



Solar PV Greenhouse Proposal

Summary:

This is a proposal and estimate for a Solar PV Greenhouse, incorporating Polysolar's uniquely transparent IET certified solar PV laminate glass. The greenhouse will incorporate 6 panels giving a peak output of 0.54kWp. The greenhouse structure has been designed and manufactured by Cambridge Glasshouse.





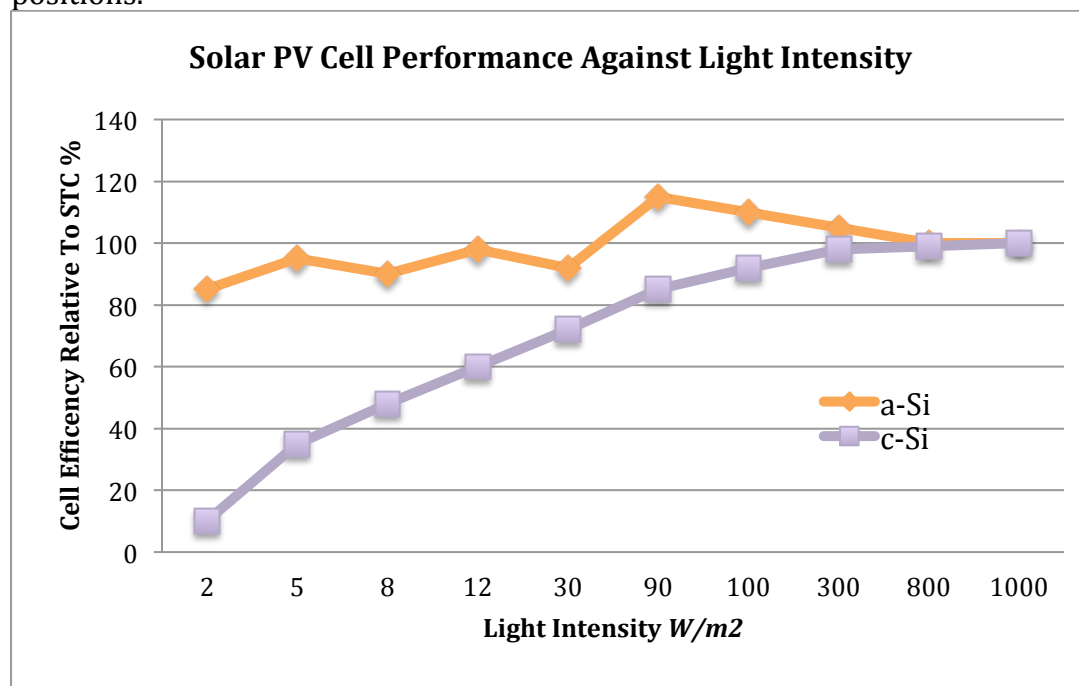
Product:

The PV panels specified are the PS-C-901 units (90-95kWp) The units are standard dimensions of 1100mm x 1300mm x 7mm thermally strengthened laminate float glass with back mounted junction box and MC4 connectors.

Polysolar's thin-film a-Si PV technology benefits from:

Superior Low Light Performance

Our a-Si PV technology works in ambient and low light levels (down to 10% of sunlight). This makes them ideally suited to the UK climate and for non-optimal positions.



Solar PV Greenhouse Benefits

Polysolar are the leaders in the development of Building Integrated Photovoltaic Glazing (BIPV). Our unique transparent PV glass based on thin-film a-Si photovoltaic technology is ideal for greenhouse applications. It offers an enhanced growing and generates renewable energy.

The advantage of Polysolar's transparent PV glazing panels incorporated into the roof of the greenhouse are:

1. The Glass absorbs 99% of UV light, blocking harmful plant scorching and reducing mildew growth in the greenhouse
2. The shading effect within the greenhouse reduces excessive heat gain and plant transpiration in high sunshine
3. It is an attractive alternative to installing solar PV

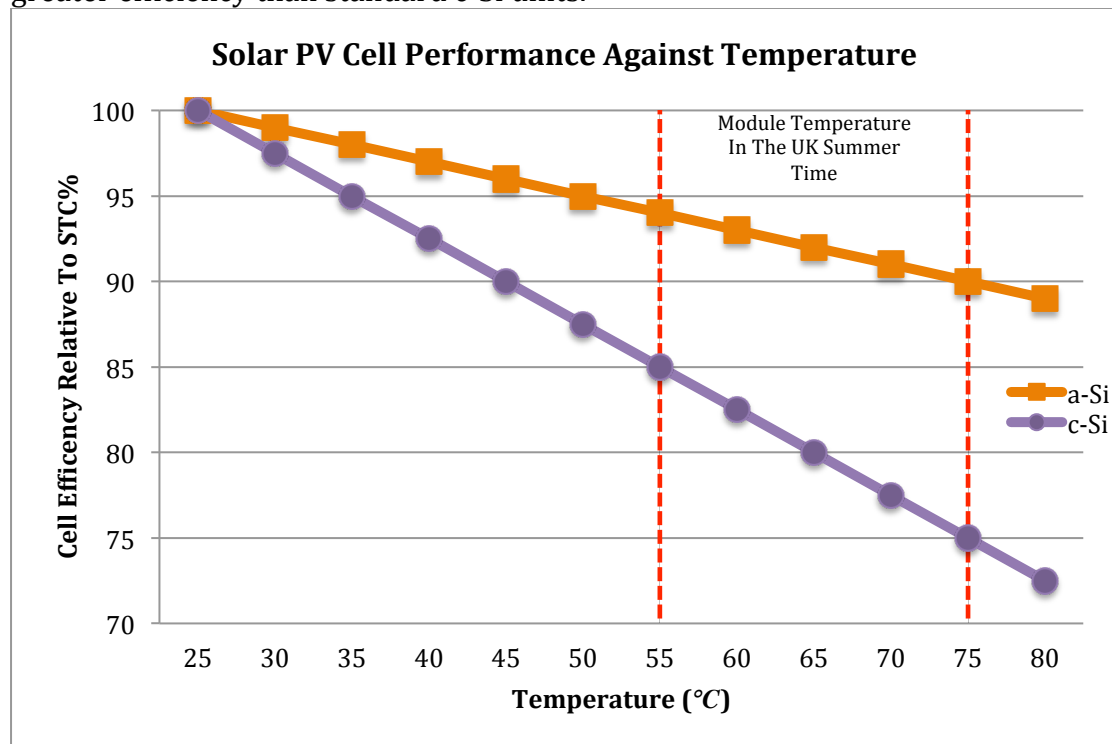


Dual sided performance

Polysolar panels generate electricity on both sides. Independent trials of the panels at Sheffield University Solar Farm have showed a 25% higher annual yield. The University's ongoing data collection can be seen live online via a link on our website.

Greater Efficiency At High Temperatures

Polysolar's a-Si units maintain their efficiency at higher temperatures making them suitable for building integrated application without ventilation. In summer temperatures where units reach +60°C degrees Polysolar units can have 30% greater efficiency than standard c-Si units.



Less Sensitivity To Shading

Polysolar's units are high voltage (140v) with the cells arranged in series. The units can therefore be connected in parallel rather than series strings so shading of one module will not affect system performance and system losses are minimal.

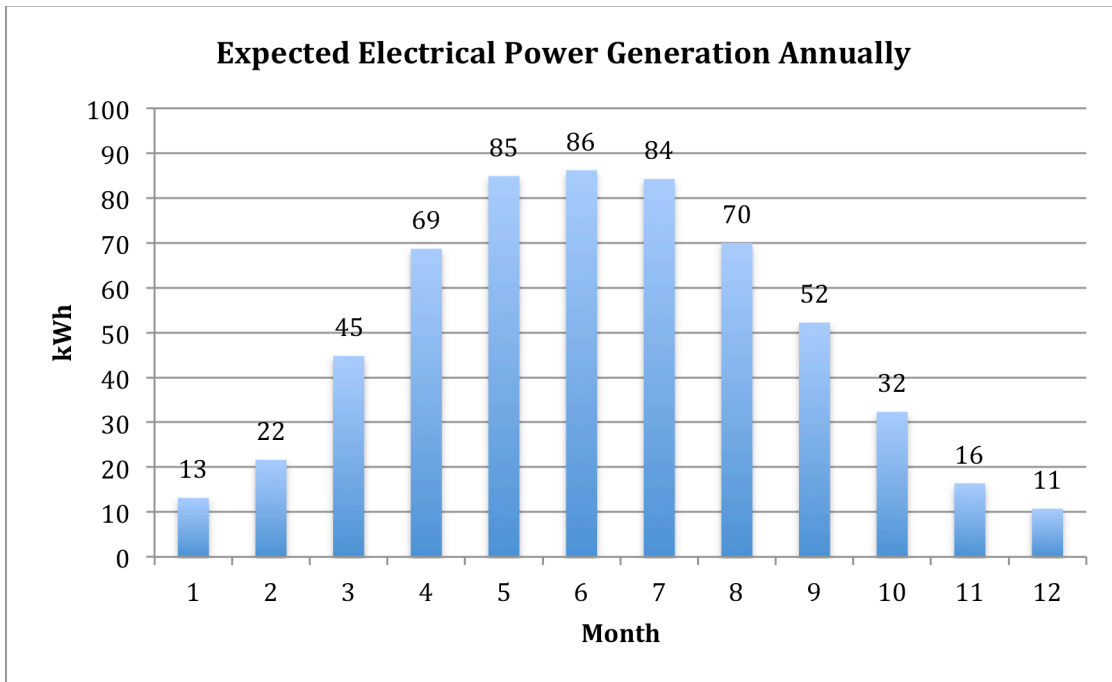
Guarantees

Polysolar's PV units are MCS Product Approved by NQA for UK Feed-in-Tariff and are IEC 6164 & 61730 certified internationally by TuV Rheinland. The products are performance warranted for 25 years, (90% for 10 years & 80% for 25 years) and come with a 5 year manufacturer warranty. Polysolar's units are manufactured using the latest manufacturing plant and equipment and to the highest international standards in OEM ISO 9001 plant.



Performance

The estimated electrical generation for the 6 panels mounted on the roof of the greenhouse is 586kWh/year¹. Polysolar use an electrical power generation calculator from the European Commissions - The Institute for Energy and Transport (IET). We use this calculator to estimate the potential power generation taking into consideration climate conditions, pitch and orientation. Power generation is based on standard photovoltaic thin-film technology.



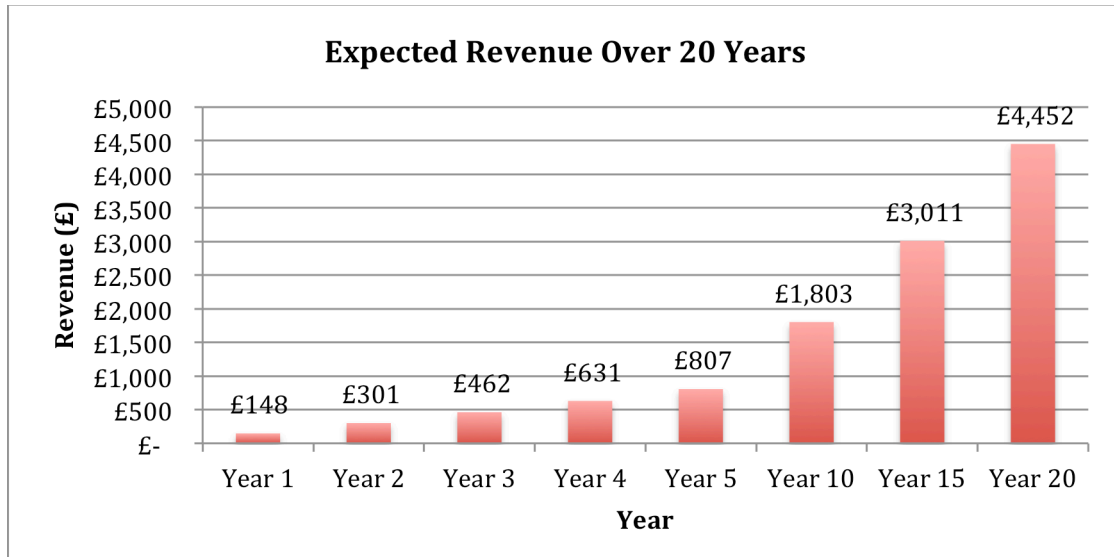
¹ Calculated from the Photovoltaic Geographical Information System. This model is from the European Commissions - The Institute for Energy and Transport (IET) and is not verified by UK MCS. We are therefore unable to guarantee the energy generation and customers should use these figures for guidance only.



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Revenue

The following figures are based on revenue over 20 years. In the 1st year you can expect the greenhouse to provide returns of £148.



Feed in tariff revenue @15.44p/kWh	£2,533
Export revenue @ 4.5p/kWh for 50%	£373
Electricity savings: Usage based on 15p/kWh	£1,546
Total Returns over 20 years (index linked and tax free)	£4,452

Quotation:

The following costs are for Polysolar to supply the 6-panel greenhouse as a complete package ready to install. Ground works and installation are not included.

6 Panel Greenhouse 2.4 (W) x 3.5 (L)	£4,599
Electricals - Cables, Branch connectors, connectors and Soladin 600 inverters all Included	
Packaging and Delivery within the UK	£500.00
Total (excluding VAT)	£5,099.00
VAT (5%)	£254.95
Total	£5,353.95