Solar Thermal at Latitude 57º

3 panel on roof system

“it doesn't work here”

You will be surprised how many times we hear this statement so we thought it best to explain why in fact it DOES work here and the proof of how we can make that claim.

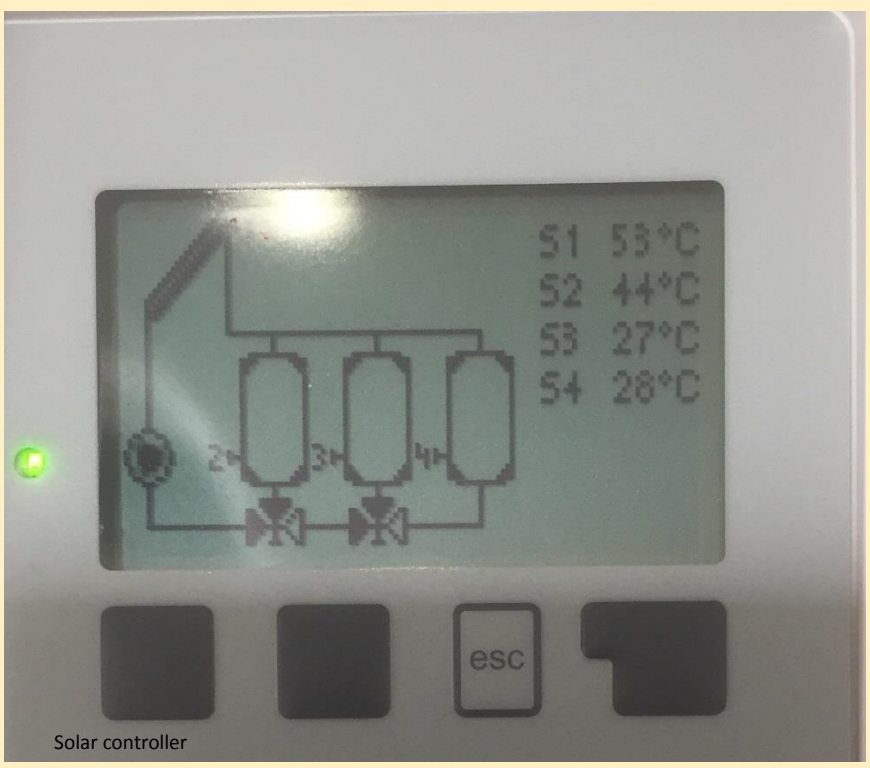
On the roof of our showroom in inverness we have 3 flat plate solar thermal panels feeding a 300 ltr twin coil domestic hot water cylinder. We also have it connected to a big 800 ltr thermal store that is heated once the DHW cylinder is fully heated.

Most people think if they are going to get any heat out of a solar thermal system then it will be in the summer months and get very little or nothing during the winter but this is not the case and we will show you why.

Free hot water in a Highlands winter.

The picture on the right shows the free energy being received from the sun on a very cold (minus 1ºC) day in November this year (2016)
Even though it is freezing and the sun is low in the sky there is over 800 W/m² hitting the earth in Inverness at Latitude 57. It doesn’t need to be a hot day to make the solar thermal panels start producing hot water, as long as the sun is shining then the panels work tirelessly to produce hot water and all for free.
Even if the water being produced is not hot enough to bring the cylinder up to full temperature, every degree it raises the water by is a degree the boiler is not having to do and therefore saving you money.

Solar meter



Solar controller

When we arrived into our office at 08.00am the sensor at S1 on the controller in the picture on the left was showing minus 3ºC. By 10.00am the panels had raised the water temperature up to 53ºC and it was still minus 1ºC outside but a crisp sunny day.

This installation is just the same as you would have in a normal domestic property except ours is designed to feed different tanks so we can monitor the performance of the system and prove the efficiency of the panels.

As proof of how much Solar thermal can contribute towards your hot water & heating we have energy meters on the output of the panels & our biomass boiler. October to October 2015/2016 saw our Solar Thermal panels contribute over 30% towards our total energy requirements for both hot water & heating. This is with just 6m² of flat plate collectors. Imagine what you can do with more.

Inverness on latitude 57.5

Solar plant in Denmark

You can see by the map on the left that Inverness is halfway between latitude 57 & 58 which is the same latitude as one of the largest solar thermal district heating plants in Europe which is based in Denmark.