

Using a Smart Cylinder with Solar Electric

To maximise the benefits of your Solar Electric system you should use as much renewable electricity as possible within your own home

The trouble is the peak solar activity doesn't often occur at the same time as your peak electricity load. So you need to store the energy.

Battery solutions are very expensive, large and have a limited lifespan.

The most obvious solution is to heat water with the surplus renewable electricity and use it later. Almost nothing holds more energy than water and we use it daily.

One option is to use a 'PV diverter' which varies the load from the hot water cylinder to match your surplus power. There are however some **drawbacks** with this method

1. The Diverter is expensive
2. Present Diverter offerings do not measure the cylinder temperature and have no idea how much useful hot water you have in your cylinder.
3. Present Diverter use a timer, where full power is supplied outside daylight hours and surplus power only is applied during daylight hours. As a result;
 - a. You can easily run out of hot water during the day
 - b. Will tend to inefficiently heat even when it doesn't need to outside of daylight hours
4. When you discover you have run out of hot water, you must press a button to start a one off heat up of the cylinder. The trouble is, this can take hours to heat from cold and might actually heat more hot water than you need.

The Solution is a Smart Cylinder

A Smart Cylinder is fundamental to good hot water management. Every home should have one regardless

Due to its highly adaptable functions, it can be easily set up to suit a wide range of energy inputs. Solar Electric is easily accommodated.



Because you have time dependent periods that form a profile you can set, simply adjust for peak energy storage during peak daylight hours. The Smart Cylinder will decide the best time to turn the element on.

For example

Period 1: 11:00 pm to 5:00am, minimum – overnight, maintain a useful reserve

Period 2: 5:00 am to 10:00am, low – make sure there is (just) enough for morning showers, there should be enough stored anyway.

Period 3: 10:00am to 15:00, maximum, element is on to use Solar Electric

Period 4: 15:00am to 11:00pm, medium – cylinder most likely has gained considerable energy during the day but if necessary the Smart Cylinder can intervene to maintain a medium availability of hot water.

There are many possible profiles you can set depending on your household needs

*There are also some other settings that will enhance Solar Electric operation. Your installer can set these up for you.

The Smart Cylinder is always calculating if you have enough hot water while still allowing plenty of scope to make best use of renewable power for the cylinder.

With the Smart-Cylinders savings control, the power is in your hands to save as much as possible, for example; if you consistently have a full or nearly full fuel gauge of hot water (as shown on the in home display) then increase the savings % some more until you find the best balance of savings and reliable supply of water.

Advantages of using a Smart-Cylinder with Solar Electric;

1. The Smart Cylinder always monitors the amount of hot water available, it will avoid overheating (and waste) or under heating with the risk of running out of hot water
2. It is quite capable of safely increasing the storage capacity of your cylinder up to 50% beyond what it is set to as standard.
3. Water is automatically sterilised of dangerous Legionella infection.

Will it draw too much power during the day?

- It is important to match the (lower) electric element to the size of the Solar Electric system. E.g. a 3kW system will work well with a 2kW electric element.
- The water needs to be heated anyway; this is simply shifting the bulk of it to peak sunshine hours.

Contact The Smart Hot Water Company for your hot water needs and desires, you might be surprised at what is possible.

Contact: The Smart Hot Water Company

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