

**August 2018**

## **Purpose of this note**

This is background information on Ofgem's Electricity Network Access project, summarising Ofgem's consultation on 'Getting more out of our electricity networks by reforming access and forward looking charging arrangements', found [here](#).

In late 2017, two Charging Futures Task Forces were set up to consider access arrangements and forward-looking charges. You can read their report and other meeting notes [here](#).

## **Executive summary**

Our energy system is currently going through a radical transformation. Ofgem does not think the current approaches to allocating and using capacity – and charging for the associated network usage – on the electricity networks can adequately address the associated challenges and opportunities. Their consultation outlines their view on the key problems with the current arrangements, the potential options to address these problems, and how this should be taken forward.

Ofgem is proposing to launch a review of access and forward-looking charging arrangements. It is consulting on whether it would be in consumers' interests for the proposed review to include the following areas:

- › Assessing options to improve the definition and choice of access rights for all users of the network. For small users, this could be a defined 'core' access with options for additional access products above this. For larger users, there could be a choice of access options with a range of firmness, time, duration or depth of access.
- › Understanding how best to allocate and reallocate access rights
- › Comprehensively reviewing distribution forward-looking charges by:
  - introducing greater granularity to Common Distribution Charging Methodology (CDCM) charges so that they are more reflective of actual local network conditions
  - reviewing locational charges for Extra High Voltage users to improve predictability
  - reviewing the balance between usage-based charges and capacity-based charges so they are more cost-reflective
  - considering whether to move to a shallow connection charge at distribution level, more in line with transmission.

- › Reviewing the Transmission Network Use of System (TNUoS) charging arrangements for distributed generation to consider whether there should be greater alignment with how larger generators are currently charged. Ofgem are also seeking views on whether to review the basis of TNUoS charges for demand users.

Ofgem is also consulting on which parts of these reviews should be taken forward by Ofgem, the ESO, network operators and wider industry. It is proposing that at least the review of charging and access arrangements for small users should be taken forward under an Ofgem-led Significant Code Review (SCR), with the industry leading work to improve the allocation of access rights, and potentially considering definition and choice of access rights for larger users.

## What's driving change?

The energy sector is undergoing fundamental change. In electricity, the type and location of generation plant has changed significantly and will continue to do so. The way consumers, businesses and households, want to use electricity is also changing. Many more consumers of electricity also want to generate it, or store it - changing how much electricity they take off the network, and when they do this. New technologies, such as electric vehicles, could also significantly increase demand on the system.

These changes can really benefit consumers but they also put pressure on our electricity networks as capacity becomes constrained in different locations, and can increase costs and delays in connecting to them. It is important that these changes are enabled without incurring unnecessary additional costs, and in a way that treats people fairly.

Ofgem wants to ensure the electricity networks can be used efficiently and flexibly, so that network users can each have the access they need and benefit from new technologies and services, while avoiding unnecessary costs on energy bills in general.

Specifically, there are three priorities that Ofgem's consultation is looking to address:

1. Enabling growth in demand, particularly stemming from new low carbon technologies, while managing constraints on the networks.
2. Managing constraints on the distribution networks as a result of growth in generation connecting there.
3. An effective interface between transmission and distribution arrangements so that signals are consistent across the whole network, and network users can adequately respond.

## What does 'network access' and 'forward looking charges' mean?

### Network access rights

- The network capacity a user has allocated to them in order to import or export electricity from their target market
- Requires a connection from the user's equipment to the wider network, and then **allocated capacity on that wider network**

### Forward-looking charges

- The elements of network charges that look to provide signals to users about how their behaviours can increase or reduce future (ie incremental) costs on the network
- Includes connection charges and elements of use of system charges

## What are the current arrangements?

### Access

For many users there is no choice, or a poorly defined choice, of access options. Access rights are generally allocated on a first-come, first-served basis, and are not readily tradeable or transferable to another user who might wish to use them. As a result, some users may face disadvantages in seeking to get access to the system, and existing capacity may not be being used efficiently.

Connection to the transmission network generally provides 'financially firm' access, whereby the generators agree a payment with the ESO if they need to be curtailed – meaning they are prevented from putting electricity onto the network. Under the 'connect and manage' approach, allowing more connections onto constrained areas of the network can only be achieved by increasing costs to the ESO, which are consequently passed on to consumers.

At distribution level, DNOs are increasingly offering non-firm (flexible) connections in constrained parts of their network. Ofgem welcomes these types of options as a means to unlock more network capacity and provide quicker and cheaper connections. Ofgem now think there is a need to consider how arrangements can evolve to allow for more efficient definition and allocation of firm and non-firm access.

Electricity network users provide an ongoing financial commitment to the network investment they trigger. These contributions differ between electricity transmission and distribution, due to differences in the extent of upfront connection charges.

### Forward-looking charges

Currently, the models used to generate the forward-looking charges for distribution and transmission work quite differently.

While there are locational signals in transmission charges, distribution charges (except for those connected at extra high voltage level) only provide a generic signal that varies by voltage level across a DNO area.

The time-of-use element of network charges works differently for transmission and distribution charging. For example, transmission network charges for half-hourly settled demand customers are charged based on their use during periods of peak demand (triad), whereas distribution network charges are charged differently for use during defined 'Red-Amber-Green' or 'super-Red' periods.

Transmission-connected generation pay generation network charges related to their agreed entry capacity. Distribution-connected generators can receive credits, rather than charges, even in generation-dominated areas.

The connection charging methodologies at distribution and transmission are also different. At transmission there is "shallow" connection charging boundary, which means the connection customer do not pay for any wider reinforcement that is triggered. At distribution there is a 'shallowish' connection charging boundary, which means that the connection customer pay for a proportion of any wider network reinforcement that is triggered.

## What changes are Ofgem proposing to these arrangements?

### **Access**

New access arrangements could offer more choice for how consumers and other users can gain access to the system - leading to more efficient use of the network. This is why Ofgem is consulting on clarifying access rights, and broadening access choices for small and larger users of the network.

#### Access for small users

The proposal is to clarify access rights and enhance choices for small users. These are domestic users but also small non-domestic users like micro-businesses and others whose capacity rights may be less clearly defined. There are two ways this could happen:

1. Asking small users to specify the level of capacity they require, with a minimum standard 'core' level. This would make sure that the basic needs of small consumers to have access to the network are met and protected. A defined level of 'core' access would need to be established.

If small users want more above the 'core' level, they could then have a range of options to choose from, e.g. firm access or access at certain times, such as peak or off-peak. This could allow small users to choose the access that best suits their needs – for instance, whether they value continuous high use of the system, or, are able to be far more flexible in their use and may benefit from varied access.

2. Placing a principles-based obligation on suppliers or other intermediaries to consider the types of access that are appropriate to meet a small user's needs, through understanding their particular characteristics. They would need to ensure

they only recommended options which were in line with their customer's best interests.

This review would need to be based on an understanding of what makes up small users' essential needs, both now and in the future. A more sophisticated understanding of consumers' behavioural response to flexible options in the future will be helpful when considering this.

#### Access for larger users

Improving the definition and choice of access for larger users will help network operators understand where and when new network capacity is needed. For larger user access rights, Ofgem considers that there are benefits in improving the definition and choice of:

- **Firmness of access** – the extent to which a user's access to the network can be restricted, and under what conditions. For example, a user who is willing to bear a certain level of interruptions to their network access at certain times could pay less than another user that has non-interruptible access.
- **Time-profiled access** – whether a user wants certainty of access at all times of the day/ year, or options such as 'seasonal' or 'off-peak' access to the network. For example, a solar farm without a battery would only need access during the day. Users who have time-specific access could have lower charges than those with constant 'round the clock' access. This could help network operators know when capacity in parts of the network are needed, and at which points in the day.
- **Short term access** – where users are able to provide short term capacity to networks closer to 'real time'. This is already possible at transmission level, but does not currently happen at distribution level.

Ofgem is also inviting views on the value and feasibility of developing options for:

- **Long term access** - whether a user's access rights expire after a defined length of time, or if access should stay with no end date. This could help network operators plan long term network demand.
- **Local and depth of access** – whether users want access to the whole system (distribution and transmission) and therefore all GB markets, or only 'local' access - to either a geographical area, or a certain voltage level. Those who only want a local or shallow access could see lower charges than those with full access.

#### Allocating and reallocating access rights

Ofgem and the Task Forces considered a range of ways to initially allocate access rights, and reallocate them in the future. These included a first come first served approach, an auction, or other market-based approaches.

In the consultation, Ofgem is proposing that a review should focus on improving the initial allocation of access rights through incremental improvements to existing queue management routes. Better queue management could help make better use of existing capacity while reducing the time users wait to connect.

Ofgem is not proposing to consider introducing an auction based approach at this time due to its complexity and the potential disruption caused by its introduction. Additionally,

better definition of access rights and a decision on the distribution connection charging boundary would be needed before it is possible to develop proposals for auction design.

Ofgem is proposing a review to consider how improvements can be made to the reallocation of rights. Options to consider could include establishing new access conditions (eg 'use it or lose it' or 'use it or sell it') to improve network utilisation. Ofgem also considers that a mechanism could be developed to enable exchange of access rights between users. For example, developing a mechanism allowing distributed generators with flexible connections to trade access rights, to help users manage their level of curtailment.

### **Forward-looking charges**

Changes to forward looking charges could lead to more effective ways of reflecting network costs to users of the system. This would allow users to adjust their behaviour - leading to more efficient use of the network and lower costs to consumers.

Options for reviewing forward looking charges are mostly focused on distribution charging across Distribution Use of System (DUoS) and connection charges, with some transmission proposals.

#### Distribution forward-looking charging proposals

Ofgem are proposing a comprehensive review of distribution charges that could introduce:

- › **Greater granularity to CDCM charges so that they are more reflective of actual local network conditions.** One way these locational signals could be done is by classifying the distribution system into different 'zones' such as 'generation-dominated' or 'demand-dominated' zones. This could mean that distributed generation in generation-dominated areas could pay a charge than receive a credit, while demand could receive a credit. Ofgem may also consider whether there should be limits on the extent to which small users should be subject to these new cost-reflective locational signals.
- › **More predictable locational charging for Extra High Voltage users.** Options could involve moving towards a zonal approach, more similar to the approach used in transmission charging (TNUoS).
- › **Review of the balance between usage-based charges and capacity-based charges** so they are more cost-reflective. For Half-Hourly metered users, this would mean greater focus on capacity charges. A capacity charge would mean users pay for the amount of space (capacity) within their wires and cables they want to be able to use at their maximum. This new approach would need to consider the impact of new business models and technologies as more demand users start to 'export' back on to the network (eg Electric Vehicles exporting back to the system through smart chargers). If this approach is taken, Ofgem would also need to consider the arrangements for those users who are not Half Hourly metered, to ensure that they are aligned.
- › **Reviewing whether a shallow connection charge at distribution level is preferable** (more in line with transmission connection charging). Whilst the shallowish connection charging boundary sends a strong locational signal to users about the most efficient place to locate on the network, the potential high upfront

cost of the connection has also been identified as a potential barrier to connecting to the distribution network. Moving to a shallow distribution connection charge at distribution would depend on being able to send better locational signals through ongoing DUoS charges. Locationally varying use of system charges would mean that a wider group of network users receive a signal to provide flexibility to offset the need for reinforcement. The potential introduction of a shallow distribution connection charging would also have to consider the users commitment arrangements and timing of payments.

### Transmission forward-looking charges

Ofgem are also proposing a focused review of TNUoS forward looking charging arrangements. Specifically, Ofgem are proposing to review the TNUoS forward-looking charging arrangements that apply to distributed generators and whether this should be more aligned with the arrangements that apply to transmission connected generators. Today, distributed generation are treated as 'negative demand', which means they receive charging credit. Under this proposal, generators could receive the TNUoS credits in zones where they are expected to reduce long term transmission costs, and pay charges where they are expected to increase long term costs. This would mean that all generators across all voltage levels on the system would receive the same consistent forward-looking signals.

Ofgem are also considering reviewing the demand element of forward-looking charges in TNUoS. This could mean moving away from triad periods to collect TNUoS forward-looking charges, and towards fixed time of use periods, or charging based on agreed capacity. This could improve predictability of charges and improve consistency between generators and demand users with on-site generation.

## Taking the review forward

Ofgem has considered a range of options for how a review of these aspects of access and forward-looking charging arrangements should be taken forward.

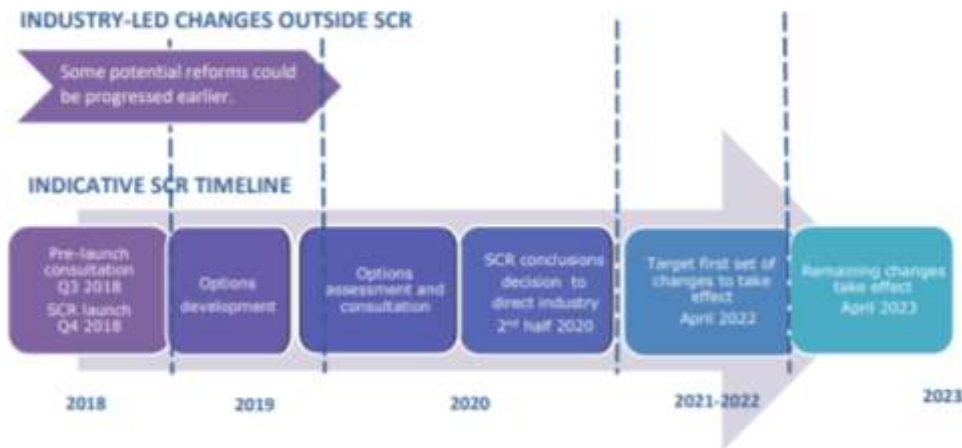
In its consultation, Ofgem is inviting views on:

- › Leadership of the review(s)
  - Ofgem's proposal is to launch an SCR. At a minimum, Ofgem thinks the SCR should cover the proposed review of small users' access rights and forward-looking network charging changes
  - Whether the ESO and DNOs (with the involvement of other stakeholders) should lead the proposed review of larger users' access rights and improvements to allocation arrangements, with expectations set out in new licence obligations, or whether these should also be in the scope of Ofgem's proposed SCR
- › The type of SCR that Ofgem proposes to launch.
- › Ofgem's proposals to ensure coordination and effective input from the industry and stakeholder engagement through Charging Futures.
- › The expected timelines for review and implementation of any changes.

Visit [www.chargingfutures.com](http://www.chargingfutures.com) for more information



## The proposed review timeline:



## What are the next steps on this review?

In its consultation, Ofgem is asking for feedback on the proposed scope and method to take this review forward. The consultation period is open until 18 September 2018 and Ofgem intends to make a decision on the scope and approach to the review towards the end of 2018.

## How can you get involved or find out more?

### Contribute

- > Read and respond to Ofgem’s consultation up until 18 September 2018 [here](#).
- > Attend the 5 September Charging Futures Forum to join the ‘contribute’ sessions.

### Learn

- > Read the full consultation document and Baringa’s analysis [here](#).
- > Visit the [Charging Futures consultation page](#) to:
  - o Watch Ofgem’s 24 July [webinar](#) launching the consultation
  - o Listen to the Charging Futures podcast series on the consultation document launch here on [soundcloud](#) or on [apple podcasts](#).

### Ask

- > You can contact Ofgem directly on Access and Forward-looking charges via [NetworkAccessReform@ofgem.gov.uk](mailto:NetworkAccessReform@ofgem.gov.uk) .
- > For any other questions on charging reform or Charging Futures, contact the Electricity System Operator, Lead Secretariat for Charging Futures at [chargingfutures@nationalgrid.com](mailto:chargingfutures@nationalgrid.com)