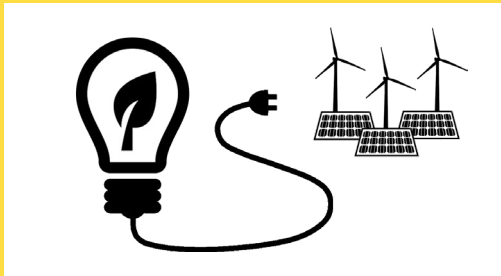




**EARNING AN INCOME FROM
FLEXIBLE ENERGY USE**

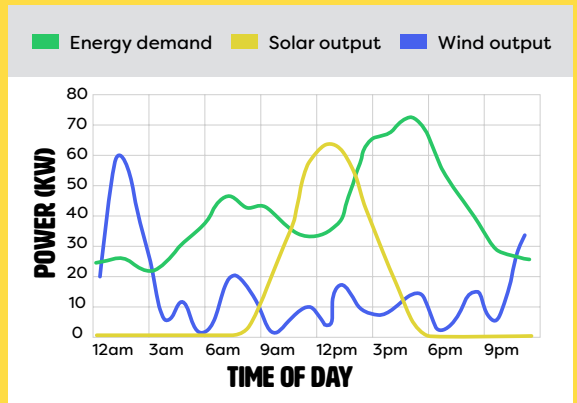
WHAT CHANGES ARE HAPPENING AS A RESULT OF HAVING MORE ELECTRICITY FROM RENEWABLE ENERGY?



More and more of our electricity comes from renewable energy which is helping tackle climate change and building a more sustainable society and economy. Also, we are using electricity more than ever before; in everything from electric heaters to cars.

BUT THERE'S A COUPLE OF PROBLEMS

Firstly, renewable energy comes from the wind, the rain, waves, tides and the sun, but we can't control when this energy is generated. Ideally, the electricity generated needs to always match when we want to use electricity, but we can't turn the wind or these other energy sources up and down on demand.



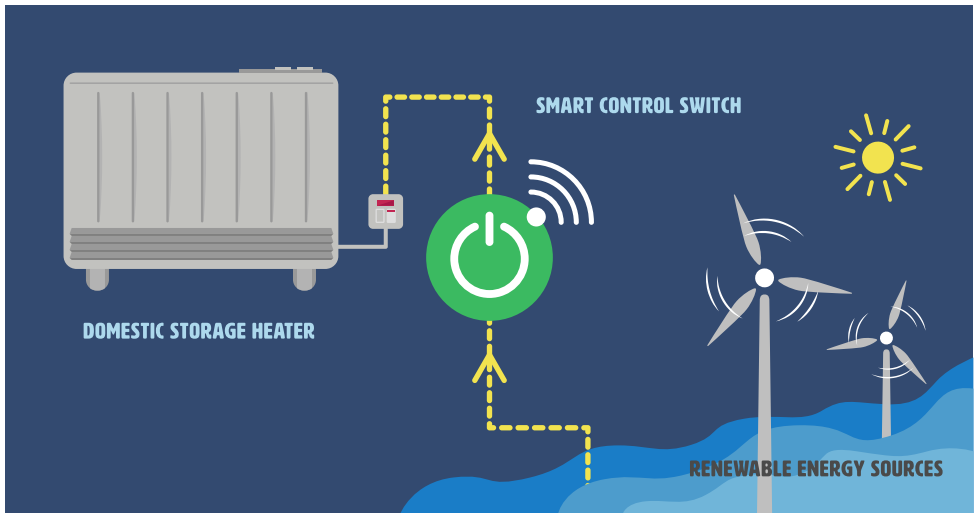
Secondly, most of the renewable energy is generated and comes on to the electricity grid in lots of smaller amounts at many different locations (rather than having a few large central power stations next to the big transmission lines where there is lots of space). This means that renewable energy mainly comes on to the electricity grid where the wires are smaller and there is less space to take lots of energy. So it is better to use the electricity close to where it is generated, so it does not have to try and get onto a congested grid.

These two problems (not enough space on the electricity grid for more renewable energy and the renewable energy not being predictable and controllable) create some challenges for the power companies managing the grid. They need to be able to help us decarbonise our energy system while providing electricity reliably, safely and affordably to all their customers.

AN ANSWER TO THESE PROBLEMS ... FLEXIBILITY!

One of the main answers is to be more flexible in when we use electricity. We should use it at times during the day (or night) when it is most available and not when it is in short supply. This is called 'Flexibility' and we will all be encouraged to agree to be more flexible in our use of electricity.

HOW DOES FLEXIBILITY WORK?

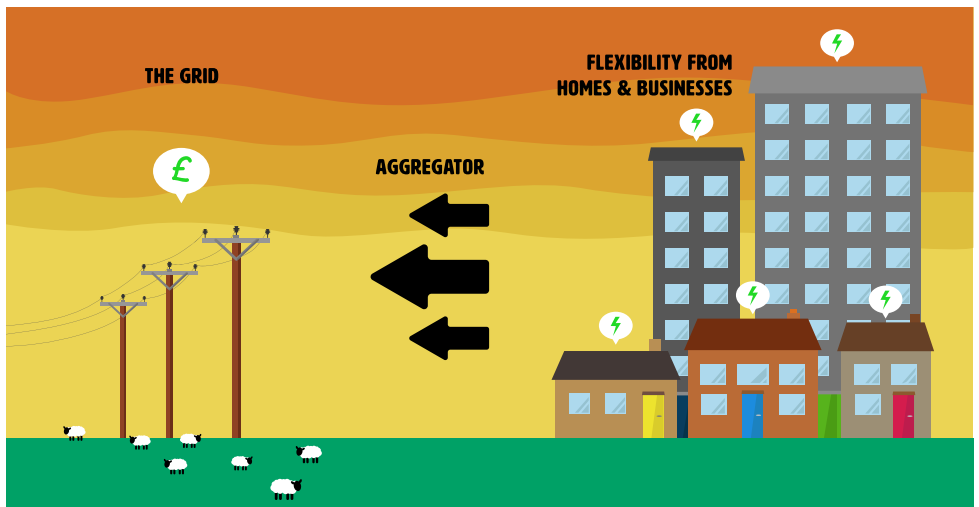


Householders agree to let their main electric devices (the ones that can store energy such as storage heaters, emersion heaters and electric vehicles) be charged at times when the renewable energy is most available locally. The best way of doing this is by using an automated remote control system to synchronise the charge times of these devices to when the sun is shining, the wind is blowing, and there is spare power.

The householder would be able to choose the comfort levels or requirements they have (e.g. for heating or for charging the vehicle) but the smart controller would do the actual shifting of the time when it charges. Householders would earn an income from the power companies for agreeing to be flexible, with more on offer the more flexible they are.

BUT YOU NEED TO CLUB TOGETHER WITH OTHER HOUSEHOLDERS - AGGREGATION

- The flexibility from a single home or business or a single solar PV system or storage battery on its own is not of interest to the power company
- Need to 'add up' or 'aggregate' many sources of flexibility – for example energy users, generators or those storing energy - to provide a large 'lump' of flexibility to the power company
- This aggregation could be done by a private company, or maybe a community owned aggregator company, which acts as the go-between for the households / small businesses and the power company. Some energy suppliers are teaming up with aggregators to offer energy tariffs linked to being flexible with energy use



WHEN CAN I START?

At the moment there is not an active flexibility market for households to sign up for. Presently, power companies have only been working with companies using very large amounts of electricity who are willing to be flexible about when they use it. They contract directly with the companies, or work through aggregators who have been signing up commercial electricity users. However, the UK and Scottish Governments and the power companies are planning for household flexibility to join the market over the next couple of years. Some power companies are already experimenting how to do this through pilot small scale demonstration projects.

FAQs

WHO ARE THE POWER COMPANIES?

When we say 'power company', we mean all the various companies managing the grid including: the Distribution Network Operators (operating the grid at a local level up to your house), as well as the Transmission Network Operators (operating the grid taking the electricity long distances at high voltage) and the National Grid (responsible at the UK level). These are the companies that own the cables that carry the electricity at all these various levels of the grid to your house. They are all very interested in flexibility. They know when there is extra energy in the grid and also when there is not enough. They are the ones that will pay for flexibility in shifting energy consumption.

IS THERE A COMMUNITY OWNED AGGREGATOR COMPANY YET?

At the moment there is not a community owned aggregator company but a few community energy support organisations are looking at whether one could be set up and work with community groups across the UK. The aim of this would be to help local people sign up for offering flexibility, with support from their housing association (if they were a tenant) or a local community group if they signed up to help local people. This will probably not be up and running for another few years. If it was set up, your community group might be able to get involved in helping local people find out more about how to offer flexibility and earning an income.



HOW MUCH TIME WOULD I NEED TO BE FLEXIBLE ABOUT MY ENERGY USE?

The market for household flexibility is not up and running yet, so there are no specific requirements identified so far. It is likely that there will be several types and levels of flexibility offer. On average this could be asking households to shift the time of charging electrical loads for around 125 hours over a year.



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