

Smart energy market review

Summary of webinar one

Introduction to the review

Improving information across the smart energy market

A key finding from CSE's Smart and Fair programme to date has been a lack of clear and consistent information across the smart energy market - both *for* and *about* the consumers to whom smart energy products, services and tariffs ('offers') are being marketed. This risks: i) consumers not participating in the market, ii) consumers taking up unsuitable offers, and iii) some consumer groups being left behind by innovation.

CSE's biannual webinar series aims to mitigate these risks through providing a regular heartbeat of key consumer fairness developments across the smart energy market. We will use the four elements below to track trends in relation to consumer access and outcomes and advocate for better marketing, design and regulation of smart offers.



Market overview

Summary of new market offers and tracking of key quantitative metrics.



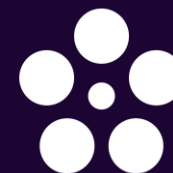
Key themes

Deep dive into recent emerging themes or issues facing smart energy consumers.



Data analytics

Analysis from the Smart & Fair data team on consumer outcomes.



Horizon scan

Spotlighting good practice and other relevant work in the Smart & Fair space.

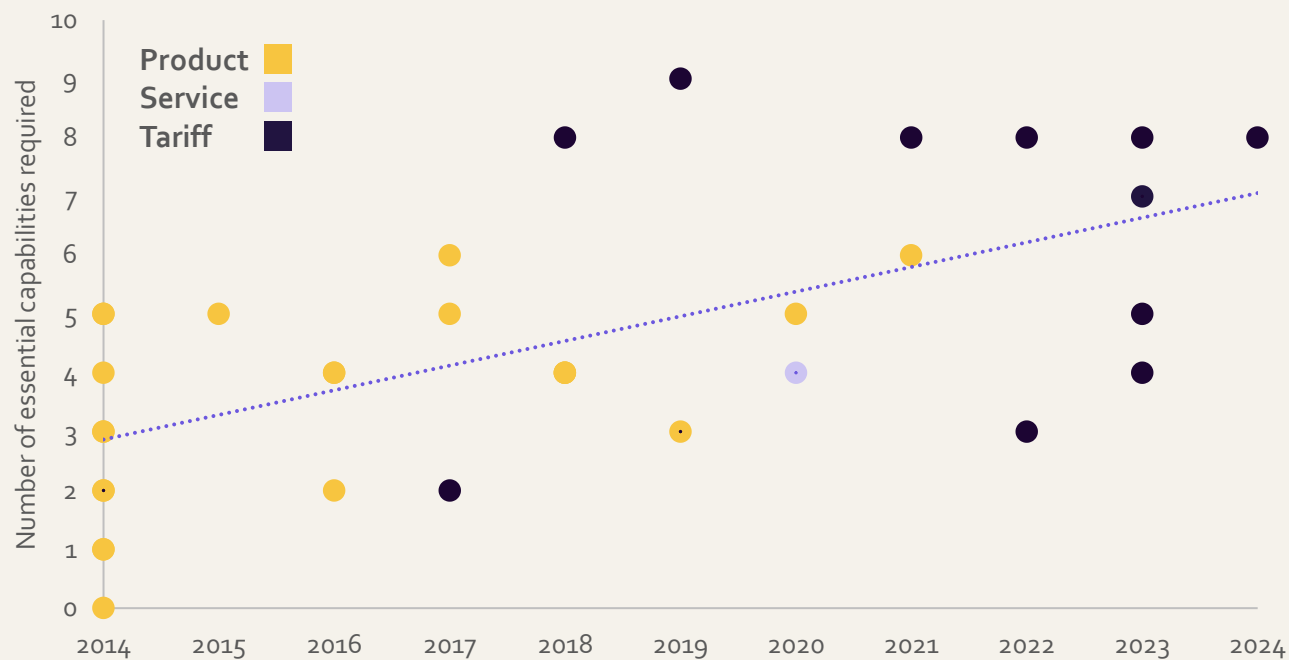
The following pages give a summary of key findings from our first webinar using these four elements. Please watch out for the next webinar and accompanying report, due in Spring 2025.

Market overview

Increasing offer choice and capability requirements

- The last decade has seen massive growth in the range of smart energy offer types coming to the market. We currently count 33 (some plots on the chart below are double counted).
- Early innovation focused on smart products (yellow), with more recent market activity around smart tariffs (navy), with limited service options (lilac).
- We can use the [CSE Capabilities Lens](#) to understand what consumers need to be able to take up and benefit from different offer types. Plotting launch date against essential requirements (as below) highlights that over time, offers are generally requiring more capabilities.

Smart offer types against launch year and essential capabilities required



Persona 1

Small young family in council housing, with storage heaters and Economy 7 meter.

6

Persona 2

Older single renter with limited digital skills. Gas central heating and prepayment meter (PPM).

1

Persona 3

Owner-occupier couple with heat pump, solar PV, EV charger and smart meter.

26

Persona 4

Large family owner-occupiers, gas central heating and smart meter.

12

Disparities in market access

- The graphic above shows how many offers on the market would be available to personas constructed from different essential smart energy capabilities.
- We can see a large current disparity in market access: whilst Persona 3 can access almost every offer on the market, Personas 1 and 2 – limited by their tenure, finances, digital skills or meter type – have far fewer options. Persona 4 may be able to access LCTs and some products but are restricted by their heating type and lack of assets.
- We will use these personas to track change over time throughout the webinar series.

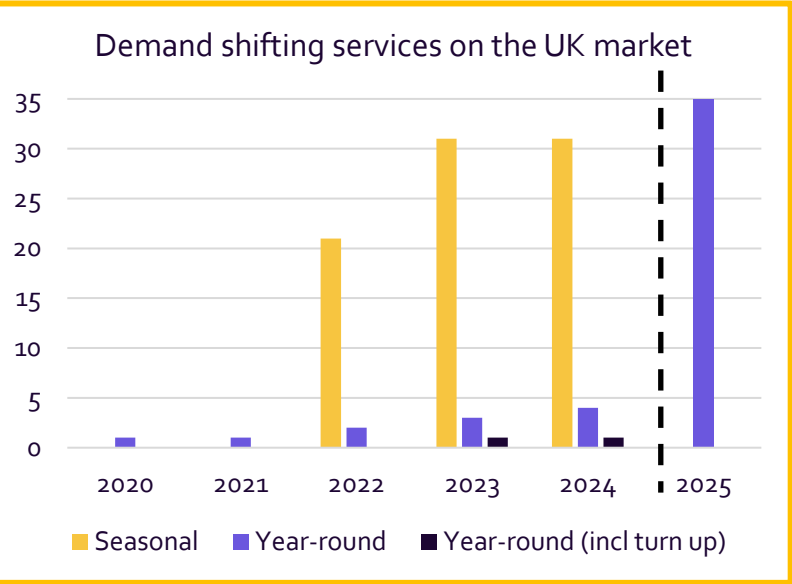
Key themes

Recent proliferation of two tariff types

Tech-specific tariffs are bringing new smart offer options to more consumers: those with storage heaters (c.1 million), heat pumps (c. 225k), as well as EVs (1.7 million).¹

There has also been a spread of 'type-of-use' tariffs. These offer users a cheaper rate whenever they use a particular asset – but the supplier decides the optimal time to charge.

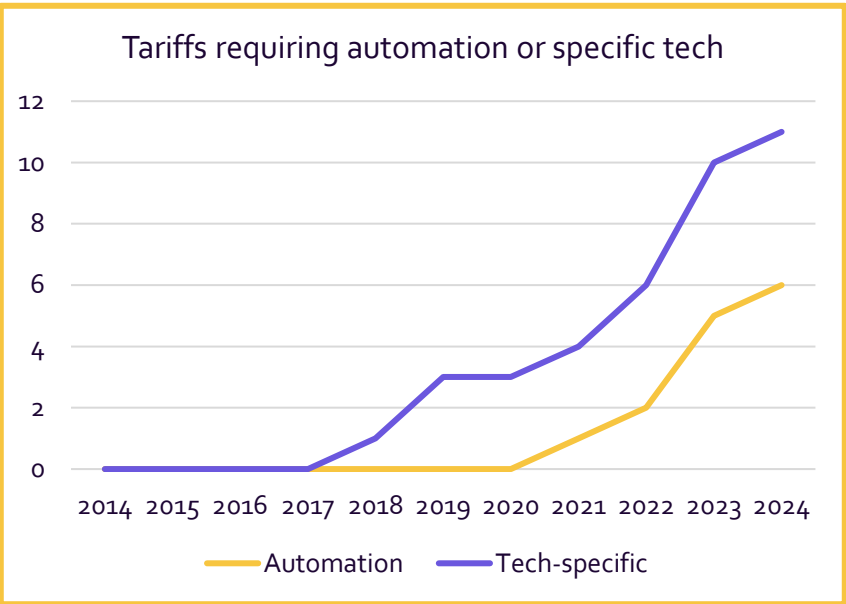
More research is needed to understand consumer views on this automation, but webinar discussion flagged that – although technically a new capability – this doesn't necessarily increase offer complexity: it is designed for consumer convenience.



Few prepayment meter (PPM) or non-digital options

Although PPM customers have been able to take part in services like the DFS, they are still locked out of most smart tariffs. Meters need to be switched to credit mode to participate which is an accessibility concern. Currently, the only time of use tariff (TOU) that prepay customers can access (Economy 7) offers uncompetitive rates compared to smart tariffs – as seen on the following slide.

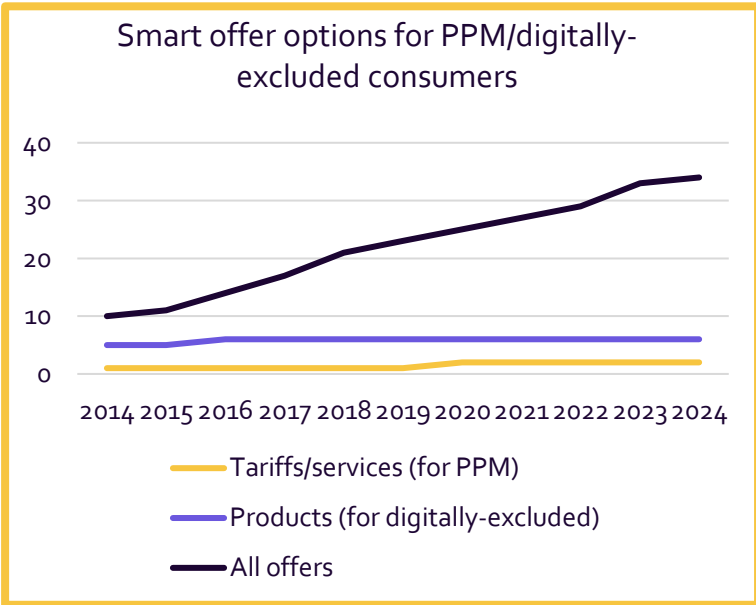
Digital technology and skills also present a barrier to uptake. Of the 18 smart products currently available on the UK market, only 6 can be used by those without a smartphone.



More demand shifting service options

Demand shifting services offer opportunities for users without significant energy assets to take part in flexibility opportunities.

The number of options within this offer type have increased significantly over the past years. As well as different providers offering turn-down services via the Demand Flexibility Service (DFS), some are also now offering year-round turn-down windows, as well as turn-up propositions. The DFS is scheduled to run permanently from 2025. There will likely be other seasonal or turn-up opportunities too – although we haven't indicated this on our chart.



¹Estimated number of households with these technologies in the UK. Sources: Zap Map, HVP, MCS.

Data analysis

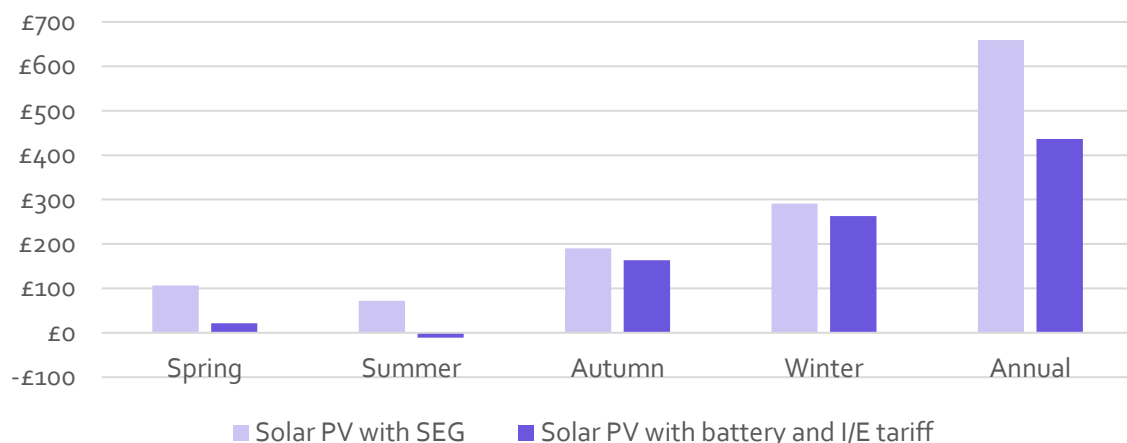
Understanding smart energy offer finances

Our research (see right) has shown that better financial information is key for improving consumer confidence in smart energy. We are using a set of archetypes we [made for NESO](#) – based on heating type, household composition and solar PV/EV ownership - to understand financial impacts of offers. For each archetype we have average (50th percentile), high (75th) and low (25th) demand and export profiles and can use these to model different scenarios.

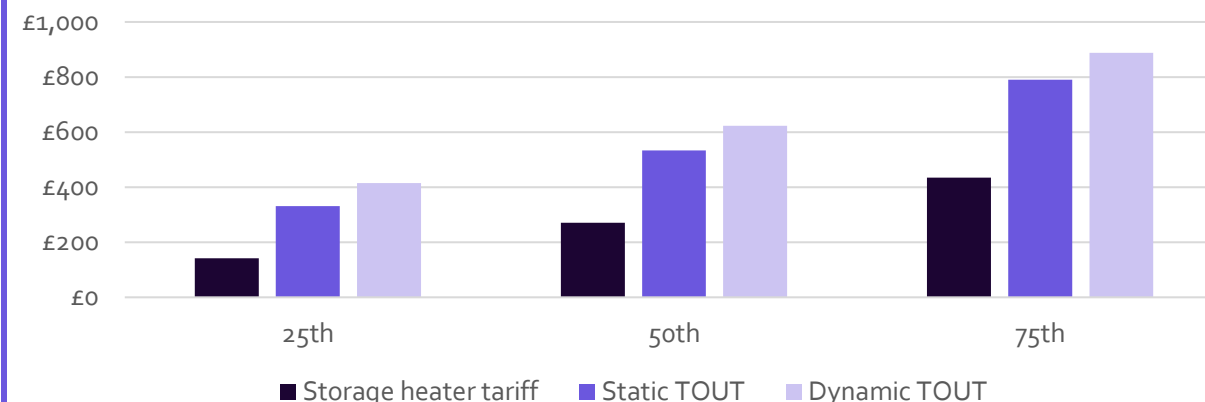
“Be clear about how savings are calculated and how much might be achieved.”

- DFS participant²

Comparative seasonal and annual running cost of PV setups



Savings against Economy 7 price cap for different storage heater tariff options and demand profiles



PV users: battery or no battery?

A common query received by CSE's smart energy advisors is: what savings can I expect from using solar PV with a battery?

Using the solar PV archetype – with an annual export of 1,727.69 kWh - our modelling suggested significant annual savings of over £225 a year using PV with battery and an import/export tariff, compared to PV with just a Smart Export Guarantee tariff. Nonetheless, this would be unlikely to offset the upfront cost of a typical battery over the course of its lifetime.

Storage heater tariff options

We also modelled some of the new tariff options available for storage heater users.

All delivered savings against a typical Economy 7 (E7) rate (£1,548/year), with the highest achieved by a dynamic TOUT, though these may not work with all models. The proportional savings for the dynamic TOUT decreased with usage, likely reflecting low standing charges. One webinar attendee suggested that savings could be even higher for more vulnerable consumers, who may use a higher proportion on off-peak rates – this could be an area for further analysis.

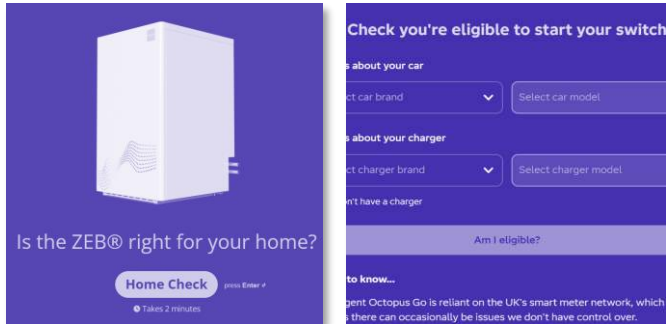
²This quote is drawn from the consumer evaluation of the first year of the DFS carried out by CSE in 2023. Full report: <https://www.neso.energy/document/282981/download>.

Horizon scan

Good practice

There have been some good recent examples of smart energy offer providers giving consumers more detail about the capabilities they will require to take up or benefit from different offers.

A focus for future analysis should be on *which* capabilities are being referenced – and which are often being left out.



Other relevant work

- CSE worked with ADE Research on the latest phase of research for the HOMEflex project, which was published in September. The [report](#) indicates support from across the smart energy industry for a compliance scheme to support the HOMEflex Code of Conduct and makes some recommendations for the design of the scheme.
- CSE's [response](#) to Ofgem's Consumer Vulnerability Strategy refresh consultation drew on our findings from Smart and Fair research to emphasise that inclusive innovation extends beyond consumer products to encompass network planning and investment decisions.
- CSE's new YouTube [series](#) explores our take on social justice within the future energy transition.
- The latest phase of the Equinox project – led by NGED – produced some interesting [findings on heat pump flexibility](#) in relation to some of the new tariffs covered here. Notably, outcomes for vulnerable consumers were similar to non-vulnerable groups, and there was broad acceptance of automation.

Next steps

- The next review webinar will take place at the end of March 2025.
- If you have any questions about the smart energy market review, or the Smart and Fair programme, please get in touch at nick.stromberg@cse.org.uk.
- Find out about the next review webinar, and CSE's other work, by [signing up our newsletter](#).

