



## Solar PV System

### For: Power Up North London

Site: OneStonegrove  
5 Hayling Way  
Edgware  
HA8 8BN

30 March 2022

### Version 7.02

Estimate prepared by: Tom Cole  
Estimate reviewed by: Tim Nicholson



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MCS 213 22.02.02.v218

## 1: Project Summary

**Site Address: OneStonegrove, 5 Hayling Way, Edgware, HA8 8BN.**

**Installation Time PV System: 9 Days**

**Total PV System Cost: £77,128.19 ex VAT @ 20%**

### **Included in this document is:**

- a general description of R-ECO scope of works (and some key exclusions)
- the key assumptions on which this estimate is based
- some general information on aspects such as health and safety and lead times
- a number of attachments, including a detailed scope of works document, the relevant data sheets, the terms and conditions on which this estimate is based and details of the insurance that R-ECO holds.

This estimate constitutes an offer by R-ECO that is valid for 30 days and is subject to your acceptance of R-ECO's terms and conditions. Please see the enclosed instructions on how to accept our offer and place a firm order. After 30 days we recommend you contact usestimate reviewed as prices fluctuate frequently and some products are superseded by newer technology.

## **2: Who are R-ECO?**

R-ECO are the UK's only co-operatively owned renewable energy installation company and has been recognised as such through business awards and has been the centre of several national case studies on how a business can be run ethically and sustainably for the benefit of its workers and customers.

R-ECO is centred in Oxford from where we work across the UK. We originally began life in Cornwall in 2008 and since when hundreds of domestic and commercial customers have been delighted by our exceptionally high standards and value for money service.

We hope this estimate contains all the information you require without being bamboozled by technical data. If you want to see any further information we welcome you to contact us and we will happily furnish you with as much detail as you need.

We hope you like the following proposal and we look forward to working with you on this project.

Kind regards,  
Tim Nicholson

Commercial and Technical Sales.

### 3: System Description

You have informed R-ECO that you require a solar PV installation on the roof of your property. A desktop survey has identified the following system or systems as potentially suitable.

The solar modules selected are manufactured by REC with a lead time of two weeks. REC is an ISO9001 accredited company and the modules are manufactured to the Environmental Management system ISO14001.

The system consists of 222 x 370Wp modules on a mounting frame creating a system with a total output of 82140Wp.

All prices below form the complete install that includes:

- PV panels, inverters and associated equipment to export power to the grid
- MCS Certification
- Part P Certification
- Grid Connection (DNO) Notification
- System design, installation, testing and project management
- Commissioning to G98, G99 or G100 18th edition IEE wiring regulations
- Provision of O&M manuals, working drawings and H&S Information and method statement
- Access equipment estimated
- Scaffolding costs estimated

**Note 1: If your properties electrics are found to be unsafe, any additional work will be charged at a rate of £60 an hour.**

**Note 2: If your properties roofing slates, tiles or sheets are found to need replacing, any additional work will be charged at a rate of £40 an hour. Materials will be charged at cost.**

Table 1: Components and Cost:

Manufacturer & Materials Description	Model	Qty	Price
<b>MODULES</b>			
REC BLACK FRAME	REC-370TP4	222	£34,015.62
<b>INVERTER</b>			
SOLAREGE THREE PHASE INVERTER	SE66.6K-RW00IBNC4	1	£3,330.69
<b>POWER OPTIMISERS</b>			
SOLAREGE POWER OPTIMISER	SEP801-4RMLMRY-NM31	112	£5,574.96
<b>MONITORING</b>			
MONITORING			£63.37
<b>IMPORT/EXPORT MONITORING</b>			
IMPORT/EXPORT MONITORING			£306.38
<b>MOUNTING SYSTEM</b>			
K2 SYSTEMS MOUNTING SYSTEM			£9,219.39
<b>GENERATION METERING</b>			
ENERGY METER ENCLOSURE		1	£18.82
GENERATION METER – THREE PHASE		1	£163.56
ENERGY METER ENCLOSURE		2	£39.29
<b>MISC. ELECTRICAL PARTS</b>			
MISC. ELECTRICAL PARTS			£1,882.35
<b>CERTIFICATIONS &amp; NOTIFICATION</b>			
MCS CERTIFICATION			£68.19
BUILDING CONTROL CERTIFICATION			£36.45
DNO NOTIFICATION			£68.19
<b>GRID CONNECTION COSTS</b>			
G98/99 GRID APPLICATION			£205.88
<b>MATERIALS</b>			<b>£54,993.16</b>

<b>TRANSPORT, WARRANTY, STRUCTURAL, WASTE, HIRE CHARGES</b>	
EQUIPMENT HIRE	£3,760.00
TRANSPORTATION / DELIVERY	£6,426.21
WASTE DISPOSAL	£308.82
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LABOUR – ACCESS	£840.00
LABOUR - INSTALLATION	£9,663.53
LABOUR – PROJECT MANAGMENT	£1,136.47
<b>SUB-TOTAL</b>	<b>£77,128.19</b>
VAT @ 20%	£15,425.64
<b>TOTAL</b>	<b>£92,553.83</b>

#### **4: Warranty, Maintenance and Service**

The following warranties are included as standard with this system. In some cases these warranties are extendable to 25 years for an additional cost. As we can never be sure what the future holds, R-ECO's workmanship warranty is backed by IWA insurance for peace of mind that it will be honoured even if we are no longer trading.

##### **Warranties and Guarantees:**

- 25 Year Manufacturer's Module Warranty
- 10 Year Manufacturer's Guarantee on 94.4% of the Nominal Performance
- 25 Year Manufacturer's Guarantee on 86% of the Nominal Performance
- 12 Year Manufacturer's Inverter Warranty
- 25 Year Manufacturer's Power Optimiser Warranty
- Insurance Backed Deposit Warranty

##### **Workmanship Warranty:**

R-ECO warrants to you that the Installation Services will be performed by the appropriately qualified and trained R-ECO Registered Installers using reasonable care and skill, to such high standard of quality as it is reasonable for you to expect.

The Warranty Period for the Installation Services shall be two years from completion of the Installation Service.

## 5: Annual Output

*\*Important: The performance of solar PV systems is impossible to predict with certainty due to the variability in the amount of solar radiation (sunlight) from location to location and from year to year. This estimate is based upon the standard MCS procedure is given as guidance only. It should not be considered as a guarantee of performance. This system performance calculation has been undertaken using estimated values for array orientation, inclination or shading. Actual performance may be significantly lower or higher if the characteristics of the installed system vary from the estimated values. This shade assessment has been undertaken using the standard MCS procedure - it is estimated that this method will yield results within 0.1 of the actual annual energy yield for most systems.*

### PV PERFORMANCE CALCULATION

Installed Capacity of PV System - kWp (stc):	82.140
Postcode Region:	1

#### Aspect One:

System Aspect:	41.070
Orientation:	100 ° from South
Inclination:	15.00 °
Shading Factor:	1.00
Ideal kWh/kWp/annum:	799
Estimated Annual Output:	32815 kWh

#### Aspect Two:

Split System Aspect:	41.070
Orientation:	80 ° from South
Inclination:	7.00 °
Shading Factor:	1.00
Ideal kWh/kWp/annum:	835
Estimated Annual Output:	34293 kWh

Total:	£77,128.19
£/Wp:	£0.94



## REVENUE CALCULATION

**Import Rate (Site):**            £0.2900 /kWh

**Occupancy Archetype (Occupancy applies to DOMESTIC only):** Non-Domestic

**Annual electricity consumption (NON-DOMESTIC):**            36,000 kWh

**Annual electricity generated (NON-DOMESTIC) by solar PV system:**            67,108 kWh

**Annual contribution of NEW solar PV generation to electricity supply:**            17,231 kWh  
48%

	<u>Standard</u>	<u>Manufacturer's</u>
	<u>Data</u>	<u>Data</u>
<b>Annual contribution (DOMESTIC) of solar PV generation to ASSUMED electricity consumption:</b>	48%	48%
	17,231	17,360 kWh/annum

**PPA/SEGs Export Rate:**            £0.0750 /kWh

**Module performance:**            86.0%

**After no. years:**            25

**SEG export inflation:**            4.50%

**O&M price inflation:**            3.00%

**Fuel price inflation:**            4.50%

### IRR Results PV System

		<b>IRR</b>
Standard Method	<b>At 48% Self Use</b>	19.8%

		<b>IRR</b>
Manufacturer's Data	<b>At 48% Self Use</b>	19.8%

### Generation and Emissions Data

	First Year Generation kWh	First Year Annual CO2 Avoided [tn]
Standard Method	67108	18.8
Manufacturer's Data	67610	18.9

### Self-Consumption Scenarios PV Only

		Consumption kWh	Annual CO2 Avoided [tn]
Standard Method	<b>At 48% Self Use</b>	32121	9.0
Manufacturer's Data	<b>At 48% Self Use</b>	32603	9.1

Note: more details of the these calculations both the standard method and the manufacturer's data can be found in Appendix A.

## **6: Selling Generated Energy**

We have modeled an income from the sale of your exported electricity under the Smart Export Guarantee scheme. Please contact us to discuss this in more detail to explain how this works.

## **7: Payback Period + Lifecycle Profit**

To truly appreciate the longer-term financial benefit of a solar PV system, it is very important to consider future increases in electricity prices. The following table shows the financial benefit of the system over 20 years using the following assumptions:

- 52% of the energy generated from the system is exported back to the grid from your PV system.
- Electricity exported income is estimated to increase in value by 4.5% per year.
- Electricity cost from your supplier is estimated to increase at a rate of 4.5% each year.

The table in Appendix A gives output predictions for your system using the government approved methodology to make 'like against like' comparisons of systems throughout the UK.

## **8: Layout and Shading Assessment**

The following shading analysis was performed modelling shading at the following times of year in order to optimize the positioning and string layout to maximize yield.

LAYOUT TO BE CONFIRMED

SEE SOLAR EDGE DESIGN REPORT: One Stonegrove 222 x REC 370  
(82.14 kWp)

SHADING TO BE CONFIRMED

### What Now?

If you are happy with this estimate and would like a comprehensive quote, please get in touch with our office by email [info@r-eco.coop](mailto:info@r-eco.coop) or phone, 01865 595 264. Similarly if you have any queries at all regarding this estimate we look forward to hearing from you soon.

## 9: General Information

### **Health and Safety**

Under the CDM Regulations R-ECO will be the “designer” of the PV system. If this project is notifiable R-ECO will of course provide appropriate risk assessments and method statements. However, please note, under the CDM Regulations, it is your responsibility to inform R-ECO of any site specific risks of which you are aware. R-ECO’s Health and Safety Policy is available on request.

### **Design Revisions**

You may request additional design revisions.

### **Irrecoverable VAT**

VAT can be complicated and you should check carefully how it might affect the costs of your project. In general, if an organisation is VAT registered it will be able to recover any VAT that R-ECO has to charge. In certain circumstances VAT may not be recoverable and will therefore add to the costs of your project.

### **Tax**

R-ECO is registered under the Construction Industry Scheme. R-ECO’s Unique Tax Reference number is 1606816993.

### **Insurance**

Details of the insurance cover R-ECO holds are:

Policy	Level of Cover	Insurer
Public Liability	£5,000,000.00	Argenta DA Scheme
Employers Liability	£10,000,000.00	Argenta DA Scheme
Products Liability	£5,000,000.00	Argenta DA Scheme
Professional Indemnity	£2,000,000.00	ABG AXA PI Scheme