# Smartening up

How to improve people's confidence in smart home technology





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#### **Executive summary**

Direct emissions from buildings account for 17% of the UK's greenhouse gas emissions. Smart home technology has the power to reduce emissions, keep people's homes warm and save them money on bills, by helping the grid to run more efficiently.

The mass uptake of smart home technology will help meet the government's net zero targets. Companies providing smart home technology services should continue to innovate at speed. But this must be supported by a robust regulatory framework to reassure people and build confidence.

In 2022, the government plans to set out an approach to regulating companies providing smart energy products and services. And these regulations must be in place by 2025 to avoid significant detriment.<sup>2</sup>

This report builds on previous Citizens Advice work. In **Demanding Attention**, we assessed the risks and protection gaps for people using smart energy products and services.<sup>3</sup> Right now, the market feels disjointed and confusing for people and the rules aren't flexible enough to keep up with innovation.

Our research asked people what's important to them, heard from smart energy companies about their experiences and considered regulatory approaches in other countries and markets. This report outlines the key priorities that the government must get right to help people feel confident about smart home technology. We want the government to use these priorities to help shape its regulatory approach.

We have identified 3 outcomes for consumers that government should prioritise.

#### People should:

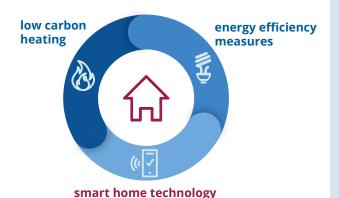
- 1) feel confident about the contracts they sign up to
- 2 know where to go for support
- (3) have control over their data

We have recommended a range of regulatory provisions that could achieve these outcomes.

There are many different ways the government could achieve these 3 outcomes. It is essential that the chosen model is appropriate for the diverse markets in which these companies operate and helps encourage innovation.

### **Background**

Getting homes ready for net zero will require people to make changes to how they use energy in their homes.



We've called for a **single accreditation and inspection body** to give people the confidence to switch to low carbon heating and install energy efficiency measures.<sup>4</sup>

Another piece of the consumer protections puzzle is smart home technology.

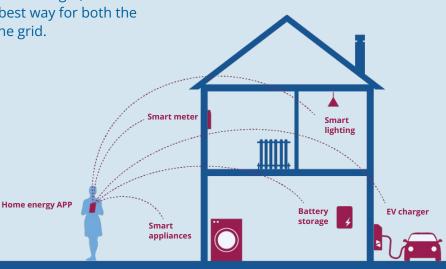
**Smart home technology** has the potential to transform how we use energy.

Households decide the parameters for the level of flexibility that's convenient for them, usually with a home energy app.

Within those parameters, the household's smart products, such as their washing machine or EV smart charger, access electricity in the best way for both the household and the grid.

Together with **'time of use' tariffs**, smart home technology can help households get more for their money by using energy when there's less demand or excess renewable power on the grid.<sup>5</sup>

Early research is finding that using energy flexibly in this way can save an average of 49% annually on energy bills.<sup>6</sup>



#### The challenge

Smart energy products and services are already on the market, but they're not yet mainstream - and not everyone can use them.

We want as many households as possible to benefit from new products and services. Inclusive markets must be the goal and this is the key challenge for regulators.

Our past work found that people who lose out in today's energy market are likely to find it more difficult to understand new and innovative products and services.<sup>7</sup> People's financial situations, attitudes, personal circumstances, tenure and understanding of new business models, as well as the physical attributes of their home, will all be crucial factors.<sup>8</sup>

The growing importance of new business models will require new approaches to regulation.

People's needs must be front and centre. What do people need to understand which offers are right for them? What can help build trust in companies selling new products and services?

For the companies selling these products and services - what are their priorities and what have been their experiences so far? And what can we learn from regulatory approaches from other markets and countries?

In 2022, the government plans to set out an approach to regulating companies providing smart energy products and services. <sup>10</sup> We previously identified that people need similar assurances from electric vehicle smart chargers to the needs identified in this research. <sup>11</sup> So it's positive that the government's proposals will encompass all companies providing a load-controlling role.

In **Stuck in the Middle** we called for regulations to tackle the emerging detriment following the growth of 'third party intermediaries'.<sup>9</sup>

For companies providing smart home technology services, the government has the opportunity now to design protections that prevent consumer detriment, rather than trying to tackle problems later.



### Research approach

This research took a user-centred approach towards defining 3 core protection themes, by speaking to people and companies about their needs and priorities.

From there, we drew on examples of consumer protections in other markets and countries to develop a suitable framework of regulatory options within each core protection theme.

#### Consumer polling

- Nationally representative online survey of 1,006 people
- Carried out by Yonder Data Solutions, 15 to 24 March 2021
- To understand what people currently understand about smart energy products and services, the barriers to engaging with them, and differences across consumer groups

#### Literature review

- Carried out by Lucerna Partners,
   November 2020 to February
   2021
- To understand comparable interventions in other countries and markets



Read full research report here

## Interviews with industry stakeholders

- Industry stakeholders included:
  - Representatives from 20 smart energy companies
- 7 other energy sector stakeholders
- 2 representatives from open banking
- Carried out by Collaborate Research, December 2020 to March 2021
- To understand more about smart energy companies and the context within which they operate



Read full research report here

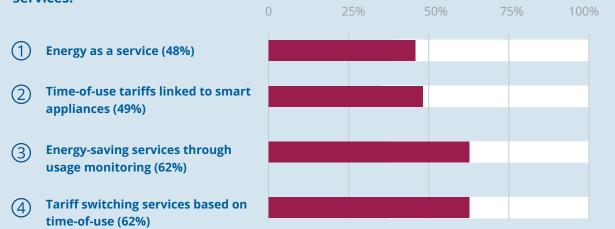
#### Social media analysis

- Conducted using the natural language processing programme Method52, data from September 2020 to May 2021.
- To gain insight about the emerging problems people experience with smart energy products and services

# People's confidence in smart home technology is low

In our consumer polling, we showed people definitions of various smart energy services and asked whether they understood what the service would deliver and whether they'd be likely to use the service.<sup>12</sup>

For most services, only around half of people felt confident they understood these services.



In **Powering Up or Facing Resistance?** we ran comprehension tests with people after they'd read information about smart energy services. 40% got something wrong in the tests.<sup>13</sup>

And even fewer people felt that they would be likely to use these services.

Older people often felt less confident.



Only a quarter (26%) said they would be likely to use energy as a service.



This falls to just 13% of people aged over 65.



Under a third (29%) said that they would be likely to use time-of-use tariffs linked to smart appliances.



In the 18-24 age group, this rises to 49%.



In the 65+ age group, this falls to 16%.

# There are barriers holding people back from using smart home technology



## **Data privacy concerns**



Nearly a quarter of people (23%) we spoke to said that concerns about companies accessing their data is the biggest barrier to using these services.

Data sharing is a sensitive subject and people often want control and choice, even if they don't use it. In **Clear and in Control**, we found that 89% of people feel that having the **ability** to opt out is important to them, even when in practice people often do not choose to opt out.<sup>14</sup> This is known as the 'privacy paradox'.

And there are nuances to how people feel about sharing different types of data. We found that two-thirds of people would feel comfortable with their energy supplier using smart meter data to identify and monitor vulnerable consumers. However, this declined by around a third when it was specified this would involve their energy supplier collecting **their** smart meter energy data to identify if **they** were vulnerable.<sup>15</sup>

If people aren't presented with clear and engaging information about how their data will be used, then it's difficult to make an informed decision. Sometimes the design of sign-up processes for products and services can mean that people won't even realise that they've made a decision about their data sharing preferences. In **Smart and Clear**, we found that lengthy terms and conditions, with complex legal terminology, are neither understood nor trusted by consumers. <sup>16</sup> They're often not read and reduce trust in products and services.

We've continued to see poor design of online transactional processes. In **Buy Now, Pain Later?** we explored how the design of check-out processes for 'buy now, pay later' services often 'nudge' people into decisions they don't realise they're making. We found that 42% of people who used these services didn't fully understand at least one part of what they were signing up for.<sup>17</sup>

It's important that companies selling smart home technology take care when designing their data-sharing consent processes.



## **Concerns about cost**



15% of people said that concern about their bills increasing was the biggest barrier to using these services.

Smart energy technology has the potential to save people money, by incentivising them to use energy when it's cheaper.

But many smart energy products, such as smart washing machines or dishwashers, come with upfront costs. These can be out of reach for a lot of people without financial support.



As well as upfront costs, the financial risk of fluctuating or more expensive bills is something many people on lower incomes are likely to feel less confident about.



For people renting their homes, it can feel less likely that they'll reap the long-term benefits of investing in smart home technology. And the proportion of people renting privately has doubled in the last 20 years.<sup>18</sup>



## **Difficulty understanding offers**



For 11% of people, their biggest barrier was not knowing whether these offers were right for them or finding the offers difficult to understand.

With what's available in the current smart energy market, there are likely to be groups of people who feel that it just isn't designed for them.



Families with young children might be less able to shift their energy use away from peak times.



People with certain routines, such as those who work shifts, might be less able to regularly use energy at cheaper times.



A third of renters feel worried to ask their landlords about making home improvements.<sup>19</sup>



People who are digitally excluded might be less able to access or understand deals and services that require an app or an internet connection.

## There are provisions that people think will help them feel more confident in this market



Our polling found that the majority of people feel government regulation of companies providing smart energy services would help them feel more confident in this market <sup>20</sup>

We presented people with specific provisions and asked whether these would make them feel more confident. The majority of people were supportive of all of these provisions.



Being able to exit unsuitable contracts without exit fees



Clear information about expected costs/savings



Good quality tool to help compare offers



Access to good quality, independent advice



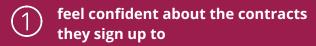
Control over what data they can share, and clear information about what companies can access



Assurances that they won't be left without energy or other services

We have identified 3 outcomes for consumers that the government should prioritise in its regulatory approach.

#### People should:







In the following section, we set out our recommendations for the provisions that could achieve these core outcomes.

## People should feel confident about contracts they sign up to

## A required minimum standard of information provision

Contract terms must be prominent and transparent (Consumer Rights Act 2015), but there are no sector-specific requirements for companies providing smart energy products and services.

Ofgem's supply licence conditions require energy suppliers to provide certain information to their customers, for example principal contract terms and estimated annual cost calculations (SLC 20-22, 31F).

Smart energy companies should be required to meet a minimum standard of information provision. This should include the initial expected costs and savings attached to a product or service.

And companies should be required to notify customers when costs and savings change over the course of a contract or product lifecycle.  A requirement to allow customers to exit their contract within an agreed period before their contract ends

People must have the opportunity to cancel a subscription or contract within 14 days (Consumer Contracts Regulations 2013). The length and terms of this cooling-off period is currently being reviewed.

Energy suppliers must allow customers to switch supplier within the 49 days before the end of their contract (SLC 24.8).

In the telecoms sector, people have the right to exit their mobile, landline or broadband contract within a month of price increases if the rise is of 'material detriment', for example a rise that's bigger than the RPI rate.

As things stand, there are plenty of offers from smart energy companies that are exit fee free.

But as the market develops, such assurances could become less common.

To help people feel confident, they need the flexibility to exit contracts, regardless of the company they buy from.

Products and services should be designed with a smooth contract exit process in mind. This should also apply to the increasing number of bundled offers, where multiple companies offer different parts of the product or service.

 A requirement to waive contract fees if the service falls below the promised standard

Energy suppliers must ensure that each customer is treated fairly, waiving exit fees where appropriate (SLC 0).

The exit fees charged by smart energy companies should be cost-reflective. In addition, if contract terms were not made clear or if the service falls below the

### People should feel confident about contracts they sign up to

promised standard, then companies should allow for fees to be waived. Ofcom's voluntary code of practice on broadband speed is a useful prototype.

## Quicker investigations into unfair contracts

There are broad rules specifying that contract terms must not be unfair (Consumer Rights Act 2015). Information should not be difficult to find or understand and any charges should be proportionate.

As the regulator and enforcer for these rules, the Financial Conduct Authority has powers to review contract terms and share intelligence with the Competition and Markets Authority (CMA), who may then investigate.

However, this can be a long process.<sup>21</sup> We'd like to see much quicker investigations where consumer detriment

is suspected.<sup>22</sup>

## Accreditation for smart energy digital comparison tools

Digital comparison tools (DCTs) are already helping people to make informed decisions when choosing between smart energy products and services.

But it's not always clear how they get their data and what assumptions are made in order to produce estimations. We know that it's important for people to trust any comparison tools that use their data.

BEIS has funded the development of a smart tariff comparison prototype tool, showcasing high standards of data transparency.<sup>23</sup>

And Ofcom runs a voluntary accreditation scheme which requires DCTs to adhere to a code of conduct spanning transparency, accessibility and reliability.

A similar accreditation scheme for smart energy DCTs, building on the standards set by BEIS' prototype tool, could improve people's confidence in choosing an appropriate contract.



Sam had a solar panel and battery fitted, and was expecting payment for exporting their excess energy. However they haven't received payment, and then found out in the terms and conditions that they would not start receiving payment until 3 months after the contract started. They feel that this was not adequately explained to them.

Source: Analysis of Twitter data

## 2 People should know where to go for support

#### A requirement to provide access to advice and redress

Energy suppliers are required to follow a clear complaints process, provide company contact details and signpost to free independent advice (Citizens Advice) and alternative dispute resolution (the Energy Ombudsman).

The Ombudsman can instruct companies company to take certain actions and provide compensation.

Smart energy companies that are not covered by supply licence conditions don't have to follow these rules. Often, the customer's only option is to challenge the decision in court under consumer law.

The consensus among smart energy company representatives we spoke to was that establishing a well-functioning system of redress is essential to a well-functioning smart energy market that protects consumers.

We can learn from existing voluntary schemes for emerging energy technologies.

The Electric Vehicle Consumer Code (EVCC) is open to companies providing EV home chargepoints. In addition to a good standard of technical and service quality, customers also have access to free expert advice and to Renewable Energy Assurance's dispute resolution service.

Under the UK government's Green Deal scheme, energy-saving improvement providers should receive and handle any complaint, regardless of where the ultimate responsibility lies.

Learning from and applying these types of models to smart home technology could be a starting point. An effective single complaints and redress journey should build trust in the market, benefiting both industry and consumers.

#### A suitable funding model for advice and redress services

As the smart energy market grows, offers are likely to become increasingly complex. Provision of good quality independent advice and access to an independent dispute service will require adequate funding.

Access to advice and support is currently paid for by a levy on energy distribution companies, whereas cases dealt with by the Energy Ombudsman are paid for individually by energy companies. There may be scope to fund expanded advice functions for smart energy companies in a similar way.

## 2

#### People should know where to go for support

## An incentive or grant scheme to widen access

Given people's concerns about costs, grants and incentives will be an important way to widen the accessibility of smart home technology.

Some schemes have already been developed to help people get their homes ready for net zero. In September 2020 the government launched the Green Homes Grant scheme to help people pay for energy efficiency changes in their homes. However, the scheme closed in March 2021 and by May only 14,500 households managed to use the scheme to make energy efficiency improvements to their homes.

Our research showed that people found the scheme difficult to understand and navigate, and some groups in particular required extra support to use the scheme.<sup>24</sup> We also found that rogue traders and scammers were taking advantage of the scheme to make false claims and target consumers in vulnerable circumstances.

We've already called for a **single accreditation and inspection body** to give people the confidence to switch to low carbon heating and install energy efficiency measures.<sup>25</sup>

The Electric Vehicle HomeCharge Scheme (EVHS) gives people a £350 discount off the cost of an electric vehicle home chargepoint. The Smart Export Guarantee also exists to allow consumers to sell electricity back to the grid. However, these schemes are technology specific and limited.

A good incentive or grants scheme that builds on learnings from previous and existing schemes could increase access to smart energy products and services for all consumers, including those on low incomes and those living in the private rented sector.



Mattheo signed up to a tariff with an energy supplier which included battery and solar storage. However, his solar panel has tripped and cut off their electricity. Mattheo's wife is disabled and relies on electrical equipment to help her breathe. They tried to contact the supplier but were unable to get hold of them because their phone lines closed at 4.30pm, so they tried to contact them on Twitter.

Source: Analysis of Twitter data

#### ③ People should have control over their data

#### A requirement to allow people to make choices about how their data is used

In order for people to make informed choices about their data-sharing preferences, they need to understand how companies will use their data.

The General Data Protection Regulation (GDPR) means that personal data can only be processed when there is a lawful basis to do so, and outlines what lawful means. In a post-Brexit landscape, the UK is considering its own approach. It's crucial that this does not reduce the level of protection provided by GDPR.<sup>26</sup>

There are energy-specific protections, such as the Smart Meter Data Access and Privacy Framework set out in the supply license conditions. This framework could be used as a basis for protecting consumers accessing services through companies other than an energy supplier.

Companies providing smart home technology have the potential to collect and use their customers' data for a wide range of purposes. For example they can help people choose the right tariffs or services, based on their previous choices and patterns in energy usage.

Autonomous decision-making has potential advantages. However there are also risks about the kinds of decisions that companies make about consumers based on their data, and the kind of options that different people end up having.

There are no substantive existing protections against the risks posed by autonomous decision-making and price optimisation in the energy market, although there are examples of emerging protections in insurance markets.

Many US states have implemented a ban on price optimisation.<sup>27</sup> In the UK, the

financial regulator has strengthened its product governance rules, requiring firms to ensure their products offer fair value and avoid unlawfully discriminating against actual or potential customers.<sup>28</sup> However there is no real evidence of impact yet.

Given the potential for price discrimination to emerge in the smart energy sector, similar rules should be explored and companies should be required to mitigate the risks associated with autonomous decision-making.

A central solution, such as a data dashboard, to provide people with control over their data

Although people do have some rights to choose the personal data they share, it is often reduced to a yes or no choice and is time-consuming and complicated to engage further.

### 3

#### People should have control over their data

In 2018, we conducted a feasibility study for the concept of a data dashboard tool, which would allow consumers to see who is accessing their data, amend their choices and share their energy usage data with trusted third parties to compare offers.<sup>29</sup>

The Australian government's consumer data right, introduced in 2018, shares many of the same features and aims as a data dashboard. The system is designed to explicitly provide verified businesses with access to personal data, and allows consumers to transfer their data from their old provider to the new one.

Consumers are able to see the data they have consented to sharing and are able to withdraw their consent to share that data at any time. Currently, the consumer data right exists in a limited way within banking, but it is due to be extended to energy and telecoms in the future.

Another suggested solution is 'data trusts'. While the exact design of data trusts is uncertain, as they are yet to be implemented, the principle is that data trusts would act as intermediaries for people. They would act on behalf of data subjects based on their general attitudes to data-sharing. The model could protect individual and collective data rights by giving the steward the power to bargain on behalf of a pool of data subjects.

It is generally agreed that there would be a 'market of data trusts', with consumers having the ability to choose a trust that reflects their choices and needs.

Currently only limited pilots of data trusts exist, so it is difficult to draw conclusions about their impact.

The government's Smart Data Review is considering how access to smart data can support better consumer outcomes across markets, including how consumers

and their data can be protected.<sup>30</sup> We look forward to the outcomes of this, following its 6-month extension from June 2021.

The government should build on this work to explore the options of a data dashboard, a data right and data trusts. It should use the outcomes to help inform the regulatory approach for smart energy companies.



Jakob was trying to sign up to use a smart thermostat and the service provider was requesting personal information including their address. He wasn't sure why the provider needed this personal information for him to use the service.

Source: Analysis of Twitter data

# Our recommended consumer protection priorities for smart home technology

- People should feel confident about contracts they sign up to
- People should know where to go for support

People should have control over their data

#### The regulatory approach should include:

- A required minimum standard of information provision
- A requirement to allow customers to exit their contract within an agreed period before their contract ends
- A requirement to waive contract fees if the service falls below the promised standard

 A requirement to provide access to a single point of contact for advice and redress

 A requirement to allow people to make choices about how their data is used

#### And the government should explore some wider provisions:

- Quicker investigations into unfair contracts
- Accreditation for smart energy digital comparison tools
- A suitable funding model for advice and redress services
- An incentive or grant scheme to widen access

A central solution, such as a data dashboard, to provide people with control over their data

#### Conclusion

A wide range of smart home technology products and services are already on the market, promising to save people money and make their lives easier. Our research shows that there are a number of fundamental barriers holding people back from the full potential of this market and threatening the government's net zero commitments.

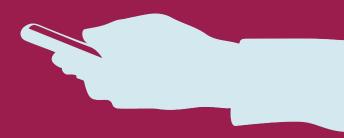
In **Stuck in the Middle**, we concluded that authorisation was the most suitable regulatory approach for third party intermediaries (TPIs).<sup>28</sup> Smart energy companies are similar to TPIs in many ways - and sometimes a company might be active in both markets, for example companies offering bundled services including switching and load-controlling.

This report focuses on how to achieve 3 core outcomes - helping people feel confident signing up to contracts, knowing where to go for support and having control over their data.

We remain open minded about the form that regulation should take, as long as it's able to achieve these 3 core outcomes. It must also be able to be applied across the diverse markets in which these companies operate and encourage innovation.

For these reasons, we're minded towards more flexible models, such as authorisation or accreditation, rather than more prescriptive approaches such as licensing.

Crucially, the starting point for this work was people and what outcomes they need to see in order to feel confident. By drawing on the priorities we've set out, the government can confidently design the new regulatory approach with consumers at the heart of the process.



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## **Appendix**

Definitions of smart energy services provided to consumers in the polling by Yonder Data Solutions

(1) Energy as a service

Companies that access information about how and when you use energy to sell you an outcome, like an hour of warmth of 21 degrees in your living room, or 50 miles of charge for your electric vehicle.

(2) Time-of-use tariffs linked to smart appliances

Companies that help you use electricity when it's cheapest by automatically turning on or off smart appliances in your home at certain times. This might mean switching your energy tariff.

(3) Energy-saving services through usage monitoring

Companies that access information about how and when you use energy to give you tailored tips on how to reduce how much energy you're using.

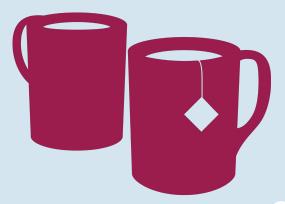
4 Switching services based on time-of-use

Companies that access information about how and when you use energy to tell you which offers would work best for you and/or automatically switch you to that offer.

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Details of research methodologies and links to individual research reports can be found on page 6.



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Design: Carmela Pica

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