What's a Watt?

By Dave Green

All this talk of 'kilowatts' and 'kilowatt-hours' confuses most people but it is actually quite simple (honest!).

Your electricity consumption is charged by how much energy you consume. This is measured in kilowatt-hours (kWh) and you are usually charged a standing charge per day + a usage charge of typically 10-20p per kWh consumed depending on time of day and supplier.

A kilowatt (kW) is simply the rate this energy is supplied. So an appliance rated at 2kW (note kilo means a thousand) e.g. a kettle, would use energy at the rate of 2kW (or 2000W which if you remember anything about your school science is 2000 Joules of energy per second) and you would have to leave it on for an hour before you used up 2 kWh of energy costing you somewhere between 20 and 40p.

Solar panels are rated in kW telling you the rate they produce energy if the sun is shining (more if it is at 90 degrees to the panel, less if the sun shines at an angle). They also generate a surprising amount even when it's cloudy. Typical solar installations on roofs are 4kW so on a sunny summer day can easily supply 20kWh + of energy, more than enough to run most houses and export some to the grid (or to your battery).

Batteries are rated in kWh and tell you how much energy they can store. A Tesla Powerwall 2, for example, can store 13.5kWh. This is enough to run most houses in the evening and overnight depending on what else you do with the electricity (e.g. charging an EV car will need a lot more energy).