

Gregs Properties LTD
Gregs Building
Booth Street
Manchester
M2 4DU

3rd April 2023

Supply, Installation and Commission of Solar PV

Reference: GPL24

Dear Sir/Madam,

Please find attached savings indications, product specifications and a bill of quantities for the design, supply and installation of a Solar PV system at the above site.

A desktop study has been conducted, we have analysed the data provided and our design engineers have used their expertise to design a system suitable to your site which will provide the best economic return and highest output yield. The quotation is for a full turnkey project including all applications to grid (DNO applications), full supply and installation, online monitoring and a 5 year Operations & Maintenance package.

A detailed bill of quantities and savings figures is provided overleaf. It is worth noting, that we include a 5-year Solar PV O&M package as part of the service we offer. A detailed outline of what is included is in the report.

As of April 2021, Solar PV and EV Charging falls under the Super Tax Deduction Scheme. A fact sheet with further details can be provided but please consult your accountant to see which bracket you fall under. Please note, the super tax deductions are likely to end in March 2023.

Yours Sincerely,

Tom Thurling
Managing Director

What's in this report?

This report will outline and detail the solutions that we suggest you should install to reduce your electricity consumption and CO2 emissions. It will detail the funding solutions available to you and it will provide you more information about the products themselves.

The products the report details:

- Solar PV

A summary is included in the table below which shows you how much can be saved by implementing the above, what the return on investment would be if you were to privately fund the projects with your own capital and whether the option to have the equipment installed under a finance agreement is available.

Product	Cost	First Year Saving**	Kwh saving***	Annual CO2 Saving	Return on Investment*	Funding Options
Solar PV	£25,798	£5,566	11,596kwh	2,707kgco2	4.93 years	FINANCE, CAP-EX

*Not including inflation

**Based on a rate of 48ppkwh rate

KEY:

FINANCE - 12-84 month finance

CAP-EX - Purchased with own funds

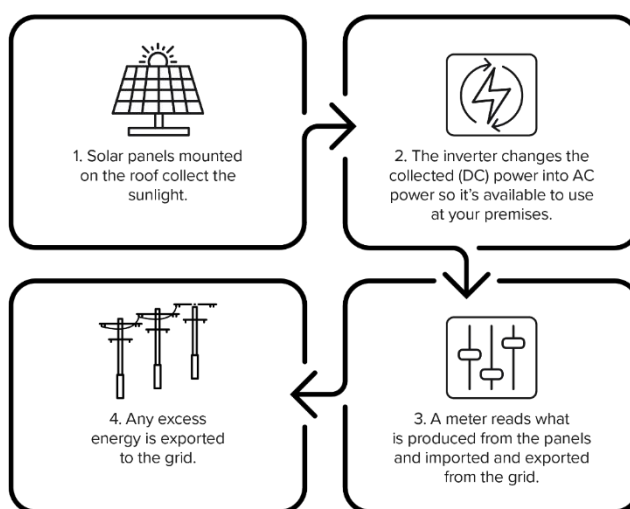
Solar PV



 Solar

Solar is one of the world's most established renewable energy solutions. You can generate your own renewable energy and even extra income, simply with a solar array on your premises' roof. As the power generated by solar panels is from a renewable source, you'll be reducing the carbon footprint of your business and helping to create a more sustainable tomorrow.

A commercial premise can provide a ROI through a combination of reduction in energy bills, the Smart Export Guarantee and battery storage.

**Benefits:**

- ✓ Product guaranteed for a minimum of 12 years with a 25-year performance warranty
- ✓ Enjoy an impressive ROI, on average between 15% and 30%
- ✓ Full monitoring of the system via an online portal
- ✓ Reduce or eliminate your energy bill - and in turn, reduce your carbon footprint
- ✓ Improve your sustainability - Solar helps lower your carbon emissions and reach your business's sustainability goals or environmental accreditations (such as PAS 2060 or ISO14001)

Specification, savings, and financial forecasts

We have analysed the data gathered, conducted a desktop survey of the roof and put together the figures below.

Year	Solar Anticipated Generation (kWh)	Solar Annual Saving Against Electricity Bills (£)	Export	CO2 Savings (KG)	Total Savings per annum (£)	Cash Flow	Electricity Rate
Year 1	11,596.00	£5,566.08	£0.00	2,707	£5,566.08	£20,231.92	0.4800
Year 2	11,549.62	£5,793.29	£0.00	2,696	£5,793.29	£14,438.63	0.5016
Year 3	11,503.23	£6,029.67	£0.00	2,685	£6,029.67	£8,408.96	0.5242
Year 4	11,456.85	£6,275.60	£0.00	2,674	£6,275.60	£2,133.36	0.5478
Year 5	11,410.46	£6,531.45	£0.00	2,663	£6,531.45	£4,398.09	0.5724
Year 6	11,364.08	£6,797.62	£0.00	2,652	£6,797.62	£11,195.71	0.5982
Year 7	11,317.70	£7,074.52	£0.00	2,642	£7,074.52	£18,270.23	0.6251
Year 8	11,271.31	£7,362.58	£0.00	2,631	£7,362.58	£25,632.81	0.6532
Year 9	11,224.93	£7,662.23	£0.00	2,620	£7,662.23	£33,295.04	0.6826
Year 10	11,178.54	£7,973.94	£0.00	2,609	£7,973.94	£41,268.98	0.7133
Year 11	11,132.16	£8,298.19	£0.00	2,598	£8,298.19	£49,567.17	0.7454
Year 12	11,085.78	£8,635.48	£0.00	2,587	£8,635.48	£58,202.65	0.7790
Year 13	11,039.39	£8,986.32	£0.00	2,577	£8,986.32	£67,188.97	0.8140
Year 14	10,993.01	£9,351.25	£0.00	2,566	£9,351.25	£76,540.22	0.8507
Year 15	10,946.62	£9,730.82	£0.00	2,555	£9,730.82	£86,271.04	0.8889
Year 16	10,900.24	£10,125.62	£0.00	2,544	£10,125.62	£96,396.66	0.9289
Year 17	10,853.86	£10,536.25	£0.00	2,533	£10,536.25	£106,932.91	0.9707
Year 18	10,807.47	£10,963.33	£0.00	2,522	£10,963.33	£117,896.24	1.0144
Year 19	10,761.09	£11,407.50	£0.00	2,512	£11,407.50	£129,303.74	1.0601
Year 20	10,714.70	£11,869.46	£0.00	2,501	£11,869.46	£141,173.20	1.1078
Year 21	10,668.32	£12,349.89	£0.00	2,490	£12,349.89	£153,523.09	1.1576
Year 22	10,621.94	£12,849.52	£0.00	2,479	£12,849.52	£166,372.61	1.2097
Year 23	10,575.55	£13,369.12	£0.00	2,468	£13,369.12	£179,741.73	1.2642
Year 24	10,529.17	£13,909.45	£0.00	2,458	£13,909.45	£193,651.18	1.3210
Year 25	10,482.78	£14,471.34	£0.00	2,447	£14,471.34	£208,122.52	1.3805
Totals	275,984.80	£233,920.52	-	64,415	£233,920.52		
						Cost	
						VAT	
						Total Cost	
						£25,798.00	
						£5,159.60	
						£30,957.60	

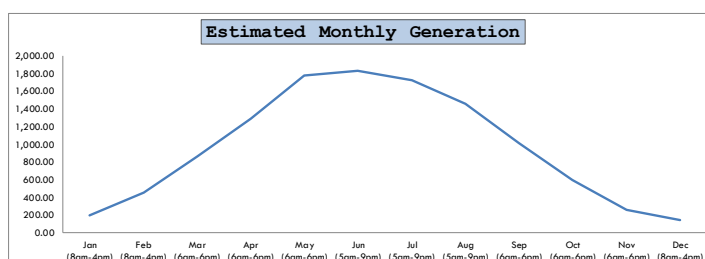
Table subject to degradation of the panels @ 0.4% (solar anticipated generation kWh)
 Table subject to RPI at 4.5% (solar annual savings against electricity bills)

Estimated Generation (Jan-Dec)

After analysing the data provided, the system size will cover 17% of the total on site consumption.

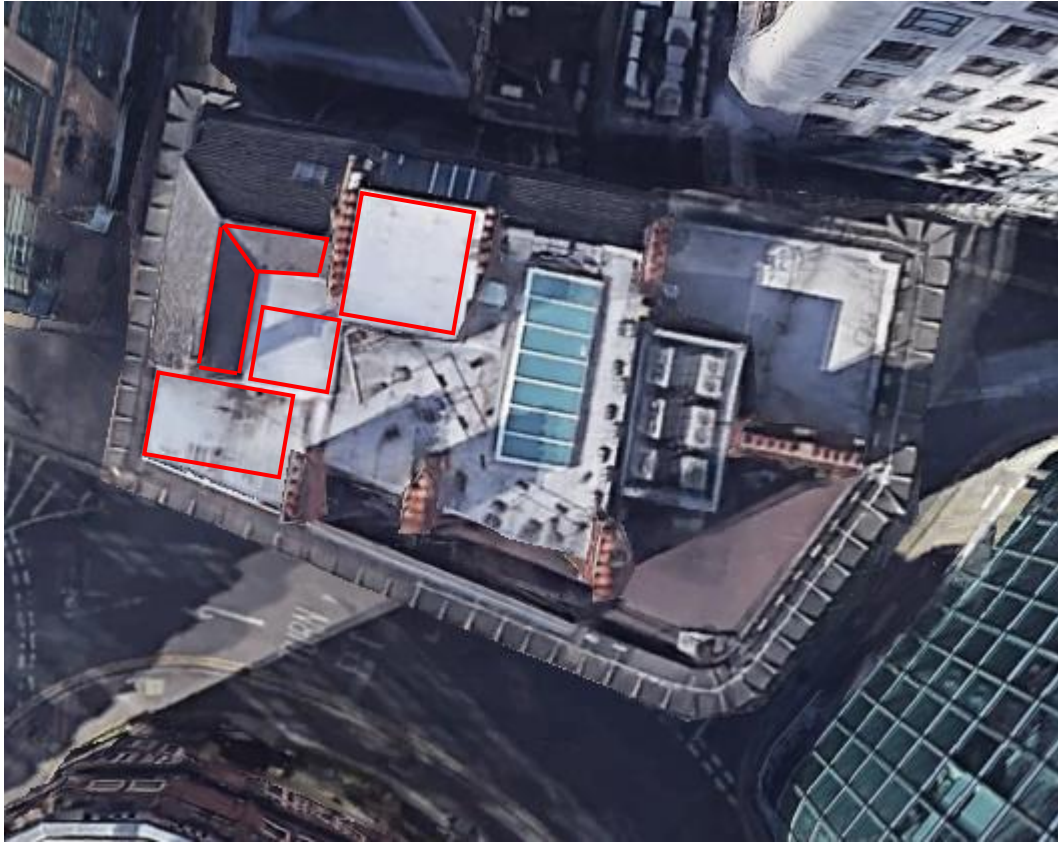
Estimated Electricity Generation per Annum (SAP Calculation)	11,596
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Month (Day light hours)	Jan (8am-4pm)	Feb (8am-4pm)	Mar (6am-6pm)	Apr (6am-6pm)	May (6am-6pm)	Jun (5am-9pm)	Jul (5am-9pm)	Aug (5am-9pm)	Sep (6am-6pm)	Oct (6am-6pm)	Nov (6am-6pm)	Dec (8am-4pm)
Insolation (kWh/m ² /day)	0.57	1.35	2.53	3.8	5.22	5.38	5.08	4.28	2.99	1.75	0.77	0.43
Estimated Daily Generation	6.24	16.37	27.71	43.01	57.18	60.89	55.64	46.88	33.84	19.17	8.72	4.71
Estimated Monthly Generation	193.55	458.41	859.09	1,290.33	1,772.51	1,826.84	1,724.97	1,453.32	1,015.29	594.23	261.46	146.01



Our proposal

We propose to install on the marked areas on the roof space below.



Detailed specification for the Design, Supply, Installation and Commission of 18.48kWp Photovoltaic Solar Array

INSTALLATION DATA			
Installed capacity of PV system - kWp:	18.48kw	No. modules x output	44 x 420w
Reduction in carbon consumption	2,707 kgco2		
Orientation of the PV system - degrees from South:	VARIED	Manufacturer:	Trina
Inclination of system - degrees from horizontal:	VARIED		
CALCULATIONS			
Irradiation factor:	881.00		
Shading factor:	0.74		
Estimated annual output:	11,596 (KWp x irradiation factor x shading factor)		

SPECIFICATION	
Modules	44 x 420w Trina Polycrystalline Solar Modules (or similar tier 1 panel) (15-year warranty /25-year performance warranty)
Mounting	Renusol/Clenergy (sloped roof) Mounting Systems
Inverters	1 x SolarEdge 15kW Inverter with 22 x P505 WW Optimisers (2 panels per string) - 25 year warranty
Electrical Items	4 Pole AC Isolators (as required), 4 Core Armoured Cabling (as required), Specified 3Phase Monitoring Generation Meter, all Other Required Ancillary Electrical Items, Electrical Containment
Access	Scaffold access / Telehandler provided on site by Heatsource
Design & Commission	Design, G99 Application + Notification, Provision of relevant H&S and RAMS documentation, Commission and Handover, Access to online monitoring portal
Labour	Installation

Assumptions:

- Roof is structurally stable - Structural survey will be completed upon contract agreement (included in the price)
- DNO approve the installation without recommendations for major works
- Full free site survey to be completed by installation manager (structural, electrical and logistical) upon contract completion
- Solar system set out over multiple roof spaces. SAP calculations calculated for each individual roof space and combined together to provide a single quotation. Full design can be given on request.

Funding your purchase

As well as capital expenditure projects, we also offer several finance packages and have broken down an example asset finance package for your site below. We will always endeavour to make the finance cash positive meaning you will be saving more than what the finance payment is costing. Finance is a great option to spread the cost of the payments across a desired period. Packages from 12-84 months allow you to tailor the plan to suit your business. Tax relief on the monthly payments and low interest rates gives Heatsource some of the most competitive finance packages available to the renewables market.

MONTHLY SAVINGS £472.16

DEPOSIT 0.00
CAPITAL COST OF GOODS: £25,798.00

Number Of Payments Due	Frequency	Amount of Each Payment Due	Weekly Equivalent
36	Monthly	£ 839.47	£ 193.72
48	Monthly	£ 651.14	£ 150.26
60	Monthly	£ 538.40	£ 124.25
84	Monthly	£ 410.45	£ 94.72

Net Cost of Finance after tax relief @ 19%

	36 months	48 months	60 months	84 months
Tax Relief @ 19%	£ 5,741.95	£ 5,938.41	£ 6,137.81	£ 6,550.72
NET COST OF FINANCE	£ 24,478.86	£ 25,316.38	£ 26,166.45	£ 27,926.76

Payment Profile: 5 Years

Number Of Payments Due	Frequency	Amount of Each Payment Due
1+59	Monthly	£ 538.40

Please note that this is not a formal, finance proposal, and should you want to finance the product, you would need to contact Heatsource Direct to request a proposal in principle.

Operations & Maintenance schedule

As part of our ongoing commitment to our clients, we also include a 5-year O&M package as part of our installation which will include an annual site visit to assess the system in line with the table below.

#	Annual Checklist
1	CABLES (LV (internal and external), ancillary equipment)
1a	Inspection to identify issues and check functionality.
	Checks to include:
	Physical damage
	Cable tightness
	UV exposure (where applicable)
	Connections, terminations and joints (including torque and lubrication)
	Conduit and/or other protection used
	Duct sealant
	Labelling
	Cable sheaths
	Fixings (to rails, cable ties etc.)
1b	Annual measurement of insulation resistance of cables at the inverter end
2	MODULES
2a	Inspection to identify issues and check functionality.
	Checks to include:
	Discoloration
	Surface soiling
	Cracks and/or physical damage
	Shading
	Algae, mould, delamination
	Stability, rigidity and fixing of modules
	Module Cleaning - once per year
3	MOUNTING FRAME
3a	Inspection to identify issues and check functionality.
	Checks to include:
	Cracks and/or physical damage
	Corrosion
	Labelling
	Clamp integrity and module stability
	Integrity of frame components (including torque)
	Fastener stability and torque
4	EARTHING (if applicable)
4a	Inspection to identify issues and check functionality.
	Checks to include:
	Labelling
	Physical damage
	Connections, terminations and joints (including torque and lubrication)
	Corrosion
5	INVERTERS
5a	Inspection to identify issues and check functionality.
	Checks to include:
	Labelling
	Fault Codes (if applicable - rectify the fault)
	Physical damage
	Corrosion
	Inverter screens
	Connections
	Cables and terminals

	Cleanliness
	Seals
	Water ingress, dampness or humidity inside the cabinet
	Overheating
	Fan operation (as applicable)
	Tightness of screws
	Alarm status and inverter power
	Correct ventilation of the equipment
	State of filters
	Environmental condition
5b	Annual thermographic study
	Results report on any underperforming inverters
6	OTHER LV EQUIPMENT (communication boxes, satellite etc.)
6a	Inspection to identify issues and check functionality.
	Checks to include:
	Any vents and/or seals
	Corrosion
	Water ingress
	Connections, terminations and joints (where applicable)
	Environmental condition(s)
7	MONITORING SYSTEM
7a	Check general functioning of current monitoring system
7b	Check external connections
7c	Exterior cleaning (once yearly)
7d	Performance report and comparison to expectations
8	AUXILIARY POWER SUPPLIES AND INVERTER AC CABINETS (if applicable)
8a	Inspection to identify issues and check functionality.
	Checks to include:
	Debris, rubbish or waste from inside LV AC cabinets
	Weather proofing of LV AC cabinets
	Sealing, door and locking mechanism
	Fuses
	Condition of MCBs, RCDs, surge arrestors and isolators.
	Circuit labelling, identification and LV AC cabinets labelling.
8b	Mechanical inspection of tightness of ALL AC circuit cabling and sub-main circuits.
8c	Thermographic inspection of LV AC cabinets
8d	Mechanical operation of all switches and circuit breakers including circuit breaker trip