Today

▶ Charging Futures quick overview
▶ Programme of reform in charging and access
  ▶ Access and Forward Looking Charges
  ▶ Targeted Charging Review
▶ Next steps
▶ Q & A through webex chat
What is Charging Futures?

- Charging Futures Forum
- Charging Delivery Body
- Task Forces
- Ofgem Chair
- Electricity policy and regulation
- Industry innovation and initiatives

INDUSTRY CODE GOVERNANCE

- CUSC: Connection and Use of System Code (for transmission)
  - Code admin > National Grid
- DCUSA: Distribution Connection and Use of System Agreement
  - Code admin > ElectraLink
- BSC: Balancing and Settlement Code
  - Code admin > Elexon
Current Change

- Targeted Charging Review (Significant Code Review)
- Access Rights
- Forward Looking Charges
- Code modifications

Charging Futures
Quick poll
Today’s webinar hosts:

Stephen Perry
& Andrew Self

Ofgem
Access Rights & Forward Looking Charges
Stephen Perry
The two main objectives of the project are to consider:

> The nature of network access rights and whether different ways of constructing and allocating them could have value

> The appropriate forward-looking charges for access and use of networks. This covers what changes might be merited both with and without changes to access arrangements.
What are Access Rights & Forward Looking Charges?
Some introductory concepts

**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 (i.e., incremental) costs on the network
- Includes connection charges and elements of use of system charges

**Access vs usage charges**
- Access charges reflect the cost/value of providing a user with a certain amount of network access, regardless of whether the user actually ends up using it or not
- Usage charges aim to reflect the cost/value conferred on the network by the user’s actual usage. May be used where less emphasis on access rights.
Access Rights & Forward Looking Charges reform

Drivers for change
- Prospect of increased network constraints as use of the network changes
- Opportunities from smart & flexible tech to maximise capacity
- Growth of embedded gen – need for more consistency across T&D

Charging Futures Task Forces

Desired outcomes
- Consumers’ needs met efficiently
- Network capacity allocated according to users’ needs
- Cost reflective charges
- Level playing field to support competition
- Timely & efficient network investment
- Signals are simple, transparent and predictable
- Appropriate allocation of risk between consumers, networks and users

Access Rights & Forward Looking Charges review
Why action is needed

Signals for efficient use of the network in a changing world

> Prospect of increased network constraints as use of the network changes. Building more network capacity rather than using distributed flexibility likely to be very inefficient.

> Congestion could hinder ability for system to accommodate new techs (eg EG, EVs, heat pumps) and new network capacity will add significant costs to consumers.

> New smart and flexible technologies offer opportunity to accommodate new usages through making much better use of existing network capacity, alleviating the need for new capacity. Currently little participation of DSR, and onsite generation.

> Better access arrangements enables price control to incentivise more efficient investment in networks.

Sending coherent signals across transmission and distribution

> Current access and charging arrangements designed when very limited EG and so little focus on ensuring consistent signals across T & D. This no longer holds - EG capacity has doubled over the last 5 years,

> Need to ensure that different approaches are not distorting investment and dispatch decisions.
Desirable features of network access and forward-looking charging arrangements

- Network capacity allocated in accordance with users' needs
- Users face cost-reflective charges
- Arrangements support timely and efficient network investment
- Arrangements provide for appropriate allocation of risks
- Consumers' requirements are met efficiently, as appropriate for an essential service
- Signals are sufficiently simple, transparent and predictable
- Arrangements support competition by providing a level playing field

Consumers' requirements are met efficiently, as appropriate for an essential service. Network capacity allocated in accordance with users’ needs. Users face cost-reflective charges. Arrangements support timely and efficient network investment. Arrangements provide for appropriate allocation of risks. Consumers’ requirements are met efficiently, as appropriate for an essential service. Signals are sufficiently simple, transparent and predictable. Arrangements support competition by providing a level playing field.
### What are the options for change?

<table>
<thead>
<tr>
<th>Network access arrangements</th>
<th>Forward looking network charges</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Nature of access rights</strong></td>
<td><strong>Structure of the charge</strong></td>
</tr>
<tr>
<td>Time aspects</td>
<td>Types of costs</td>
</tr>
<tr>
<td>Firmness</td>
<td>Types of charge</td>
</tr>
<tr>
<td>Geographical nature</td>
<td>Basis of charge</td>
</tr>
<tr>
<td>Associated conditions</td>
<td>Timing of payment and degree of user commitment</td>
</tr>
<tr>
<td><strong>Allocation and reallocation</strong></td>
<td><strong>Level of granularity</strong></td>
</tr>
<tr>
<td>Initial allocation</td>
<td>Locational granularity</td>
</tr>
<tr>
<td>Reallocation and trading</td>
<td>Types of locational signal</td>
</tr>
<tr>
<td></td>
<td>Temporal granularity</td>
</tr>
</tbody>
</table>
Next steps for Access and Forward Looking Charges project

Industry engagement events:

1. 28 Feb 2018 - Charging Futures Forum, London
2. 6 March 2018 – Workshop at University of Strathclyde, Glasgow

April 2018

CFF Network Access and Forward Looking Charging Task Forces publish their reports on their view of preferred future reforms

Summer 2018

Publication of a consultancy document on future reforms of network access and forward looking charges
Targeted Charging Review

Andrew Self
What is the demand residual and scaling factor?

**Transmission Network Use of System Charge (TNUoS)**

- Locational component
- Transport model
- Residual component
  - Generators: TEC
  - Demand
- Generation only
  - Local circuit charge
  - Local substation charge

Total TNUoS split in 2018/19:

- Generation: 16.1%
- Demand: 83.9%

**Distribution Use of System Charge (DUoS)**

- CDCM - Average costing model
  - Demand: primarily unit-based charges
  - Generation: unit-based credits
- EDCM - Site-specific charging model
  - Demand and generation: primarily capacity-based charges
- Demand: scaling via fixed adder
- Demand: site-specific scaling

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*Charging Futures*
Targeted Charging Review overview

Current framework

- Inefficient investment decisions
- Increasing system costs
- Inefficient operation decisions
- Increasing costs for inactive consumers

Significant Code Review

Targeted Charging Review (TCR)

Desired outcomes

- Resolve how residual charges are set and recovered
- Review embedded benefits
Current framework

The current levels of network and SO charges are c£10 B per year, of which about 50% is connection/forward-looking (designed to send signals) and 50% is residual/cost recovery charges (to ensure total revenue is recovered)

<table>
<thead>
<tr>
<th>2016/17 charges</th>
<th>Transmission</th>
<th>Distribution</th>
<th>Balancing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>£0.2 B</td>
<td>£0.2 B</td>
<td></td>
</tr>
<tr>
<td>Use of system</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Forward-looking</td>
<td>£0.5 B</td>
<td>£ 4.0 B</td>
<td></td>
</tr>
<tr>
<td>(both gen and demand)</td>
<td>(almost all on demand)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual/cost recovery</td>
<td>£2.1 B</td>
<td>£1.4 B</td>
<td>£1.3 B</td>
</tr>
<tr>
<td>(all on demand)</td>
<td></td>
<td>(more than 99% on demand)</td>
<td>(half on demand and half on gen)</td>
</tr>
<tr>
<td>Total charges</td>
<td>£2.8 B</td>
<td>£ 5.6 B</td>
<td>£1.3 B</td>
</tr>
</tbody>
</table>
Current approach to residuals

Inefficient investment and operation decisions

- Residuals may drive unintended and inefficient user actions by dampening or amplifying signals
- ‘Active’ network users are increasingly able to vary their interaction with the networks, reducing residual exposure
- Overall system costs may be increased by these actions to avoid residual charges

Adverse impacts on consumers

- Residuals increasingly fall on users who aren’t active or don’t have onsite generation
- Residential and small business consumers more likely to be affected, particularly more vulnerable consumers
  - Level of distortion will depend on incentives and scale and speed of technology adoption (such as Evs)
- Costs likely be passed through to PPM customers - current price cap provides allowance for the network companies’ published charges
Principles of the Targeted Charging Review

- Reducing harmful distortions
- Fairness
- Proportionality and practical considerations
Who should pay the demand residual and how?

Who should pay?

Our shortlist for further analysis

Demand

- Fixed charges
  - Based on a range of implementation options

Generation

- Capacity demand charges
  - Ex post
  - Ex ante

Gross consumption charges
- For business consumers

Baseline arrangements
- For T and D charging
Next steps for the Significant Code Review

Now that we have developed a short-list of options, we are ready to move on to the next phase of the SCR which will mean further analytical work.

Three levels of analysis:

- What are the residual charges and associated incentives faced by individual users due to the existing arrangements, and how are they affected by a change in the method by which residual charges are collected?
- What aggregate (whole system) changes might be expected from a change to residual charges.
- Costs of change
Overview of change
How do these changes fit together?

Targeted Charging Review (Demand Residual) + Access and Forward Looking Charges
Timeline for change

- **Q2 2018**: Further analysis & industry engagement to narrow options
- **Q3 2018**: Summer 2018 consultation
- **Q4 2018**: Late 2018 decision
- **2019**: Outputs raised as code modifications through open governance process
- **2020**: Implementation from 2020/21 onwards
- **Our decision will outline how we will take implementation of any reforms forward. This includes expected implementation timescales.**
Your involvement

Learn

Ask

Contribute
More info

Visit the Charging Futures website for

• Introductory webinars on how transmission and distribution charges work
• Learn more about Charging Futures
• Summary notes on the progression of charging reform
  • Targeted Charging Review
  • Access and Forward Looking Charges Task Forces
  • Storage
  • BSUoS
• Sign up to the Charging Futures distribution list

www.chargingfutures.com
Quick poll
Q & A

Please use the chat box to ask your questions
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Contact:
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