



Department for  
Business, Energy  
& Industrial Strategy

# Energy Bill Policy Statement

Energy Smart Appliances and Load Control

December 2022



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## Summary

The Energy Security Bill was introduced into Parliament on 6 July 2022. This Bill will deliver a cleaner, more affordable and more secure energy system for the long term. It builds on the ambitious commitments in the British Energy Security Strategy to invest in homegrown energy and maintain the diversity and resilience of the UK's energy supply. ‘

Transitioning to a smart and flexible energy system has the potential to reduce costs by up to £10 billion a year by 2050<sup>1</sup>. These benefits would be passed on to all consumers through their energy bills, and consumers who take part in Demand Side Response (DSR) through using smart appliances and services will see greater savings.

The Energy Security Bill makes provision for two key demand-side measures – (i) the regulation of energy smart appliances (ESAs) and (ii) regulation of organisations who control smart appliances (load controllers) through licensing. These measures will ensure Government objectives for a smart and secure electricity system can be fully met, by helping consumers participate confidently using their ESAs and mitigating risks such as cyber security.

Below sets out more information on how Government intends to implement these measures, and regulations will be developed in collaboration with industry in a proportionate and flexible way.

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<sup>1</sup> <https://www.gov.uk/government/publications/transitioning-to-a-net-zero-energy-system-smart-systems-and-flexibility-plan-2021>

## Why is Government taking these powers?

Electricity demand fluctuates throughout the day (e.g. peaking in the evening when millions of people cook dinner at the same time). Increasingly, with the shift to renewables, the supply of electricity will also fluctuate in different locations and at different times of day. The Electricity System Operator constantly balances supply and demand, second by second, to ensure that the two are in equilibrium. As we electrify sectors such as transport and heat, the electricity system needs to retain 'flexibility' to enable this.

Consumers will become an integral part of helping to balance the system by opting into being flexible with their energy use, for example by charging their electric vehicle (EV) overnight using a smart chargepoint, and being financially rewarded for doing so. This flexibility is often termed "demand side response" (DSR) and the organisations who provide these smart services by controlling ESAs are referred to as "load controllers".

Government is therefore seeking powers through the Energy Security Bill to create the right technical frameworks to unlock the potential of flexibility, improve the security of the electricity system and give consumers confidence to engage with a smart and flexible system.

## What powers is Government taking?

**Powers to set requirements for energy smart appliances:** The Bill will provide Government with powers to require ESAs (such as smart EV chargepoints and smart heat pumps) to meet minimum technical requirements for cyber security, interoperability, data privacy and grid stability. These powers will also allow Government to mandate that electric heating appliances and EV chargepoints must have smart functionality, allowing consumers to have the option of using these devices in a smart way and prohibiting the sale of non-smart devices in Great Britain. Although there are existing powers<sup>2</sup> in relation to EV chargepoints which allow Government to make regulations for smart EV chargepoints, additional powers are needed to ensure that a coherent approach can be taken to regulating all ESAs given the degree of similarity across this cohort of devices, in turn allowing Government to rationalise and simplify the regulation in this space.

**Powers to make activities relating to load control licensable and to amend licenses and codes:** The Bill provides powers to licence organisations who are involved in controlling ESAs. This will ensure that organisations who control large amounts of electrical load on behalf of consumers operate in a way which is beneficial and safe for consumers and the energy system, for example meeting requirements for consumer protection and cyber security. In addition, the Bill provides the power to amend licences and codes to ensure the new framework fits in with the existing energy system licensing landscape.

Both measures are seeking enabling powers due to the technical nature of requirements, and so that regulations can be updated as the market grows and innovates, for example as new smart appliances come on the market or new business models for load control emerge.

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<sup>2</sup> The Automated and Electric Vehicles Act 2018 <https://www.legislation.gov.uk/ukpga/2018/18/contents/enacted>

## How will Government use these powers?

Government has published its consultation on Delivering a Smart and Secure Electricity System<sup>3</sup> which sets out a proposed framework for regulating ESAs and load control activity. The consultation includes an indicative timeline for the implementation of regulatory measures and proposes a phased approach (see table below), subject to further policy development and consultation. This phased approach would see a number of statutory instruments being laid across the mid to late 2020s.

Phase	Proposal	Outcome
Short-Term (by the mid-2020s)	To require energy suppliers to make time-of-use tariff data openly available in a common format, accessible over the internet.	Time-of-use tariffs are electricity tariffs where the unit price for electricity varies throughout the day. Such tariffs will, for example, incentivise consumers to charge their EV at times when impact on the energy system is less. Standardising tariff information will ensure that consumers can use their smart appliances with any time-of-use tariff from any energy suppliers, enabling greater choice and market competition.
	To require domestic-scale ESAs, including heat pumps, storage heaters, heat batteries and batteries, to meet minimum cyber security and grid stability requirements.	Appliances sold in Great Britain that already have smart functionality will need to meet essential requirements to ensure they are safe for both consumers and the grid. This means they will be protected from cyber-attack and from causing grid stability issues.
Medium-Term (mid-2020s)	To establish a proportionate and flexible licensing framework for organisations providing DSR to domestic and small-non-	Organisations who are involved in controlling ESAs to provide smart services to consumers will have to obtain a licence and

<sup>3</sup> <https://www.gov.uk/government/consultations/delivering-a-smart-and-secure-electricity-system-the-interoperability-and-cyber-security-of-energy-smart-appliances-and-remote-load-control>

	<p>domestic consumers, regulated by Ofgem.</p> <p>To require heating appliances with the greatest flexibility potential, namely heat pumps, storage heaters, and heat batteries, to have ‘smart’ functionality, by prohibiting the sale of non-smart appliances.</p>	<p>meet licence conditions, so that they operate in a way which is safe for consumers and the grid.</p> <p>Certain heating appliances sold in Great Britain will need to have smart functionality, so that they have the functionality needed for consumers to benefit from smart services (e.g. Time-of-use tariffs and DSR services).</p>
<p>Long-Term (mid-late 2020s)</p>	<p>To require larger domestic-scale ESAs, such as EV charge points, batteries, and heat pumps, to be fully interoperable with DSR service providers (meaning devices can work with different service providers), and to meet further requirements for cyber security, grid stability and data privacy.</p>	<p>Devices with smart functionality that are sold in Great Britain will meet a standard(s) to ensure they meet more advanced requirements to fully protect consumers and the energy system, as uptake increases to mass market. These will build on the requirements proposed in the short-term.</p>



## Frequently asked questions

### **How will industry be affected by the secondary legislation proposals?**

Government will work collaboratively and closely with industry to develop future regulations made under these powers. The published consultation sets out proposals for a delivery and governance framework, which includes setting up industry working groups who will help shape requirements for ESAs and load controllers.

Initially, Government expects to agree with industry a set of minimum technical requirements for ESAs around cyber security and grid stability, and in the longer term develop a technical standard for appliances, to ensure interoperability between devices and different service providers. Standardisation will also create greater competition amongst providers of smart services, allowing businesses to provide better services for consumers, and monetise their flexibility.

### **How will the secondary legislation proposals impact consumers?**

A smart and flexible energy system can reduce costs by up to £10 billion a year by 2050, by reducing the amount of new generation and network infrastructure needed to meet increased peak electricity demand. Achieving this potential saving will reduce the overall cost of electricity for all consumers, as lower system costs feed through into lower consumer prices.

In addition, individual consumers can be financially rewarded for using smart appliances and services, and through being flexible with when they use electricity, they can save money on their energy bills.

### **How do these measures relate to the roll out of smart meters?**

Smart meters provide a foundational capability in the smart energy ecosystem and Government is considering where it is appropriate to use this infrastructure. These measures are not entirely dependent on smart metering as consumers without a smart meter can still use an ESA, however consumers with a smart meter will have greater visibility and therefore ability to control their energy consumption. Smart meters will allow consumers to benefit from propositions such as time-of-use tariffs, that require half-hourly metering.

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