

Getting more out of our electricity networks by reforming access and forward-looking charging arrangements

Jon Parker, Head of Electricity Network Access, Ofgem

18 September 2018

Dear Jon,

Thank you for the opportunity to respond to the consultation on reform of access and forward-looking charges.

Please find attached Regen's response to the consultation. This response is also supported by Community Energy England.

Regen is an independent, not-for-profit centre of expertise on sustainable energy and has been working extensively in the areas of local energy and network charging, sitting on the Access Task Force as part of the Charging Futures Forum.

As a membership organisation, we inform our response from our 200 business, local authority and community energy members that support our mission to transform the energy system.

We have extensive experience of guiding the sector through shifts in the energy system over the last decade and influencing change at the heart of government. Our experience is also drawn from our work on innovation projects such as a local demand side response trial in Cornwall and a vehicle to grid trial on the Isle of Lewis and in-depth advisory work for utility companies and public bodies such as the Welsh Government.

Yours faithfully,

A handwritten signature in blue ink, appearing to read 'M. Hyman', is shown on a white background.

Merlin Hyman
Chief Executive



The future of access and forward-looking charges

Introduction

The last decade has brought seismic shifts to the energy sector; with the electricity system becoming increasingly decarbonised and decentralised. These changes have particularly impacted at a local and distributed network level, putting electricity at the forefront of innovative, democratised system change.

The way we pay for our electricity infrastructure will send critical signals as to future investment in energy generation, demand and flexibility. Regen, therefore, welcomes this broad review of network charging.

We are concerned, however, that the objectives of a review that will play such a key role in our future energy infrastructure are set to narrowly and make little mention of the government's carbon or smart and flexible network objectives¹. Ofgem should set the objectives of this review to ensure the nation's critical electricity network infrastructure is fit for purpose to deliver the government's Clean Growth Plan and targets within the Climate Change Act.

That will mean an efficient network but also one where we invest to enable the UK to lead the way in developing the smart, decarbonised energy system of the future to the benefit of all future consumers.

The speed of this review is also of key importance. The charging regime is a key factor in the business models of a wide range of energy investments. Reviewing that regime will create inevitable uncertainty and delay investments. If decisions are not clear until 2023 that could have a very negative significant impact on energy investments up and until that point. Every effort should be made to speed up the review set out key decisions for investors as soon as possible.

Key recommendations for the scope of review:

- 1. Review needs to include an explicit methodology to identify when managing network constraints through flexibility or access limitations becomes inefficient relative to physical network investment.**

One key limitation of the review is that it is overly focused on avoiding future investment to minimise the current network costs to the consumer. However, optimising one part of our electricity system in isolation from the needs of the rest of our energy system will lead to inefficient and higher cost outcomes for the whole system. These are costs that will fall on future consumers.

In the introduction to the consultation 'Timely and efficient network investment to meet users' needs' is number six in a list of seven desirable features. We believe this should be the first and overarching desirable feature rather than nearly the last in a list.

- 2. A commitment in the review to modelling the impacts on decarbonisation.**

¹ <https://www.gov.uk/government/publications/upgrading-our-energy-system-smart-systems-and-flexibility-plan> (BEIS and Ofgem, 2017)

We welcome the consultations focus on unlocking capacity on the distribution network for both generation and demand. At distribution there are currently queues for connection of low-carbon generation and storage. Some constrained areas face very high cost connection charges. This is stifling future investment in the decarbonised electricity that we desperately need if the UK is to get back on track to achieve the fifth carbon budget².

However, the support for decarbonisation is implicit rather than explicit. Proposals such as charging TNuoS on distributed generation could significantly slow the deployment of low carbon technologies. It cannot make sense for Ofgem to put in place changes which directly work against our legally binding commitments on carbon emissions. We recommend there should be a commitment to assess and mitigate any negative impacts on the delivery of our carbon targets and renewable generation deployment in particular.

3. An upfront commitment to shallower connection boundary at distribution with UOS charging to facilitate that change.

We welcome the intention of the consultation to have shallower charging and, therefore, lower upfront costs for new connections at distribution level, bringing it in-line with transmission. This should help unlock the queues and investment in distributed generation and storage.

However, a key condition is placed on this around locational and cost reflective use of system charging that would facilitate this change. Though we recognise the aims of this condition, we feel it is unnecessarily perpetuating uncertainty for investors.

It is highly likely that the new use of system charging methodology will need to be refined over-time to ensure that it is or remains fit for purpose and changing circumstances – as a result using this as a prerequisite condition for a more binary decision on a connection charge boundary is problematic.

We recommend there is a clear commitment as early as possible to shallower charging for distribution connections.

4. Facilitating local action to solve local problems

Increasing demand and supply on the distribution network are two of the three challenges this review is aiming to tackle, and we believe these localised challenges should prioritise local solutions, such as balancing supply and demand on a local level.

Distributed renewables have a particular added-value in that they decentralise and also democratise energy, bringing valuable jobs and economic opportunity and, in the case of locally owned assets, revenues, to areas and regions outside of traditional industrial bases.

Community energy schemes across the UK total 249MW of capacity and Local Enterprise Partnerships are increasingly looking to local energy generation as part their energy strategy to reduce bills and increase jobs and investment. Devolved administrations have a high level of

² <https://www.theccc.org.uk/2018/06/28/apply-the-lessons-of-the-past-decade-or-risk-a-poor-deal-for-the-public-in-the-next/> (Committee on Climate Change, June 2018)

ambition; the Scottish Government want 50% of new renewable projects to have an element of shared ownership³, while the Welsh Government are aiming for 100%⁴.

The consultation rejects the idea of lower-cost local access rights that might facilitate local energy approaches. “we consider that developing local access rights could be very complex” though we recognise the complexity of local access, we strongly advocate a solution where communities can benefit from the same ‘behind the meter’ balancing currently enjoyed by complex sites or industrial users with generation or storage assets.

Answers to questions:

Question 1: Do you agree with the case for change as set out in chapter 2? Please give reasons for your response and include evidence to support this where possible.

Yes – we believe distribution network is a key area for reforms. Lack of network capacity in many areas is constraining new low-carbon generation on the system. The access and use of system charging on the distribution network needs to be redesigned to enable the expected future growth in low-carbon technologies, both supply and demand.

Question 2: Do you agree with our proposal that access rights should be reviewed, with the aim to improve their definition and choice? Please provide reasons for your response and, where possible, evidence to support your views.

Yes – it is sensible that defining and clarifying rights of the users of the system is the first step in efficient utilisation and development of the distribution network. Once rights and options have been established, more efficient use and investment can be incentivised.

It would be useful to have more information about distinguishing the access right options between large and small smaller users. We would like to ensure that the options available to large users to manage their access and provide flexibility for the system are also available to smaller users on an opt-in basis. This would ensure that small users were not excluded from the ability to manage or reduce their access costs in the same way as large users.

In relation to this we would like the scope of the review to include defining both the rights of both large and small users at the same time and by the same body.

➔ **Question 3:** Specifically, do you have views on whether options should be developed in the following areas as part of a review? Please give reasons for your response, and where possible, please provide evidence to support your views:

- a) Establishing a clear access limit for small users, with greater choice of options (as considered under b) and c) below) above a core threshold – do you agree with

³Scottish Government: Scottish Energy Strategy, Dec 2017,

<https://www.gov.scot/Resource/0052/00529523.pdf>

⁴Cabinet Secretary for Environment announcement, Sept 2017

<https://gov.wales/newsroom/environmentandcountryside/2017/170928-lesley-griffiths-high-on-ambition-for-clean-energy/?lang=en>

our proposal in paragraphs 3.5-3.10 that this should be considered? Do you have views on how a core threshold could be set?

We believe this is a sensible approach and recognise the complexity of definition of core access. A high threshold for core access might be a straight-forward approach but would reduce the potential for engaged households or communities to participate in providing flexibility.

- b) Firm/non-firm and time-profiled access – do you agree with our proposal outlined in paragraphs 3.15-3.21 that these options should be developed?

Yes, we think that having different types of access is an important part of managing the grid efficiently. We also believe that these should be tradable. However by introducing trading there is the potential to disadvantage small generators and demand customers who could easily be out priced. Any system will need to be fair and ensure that there is a level playing field for smaller players and communities.

We do also believe that the benefit of access options would be limited to some extent in a dynamic system as the needs of the network will change over time. It may be that the changing needs of flexibility in a locality on the network could be better served by local flexibility markets that could pay for the network services it needs at a particular time and place.

- c) Duration and depth of access, discussed in paragraph 3.25-3.32 - would these options be feasible and beneficial?

We think that these options should also be developed. Constraints vary by geography and voltage level therefore it would be useful to have access based on different voltages to effectively manage this but recognise the complexity this might bring.

We remain keen to see a solution where communities can benefit from the services their local balancing could provide to the network and propose that there is a system where they benefit from the same 'behind the meter' balancing currently enjoyed by complex sites or industrial users with generation or storage assets.

We would welcome a commitment to include network charging arrangements and particularly local energy and balancing as a valid area for NIA, NIC and sandbox projects.

Different durations would also be useful for storage participants. Related to point C above, constraints in a certain area should be time limited and there will be a need for flexibility in advance of investment or reinforcement. With duration options, mobile generation or demand units such as storage could move around as per need.

- d) At transmission or distribution in particular, or are both equally important – as discussed in this chapter?

→ **Question 4:** Do you agree with the key links between access and charging we have identified in table 1? Why or why not? Do you think there are other key links we have not identified? Where possible, please provide evidence to support your views.

A key area missing is the link between the development of network charging and the UK's decarbonisation targets including the Committee on Climate Change Carbon Budget

and the National Grid Future Energy Scenarios. It will be important to understand how these changes will impact the decarbonisation of electricity and the different pathways to achieve that. We would like to see an explicit commitment to ensure the impact is modelled and not negative.

➔ **Question 5:** Do you agree with our proposal that targeted areas of allocation of access should be reviewed? Please give any specific views on the areas below, together with reasons for your response. Where possible, please provide evidence to support your views:

- a) Improved queue management as the priority area for improving initial allocation of access, as outlined in paragraphs 3.41-3.44?

We agree that queue management might provide a useful approach, but any approach needs to recognise that some generation assets have much longer lead-in or development time than others, such as storage.

These longer profiled technologies should not be excluded or penalised from being assigned network capacity.

- b) Not to consider the potential role of auctions for initial allocation of access as part of a review at this time, as discussed in paragraph 3.44?

Yes – auctions could be very problematic and inequitable. Principle of networks is that they are natural monopolies that are providing an essential service to all users, demand and generation, this should not be based on 'willingness to pay'

- c) To review the areas outlined in paragraphs 3.45-3.48 to support re-allocation of access?

Use it or sell it is not necessary if the users are charged sufficiently for having the access. They may choose the correct level of access for them or pay to keep a higher access than is necessary at the present time. If people are incentivised to give up excess capacity it will be important that there will be options in the future to buy it back if necessary.

Trading or swapping of access or access types is likely also to be useful as would be trading of constrained access obligations. However, the value of this is likely to change if there is a shallower charge and new locational DUOS. Therefore, it will be difficult to say at present what the impacts would be.

Question 6: Do you agree that a comprehensive review of forward-looking DUoS charging methodologies, as outlined in paragraphs 4.3-4.7, should be undertaken? Please provide reasons for your response and, where possible, evidence to support your position.

Yes – but we believe there will still need to be some socialisation of cost as there will be some areas that are relatively high cost to serve. UOS or DUOS will be a relatively blunt instrument with which to manage networks in constrained areas. Local flexibility markets will potentially be a more important part of the solution. The costs of these local markets will also need to be partly socialised or charged in local UOS.

Furthermore, it is important that the cost of constraints managed through DUOS, access options and flexibility markets are quantified. After a point in time it will become

necessary/economically optimal to invest in an area to remove constraints. There needs to be an explicit methodology to achieve this at distribution level.

→ **Question 7:** Do you agree that the distribution connection charging boundary should be reviewed, but not the transmission connection boundary? Please provide reasons for your response and, where possible, evidence to support your position.

Yes – the distribution connection boundary can provide a significant barrier to new projects resulting in long queues and high costs. The existing system of shallow-ish charging is inequitable for new and future users in constrained areas. It also explicitly assumes in the methodology that upgrades are required rather than flexibility (which may be cheaper) to manage constraints.

However, though we recognise the condition of locational UoS we believe it makes sense to develop these options in tandem rather than have one as a pre-requisite for the other.

In order to reduce uncertainty that will impact investments on distribution in advance of the change, it will be important to get clarity as soon as possible on the conditions of the shallow charge on connection, in what time period will new connections allowed to be connected? How will constraints (or constraint costs) be managed during the period prior to any reinforcement or effective flexibility market solutions to constraints?

→ **Question 8:** Do you agree that the basis of forward-looking TNUoS charging should be reviewed in targeted areas? If you have views on whether we should review the following specific areas please also provide these:

a) Do you agree that forward-looking TNUoS charges for small distributed generation (DG) should be reviewed, as outlined in paragraphs 4.19-4.23?

We do not believe at present that it is necessary to review TNUoS as it adds further uncertainty to what is already a significant review of charges in this consultation as well as the TCR review. We would also question the logic and fairness that DG exporting onto transmission is chargeable for TNUoS – whereas transmission generation exporting onto the distribution network is not charged DUoS.

b) Do you consider that forward-looking TNUoS charges for demand should be reviewed, as outlined in paragraphs 4.24-4.27?

Please provide reasons for your response and, where possible, evidence to support your position.

We believe that the TRIAD system should be reviewed. This is an example where system needs have run contrary to decarbonisation objectives. Though reducing peak demand has been valuable for the system, the TRIADS have mainly driven high-carbon 'peaking' onsite generation.

→ **Question 9:** Do you agree that a broader review of forward-looking TNUoS charges, or the socialisation of Connect and Manage costs through BSUoS at this time, should not be prioritised for review? Please provide reasons for your response and, where possible, evidence to support your position.

We believe this is the correct approach and that some certainty needs to remain in the system for investors while other substantial changes are made. However, we dispute that 'socialisation of BSUoS' is itself an issue that needs to be addressed.

Many of the locations with the best renewable energy resources have had low historic investment in the electricity network. These areas are subject to 'technology lock-in' – a form of market failure - which means that these areas face higher costs than others through historic lack of investment.

Making users in those areas pay the cost of this 'lock-in' leads to sub-optimal outcomes for the system and higher costs for future consumers. Therefore, socialisation of BSUoS and other network investment costs is the most equitable and efficient way to deal with this market failure. Without it you are unfairly penalising these important areas for renewable generation resource and holding back decarbonisation.

➔ **Question 10:** Do you agree that there would be value in further work in assessing options to make BSUoS more cost-reflective, and if so, that an ESO-led industry taskforce would be the best way to take this forward?

As above this is an area that is impacted by 'lock in' market failure, and furthermore in a national electricity market it is difficult to assign costs to one particular actor or actors. As a result, we believe socialisation is the most effective and equitable way to manage system balancing.

Constraints or system over-supply may be caused not just because there is too much generation at certain points in time, but that there is also too little flexibility or perhaps too little demand. As a result, it will be difficult to ascertain who is the root cause of the constraint.

For example, high nuclear generation at a point when there is high solar generation may create too much generation on the system. In this instance solar would be the cheaper source of electricity and using that over nuclear would be economically optimal and lower consumer bills. The excess cost for consumers here is caused by the fact that a nuclear generator cannot turn down when cheaper renewables are generating.

Therefore, the cost of constraining solar or wind on the system in this instance should be paid by the nuclear generator.

Question 11: What are your views on whether Ofgem or the industry should lead the review of different areas? Please specify which of SCR scope options A-C you favour, or describe your alternative proposal if applicable. Please give reasons for your view.

We remain concerned whether in an industry led review or in an Ofgem SCR that new users and non-traditional stakeholders will continue to have a strong voice in the process. The complexity of the charging system means that it is very difficult for the non-industry stakeholder to have a strong grasp of the changes, be able to model outcomes and effectively feed into the process.

As a result, we would prefer the changes to be led by Ofgem where there is a better chance for smaller stakeholders continue to have a voice and influence.

➔ **Question 12:** Do you agree with our proposal to launch an 'Option 1' SCR for areas of review that we lead on? Please give reasons for your view.

➔ **Question 13:** Do you agree with the introduction of a licence condition on the basis described in paragraphs 5.11 and 5.12 and Appendix 5? Why or why not? Do you have any comments on the key elements set out in table 7 of Appendix 5a, or consider there are any other key elements which should be included? Please give reasons for your view.

➔ **Question 14:** Do you have any comments on the draft wording of the outline licence condition included at Appendix 5b? Please give reasons for your view.

→ **Question 15:** What are your views on our indicative timelines? Do you foresee any potential challenges to, or implications of, the proposed timelines and how could these be mitigated?

The significant changes to the connection charging at distribution will have big implications for new connections and those paying up front for their connection. It could halt new connections for a period of several years while these changes are put in place.

It will be important to agree some sort of interim arrangement or agreement to lower future charges for a period to those who are currently paying (or have paid) high shallow-ish charges for distribution connection.

→ **Question 16:** What are your views on our proposals for coordinating and engaging stakeholders in this work?

Would like to continue to see the Charging Futures process – but also the requirement for different stakeholders to be engaged and consulted. With a more diverse and distributed energy system there are far more non-traditional and smaller stakeholders to consider and ensure that systems and methodologies developed do not disadvantage those with less financial backing or ability to take risk.

As part of the review we would be keen to see options tested and explained in case studies for key stakeholders through-out the process to allow the suggested changes to be thoroughly investigated before modifications are agreed.