluded that around 900 acres of the originally proposed 3,000 acres will be affected. As a result the initially identified 22 tenant farmers has been reduced to nine, all of whom are being consulted individually.

Cabinet will also be asked to approve the submission of planning applications for the development of ground mounted solar photovoltaic panels. A further report will be brought back to Cabinet prior to the submitting of planning applications for wind turbines.

The Cabinet report also outlines plans for wider consultation with people in the local areas affected as well as opportunities for all residents to view the proposals and feedback at a city centre exhibition launching on Wednesday 7 November 2012. Further details will be announced soon about the exhibition.

Councillor Marco Cereste, Leader of Peterborough City Council, said: “The feasibility studies have been very useful and the knowledge we have gained has allowed us to refine the proposals. For example, we now know that we can develop less than a third of the originally identified land and still achieve the same level of return financially and in terms of output levels.

“The results have also given us a clearer indication of the income achievable if we progress our plans. The development would generate significant amounts of renewable energy that we can use to safeguard our budgets against rising and uncertain energy prices. The energy could be sold to generate income in order to help close the council’s funding gap and ensure that we can continue to provide the services that our residents need and expect.

“That said, I want to make it absolutely clear that no decision has yet been made and we will continue to consult with those affected by the proposals. I would encourage as many people as possible to attend the public exhibition in November to view the proposals and offer their feedback.”

29/10/12

Cabinet asked to approve next stage of Renewable Energy Project

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"That said, I want to make it absolutely clear that no decision has yet been made and we will continue to consult with those affected by the proposals. I would encourage as many people as possible to attend the public exhibition in November to view the proposals and offer their feedback."

21/11/12

Next phase of renewable energy project gets green light

The next phase of a renewable energy project which could generate in excess of £100 million for taxpayers while reducing the city's carbon footprint has been given the green light.

Members of Peterborough City Council's Sustainable Growth and Environment Capital Scrutiny Committee met earlier this week (Monday 19 November 2012) and considered a request to call-in a decision taken by Cabinet in respect of the development of ground mounted solar photovoltaic (PV) panels (solar farms) and wind turbines.

The decision made by Cabinet at its meeting on 5 November 2012 was to approve the submission of planning applications for the development of solar farms at three council-owned agricultural sites at America Farm and Morris Fen in Thorney and at farmland at Newborough. Cabinet also approved the launch of a public consultation and it was agreed a further report will be brought back to Cabinet prior to the submission of planning applications for wind turbines in 2013.

The scrutiny committee voted to reject the call-in and as a result the decision taken by Cabinet at the meeting on 5 November 2012 now stands.

Councillor Marco Cereste, Leader of Peterborough City Council, said: "I am pleased that the scrutiny committee has found the decision taken by Cabinet to be sound.

"This project will generate significant amounts of renewable energy that we can use to safeguard our budgets against rising and uncertain energy prices. The energy could be sold to generate income in order to help close the council's funding gap and ensure that we can continue to provide the services that our residents need and expect.

"We are continuing to consult with those affected by the proposals. I would encourage as many people as possible to attend the public exhibitions in November and visit the website to view the proposals and offer their feedback."

Following the scrutiny decision, consultation with people in the areas affected and the wider public can now begin. People can view the proposals and feedback via a dedicated consultation website and at public exhibitions from Friday (23 November 2012).

To participate and view the plans online, visit www.peterboroughrenewableenergy.org.uk from Friday 23 November 2012.

Exhibitions and events will take place as follows:
• Saturday 24 and Sunday 25 November – Peterborough Garden Park unit 8, 10am to 4pm
• Monday 26 and Tuesday 27 November – Queensgate central square, 9am to 6pm
• Wednesday 28 November – Crowland Snowden Pavilion, 4pm to 8pm
• Thursday 29 November – Bedford Hall, Thorney, 4pm to 7pm
• Friday 30 November – Peterborough Town Hall, 9am to 5pm

• Saturday 1 December – Newborough Village Hall, 10am to 2pm
• Sunday 2 December – Eye Community Centre, 4pm to 8pm

A tour of a solar farm near Whittlesey will also be available on Saturday 1 December starting at 9.45am and will last approximately 45 minutes. To register your interest please email: renewables@peterborough.gov.uk

Ends.

At a meeting in July, Cabinet approved the outline strategy for the development of renewable energy parks at three council-owned agricultural sites. During the four months of feasibility studies leading up to the most recent Cabinet meeting, extensive research and testing concluded that only around 900 acres of the originally proposed 3,000 acres will be affected. As a result, the initially identified 22 tenant farmers has been reduced to nine, all of whom are being consulted individually.

APPENDIX G

PUBLIC CONSULTATION FEEDBACK

Peterborough Renewable Energy Parks
Pre-application public consultation responses

ID	Feedback (names and addresses removed)
1	I consider that the proposals in relation to Morris Farm Thorney and the Newborough area are too big and constitute the worst form of "cashing in" on the the latest money making idea and have little or no regard for agriculture. Further views will follow.
2	Quite a few more windless days. What a way to steal the money from Peterborough people. You should be ashamed, but of course the mantra rules.
3	I was pleased to see the stand in Queensgate last week, and am really excited about Peterborough's plans for renewable energy. The presentation of the potential sites, and the assessments completed of impact are clear, but I have a concern regarding the impact of Peterborough's food supply, and wonder if it has been considered in planning. There is clear evidence that globally we face a very real challenge in feeding an increasing population. In the UK, and in Peterborough this means increasing productivity of food production, whilst reducing environmental impact, on the same amount of land. I wonder if the impact of using productive arable land on Peterborough's future food supply has been considered. As there is not currently a clear overview of the local food supply chain, and an assessment of food security has not yet been completed this is a challenge, but I think that it is vital we look at the whole picture of the city's sustainability when taking a step forward in any area. Evidence on the urgency of securing our food supply: http://www.bis.gov.uk/assets/foresight/docs/food-and-farming/11-546-future-of-food-and-farming-report.pdf http://archive.defra.gov.uk/foodfarm/food/pdf/food2030strategy.pdf
4	I was interested to see your stand in the Queensgate shopping centre which has prompted this email. I have had an interest in photovoltaic cell for a number of years and had a number of conversations with engineers of different persuasions. I am interested to know how much energy is required to produce the cells and therefore how long the cells need to be in service before a positive contribution to the environment is made. In many cases inverters are used in conjunction with cells and they produce harmonics, how do these affect and restrict your proposals? On a recent visit to Queensgate I noted during the daytime that lighting was on at the top level which is open to natural light. There could be logical reasons for this but conversely this could be a waste of energy. A few years ago I recall walking to work and on a number of occasions witnessing outside lighting on during the day on premises of a company who claim to care for the environment. When they were asked the reason they took action to turn the lights off. This prompts the question as to whether independent energy audits are carried out in and around commercial, industrial and public buildings in Cambridgeshire.

5	With reference to the Consultation Event held in Crowland on 28th November 2012 we wish to make the following points: We had no knowledge of this proposed project until we were informed by a friend on 2nd November 2012. We were only aware of the Consultation Event on the day itself and again this was information received from a friend. At the Consultation Event, your representative advised us that all homes in Crowland had received a notification postcard detailing the event, but we had received nothing at all and when we checked with our neighbours they were also unaware of any Consultation Event taking place or of the proposed project. It appears that the majority of people in Crowland are unaware of this proposed project and as the area concerned appears from the map to be larger than Crowland itself and is so close to our town it is only right that all people who live in Crowland should be made aware of the proposed project. We feel that a further Consultation Event should be arranged, ensuring that all residents of Crowland are fully informed. We understand that it has been proved that developments such as this devalue the price of property in the surrounding area. We would like confirmation that we would be compensated if this was to occur if the scheme goes ahead. Crowland is a rural town surrounded by farmland, the proposed site is prime agricultural land and surely should be used to produce food not power. It has been stated that the original plan of 3000 acres would generate an income of £120 million over 20 years but we have been informed that the revised development of 900 acres will generate £110 million over 25 years, how does this equate? In respect of the above points, please accept this e-mail as our formal objection to this proposed scheme.

6	After attending the Consultation Event held at Crowland Snowden Pavilion on 28 November 2012 we would like to make the following points: • Initially we were informed of the project by a friend who lives in Newborough and would not have been aware of the proposed development without this contact • We were only aware of the Consultation Event as we were informed by a family member who had been in contact with Crowland Parish Council ,this is despite previously registering our objections with Peterborough City Council and understanding that we would be kept updated. • We were advised by your representatives at the Consultation Event that every house in Crowland had received a notification postcard through their door. We have checked with neighbours and friends who live in the furthest points of Crowland and this is not the case, hence the reason for approximately only 30 residents attending (three of which were from our immediate family). It therefore appears that the evening was a not correctly publicised and "tick box exercise". • The majority of the residents of Crowland are unaware of the proposed dev elopement and you have a moral duty to inform them when the proposed sight is less than 1 mile from their homes and the proposed area is vast. • We believe that a further consultation evening should now be arranged and the correct communication methods should be used to ensure that all residents of Crowland are correctly and fully advised. • Your representatives on the evening agreed that they would want to be made aware of such a scheme and be fully consulted with if the proposed development was within 1 mile of the homes, so why was this not the case in the case? • It has been proved that such developments devalue the price of property in the surrounding area. • We plan to have our property valued and would like confirmation that should the scheme go ahead and the value of a property decrease we will receive compensation from Peterborough City Council. • We are not opposed to solar and wind energy however the proposed sight is prime agricultural land which should be used to produce high value arable crops and not power in a country when upwards of 40% of food is imported, food prices are increasing and there are worldwide grain/food shortages. • Crowland is a rural town surrounded farmland and the proposed development is totally inappropriate in this location when alternative brown-field sites are available elsewhere. • The proposed scheme aims to reduce the deficit of Peterborough City Council, however the residents of Crowland who will be most affected by having the site on their doorsteps, do not come within the council boundaries and therefore the projected additional net income will be of little or no benefit to the town. • It was stated by the leader of the council that the original plan of 3000 acres would generate income of £120 million over 20 years, yet the current information document states that the revised development of 900 acres will deliver in access of £110 million over 25 years which does not equate. Are the current figures therefore correct or overstated?
7	I'm against this project. 1. Wind and solar farms are too little, too late. We have to go nuclear, geothermal, anaerobic and tidal. It is the only way to support the huge energy demand of an overcrowded country. 2. Wind farms cause more CO2 damage than they negate: the manufacture of the turbines, shipping them from abroad, new roads. 3. Energy from wind is intermittent and cannot be stored. The national grid cannot cope with energy from turbines in high winds. 4. This project is the rape of prime agricultural land in a country which is chronically short of open space. Our local farmers already provide local, sustainable food security for us. 5. However, if continued with, solar panels should be placed on all the large building roofs in Peterborough and surrounding areas. Wind turbines should be built along motorways. This would use existing scarred landscapes.
8	As you don't seem to have a proper consultation area on here I am writing to register my profound distaste for your appalling, ridiculous, asinine proposals to replace prime farming land with under efficient, monstrously ugly excrescences. I note that you mange to place them as far away from Peterborough as possible and impose them on those of us who choose to live elsewhere. I hope you see sense and consign this project where it belongs-In the bin.
9	As an inhabitant of Crowland I have become aware of the proposed development on farm land near Newborough. I am against this for the following reasons: - I moved to Crowland to be in the country - this will make a 'blot on the landscape' - If the proposal proceeds farmers will lose their livelihood - we will lose availability of UK produced goods - People in Crowland will not benefit from any reduced cost electricity generated - Our house prices could devalue I do not believe that people of Crowland know about this proposed development. There was a meeting held on 28 November at the local centre but it was very little publicized and believe only 29 people attended. I think that a meeting should be held again with all the inhabitants of Crowland made aware, advertising posters put up everywhere so that people become aware of this planning proposal and are able to give their views. I think you will find many are against it!
10	We are if this goes ahead walking into a big black hole and I feel it is all being rushed through as you want the cash for your budget shortfalls.
11	How will panels be raised if floods occur. What mechanisms will be needed??
12	You can keep your wind turbines and solar panels we don't want them.
13	No one from the PCC was here to answer the questions very bad consultation.
14	How dare he's the leader of the pack have Churchill behind him.
15	High risk to local tax payers, if project does not pay. Ugly to view.
16	Where the Council? Why not available?? Typical no one at Newborough.

17	I object to the proposed development.
18	Keep Cereste sticky fingers out of it.
19	I'm averse to using the agricultural land for solar panels
20	Attended Newborough Village Hall - Sat 1st. Very disappointed and surprised no council representative present.
21	Build some Nuclear power stations.
22	Not happy! To close to village and homes. We need agricultural and food production
23	Farm land will be required for more food production as population increases. "Green Energy" is not efficient. Look how often wind turbines are not working. Peterborough does not need this development. Even the energy minister has his doubts.
24	Peterborough Garden Park 25/11 – The display was incomplete as there was no indication of the position of the wind turbines. The videos only put over one side of the argument. The argument "for" and should show the argument "Against" too, to offer a balanced view. It appears to be about money only, not the local environment. The land will be unfarmable.
25	Waste of arable land, will seriously devalue our house – who is going to compensate us? Construction traffic will damage English Drove if is used as access from A47.
26	I disapprove of more wind farms – not convinced of the economic efficiency of them. I know from personal experience solar energy is a better way forward but not at the cost of farmland – that is very short sighted. Spend the money putting solar panels on council houses offer grants to private landlords.
27	The Rider. The environmental impact of solar, no effect on wildlife. The panels will increase the loss of habitat and not benefit the environment. What happens when they are taken away?
28	The idea is ridiculous to use good Agricultural Land!!!
29	Prime farm land – we need to feed people. Put up solar panels on all council owned property – along the banks (won't happen not council owned)
30	Keep away from residential homes in Newborough please.
31	Why does Cereste want to waste more money on projects that don't work, as it has been proven in other parts of the country, No wind No Energy he's just wasting more money the same as he did on his famous Cathedral Square, good money which could have gone to vulnerable people children and the elderly. No to Wind farms. Newborough Resident
32	I have horses down hundreds road and so will be affected greatly. I will be unable to hack out up the road as they will see them as a threat. They may even affect me riding in the school. They will be an eyesore.
33	I/we are opposed to the planned development you only talk about impacting farmers and never talk about villagers and their concerns you simply do not care! You are bullies not in your back yard I bet!! PS waste of good money.
34	As Newborough resident an opposed to proposals. Impact on wildlife livelihoods, house prices. Why choose an area so close to a village when there are many other locations which could be used away from settlements. This is prime agricultural land, what a waste! Please take notice of views of the local community.
35	I totally oppose wind farms. They are ugly and a blot on the landscape. They are an environmental eyesore and fail to meet needs of Renewable Energy. As they only produce electricity when the wind blows and only then in varying amounts due to wind speed. Then when wind speed passes they are turned off no generation again!! Renewable needs tide power (wave power) Tidal barrier power and Nuclear !! Forget Wind Turbines!!
36	Great idea the sooner the better. Hope it gets the go ahead.
37	Why have the council not put Solar Panels on every council building – community centres, schools etc. To reach their targets instead of using the most valuable farming land!!
38	Solar Panels waste of money the land is more important. Is this an ego builder, Council Tax will go sky high. Get on new committee, some hope. I am not a farmer, so sorry for them. I do not suppose this will get read, or counted.
39	I am definitely against the wind farm @ Newborough as this will affect my property, be noisy to the village and have negative affect on us locally. Property price will drop. NO !!
40	It's a great initiative our futures depends on gathering energy from renewable sources. It would be nice to know the percentage of power produced in relation to the needs of the city and savings passed on to consumers. All in all the plans seem well considered.
41	It seems totally wrong to take away good fen farmland away, especially when our population is growing so rapidly and all need feeding.
42	Not in favour at all on this.
43	Marco Cereste you're a fool!! The cost of food is on the increase and you want to put Glass on farm land!!?? Vote out this Council!!
44	A very good idea, if it gives us in Thorney cheaper tariff etc. It is like having our windmills back but they don't bake flour.
45	I attended your presentation in Crowland on 28/11. I was surprised to find out from other residents in attendance that they had not had the information through their door about the evening. The people running the event said circa 29 people attended, which is very low considering the number of households. I was informed that a two week consultation period ends on 3/12, which does not give much time for people of Crowland to respond. The consultation is flawed, as I do not believe residents of Crowland were given enough notice.

46	Many thanks for the helpful and information information session in Crowland yesterday. It was good that the time was taken to provide information on the proposed scheme. There was one point on which you were unable to provide me with information and I would be pleased if you could do this. My questions were as follows: - where will the proposed schemes at Morris Fen and Newborough Farms be linked to the national grid? - will any cables used to join to the national grid be underground or over-ground? - if over-ground will any new pylons have to be erected to support the cabling? - if the answer is yes to the above question are details of the route of any over-ground cabling and the potential siting of pylons? - would permission be required from neighbouring authorities re the routeing and siting of any over-ground or underground cables to connect to the National Grid?. If yes, have any such discussions taken place?. I look forward to receiving your answers in the near future.
47	100 -110 million net income over the 25 year period does not seem a significant figure given the cost of the project should it go ahead. Would the 'community fund' be for each individual area affected, should the proposal go ahead, and would it operate over the entire 25 year period? Who would decide the local projects/ would there be restrictions on what type of project may be considered.
48	I have logged about 8 windless days over the past two weeks. Most of these days were also dark and overcast. Solar panels will be useless during the long hours of darkness during the winter, even the useless wind turbines might put out a few volts at night. Perhaps you could explain the value for money here? Mr Cereste says he "takes global warming very seriously" What global warming?? Please point me to the evidence. What a giant scam. (sorry I should call it climate change, that covers all the cold bitter winters and rain. Sheer genius!
49a	I am writing to you to express my objection to the proposed plan to site solar and wind turbines at or near the location of Newborough. I am also disgusted at the way the city council, especially certain leaders are appearing to be bullies and not concerned about the affect this development could have on hard working council tax payers in one of their villages, who as a result of the development may see their property prices destroyed, possible flooding, turbine sickness.....etc, Will the affect of this mean I have to pay no council tax? Especially as Newborough villagers appear to be taking one for the whole of Peterborough and the greater good. This is how it is presented at the moment. One thing that does bother me the most is the way the council have appeared to be bullies, they constantly mention the farmers (cannot believe in the world where food will become short we plan to use good land) but they have never apologised to the villagers, and in every report I read we hardly get a mention! So much for being a loyal resident in Peterborough of 40 years. It is even more disheartening when you read that a leading councillor talks openly about greatly compensated in such a flippant manner all the time. It is really all about the money isn't it. What about the villagers affected!!! Doesn't care I suppose about those families.
49b	I am not a farmer. Just a house owner with children. No wonder so many of my friends have decided to leave, the place is being destroyed by bad planning and acceptance of anything, let alone crazy ideas. Ps I am an electrical design engineer of many years experience and I know about the cost and practicalities of such a design, ongoing maintenance costs, cost of operation such an infrastructure, possibility of problems with the DNO, the possible problems with the technology and the fact that what ever costs you quote for tender they always increase by 12 percent +, generally. I am also concerned about how good your team is at organising such a large scheme. I used to live in Eye and was greatly impressed by the way your traffic management team shut Eye off from the rest of Peterborough, for such a long time, during the development of Van Hague and those dastardly traffic lights, etc. I felt especially for all those drives who could not go anywhere for a period of time. Due to a number of road closures not thought through, not instilling me with confidence, still great publicity for the city though, not. Great job though and looking forward to Newborough becoming a ghost village. I'm also greatly concerned by the recent developments with regard to turbine syndrome and look forward to future findings, I suggest you look into this very carefully. You can see from the length of my email the strength of feeling that I have and I do wish you to respond, please. (Unlike the councillor Mr Cereste, he did not bother to respond to my email to his personal website, although his website states that he responds to emails. Very disappointing again).

50	This whole plan is an utter disgrace which must be vehemently opposed by whatever means necessary. The council has absolutely no mandate to inflict such scars on the landscape, which would amount to nothing more than institutionalised vandalism. Shame on Peterborough City councillors, particularly the Council Leader, who are seeking to betray so many of their constituents. People should oppose this abomination by any - any - means available.
51	I object to the proposed scheme. We (and others) have invested in the area so we can live in the countryside and not so that we live near ugly / noisy wind turbines and solar farms. There are other options other than this such as placing solar panels on top of all the warehouse and factories in the area such as the IKEA building. Property prices will drop by up to 30% if this goes ahead and the council should compensate all residents accordingly, that is assuming that properties will sell once these monstrosities have been erected. If the council members are so keen on proceeding with this, maybe they should consider erecting a wind turbine and /or a solar farm near their homes.
52a	Thank you for the consultation letter that I received today 23rd November 2012, regarding the proposed development of America Farm for 8MW of photo-voltaic electrical generation. In respect of the above development I have a number of questions that I hope that you will be able to furnish the answers to. 1. I note that the original plans were for 16MW and that this has subsequently been reduced to 8MW due to capacity limitations of the local electricity grid. Please can you tell me if the financial model for America Farm has been published to account for the 50% reduction in generating capacity? It appears that a significant proportion of the CAPEX and OPEX costs will be fixed regardless of the electrical output and I would ask to see the revised model that takes into account the reduction in revenues from the site. 2. Please can you confirm how the reduction of efficiency has been factored into the financial model, i.e. if the site is designed to an output of 8MW in year 1 with predicted 80% output (6.4MW)in year 25, how is any efficiency reduction accounted for within the model. 3. Please can you confirm that the financial model accounts for the whole life cost of the asset including the costs of decommissioning and disposal of the PV cells (and any other infrastructure directly associated with the asset) at the end of their design life.
52b	5. What is the basis for the 7.4% inflation rate used in the model? Does this account for the development of shale gas recovery within the UK and the possible reductions in wholesale gas prices due to reductions in imported gas? 6. Is the detailed Financial Model available for review rather than the summary published so far? 7. I note from the reports that the Contract to build the site is likely to be let to Mears Ltd under a framework agreement let in January 2012. Is the contract to be a design and build or just for construction? If construction only, who are the designers of the project. Is the intention for one contract for all three sites or individual contracts for each site? Please can you confirm that the letting of the contact is [to be] in full compliance with European procurement directives? 8. I note that Mears is primarily a company involved in buildings and social housing maintenance. Please can you confirm if Mears Ltd have a proven track record of construction of solar farms of a similar magnitude to the proposed electrical output(s) of the sites. Could you provide a history of previous comparable projects completed by the likely contractor? 9. Has an Environmental Statement or Environmental Impact Assessment been produced? Is this available for review by members of the public? 10. Has a full Flood Risk Assessment (FRA) been produced and accepted by the Environment Agency for the America Farm site. What is the proposed flood risk criteria for the development i.e. designing for a 1:100, 1:1000 weather event etc. 11. Have Geophysical surveys and Archaeological investigations taken place? Has a written scheme been submitted and approved by the County Archaeologist. 12. Have full ecological surveys taken place for the site? Are there any protected species present at during any part of the year? 13. Has a Traffic Management Plan (TMP) been produced for the proposed development? What are the proposals for Traffic along Willow Hall Lane and the Green Wheel during construction and operation of the site? Has future development of the incinerator been factored in to any TMP? 14. Please can you confirm the programmed date for the planning application submission?

53	Further to my e-mail of 4th December, I write further as a retired Chartered Surveyor, resident in Peterborough for 50 years, and previously a partner in a local firm of Auctioneers and Valuers. I appreciate the need to consider renewable energy, but feel that the Council, is trying "cash in", and is overlooking agriculture and the local environment. In relation to Newborough and Morris Fen Thorney, I feel; the areas of land suggested for solar farms are too big and in the wrong places. It looks very much to me that senior members of our Council see an oppurtunity to realise money from farm land they have inherited, and are not acting in a responsible manner. If all owners of agricultural land had the same ideas, farming locally could be killed. I believe there may be a case for a mdest solar farm on individual areas of up to about 40 acres, but never on grade1 farm land and not close to roads. It could be possible to contemplate "development" on America Farm, which is close to Eastern Industry, but would be a comparison with Flag Fen. If a tenant is wishing to retire, then an area in Newborough might be found from his holding on the least good land and with adjustments to other tenants land and boundariies if they wish, but not on grade1 land. A modest area at the rear of the holding might be possible at Morris Fen, but not the whole holding, and not close to the road, farm buildings or the golf course. To sum up the City Council appear to me to be only interested in a possible large cash gain and have too little regard for agriculture and the environment.
54	What's going to happen to the farmers there going to lose their crop space
55	Why put them on good land there is plenty of other places.
56	Where will wildlife go to? Our food will have to be imported.
57	This has not been thought about the figures seem pie in the sky. Why take agricultural land. Plenty of brown field sights.
58	Why use up good land put them on waste land all tips we got lot round here.
59	It's criminal what you are doing. Taking good land out of food production. No good having electric and starving.
60	What about game keepers what will they do.
61	What and where will the solar panels go when they are worn out?
62	You are taking valuable farm land up from people who rely on it for a living, there needs to be land to feed future generations. How can these farmers stay on in their homes with no income coming in. Just because they aren't from the council shouldn't give you the right to take it.
63	I'm averse to using prime farming land for solar energy panels.
64	Given we live within sight of one of the proposed sites surprised this is the first official correspondence we have received.
65	The Fens are the best agricultural land in England, keep it for food production, instead of transporting food half way round the world! Stop these "Emperor's New clothes" Syndrome.
66	Why not put them on a tip we have two tips in Eye.
67	It doesn't matter if it is 1 tenant or 20 tenants, you are planning to take away 900 acres prime agricultural land, which can grow: 2,700 tons wheat, 2,700 tons sugar, 36,000 tons potatoes – valuable food for thousands of people. Food is the most important issue here!!
68	Do a search 100's farm Single turbine gone in. Scale on map wrong. Dual use Morris – landscaping? What house between two plots Historic Monument Heritage Newborough Top left
69	More blots on our fenland landscape AND You are taking away the livelihood of a lot of people you have no idea of the effects – produce of these blots.
70	What happens to the farmers after they are built.
71	Solar farms and wind farms look unattractive we have loads of unwanted land like a tip we have
72	Housing devalued. New land house Site visit arrange Height of panels glare 100m buffer zone Return of land from gross to arable – Defra!! Can it be done French Huts Grove Wind Farm
73	What a stupid waste of prime farm land Another blot on the fens, why are these things (including wind farms) built to the west of P'boro Hasn't the leader of the council got a vested interest in getting these built?

74	Having visited the Peterborough Renewable Energy Project consultation event on Sunday at Eye and digested the available information I have the following comments. Whilst in general terms I am a supporter of renewable energy I feel that the project is ill conceived for the following reasons: The proposal removes 900 acres of agricultural land from production. This equates to a loss of potential food production equivalent to approximately 2900 tonnes of cereals (wheat / barley / oats - with associated straw) or 5000 tonnes of white sugar or approximately 16000 tonnes of potatoes. Food is the most basic of mans needs! Not only does this affect food production, but also removes an efficient and natural way of removing CO2 via plant growth. Crops also take moisture from the land which could lead to more flooding as rain is not taken up / falls on crusted soils. There is a renewed demand for straw especially in this area where planning has already been consented for two straw burning power stations in Lincolnshire, one ast Brigg and the other only 35 miles away at Sleaford which will produce 38Mw. The Brigg plant will generate 40Mw. This shows that renewable energy projects can enhance rather than adversely impact Agriculture. The loss of land affects not only the tenant farmers but also the industries / jobs which rely on farming such as hauliers, agricultural contractors and will lead to some job losses. At the end of the 25 year period the land will not be readily returned to agricultural use, therefore other uses will be needed, possibly housing. How has this been factored into the over feasibility? There are alternatives such as placing panels on all council buildings e.g. schools, offices. I accept that some of this has taken place already but more can be done. For me the thinking behind the project only considers the short term financial benefits to Peterborough City Council. It does not consider the long term environmental, social and financial impact. Land on which to produce food is being continuously eroded leading to increased imports leading to more CO2 being produced reducing if not outweighing any benefits the project may seek to deliver.
75	No Thanks a complete waste of money and energy.
76	I'm all for renewable energy.
77	I'm concerned about the loss of farm land and the impact on the landscape, especially w.r.t the value of my property and my enjoyment of the local surroundings.
78	I'm in favour of solar panel but not wind farms as they are not cost efficient and a blot on the landscape.

APPENDIX H

FREQUENTLY ASKED QUESTIONS SHEET

Q & A

PETERBOROUGH CITY COUNCIL

September 2012

Communications Team
Town Hall
Peterborough
PE1 1HG

Subject: Peterborough City Council – Renewable Energy Projects

Questions and Answers

1. ***What is being proposed?***

   At this stage, work is commencing to better understand the potential to develop three renewable energy parks (referred to in this Q&A as the Schemes) on Council owned agricultural sites that are currently subject to tenancy agreements. The Schemes may potentially include ground mounted solar photo-voltaic panels (commonly known as solar panels) and/or wind turbines and/or other types of renewable energy solutions. The potential mix of energy generating solutions will be subject to feasibility studies as well as consultation with the public.

2. ***Why have Morris Fen, America and Newborough Farms been chosen as potential renewable sites?***

   These three sites have been identified by the Council as the preferred sites due to their potential to deliver the Schemes. The three preferred sites have the benefit of being in the ownership of the Council. Using sites that are not in Council ownership would make it harder for the Council to deliver the Schemes and could affect the long term profitability of the Schemes as you would have to pay a private owner. In addition, preliminary assessments indicate that the three sites are well suited to deliver renewable energy development, both from a technical and environmental perspective. At this stage, no other credible alternative sites have emerged.

3. ***How many different organisations will be involved in this project?***

   A number of different organisations will be involved throughout the process. They will be procured as and when required.

4. ***Why is Peterborough City Council pursuing renewable energy projects?***

   This project enables Peterborough city Council to meet its legal obligations to the government and ultimately the EU, in contributing to the required reduction of the UK's carbon emissions by 15% by 2020. It is also a continuation of the Council's ongoing renewable energy strategy found in our 'Statement of Community Involvement' policy document. The schools PV project represented the first phase of our Green Energy Plan and supports our aspiration to be the UK's Environment Capital, demonstrating our commitment to reducing our carbon footprint by investing in renewable energy.

Additionally, Peterborough City Council, like many other Councils in the country, is facing a significant deficit in its budget over the next 10 years and it has been looking at a range of measures to help meet that shortfall whilst still being able to meet its obligation to deliver a wide range of necessary and essential services such as social care, infrastructure development and maintenance etc. The potential development of its agricultural estate to create a renewable energy park therefore creates a major potential opportunity to make a significant inroad into alleviating these known budget pressures and protect our ability to deliver future services.

5. ***How will the schemes be funded?***

Funding is being sought in part from the Council's capital programme, which includes support for 'Invest to Save' schemes. This budget is for any project that delivers savings to the Council and has already been used to fund solar panels on local school buildings. Other important sources include lending from Central Government and private investors.

Potential private investors include institutional investors, such as pension funds, and early negotiations are in process to secure funding via this route.

6. ***What are the benefits to local people?***

The Schemes will return a long term income to the Council over a 20-year period. Early assessments suggest the Schemes could generate between £90m and £137m in NET income, which would be reinvested locally into improving Council Services to meet the needs of a growing population and would provide support for major regeneration schemes such as Fletton Quays.

Long term revenue generated from the Schemes could also be reinvested locally into one-off civic amenity projects.

7. ***What are the timescales?***

A detailed feasibility study is being undertaken to establish the potential mix of energy generating solutions and the size of those solutions on the identified preferred sites. This will be completed by the end of August 2012. At this point PCC will decide on whether to take the Schemes forward into planning.

Should PCC decide to proceed to submitting planning applications, it is anticipated these will be submitted in December 2012 for the solar schemes and December 2013 for wind schemes.

8. ***How will people have their say?***

A public consultation exercise involving exhibitions and public meetings with Parish Councils, statutory consultees (e.g. Natural England & Environment Agency), other stakeholders, local residents and any other identified interested parties, will be conducted during the planning stages. These exhibitions and public meetings will be publicised in due course and a website and other appropriate communication and engagement channels will be established to keep people updated on progress and enable them to feedback comments and questions. The consultation will take place before the planning applications are submitted. Furthermore, Peterborough Planning Authority will carry out a statutory consultation process when the applications are submitted.

9. How will the farmers be affected?

Current agricultural practices can be maintained around the wind turbines. Solar panels will take some arable land out of production. However, other forms of agriculture could still be undertaken such as sheep grazing and hay meadows. Tenants of the affected land have been informed in writing of the Council's consideration of the potential Schemes and advised that they will be fully consulted. To end any tenancy agreement, the Council would need to give not less than one year's notice once the planning permission is granted, although early agreement to end the tenancy agreements may be sought so that work can start sooner.

10. Will public rights of way be affected?

There are no public rights of way through any of the sites.

11. How will the Schemes affect the Council's carbon footprint?

The Council's current carbon footprint from energy is approximately 22,000 tonnes of CO^2 per year. Once operational, each Scheme would contribute to reducing this annual figure by displacing the amount of carbon generated from traditional sources, which would have been consumed by the Council, had the Scheme not been built.

This does not factor in the embodied carbon within the renewable assets themselves, but a wind turbine will generally take around 3-5 months to generate the energy required to manufacture it. A conventional power station tends to take around 6 months. The lifespan of a turbine can be around 20 years, so the initial energy outlay is fairly negligible compared with its ultimate potential.

12. Why is the potential for solar energy being explored?

Solar energy is a totally silent and non-polluting means of generating electricity. The effect on the environment and local views are minimal and they also require little maintenance as they have no moving parts.

13. Why is the potential for wind energy being explored?

The UK Government has signed up to an EU target of generating 20% of its energy from renewable sources by 2020. Wind energy is the most cost effective way of achieving this. There are currently around 3,500 wind turbines in the UK.

14. Could a potential energy generating solution involve wind and solar energy together?

Potentially yes, subject to feasibility and assessment studies being undertaken. Wind energy generates energy more efficiently than solar and so the preferred sites have significantly greater potential if wind energy is either the sole solution or forms part of the solution in each Scheme (i.e the Scheme for each of the preferred sites). Wind energy is also more cost-effective than solar. Furthermore, mixed solar and wind proposals complement each-other as typically the sun shines when wind levels are low, and vice-versa. This therefore generates a more constant stream of electricity. However, the mix of generating solutions for the Schemes is subject to feasibility and assessment work, including assessment on the likely significant environmental effects, and consultation.

15. What would happen after each Scheme has reached the end of its operational life?

We expect that the planning authority will impose a planning condition on any planning permission that the planning authority may grant which would require the development to be removed after decommissioning. This is likely to be after 25 years.

16. How do solar panels (PV cells) work?

A photo-voltaic (PV) cell works by absorbing light across semi-conductors, which are located on the face of the solar panel. These semi-conductors work in a similar way to a household battery, with positive and negative sides, which allow the light energy to be converted into an electrical current. These then feed their way into the National Grid..

17. Will solar panels work well in the UK given the climate?

Solar panels work based on the amount of light available and do not require direct sunlight to operate, although this does help their efficiency. Therefore even when it is raining, cold or cloudy, as long as it is light outside then the solar panels will be working. Whilst it may not appear so based on the temperature, we receive similar amounts of light as parts of France and Spain.

Furthermore, solar panels generally become less efficient in hotter temperatures. So, a clear and sunny day in Peterborough may yield more solar power than a clear, hot and sunny day in Barcelona!

18. Will solar panels work in the snow?

Solar panels are normally installed at an angle, about 30 degrees, which means that light snowfall should slide off. Heavy snowfalls will block the light though and so may need to be brushed clear once the snow levels have subsided.

19. Are there any health & safety matters relating to solar installations?

There are no health and safety concerns. All equipment on this type of installation must conform to the relevant British and European standards to comply with UK Health and Safety legislation, and Electrical Safety regulations. These standards are applicable to design and manufacture of the solar panels and electrical control equipment.

20. How much noise do solar panels make?

The solar panels convert sunlight to electricity using photovoltaic cell technology. The panels have no moving parts and generate no noise.

21. Are solar panels harmful to ecological areas?

Solar installations are generally low-impact developments (minimal ground disturbance) and will not affect identified ecological areas.

22. How close would any potential wind turbines be to homes?

The wind turbines would be carefully located. Best practice guidance suggests that they should not be within 500m from any residential property. However, this is determined through detailed assessments such as noise and visual impacts.

23. How much noise do wind turbines make?

Over the last ten years the noise levels of wind turbines have reduced dramatically. The mechanical noise of the turbines is now virtually non-existent. The audible noise is essentially just a 'swoosh' as the blades pass the supporting column. All on-shore wind farms are subject to strict noise assessments to protect local amenity. You can comfortably chat to people standing next to modern turbines without speaking loudly.

24. How big are wind turbines?

The sizes vary based on local circumstances, but as a rule of thumb a 2MW turbine may have a total height of around 100-120 metres from the ground to the tip of the blade. The tower or column itself tends to be around 80 metres. Broadly speaking, the greater the energy-generating capacity of the turbine, the greater its size, but wind turbines become more efficient the larger they become (for example, a 2.5MW turbine would not need to be twice the size of a 1.5MW turbine).

25. What about the effects of shadows cast by wind turbines and the potential for 'ice throw'?

Shadow flicker is where the rotating blades cast moving shadows due to the angle of the sun. The wind turbines would be located some distance away from properties to prevent 'shadow flicker' on homes.

Ice build-up on turbine blades is very rare. In these instances the sensors within the turbine ensure that the blades do not move until all the ice has melted.

26. Can wind turbine development affect local property values?

Wind farms could affect property prices however this will depend on the proximity of the turbines to the property. It is important to note that a UK study1 showed that the vast majority of people (94%) who live near wind farms are in favour of them.

27. What will happen to our views of the countryside?

Further studies will take place to better understand the visibility impact of any potential wind turbines from surrounding locations, and negative impacts will be reduced by altering the number and location of the turbines, where possible. The turbines are painted a colour tested to be most like the UK sky (a shade of grey!) to minimise visual impacts, but beauty is in the eye of the beholder and opinions will always be personal.

28. Are wind turbines harmful to ecological areas and bats or birds?

Whilst they have the potential to be harmful if located inappropriately, protection measures are in place to stop this. Every development is subject to detailed bat and bird surveys and an

[1] TNS (2003), Attitudes and Knowledge of Renewable Energy amongst the General Public, On behalf of Department of Trade and Industry, Scottish Executive, National Assembly for Wales and Department of Enterprise, Trade and Investment Northern Ireland.

Environmental Impact Assessment, and the Council will work closely with Natural England and the Royal Society for Protection of Birds to gain their input and support.

Ecological surveys will also inform the design to reduce the adverse effect on habitats and protected species.

29. Are wind turbines dangerous to humans?

As far as we are aware, no member of the public has ever been injured during the normal operation of a wind turbine, with more than 70,000 machines installed around the world.

30. Can wind turbines interfere with TV signals?

In extremely rare circumstances, some interference to analogue TV reception is possible. However, following the digital switchover in Peterborough last year, this should not be an issue.

31. How much of the time do wind turbines produce electricity?

Well-sited wind turbines tend to produce electricity approximately 75% of the time. A commonly misquoted figure is of the typical output, which tends to be 30% of the 'theoretical maximum'. The theoretical maximum is the amount of energy produced if the turbine operates at the optimum speed all day and night. By comparison, the typical output of a conventional power station tends to be 50% of its theoretical maximum.

32. Why can't all wind farms be located off-shore?

Off-shore wind farms are an important resource, but they are relatively complicated and expensive to build, and take longer to develop due to the nature of the sea. To respond to national targets and local aims, on-shore turbines are a fundamental accompaniment to their off-shore equivalents.

Media contact: Amanda Rose, Communications Manager - telephone 01733 452304 or email media@peterborough.gov.uk

APPENDIX I

NLPG Q+A RESPONSE SHEET

Questions arising from the Newborough Landscape Protection Group Meeting

1. ***Has the Council 'messed up' in the putting of solar panels on the community building roof?***

   The installation of solar photovoltaic (PV) panels has already been completed on a number of buildings around the city. However, because of the reduction in central government subsidies last August these smaller scale schemes are no-longer economically viable and will not significantly contribute to the achievement of our stated environmental objectives.

2. ***How many companies or businesses have been approached to provide funding for this project?***

   Funding is being sought in part from the Council's capital programme, which includes support for 'Invest to Save' schemes. This budget is for any project that delivers savings to the Council and has already been used to fund solar panels on local school buildings. Other important sources include lending from Central Government and private investors.

   Potential private investors include institutional investors, such as pension funds, and early negotiations are in process to secure funding via this route.

3. ***What level of reduction in C02 emissions does the current solar panel installations on Council buildings give us?***

   Total Installed capacity on Council buildings is just under **1,000kW which equates to** 510 tonnes CO_2e displaced per annum.

4. ***What compensation will the farmers get, not just in terms of compensation for lost crops, but farming equipment they have brought that they will no-longer have a need for?***

   We are looking into the issues around compensation and any legal obligations we may have to meet in this regard we will clearly do so.

5. ***Who will decide on the level and type of compensation given to farmers?***

   This will be a decision made by Councillors.

6. ***What is PCC's view on food security/scarcity?***

   We recognise that food security is a major issue but equally important is energy security and, at a local level, the need to close PCC's funding gap in order to maintain key front line services, such as Adult Social Care and Children's Services.

7. ***Some of the land you are planning to use is currently Grade 1 arable land. Why is the council using this when there is plenty of other land that is either barren or not seen as high quality food producing land?***

   PCC are aware that the land is designated as grade 1 and 2 agricultural land. The three sites have been identified as the preferred sites due to their potential to deliver the Schemes and that they are in the ownership of the Council. Using sites that are not in Council ownership would make it harder for the Council to deliver the Schemes and could affect the long term profitability of the Schemes, as you would have to pay a private owner. In addition, preliminary assessments indicate that the three sites are well suited to deliver renewable energy development, both from a technical and

environmental perspective. At this stage, no other credible alternative sites have emerged.

8. ***The MoD is trying to get rid of a number of airfields, why hasn't the council considered using these?***

   Using sites that are not in Council ownership would make it harder for the Council to deliver the Schemes and could affect the long term profitability of the Schemes as you would have to pay a third party for the land.

9. ***What will residents who live adjacent to the development see?***

   Residents will see structures associated with solar and wind energy generation, such as solar panels and wind turbines.

10. ***Tenants can be given notice to quit if planning permission is given – is this true? If so what sort of notice will the council be considering giving?***

    Yes this is true.

    The notice period will depend on the type of tenancy agreement but it could range from 3 to 12 months.

11. ***How near are the closest residents to the wind turbines proposed on these sites?***

    This information is not available as no decision has been made on the siting of the turbines.

12. ***I understand there is a gas pipe in the land, how will the developments affect this?***

    The development will be carefully sited to avoid affecting the gas pipe and a buffer zone will be put in place.

13. ***Who is undertaking the feasibility studies on behalf of PCC?***

    PCC's appointed consultants, AECOM, will be undertaking the feasibility studies.

14. ***From the Cabinet Report issued previously, it appears that the council is looking at two main energy sources – solar and wind? If the current studies show it is not feasible to progress these, will the council be using these same sites for other technologies?***

    PCC will investigate alternative technologies on these sites if solar and/or wind is found to be unfeasible.

15. ***Does the council know how much straw is taken off the land for energy from these proposed sites?***

    No. PCC does not know how much straw is taken off the land for energy from these sites. However, the Newborough Young Farmers have touched on this issue in the report they sent to the Council and a response to the issue of straw burning will be given as part of a response to that report.

16. ***With the £100 million government grant scheme to generate extra revenue in the future, is the council looking at other ways to deliver against our renewable energy and environmental targets other than the development of renewable energy parks?***

Given the financial pressures facing the council, we will be looking at all possible options that will help us balance our budgets whilst continuing to provide the essential services we are expected to deliver.

17. Will the council be putting money back into the communities that are affected by these developments?

You may be aware that other renewable energy schemes set aside a 'community fund', which can be spent on projects that the local community sees fit. This fund is proportionate to the development proposed. We intend to do the same to ensure that money is put back into the local community.

18. What are the views of the council on Britain's and the region's food security?

The national targets and direction to move to a low-carbon economy will increasingly influence our local land use decisions, as they will surely do with other local authorities across our whole country. Our region will not be exempt from this pressure and it will affect the design of our urban environment and our choices on transport infrastructure.

We know a significant increase in renewable energy capacity is required to meet the EU 2020 target for renewables and this is forcing us to look at different opportunities for land use.

The modern food chain is highly dependent on energy, mostly from fossil fuels, from the production of fertiliser all the way through to food preparation. Our food system has the potential to be significantly vulnerable to interruptions in energy supplies used for agriculture, food processing and refrigeration, food transport, and in food retailing. This will be another good reason, why at a local level, we should build our own energy security, resilience and stability.

British grocery retailers are geared to source their produce from a number of suppliers. This enables them to keep shelves stocked and offer competitive prices. With this flexibility to switch suppliers, retailers can also ensure continuous supply in the event of a disruption to part of the food supply or distribution chain, either in the UK or abroad.

We recognise that food security is a major issue, but equally important is energy security and at a local level, the need to close the council's funding gap in order to maintain key front line services such as Adult Social Care and Children's Services.

19. What are the Council's strategic plans for the use of farmland within its ownership?

As part of this project we are assessing the potential for renewable energy parks. The reality is this could take up some farmland. However, we intend to work with the farmers as much as possible, as part of an integrated approach, to try and see what benefits renewable energy parks could bring to farming in the area, such as the development of anaerobic digesters or the use of straw to produce green energy.

20. Why has the consultation appeared to have slipped?

The consultation process has not slipped. It has already commenced and will continue for the duration of the project.

21. Why haven't PCC chosen Ferry Meadows as an alternative site for the installation of solar panels?

This site is designated a Site of Nature Conservation Importance and falls within the Nene Valley landscape area. Therefore, it is unlikely that it is suitable for development of this kind.

22. What plans do the Council have for securing the site to prevent theft and vandalism? Will fencing, CCTV etc. need to be erected and what impact will that have on the landscape? Has the Council budgeted for ongoing maintenance costs?

Security is likely to be in the form of a combination of CCTV and Fencing which will be tailored to the specific risks of the site. Fencing will surround all of the sites - they are usually 3m high and are made of open mesh to prevent climbing.

CCTV is usual and the poles range from 4 to 6m in height depending on the number used - this will be agreed with the contactor and operation contractor and need to be risk assessed on likelihood of theft and vandalism - they are there to cover the perimeters of the site facing the panels and entrances.

It is normal that the sites will be covered by a long term maintenance agreement which will ensure that the plant continues to operate as intended. This has been budgeted within the financial planning.

23. How can the feasibility studies truly assess the impact of the schemes if the study period has only been carried out over a short period of time?

The study periods are determined by advice from the statutory consultees, such as Natural England and the Environment Agency. They are also based on our own experience and best practice. If the survey/feasibility work is not sufficient and the impacts of the development are not accurately assessed and adequately mitigated, planning permission is unlikely to be granted.

24. Is the feasibility study going to include the cost of disposal of the solar panels as part of the costing exercise?

The feasibility study does not address this matter. This will be addressed as part of the decommissioning costs which will be considered in due course.

25. The feasibility assessment studies were conducted whilst crops were still standing in the fields, surely this means they haven't been done properly?

The assessments were based on a series of desk top studies and site inspections. The field crops do not affect the outcome of the studies.

26. What does the feasibility study cover, what seasons and how is it being undertaken?

The report has been prepared to advise PCC on the technical feasibility of developing renewable energy assets on the three Council owned agricultural sites, by identifying the constraints associated with each site. The studies were conducted through a series of desk top assessments, site visits, and meetings with stakeholders. More detailed seasonal studies will be carried out to support the planning applications, should PCC decide to proceed with the project.

27. When the equipment is decommissioned, there is the potential for silicon contamination from the solar panels (teeth falling out!) – How is the Council dealing with that potential problem?

It is expected that the lifetime of the project will be 25 years and the planning conditions will reflect this. On average most solar panels have a 25 year limited

warranty on power output. Some manufacturers claim that while their warranty is around two decades, many solar panels continue to work for 40 to 80 years.

We are not aware with the issue of 'silicon contamination from the solar panels (teeth falling out!)'. If further details are forwarded then we can provide comments. However, there is a manufacturer and installer backed scheme for the recycling of PV modules:

http://www.pvcycle.org/

All components in a solar module can be treated and recycled. For example, the glass resulting from PV modules is mixed with standard glass to be reintroduced in the glass fibre or insulation industry.

28. Will you be conducting a full seasonal study that crosses all seasons?

All relevant seasonal studies will be carried out. See answer to questions 23 & 26. The findings will be incorporated into a series of reports which will be submitted with the planning applications.

29. Did the council know that Newborough is identified as a Zone 3 Flood Risk i.e. on a flood plain and how are you planning to deal with this?

PCC are aware that the sites lie within flood zone 3. A flood risk assessment will be prepared to address this issue and will be submitted with the planning applications and the Environment Agency will be consulted and their comments taken on board.

30. Isn't it unfair that the PCC is in effect policing its own planning applications and policy in respect of this project and the developments within it?

The law allows PCC to determine many of its own planning applications. This inevitably gives rise to problems of public perception. The planning legislation provides that if PCC intends to carry out the development itself, either alone or jointly with another party, then PCC determines its own application for planning permission, irrespective of ownership of the land. This is set out in **Regulation 3 of the Town and Country Planning (General) Regulations 1992**.

In this particular case, all future planning applications will be submitted by the appointed consultant and not by PCC. Nevertheless, the applications will be determined by PCC itself as local planning authority and, in the same way as any other application, will be dealt with impartially, fairly and transparently.

The planning legislation requires first and foremost that the decision should be taken in accordance with policies contained in the development plan. This comprises central government guidance and local planning policies. In some cases, material considerations may support a decision contrary to policies of the development plan, but these are exceptional cases, known technically as 'departures'.

The Council's decisions as local planning authority are scrutinised closely and even more so its own applications. The process is transparent and the decision supported by clear planning reasons. Under the council's constitution, all planning applications submitted by the Council have to be considered by the Planning and Environmental Protection Committee and cannot be determined at an officer level.

Currently there are no third party rights of appeal through the planning system against a decision of a Local Planning Authority. Therefore, if you have concerns about a planning application and permission is granted, you cannot appeal that decision. Any challenge under current legislation would have to be made outside the planning system through a process called Judicial Review (JR).

A ‘claim for judicial review’ includes a claim to review the lawfulness of a decision, action or failure to act in relation to the exercise of a public function, in this case, a planning decision.

There is a also a PCC Central Complaints Procedure available and the Local Government Ombudsman will independently review any alleged complaints of maladministration if you are unhappy with how any planning applications are dealt with.

31. Will the raising of solar panels in the flood plain area be on concrete blocks?

No. Generally, the solar PV panels are laid out in arrays of long rows running across the development site. Each array is mounted on a simple metal framework and therefore does not require any significant foundations or below ground infrastructure. The panels are fixed using 1 to 2m length pins in the ground. Two pins are inserted approximately every 10m along an array so for example, a 50m array would require 12 pins.

32. Won’t the solar panels contribute to creating a flood risk as the surfaces of the panels will not absorb water but cause massive run off in condensed periods of time? How will you be ensuring the drainage is adequate and effective?

The panels are raised above the ground and therefore will not obstruct the flow of water.

33. By not cultivating the land, moisture will not be removed from it as it has been worked over many years. Suddenly stopping cultivation and therefore not removing the moisture will surely cause a problem and increase the risk of flooding in the area? How is the council going to address this and to keep drains clear etc? Will this affect our drainage rates adversely?

Land cultivation does not affect flooding. The proposals will not affect land moisture or block existing drains.

34. What infrastructure changes to the local roads and access will be required to accommodate the construction of these sites?

There are no proposals to carry out road works to accommodate the development.

35. Do you have a Construction Management Plan and is it available for everyone to see?

A construction transport management plan will be prepared and submitted with the planning application.

36. I’ve heard of instances that wind turbines can affect livestock adversely causing animals to abort their foetuses and to cause chickens to stop laying is there any evidence that this is true?

We are not aware of any evidence to support this.

APPENDIX J

PROPOSAL WEBSITE - SCREENSHOTS

PETERBOROUGH CITY COUNCIL

Welcome

Scroll over the icons to find out more about the benefits of the Peterborough Renewable Energy Project.

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PETERBOROUGH RENEWABLE ENERGY PROJECT

News and Updates

In this section you can find press releases, newspaper articles and radio interviews, as well as other key updates about the project.

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PETERBOROUGH RENEWABLE ENERGY PROJECT

29/11/12
SOLAR PLAN – ALL THREE SITES

SOLAR PLAN – AMERICA

SOLAR PLAN – NEWBOROUGH

SOLAR PLAN – MORRIS FEN

23/11/12
LARGE PRINT EXHIBITION BOOKLET

AUDIO EXHIBITION

VIDEO: WHAT IS RENEWABLE ENERGY?

POCKET EXHIBITION

SCRUTINY REPORT – 19 NOVEMBER 2012

VIDEO: BENEFITS FOR PETERBOROUGH

CABINET REPORT – 5 NOVEMBER 2012

SCRUTINY REPORT – 2 NOVEMBER 2012

CABINET REPORT – 10 JULY 2012

VIDEO: IMPACT ON TENANT FARMERS

22/11/12
CONSULTATION EXHIBITION SCHEDULE

21/11/12
NEXT PHASE OF RENEWABLE ENERGY PROJECT GETS GREEN LIGHT

29/10/12
CABINET ASKED TO APPROVE NEXT STAGE OF RENEWABLE ENERGY PROJECT

16/10/12
COUNCIL LEADER MEETS RESIDENTS TO DISCUSS RENEWABLE ENERGY PROJECT

PETERBOROUGH CITY COUNCIL

Events

Peterborough City Council will be hosting meetings and exhibitions aimed at engaging a wide-ranging audience. Confirmed sessions are set out here

CONSULTATION EXHIBITION SCHEDULE

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PETERBOROUGH RENEWABLE ENERGY PROJECT

PETERBOROUGH CITY COUNCIL

Downloads

All documents can be accessed below. Simply click on the appropriate link to download a copy of any document.

29/11/12 SOLAR PLAN – ALL THREE SITES	SOLAR PLAN – AMERICA	SOLAR PLAN – NEWBOROUGH	SOLAR PLAN – MORRIS FEN	23/11/12 LARGE PRINT EXHIBITION BOOKLET
POCKET EXHIBITION	SCRUTINY REPORT – 19 NOVEMBER 2012	CABINET REPORT – 5 NOVEMBER 2012	SCRUTINY REPORT – 2 NOVEMBER 2012	CABINET REPORT – 10 JULY 2012

PETERBOROUGH RENEWABLE ENERGY PROJECT

Links and Resources

This section contains links to resources and other websites that may be of interest to those wishing to understand more about renewable energy.

Department of Energy and Climate Change:
The Governmental Department addressing all initiatives relating to Energy and Climate Change.

The Renewable Energy Trust:
The Energy Saving Trust gives impartial, accurate and independent advice to communities and households on how to harness the benefits from renewable energy technologies.

Common Questions

This page includes a collection of common questions that we hope answers any questions you may have at this stage. Should you require any further information then please get in touch via the 'Get involved' page.

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PETERBOROUGH RENEWABLE ENERGY PROJECT

1. What is being proposed?

At this stage, work is commencing to better understand the potential to develop three renewable energy parks (referred to in this Q&A as the Schemes) on Council owned agricultural sites that are currently subject to tenancy agreements. The Schemes may potentially include ground mounted solar photo-voltaic panels (commonly known as solar panels) and/or wind turbines and/or other types of renewable energy solutions. The potential mix of energy generating solutions will be subject to feasibility studies as well as consultation with the public.

2. How many different organisations will be involved in this project?

A number of different organisations will be involved throughout the process. They will be procured as and when required.

3. Why is Peterborough City Council pursuing renewable energy projects?

This project enables Peterborough City Council to meet its legal obligations to the government and ultimately the EU, in contributing to the required reduction of the UK's carbon emissions by 15% by 2020. It is also a continuation of the Council's ongoing renewable energy strategy found in our 'Statement of Community Involvement' policy document. The Schools solar PV project represented the first phase of our Green Energy Plan and supports our aspiration to be the UK's Home of Environment Capital, demonstrating our commitment to reducing our carbon footprint by investing in renewable energy.

Additionally, Peterborough City Council, like many other Councils in the country, is facing a significant deficit in its budget over the next 10 years and it has been looking at a range of measures to help meet that shortfall whilst still being able to meet its obligation to deliver a wide range of necessary and essential services such as social care, infrastructure development and maintenance etc. The potential development of its agricultural estate to create a renewable energy park therefore creates a major potential opportunity to make a significant inroad into alleviating these known budget pressures and protect our ability to deliver future services.

4. How will the schemes be funded?

Funding is being sought in part from the Council's capital programme, which includes support for 'Invest to Save' schemes. This budget is for any project that delivers savings to the Council and has already been used to fund solar panels on local school buildings. Other important sources include lending from Central Government and private investors.

Potential private investors include institutional investors, such as pension funds, and early negotiations are in process to secure funding via this route.

5. How many companies or businesses have been approached to provide funding for this project?

No businesses have been approached to provide funding.

6. What are the benefits to local people?

Get Involved

Please fill in our contact form below if you need to get in touch.

You can also find answers in our common questions section or opportunities to speak to technical advisors at our public exhibitions.

Should you wish to receive updates on this project and the wider environmental agenda please provide your details below:

Mr

First Name (required)

Last Name (required)

Your Email Address (required)

Address

Town

Postcode

Subject

Your Message

Email
Select Language
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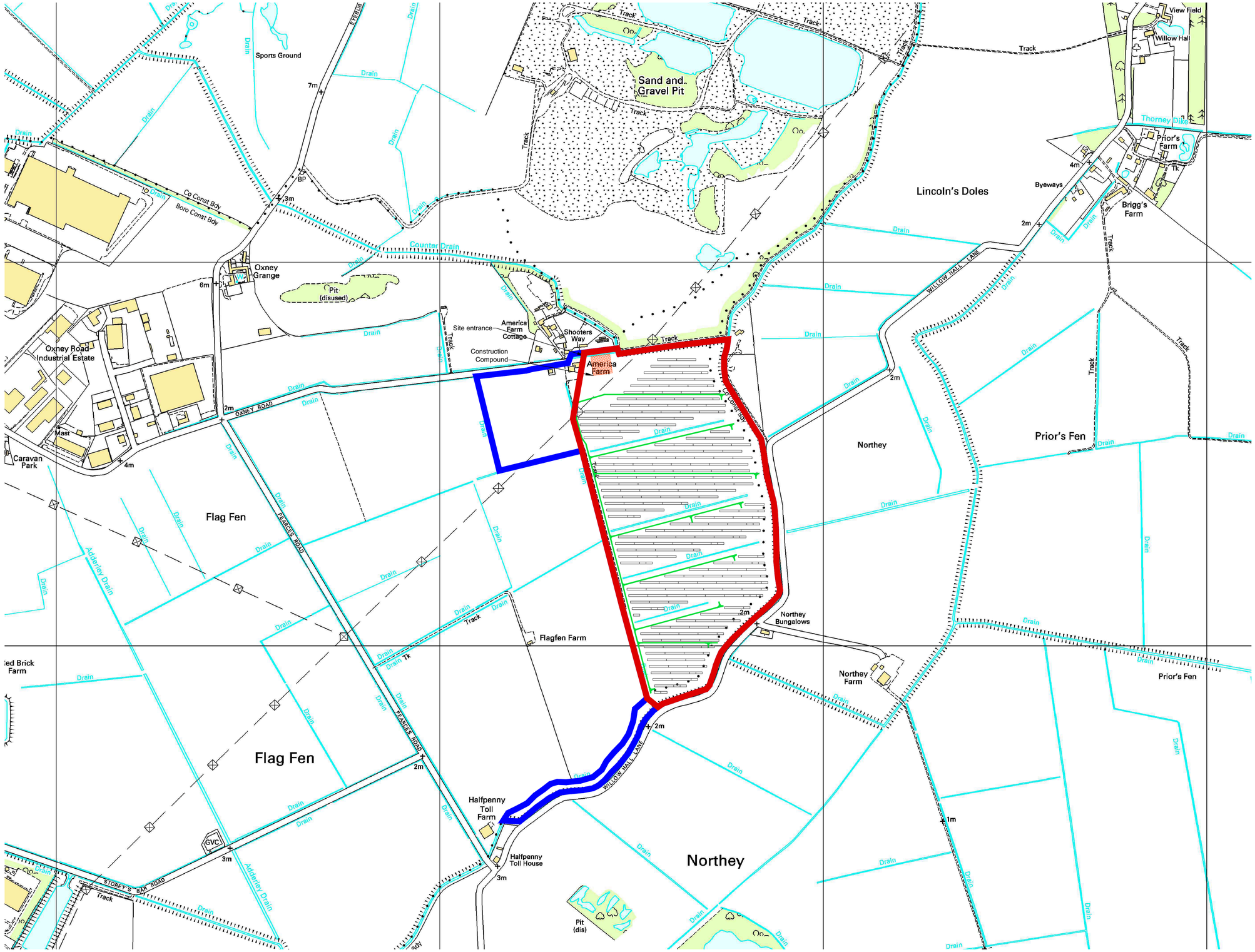
PETERBOROUGH RENEWABLE ENERGY PROJECT

APPENDIX K

SITE PLANS USED AT PUBLIC CONSULTATION EVENTS



	Capacity (MW)
Solar	8

Rack Size	No. of Racks	No. of Strings
50 x 5.2	247	1482
16.7 x 5.2	56	112
	Total	1594

AECOM

PROJECT

PCC RENEWABLE ENERGY PROJECT

SITE S1
AMERICA FARM

CLIENT

PETERBOROUGH CITY COUNCIL

Town Hall, Bridge Street
Peterborough, Cambs, PE1 1HG
01733 747474 tel DX 12310 Peterborough 1
www.peterborough.gov.uk

CONSULTANT

AECOM
1 Tanfield
EDINBURGH, EH3 5DA
+44 (0) 131 301 8600 tel
+44 (0) 131 301 8699 fax
www.aecom.com

NOTES

1 - LANDSCAPING DETAILS WILL BE DEVELOPED DURING THE PLANNING PREPARATION PERIOD AND WILL BE ON FUTURE PLANNING DRAWINGS.

2 - UTILITIES SEARCH IS ONGOING AND WILL BE FINALISED ON FUTURE PLANNING DRAWINGS.

Scale
50m 0 50 100 150 200 250m
1:5000 at A1
(1:10000 at A3)

ISSUE/REVISION

I/R	DATE	DESCRIPTION
	31/08/12	Master Plan

KEY PLAN

Access Track
Site Boundary
PCC Land Holdings
Solar panel rack with 6 PV module lines per row (6 strings)
Solar panel rack with 6 PV module lines per row (2 strings)
Construction Compound
Switch Station

PROJECT NUMBER

60271594

SHEET TITLE

AMERICA FARM
PV PANEL LAYOUT

SHEET NUMBER

60271594-S1-ENG- 351

Filename: F:\PROJECTS\WASTEWATER - PRETEBOROUGH CC SOLAR\PCC WIND AND SOLAR\CAD_ACM-MASTERLAYOUT3.DWG
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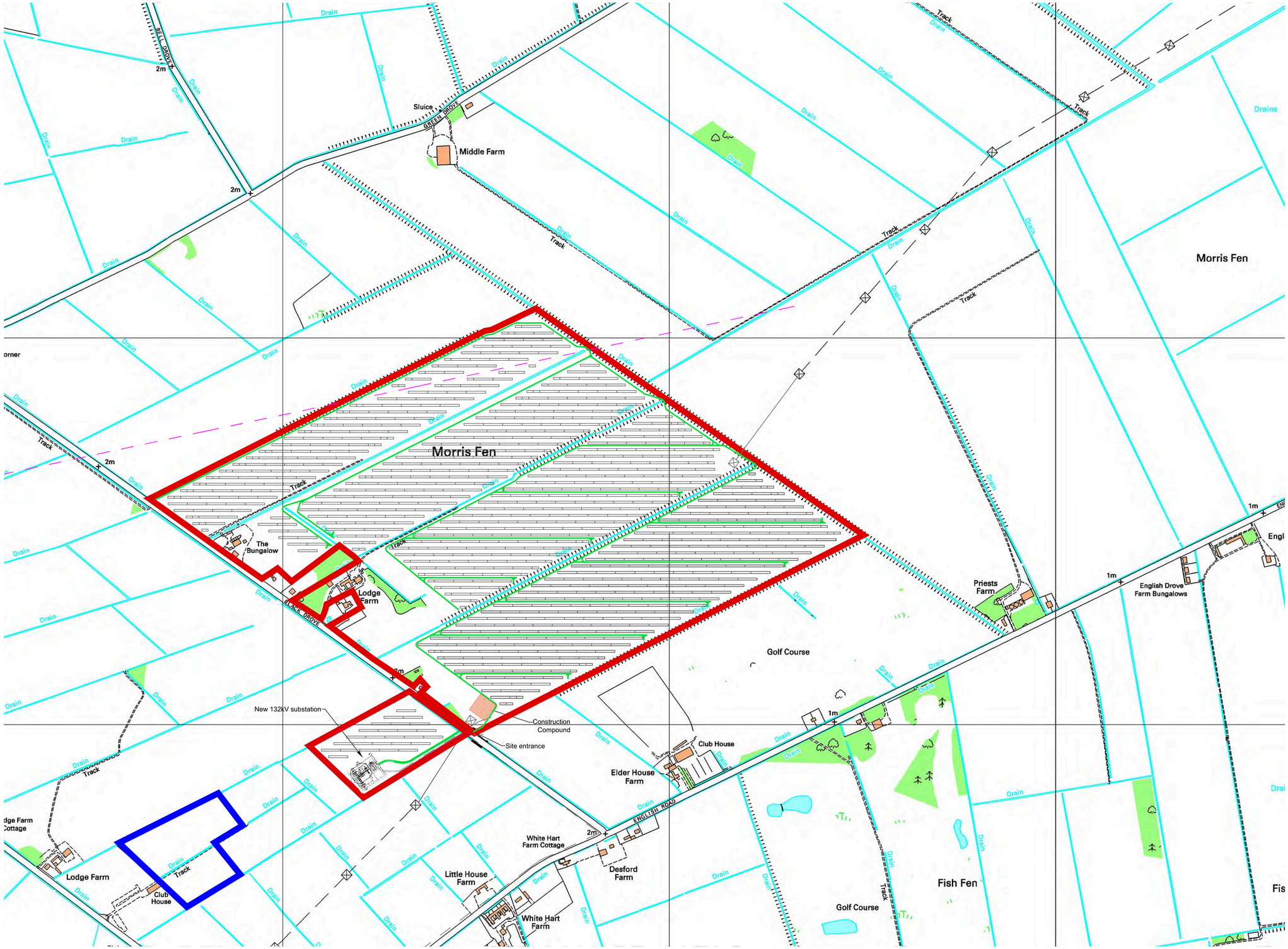
Project Management Initials: ____ Designer: ____ Checked: ____ Approved: ____ ISO A1 594mm x 841mm



	Capacity (MW)
Solar	27

Rack Size	No. of Racks	No. of Strings
50 x 5.2	809	4854
16.7 x 5.2	126	252
	Total	5106

AECOM

PROJECT

PCC RENEWABLE ENERGY PROJECT

SITE S2
MORRIS FEN

CLIENT

PETERBOROUGH CITY COUNCIL

Town Hall, Bridge Street
Peterborough, Cambs, PE1 1HG
01733 747474 tel DX 12310 Peterborough 1
www.peterborough.gov.uk

CONSULTANT

AECOM
1 Tanfield
EDINBURGH, EH3 5DA
+44 (0) 131 301 8600 tel
+44 (0) 131 301 8699 fax
www.aecom.com

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Scale
50m 0 50 100 150 200 250m
1:5000 at A1
(1:10000 at A3)

ISSUE/REVISION

I/R	DATE	DESCRIPTION
	31/08/12	Master Plan

KEY PLAN

Access Track
Site Boundary
PCC Land Holdings
Solar panel rack with 6 PV module lines per row (6 strings)
Solar panel rack with 6 PV module lines per row (2 strings)
Construction Compound
Gas Pipepline
Overhead Line

PROJECT NUMBER

60271594

SHEET TITLE

MORRIS FEN
PV PANEL LAYOUT
OPTION - 2

SHEET NUMBER

60271594-S2-ENG-353

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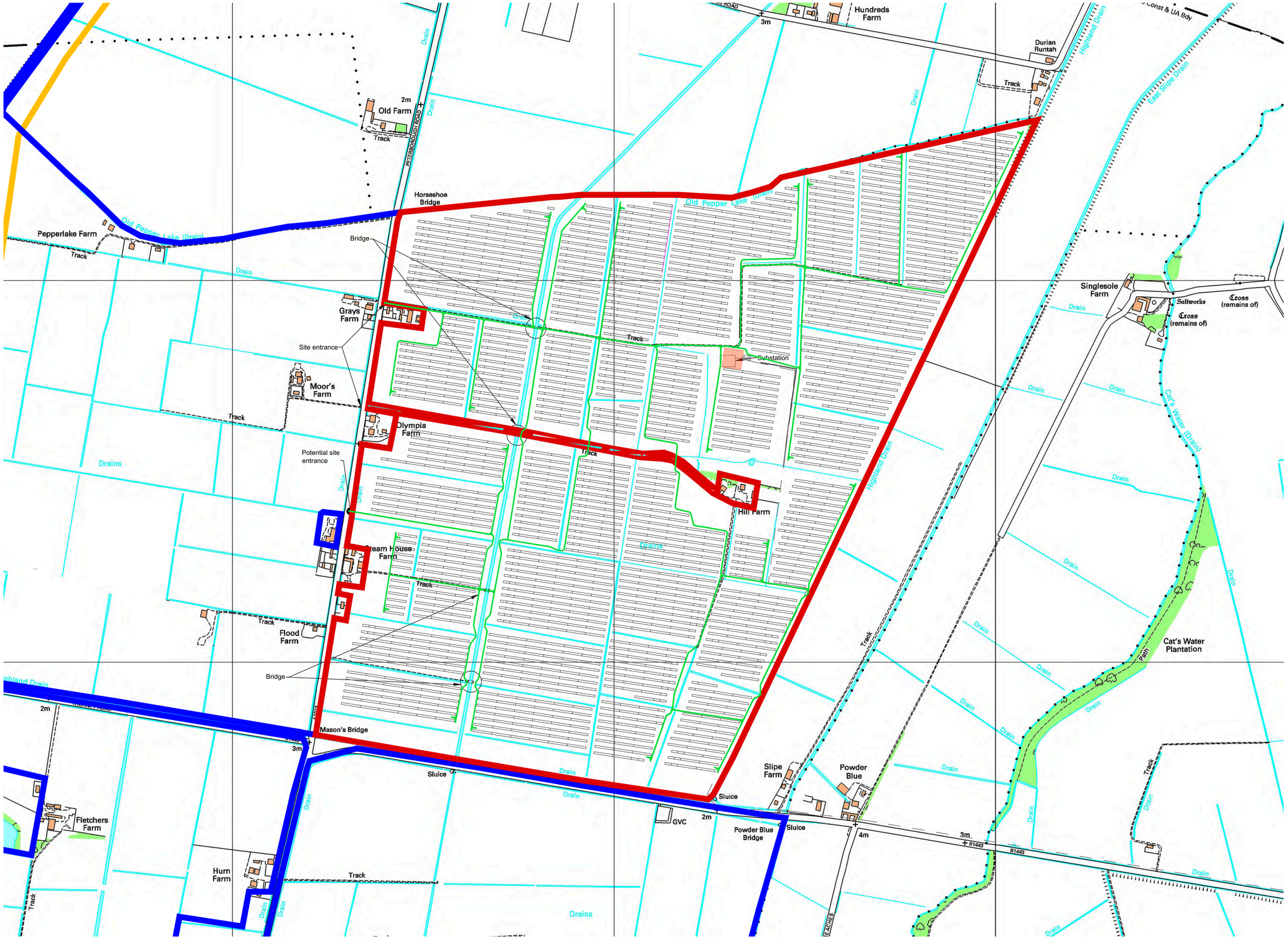

WEST 9° EAST

	Capacity (MW)
Solar	49

Rack Size	No. of Racks	No. of Strings
50 x 5.2	1479	8874
16.7 x 5.2	445	890
	Total	9764

AECOM

PROJECT

PCC RENEWABLE ENERGY PROJECT

SITE S3
NEWBOROUGH FARM

CLIENT

PETERBOROUGH CITY COUNCIL

Town Hall, Bridge Street
Peterborough, Cambs, PE1 1HG
01733 747474 tel DX 12310 Peterborough 1
www.peterborough.gov.uk

CONSULTANT

AECOM
1 Tanfield
EDINBURGH, EH3 5DA
+44 (0) 131 301 8600 tel
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Scale
50m 0 50 100 150 200 250m
1:5000 at A1
(1:10000 at A3)

ISSUE/REVISION

I/R	DATE	DESCRIPTION
	31/08/12	Master Plan

KEY PLAN

Access Track
Site Boundary
PCC Land Holdings
Solar panel rack with 6 PV module lines per row (6 strings)
Solar panel rack with 6 PV module lines per row (2 strings)
Construction Compound
A16

PROJECT NUMBER

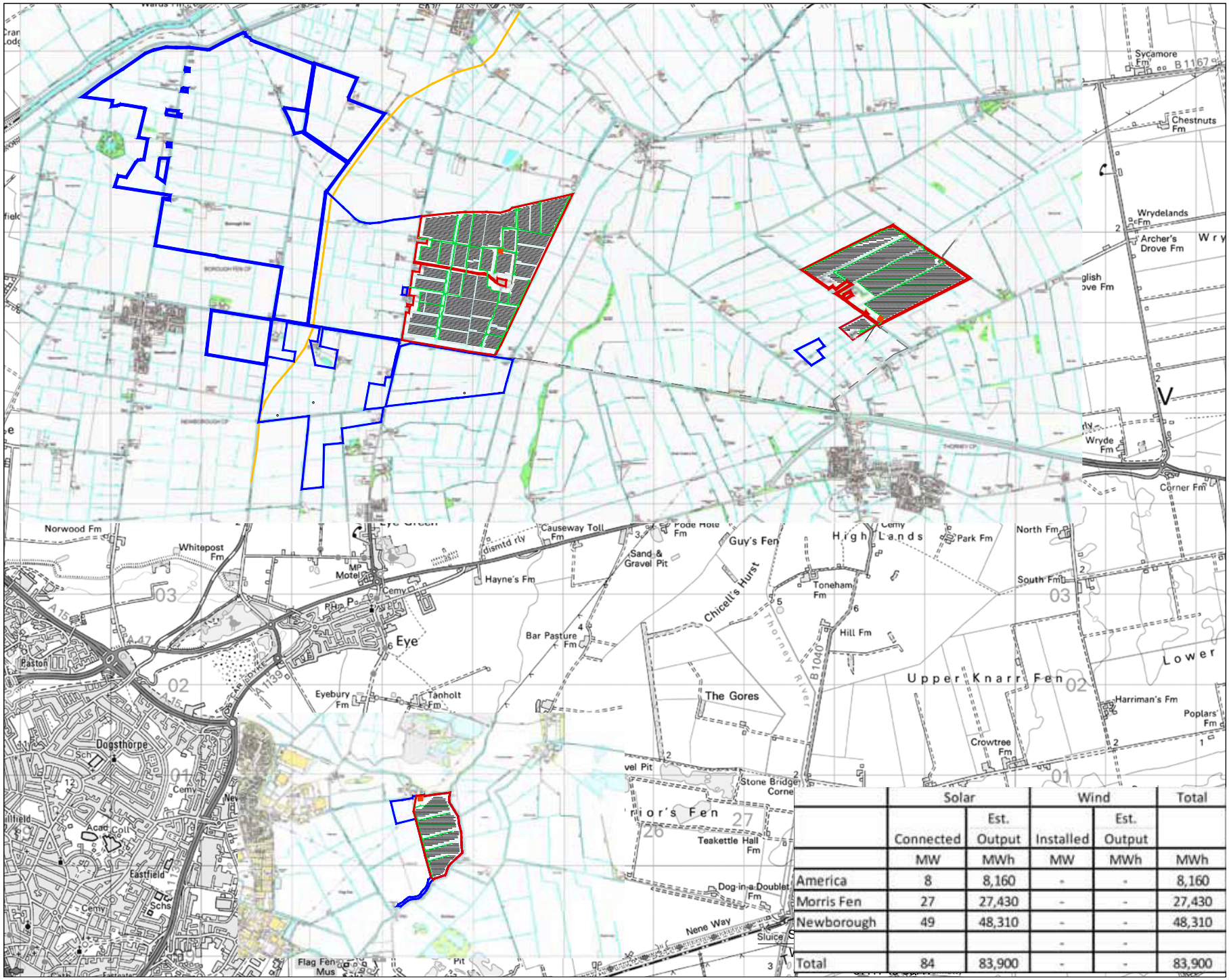
60271594

SHEET TITLE

NEWBOROUGH FARM
PV PANEL LAYOUT

SHEET NUMBER

60271594-S3-ENG-356



	Solar		Wind		Total
	Connected	Est. Output	Installed	Est. Output	
	MW	MWh	MW	MWh	MWh
America	8	8,160	-	-	8,160
Morris Fen	27	27,430	-	-	27,430
Newborough	49	48,310	-	-	48,310
			-	-	
Total	84	83,900	-	-	83,900

Project Management Initials: Designer: Checked: Approved: ISO A1 594mm x 841mm

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Last saved by: ALCOCKJ1 Last Plotted: 2012-10-22

157

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PROJECT

PCC RENEWABLE ENERGY PROJECT

ALL SITES

CLIENT

PETERBOROUGH CITY COUNCIL

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01733 747474 tel DX 12310 Peterborough 1
www.peterborough.gov.uk

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AECOM
1 Tanfield
EDINBURGH, EH3 5DA
+44 (0) 131 301 8600 tel
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NOTES

Scale
200m 0 200 400 600 800 1000m
1:20000 at A1
(1:40000 at A3)

ISSUE/REVISION

I/R	DATE	DESCRIPTION
	31/08/12	Master Plan

KEY PLAN

Access Track
Site Boundary
PCC Land Holdings
Solar panel rack with 6 PV module lines per row (6 strings)
Solar panel rack with 6 PV module lines per row (2 strings)
Construction Compound
A16

PROJECT NUMBER

60271594

SHEET TITLE

ALL SITES
SOLAR LAYOUT

SHEET NUMBER

60271594-ALL-PLA-154

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APPENDIX 5

AECOM

PCC Solar Schemes – Additional Surveys requirements

Archaeology

As part of the preplanning assessment of the three solar schemes, English Heritage asked the council to carry out a set of archaeological assessments to better inform them of potential archaeology on site. Two different types of survey were carried out using Test Pits and Augur Sampling, the methodology used was agreed with English Heritage and Peterborough City Council Archaeology Services (PCCAS), see Annex 1,2,3 below.

Summary

Work commenced in October 2013 by Wessex Archaeology at Newborough and America Farm. The intention was to combine the evaluation trenching and augur surveys to produce enhanced site interpretation and data. This was to provide PCCAS and English Heritage with sufficient baseline information on which to determine the significance of any heritage assets present within the sites and allow for a tailored mitigation strategy to be formulated.

The results at America Farm suggest whilst palaeoenvironmental deposits are present, anthropogenic activity is limited. There may be further evidence sealed within and below the palaeoenvironmental deposits. However, it is unlikely these will be affected during construction. AECOM are currently waiting for an interim report for the augur surveys to establish whether we have fen-edge areas within the site.

At Newborough, the investigation has uncovered evidence of probable prehistoric date, Roman settlement and medieval and post-medieval activity. The main focus of the archaeological interest lies to the north of Hill Farm where a small nucleated Roman farmstead has been found. We are yet to establish a date for the potentially prehistoric features and are waiting on further laboratory assessments by Wessex Archaeology. A number of palaeoenvironmental deposits have been located at Newborough which may contain evidence of prior anthropogenic activity although it is unclear at this stage of the investigations. Again, we are waiting on an interim statement for the augur surveys by Wessex.

The next stage of the archaeological investigations will be determined by PCCAS and English Heritage following meetings with them in January.

Methodology

The locations for the test trenches and the frequency of the Augur surveys suggested by English Heritage and PCCAS receipt of the geophysical survey results and reviewed/approved by English Heritage. PCCAS issued a brief to AECOM which was then used to agree the methodology within the Written Scheme of Investigation prepared by Wessex Archaeology see annex 1, 2 and 3 below.

Soil Assessment

This survey was commissioned by AECOM on behalf of the council and was awarded to Soil Environmental Services who carried out the agricultural land soil survey and classification to assess the soil quality of the three proposed solar sites.

Other specific questions asked of the:

- *What will happen to the soil quality (soil nutrient status) if the land is left unfarmed for the next 25 years?*
- *What will happen to the soil quality (soil nutrient status) if the land continues to be intensively farmed for the next 25 years?*
- *Based upon the current soil quality, what do the farmers need to do to the land to farm it in its current state?*

The survey will involved soil auguring to 1.2 m depth at 100m intervals in approximately the same location as the auger work done by Wessex archaeology. In most cases (dependant on soil conditions), a 50 mm Dutch hand held auger will be used. Soil pits dug by wessex archaeology were also used to analyze the soil type. See methodology contained within Appendix 4.

The soil removed during the auguring and during pit excavation where examined in accordance with:

- Soil Survey Field Handbook
  Describing and Sampling Soil Profiles
- Soil Survey of England and Wales, Technical Monograph o. 5, 1976
- Soil Classification for Soil Survey
- Monographs on Soil Survey
- Butler, B E (1980) Clarendon Press, Oxford

Laboratory analysis may be required for soils from some sites.

The reports outlining the results of these assessments for Farms of Newborough and America farm are due before the end of December 2014 so will be available in the New Year.

Tennant Farms Association

The tenant farmers association approached the council in November 13 stating that they would be carrying out a similar soil assessment and asked to see the survey methodology that SES would be following. This was sent to them with the agreement that any survey they conducted would be shared with the council.

Appendix 1 – Test Pitting

Brief for Archaeological Evaluation

Planning Services, Peterborough City Council, Stuart House, East Wing, St John's Street, Peterborough PE1 5DD; Tel: 01733 864702; email: rebecca.casa-hatton@peterborough.gov.uk

Application No.:	PAMAJ/12/00138 (Morris Fen Site); PAMAJ/12/00139 (America Farm); PAMAJ/12/00140 (Newborough Farms)
Address:	Land To The East And West Of Black Drove Thorney Peterborough (Morris Fen Site); Land To The South Of America Farm Oxney Road Peterborough (America Farm); Land To The East Of Peterborough Road Crowland Peterborough (Newborough Farms)
Location:	(centred at) TF 28432 06531 (Morris Fen Site); (centred at) TF 23583 00422 (America Farm); (centred at) TF 23694 06422 (Newborough Farms)

This brief specifies basic requirements for an archaeological evaluation at the above-named sites in order to gain information about the presence/absence, character, extent, date, integrity, state of preservation and quality of potential heritage assets. The purpose is to inform a strategy for the recording, preservation and/or management of the identified assets, also mitigating potential threats and informing proposals for further archaeological investigations within the ongoing programme of research. The investigation must result in a comprehensive and structured record that is interpreted in consideration of national, regional and local archaeological research themes, and a report that is disseminated appropriately.

This brief has been drawn up on the basis of information supplied in respect of the planning application. The terms of the brief will be monitored during the course of work on site. Revisions and amendments may be required in consideration of further details and ongoing fieldwork results.

1. Site Description

The development site at Morris Fen (*c.* 106ha) is located approximately 9km north east of Peterborough and 1km north of Thorney. Currently, it comprises arable fields bounded to the west by Black Drove, and to the north, east and south by land drains.

The development site at America Farm (*c.* 41ha) is located approximately 2km east of Peterborough and 3.5km northwest of Whittlesey. Currently, it comprises arable fields bounded to the east and southeast by Willow Hall Lane, and to the north by Oxney Road. To the north of the development site are America Farm Cottage and Shooters Way, to the west of the development site is Flagfen Farm and to the south east are Northey Bungalows and Northey Farm.

The proposed development site at Newborough Farms (*c.* 203ha) is located approximately 7km north east of Peterborough and 1km south of Crowland. Currently, it comprises arable fields bounded to the north by Old Pepper Lake drain, to the east by Highland Drain, to the south by the B1443 (Thorney Road) and to the west by the A1073 (Crowland / Peterborough Road).

There is one property, Hill Farm, located within the eastern part of the development site and three properties on the western boundary of the development site.

The proposed developments at the three sites entail the creation of solar parks at the three aforementioned sites. These will consist of rows of panels (arrays) 700mm high (minimum) with a pitch angle of 27°and up to 14m apart. The panels will be connected together with above ground cables. The depth of foundations for the inverters (6m x 3m) will be approximately 0.8m. The inverters will be connected in series using below ground cables to the switching stations at America Farm and Newborough Farms, respectively, and to the substation at Morris Fen. Cable trenches will be approximately 0.9m wide and 1m deep. Associated features will include a security fence and CCTV posts to be installed to a depth of approximately 1m; stock fencing; switching stations with 0.8m deep foundations at America Farm and Newborough Farms, and a substation with 2m deep foundations at Morris Fen; access tracks (5m wide) on the existing topsoil to a depth of approximately 0.3m with compacted stone on top.

Ideally, the panels will be fixed using 2m deep and 120-150mm wide stainless steel or aluminium pins. The pins will be driven into the ground and spaced every 7.5m along an array. Alternative foundation systems will be considered, in consideration of further details and ongoing fieldwork results.

2. Archaeological Background

Past and recent arcaheological investigations have indicated that the proposed development sites may contain buried remains dating from the Mesolithic period.

In particular, Morris Fen would have been deep fen in the past, becoming progressively wet from the Bronze Age and thus mostly unsuitable for permanent activity/settlement, as indicated by the fenland survey (Hall 1987). Nonetheless, the proposed development site at Morris Fen is characterised by the presence of a number of fen gravel islands which were dry land in the Mesolithic and Neolithic periods, and were buried under later marine and freshwater fen deposits (French & Pryor 1993).

Newborough Fen contains the late Neolithic tidal roddons, as well as the Bronze Age and Roman fen edges. Undesignated Bronze Age barrows visible on aerial photographs are located within the boundaries of the proposed development area. In addition, three scheduled Bronze Age barrows are located within a 1km-radius, the closest sitting *c.*300m to the west.

America Farm includes the Neolithic and Bronze Age buried fen edges, between the Flag Fen basin to the east and the Priors' Fen basin to the west. It is located in close proximity to Flag Fen Scheduled Monument (List Entry Number: 1406460 A Bronze Age post alignment and timber platform at Flag Fen and associated Bronze Age and later field systems and settlement to either side of the Northey Road). The proposed development site may contain waterlogged deposits with preserved palaeo-environmental remains, as well as organic artefacts and metalwork similar to those found at Flag Fen and, more recently, at Must Farm (Whittlesea).

3. Requirements for the Investigation

Any application for development is assessed against the National Policy Framework Section 12 (NPPF, Department for Communities and Local Government, 27 March 2012) and Policy CS17 of the adopted Peterborough Core Strategy DPD (PCC, February 2011).

With reference to NPPF 12.139 'Non-designated heritage assets of archaeological interest that are demonstrably of equivalent significance to scheduled monuments, should be considered subject to the policies for designated heritage assets'.

With reference to NPPF 12.128 '… Where a site on which development is proposed includes or has the potential to include heritage assets with archaeological interest, local planning authorities should require developers to submit an appropriate desk-based assessment and, where necessary, a field evaluation'.

All archaeological work must be carried out in accordance with a written scheme of investigation which is expected to fulfil the conditions specified in this brief.

No demolition/development shall commence until a programme of archaeological work, including a Written Scheme of Investigation (WSI), has been submitted to, and approved by, PCCAS in writing. The scheme shall include an assessment of significance and research questions.

The investigation will be undertaken by a recognised archaeological organisation of demonstrable competence, working to IfA *Standard and Guidance for Archaeological Excavations*, IfA *Standard and Guidance for Archaeological Watching Briefs* and *Standards for Field Archaeology in the East of England* (Gurney 2003).

A Written Scheme of Investigation (WSI) must be completed and approved before fieldwork begins. This will include:

- The programme and methodology of site investigation and recording
- The programme for post investigation assessment
- Provision to be made for analysis of the site investigation and recording
- Provision to be made for publication and dissemination of the analysis and records of the site investigation
- Provision to be made for archive deposition of the analysis and records of the site investigation
- Provisions to be made for public engagement during fieldwork (through direct participation, interpretation panels, open days, public talks, online information, and media coverage) and following post-excavation assessments (through displays, exhibitions, popular publications, site designs and public art).
- Nomination of a competent person or persons/organisation to undertake the works set out within the WSI.

4. Aims

The investigation will aim to:

- gain information about the heritage assets within the proposed development areas;
- provide detailed information regarding the date, character, extent, integrity and degree of preservation of the identified heritage assets;
- inform a strategy for the recording, preservation and/or management of the identified assets;
- mitigate potential threats;
- informe proposals for further archaeological investigations (namely, targeted area excavations) within the ongoing programme of research;
- define the sequence and character of activity at the site, as reflected by the excavated remains;
- interpret the archaeology of the site within its local, regional, and national, archaeological context.

The excavation should consider the general investigative themes outlined by: Medlycott, M. 2011 (ed.) *Research and Archaeology Revisited: a Revised Framework for the East of England*, East Anglian Archaeology Occasional Paper 24; *Research and Archaeology: A Framework for the Eastern Counties* (Glazebrook 1997; Brown & Glazebrook 2000), *English Heritage Archaeology Division Research Agenda* (1997); *Discovering the Past, Shaping the Future: Research Strategy 2005 - 2010* (English Heritage 2005).

Specifically, the following investigative aims should be accommodated in the programme of archaeological work:

- characterisation of the sites in the broader landscape;
- characterisation of the activities identified on the sites
- characterisation of changes affecting land-use through time

Supplementary and alternative research themes may be proposed within the submitted specification, or defined by agreement in consideration of on going excavation results (see Rebecca Casa Hatton 2013, *Brief for Archaeological Coring Survey*).

5. Techniques

5.1 Desktop study

There is no need to produce a separately bound desk-based study. However, the cultural heritage study undertaken as part of the Environment Statement (Ch. 6, Draft) will be incorporated in the final report.

5.2 Trial Trenching

Machine cut trial trenches/test pits with a minimum width of 5m will be excavated under archaeological supervision, using a flat bladed ditching bucket.

The location of the trenches/test pits will target areas of anomalies, as identified during the geophysical survey, as well as areas of significance, as identified during the coring survey and in the course of the post-excavation interim assessment. The evaluation sample will be no less than 2% of the targeted areas to be evaluated. Revisions and amendments of the sampling methodologies and percentages may be required in consideration of further details and ongoing fieldwork results.

The location of the trenches/test pits will flexible and will take into consideration potential above- and below-ground constraints and/or hazards, such as trees, utility trenches, overhead cables and areas of modern disturbance. If necessary, the trenches/test pits will be re-located.

The trenches/test pits will be excavated to the upper interface of secure archaeological deposits or, where these are not present, to a depth of 2m. Thereafter, hand-excavation will be required to sample any features exposed (see below).

In addition, further trenching will be carried out as a contingency, if significant discrete remains or clusters of features are encountered.

The field evaluation must not be carried out at the expenses of the heritage assets and has to be minimally intrusive and minimally destructive to archaeological remains.

5.3 Metal Detecting

Thorough metal detector sweeps of exposed features and excavation spoil will be carried out in advance of, and during, hand excavation. Deeply buried signals will be investigated only if agreed as part of the hand excavation programme.

5.4 Hand Excavation

All man-made features will be investigated. Apparently natural features (such as tree throws) will be sampled sufficiently to establish their origin and to characterise any related human activity. Hand excavation and feature sampling will be sufficient to establish date and character, and to allow appropriate levels of recording.

Deposits and layers (including buried soils) will be sampled sufficiently to enable a confident interpretation of their character, date and relationships with other features. Thereafter, mechanical removal and visual scanning for artefacts may be acceptable.

A viable, representative sample (usually not less than 50%) of all exposed features will be hand excavated. A representative sample of all significant discrete man-made features will normally be subject to a minimum of 50% excavation. At least 15% (or a percentage sufficient to achieve information on the character, function and dating) of linear and/or very large and deep features will be hand excavated. Particular attention will be given to terminals and intersections to ascertain stratigraphic and physical relationships.

Structural remains (stake holes, post holes and gullies, as well as masonry foundations or low masonry walls) and associated features like hearths) will be excavated fully and in plan/phase, as appropriate to the requirements of the project.

The evaluation will provide a representative sample of the site's archaeology at no significant cost to the value or integrity of archaeological remains therein. Judgement regarding the removal of human remains, structural remains (*in situ* wood or masonry), or other special remains or deposits, will be led by this consideration, and will be made in consultation with the PCCAS Archaeologist.

If exceptional remains are encountered unexpectedly, the PCCAS Archaeologist will be notified. A new brief may be issued to be read in conjunction with the present one.

5.5 Palaeoenvironmental Sampling

Viable samples to characterise soil profiles, as well as plant remains/charred plant remains, molluscs, small faunal remains, and pollen sequences, will be taken from a representative selection of suitable deposits in accordance with the evaluation aims. The samples will be extracted and recorded in accordance with Environmental Archaeology (English Heritage 2002), and in consultation with the appointed specialist and English Heritage.

5.6 Recording

A numbered single context-based recording system, written on suitable forms and indexed appropriately, will be used for all elements of the archaeological recording programme.

Measured plans will be produced that show all exposed features (including natural features, modern features, etc.) and excavated areas. Individual measured plans and sections will be produced for all excavated features and deposits. These will be accurately tied in to trench plans/trench location plans that in turn will be accurately related to the Ordnance Survey grid and to suitably mapped local features (boundaries, buildings, roads, etc.).

All sections and plans will be related accurately to Ordnance Datum.

A photographic record comprising monochrome and colour prints or colour slides will form part of the excavation record. Digital photographs may be used in the final report (maximum of two photographs per A4 sheet).

5.7 ***In Situ Preservation***

Should preservation *in situ* strategy be applicable, following appropriate excavation and recording, all exposed surfaces will be cleaned and prepared for re-burial beneath construction materials. If necessary, the laying out of geotextile and buffering materials will be carried out under archaeological supervision.

6. Assessment and Review

The archaeological investigation may be followed by an assessment of the character and significance of all categories of the recorded evidence. The assessment will be undertaken by suitably qualified specialists in accordance with MoRPHE (English Heritage 2006), and a report will be submitted within two months of the cessation of fieldwork.

The assessment report will contain a thorough appraisal of the recorded evidence within its local, regional and national context.

An assessment review will be held with PCCAS Archaeologist in order to agree proposals for further analysis and publication.

7. Report

Specific publication requirements will be agreed during the assessment review. Publication of a short report within refereed local journal (for example, *Proceedings of Cambridge Antiquarian Society, Northamptonshire Archaeology*) or national journals should be anticipated. Copies of the final report should be submitted to the NMR, Local Studies section of Peterborough Central Library, Peterborough Sites and Monuments Record (minimum of 2 paper copies, and 1 digital version), and the Haddon Library (Cambridge University). Distribution and dissemination are NOT undertaken by PCCAS.

Reports will be supported by sufficient maps, plans and sections to complement the text. Phase plans and artefact drawings should be included. Reconstruction drawings are desirable.

ALGAO and PCCAS endorse the *Online Access to Index of Archaeological Investigations* (OASIS) project. The overall aim of the OASIS project is to provide an online index to the mass of archaeological grey literature that has been produced as a result of the advent of large-scale developer funded fieldwork. **The archaeological contractor must therefore complete the online OASIS form at** http://ads.ahds.ac.uk/project/oasis/. If the archaeological contractor does not have internet access a paper copy of the form can be obtained from PCCAS. Contractors are advised to contact PCCAS prior to completing the form. Once a report has become a public document by forming part of a planning application, PCCAS will place the information on a website. Please ensure that you and your client agree to this procedure in writing as part of the process of submitting the report to PCCAS.

8. Archive

It is a requirement of PCCAS that significant excavation archives pertaining to the Peterborough area should be held close to source and made readily available to the public and local and national researchers. This would normally mean retention at Peterborough Museum and Art Gallery's facilities. Arrangements for archive storage at this location should be made with the Curator at Peterborough Museum. In this case, the archive will be prepared for long term storage to the requirements of Peterborough Museum and Art Gallery (Wass 2003).

If alternative arrangements for storage are agreed, the archive should be prepared to the requirements of *Management of Archaeological Projects* (English Heritage 1991), *Selection, Retention and Dispersal of Archaeological Collections* (Society of Museum Archaeologists, 1993), and Standards *in the Museum Care of Archaeological Collections* (Museums and Galleries Commission, 1992).

In either case, the requirement for conservation of significant items for long term storage and display should be anticipated. As a supplement to a paper archive, proposals for the creation of a digital archive should be submitted.

9. Miscellaneous Requirements and Considerations

The fieldwork contractor and commissioning agent are responsible for obtaining all necessary permissions and licenses to carry out archaeological work at the subject site. No liability will be accepted by PCCAS for the breach of any legal provisions (Scheduled Monument Consent, health and safety measures, etc.), or informal agreements, made by the fieldwork contractor or commissioning agent during the course of the archaeological work.

Peterborough City Council's Archaeologist will be given notice of when work is due to commence. Access to the site for monitoring purposes must be accorded to PCCAS who will monitor implementation of the programme of works on behalf of the Local Planning Authority and evaluate the work being undertaken on site against the methodology detailed in this specification.

Peterborough City Council's Archaeologist will also be responsible for considering any changes to the specification of works; any such alterations should be agreed in writing with the relevant parties prior to commencement of on site works, or at the earliest available opportunity.

It is expected that individuals who have an archaeological interest in the area will be given an opportunity to visit the on-going evaluation.

10. References

Brown, N. & Glazebrook, J. 2000. *Research and Archaeology: a Framework for the eastern Counties, 2. Research agenda and strategy*, East Anglian Archaeology Occasional Paper 8

English Heritage, 1997. *English Heritage Archaeology Division Research Agenda*

English Heritage, 2002. *Environmental Archaeology. A guide to the theory and practice of methods, from sampling and recovery to post-excavation*

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IfA *Standard and Guidance for Archaeological Excavations*

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Medlycott, M. 2011 (ed.) *Research and Archaeology Revisited: a Revised Framework for the East of England*, East Anglian Archaeology Occasional Paper 24

Museums and Galleries Commission, 1992. *Standards in the Museum Care of Archaeological Collections*

Peterborough Historic Environment Record (HER)

Society of Museum Archaeologists 1997. *Selection, Retention and Dispersal of Archaeological Collections*

Wass, G. 2003. *Peterborough Museum and Art Gallery Standards for Archaeological Archive Preparation*

Appendix 2: Augur Survey

Brief for Archaeological Coring Survey

Planning Services, Peterborough City Council, Stuart House, East Wing, St John's Street, Peterborough PE1 5DD; Tel: 01733 864702; email: rebecca.casa-hatton@peterborough.gov.uk

Application No.:	PAMAJ/12/00138 (Morris Fen Site); PAMAJ/12/00139 (America Farm); PAMAJ/12/00140 (Newborough Farms)
Address:	Land To The East And West Of Black Drove Thorney Peterborough (Morris Fen Site); Land To The South Of America Farm Oxney Road Peterborough (America Farm); Land To The East Of Peterborough Road Crowland Peterborough (Newborough Farms)
Location:	(centred at) TF 28432 06531 (Morris Fen Site); (centred at) TF 23583 00422 (America Farm); (centred at) TF 23694 06422 (Newborough Farms)

This brief specifies basic requirements for a coring survey at the above-named sites. The purpose of this work is to provide palaeo-environmental sampling analyses, hydrological assessments, sedimentary mapping and archaeological characterisation within the proposed development schemes. The investigation must result in a comprehensive and structured record that is interpreted in consideration of national, regional and local archaeological research themes, and a report that is disseminated appropriately.

This brief has been drawn up on the basis of information supplied in respect of the planning applications. The terms of the brief will be monitored during the course of work on site. Revisions and amendments may be required in consideration of further details and ongoing fieldwork results.

1. Site Description

The development site at Morris Fen (*c.* 106ha) is located approximately 9km north east of Peterborough and 1km north of Thorney. Currently, it comprises arable fields bounded to the west by Black Drove, and to the north, east and south by land drains.

The development site at America Farm (*c.* 41ha) is located approximately 2km east of Peterborough and 3.5km northwest of Whittlesey. Currently, it comprises arable fields bounded to the east and southeast by Willow Hall Lane, and to the north by Oxney Road. To the north of the development site are America Farm Cottage and Shooters Way, to the west of the development site is Flagfen Farm and to the south east are Northey Bungalows and Northey Farm.

The proposed development site at Newborough Farms (*c.* 203ha) is located approximately 7km north east of Peterborough and 1km south of Crowland. Currently, it comprises arable fields bounded to the north by Old Pepper Lake drain, to the east by Highland Drain, to the south by the B1443 (Thorney Road) and to the west by the A1073 (Crowland / Peterborough Road).
There is one property, Hill Farm, located within the eastern part of the development site and three properties on the western boundary of the development site.

The proposed developments at the three sites entail the creation of solar parks at the three aforementioned sites. These will consist of rows of panels (arrays) 700mm high (minimum) with a pitch angle of 27°and up to 14m apart. The panels will be connected together with above ground cables. The depth of foundations for the inverters (6m x 3m) will be approximately 0.8m. The inverters will be connected in series using below ground cables to the switching stations at America Farm and Newborough Farms, respectively, and to the substation at Morris Fen. Cable trenches will be approximately 0.9m wide and 1m deep. Associated features will include a security fence and CCTV posts to be installed to a depth of approximately 1m; stock fencing; switching stations with 0.8m deep foundations at America Farm and Newborough Farms, and a substation with 2m deep foundations at Morris Fen; access tracks (5m wide) on the existing topsoil to a depth of approximately 0.3m with compacted stone on top.

Ideally, the panels will be fixed using 2m deep and 120-150mm wide stainless steel or aluminium pins. The pins will be driven into the ground and spaced every 7.5m along an array. Alternative foundation systems will be considered, in consideration of further details and ongoing fieldwork results.

2. Archaeological Background

Past and recent arcaheological investigations have indicated that the proposed development sites may contain buried remains dating from the Mesolithic period.

In particular, Morris Fen would have been deep fen in the past, becoming progressively wet from the Bronze Age and thus mostly unsuitable for permanent activity/settlement, as indicated by the fenland survey (Hall 1987). Nonetheless, the proposed development site at Morris Fen is characterised by the presence of a number of fen gravel islands which were dry land in the Mesolithic and Neolithic periods, and were buried under later marine and freshwater fen deposits (French & Pryor 1993).

Newborough Fen contains the late Neolithic tidal roddons, as well as the Bronze Age and Roman fen edges. Undesignated Bronze Age barrows visible on aerial photographs are located within the boundaries of the proposed development area. In addition, three scheduled Bronze Age barrows are located within a 1km-radius, the closest sitting *c.*300m to the west.

America Farm includes the Neolithic and Bronze Age buried fen edges, between the Flag Fen basin to the east and the Priors' Fen basin to the west. It is located in close proximity to Flag Fen Scheduled Monument (List Entry Number: 1406460 A Bronze Age post alignment and timber platform at Flag Fen and associated Bronze Age and later field systems and settlement to either side of the Northey Road). The proposed development site may contain waterlogged deposits with preserved palaeo-environmental remains, as well as organic artefacts and metalwork of the type which have been found at Flag Fen and, more recently, at Must Farm (Whittlesea).

3. Requirements for the Investigation

Any application for development is assessed against the National Policy Framework Section 12 (NPPF, Department for Communities and Local Government, 27 March 2012) and Policy CS17 of the adopted Peterborough Core Strategy DPD (PCC, February 2011).

The investigation will be undertaken by a recognised archaeological organisation/individual of demonstrable competence, working to IfA standards.

A Written Scheme of Investigation (WSI) must be completed and approved before fieldwork begins. This will include:

- The programme and methodology of site investigation and recording
- The programme for post investigation assessment
- Provision to be made for analysis of the site investigation and recording
- Provision to be made for publication and dissemination of the analysis and records of the site investigation
- Provision to be made for archive deposition of the analysis and records of the site investigation
- Nomination of a competent person or persons/organisation to undertake the works set out within the WSI

4. Aims

It is proposed that coring should be undertaken in pre-determined locations in order to investigate the stratigraphy of the Holocene fen sequence preserved at the sites. One or more key sequence will be identified, and cores of sediment will be taken for sedimentary and palaeo-environmental analyses. It is presumed that the sediments are no more than 2m deep. An appropriate method for coring needs to be implemented in order for samples to be taken from integral stratigraphic sequences.

The excavation should consider the general investigative themes outlined by: Medlycott, M. 2011 (ed.) *Research and Archaeology Revisited: a Revised Framework for the East of England*, East Anglian Archaeology Occasional Paper 24; *Research and Archaeology: A Framework for the Eastern Counties* (Glazebrook 1997; Brown & Glazebrook 2000), *English Heritage Archaeology Division Research Agenda* (1997). Specifically, the following investigative aims should be accommodated in the programme of archaeological work:

- characterisation of the sites in the broader landscape;
- characterisation of the activities identified on the site
- characterisation of changes affecting land-use through time

Supplementary and alternative research themes may be proposed within the submitted specification, or defined by agreement in consideration of on going excavation results. In particular, the investigation should aim to establish the extent, depth, type, date (by C14 dating) and degree of preservation of fen deposits. It should also focus on the analysis of both macro and micro palaeo-environmental remains in order to establish the main floral and faunal species present (and exploited), changes in relation to the fen depositional sequences and the anthropogenic impact on the landscape (environmental disturbance/interaction) (English Heritage 2011, *Environmental Archaeology*).

5 Fieldwork methodology

Both coring method and type of equipment will be discussed with the appointed specialist and written into the WSI for agreement with Peterborough City Council and English Heritage. However, given the shallow depth of the deposits to be sampled (which are no more than 2m deep), for the initial survey work a hand auger should provide an adequate system for both palaeo-environmental sampling and sedimentary mapping (English Heritage 2004, *Geoarchaeology*). Different coring devices may be employed to cope with the potential diversity of sediments that may be encountered.

Coring will be undertaken from geo-located positions at regular sampling intervals on a survey grid. The plan for the boreholes (frequency and number) must be appropriate for the amount of ground disturbance caused by the development. The applicant must produce such a plan prior to commencing coring and the plan must be agreed with Peterborough City Council and English Heritage. Given the extent of the proposed development sites, it is suggested that the first samples are placed far apart, predicting and testing the intervening stratigraphy with further, more closely spaced, tests. A site-specific fieldwork Risk Assessment will be prepared prior to the survey.

6. Assessment and Review

Following the fieldwork, a short interim report of the stratigraphic relationships (a deposit model) and preservation potential of sediments should be prepared. This would inform decisions about further environmental analyses and dating, as well as fieldwork.

The archaeological investigation should be followed by an assessment of the character and significance of all categories of the recorded evidence. The assessment will be undertaken by suitably qualified specialists in accordance with MoRPHE (English Heritage 2006), and a report will be submitted within two months of the cessation of fieldwork.

The assessment report will contain a thorough appraisal of the recorded evidence within its local, regional and national context.

An assessment review will be held with PCCAS Archaeologist and English Heritage in order to agree proposals for further analysis and publication.

7. Report

Specific publication requirements will be agreed during the assessment review. Publication of a short report within refereed local journal (for example, *Proceedings of Cambridge Antiquarian Society, Northamptonshire Archaeology*) or national journals should be anticipated. Copies of the final report should be submitted to the NMR, Local Studies section of Peterborough Central Library, Peterborough Sites and Monuments Record (minimum of 2 paper copies, and 1 digital version), and the Haddon Library (Cambridge University). Distribution and dissemination are NOT undertaken by PCCAS.

Reports will be supported by sufficient maps, plans and sections to complement the text. Phase plans and artefact drawings should be included. Reconstruction drawings are desirable.

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In either case, the requirement for conservation of significant items for long term storage and display should be anticipated. As a supplement to a paper archive, proposals for the creation of a digital archive should be submitted.

9. Miscellaneous Requirements and Considerations

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Peterborough City Council's Archaeologist will be given notice of when work is due to commence. Access to the site for monitoring purposes must be accorded to PCCAS who will monitor implementation of the programme of works on behalf of the Local Planning Authority and evaluate the work being undertaken on site against the methodology detailed in this specification.

Peterborough City Council's Archaeologist will also be responsible for considering any changes to the specification of works, in consultation with English Heritage. Any such alterations should be agreed in writing with the relevant parties prior to commencement of on site works, or at the earliest available opportunity.

10. References

Brown, N. & Glazebrook, J. 2000. *Research and Archaeology: a Framework for the eastern Counties, 2. Research agenda and strategy*, East Anglian Archaeology Occasional Paper 8

English Heritage, 1997. *English Heritage Archaeology Division Research Agenda*

English Heritage, 2002. *Environmental Archaeology. A guide to the theory and practice of methods, from sampling and recovery to post-excavation*

French, C.A.I. & Pryor, F.M.M. 1993, *The South-West Fen Dyke Survey Project 1982-1986*, EAA59

Glazebrook, J. 1997. *Research and Archaeology: A Framework for the Eastern Counties 1. Resource Assessment*, East Anglian Archaeology Occasional Papers 3

Gurney, D. 2003. *Standards for Field Archaeology in the East of England*, East Anglian Archaeology Occasional Papers 14

Hall, D. 1987, *The Fenland project Number 2: Cambridgeshire Survey, Peterborough to March*, EAA 35

IfA *Standard and Guidance for Archaeological Excavations*

IfA *Standard and Guidance for an Archaeological Watching Brief*

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Wass, G. 2003. *Peterborough Museum and Art Gallery Standards for Archaeological Archive Preparation*

Appendix 3 – Wessex Archaeology Written Scheme of Investigation

T17758
Peterborough Solar P

Appendix 4: Soil Environmental Services Methodology

AGRICULTURAL LAND CLASSIFICATION

Agricultural Land Classification (ALC) surveys are undertaken strictly in accordance with:

Agricultural Land Classification of England and Wales
Guidelines and criteria for grading the quality of agricultural land
(Revised guidelines 1988 and Draft second revision 1996, MAFF, London)

1 Desktop study

The classification includes an initial desktop investigation to examine previously mapped soil types and to note the drift and solid geology. This will include consultation of:

- **Soil Survey of England and Wales 1:250 000 Soil maps**
- **MAFF 1:250 000 ALC Survey Maps**
- **British Geological Survey 1:50000 survey maps**

2 Site survey

The site visit will involve soil augering to 1.2 m depth at, typically, 50 to 100 m intervals using, in most cases (dependant on soil conditions), a 50 mm Dutch hand held auger. The interval between auger locations can vary as necessary to develop a map of soil characteristics relevant to ALC determination and in accordance with the size of the site and scale of the project. Soil pits will be excavated in each soil type to examine structure. Pits are up to 1 m x 1 m square (maximum) to 1.2 m depth maximum. All soil horizons and grass turf surfaces removed will be carefully replaced following excavation if appropriate.

The soil removed during the augering and during pit excavation is examined in accordance with:

- **Soil Survey Field Handbook**
- ***Describing and Sampling Soil Profiles***
- **Soil Survey of England and Wales, Technical Monograph o. 5, 1976**
- **Soil Classification for Soil Survey**

Monographs on Soil Survey
Butler, B E (1980) Clarendon Press, Oxford

3 Laboratory testing and other data

Laboratory analysis may be required for soils from some sites. Flood risk information data, if needed, is taken from Environment Agency and local knowledge records.

4 Reporting

Reporting will include separate colour maps for soil types and ALC Grades. Reports are presented in hard-copy and digital format with drawings in CAD compatible format if required.

Plans
Plans would be delivered in QuickCAD/DWG, JPEG or BMP format at A4 or A3 size.
Base map from the client would be preferred. No additional costs in these formats.

5 Overall timescale

Timescale would be approximately 2-3 weeks total time from date of instruction.

APPENDIX 6

Cost Breakdown for 7.2MWp Solar Farm America Farm: Option 1 No Delay

Power Output	7,200	KWp
Construction Cost Rate	900	£k / kW
Construction Cost	6,480,000	£

Capital Costs Breakdown			**Amount**
Modules		£	3,564,000
Civil works installation		£	729,000
Electrical installation		£	379,080
Security system		£	116,640
Inverters		£	787,320
Structures		£	495,720
Other balance of system		£	174,960
Contractor Cost		£	233,280
	EPC Contract Sub Total	75% £	6,480,000
	Development Costs Sub Total	5% £	400,000
	Grid Connection Sub Total	21% £	1,800,000
	Capital Costs Sub Total	**100% £**	**8,680,000**
	Contingency	22%	1,900,000

Operational Costs Breakdown			**Amount**
Operation & maintenance		£	6,640,000
(includes cleaning, security, sinking fund for pro-active maintenance & decommissioning)			
Insurances		£	1,200,000
Business Rates		£	1,000,000
	Operation & Maintenance Sub Total	56% £	8,840,000
	Interest Sub Total	44% £	7,000,000
	Operational Costs Sub Total	**100% £**	**15,840,000**
	Land Drainage & Contingency	7%	1,100,000

	Total Expenditure	**£**	**27,520,000**

Revenue		
ROC Price	Confidential	£ per MWh
No of ROCS	1.4	
PPA Price	Confidential	£ per MWh
Solar Irradiation	1,016	kWh p.a.

Revenue Breakdown			**Amount**
ROC Revenue over lifetime		£	12,020,000
PPA Revenue over lifetime		£	17,100,000
	Total Lifetime Income	£	29,120,000
	Net Project Income	£	1,600,000
	Loss of Rental Income	£	300,000
	Net Income to PCC	**£**	**1,300,000**

Cost Breakdown for 25.5MWp Solar Farm Morris Fen: Option 1 No Delay

Power Output	25,500	KWp
Construction Cost Rate	900	£k / kW
Construction Cost	22,950,000	£

Capital Costs Breakdown			**Amount**
Modules		£	12,622,500
Civil works installation		£	2,581,875
Electrical installation		£	1,342,575
Security system		£	413,100
Inverters		£	2,788,425
Structures		£	1,755,675
Other balance of system		£	619,650
Contractor Cost		£	826,200
	EPC Contract Sub Total	81% £	22,950,000
	Development Costs Sub Total	4% £	1,100,000
	Grid Connection Sub Total	15% £	4,300,000
	Capital Costs Sub Total	**100% £**	**28,350,000**
	Contingency	19%	5,500,000

Operational Costs Breakdown			**Amount**
Operation & maintenance		£	23,800,000
(includes cleaning, security, sinking fund for pro-active maintenance & decommissioning)			
Insurances		£	3,800,000
Business Rates		£	3,700,000
	Operation & Maintenance Sub Total	56% £	31,300,000
	Interest Sub Total	44% £	24,600,000
	Operational Costs Sub Total	**100% £**	**55,900,000**
	Land Drainage & Contingency	7%	3,900,000

	Total Expenditure	**£**	**93,650,000**

Revenue		
ROC Price	Confidential	£ per MWh
No of ROCS	1.3	
PPA Price	Confidential	£ per MWh
Solar Irradiation	1,016	kWh p.a.

Revenue Breakdown			**Amount**
ROC Revenue over lifetime		£	40,000,000
PPA Revenue over lifetime		£	61,500,000
	Total Lifetime Income	£	101,500,000
	Net Project Income	£	7,850,000
	Loss of Rental Income	£	1,100,000
	Net Income to PCC	**£**	**6,750,000**

Cost Breakdown for 49MWp Solar Farm Newborough Farm: Option 1 No Delay

Power Output	49,000	KWp
Construction Cost Rate	900	£k / kW
Construction Cost	44,100,000	£

Capital Costs Breakdown			**Amount**
Modules		£	24,255,000
Civil works installation		£	4,961,250
Electrical installation		£	2,579,850
Security system		£	793,800
Inverters		£	5,358,150
Structures		£	3,373,650
Other balance of system		£	1,190,700
Contractor Cost		£	1,587,600
	EPC Contract Sub Total	88% £	44,100,000
	Development Costs Sub Total	4% £	1,800,000
	Grid Connection Sub Total	8% £	4,000,000
	Capital Costs Sub Total	**100% £**	**49,900,000**
	Contingency	15%	7,600,000

Operational Costs Breakdown			**Amount**
Operation & maintenance		£	46,100,000
(includes cleaning, security, sinking fund for pro-active maintenance & decommissioning)			
Insurances		£	6,600,000
Business Rates		£	7,200,000
	Operation & Maintenance Sub Total	58% £	59,900,000
	Interest Sub Total	42% £	42,600,000
	Operational Costs Sub Total	**100% £**	**102,500,000**
	Land Drainage & Contingency	8%	7,800,000

	Total Expenditure	**£**	**167,800,000**

Revenue		
ROC Price	Confidential	£ per MWh
No of ROCS	1.3	
PPA Price	Confidential	£ per MWh
Solar Irradiation	986	kWh p.a.

Revenue Breakdown			**Amount**
ROC Revenue over lifetime		£	75,250,000
PPA Revenue over lifetime		£	115,900,000
	Total Lifetime Income	£	191,150,000
	Net Project Income	£	23,350,000
	Loss of Rental Income	£	1,800,000
	Net Income to PCC	**£**	**21,550,000**

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APPENDIX 7

Cost Breakdown for 7.2MWp Solar Farm America Farm: Option 1 Delay

Power Output	7,200	KWp
Construction Cost Rate	900	£k / kW
Construction Cost	6,480,000	£

Capital Costs Breakdown			**Amount**
Modules		£	3,564,000
Civil works installation		£	729,000
Electrical installation		£	379,080
Security system		£	116,640
Inverters		£	787,320
Structures		£	495,720
Other balance of system		£	174,960
Contractor Cost		£	233,280
	EPC Contract Sub Total	75% £	6,480,000
	Development Costs Sub Total	5% £	400,000
	Grid Connection Sub Total	21% £	1,800,000
	Capital Costs Sub Total	**100% £**	**8,680,000**
	Contingency	22%	1,900,000

Operational Costs Breakdown			**Amount**
Operation & maintenance		£	6,800,000
(includes cleaning, security, sinking fund for pro-active maintenance & decommissioning)			
Insurances		£	1,200,000
Business Rates		£	1,100,000
	Operation & Maintenance Sub Total	54% £	9,100,000
	Interest Sub Total	46% £	7,900,000
	Operational Costs Sub Total	**100% £**	**17,000,000**
	Land Drainage & Contingency	7%	1,200,000

	Total Expenditure £	**28,780,000**

Revenue		
ROC Price	Confidential	£ per MWh
No of ROCS	1.3	
PPA Price	Confidential	£ per MWh
Solar Irradiation	1,016	kWh p.a.

Revenue Breakdown			**Amount**
ROC Revenue over lifetime		£	11,420,000
PPA Revenue over lifetime		£	17,600,000
	Total Lifetime Income	£	29,020,000
	Net Project Income	£	240,000
	Loss of Rental Income	£	300,000
	Net Income to PCC	**£**	**-60,000**

Cost Breakdown for 25.5MWp Solar Farm Morris Fen: Option 1 Delay

Power Output	25,500	KWp
Construction Cost Rate	900	£k / kW
Construction Cost	22,950,000	£

Capital Costs Breakdown			**Amount**
Modules		£	12,622,500
Civil works installation		£	2,581,875
Electrical installation		£	1,342,575
Security system		£	413,100
Inverters		£	2,788,425
Structures		£	1,755,675
Other balance of system		£	619,650
Contractor Cost		£	826,200
	EPC Contract Sub Total	80% £	22,950,000
	Development Costs Sub Total	5% £	1,300,000
	Grid Connection Sub Total	15% £	4,300,000
	Capital Costs Sub Total	**100% £**	**28,550,000**
	Contingency	19%	5,500,000

Operational Costs Breakdown			**Amount**
Operation & maintenance		£	24,500,000
(includes cleaning, security, sinking fund for pro-active maintenance & decommissioning)			
Insurances		£	3,900,000
Business Rates		£	3,800,000
	Operation & Maintenance Sub Total	55% £	32,200,000
	Interest Sub Total	45% £	26,300,000
	Operational Costs Sub Total	**100% £**	**58,500,000**
	Land Drainage & Contingency	7%	4,000,000

	Total Expenditure	**£**	**96,550,000**

Revenue		
ROC Price	Confidential	£ per MWh
No of ROCS	1.2	
PPA Price	Confidential	£ per MWh
Solar Irradiation	1,016	kWh p.a.

Revenue Breakdown			**Amount**
ROC Revenue over lifetime		£	37,900,000
PPA Revenue over lifetime		£	63,600,000
	Total Lifetime Income	£	101,500,000
	Net Project Income	£	4,950,000
	Loss of Rental Income	£	1,200,000
	Net Income to PCC	**£**	**3,750,000**

Cost Breakdown for 49MWp Solar Farm Newborough Farm: Option 1 Delay

Power Output	49,000	KWp
Construction Cost Rate	900	£k / kW
Construction Cost	44,100,000	£

Capital Costs Breakdown			**Amount**
Modules		£	24,255,000
Civil works installation		£	4,961,250
Electrical installation		£	2,579,850
Security system		£	793,800
Inverters		£	5,358,150
Structures		£	3,373,650
Other balance of system		£	1,190,700
Contractor Cost		£	1,587,600
EPC Contract Sub Total	88%	£	44,100,000
Development Costs Sub Total	4%	£	2,100,000
Grid Connection Sub Total	8%	£	4,000,000
Capital Costs Sub Total	**100%**	**£**	**50,200,000**
Contingency	15%		7,600,000

Operational Costs Breakdown			**Amount**
Operation & maintenance		£	47,193,000
(includes cleaning, security, sinking fund for pro-active maintenance & decommissioning)			
Insurances		£	6,703,000
Business Rates		£	7,409,000
Operation & Maintenance Sub Total	58%	£	61,305,000
Interest Sub Total	42%	£	44,600,000
Operational Costs Sub Total	**100%**	**£**	**105,905,000**
Land Drainage & Contingency	7%		7,700,000

Total Expenditure		**£**	**171,405,000**

Revenue		
ROC Price	Confidential	£ per MWh
No of ROCS	1.2	
PPA Price	Confidential	£ per MWh
Solar Irradiation	986	kWh p.a.

Revenue Breakdown		**Amount**
ROC Revenue over lifetime	£	71,040,000
PPA Revenue over lifetime	£	119,200,000
Total Lifetime Income	£	190,240,000
Net Project Income	£	18,835,000
Loss of Rental Income	£	1,800,000
Net Income to PCC	**£**	**17,035,000**

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Cost Breakdown for 7.2MWp Solar Farm America Farm: Option 1 No Delay

Power Output	7,200	KWp
Construction Cost Rate	900	£k / kW
Construction Cost	6,480,000	£

Capital Costs Breakdown			**Amount**
Modules		£	3,564,000
Civil works installation		£	729,000
Electrical installation		£	379,080
Security system		£	116,640
Inverters		£	787,320
Structures		£	495,720
Other balance of system		£	174,960
Contractor Cost		£	233,280
	EPC Contract Sub Total	75% £	6,480,000
	Development Costs Sub Total	5% £	400,000
	Grid Connection Sub Total	21% £	1,800,000
	Capital Costs Sub Total	**100% £**	**8,680,000**
	Contingency	22%	1,900,000

Operational Costs Breakdown			**Amount**
Operation & maintenance		£	6,640,000
(includes cleaning, security, sinking fund for pro-active maintenance & decommissioning)			
Insurances		£	1,200,000
Business Rates		£	1,000,000
	Operation & Maintenance Sub Total	56% £	8,840,000
	Interest Sub Total	44% £	7,000,000
	Operational Costs Sub Total	**100% £**	**15,840,000**
	Land Drainage & Contingency	7%	1,100,000

	Total Expenditure	**£**	**27,520,000**

Revenue		
ROC Price	Confidential	£ per MWh
No of ROCS	1.4	
PPA Price	Confidential	£ per MWh
Solar Irradiation	1,016	kWh p.a.

Revenue Breakdown			**Amount**
ROC Revenue over lifetime		£	12,020,000
PPA Revenue over lifetime		£	17,100,000
	Total Lifetime Income	£	29,120,000
	Net Project Income	£	1,600,000
	Loss of Rental Income	£	300,000
	Net Income to PCC	**£**	**1,300,000**

Cost Breakdown for 37MWp Solar Farm Newborough Farm: Option 2 No Delay

Power Output	37,000	KWp
Construction Cost Rate	900	£k / kW
Construction Cost	33,300,000	£

Capital Costs Breakdown			**Amount**
Modules		£	18,315,000
Civil works installation		£	3,746,250
Electrical installation		£	1,948,050
Security system		£	599,400
Inverters		£	4,045,950
Structures		£	2,547,450
Other balance of system		£	899,100
Contractor Cost		£	1,198,800
	EPC Contract Sub Total	85% £	33,300,000
	Development Costs Sub Total	5% £	1,800,000
	Grid Connection Sub Total	10% £	4,000,000
	Capital Costs Sub Total	**100% £**	**39,100,000**
	Contingency	16%	6,400,000

Operational Costs Breakdown			**Amount**
Operation & maintenance		£	34,800,000
(includes cleaning, security, sinking fund for pro-active maintenance & decommissioning)			
Insurances		£	5,100,000
Business Rates		£	5,500,000
	Operation & Maintenance Sub Total	57% £	45,400,000
	Interest Sub Total	43% £	33,700,000
	Operational Costs Sub Total	**100% £**	**79,100,000**
	Land Drainage & Contingency	8%	6,400,000

	Total Expenditure	**£**	**131,000,000**

Revenue		
ROC Price	Confidential	£ per MWh
No of ROCS	1.3	
PPA Price	Confidential	£ per MWh
Solar Irradiation	986	kWh p.a.

Revenue Breakdown			**Amount**
ROC Revenue over lifetime		£	56,820,000
PPA Revenue over lifetime		£	87,500,000
	Total Lifetime Income	£	144,320,000
	Net Project Income	£	13,320,000
	Loss of Rental Income	£	1,800,000
	Net Income to PCC	**£**	**11,520,000**

Cost Breakdown for 26.5MWp Solar Farm Morris Fen: Option 2 No Delay

Power Output	26,500	KWp
Construction Cost Rate	900	£k / kW
Construction Cost	23,850,000	£

Capital Costs Breakdown			**Amount**
Modules		£	13,117,500
Civil works installation		£	2,683,125
Electrical installation		£	1,395,225
Security system		£	429,300
Inverters		£	2,897,775
Structures		£	1,824,525
Other balance of system		£	643,950
Contractor Cost		£	858,600
	EPC Contract Sub Total	82% £	23,850,000
	Development Costs Sub Total	4% £	1,100,000
	Grid Connection Sub Total	15% £	4,300,000
	Capital Costs Sub Total	**100% £**	**29,250,000**
	Contingency	19%	5,600,000

Operational Costs Breakdown			**Amount**
Operation & maintenance		£	24,700,000
(includes cleaning, security, sinking fund for pro-active maintenance & decommissioning)			
Insurances		£	3,900,000
Business Rates		£	3,900,000
	Operation & Maintenance Sub Total	56% £	32,500,000
	Interest Sub Total	44% £	25,400,000
	Operational Costs Sub Total	**100% £**	**57,900,000**
	Land Drainage & Contingency	7%	4,000,000

	Total Expenditure	**£**	**96,750,000**

Revenue		
ROC Price	Confidential	£ per MWh
No of ROCS	1.2	
PPA Price	Confidential	£ per MWh
Solar Irradiation	1,016	kWh p.a.

Revenue Breakdown			**Amount**
ROC Revenue over lifetime		£	41,600,000
PPA Revenue over lifetime		£	63,900,000
	Total Lifetime Income	£	105,500,000
	Net Project Income	£	8,750,000
	Loss of Rental Income	£	1,100,000
	Net Income to PCC	**£**	**7,650,000**

Cost Breakdown for 12.3MWp Windfarm Newborough: Option 2

Power Output	12,300	KWp
Construction Cost Rate	1130	£/kW
Construction Cost	13,899,000	£

Capital Costs Breakdown			**Amount**
Turbines		£	10,210,337
Civil works installation		£	1,591,221
Electrical installation		£	928,212
Security system		£	397,805
Other balance of system		£	241,017
Contractor Cost		£	530,407
	EPC Contract Sub Total	91% £	13,899,000
	Development Costs Sub Total	9% £	1,300,000
	Capital Costs Sub Total	**100% £**	**15,199,000**
	Contingency	13%	2,000,000

Operational Costs Breakdown			**Amount**
Operation & maintenance		£	9,700,000
Insurances		£	1,900,000
Business Rates		£	6,500,000
	Operation & Maintenance Sub Total	57% £	18,100,000
	Interest Sub Total	43% £	13,400,000
	Operational Costs Sub Total	**100% £**	**31,500,000**
	Land Drainage & Contingency	8%	2,600,000

	Total Expenditure	**£**	**51,299,000**

Revenue		
ROC Tariff	Confidential	£ per MWh
No of ROCS	0.9	
PPA Price	Confidential	£ per MWh
Wind Speed (Average)	6	m/s

Revenue Breakdown			**Amount**
ROC Revenue over lifetime		£	43,100,000
PPA Revenue over lifetime		£	111,000,000
	Total Lifetime Income	£	154,100,000
	Net Project Income	£	102,801,000
	Loss of Rental Income	£	
	Net Income to PCC	**£**	**102,801,000**

Cost Breakdown for 6.2MWp Windfarm Morris Fen: Option 2

Power Output	6,200	KWp
Construction Cost Rate	1130	£/kW
Construction Cost	7,006,000	£

Capital Costs Breakdown			**Amount**
Turbines		£	5,146,674
Civil works installation		£	802,079
Electrical installation		£	467,879
Security system		£	200,520
Other balance of system		£	121,488
Contractor Cost		£	267,360
	EPC Contract Sub Total	92% £	7,006,000
	Development Costs Sub Total	8% £	600,000
	Capital Costs Sub Total	**100% £**	**7,606,000**
	Contingency	13%	1,000,000

Operational Costs Breakdown			**Amount**
Operation & maintenance		£	4,800,000
Insurances		£	1,000,000
Business Rates		£	3,200,000
	Operation & Maintenance Sub Total	57% £	9,000,000
	Interest Sub Total	43% £	6,700,000
	Operational Costs Sub Total	**100% £**	**15,700,000**
	Land Drainage & Contingency	8%	1,300,000

	Total Expenditure £	**25,606,000**

Revenue		
ROC Tariff	Confidential	£ per MWh
No of ROCS	0.9	
PPA Price	Confidential	£ per MWh
Wind Speed (Average)	6	m/s

Revenue Breakdown			**Amount**
ROC Revenue over lifetime		£	21,600,000
PPA Revenue over lifetime		£	55,500,000
	Total Lifetime Income	£	77,100,000
	Net Project Income	£	51,494,000
	Loss of Rental Income	£	
	Net Income to PCC	**£**	**51,494,000**

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APPENDIX 9

Cost Breakdown for 7.2MWp Solar Farm America Farm: Option 1 Delay

Power Output	7,200	KWp
Construction Cost Rate	900	£k / kW
Construction Cost	6,480,000	£

Capital Costs Breakdown			**Amount**
Modules		£	3,564,000
Civil works installation		£	729,000
Electrical installation		£	379,080
Security system		£	116,640
Inverters		£	787,320
Structures		£	495,720
Other balance of system		£	174,960
Contractor Cost		£	233,280
	EPC Contract Sub Total	75% £	6,480,000
	Development Costs Sub Total	5% £	400,000
	Grid Connection Sub Total	21% £	1,800,000
	Capital Costs Sub Total	**100% £**	**8,680,000**
	Contingency	22%	1,900,000

Operational Costs Breakdown			**Amount**
Operation & maintenance		£	6,800,000
(includes cleaning, security, sinking fund for pro-active maintenance & decommissioning)			
Insurances		£	1,200,000
Business Rates		£	1,100,000
	Operation & Maintenance Sub Total	54% £	9,100,000
	Interest Sub Total	46% £	7,900,000
	Operational Costs Sub Total	**100% £**	**17,000,000**
	Land Drainage & Contingency	7%	1,200,000

	Total Expenditure £	**28,780,000**

Revenue		
ROC Price	Confidential	£ per MWh
No of ROCS	1.3	
PPA Price	Confidential	£ per MWh
Solar Irradiation	1,016	kWh p.a.

Revenue Breakdown			**Amount**
ROC Revenue over lifetime		£	11,420,000
PPA Revenue over lifetime		£	17,600,000
	Total Lifetime Income	£	29,020,000
	Net Project Income	£	240,000
	Loss of Rental Income	£	300,000
	Net Income to PCC	**£**	**-60,000**

Cost Breakdown for 12.3MWp Windfarm Newborough: Option 2

Power Output	12,300	KWp
Construction Cost Rate	1130	£/kW
Construction Cost	13,899,000	£

Capital Costs Breakdown			**Amount**
Turbines		£	10,210,337
Civil works installation		£	1,591,221
Electrical installation		£	928,212
Security system		£	397,805
Other balance of system		£	241,017
Contractor Cost		£	530,407
	EPC Contract Sub Total	91% £	13,899,000
	Development Costs Sub Total	9% £	1,300,000
	Capital Costs Sub Total	**100% £**	**15,199,000**
	Contingency	13%	2,000,000

Operational Costs Breakdown			**Amount**
Operation & maintenance		£	9,700,000
Insurances		£	1,900,000
Business Rates		£	6,500,000
	Operation & Maintenance Sub Total	57% £	18,100,000
	Interest Sub Total	43% £	13,400,000
	Operational Costs Sub Total	**100% £**	**31,500,000**
	Land Drainage & Contingency	8%	2,600,000

	Total Expenditure	**£**	**51,299,000**

Revenue		
ROC Tariff	Confidential	£ per MWh
No of ROCS	0.9	
PPA Price	Confidential	£ per MWh
Wind Speed (Average)	6	m/s

Revenue Breakdown			**Amount**
ROC Revenue over lifetime		£	43,100,000
PPA Revenue over lifetime		£	111,000,000
	Total Lifetime Income	£	154,100,000
	Net Project Income	£	102,801,000
	Loss of Rental Income	£	
	Net Income to PCC	**£**	**102,801,000**

Cost Breakdown for 6.2MWp Windfarm Morris Fen: Option 2

Power Output	6,200	KWp
Construction Cost Rate	1130	£/kW
Construction Cost	7,006,000	£

Capital Costs Breakdown			**Amount**
Turbines		£	5,146,674
Civil works installation		£	802,079
Electrical installation		£	467,879
Security system		£	200,520
Other balance of system		£	121,488
Contractor Cost		£	267,360
	EPC Contract Sub Total	92% £	7,006,000
	Development Costs Sub Total	8% £	600,000
	Capital Costs Sub Total	**100% £**	**7,606,000**
	Contingency	13%	1,000,000

Operational Costs Breakdown			**Amount**
Operation & maintenance		£	4,800,000
Insurances		£	1,000,000
Business Rates		£	3,200,000
	Operation & Maintenance Sub Total	57% £	9,000,000
	Interest Sub Total	43% £	6,700,000
	Operational Costs Sub Total	**100% £**	**15,700,000**
	Land Drainage & Contingency	8%	1,300,000

	Total Expenditure £	**25,606,000**

Revenue		
ROC Tariff	Confidential	£ per MWh
No of ROCS	0.9	
PPA Price	Confidential	£ per MWh
Wind Speed (Average)	6	m/s

Revenue Breakdown			**Amount**
ROC Revenue over lifetime		£	21,600,000
PPA Revenue over lifetime		£	55,500,000
	Total Lifetime Income	£	77,100,000
	Net Project Income	£	51,494,000
	Loss of Rental Income	£	
	Net Income to PCC	**£**	**51,494,000**

Cost Breakdown for 37MWp Solar Farm Newborough Farm: Option 2 Delay

Power Output	37,000	KWp
Construction Cost Rate	900	£k / kW
Construction Cost	33,300,000	£

Capital Costs Breakdown			**Amount**
Modules		£	18,315,000
Civil works installation		£	3,746,250
Electrical installation		£	1,948,050
Security system		£	599,400
Inverters		£	4,045,950
Structures		£	2,547,450
Other balance of system		£	899,100
Contractor Cost		£	1,198,800
	EPC Contract Sub Total	85% £	33,300,000
	Development Costs Sub Total	5% £	2,100,000
	Grid Connection Sub Total	10% £	4,000,000
	Capital Costs Sub Total	**100% £**	**39,400,000**
	Contingency	16%	6,400,000

Operational Costs Breakdown			**Amount**
Operation & maintenance		£	35,600,000
(includes cleaning, security, sinking fund for pro-active maintenance & decommissioning)			
Insurances		£	5,300,000
Business Rates		£	5,600,000
	Operation & Maintenance Sub Total	57% £	46,500,000
	Interest Sub Total	43% £	35,300,000
	Operational Costs Sub Total	**100% £**	**81,800,000**
	Land Drainage & Contingency	8%	6,300,000

	Total Expenditure	**£**	**133,900,000**

Revenue		
ROC Price	Confidential	£ per MWh
No of ROCS	1.2	
PPA Price	Confidential	£ per MWh
Solar Irradiation	986	kWh p.a.

Revenue Breakdown			**Amount**
ROC Revenue over lifetime		£	53,640,000
PPA Revenue over lifetime		£	90,000,000
	Total Lifetime Income	£	143,640,000
	Net Project Income	£	9,740,000
	Loss of Rental Income	£	1,800,000
	Net Income to PCC	**£**	**7,940,000**

Cost Breakdown for 26.5MWp Solar Farm Morris Fen: Option 2 Delay

Power Output	26,500	KWp
Construction Cost Rate	900	£k / kW
Construction Cost	23,850,000	£

Capital Costs Breakdown			**Amount**
Modules		£	13,117,500
Civil works installation		£	2,683,125
Electrical installation		£	1,395,225
Security system		£	429,300
Inverters		£	2,897,775
Structures		£	1,824,525
Other balance of system		£	643,950
Contractor Cost		£	858,600
	EPC Contract Sub Total	81% £	23,850,000
	Development Costs Sub Total	4% £	1,300,000
	Grid Connection Sub Total	15% £	4,300,000
	Capital Costs Sub Total	**100% £**	**29,450,000**
	Contingency	19%	5,600,000

Operational Costs Breakdown			**Amount**
Operation & maintenance		£	25,400,000
(includes cleaning, security, sinking fund for pro-active maintenance & decommissioning)			
Insurances		£	4,000,000
Business Rates		£	4,000,000
	Operation & Maintenance Sub Total	55% £	33,400,000
	Interest Sub Total	45% £	27,100,000
	Operational Costs Sub Total	**100% £**	**60,500,000**
	Land Drainage & Contingency	7%	4,100,000

	Total Expenditure	**£**	**99,650,000**

Revenue		
ROC Price	Confidential	£ per MWh
No of ROCS	1.2	
PPA Price	Confidential	£ per MWh
Solar Irradiation	1,016	kWh p.a.

Revenue Breakdown			**Amount**
ROC Revenue over lifetime		£	39,400,000
PPA Revenue over lifetime		£	66,100,000
	Total Lifetime Income	£	105,500,000
	Net Project Income	£	5,850,000
	Loss of Rental Income	£	1,100,000
	Net Income to PCC	**£**	**4,750,000**

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