



3rd Floor North
200 Aldersgate Street
London EC1A 4HD
Tel: 03000 231 231

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Response from Citizens Advice to consultation C16-DS-29-03: "Guidelines of Good Practice for Flexibility Use at Distribution Level"

Dear Mr Ebrill

We welcome this consultation and the focus on flexibility on the distribution level.

Balancing networks at the distribution level and tapping into the growing number of flexibility sources has the potential to improve network efficiency and increase consumers' control of their own energy bills.

Citizens Advice further supports the endeavour of developing guiding principles for national regulatory authorities (NRAs). We do not believe that going beyond principles in pursuit of greater harmonisation is desirable. EU Member States have made varying progress down the path of making their grids smart and flexible, and the challenges that individual Distribution System Operators (DSOs) face on their network vary greatly. NRAs need to be able to establish a framework and processes to facilitate and coordinate access for DSOs to flexible resources which are appropriate and relevant to their national context. This includes developing definitions for flexibility products.

In this response we have addressed the changes we believe are necessary to make flexibility work for consumers. The consultation document approached flexibility from an electricity system and regulatory point of view. It listed potential benefits to consumers but not the critical success factors to make these benefits a reality. We believe that DSOs and NRAs should do more to inform and protect consumers, prevent discrimination of and provide support to vulnerable consumers, and enable consumers to take full opportunity of a flexible energy system.



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Question1: What are, in your opinion, the main drivers for flexibility use by DSOs going to be in the coming years?

The main driver for flexibility use by Distribution System Operators (DSOs) is and will increasingly be the way consumers, large and small, use the electricity distribution system. Insufficient transfer capacity, voltage instability or overloading network equipment are simply symptoms of this change, not the drivers.

Consumer requirements of a distribution system are changing to encompass:

- connections for modular electricity generation devices such as rooftop solar
- connections for household batteries to store home-generated electricity
- charging points for electric vehicles
- using heat pumps in their homes
- connections for community energy schemes
- the ability to control their own energy environment through smart meters and other smart appliances in homes.

In Great Britain, major drivers for DSOs to move towards flexibility use are a rise in electric vehicle usage, expected increased levels electrification of heat, and increasing volumes of intermittent generation. DSOs need to adequately respond to these changes. But rather than seeing these developments as a disturbance to the status quo, they should be seen as an opportunity to engage consumers in the energy system, enable more choice and individuality in the way electricity is generated and consumed and for DSOs to build more flexible, efficient electricity systems.



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Question 3: Should DSOs be encouraged to use flexibility to manage the distribution network where this is more efficient than reinforcing the network? Please provide an explanation.

Yes, we agree that DSOs should be encouraged to use flexibility as a way to manage the distribution network where this can delay or avoid network reinforcement. The costs of network reinforcement are borne by the consumer. Using flexibility would therefore translate into savings for energy bill payers.

This view is based on the understanding that any use of flexibility sources does not entail compromising network stability or reducing reserve margins. The quality and security of supply should not suffer as a result.

Question 4: Should all sources of flexibility be treated equally in the market and by system operators?

From a theoretical standpoint, we agree that all sources of flexibility should be treated equally in the market. Non-discrimination is key. Free competition drives price competition and innovation in new forms of flexibility sources. However, from a practical perspective we are less sure what is being proposed by this principle.

We can agree that all sources of flexibility should have equal access to the market, i.e. should be assessed and considered by the System Operator. But ultimately, flexibility sources have to be judged on the basis of whether they can fix the network issue that needs to be solved, whether it be congestion, voltage drop/rise, etc. Not all flexibility sources are equal, ie. they vary in response time, the load they can deliver, and the time period they can deliver their service for.



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This is the reason why system operators may choose to put in place certain requirements to participating in a flexibility market. For example, in the Great Britain, the system operator procures a variety of balancing services through different “pots”, for each of which specific criteria apply (such as the ability to respond within 1 second or to deliver at least 3MW). This inadvertently excludes certain flexibility sources from participating in the market.

We therefore ask CEER to consider the following wording, which would add precision to the currently proposed principle:

Flexibility markets and procurement processes should be designed to be as non-discriminatory to different sources of flexibility as possible whilst enabling the system operator to effectively procure the flexibility service that meets their requirements.

Question 6: Do you think it is important for Member States to establish standardised EU definitions of the various flexibility products, to facilitate market participation in flexibility use at distribution level?

We are sceptical of the argument that standardised EU definitions do facilitate market participation in flexibility use at distribution level. The opposite can be just as true. Narrow definitions can exclude new, innovative flexibility products which may develop in the future. It should be the role of NRAs to develop and adjust definitions which facilitate the use of flexibility and which reflect the diversity of flexibility products in their country. NRAs should work collaboratively through CEER to ensure that there are no barriers to developing cross-border flexibility products.



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Question 7: Should regulators seek a regulatory framework that can accommodate a range of models that would enable DSOs to access and use flexibility, while ensuring that competition and markets are not unduly distorted?

Yes, DSOs should have a range of tools at their disposal to access and use flexibility to manage their network as efficiently as possible. They need a degree of freedom to achieve this, as every DSO faces different challenges and has different flexibility sources on their network. We see great diversity even among the DSOs in Great Britain, e.g. between London and rural Scotland. Regulators should therefore seek a regulatory framework that gives DSOs a range of options to access and use flexibility, whilst ensuring competition and markets are not distorted, and an exchange of flexibility services between DSOs, and between DSOs and TSOs is possible.

While DSOs accessing and using flexibility is one side of the coin, consumers providing flexibility and allowing DSOs to access it is the other. Consumers do not only stand to benefit from flexibility use, they may also suffer detriment from it if the right regulations are not in place.

Therefore, DSOs should be asked to demonstrate within their network development plan:

- the value that using flexibility will deliver to their customers
- how the use of demand response has been built around the requirements and behaviours of consumers
- which steps were taken to guard against unfair discrimination within network charges

We elaborate further on how to make flexibility work for consumers in Question 17.



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Question 8: What do you consider to be the key benefits and key risks of particular models (rules- based, network tariffs, connection agreements, and market-based)?

Our response will focus on the benefits and risks of particular models for consumers, which are most direct in the case of network tariffs and connection agreements. We have already touched on market-based approaches and the design of flexibility markets in Question 4.

A. Network Tariffs

A benefit of using network tariffs as a technique for DSOs to access flexibility is that they act as a nudge, with the response from the consumer being voluntary. Network tariffs which charge users more during peak times are also cost-reflective, which we are principally supportive of.

We see a number of risks for consumers engaging with static and dynamic time-of-use tariffs. These apply regardless of whether it is the DSO itself that rewards the consumer for their flexibility (not currently the case in Great Britain), or whether it is an aggregator or supplier (which is already taking place here).

- **Too complex to engage.** Already, consumers struggle to understand which electricity tariff is best for them. The introduction of further tariffs which reward or punish them for using the network at certain times will make the market even more complex and confusing. It can be difficult for a household to forecast what their bill may look like if they change their behaviour in one way or the other.
 - **Action:** The national requirement to have at least one, free of charge comparison tool should be extended so that at least one tool is also obliged to cover the whole of the market. NRAs should ensure that tools are available to help consumers determine whether emerging tariffs are suitable for them.



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- **Taking up inappropriate tariffs.** Consumers may choose a time-of-use tariff that is inappropriate for them - either due to optimism bias, a lack of understanding of tariffs or their own energy consumption habits. This may lead to higher bills for the consumer and them being less responsive to the tariff.
 - **Action:** “Encourage” only those groups of consumers to participate in demand response, for which the potential benefit has been demonstrated.
- **Paying more than expected.** Consumers may end up with a higher bill after signing up to a time-of-use tariff.
 - **Action:** set appropriate limits for consumers’ financial liability to offset the risk that the household does not perform as expected (e.g. the underperformance of smart appliances and/or energy efficiency tools). This can be time-bound, eg. for a period of 6 months, until the customer has adjusted to the tariff and any smart devices in the home. It is insufficient to simply require DSOs or suppliers to inform them of the risk of higher bills. This fails to acknowledge the difference in the market understanding and bargaining power of the two parties, or the evidence from current market practice that consumers can nevertheless sign up to inappropriate tariffs.
- **Punishing those who cannot respond.** There are consumers who cannot alter their energy usage behaviour, which may be those who rely on electricity to keep medical equipment going, or those who need to keep young children or frail elderly family members warm.
 - **Action:** There needs to always be the option of a static, affordable tariff, which does not punish those who need electricity at peak times.



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- **Inability to access smart devices.** Those who are likely to make the most of time-of-use tariffs are those who will be able to afford and operate a smart meter, their own generation unit, their own home battery, and timed/remote-controlled devices. Few consumers will be able to take full advantage of these opportunities due to lack of funding and technical know-how.
 - **Action:** DSOs (as well as suppliers and aggregators) should assist all customers in accessing and understanding smart devices and how these can work to their benefit. NRAs should ensure that funding programmes are in place that make smart devices, including generation and storage units, accessible to domestic consumers and small-medium enterprises (SMEs).

B. Connection Agreements

Innovation [trials in Great Britain](#) have shown that a potential benefit of generation connection agreements with flexibility provisions¹, could be the ability for DSOs to connect customers to the distribution network, to whom they could not have offered a firm generation connection. For example, in 2015 a DNO in Great Britain had to delay all firm distributed generation connections that required access to lines 6.6kV or above as further connections would have exceeded their peak network limits.

Risks that we see with this approach relate to generation and demand connections with flexibility elements.

- **Risk to financial viability of renewable generation:** Millions of SMEs, domestic households and community energy schemes across Europe have invested in renewable energy generation units. They sell their electricity to their supplier, to energy brokers or earn money through Feed-In-Tariffs (FITs). By cutting their generation connection for periods of time, DSOs reduce the income these generators can earn. This limits these projects' ability to forecast their income and pay-off time. Such uncertainty may put off future investors into renewable energy generation.

¹ Energy Network Association, 2017, Electricity Flexible Connections. URL: <http://www.energynetworks.org/electricity/futures/flexible-connections.html>



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- **Interrupting lives and business activity:** DSOs should take the needs of their customers into account when offering flexible demand connections. As explained above, vulnerable consumer groups need a secure, constant demand connection; SMEs need to be able to run their businesses without power failures.
 - **Action:** As indicated in the consultation document, connection agreements with flexibility elements should only be introduced for new customers. Such agreements should set out clear and realistic limits on the number of times and length of time for which a generation connection of a customer will be cut in any one year. This should be coupled with tailored advice, including options for how to mitigate the impact of a disconnection (such as batteries or alternative generators).
 - **Action:** Customers should be offered the option of moving to a stable connection if they find a flexible one is not appropriate for them and if network capacity allows it.

Question 11: Are there case study examples of approaches to improve flexibility on the system that you think should be considered in this work? If so, please provide a summary of the key information and findings.

A good example in GB is Ofgem's Low Carbon Network Fund and carried out in partnership by Northern Powergrid (DSO) British Gas (supplier), Durham University, Newcastle University and EA technology (energy technology provider). "Customer-led Network Revolution" (CLNR) looked at a number of issues related to the potential for customer and network-led flexibility options in managing the networks, including: domestic use of time-of-use tariffs, industrial and commercial demand side response (DSR), storage, domestic heat-pumps, electric vehicles, rooftop Photovoltaic (PV) and smart appliance. It also trialed new practices to be carried out by DSOs, including Real Time Thermal Ratings, Enhanced Automatic Voltage Control, network monitoring and Active Network Management.



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A [suite of reports](#)² summarise the key findings. The main insights are highlighted below.

Network Solutions

The project “identified a path to progressively smarten networks over time” as customer needs change. It “demonstrated that there is no need to fund a vast new network infrastructure if we invest little by little – a beneficial smart grid approach that allows DNOs deploying our recommendations to travel the smart/smarter/smarter path – from simple, local solutions to complex wide-area control solutions – without the risk of stranded assets.”

Domestic and SME customers

CLNR “found that domestic customers showed interest and were willing to accept smart meters. Time-of-use tariffs also proved popular; the majority of the customers taking part in the trial saved money and used approximately 10% less electricity in the peak period than customers on a regular tariff.” It was shown that “the domestic DSR propositions can be developed to deliver peak reduction on the days of highest network demand – simpler design can miss the target. Restricted hours and direct control trials revealed some challenges and limitations and need more development.”

“SMEs demonstrated significant variety in energy practices and were reluctant to flex electricity usage due to concerns about disrupting their business activities, indicating that industry will need to work closely with them to develop appealing propositions.”

Industrial and Commercial customers (I&C)

The trials showed that “I&C demand side response is fit for adding to business as usual practices today. [...] Better engagement with I&C customers is needed to improve their awareness and understanding of the benefits of DSR. This will require improved customer knowledge, the development of relationships with large customers and customers with multiple sites and the development of sharing arrangements with other users of DSR resources.”

² Customer-Led Network Revolution (2017), Findings and Conclusions. URL: <http://www.networkrevolution.co.uk/conclusions/>



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Questions 15 and 17: In principle, can the regulatory tools listed be used by regulators to remove barriers and facilitate the use of flexibility at distribution level? Are there any other regulatory tools that have not been included and should be considered?

We agree that the regulatory tools mentioned in the consultation are commonly in the toolbox of an NRA and should be used to facilitate flexibility use at DSO level. These tools enable them to remove the technical and regulatory barriers that stand in the way of DSOs accessing and using flexibility - but not barriers that exist for consumers. These barriers include:

- a lack of awareness and understanding of the energy system and the actors within it
- a lack of trust in the energy industry, particularly energy suppliers due to regular cases of misselling and billing errors
- a lack of trust in the security of smart devices and the privacy of personal energy usage data
- a lack of accountability and transparency to the public around the price and income control of energy networks and suppliers

Further forward-thinking action is required from NRAs to make flexibility work for domestic consumers and SMEs. Otherwise, they risk those consumers not responding to flexibility procurement calls from DSOs, not taking up or benefitting from time-of-use tariffs or not entering into flexible connection agreements - thus preventing the full benefits of a flexible energy system being realised. Regulatory tools they could use to achieve this include:

- Industry code changes
- Amending licence conditions
- Introducing licensing for new actors
- Voluntary/Mandatory codes of practices



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- Collaboration between regulators and with consumer protection authorities to address cases where energy products and services span across multiple jurisdictions, i.e. consumer protection and redress responsibilities are not clearly defined.

NRAs should look to:

- **Extend existing consumer protections.** Consumers will be engaging with the flexible energy system in a variety of ways - some through their DSO, others through their supplier, an aggregator or other energy service providers. New actors are continually entering in this market. The existing consumer rights framework should therefore be modernised to maintain existing levels of protection. It should be extended to all third party intermediaries (including new generation energy service providers such as aggregators). Currently consumer protection seems to vary across suppliers, electricity undertakings, energy service providers, and aggregators.³
- **Extend Alternative Dispute Resolution.** Related to our first point, the mandatory dispute resolution and single point of contact requirements established by the third energy package must be maintained. Their application should also be extended to the new market players⁴ brought under the scope of the legislation⁵, eg. bundled electricity offers, and new third party service providers (eg. aggregators).
- **Ensure transparent data management.** Member States must ensure that the oversight procedures are sufficiently robust to ensure not only that consumers' private data (which includes energy consumption data) is shared only with parties for whom a consumer's explicit consent has been given, but that consumers can verify who has accessed their data.⁶

³ E.g. in Articles 10, 12 and 13 of the proposed revision of the Electricity Directive and Article 24 of the proposed revision of the RES Directive.

⁴

<https://www.citizensadvice.org.uk/about-us/policy/policy-research-topics/energy-policy-research-and-consultation-responses/energy-consultation-responses/response-to-ofgembeis-call-for-evidence-on-a-smart-flexible-energy-system/>

⁵ Energy consumers can already be sent back and forth between energy suppliers, networks and the grid. As more parties enter this space, it will be crucial for consumers to know who to contact for different issues, and for service providers to clearly identify who has 'ownership' of an issue.

⁶ The consent mechanism in the DCC is not fit for purpose (i.e. when a DCC user requests consumer smart data they are automatically given it with no check that the consumer gave consent for this collection)



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- **Regulate smart homes & appliances.** To engage in a smart and flexible energy market, consumers need the ability to control their own energy load, devices which can transmit energy consumption data, or tools which enable automation or remote-control of consumers' devices. So far, EU policies have not looked at smart home issues holistically (ie. separate policies exist for energy supply, heating controls, automated appliances and the efficiency of housing fabrics etc).
 - Member States should ensure that⁷ appliance performance⁸ is capable of supporting dynamic price contracts offered to consumers, and that the **smart function can be switched off**. Consumers should have the choice whether their appliances are smart or not. They should not be forced to adopt the technology through lack of choice.
 - The standards framework should ensure the integration and **inter-operability of home-technologies**. This should be supported by **easy access redress procedures**, even when appliances are installed as part of a bundled offering.
 - National regulators should oversee the **marketing of energy products and services** to ensure that consumers are fully informed of the risks, opportunities and required actions for their own household. It is insufficient to limit this right to information to the risk from dynamic tariff contract with suppliers⁹
 - The roll out of smart meters should be supported by a tailored advice programme that ensures consumers know how to make savings from their smart meter and how far this is supported by their own housing type.

⁷ Articles 11(1) and 13

⁸ <https://www.citizensadvice.org.uk/Global/CitizensAdvice/Energy/PolicybriefingSmartappliances.pdf> and <https://www.citizensadvice.org.uk/about-us/policy/policy-research-topics/energy-policy-research-and-consultation-responses/energy-consultation-responses/response-to-ofgembeis-call-for-evidence-on-a-smart-flexible-energy-system/>

⁹ Article 11(2)



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Question 19. Is a principles-based approach (rather than one-size-fits-all) the correct one for national regulators developing a framework for facilitating flexibility use by DSOs at distribution level?

We believe that a principles-based approach to facilitate flexibility use at distribution level is desirable for many reasons.

- It puts greater responsibility on DSOs to understand and deliver what is right and fair for their customers
- Principles are more future-proof than current regulation and provide room for technical innovation and market changes
- Detailed, lengthy regulation is a barrier to entry for new actors such as aggregators or energy service providers who may be able to facilitate the flexibility market but find understanding and complying with regulation challenging
- Principles allow DSOs with their individual challenges and opportunities on their network to deliver locally appropriate and efficient solutions

Principles-based regulation is being introduced at the moment in Great Britain in the domestic gas and electricity supplier market and could provide early lessons for NRAs considering to move in that direction.

Question 20. Are the principles outlined appropriate? Are there any fundamental principles that you think are missing in order to deliver maximum benefit to customers?

We agree with the suggested principles - with the additional comments we made in Question 4 with regards to the wording: "treating all sources of flexibility equally".



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We suggest the addition of the following to guide DSO activities:

- DSOs should ensure the efficient reliable and secure operation of the distribution system
- DSOs should ensure consumers own and control their own data
- DSOs should assess and report on the customer experience of flexibility usage on their network, including plans for improvement.¹⁰
- DSOs should demonstrate within the network development plan:
 - the value that using flexibility will deliver to their customers
 - how the use of demand response has been built around the requirements and behaviours of consumers
 - steps were taken to guard against unfair discrimination within network charges

Yours sincerely

Victoria Pelka

Policy Researcher, Citizens Advice

¹⁰ Such reporting has been part of many DSO-run innovation trials in Great Britain. Quantitative data about customer responsiveness, network cost savings, etc. is one aspect. Using surveys and qualitative interviews, DSO were also able to better understand: customer satisfaction with the experience they have had e.g. on time-of-use tariffs or flexible connection agreements; satisfaction with the level of information they have been provided with; effects on their lifestyle and energy usage behaviour; and suggestions for improvement of the customer experience. Such information enables DNOs to improve the attractiveness of flexibility services and products as well as allowing regulators and consumer bodies to scrutinise DSO practices.