

Energy Systems Catapult: Consultation Response

Flexible and Responsive Energy Retail Markets

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Introduction

[Energy Systems Catapult \(ESC\)](#) was set up to accelerate the transformation of the UK's energy system and ensure UK businesses and consumers capture the opportunities of clean growth. The Catapult is an independent, not-for-profit centre of excellence that bridges the gap between industry, government, academia and research. We take a whole systems view of the energy sector, helping us to identify and address innovation priorities and market barriers, in order to decarbonise the energy system at the lowest cost.

Key Points

Overarching approach

- The ESC supports the broad emphasis in the review of the energy retail market on reform to enable innovation and the emergence of new business models and differentiated services. Innovation will be key to enabling efficient decarbonisation and management of the wider transition to smart, clean energy services.
- We support the key components of the broad vision for future energy retail markets that:
 - deliver wide choice,
 - provide consistent consumer protection,
 - minimise market distortions,
 - deliver competitive prices and
 - meet vulnerable consumers' needs.
- Reform of retail market arrangements and regulation is vital to enable innovation and to harness the potential of new retail offers in delivering flexible low carbon energy services to consumers. In this context, retail market reforms should work in tandem with simplification of industry codes and their operation, as well as reform of code governance arrangements to improve agility in addressing energy market changes¹.

Overarching regularity framework

- There is a clear case for reform of the one size fits all approach to the supply licence, including the 'supplier hub' arrangements so that they do not inhibit the emergence of innovative new service offerings or embed incumbent business models.

¹ BEIS/Ofgem (2019), Reforming the energy industry codes consultation, available from: <https://www.gov.uk/government/consultations/reforming-the-energy-industry-codes>

- However, important current consumer, social and environmental policy objectives must still be met by the operation of retail energy markets, even if consumers have further choices beyond a single licensed supplier as their interface with the wider energy system and markets. It will be essential to clarify the responsibilities and minimum standards that all market players must comply with, including clarity on rules around the delivery of key existing (and potential future) policy obligations. All consumers must continue to be able to access services that meet minimum standards, along with fair treatment and redress when appropriate.
- Digitalisation may be able to enable effective management and reconciliation of a more diverse market environment with the delivery of consumer protection and social and environmental obligations, provided the recommendations of the Energy Data Taskforce² are acted upon.
- Innovation can also enable new approaches to consumer protection and empower consumers to access services more specifically tailored to their specific needs. ESC work suggests that digitalisation can support a much deeper understanding of consumer needs, and enhanced consumer control over energy usage. This could enable vulnerable and fuel poor consumers greater control and reduce commercial risks to service providers, with appropriate regulatory safeguards around energy access.
- In recent decades, the retail energy market has offered consumers the same item bought in the same way (paying for kilowatt hours through energy bills), which means that factors affecting fuel poverty risk have stayed largely stable over that time. However, consumer protection needs are also likely to change in future, as factors that shape fuel poverty risk and vulnerability will change in as decarbonisation and digitalisation change how people can use and purchase energy, e.g. where currently risk is higher for those off the gas grid in rural areas and tower blocks, in future it might be for those without access to low carbon electricity or new low carbon energy networks.
- This tends to support the case for a modular approach to regulation, allowing continued allocation of social and environmental obligations, but without imposing the full range of obligations on all competitive entrants or innovative service providers. In the context of net-zero targets and potential overlaps between activity across economic sectors and energy vectors in future (e.g. heat, transport, energy), providing a clearer, but sufficiently flexible regulatory environment would become increasingly important. To support innovation and accommodate potential future system needs and increasingly diverse business models, a more fundamental reform would be required than the options allowed through existing derogation and exemption processes.
- We support flexibility in future arrangements to enable suitable regulation or oversight, for example to prevent mis-selling of brokering or other market intermediation services. As recognised in the consultation document, new service offerings and forms of market intermediation will raise new issues for regulation and industry governance that are inherently difficult to predict and anticipate in policy design.

² ESC (2019), Energy Data Taskforce: A Strategy for a Modern Digitalised Energy System, available from: <https://es.catapult.org.uk/news/energy-data-taskforce-report/>

- ESC has developed a 'Living Lab', as a safe, test and demonstration facility for innovators to trial new smart energy products and service propositions. In the future, we believe that an expanded Living Lab facility can also provide a trial environment for new regulatory and market arrangements, enabling testing of how they operate in practice for real people in real homes. This can enable policy development based on co-creation and experimentation, reducing the risk of unanticipated consequences. Policy makers can witness for themselves whether new regulatory and market designs are successful in delivering desired outcomes for consumers and competition.
- Investment in the creation of an expanded Living Lab, building on the early success of the ESC's a 108 home facility (created through the Smart Systems and Heat programme) could provide a key national facility to inform the design of open and effective retail market designs and regulatory arrangements. More broadly the development of a large-scale, interoperable Living Lab, would constitute a key national asset for innovators, policy makers and regulators alike to support decarbonisation across the whole energy system.

Further distortions and policy considerations

Market framework

- Current market arrangements (e.g. the recovery of policy costs from electricity bill payers) tilt heat markets against low carbon choices. The uneven distribution of low carbon policy costs between electricity and gas bills constitutes a key market distortion that should be addressed. Our Cost Reflective Pricing report illustrates the importance of this distortion³. It highlights that rebalancing fixed and volumetric charges into the standing and unit prices respectively would more recover fixed costs more efficiently. Some of the reforms undertaken by Ofgem currently are consistent with this argument.
- If environmental and social costs were moved away from energy bills to general taxation, this effect would be greater. As a result, the marginal cost of operating a heat pump would be lower than a gas boiler because gas bills currently do not contain these environmental and social policy charges. If it was not possible to move environmental and social costs to general taxation, spreading them more evenly between gas and electricity bills would improve the efficiency of the system. The current cost distribution is a major distortion of market incentives for innovation in low carbon heat options and will over time distort innovation, supply chain development and energy network investment choices.
- It is also important that market arrangements across the supply chain are non-distortive and create a level playing field between technologies and providers. This is especially relevant for electricity, where a more decentralised low-carbon future would increase the need for flexibility and management of variable renewable energy resources. Due to the role electricity is likely to play in decarbonisation of both heat and transport, setting a non-distortive investment framework for the sector will become increasingly important. This in turn will create a stronger

³ ESC (2019), Cost Reflective Pricing, available from: <https://es.catapult.org.uk/case-studies/cost-reflective-pricing/>

need for good market signals to uncover the true underlying 'system value' of technologies (and operational/demand side choices) in real time – to bring forward the investment and innovation that will deliver efficient low carbon future system and bring forward appropriate investments where they are needed. The ESC has initiated a project, Rethinking Electricity Market Design, to explore how a consistent and integrated electricity market framework can be designed so that it improves electricity market signals and supports innovative, efficient, whole energy system decarbonisation. A more strategic discussion is needed around key market design topics - including the role of flexible markets, contracting between buyers and sellers of system services and reliance on centralised contracting mechanisms; options to internalise reliability and decarbonisation within prices and incentives for market players; and reviewing the granularity of pricing in time, space, and for different services.

Heat decarbonisation

- Reforms to energy retail markets should not preclude the ability of policy makers to obligate energy market participants – particularly in relation to their role in delivering and enabling decarbonisation of energy services. Our work on Rethinking Decarbonisation Incentives⁴ shows how current incentives are too weak for heat decarbonisation and suggests that an enduring framework of carbon standards for heat could play a key role in strengthening the market incentives for low carbon heat options.
- An obligation or carbon standard approach offers potential to create technology neutral incentives for innovation in developing, offering and adopting low carbon heat options, while having a lower impact on consumers' bills than other policies (e.g. a carbon tax). Such an approach to incentivising the market to deliver low carbon heat would require a framework that allowed clear definition and identification of a service provider responsible for delivering compliance with carbon standards. Moving away from the model of licensed suppliers as the exclusive interface between consumers and the energy system may make it more complex to rely on market participants for the delivery of policy goals - particularly in relation to delivering and enabling decarbonisation of energy services.

Interoperability

- Market arrangements also need to embed interoperability as a key element of the energy system to ensure that technology, businesses and services are compatible with one another.⁵ Interoperability is the ability of a product or system to cooperate with other products or systems to share resources, and ESC's previous work considers it to cover consumer, commercial, data, device, physical and cross-vector aspects. Retail markets should be designed taking interoperability in consideration, which includes:

⁴ ESC (2019), Rethinking Decarbonisation Incentives: Future Carbon Policy for Clean Growth, available from: <https://es.catapult.org.uk/news/rethinking-decarbonisation-incentives-future-carbon-policy-for-clean-growth/>

⁵ ESC's thinking on interoperability is laid out in the following reports: SSH2: Enabling domestic interoperability, available from: <https://es.catapult.org.uk/news/ssh2-enabling-domestic-interoperability/> and An Introduction to Interoperability in the Energy Sector, available from: <https://es.catapult.org.uk/news/an-introduction-to-interoperability-in-the-energy-sector/>

- Considering markets holistically and ensuring that they are designed to align incentives and send compatible signals, aligning the requirements of physical trades with the markets that are used for trading;
- Supporting the development of interoperable marketplaces;
- Exploring and aligning signals between operational and long-term planning scales, providing predictable and stable investment signals.
- Utilising new approaches to find methods of customer protection which are appropriate in a faster moving, consumer-led environment.