



Making a positive difference
for energy consumers

To all interested stakeholders.

Email: energy.futures@ofgem.gov.uk

Date: 23 March 2016

Open letter: call for engagement on insights for future regulation

The ways energy is generated, transported and supplied to consumers are changing. The energy system is transforming from a largely centralised and carbon-intense model to one that is carbon-constrained, more decentralised, smart and flexible.

At the same time, we're seeing new and potentially disruptive business models entering the market. Peer-to-peer developments in the accommodation and transport sectors, and the societal changes wrought by information technologies are turning established business models inside-out in ways that few were prepared for.

We know that the energy system of the future will be very different to the energy system of today. Our role as the energy markets regulator is to protect the interests of existing and future consumers. While we cannot be certain what tomorrow's system will look like, in order to best protect consumers' interests we need to understand what is driving system change, the likely impacts on consumers and the implications for regulation. This will help us set our future priorities for the evolution of regulatory arrangements.

That's why we're initiating a new process of horizon scanning to help us identify and understand these issues. For this to be successful we need your help in considering the implications of these matters for consumers and regulation. This letter explains how you can get involved and what it is that we need from you. We look forward to hearing from you.

What is horizon scanning?

Horizon scanning uses a range of tools to assist strategic decision-making. It doesn't predict the future, but its findings can be used to inform policy and enable organisations to make more resilient choices and reduce risk exposure. It's about exploring new issues and trends or problems in different ways¹.

Why are we doing horizon scanning?

Some of the effects of the energy system transformation are already being felt. A number of our current projects are looking at different elements of this in the context of future regulatory issues. For example, we have a programme of work to help deliver the benefits of a more flexible electricity system for consumers². The National Infrastructure

¹ Cross-government review of horizon scanning: <https://www.gov.uk/government/publications/review-of-cross-government-horizon-scanning>

² <https://www.ofgem.gov.uk/electricity/retail-market/market-review-and-reform/smarter-markets-programme/electricity-system-flexibility>

Commission recently emphasised the scale of this opportunity reporting that a smart and flexible power system could save consumers up to £8 billion a year by 2030³. Information about this and other future-focused projects can be found in our draft Forward Work Programme⁴.

These projects are important as they are looking at those areas of regulatory arrangements that we know need to evolve. What horizon scanning will add to our existing future-facing work is insight about challenges that are just emerging, or issues that don't yet appear to be material, or even those not yet known. This will allow us to plan our future priorities accordingly.

There are already a number of emergent challenges, the implications of which are likely to be felt over time. For instance, there are already some potentially transformative technologies and business models present in the market today. The rapid growth and deployment of solar photovoltaics is a good example. It's already led to grid constraints in the south west of England and is challenging the way power is generated and distributed. Rapid cost reductions in storage technologies could lead to mass deployment in the future, re-drawing our energy landscape. Our work on non-traditional business models⁵ uncovered many other new and potentially transformative models such as those exploring peer-to-peer services, multi-utility arrangements and new approaches to consumer engagement and involvement in energy markets.

We won't be starting from scratch, nor will we be looking to reinvent wheels. We know that there is already a wealth of material out there looking at future energy considerations. This includes our own work in this area such as the Long-Term Electricity Network Scenarios which examined the future of the electricity network⁶.

We also know that these transformational issues aren't unique to Great Britain or to the energy sector. Countries like Germany, Denmark, Australia, South Korea and parts of the United States are also in the midst of energy system and market transformations. Other sectors have already experienced such disruptions, for example the rise of mobile phone technology in the telecoms sector. It is important we are able to learn from experiences elsewhere.

What are we setting out to achieve?

Our objective is to understand which drivers of energy system change have the greatest potential impact on consumers and regulation. We're focusing on consumer impacts because our principal objective is to protect the interests of existing and future consumers. This will help us set our future priorities.

There will likely be insights that arise from this process which reach beyond our regulatory remit. We regulate the gas and electricity markets, but it's important to look at the entire energy system because there are important relationships and interdependencies between electricity, gas, heat and transport. For example, if people change from heating their homes with gas to using electric heating or purchasing heat directly, this will have broader system and regulatory implications.

³ <https://www.gov.uk/government/news/a-smart-power-revolution-could-save-consumers-8-billion-a-year-adonis>

⁴ <https://www.ofgem.gov.uk/publications-and-updates/draft-forward-work-programme-2016-17>

⁵ <https://www.ofgem.gov.uk/publications-and-updates/non-traditional-business-models-supporting-transformative-change-energy-market>

⁶ <https://www.ofgem.gov.uk/publications-and-updates/long-term-electricity-network-scenarios-lens-final-report>

How will we do this?

Our horizon scanning process has three stages:

1. Long-listing drivers of change

Compiling a long-list of social, technological, environmental, economic, political, legal and ethical drivers (domestic, European and global levels) which will shape the future energy system. We will draw on the existing knowledge base, including evidence from our and other stakeholders' energy system studies, disruptive technologies, and business models, social and geopolitical trends. The high-level themes we will consider in this driver identification process are described in the appendix to this letter. We welcome your input on the evidence you think we should be considering. This long-list of drivers will inform stage 2.

2. Short-listing drivers of change

We will narrow this long-list of drivers down to those with the greatest potential impact on consumers and implications for regulation. We will be hosting workshops in June and July to test what we have learned. This is an important part of the process and we hope you will work with us. We are seeking to uncover those drivers that are both high-impact and high-uncertainty and, therefore, have the potential to disrupt the energy system. This could be beneficial or detrimental disruption. We think these are the drivers that are likely to have greatest impact on consumers and regulation. We are also interested in understanding how these drivers could interact with each other. This short-list of drivers will inform our prioritisation process in stage 3. We expect to complete this stage by July 2016.

3. Developing regulatory priorities

Once we have identified the most impactful drivers, we will consider the implications for regulation. As part of this stage we plan to host workshops with stakeholders in the autumn (dates to be confirmed). This will ultimately inform which issues we should prioritise and focus our attention on. This stage will be completed by December 2016.

We recognise that we're not alone in being interested in the future of the energy system. Government, industry and academia are also looking into this. So there's a lot of information and expertise out there already, and we will draw on this in our work.

We'll publish the findings of our work in December 2016 and set-out how it will inform the development of our future priorities. Along the way, and as well as the workshops, we'll publish updates on our progress and ask questions through a series of blogs. We hope you'll engage with these.

How to get involved

This letter is the first step in reaching-out to those with knowledge and insight to offer. We're casting our net to interested parties within and outside of the energy sector. We would be grateful if you would cascade this letter through your networks.

If you would like to be involved, please register your interest by sending us an email: energy.futures@ofgem.gov.uk. We'll then get in touch with more information about the workshops and other channels of communication.

If we collect any of your personal data, we'll process it in accordance with our Privacy Notice⁷ and in accordance with your rights as set-out in the Data Protection Act 1998.

We look forward to engaging with you on this important work.

Yours faithfully

A handwritten signature in black ink, appearing to read 'M. Crouch', written in a cursive style.

Martin Crouch
Senior Partner, Improving Regulation, Ofgem

⁷ <https://www.ofgem.gov.uk/privacy-notice>

The table summarises the key areas we intend to look at from which we think we'll be able to derive the key drivers of energy system change. Clearly, these aren't stand-alone issues and there will be a high-level of interaction between the different themes identified.

We will be looking at a range of quantitative and qualitative inputs from government, industry, academic and other sources. We welcome your input about the specific sources we should be looking at. Please email us at energy.futures@ofgem.gov.uk. To help us identify your suggestions, please head your message HS-KNOWLEDGE.

Energy system configuration and reform	
<ul style="list-style-type: none"> • Institutions (functions, forms and rules) • Smart / flexible • Generation (renewables and fossil) • Wholesale market • Networks (inter and intra) • Integration (gas, electricity and heat) • Balancing and settlement • Retail market • Planning 	
<p>Global market structural drivers</p> <ul style="list-style-type: none"> • Geopolitics and security • Global shocks • Climate change • Fuel / resource / commodity availability • Finance and investment 	<p>Technological innovation</p> <ul style="list-style-type: none"> • Research & development / investment • Technology cost / deployment curves • Disruptive technologies (eg, storage) • Smart technologies • Product standards • Big data • Cross-sector technology transfer
<p>Demand drivers</p> <ul style="list-style-type: none"> • Consumer characteristics (domestic and industrial & commercial) • Social / industrial trends • Consumer attitudes, roles & protections • Future of gas, heat and transport • Energy efficiency 	<p>Business models and disruption</p> <ul style="list-style-type: none"> • Bundled services • Flexibility / system services • Intermediary (including peer-to-peer) • Prosumers • Aggregators • Suppliers
<p>Environment</p> <ul style="list-style-type: none"> • Adapting to a changing climate • Environmental impacts 	<p>Political</p> <ul style="list-style-type: none"> • UK politics • Devolved administrations • EU
<p>Approaches to regulation</p> <ul style="list-style-type: none"> • Jurisdictions: eg, Germany, Denmark, Australia, US (New York, Texas, California), etc. • Sectors: telecoms, water, transport, finance, etc. 	<p>Local</p> <ul style="list-style-type: none"> • Distributed energy resources • Actor motivation • Routes to market • Grid defection