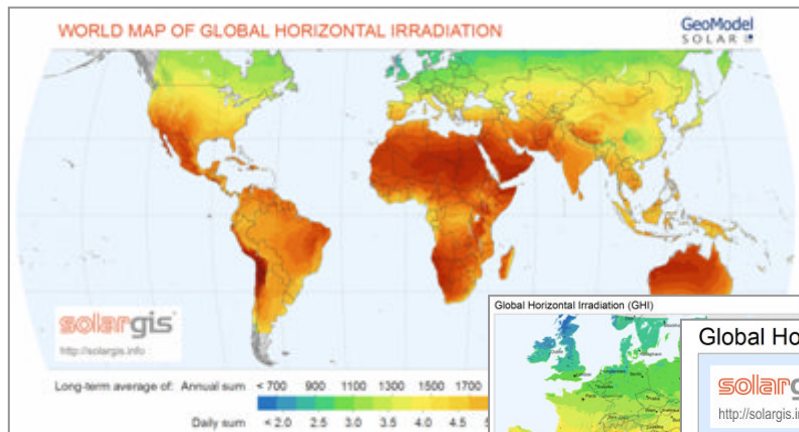
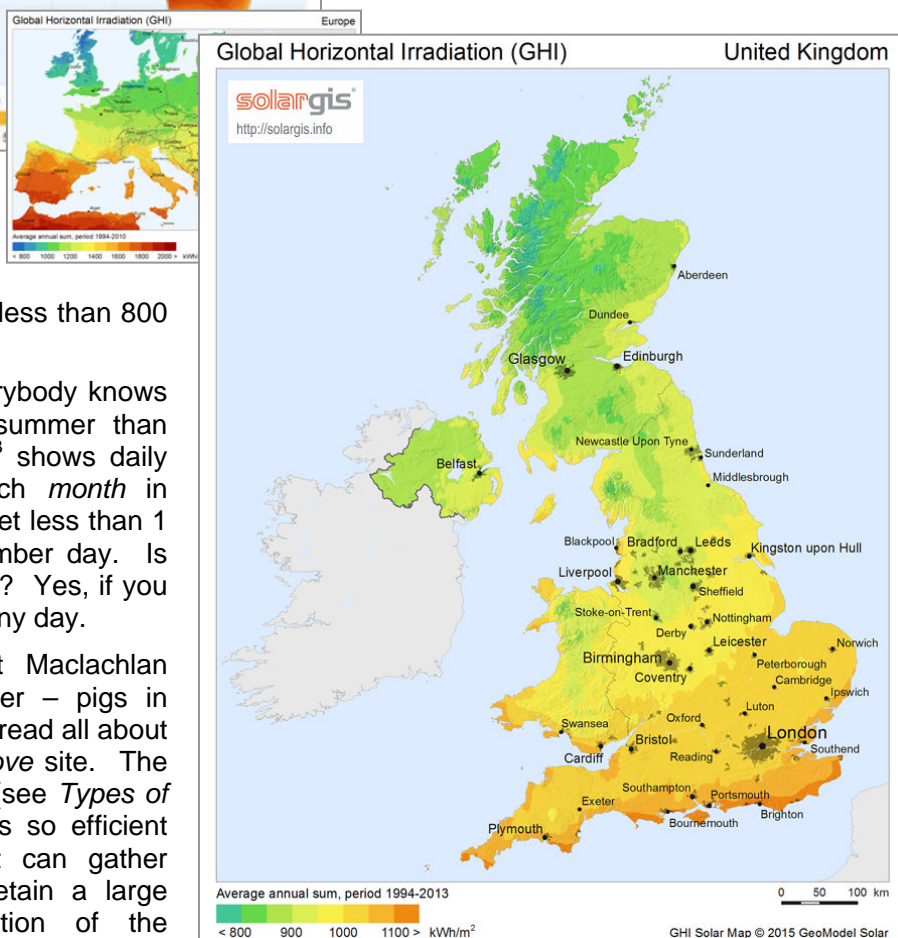


**Do we get enough sunshine in the UK to use solar cookers successfully?** 270715

These maps from *Solargis*<sup>1</sup> show the estimated 'global horizontal irradiation' – the total amount of sunlight striking a horizontal surface on different places on earth each year. If you study the world map, you will see





why solar cooking is more popular in Arizona than in Norway. Roughly speaking, if you live in the northern hemisphere, the further north you are, the less sunlight you receive each year. This effect can be seen in the map of Europe, where southern Spain receives almost twice as much solar energy each year as we do in the UK. Even *within* the UK you can see that the south has a



clear advantage. In some places along the south coast, we can get<sup>2</sup> over 1100 kWh per square metre of solar energy each year, whereas in some parts of Scotland, this figure is less than 800 kWh/m<sup>2</sup>.

But these are annual *totals*, and everybody knows that we get more sunlight in the summer than during the winter. The table below<sup>3</sup> shows daily average solar energy received each *month* in London. Note that, on average, we get less than 1 kWh of solar energy on each December day. Is that enough to cook during the winter? Yes, if you have the right solar cooker, and a sunny day.

On 25<sup>th</sup> December, 2014, Stewart Maclachlan cooked part of his Christmas Dinner – pigs in blankets - in a solar cooker. You can read all about this in the blog on the *SLiCKsolarstove* site. The cooker was an evacuated tube type (see *Types of Solar Cooker*) and this technology is so efficient

Solar Irradiance figures						
Select Country:	United Kingdom					
Select Town/City:	London					
Solar Panel direction:	Facing directly South					
  <p>London Average Solar Insolation figures Measured in kWh/m<sup>2</sup>/day onto a horizontal surface:</p>						
Jan	Feb	Mar	Apr	May	Jun	
0.75	1.37	2.31	3.57	4.59	4.86	
Jul	Aug	Sep	Oct	Nov	Dec	
4.82	4.20	2.81	1.69	0.92	0.60	

that it can gather and retain a large proportion of the energy that strikes

its reflectors. So, although we are not blessed with the hours of sunshine they receive in Arizona, we think we can demonstrate that solar cooking in the UK will be feasible at least twice a week on average. This is because the evacuated tube cookers can take advantage of short periods of sunlight, even on overcast but bright days.

Here at *SLiCKsolarstove*, we are conducting a study like the one carried out by *Newton et al*<sup>4</sup>. It concerns the number of solar cooking days in the Sahel region of North Africa. We intend to use the same methods to determine the solar cooking potential in various parts of the UK. Watch this space.

<sup>1</sup> <http://solargis.info/doc/free-solar-radiation-maps-GHI>

<sup>2</sup> This is measured in kilowatt hours. One kilowatt hour is the same as the 'unit' of energy you see on your electricity bill.

<sup>3</sup> <http://www.efficientenergysaving.co.uk/solar-irradiance-calculator.html>

<sup>4</sup> <https://cleancookstoves.org/binary-data/RESOURCE/file/000/000/333-1.pdf>