

Enabling trials through the regulatory sandbox

1. Purpose of this document

We launched the regulatory sandbox service in February 2017. It enables innovators to trial new products, services and business models without some of the usual rules applying. You can read more about what a sandbox is [here](#). We are delighted by the popularity of the sandbox, which has helped us to enable trials and to identify rules which pose barriers to innovation. Engaging with innovators through the sandbox process has provided valuable input to regulatory policy development, such as our Future Retail Market Design project (on which you can find the latest [here](#)).

We have now run two application rounds (called 'windows') – this document sets out what happened in the second window.

2. Overview of the second sandbox window

In October 2017, we launched the second window and received 37 expressions of interest. In the majority of cases we found that the innovators needed support to better understand the rules of the energy sector. For these we provided feedback on how they could go ahead without the need for a sandbox.

In a limited number of cases, we were unable to help the innovator. This was either because they sought endorsement for their business model, or their proposition required permanent rule changes or more substantive relief than the current sandbox is capable of providing. In a few instances, the rules innovators were seeking relief from were in the process of being reformed (for example, storage and network charges) and we judged it would not be appropriate to provide sandboxes in these areas at this time.

We granted four sandboxes through this window.

3. Introduction to the sandbox trials

We actively worked with innovators through the sandbox process to co-create viable trial arrangements. We are pleased to have granted regulatory sandboxes to the trials detailed below. All of these seek to maximise the benefits of locally-produced (and sometimes stored) electricity for trial participants. Two trials also explore the use of peer-to-peer electricity trading platforms.

We issued 'sandbox letters' to each of the innovators. These set out our understanding of the proposed trial, how we expect the trial to operate within the regulatory framework and the protections we require for consumers participating in the trials. We

have restricted innovators from sharing the details of the sandbox letter beyond their trial partners and, as such, we have not published these letters. This is because the approaches we have agreed are specific to the controlled environments of the trials and should not otherwise be taken as Ofgem’s interpretation of the rules.

Each trial will involve electricity supply to a small number of domestic customers and will last two years from the date the letter was issued (all trials are to be completed by summer 2020). In all cases, consumers have agreed to join the trial, can opt-out at any time, and they will pay no more for their energy than if they had not participated.

We require the innovators to maintain a risk management plan and to provide us with regular updates during the trial. At the end of each trial, the innovators will produce a report on what has been learnt. While we strongly welcome the approach of learning through trials, this should not be taken as an endorsement of the specific aims, technologies or business models of the individual trials.

4. Sandbox trial details

Trials 1 and 2 Green Energy Networks, SmartKlub and SIG

[Green Energy Networks \(GEN\)](#), [SmartKlub](#) and [SIG](#) are working in partnership and together will run two separate trials, one in Cannock Chase, Staffordshire and another in Trent Basin, Nottingham. Each trial also has additional local partners.

Trial 1 Cannock Chase

[Chase Community Solar](#), a community benefit society, has fitted photovoltaic (PV) solar panels to homes owned by Cannock Chase District Council. GEN and SmartKlub want to test a new arrangement that maximises the benefit from local PV generation, new battery storage and digital control technologies, putting a community Energy Services Company (ESCO) at the centre of the relationship with residents.

Digital technologies provided by SIG will switch customers’ electricity supply between local solar, battery storage and the grid. It will also send generation and consumption data to a central software platform.

GEN and SmartKlub will establish the ESCO, which will partner with a licensed supplier to provide each home with all of its energy needs. The ESCO will take on the regulatory obligations of an exempt supplier on behalf of Chase Community Solar. The ESCO will send a single consolidated bill to each customer with separate lines showing their local energy and their normal tariff passed through from the licensed supplier.

The project aims to automate time-of-use-tariff selection, balancing community solar and storage and lowering costs by prioritising how and when power is imported from, or exported to, the grid. By partnering with an aggregator, the ESCO is also seeking to sell local residential balancing and flexibility services to National Grid and the Distribution Network Operator.

Trial 2 **Trent Basin**

[Trent Basin](#) is a brownfield site in Nottingham being developed by [Blueprint](#), a joint venture between Nottingham City Council and 'purpose-driven' property developer, [Igloo](#). It is part of [Project SCENe](#) (Sustainable Community Energy Networks), which looks to develop different ways of generating and supplying locally-generated heat and electricity to homes and commercial buildings. PV solar panels and a community battery have been installed at the site and a community ESCO has been set up.

As with Cannock Chase, the ESCO will provide a single bill for both local energy and the tariff of the licensed supplier. SmartKlub will run the ESCO, also acting as the exempt supplier. The [University of Nottingham](#) will provide algorithms on behalf of SmartKlub.

SIG will provide digital technologies to switch customers' electricity supply between local solar, batteries and the grid and send generation and consumption data to a central software platform. [Limejump](#) will act as both the licensed supplier for electricity supplied from the grid and as the aggregator offering flexibility to National Grid as part of their Virtual Power Plant.

Trial 3 **Verv**

[Repowering London](#), a community benefit society, has worked with local residents and Hackney Council to create a local solar co-operative. To help residents access the environmental and financial benefits of renewable energy, solar panels have been fitted to the roof of a tower block. However, at the moment the solar panels only power the communal areas and so residents benefit only indirectly.

This trial aims to allow residents to benefit more directly from the solar by reducing the cost of their electricity. [Verv](#) and [British Gas](#) will trial a new arrangement that maximises the benefits from local generation and tests peer-to-peer electricity trading across a distributed ledger platform.

Energy supplied by the solar co-operative will be traded on a software platform developed by Verv. Verv Home Hubs in the flats of participating residents will monitor electricity consumption. The trial allows Verv to test practical applications of their technology, including how consumers respond to it. Verv will take on the regulatory

obligations of an exempt supplier on behalf of the solar co-operative. **Powervault** will provide battery storage.

British Gas will be the licensed electricity supplier during the trial. Participants will receive a consolidated bill or statement from British Gas with separate lines for the electricity supplied by the solar co-operative that is traded on the Verv platform, and power provided by British Gas. Customers will pay British Gas for energy supplied by them and for energy supplied by the Verv platform as trades take place.

Trial 4

BP

BP is developing a platform that will allow consumers who generate their own electricity (prosumers) to sell excess electricity in a marketplace. This could create market-based revenues for prosumers, often not available to small-scale domestic generators.

An existing licensed energy supplier wants to explore the value proposition of accessing more domestic distributed generation from their customers. This could allow the licensed supplier to enhance their ability to match supply and demand, as well as offer lower cost power to their customers. The licensed supplier and BP want to understand the opportunities for using a platform to match supply and demand, as well as how customers might interact with and benefit from it.

Up to 250 domestic customers across Great Britain will participate in the trial, using a digital platform created by BP that *simulates* energy trading from prosumers. While simulated trades will be based on real-time user data, no physical electricity will be bought or sold during the trial.

During the trial, participants will pay no more than the price of their normal tariff from the licensed supplier. Where simulated trades on the platform create a lower price of electricity, that value will be provided to trial participants by the licensed supplier, representing a saving.

5. What rules did we consider?

To allow the four trials to happen, we considered various scheme configurations and the implications of relevant rules. In many areas we helped the innovators to shape their models to wholly align with existing regulatory requirements. In other areas, the trials fit less comfortably with the rules; these are set out in the table below.

For each area, we agreed with the trial partners an approach to compliance which would apply for the length of the trial. This gives them flexibility to test their innovations, while ensuring that consumers remain protected. The approaches we have agreed are

specific to the controlled environments of the trials, and the views expressed should not otherwise be taken as Ofgem’s interpretation of the rules.

The licensed supplier in each trial will continue to fulfil their legal, licence and code obligations towards the customers on the trial.

Rules	Our view for the trials	Application for each trial
<p>Interaction between the customer communication rules that apply to licensed suppliers and the rules that cover exempt supply.</p>	<p>We agreed that one trial partner could provide bills and statements, tariff information, estimated annual costs and the fuel mix disclosure to trial participants on behalf of the exempt supplier and the licensed supplier.</p>	<p>GEN, SmartKlub and SIG. We agreed that the ESCO could provide information about licensed supply and exempt supply to participants.</p> <p>Verv and British Gas. We agreed that Verv could provide more detailed information about the exempt supply to trial participants on behalf of the exempt supplier.</p> <p>BP and a licensed supplier. We agreed that BP could provide detailed information about trades on the platform and that the supplier could provide a high level summary in correspondence such as bills.</p>
<p>Interaction between the cheapest tariff messaging (CTM) rules that apply to licensed suppliers and the rules that cover exempt supply.</p>	<p>It is more difficult to calculate the customer’s cheapest tariff when that customer is supplied by both a licensed supplier and an exempt supplier.</p> <p>We confirmed that, when customers in the trial are informed of cheaper tariffs, they will be made aware that moving to those tariffs would involve leaving the trial.</p>	<p>GEN, SmartKlub and SIG. The licensed supplier may include the ESCO tariff for other consumers who live in the relevant postcode areas.</p> <p>Verv and British Gas. Consumers will be informed that consumption information used for the CTM may be slightly inaccurate due to trades on the Verv platform.</p> <p>BP and a licensed supplier. The licensed supplier will provide CTM information. Since the trial only</p>

Rules	Our view for the trials	Application for each trial
		<p>simulates electricity trading, the CTM calculation will be based on customer's historical consumption and assume no behavioural change.</p>
<p>Receiving Feed-in Tariff (FIT) payments for export during the trial.</p>	<p>Owners of solar panels in the trials could have been paid twice for the same electricity if they were paid for their trades and continued to receive FIT export payments.</p> <p>We confirmed that, for properties participating in the trials, the owners of solar would opt out of the FIT export tariff for the duration of the trial, that they could not opt back into the FIT export tariff for 12 months.</p> <p>We also advised that the value of the FIT export tariff (as set by Government) may change during the trial lifetime.</p>	<p>GEN, SmartKlub and SIG. Chase Community Solar will opt out of the FIT export tariff for the duration of the trial.</p> <p>Verv and British Gas. The solar co-operative would opt out of the FIT export tariff for the duration of the trial.</p> <p>BP and a licensed supplier. We confirmed that since the trial is simulating electricity trading, Ofgem guidance does not suggest that this affects FIT arrangements for generating entities on the trial.</p>

With the completion of the second window, we have also published our thoughts on what we have learnt so far about the sandbox. These [insights](#) are informing the evolution of the sandbox service; we will say more about the future of the sandbox in the near future.

If you are interested in using the sandbox or have ideas about how the service can evolve, please contact the Innovation Link by emailing innovationlink@ofgem.gov.uk.