

Designing smarter consumer protection in a smarter energy world

Using field trials to explore how people understand energy as a service

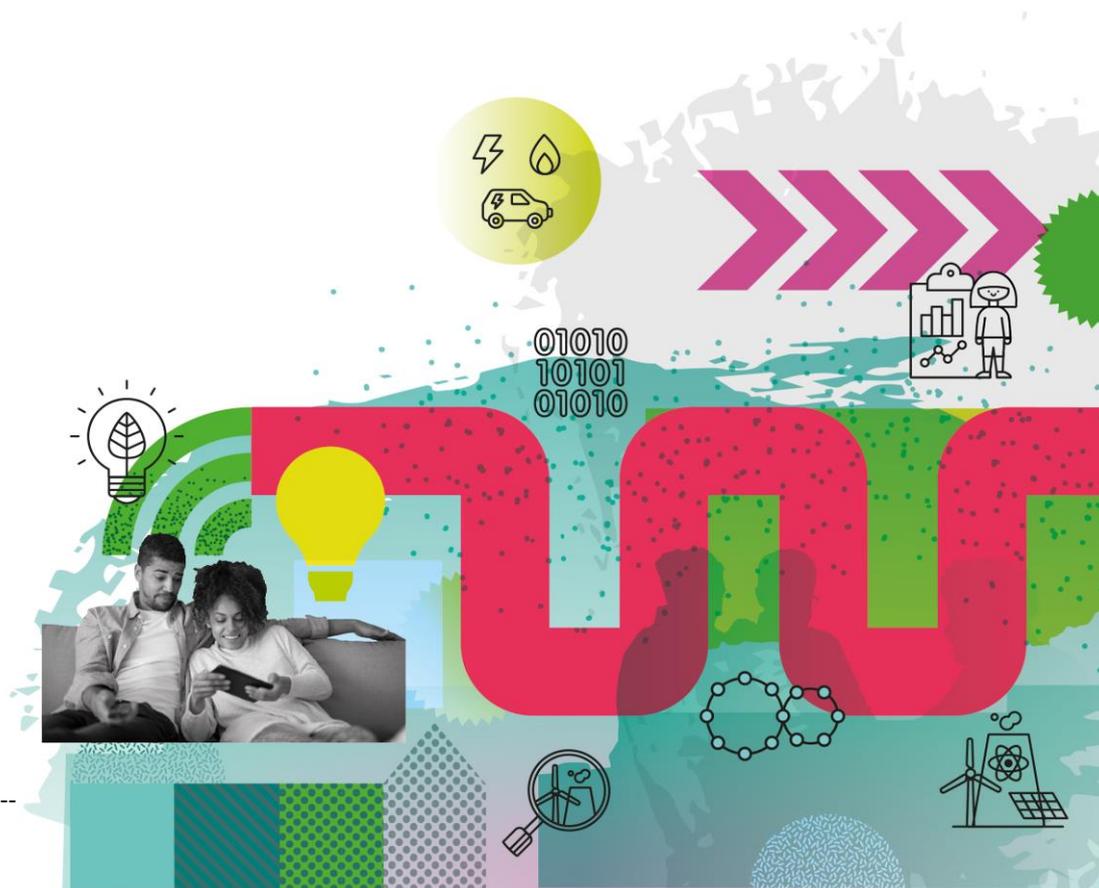
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Prepared for



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Introduction

The market to supply smarter energy products and services to domestic consumers is still in its early stages. There is the potential for developments in this area to improve consumers' experiences of energy. However, there are also risks that poor early experiences may prevent these promising opportunities from unfolding.

The Energy Systems Catapult has been working to explore these risks and opportunities further. Citizens Advice commissioned the Energy Systems Catapult to undertake a pioneering project to explore how consumers might experience emerging smart energy products and services, and the implications of this when designing suitable consumer protection. The final report identified ten specific risk areas for smart energy users of the future. The report is available [here](#)

This document focuses in on a number of those risk areas. It reports on findings from studying consumers' real experiences trialling an innovative energy service in the Energy Systems Catapult's 'Living Lab'. More information about the trial is available [here](#).

All names and identifiable characteristics have been changed to maintain the anonymity of the participants involved in this research.

Elements of the consumer experience

It is now relatively commonplace for consumers in the UK to use digital products such as smart phones and innovative services such as eBay, Airbnb and Deliveroo. Smart domestic energy products and services, by contrast, are currently not widely available so are not very familiar to consumers.

When making decisions about whether to take part in this emerging market, consumers will need to be aware of the product and service, and to understand the offers available to them. A key element of this understanding will be the consumer's perception of the key principles (or terms and conditions) of the product or service being offered. Their experience of these key principles will form an important part of their overall perception of the quality of the product or service.

The Energy Systems Catapult's Living Lab provided an opportunity for Citizens Advice to better understand consumers' experiences of a novel energy service and to explore the following risks in more detail:

- Risk 1: Consumers may not understand what they are buying
- Risk 2: Consumers may not realise what data they will be sharing or how their data will be used
- Risk 3: Consumers may not know who is responsible for addressing their problems
- Risk 4: Consumers may not be able to compare different offers

Research methods

The research that is summarised in this document was undertaken within the Energy Systems Catapult's Living Lab. More information about the Living Lab is available [\[here\]](#) and of the heat plan in the appendix of this report.

The research comprised three elements:

1. The Energy Systems Catapult has trialled new energy service propositions over the past two winters (2017/18 and 2018/19) with 100 households across England and Wales using iterative design-test methods. This research analysed the qualitative and quantitative data collected to generate unique insights into how participants responded to different elements of the 'fair use' and key 'terms and conditions' that were introduced with the new services being trialled.
2. Citizens Advice commissioned the Energy Systems Catapult to complete a specific in-trial activity during interviews with ten participants during January and February 2019 to investigate:
 - their understanding of the novel energy service they were being offered (a 'Heat Plan'); and
 - their expectations on payment and data sharing.
3. Further research was then undertaken with five participants who had chosen to buy a Heat Plan and to switch to Bristol Energy (the energy supplier that was offering the Heat Plan). The purpose at this stage was to investigate:
 - how their expectations compared with the realities of having a Heat Plan;
 - what they anticipated their first bill would be;
 - how they thought their data might be used; and
 - their understanding of the way in which the Heat Plan's pricing was calculated.

Key findings

Risk 1: Did consumers understand what they were buying?

Smart energy products and services may offer consumers new experiences and be priced in new ways. Consumers therefore need to understand what they are buying and what they are being charged for.

Our research found that:

Participants were happy overall that they understood the new offer.

Participants said they were happy that they had understood what was being offered and how much they would be charged when they were considering to buy a Heat Plan. Further information on Heat Plans is available in the appendix. They were also happy with the ways in which the offer was explained to them.

They understood that the offer was personal to them and that it was from a current commercial energy supplier, not the Energy Systems Catapult. Participants were pleased with the service they then received.

Participants understood the core parameters of the Heat Plan, including the length of the contract, the fact that there was no exit fee if they decided to end the contract, and that they could change the details of their Heat Plan once without paying an additional fee. It may be that consumers were able to transfer their understanding of how a similar contract, such as a mobile phone contract, works.

Some participants were confused about how they paid for their energy today, which made it hard for them to understand how the new offer was different.

Participants started the trial paying for their energy through a standing charge and a price for each unit, or kilowatt hour, of gas or electricity used. Heat Plans then offered them something different, which was the chance to pay a fixed price for the number of 'Warm Hours' they used. Participants understood that a Warm Hour was an hour when a room was being kept warm. However, because their monthly direct debit remained the same, many participants did not realise that they used more gas to heat their homes on cold days. This existing confusion made it hard for them to understand what was different about the new offer. As a result, many participants thought they already paid a fixed price for their heating, although the cost varied each week and energy suppliers could increase monthly direct debits after a cold winter.

"Yes, they give you kilowatts, but they don't say that you'll need more kilowatts when it's colder."

"Yes, so it's very sneaky really."

Participants may forget the details of the service they are buying.

The service trialled during the winter of 2017/18 included a Fair Use policy. However, around half of the participants who were interviewed were either unable to recall anything about it or were confused about what it covered.

Risk 2: Did consumers realise what data they will be sharing or how their data would be used?

An aspect of smart energy products and services is that consumers may be required to share information about their day to day activities (for example, when their home is empty and how many people there are in the household). This trial used data about participants' heating schedules and their heating system to offer them a personalised Heat Plan.

Our research found that:

Participants were consistently comfortable with sharing their data – from the point at which they received a Heat Plan offer, to when they activated their Heat Plan, to the moment when they provided their financial and personal details to their new energy supplier.

Participants knew that they were sharing information on their heating preferences with an energy provider so that they could make them a personal Heat Plan offer. No participants declined their Heat Plan offer because of concerns about sharing their data with a new supplier. Similarly there were no complaints from participants that their data had been shared with a commercial energy supplier after they were offered a Heat Plan. Participants all said they were happy to share their data in this way when they were asked at several points during the research.

Some participants were less comfortable to share their data if they did not know how it would be used. For example, Ms Smith¹ was happy to share information about the size of her rooms, when her heating was used, what temperatures she set and how efficient her home was. However, she did not like the idea of just giving away all of her data:

"I think if they sign exactly what they're taking from us, then I wouldn't have an issue. Yes but just signing your life saying 'Yes, have whatever data you want' is probably a bit too much."

However, if consumers become uncomfortable with the way in which data they have shared is being used, it may be too late to address their concerns.

Participants were comfortable with sharing their data, but when they were asked directly about it they did not know:

- who had access to their data,
- how often they had access to it,
- how to request a copy of their data, or
- how to change their data sharing preferences.

If they were to have issues with their data as they were experiencing a service then they may feel differently or have new concerns but this was not seen in this trial. This initial response from participants suggests a high level of trust in those who are holding and using their data. Participants also did not appear to be worried or concerned that the owner of the data and the user of the data may be different.

Participants may only realise how much data, and the type of data, they have shared once they have been using a product or service for some time.

¹ This name has been changed to keep participants anonymous.

Risk 3: Did consumers know who was responsible for addressing their problems?

Delivering smart energy services may require a larger number of parties to be involved than is currently required to supply energy. As a result, if a consumer faces a problem it may not be clear to them who is responsible and therefore who they need to contact. For example, if a consumer agrees that in order to buy an energy service, they will also have insulation, smart controls and a new heating system installed, it may not necessarily be clear who they would then need to contact if there was a problem (i.e. one of the product manufacturers, one of the installers, the service provider, or someone else). In this Living Lab trial, the energy supplier was responsible for delivering energy to the home and billing their customers; whilst the Energy Systems Catapult was responsible for using the energy supply to deliver the service and for ensuring that customers could control their heating.

Our research found that:

Participants were happy overall with the situation but did not actually know who was responsible for addressing problems.

Participants developed a trusted relationship with the Energy Systems Catapult over the course of the trial. This was perhaps because they had learned that they could easily contact Catapult staff by phone, email or the research blog to answer questions or solve problems.

They assumed that adequate 'safety nets' were in place and did not necessarily feel they wanted to know more. When asked about whether there was a fair use policy, one participant presumed that there would be a "law" built in as standard because they thought that some people would always try and use more than was "fair". They felt reassured that this independent trusted single party would hold any specialist knowledge needed to solve their problems. They were not sure whether the Energy Systems Catapult, Bristol Energy or another entity was responsible for supplying their energy, billing them and dealing with related problems.

Participants in the trial were able to find solutions to the problems they experienced.

Participants reported experiencing different problems. Sometimes these were caused by technical problems, for instance with the software or batteries that needed replacing. However, on other occasions this was because the system was not behaving as participants expected it to. For instance, the system was designed to make rooms warm at the times set in the schedule, so radiators were turned on ahead of that time. Some participants were confused that their radiators were warm before they had scheduled rooms to be warm. In this case the system was working as designed, but participants misunderstood how the system operated.

Participants went to different places for different information to get help or solve these sorts of problem. This included looking at the instruction manuals, the information provided about their Heat Plans, or contacting a member of the Energy Systems Catapult staff.

Risk 4: Were consumers able to compare offers?

There is a risk that consumers may not be able to choose the best offer for them if they do not understand or are unable to compare offers from different providers.

Our research found that:

Participants often compared the cost of their new energy service offer with their current energy bill.

As outlined in Risk 1 above, Heat Plans offered consumers the chance to buy Warm Hours instead of kilowatt hours. However, participants often compared the price of the Heat Plan they were offered with what they were paying by Direct Debit for their current energy supply.

"At the end of the day, the way I look at it is, Heat Plan versus how you pay for energy now and if Heat Plan meant that I was paying more than my existing way of paying, then it wouldn't be beneficial for me."

This seems to be a sensible comparison because both prices appeared to be fixed. However, the cost of heating depends on the weather as it takes more energy to warm homes up on cold days than on warm days. This made it hard for consumers to compare the fixed price of the Heat Plan they were offered with what they might end up paying for their energy if the weather changes. Nonetheless, participants tried to compare their current energy payments with the cost of a Heat Plan, despite knowing they weren't directly comparable.

"First reaction was, I suppose it's because we're hardwired into thinking in kilowatt hours and those sorts of things, that is hard for me, my first-, the question came up is, 'Right, let's compare it to what it would cost me on what I'm paying now,' which obviously is tricky to do so. So, it was case of, I started trying to do some calculations to see how it compares. It didn't look overly wrong, I mean, the price...that they offered when I calculated it out for a year, it was a case of then trying to factor in electricity but, ballpark figures, it seems to be about right."

Comparing new services and incumbent services may be difficult for consumers but some participants saw value in buying energy in this new way and being able to compare different providers of this new service. To make a comparison, it was perceived that consumers would need a tool designed to help them compare prices and providers in a similar way that we see in the energy market at the moment.

"I've changed providers several times, and so it's thrown me in terms of knowing that, whereas this, if I imagine it as a system where they have your data and twenty different providers all say, 'This [is] what it'll cost you for a warm hour,' and you just go to the top of the list, see which is cheapest and, boom, a much nicer way of doing it."

Conclusions

In general terms the people who took part in this research were confident that:

- they understood the offer they were buying;
- they understood the data they were sharing, and how it was being used;
- they knew where to go to solve any problems that arose.

Those who chose to try out the new offer felt reasonably confident that it was better compared with their existing heat service.

It should be noted, however, that the team at Energy Systems Catapult that had designed the research had previously given these issues significant thought and as part of that process had co-designed the service with prospective customers. This meant that potentially confusing aspects of the offer had been identified and resolved. The team had invested in high-quality customer services and had put aside contingency funds so that problems that were encountered could be resolved quickly and the consumer protection policy improved if required. Finally, more vulnerable consumers were not included in the research in order to reduce the risk of problems occurring in the first place.

In spite of this process there was still some confusion among consumers as to how the control system worked and what exactly the service offered. This was probably compounded by widespread existing misunderstandings, for instance about how heating works, or about how consumers are billed for the energy they currently use.

Perhaps most significant, there was evidence that problems may only emerge as the service is used, over the longer term. For instance, participants who said that they had understood the Fair Use policy when the service was offered subsequently revealed that they had misinterpreted it. It is the case that problems with new products and services are likely to appear gradually over time. For example, when the system does not behave as anticipated, or when bills arrive that are different from the consumer's expectations.

It is key, therefore, that the energy sector develops the capability to test and learn how to design smarter protection based on real experiences. In this way the sector will ensure that consumers benefit from the opportunities that innovation will bring.

Appendix

Detailed description of a Heat Plan in the marketplace

The key concepts of a Bristol Energy Heat Plan and Warm Hours in 2018/2019 Living Lab trial

- Customers pay a provider for Warm Hours in their Heat Plan.
- Each Warm Hour has a fixed price.
- A Warm Hour is an hour when any room is being kept warm, so there are a maximum of 24 a day
- Customers could pick a Heat Plan with a weekly Warm Hour ‘allowance’ – a Weekly Warm Hour Heat Plan, or they could pay for each Warm Hour as they use them – a Pay As You Use Heat Plan.
- For a Weekly Warm Hour Heat Plan, if a customer uses more Warm Hours than their allowance, then they pay Extras (priced a little higher than a normal Warm Hour). Pay As You Use Heat Plans are based on Extras too, so each Warm Hour costs a little more than a Weekly Warm Hour Heat Plan.
- A weekly Warm Hour plan is also for 12 months, so a customer pays the same price (apart from any Extras they use) each week over the 12 months. Pay As You Use Heat Plans will vary in how much the customer spends each month, but in the Summer they might not use any Warm Hours and not spend anything on heat.
- Bristol Energy customers had to switch to Bristol Energy for their Heat Plan.
- The Heat Plans also included Unlimited Hot Water.

BRISTOL energy	Total weekly price £22.36
85 Warm Hours per Week £0.21/ Warm Hour	£18.03/ Week
Unlimited Hot Water	£4.33/ Week
Extras £0.40/ Warm Hour	<i>For when you have used up your allowance</i>

Free to join, we'll pay any exit fees

Bristol Energy will credit your bill for any standard exit fees from your current supplier

Freedom to change your Heat Plan

You have the option to change your Heat Plan once

Free to cancel at any time

No charges for leaving during the 12 month offer

Reject plan

Select

Energy Systems Catapult supports innovators in unleashing opportunities from the transition to a clean, intelligent energy system.

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