![ofgem - Making a positive difference for energy consumers]

Access & FLC SCR
Delivery Group meeting

	Agenda Item	Timing
1	Welcome and agenda	10:00 - 10:05
2	Actions update from second Delivery Group meeting [Secretariat]	10.05 – 10.15
3	Work stream – Access rights	10.15 – 11.15
4	Work stream – Charge design	11.15 – 12.00
	BREAK	12.00 – 12.10
5	Work stream – Locational granularity	12.10 – 1.00
	LUNCH	1.00 - 1.30
6	Work stream – Cost drivers	1.30 – 2.15
7	Challenge Group (26/02) • Overview of the meeting • How best to incorporate input from the group throughout the SCR?	2.15 – 2.40
	BREAK	2.40 - 2.50
8	Risk mitigation workshop	2.50 – 3.20
9	Network Company Access Allocation update	3.20 – 3.30
10	Summary and close (AOB)	3.30 – 3.35

Access

Agenda item 3
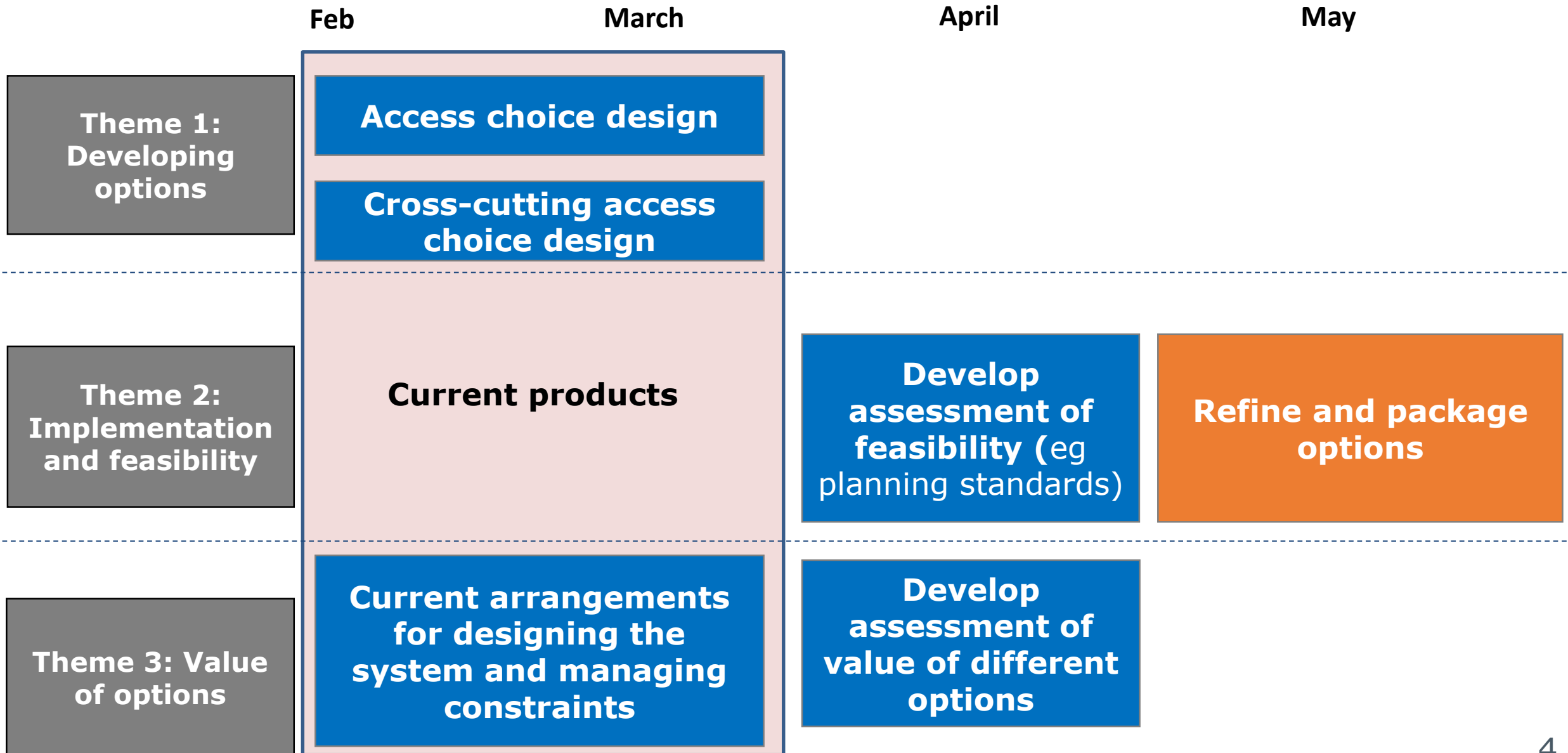
Key themes from challenge group discussion

▪ Useful feedback provided on customer preference of different access options – notably the CG were supportive of:

  ▪ better defining non-firm access rights.

  ▪ time-profiled access rights – they also had ideas for alternative types of "time-profiled" access rights.

  ▪ shared access rights, though they had questions about how it would work.

▪ The group identified pros and cons of both overrun charges and physical limits. Some supported allowing users to choose which they preferred.

▪ Stakeholders keen to ensure that alternative access choices do not restrict ability to operate in market (eg balancing services).

We have circulated a working draft of report 1: Current approach to the Design and Operation of the Electricity Transmission and Distribution Systems and User characteristics

Discussion questions

1. Which would be the priority aspects of the draft report to develop in fuller detail?

2. Which areas are necessary inputs for other deliverables?

3. Do you agree with the content of the draft report, or are there aspects which should be revisited, eg considering experience from your own networks?

We have identified different aspects of defining the 'firmness' of access rights

- The key **physical drivers of 'firmness'** we have identified are:

    - **Redundancy of service assets**
    - **Wider network redundancy**
    - **Network capacity limits**
    - **Other factors which determine network resilience?**

    These factors contribute to → **The circumstances and customers' overall likelihood of curtailment**

- **Commercial conditions** or **financial 'firmness'** determines any payments due when access is restricted

Question: Are there any other key drivers of curtailment?

The subgroup has identified that the term 'firmness' may cause some confusion. Some potential alternative terms which may capture the above include:
- Continuity of access
- 'Protected' and curtailable access

Question: Do you have views on these terms? Can you identify other suggestions?

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We have identified key parameters of access rights which may be better defined, and a range of potential variants or design choices for each option.

- **Physical 'firmness', defined in terms of network drivers**, including network redundancy levels and the nature / location of constraints

- **Physical 'firmness', defined in terms of customer outcomes**, such as instances / duration of curtailment, volume of energy lost or other indices.

- **Financial 'firmness'**, which determines the circumstances when payment is due and how the amount is set. This may be based on market value, avoided network cost or other administered amount. Also to consider how different access options are valued.

- We are also considering options for different user types, incl. small users.

- **Time-profiled access**, could be HH varying, time banded or continuous access; it could be static or dynamic, and have differing degrees of notice of changes, linked to local / market conditions?

- **Short term duration**, involves choices of any maximum duration, whether this can start at any time, what happens at the end of the period, and whether it is offered universally or only under certain conditions

- **Shared access**, could involve different numbers or types of customer, within a defined geographic region or more widely; it may need exchange rates to be defined, and could be more suited for certain access options

We have also identified a number of cross-cutting parameters which can be defined.

- **Standardisation of access,** could involve a set number of standardised options, potentially defined in codes, a more continuous range of bespoke choices for customers, or a hybrid, varying by option or customer type

- **Cross-system basis of access**, could involve access rights defining explicit conditions relating to distribution and transmission, or a single set of combined conditions.

- **Overrun and override conditions**, the circumstances when a defined access or curtailment level can be exceeded, or curtailment requests overridden, and what happens if they are, eg excess charge, automatic upgrade or physical limit

- **Planning / security standards**, describes how far access options have a basis in planning standards or other codes of practice

- **Implicit / explicit**, considering how explicitly access options are defined for different types of user or access (eg import / export)

Discussion questions

1. Have we identified **all the relevant option** categories and variants / design choices for defining these access options? Can you identify **other variants** that should be considered?

2. What are your initial views on option variants or hybrids which would be **particularly valuable** OR any which are **unlikely to be desirable / feasible**?

3. What are your views on the level of **standardisation** and options for **cross-system access**?

4. Can you identify other interactions we should consider – eg **integration with market arrangements**?
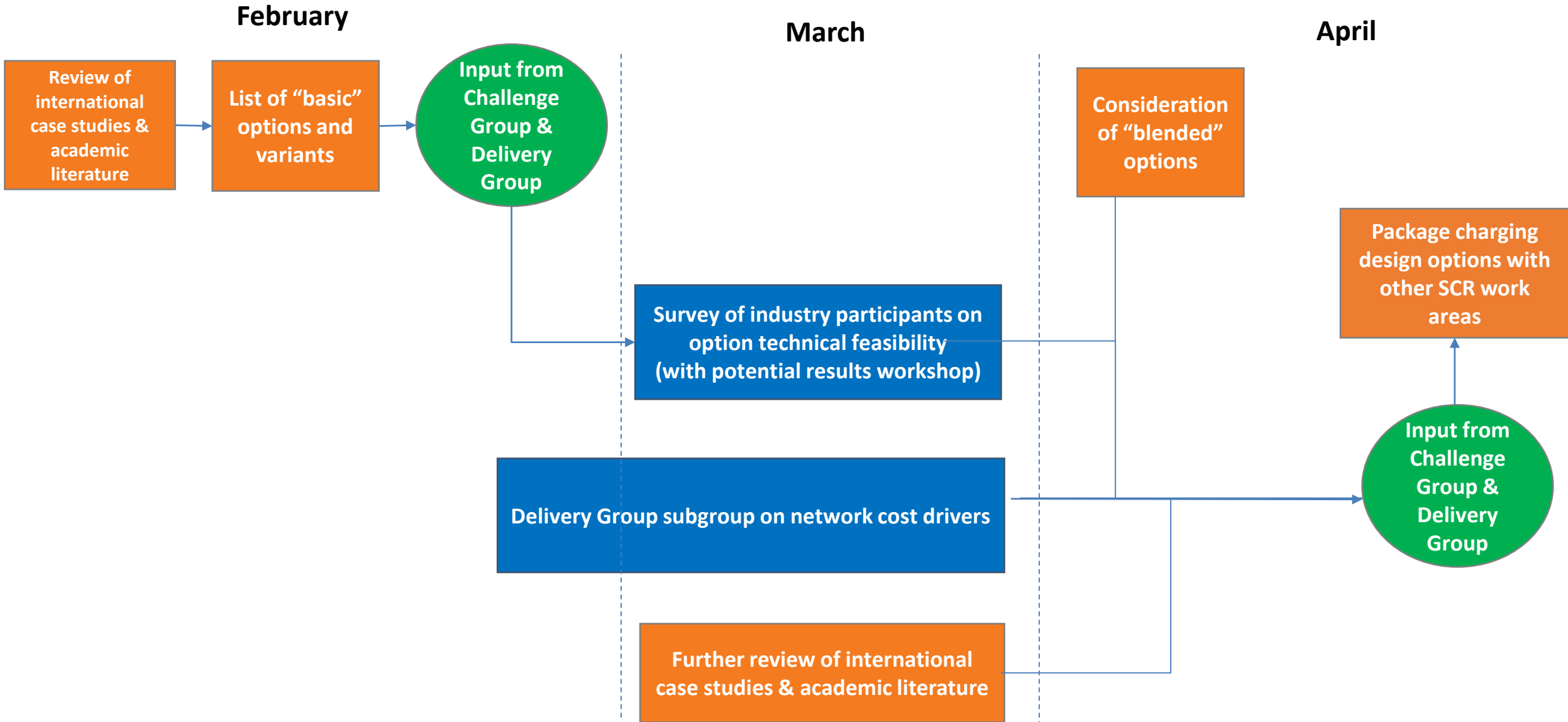
Charge Design

Agenda item 4

This session

- Sequencing
- Charge design options
- Feasibility

- **Volumetric time of use**, whereby user are charged in £/kWh, at different rates during different time bands.

- **Actual capacity**, whereby users are charged on the basis of their actual maximum capacity, eg in £/kW.

- **Agreed capacity**, whereby users agree a capacity limit ahead of time, and pay a £/kW charge for the capacity.

	Individual HH settled demand	Supplier aggregated
Volumetric time of use	✓	✓
Actual capacity	✓	✓
Agreed capacity	✓	Unclear
Critical peak pricing	✓	✓
Critical peak rebate	✓	Unclear

- **Critical peak pricing**, whereby users are charged high prices during times of actual network congestion, and very low prices the rest of the year.

- **Peak rebates**, whereby users are paid to reduce demand during times of actual network congestion.

All options could have a locational element

Basic option 1: Generation treated as "negative demand"—generation is treated as equal and opposite of demand.

Basic option 2: Generation either paying a charge or receiving a credit—generation is treated as equal and opposite of demand.

During demand dominated areas or times, generation users receive a credit which is the opposite of the charge paid by demand users. During generation dominated areas or times, generation users make a payment which is the opposite of the credit received by demand users.

Basic option 3: Agreed capacity as part of access right.

*All options could have a locational element

Survey questions

1. Have we identified all the basic options for demand?
2. Have we identified all of the basic options for generation?
3. Are there specific variants that should be added? In particular, for generation?

Feedback from challenge group

- Need to consider how the charge design interacts with the implemented solution from TCR
- Need to consider how the planning standards influence the charge design
- There needs to be a clear link between access and charging arrangements
- Need to consider that charge design will send investment and operational signals, though are weak for investment decision if volatile
- For generation charging, need to consider how behind the meter will be affected
- For generation charging, there was a load factor option developed in Transmit

Feedback from survey of network businesses (verbal update)

Feasibility survey

We want to survey the network companies and suppliers to collect evidence and views on the feasibility of the options.

Are there any additional feasibility themes that should be added?

What we need

Volunteers for bi-lateral discussion to help develop feasibility survey and provide direct evidence on forecasting

Feasibility themes

- Metering
- Data collection
- Data processing
- Charge calculation
- Billing and calculation systems
- Settlement
- Forecasting

Locational granularity

Agenda item 5

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Have any of the options been modelled to any extent?

Certain options may not be possible yet (eg need more granular reporting info).

could there be different model variants for different areas

Tx not in scope. But learning might impact arrangements at Tx

How to deal with non-stationary assets (e.g. EVS, or virtual BMUs) - don't want to miss/ignore the value/risks of these in any modelling

potentially rudimentary models before shortlisting, and using that to help select on shortlist

list is quite complex, needs more information on these

Different answers for demand and generation...

Need clarity on how the locational options link with residual (TCR) Line Loss Factor Class segmentation for network users

Struggle to see how it will work for demand...

Introduce more than just gen/demand dominated - need more archetypes.

pricing allows anybody to respond, flex markets have lower bounds

EDCM - volatile

We have generated 5 high level option categories (13 option variants) for which 'power flow' and 'asset based' approaches are considered on a spectrum of nodal to zonal options.

Power Flow Based	**Asset Model Based**
• Charges are based on power flows through an electrically representative model of the network and assumed user behaviours.	• Requires a representative model of the assets, and a method of attributing the costs associated with those assets to users.
• This could be highly granular (e.g. EDCM) or use estimated/aggregated network data where detailed network models do not exist.	• The asset based model could be highly averaged across many users (e.g. CDCM socialises across a region) or more targeted to specific parts of the network. It could include use of 'archetypical' networks.
• This approach may be good for capturing incremental reinforcement costs based on the power flows through assets at peak versus the capacity of existing network.	• This approach may be good for capturing broader forward looking costs associated with assets (e.g. replacement or O&M)

Full options list and feasibility assessment

	Option ref and name	Feasibility	Conclusion
1	**Nodal pricing**	Partial	'Pure' nodal pricing for all customers is not feasible with current data and is not expected to become feasible in the foreseeable future. However, this option could be used down to at least primary substation level now and possibly HV network in the future.
2A	**Zonal with nodes grouped by price**	Partial	Zoning on this basis has the same implementation challenges as option one, so could be used down to at least primary substation level and possibly HV network in the future.
2B	**Zonal with nodes grouped by electrical connectivity**	Partial	Zoning on this basis may be feasible down to HV network level, if combined with another option for lower voltages.
2C	**Zones with nodes grouped by geographic proximity**	Partial	Zoning on this basis could be good option to reduce some of the undesirable effects of highly locational pricing, but the restrictions of option 1 remain.
3A	**Zonal by GSP**	Unfeasible	Whilst this option is feasible from a data perspective, the inconsistency across different areas of GB and the requirement for many representative network models in Scotland renders it unfeasible.
3B	**Zonal by level of loading**	Feasible	This option is likely to be feasible but is dependent on key design choices which will determine the number of network models which are required and the way in which a network model is allocated to each customer.
3C	**Zonal by customer characteristics**	Feasible	With appropriate simplifications to enable networks areas to be classified, this option is likely to be feasible.
3D	**Zonal by network costs**	Unfeasible	The requirements for data to enable models to be allocated to customers render this option unfeasible.
4A	**Categorised by postal region or county**	Feasible	This may be a feasible option depending on how granular the zones are defined.
4B	**Categorised by other geographical factors**	Feasible	Network operators have operational regions within their licence areas which could be used as the regions, so this option is feasible. The extent to which this is a meaningful sub-segmentation is assessed when considering cost-reflectivity.
4C	**Categorised by customer type**	Feasible	Assuming a sound mechanism for differentiating between commercial and industrial customers can be defined, this option is likely to be feasible. Alternatively this could be simplified to only distinguish between domestic and non-domestic users.
4D	**Categorised by population density**	Unfeasible	The lack of population density data renders this option unfeasible.
5	**Non-locational GB-wide**	N/A	This option is included for completeness, but is not considered as applicable because it does not align with the objectives of the SCR. The lack of any locational granularity would not reflect the varying customer bases and design policies employed by different network operators.

Are we missing any questions about key charging concepts for our workshops?

- Have we missed any high level option categories that should be considered?

- Have we missed any specific option variants that should be considered?

- Do you agree with the initial feasibility assessment?

- Do you have any other feedback or comments on the draft report?

Cost Drivers

Agenda item 6

Questions for the delivery group

Our expectation is that the cost driver report would answer the cost reflectivity questions (on the next three slides). Do you agree?

What additional content needs to be included in the report to answer these questions?

Does the report contain the information that the locational granularity subgroup needs to feed into their report? What about for the access subgroup?

Volumetric ToU

- **Seasonality**
  1. How much does seasonality matter?
  2. How is seasonality determined?
  3. Extent to which there is a summer peak, and changes in the future?
  4. What would be the impact on charges/cost reflectivity of moving to seasonal time bands?

- **Time bands**
  1. What is the benefit of shoulder periods?
  2. Does having three rates in summer and three rates in winter additional create benefits?
  3. What is the extent to which all assets peak in the same time bands? How divergent is asset peak timing?

Actual & agreed capacity

- **Time of use**
  1. What is the extent to which users' actual peak coincides with system peak?
  2. How much does seasonality matter?

- **Monthly or annually**
  1. How much do monthly peaks differ?
  2. Is there benefit in signalling for reductions in monthly peaks?

Critical peak pricing and rebates

- **No. of critical peaks**
    1. How close are the top 20, 10, 5 peaks?
    2. How does this vary by location?

- **Length of critical peak periods**
    1. Do peaks tend to be short periods of half an hour, or longer periods over several hours?

- **Use of negative pricing**
    1. How often would situations requiring negative pricing occur?

Questions for discussion

- How can the contents, which comprise extracts from separate responses, be presented as a cohesive report?

- Can the data referred to in the report (e.g. historical and forecast reinforcement) be summarised in a meaningful way, rather than just being provided as links to separate workbooks?

- What information from the RFI responses can be drawn out to further evidence some of the topics in the report?

- In addition to the RFI responses, what other evidence (e.g. relationship between load related costs and consumption) is available to support assessment of the different charge design options?

- Have the network companies done work to understand the potential impact of emerging technologies on their networks that is less theoretical than what is currently included?

- Have all network companies provided input into the report and, if not, what differences have they observed on their networks compared to the report?

Feedback from the Challenge Group

Agenda item 7

	Agenda Item	Timing
1	**Welcome and introductions**	10:00 - 10:00
2	**Network Access & Forward-Looking Charges – Overview** • Wider context/case for change • Launching an SCR • Timeline / planning sequencing • Q&A sessions for queries (Sli.do)	10.10 – 11.10
	BREAK	11.10 – 11.15
3	**How will the Challenge Group work?** • Discussion of Terms of Reference • Relationship with Delivery Group/Ofgem • Membership • Indicative forward plan for Challenge Group sessions	11.15 – 12.15
	LUNCH	12.15 – 12.55
4	**Updates and discussion on current working groups** • Working Group updates on: cost drivers, access options, locational DUoS • Ofgem update on charge design options	12.55 – 3.45 **[incl. 10 min break]**
5	**Network Company Access Allocation update**	3.45 - 3.55
6	**Summary and close** (incl. next steps / clarifications)	3.55 - 4.00

- Meeting logistic improvements (eg mix up tables)
- Sending materials as far in advance as possible
- Even wider range of representatives on CG
- Central location for sharing / commenting on files
- Short summary documents for up-skilling CG members

Discuss:

How can we best incorporate feedback and input from the Challenge Group throughout the SCR?

Risk mitigation
Agenda item 8

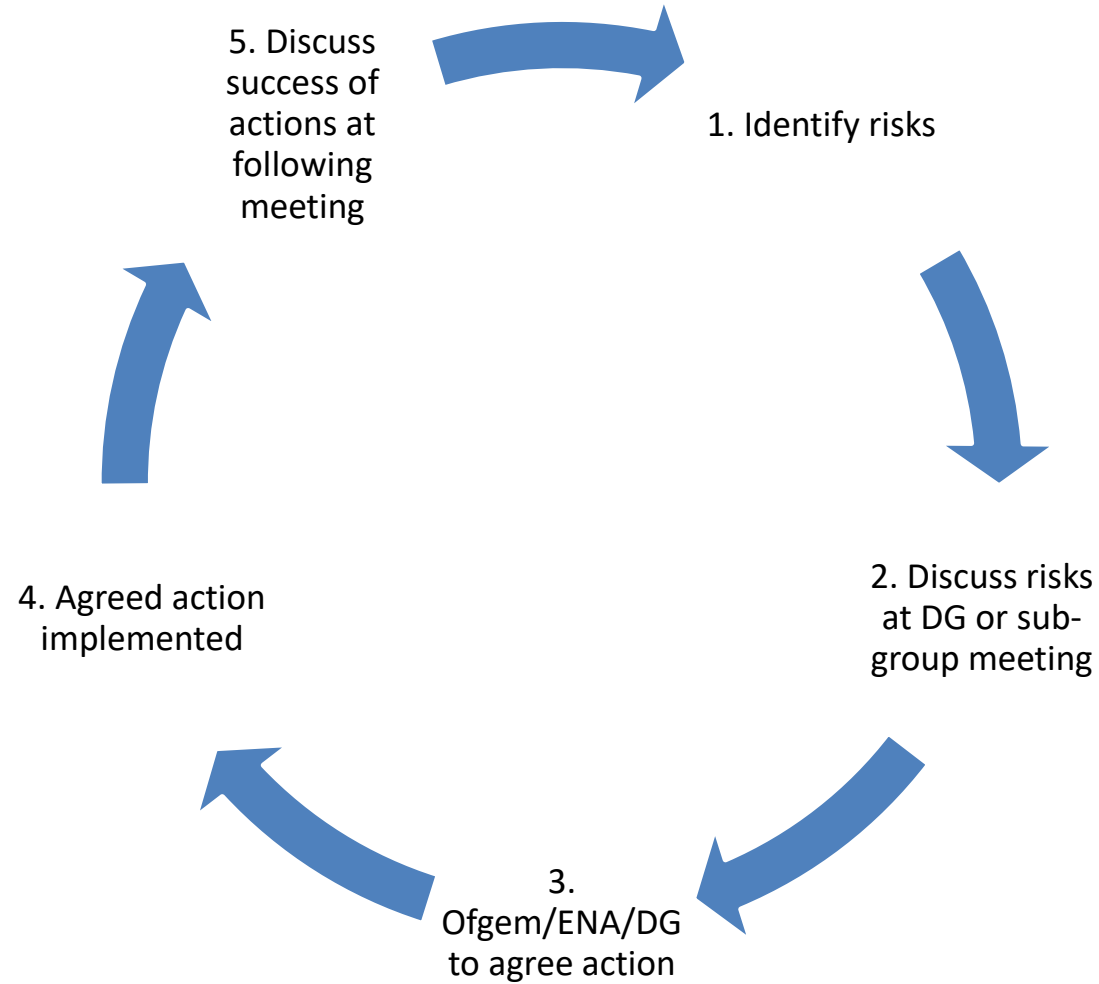For those risks assigned to Ofgem, we have incorporated those into our internal risk mitigation strategy.

The purpose of this session is to decide on mitigation actions that the delivery group and sub-groups can put in place for each risk category which is assigned to them.

For each action, we need to identify:

- Who?
- What?
- When?

Risk category	Risks & impacts	Responsibilities of the delivery & sub-groups
Resource & scope creep	• Groups get weighed down with detail and lose focus on solutions • Subgroups not delivering reports on time • Working to fast timescales compromising quality* • Lack of people to deliver output at the right quality • Potential to drown if RFI during process is considerable* • Concurrent product workshops could stretch company resources* • Scope creep – too many 'good to haves' as a result, not able to focus on core delivery objectives* • Too many voices for product design – ambiguity or scope creep	• ensure project is adequately resourced • raise resourcing concerns if they occur • keep focus on questions and approach of the product descriptions
External dependcies	• The world outside SCR keeps moving on – need to minimise disruptions (RIIO2/BEIS and Ofgem wide review/Brexit/other code mods/BAU)* • How all charging arrangements come together from a timing and practical perspective* • Interactions with RIIO-ED2 – DNOs will need to know direction of travel to inform business plans sooner rather than later* • Dependence/impact on other codes eg security standard – GBSQSS, P2/7 etc*	• remain cognisant of other developments, suggest appropriate action if required
Internal dependencies	• Work is delivered in silos & dependencies not managed making outcomes not fit for purpose* • Managing large volumes of material to successfully deliver outputs – impact is missed deadlines or negative effect on quality* • Divergence in direction between ofgem-led and network led areas of review*	• understand how outputs feed in to other sub-groups and aim to provide appropriate information as inputs
Analysis & data	• Lack of adequate data available leading to poor decision making* • Assumptions on future network developments* • Adopted solutions fail to drive the right customer behaviour • Unintended consequences • Impacts of feedback loops i.e. 15 month lag • End products need to be flexible to allow for the unknown innovations in technology and markets that may develop	• highlight where data is needed, or where received data is inadequate • provide evidence to assess the options rigorously on the basis of the guiding principles
Implementation	• Complications between SCR conclusions and code modifications implementation – potential for stakeholders to frustrate the process*	• tbc

Ofgem and DG joint responsibility

Access allocation update
Agenda item 9

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Our core purpose is to ensure that all consumers can get good value and service from the energy market. In support of this we favour market solutions where practical, incentive regulation for monopolies and an approach that seeks to enable innovation and beneficial change whilst protecting consumers.

We will ensure that Ofgem will operate as an efficient organisation, driven by skilled and empowered staff, that will act quickly, predictably and effectively in the consumer interest, based on independent and transparent insight into consumers' experiences and the operation of energy systems and markets.