

The Energy Institute (EI) welcomes the opportunity to make the following submission to the Office of Gas and Electricity Markets (Ofgem) and the Department for Business, Energy & Industrial Strategy (BEIS) on flexible and responsive energy retail markets.

1. About the Energy Institute

The Energy Institute¹ is the chartered professional membership body bringing global energy expertise together. We're a unique network with insight spanning the world of energy, from conventional oil and gas to the most innovative renewable and energy efficient technologies. The global energy industry, the people working in it and wider society all benefit from the EI's work. We gather and share essential knowledge about energy, provide the skills that are helping us all use it more wisely, and develop the good practice needed to keep it safe and secure.

We articulate the voice of energy experts, taking the know-how of around 20,000 members and 250 companies from 120 countries to the heart of the public debate.

And we're an independent, not-for-profit, safe space for evidence-based collaboration, an honest broker between industry, academia and policy makers.

2. Energy Institute response

2.1. This response is based on the views of EI members about the future UK energy retail market and placing consumers at the heart of an intelligent, low-carbon energy system. These views were collected via several member engagement activities, including:

- The Energy Barometer 2019², an annual survey of the EI College, a randomly-selected group of EI professional and pre-professional members living and working in the UK. A total of 474 members (a sample size representative of overall EI professional and pre-professional members in the UK) completed the survey online in February-March 2019.
- Past editions of the Energy Barometer surveys, conducted between 2015-2018.
- Discussions at the EI Energy Policy Debate "Making the energy retail market work for consumers³" in London, July 2019
- Ongoing consultation and engagement with industry specialists and subject matter experts.
- External industry reports and analyses.

3. Executive Summary

3.1. In order to meet the requirements of the amended Climate Change Act (2008),⁴ which commits the government by law to reducing greenhouse gas (GHG) emissions to net-zero by 2050, a significant step change in the transformation of the energy industry and retail market is required. To have any chance of success, policy will need to adapt rapidly to ensure regulation of currently un- or under-regulated markets.

3.2. The future energy retail market must decarbonise and embrace the benefits of flexibility, while ensuring fair prices and appropriate safeguards, especially for vulnerable consumers.

¹ <https://www.energyinst.org/about>

² <https://www.energyinst.org/barometer/2019>

³ https://www.energyinst.org/whats-on/search/events-and-training?meta_eventId=61907D

⁴ <http://www.legislation.gov.uk/ukpga/2008/27/contents>

- To this effect, the EI will endeavour to enable evidence-based collaboration, by facilitating cooperation between the energy industry and policymakers.
- 3.3. The Government should endeavour to create a level playing field for demand- and supply-side flexibility. Alongside current market structures, lack of political will is seen by energy professionals as a major barrier to scaling up flexibility in the UK.
 - 3.4. Tariffs that reward flexible demand are expected to be the most popular new energy service offer for domestic consumers by 2030. However, EI members do not believe that peer-to-peer energy trading will be desirable.
 - 3.5. Improved engagement is needed to ensure that consumers see the benefits of the digital and low carbon transformation of the energy system. The energy industry expects flexibility to contribute significantly to its development and decarbonisation, and improved communication is seen as a way forward. Half of EI members believe promotion of the benefits of smart technologies is needed to assure householders capitalise on the lower bills and system benefits promised by these technologies.
 - 3.6. EI members expect to see a future UK domestic retail market that is quite different from today, with the 'Big Six' energy suppliers no longer expected to dominate. Therefore, current regulations are unlikely to accommodate the needs of an increasingly diverse market. EI members emphasise the importance of a stable policy framework and long-term support to enable technological innovation.
 - 3.7. The Energy Company Obligation is valuable and may, with sufficient investment, reduce the number of consumers in fuel poverty. The Warm Home Discount can alleviate some of the financial burden faced by low-income and vulnerable households, however it does not address the root causes of fuel poverty. 40% of Energy Barometer 2019 respondents cite 'increased funding for energy efficiency improvements' as the best means to alleviate fuel poverty.
 - 3.8. EI members highlight the importance of flexibility and the need for the Government to incentivise flexibility provision. This will improve efficiency, reduce costs, and help the market to deal with future uncertainty. However, two fifths of EI members do not believe the UK has made sufficient progress in this area since 2017.
- 4. Question 1 – Do you agree with our vision for the future of the energy retail market, the outcomes we are seeking to achieve and our characterisation of the key challenges we need to overcome?**
- 4.1. In order to meet emissions reductions targets, every sector of the economy must be decarbonised, including power, heat and transport. In the UK, significant progress has been made in decarbonising power generation, thanks to improvements in efficiency, switching from coal to natural gas, and an increase in the share of renewable electricity sources. In 2018, the proportion of low-carbon electricity generated (includes nuclear power) reached a record 52.8% (BEIS).
 - 4.2. By contrast, progress in decarbonising heat and transport has been extremely limited. For example, just 4.5% of total UK buildings heat demand came from low-carbon sources in

- 2017⁵. According to the Energy Technologies Institute⁶, domestic space and water heating accounts for 23% of UK energy demand and 20% of UK carbon emissions.
- 4.3. To have any chance of successfully meeting the ambitious new UK greenhouse gas (GHG) target of net-zero emissions by 2050, a significant step change in the transformation of the energy industry is required. The Committee on Climate Change's (CCC) Net Zero report⁷ recommends that "delivery must progress with far greater urgency"; tasks include phasing out over 20 million petrol and diesel cars, establishing and executing a plan to decarbonise UK heating systems, and introducing trials for carbon capture and storage (CCS), heat pumps and hydrogen.
 - 4.4. This pace of change extends to the retail market - the consumer experience may be drastically different in the decades to come, but regulation must continue to protect consumers. For instance, possible changes include full rollout of smart meters and increased connectivity to the Internet of Things (IoT); demand aggregators managing groups of smart appliances; a home battery system and/or electric vehicle (EV) linked to the grid; and multi-year contracts for energy (or other forms of energy-as-a-service). Policy will need to adapt rapidly to ensure regulation of currently un- or under-regulated markets (for example, auto-switching services⁸).
 - 4.5. The EI is in agreement with BEIS and Ofgem that the future energy retail market must decarbonise and embrace the benefits of flexibility, while ensuring fair prices and appropriate safeguards, especially for vulnerable consumers. To this effect, the EI will endeavour to enable evidence-based collaboration, by facilitating cooperation between the energy industry and policymakers.

5. Question 2 - Are there examples of new products, services and business models that would benefit current and future consumers, but are blocked by the current regulatory framework?

- 5.1. A majority of EI members believe that the Government should support the creation of a market or other types of incentives for the development of flexibility by large non-domestic consumers. Two fifths believe the Government should endeavour to create a level playing field for demand- and supply-side flexibility. This echoes the ruling by the European Court of Justice last year which led to the suspension of the UK Capacity Market's operations⁹.
- 5.2. EI members view lack of political will as the main barrier to scaling up flexibility. Other notable barriers were 'Lack of integration between energy systems' and 'current market structures around flexibility', both of which were identified by about a third of EI members.
- 5.3. EI members strongly believe that low bills are the number one priority for domestic energy consumers. Although more than half of respondents to the Energy Barometer 2019 signalled that consumer and citizen pressure is a driver of the low carbon transition, they do not think that energy providers 'ensuring a low carbon energy supply' is currently a top priority for consumers. And although EI members identify a more integrated systems view (connecting electricity, heat and transport) as a cost-effective route to decarbonisation,

⁵ <https://www.energy-uk.org.uk/media-and-campaigns/press-releases/432-our-work/6864-decarbonising-heat-and-transport.html>

⁶ <https://www.eti.co.uk/insights/heat-insight-decarbonising-heat-for-uk-homes>

⁷ <https://www.theccc.org.uk/publication/net-zero-the-uks-contribution-to-stopping-global-warming/>

⁸ Examples include Weflip, Migrate and Look After My Bills

⁹ <https://www.carbonbrief.org/qa-what-next-for-uk-capacity-market-after-surprise-eu-ruling>

they do not believe that integration of energy with other services (such as water, transport or ICT) is a priority for consumers.

- 5.4. Regarding new services, 'tariffs rewarding flexible demand' are expected to be the most attractive energy service offer to domestic customers by 2030, according to EI members. Three out of five respondents chose this, almost twice as many as the second most popular option.
- 5.5. Peer-to-peer energy trading is expected to be least desirable to domestic customers by 2030, with only 15% of respondents choosing this option. Additionally, two thirds of respondents think 30% or fewer of UK domestic consumers will trade energy with other peer-to-peer consumers by 2030, confirming the perceived lack of interest in this energy service offer. The success of peer-to-peer trading relies on consumers' willingness to change; one quarter of overall respondents think consumers will instead stick with conventional offers.

6. Question 3 – Are there current or emerging harms to energy consumers which are currently out of scope of the regulatory framework? Do these differ for domestic and non-domestic consumers?

- 6.1. Improved engagement is required to ensure that consumers see the benefits of the digital and low carbon transformation of the energy system. Some of these benefits will be related to new energy service offers such as those that reward flexible demand; a quarter of respondents perceive a 'lack of understanding of the value of flexibility for consumers' as the main barrier to scaling up flexibility and realising these benefits.
- 6.2. EI members are sceptical that consumers will reap the rewards from the increased availability of energy use data. Twice as many respondents believe energy service providers, as opposed to their customers, will financially benefit the most from the open data revolution in energy.
- 6.3. With the possible introduction of new offers including energy-as-a-service, where energy companies take control of one or more aspects of a customer's energy portfolio, it is vital for the energy retail market to regain consumer trust. According to the Edelman Trust Barometer 2019¹⁰, just 50% of UK respondents trust businesses in the energy industry to "do what is right", a smaller proportion than for the automotive, financial services or retail industries. Regarding domestic customers being prepared to allow electricity suppliers to control their appliances, 61% of respondents think that currently a minority of households would allow suppliers such control, even if financial benefits are passed on.
- 6.4. This poses a meaningful challenge to an industry that expects flexibility to contribute significantly to its development and decarbonisation. Improved communication is seen as a way forward; half of respondents believe promotion of the benefits of smart technologies to household consumers is needed to capitalise on the lower bills and system benefits promised by these technologies. This echoes the need for improved public engagement which was cited (as in previous years) as one of the biggest challenges for the energy industry in 2019.

¹⁰ <https://www.edelman.co.uk/research/2019-trust-barometer>

7. Question 5 - Are incremental changes to regulation sufficient to support the energy transition and protect consumers? Or does this require a more fundamental reform, such as moving to modular regulation?

- 7.1. As the UK moves towards a low carbon energy system, changes in technology will lead to changes in business models, and vice versa. EI members expect more decentralisation, increased customer engagement, and a greater focus on service provision¹¹. This is not surprising given the projection of greater penetration of renewables and a more flexible energy system. The main driver of new business models is thought to be technological innovation, along with policy shifts and commercial factors.
- 7.2. Just as new technologies may necessitate new business models, new business models and market frameworks can foster technological innovation. Members see opportunities for such stimuli in the areas of decentralised renewable energy, energy efficiency and smart grid infrastructure. EI members emphasise the importance of a stable policy framework and long-term support to enable technological innovation.
- 7.3. EI members expect to see a future retail market that is quite different from today, with the 'Big Six'¹² energy suppliers no longer expected to dominate market share. Therefore, current regulations or small, incremental changes are unlikely to accommodate the needs of an increasingly diverse market as well as varied business models and technologies.

8. Question 17 - What protections or support may be required to engage consumers in vulnerable situations in the future market?

- 8.1. When it comes to ensuring a fair and just transition to a low carbon economy, 40% of Energy Barometer 2019 respondents selected 'increased funding for energy efficiency improvements' as the best means to ensure the alleviation of fuel poverty, with a further 12% citing 'more stringent minimum efficiency standards'¹³.
- 8.2. Decarbonising heat is a huge challenge that requires large-scale improvements in energy efficiency, as well as millions of homes replacing gas or oil-fired boilers with a new technology (hydrogen boilers, heat pumps, etc). There is no one-size-fits-all solution, as the fuel mix and the means of delivery to the end-user vary greatly from one area of the country to another.
- 8.3. Vulnerable or low-income consumers are often forced to pay more in order to heat their homes due to poor insulation and inefficient boilers. Furthermore, these households may not have the capital required to take advantage of energy efficiency improvements or low carbon solutions that could reduce the cost of their energy bills. A fifth of EI members believe the low carbon transition will escalate fuel poverty in the UK, regardless of government interventions to support the most vulnerable.
- 8.4. Over the past five years (2015-2019), successive governments have struggled to implement energy or social measures to significantly reduce the number of people in fuel poverty¹⁴. Reducing fuel poverty is consistently seen by EI members as one of the most ineffective

¹¹ Energy Barometer 2017 <https://www.energyinst.org/exploring-energy/resources/barometer>

¹² As of Q1, 2019, the 'Big Six' energy suppliers (British Gas, EDF, E.ON, npower, Scottish Power and SSE) enjoy a 73% share of the domestic UK retail market <https://www.ofgem.gov.uk/data-portal/electricity-supply-market-shares-company-domestic-gb>

¹³ <https://www.energyinst.org/barometer/2019#consumers-section>

¹⁴ <https://www.gov.uk/government/statistics/annual-fuel-poverty-statistics-report-2019>

areas of energy policy. Over 80% of respondents each year stated that UK energy policy has had a negative effect, or no effect at all, on reducing fuel poverty over the previous year. Over two-thirds of EI members believe that the most effective policy for decarbonising heat is to introduce financial incentives, such as tax credits or capital grant schemes (Energy Barometer 2017¹⁵). As such, effective implementation of the Energy Company Obligation is valuable and may, with sufficient investment and successful implementation, reduce the number of consumers in fuel poverty.

- 8.5. By subsidising the energy bills of vulnerable households, the Warm Home Discount can alleviate some of the financial burden faced by low-income and vulnerable households, however it does not address the root causes of fuel poverty. Improving energy efficiency is a vital first step in both decarbonising heat and easing the burden of fuel poverty on the most vulnerable consumers in society.

9. Additional points on the role of flexibility

- 9.1. With the rise of renewables and changes in demand patterns, flexibility in its various forms plays an ever-greater role in maintaining the stability of the UK energy system, particularly the electrical grid. This ranges from battery storage and demand side response to distributed generation from small, local providers. The 2019 Energy Barometer asked EI members about growth potential, barriers to scaling up system flexibility, and methods of engaging industry and domestic consumers.
- 9.2. EI members send a clear message on the importance of flexibility throughout the survey - 82% of respondents support incentivising flexibility provision in some form. Out of all the wide-ranging potential benefits of flexibility, the ability to deal with future uncertainty in the energy system is flagged up as the most important by nearly a third of respondents. Flexibility provision can assist in improving energy efficiency, as well as reducing required spend on new grid infrastructure.
- 9.3. Despite this potential and commitments made by the Government and regulator in 2017¹⁶, two out of five EI members do not believe that the UK has made sufficient progress on flexibility in the past two years.

¹⁵ <https://www.energyinst.org/exploring-energy/resources/barometer>

¹⁶ <https://www.gov.uk/government/publications/upgrading-our-energy-system-smart-systems-and-flexibility-plan>