



# Royal Borough of Kingston Efficient Homes Show



Why  
Do  
Solar  
At  
Home?



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# Royal Borough of Kingston Efficient Homes Show

## Why Should We Get Solar Panelling Installed?

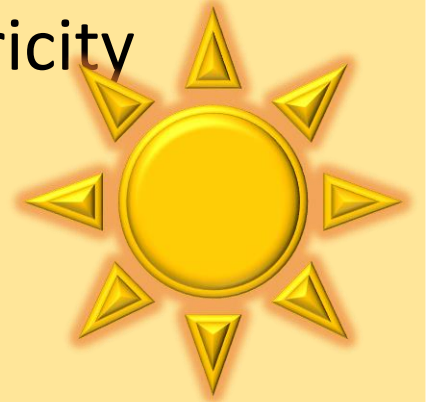
### Solar Thermal/Photovoltaic

Harness Sun to warm water/ generate electricity

Different Technologies employed

Electricity generated from Photovoltaic can be used towards:

- Meeting your electrical needs
- Storage of Power in a battery
- Fed into the Grid for others' needs





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## Why Should We Get Solar Panelling Installed?

### Considerations

#### Roof – Good condition plus



Parameter	Ideal	Comments
Pitch/Angle/Tilt	36	30 to 45 degs best but even a flat roof or vertical wall surface work (see table)
Direction Roof is facing	South	<b>Works all round to E or W and even N facing panels produce</b>
Shadows	Small level	Productivity Impacted but <b>can be tempered</b>





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**Overall optimum is c36 Deg Tilt and South facing BUT don't let that deter. Typical house roof is 20-45Deg**  
Tilt/Direction efficacy impact



Tilt \ Direction	East/West	South-East/ South-West	South
0 (Flat roof)	84%	84%	84%
20	82%	91%	96%
30	81%	93%	100%
40	78%	93%	100%
50	74%	91%	98%
70	64%	82%	89%
90 (Face of wall)	50%	65%	71%





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### Possible answer(s) to some issues

Shadows – Weakest link rule on a string  
Panel Level Optimisers on affected panels

- DC Optimisers
- Micro-inverters
- Smart Panels



Weight of panels – Lightweight panels

Very, very recently launched and Recyclable.

Also made of Recycled materials





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### Steps to take

Read up on the websites referred on final slide\*

Check if you'll need any planning permission

Grants under Energy Company Obligation ECO4  
*(For example people on Universal Credit/Pension Credit etc)*

Use Microgen'n Certif'n Scheme(MCS) Accredited Installers

Vetting / Word of Mouth

Obtain several quotes (recommend 5)

{\* Be better placed when dealing with Sales rep}

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## Why Should We Get Solar Panelling Installed?

### Pleasant Surprises

Minimal decline of energy production \*

Reliability of Inverter \*\*

Now come with extensive guarantees

(\* Studies in last few years suggest 0.25 to over 1% per annum.

\*\* Typically housed in a garage or utility room.  
Some Grid-linked ones can be kept in shade outside.  
Loft is NOT recommended as extreme heat impacts efficiency just as it needs to work hardest.  
Dimensions typically 1M X 0.5M X 0.3M )





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## Why Should We Get Solar Panelling Installed?

Lessons from experience sales people don't mention



Pigeons like nesting underneath

– Install mesh or blocker or spikes



Extreme distribution of energy production over the year.

(1 day in Summer can be as much as a couple of weeks in depth of winter)



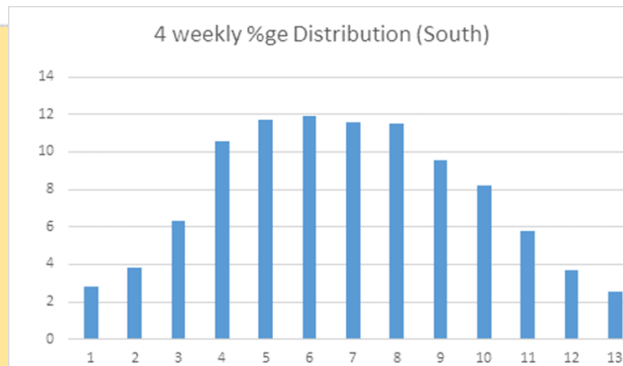
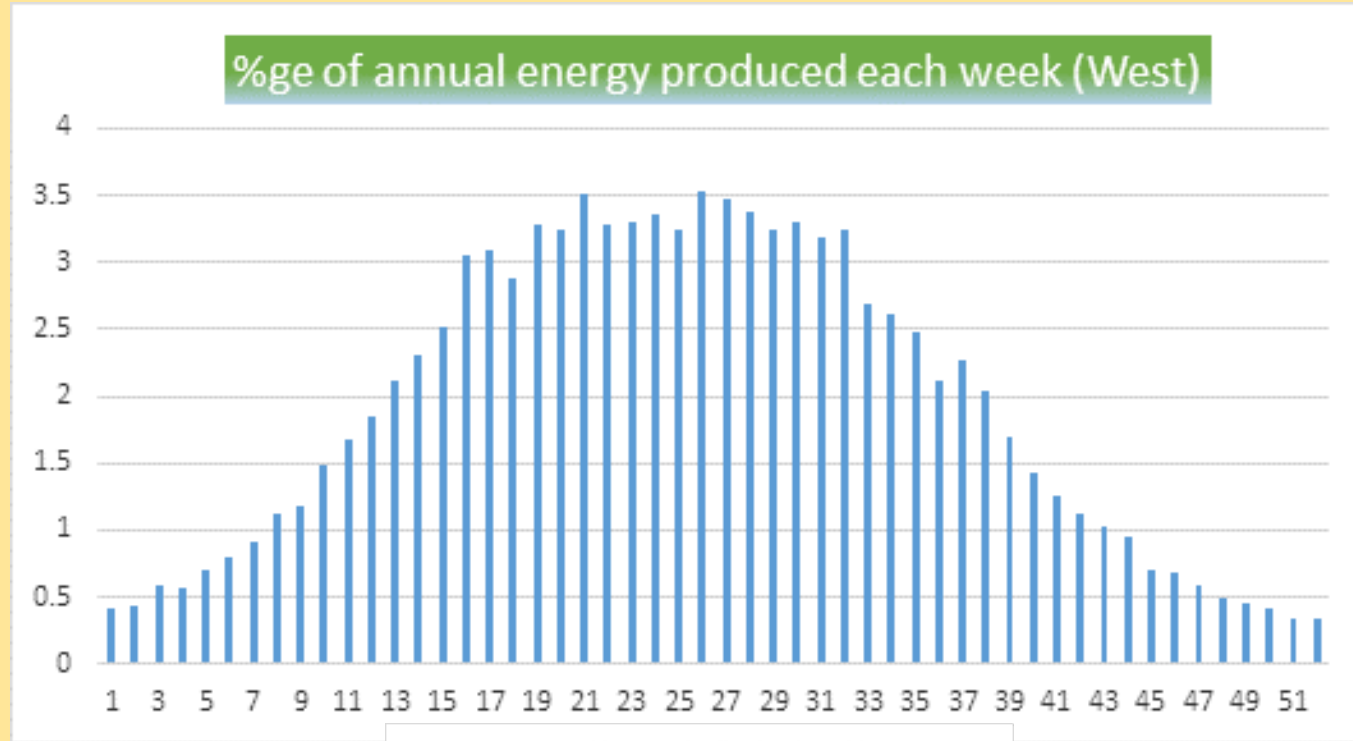
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Lessons from experience, sales people don't mention





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## Why Should We Get Solar Panelling Installed?

### Significant Benefits to recover/offset investment

Reduced annual energy bills (using energy produced)  
{savings £200->450 depending on usage profile and prices}

Smart Export Guarantee\* (payments for unused energy)  
{Payments £120->200 depending on usage profile + SEG rate}

Energy Performance Certificate Score++



May increase property value\*\*

Optimise – Maximise solar output, adjust usage patterns, install a battery

(\* Microgeneration Certification Scheme (MCS) qualified  
+ Smart Meter in most cases

\*\* Estimates range greatly Note: Net Zero targets for EPCs will become key

++ May yet influence Mortgage Rates)





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## Why Should We Get Solar Panelling Installed?

### Savings and Indirect Benefits



Government has **0**ed VAT on components

Reduction in your Carbon Footprint

Net annual CO<sub>2</sub>e savings of ~200kg per kW of System  
(~1Kg of CO<sub>2</sub>e from driving 5 miles in 50miles/gallon car)

>>800kWh per annum per kW of System in this area

Local employment





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## Why Should We Get Solar Panelling Installed?

Learn more on these websites



Federation of Master Builders (covers full installation)

<https://www.fmb.org.uk/homepicks/solar-panels/best-solar-panels/>



Centre for Sustainable Energy

<https://www.cse.org.uk/resource/home-energy-fact-sheets/>

<https://www.cse.org.uk/advice/solar-water-heating/>

<https://www.cse.org.uk/advice/a-complete-guide-to-solar-pv/>

Friends of the Earth

<https://friendsoftheearth.uk/climate/saving-energy-home-heating-and-insulation>

