



**LEE VALLEY REGIONAL PARK AUTHORITY**  
**EXECUTIVE COMMITTEE**  
**22 JANUARY 2015 AT 11:00**

**Agenda Item No:**

**6**

**Report No:**

**E/390/15**

## **INSTALLATION OF PHOTOVOLTAIC CELLS ON BUILDINGS AT HOLYFIELD HALL FARM**

Presented by the Assistant Director Legal & Property Services

### **EXECUTIVE SUMMARY**

This report sets out proposals for the provision of solar photovoltaic cells at Holyfield Hall Farm. The Farm has the advantage of various large buildings where the roofs face directly south. Due to the surface area and orientation of these buildings officers have looked into the viability of using these roofs to generate electricity plus reduce CO<sup>2</sup> emissions. Officers consider that these various pieces of work culminate in a viable proposal for the installation of a 150kwh photovoltaic system. This project will need a capital investment as detailed in the Part 2 report. In addition the project will continue to receive guaranteed income for 25 years and a reduction of CO<sup>2</sup> emissions of 84 tonnes per annum. Members are asked to consider the proposal and the amount of capital investment required as outlined in the Part 2 report.

### **RECOMMENDATION**

Members Approve:

- (1) the installation of Photovoltaic Cells on buildings at Holyfield Hall Farm; and
- (2) release of capital for this project as outlined in the part 2 report.

### **BACKGROUND**

1 Holyfield Hall Farm has 4 large agricultural buildings which house the dairy/beef units, grain and farm equipment. The roofs of these buildings are quite expansive and all face directly south. Therefore officers have been investigating if 2 of these roofs could support a photovoltaic array system (see Appendix A to this report).

### **TECHNICAL DETAILS**

2 Officers have undertaken various studies into the viability of a project of this type on these buildings. These studies have focussed on the maximum outputs the array could produce in relation to maximising the roof space available. The maximum would be in the region of 250kwp. The proposal is to adopt a system

of 150kwp. This is due to the fact that the smaller size of system would not require any additional investment into the current electricity supply and so reduces the capital required and secondly, the grid network have highlighted that they would be hesitant in approving the larger amount of electricity being exported into the grid. Officers have now received formal agreement that this size of system (150kwp) would be allowed by National Grid. This agreement has been successfully granted at no cost to the Authority to ensure that there was nothing preventing the Authority proceeding if Members were minded to approve.

- 3 A structural report on roof weight capacity for the two roofs where the arrays are being proposed is currently being undertaken by Pick Everard. This evaluation will include a review of the proposed weight of the installation and confirmation that this can be accommodated on the roofs and any recommended remedial works to facilitate this. Dependent upon the results of the structural report there may be a requirement to provide additional strengthening to the barns to take the added load of the photovoltaic panels. This risk is considered low at present, but should additional strengthening work be required an allowance of £20,000 should be set aside to undertake these works.
- 4 Epping Forest District Council have advised that planning consent is required for this project and, subject to Member approval, officers will apply for planning at the same time as procuring the supply and installation contract so as not to unduly slow the installation process.

#### **COSTS AND BENEFITS OF INSTALLATION OF THIS SIZE ARRAY**

- 5 The farms' electricity bill is around £8,000 per annum, this would reduce to £0. This would account for roughly 30% of the generated electricity, therefore the remaining 70% would be exported back into the grid and the Authority would receive income as outlined in the Part 2 report.
- 6 Officers have been in technical dialogue with a company to understand the cost elements, potential income and CO<sup>2</sup> reduction. The system would require capital investment by the Authority to install connection to the grid and inverter replacement and would generate income and reduce CO<sup>2</sup> emissions over the 25 years of optimum life of the system. Details of the proposed capital investment and income are contained in the Part 2 report.
- 7 If Members approve the proposal and release of capital then a formal procurement process will be undertaken and the contract subsequently awarded to the successful bidder subject to tenders broadly reflecting the savings and efficiencies set out in the Part 2 report.
- 8 The future electricity savings and income have been calculated at an assumed RPI increase of 3% and annual electricity price rises of 6%. To check these figures officers have therefore spoken to our supplier (Laser) to understand past electricity increases/decreases and what they believe the future pricing would be. They have provided the following information:
  - over the last 4 years prices have increased by 30%; and
  - taking their mid-case forecast they expect electricity prices to increase by 40% over the next 5 years (see Appendix B to this report).
- 9 Due to the ongoing Government commitment to reduce CO<sup>2</sup> emissions, they are currently encouraging these installations with additional Feed-in Tariffs schemes

(FITS). The current FITS are guaranteed until April 2015 at which point the Government has advertised that they will be reviewed. Past reviews have always resulted in a reduction of the FITS. Therefore commissioning the installation before this date will guarantee the current FITS at current price levels for the full 25 years.

#### **ONGOING MAINTENANCE AND COSTS**

- 10 This installation will have no impact on the day-to-day running of the farm and would provide an additional education resource to visiting youth & school groups.
- 11 The required maintenance is an annual cleaning of the panels, exactly the same method as cleaning windows, which can be undertaken by the farm staff as they have the equipment and skills. The panels currently on the market have a very good reputation for reliability, but officers have added the replacement costs of 1 panel every 5 years into the overall budget as an offset to the income generated.
- 12 The inverter will require replacing once during the life of the system, plus inspecting every 4 years, this has been calculated in the overall costs.

#### **ENVIRONMENTAL IMPLICATIONS**

- 13 The proposed scheme would accord with the Authority's adopted Environmental Strategy (2012) which seeks to maximise the efficient use of energy and contribute to sustainable energy production. The scheme will result in a reduction of CO<sup>2</sup> emissions as outlined within the report.

#### **FINANCIAL IMPLICATIONS**

- 14 The financial implications are outlined within the Part 2 report.

#### **HUMAN RESOURCE IMPLICATIONS**

- 15 There are no human resource implications arising directly from the recommendations in this report.

#### **LEGAL IMPLICATIONS**

- 16 There are no legal implications arising directly from the recommendations in this report.

#### **RISK MANAGEMENT IMPLICATIONS**

- 17 As mentioned in paragraph 9, the Government have stated that the FITS payments will be reviewed from April 2015 and will be different than they currently are, but any scheme underway before this date will receive the current FITS rates as applied to this proposal. Therefore if we do not undertake this project before 1<sup>st</sup> April we may see a reduction in the rates of FITS which will result in a longer pay back period than outlined within this report.

#### **EQUALITY IMPLICATIONS**

- 18 There are no equality implications arising directly from the recommendations in this report.

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**APPENDICES ATTACHED**

Appendix A	Location Plan
Appendix B	Laser Long-Run UK Delivered Energy Price Forecast

**LIST OF ABBREVIATIONS**

Kwh	Kilowatt-hour
Kwp	Kilowatt-peak
Kva	volts amps
PV	Photovoltaic
FITS	Feed-in Tariff scheme



**PV Array Locations**

3288  
03.12.14



# LASER Long-Run UK Delivered Energy Price Forecast

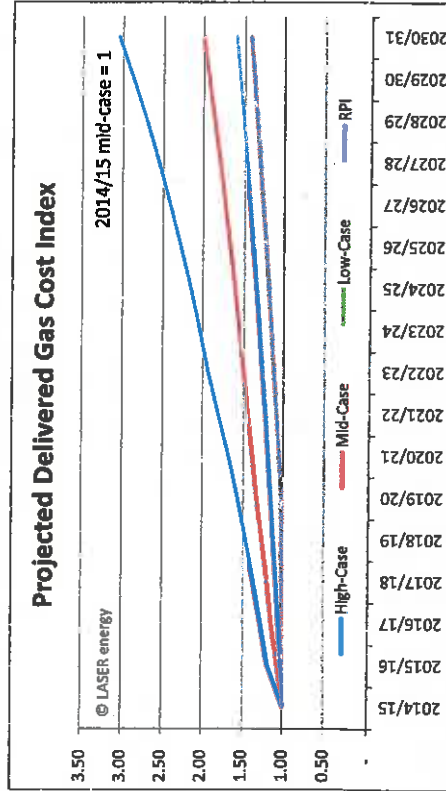
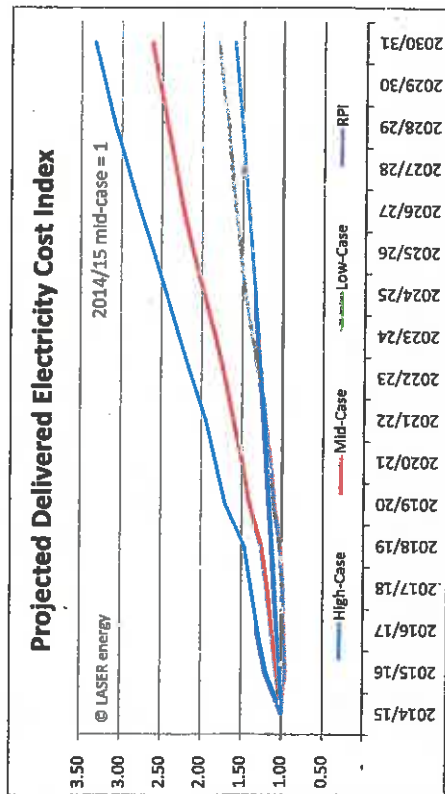


Electricity Index (2014/15 = 1)

Scenario	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
High-Case	1.00	1.20	1.30	1.38	1.47	1.70	1.82	1.95	2.11	2.28	2.44	2.60	2.76	2.92	3.07	3.20	3.33
Mid-Case	1.00	1.06	1.12	1.18	1.25	1.40	1.49	1.60	1.70	1.82	1.96	2.10	2.22	2.32	2.42	2.52	2.62
Low-Case	1.00	0.95	0.97	0.98	1.02	1.09	1.13	1.20	1.28	1.38	1.46	1.52	1.58	1.63	1.67	1.74	1.79
RPI	1.00	1.03	1.06	1.09	1.13	1.16	1.19	1.23	1.27	1.30	1.34	1.38	1.43	1.47	1.51	1.56	1.60

Gas Index (2014/15 = 1)

Scenario	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	2030/31
High-Case	1.00	1.19	1.28	1.37	1.47	1.57	1.69	1.81	1.93	2.04	2.15	2.28	2.41	2.55	2.70	2.87	3.05
Mid-Case	1.00	1.07	1.15	1.20	1.26	1.33	1.38	1.44	1.49	1.55	1.60	1.66	1.72	1.79	1.85	1.92	1.99
Low-Case	1.00	1.01	1.01	1.01	1.02	1.02	1.05	1.09	1.12	1.15	1.19	1.22	1.26	1.30	1.33	1.37	1.41
RPI	1.00	1.03	1.06	1.09	1.13	1.16	1.19	1.23	1.27	1.30	1.34	1.38	1.43	1.47	1.51	1.56	1.60



**Notes:**

- 1) All prices are nominal (i.e. pounds of the relevant year).
- 2) Delivered energy prices can be exceptionally volatile. Ranges shown represent 90% probability levels.
- 3) Gas commodity price forecasts are based on the 2013 DECC projections. Elec commodity price forecasts are based on National Grid Future Energy Scenarios projections 2014.
- 4) Network charge increases are based on published increases where available, then estimated changes thereafter.
- 5) Estimates are provided in good faith only, and no guarantee of future accuracy is provided.
- 6) Estimates are inclusive of estimated EMR rollout costs. At this stage, EMR pass through costs are highly uncertain and subject to change.
- 7) This document is not to be distributed outside of your organisation without the prior written consent of LASER.