



**The government's new plans to implement a smart export guarantee for solar panel owners from 1st January 2020 could represent a significant step towards creating a cleaner, greener future. The question is, how big of a step? Paul Hutchens, leading green energy advocate and CEO of Eco2Solar, answers this question and explores how energy models might develop**

**T**he energy system was designed around 60 years ago. For years after our behaviour as consumers remained predictable. Most of us would come home at around 6pm, cook a meal, have a shower and watch TV. Now that pattern is changing and our use of electricity is much less predictable. We have a lot more devices but they are more energy efficient and our homes are better insulated.

We also have more households producing their own energy through solar panels. This trend began in 2010 with the introduction of the government's feed-in tariff. The original feed-in tariff – which ended in April 2019 – was designed to incentivise the use of solar technology which, at the time, wasn't economically viable for most householders.

Through the feed-in tariff, homeowners were paid a set rate for each unit of electricity generated; they could use as much electricity as they needed and export the remainder for which they would be paid.

Today solar technologies are more affordable and under the new smart export guarantee homeowners who install solar after 1st January 2020 can still generate free electricity but instead of being paid a flat rate for every kilowatt of surplus energy they export they will be paid a variable amount depending on the value of that energy at the time.

Energy is still more valuable at 6pm when people come home from work than it is at 3am when most of us are sleeping. Rates will depend on this usage model as well as the package being offered by the energy providers. It is hoped that this will create a thriving market for surplus energy sellers. They will know when it is most advantageous to produce, store and use or sell energy, and be able to seek out the most competitive export packages.

The National Grid and the District Network Operators have yet to develop models around this market. There will invariably be opportunities for homeowners with solar panels and a battery to sell energy at the most advantageous rates, but we may also see the emergence of more complex models where the homeowner effectively

leases the panels or the energy company installs and owns the panels and sells the energy produced by them to the home owner or building occupier.

It's similar to the model we see with phones. People will rarely spend £1,000 on the latest mobile phone, but they will happily spend £30 a month leasing it. Just as the way we currently use data, where we can easily buy, store and move data around, the energy market could adopt the same model, enabling us to buy unlimited energy at a particular rate. This could be a successful model, providing the energy companies ensure that energy is used and moved around in the most efficient way.

Since solar energy is generated during the day, when people are out of the house, it will also be crucial to develop a mechanism to capture and leverage that energy whether it's for our own use or for export. Therefore, as the smart export tariff becomes more embedded, we will begin to see the emergence of supportive technologies such as lithium batteries that allow us to store the energy to use or sell later.

But one of the most important technologies – which, like batteries, exists at the moment but is yet to be adopted on a widespread scale – is smart apps and programmes that can connect real-time weather predictions to excess solar energy and immediate consumer needs. This technology will know you are generating excess solar energy at midday because the sun's shining, and will use that energy to do tasks you'd normally do when you come home from work, like run the washing machine.

And if you don't have any daytime need for energy it is stored for you to use later, or sell to someone down the street because, perhaps, they work from home and most of their energy usage is during the day.



**Paul Hutchens**



We will also see more technologies that allow us to sell energy to a specific buyer at a certain location, such as our next door neighbours or nearby schools, shops and services. No dirty power stations, no endless cables; just clean, green, locally produced energy, directly from the sun.

But there is another, more pressing driver behind the need to create more sustainable energy. As our lifestyles change our electricity usage will grow. Currently a typical UK household uses around 4,000 kilowatt hours of energy every year, within a matter of years that same household could be using 10 times as much.

As the most convenient and cost-effective form of renewable energy, solar is undoubtedly an essential part of our future.

If the smart export tariff succeeds in creating a full-blown marketplace for energy, and if energy providers can build competitive models, and if housebuilders construct the kind of homes that move us towards our net zero target, and if we as consumers begin to explore producing our own energy – a cleaner, greener future could be closer than we think. □

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## Investing in manufacturing

**West Midlands based Addison Saws recently installed a total of 4 Mecal CNC machining centres into Hydro Components (formerly SAPA) to increase production of complex aluminium parts destined for state-of-the-art electric vehicles.**

Hydro Components recently invested £9.6m in the refurbishment and re-opening of its manufacturing plant based in Bedwas, Wales. Addison Saws installed three Mecal Kosmos 4-Axis machining centres and a Mecal Geos MDT 5-Axis machining centre, the first of its kind within the UK at Hydro's factory. Fuelling this decision was a large contract for the supply of aluminium body components intended for manufacturers of zero emissions vehicles aiming to tackle pollution levels on the streets of the UK.

“At first, Hydro needed to outsource the CNC machining element as issues with their previously bought machinery meant they lacked the functionality to produce the parts themselves,” says Mike Grogan, Addison regional sales manager. “It soon became apparent that bringing the operation back in-house would be more beneficial in terms of turn-around time, overall cost and allow for greater control over the manufacturing process.”



After the successful installation of the Kosmos machines, Hydro's production manager at the Bedwas plant was interested in setting up a single step automated production line, eliminating the need for additional saws. To achieve this, Hydro placed an order for the new five Axis MC 302 GEOS MDT 8.6m CNC machining centre.

Hydro's production managersays: “Addison has been a great help all round, from selecting the right machinery to assisting in the program writing and ensuring we get the very best out of all our machines. They even supplied an engineer to assist us with machining centres bought elsewhere. We are very pleased with our choice; it's enabled us to tender and win several similar upcoming contracts with major names in the automotive industry.” □

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