



Access and Forward-looking charges

Defining Local Shared Access Rights

SCR Access Subgroup

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Related Documents

Reference 1	Electricity Industry Access and Forward-Looking Charging Review - Significant Code Review launch statement and decision on the wider review – Ofgem publication
Reference 2	

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1 Background

- 1.1 On 9th March 2020 Ofgem published the shortlisted policy options it plans to take forward for further assessment as part of the whole Access and Forward-Looking Charges Significant Code Review (SCR). This paper focuses on the options for implementing the shortlisted Access choice of Local Shared Access.
- 1.2 The paper aims to further define Local Shared Access Rights and expand on aspects such as eligibility criteria and potential high level administrative and commercial supporting arrangements. It also includes Sharing Group example scenarios and likely key features of this access choice, including the need for Sharing Group stability in order to utilise this as an enduring access choice.
- 1.3 An annex to the paper contains a table which assesses this access choice against the guiding principles of the Access SCR.

2 Purpose of the document

- 2.1 The purpose of this note is to define Local Shared Access Rights including qualifying criteria and potential supporting processes.
- 2.2 The Access sub-group have identified that there are challenges associated with sharing access over a wider area and “local sharing of access” has been shortlisted by Ofgem i.e. a smaller number of Users in a specific location on the network sharing access with each other, perhaps behind a specific local constraint. The working group considers that as the focus of this product is ‘local’ shared access, this is more likely to be applicable to distribution systems. This note’s main focus is therefore on potential arrangements for distribution and then explores how the arrangements may map onto transmission.
- 2.3 Alternative access choices are centred on their potential to assist with more efficient network utilisation and this notes considers the formation of sharing groups in that context, it does not consider whether customers may seek to form Sharing Groups for other purposes e.g. to create Balancing Mechanism Units, BMUs and other service provision mechanisms are therefore out of scope of this note.

3 How Local Shared Access Rights could deliver benefits

- 3.1 Sharing access across a group of sites may deliver more efficient network utilisation through coordinating the electricity usage of sites within the Sharing Group. A Sharing Group might be formed for different purposes including to reduce the collective coincidental maximum demand of the sites, to reduce agreed capacities (MIC/MEC) of sites, or to provide demand side management services (or a combination of purposes).

- 3.2 Ofgem's March 2020 open letter set out three principles to guide options assessment; Sharing Group purposes, operating principles and the assessment of them need to align to these principles:
1. Arrangements support efficient use and development of system capacity. A key part of the assessment against these criteria will be the extent to which the arrangements support decarbonisation, at least cost to consumers.
 2. Arrangements reflect the needs of consumers as appropriate for an essential service.
 3. Any changes are practical and proportionate.
- 3.3 The following scenarios are provided as potential examples to highlight potential uses for this access choice. Stakeholders are encouraged to provide feedback on examples they may find attractive:
- Medium Generation (transmission terminology): a number of generation sites sharing a collective capacity up to 100 MW in England and Wales and connected to the same part of the network downstream of the same GSP. All Users must be a net generator.
 - Large Generation: Multiple generation sites sharing a collective capacity above 10 MW in Scotland (North), 30 MW in Scotland (South) or up to 100 MW in England and Wales and connected downstream of the same GSP. All Users must be a net generator.
 - 2 large EHV generators form a Sharing Group with a newly connecting EHV generator. Same Local EHV network.
 - 2 x 1 MVA demand customers connected at HV to the same primary substation.
 - Multiple demand sites, Larger LV sites e.g. sites with agreed MICs of above 69kVA and connected downstream of the same HV constraint e.g. a local authority's non-domestic portfolio.
- 3.4 As part of the working group's considerations, a similarity with private/licence exempt networks with large users was highlighted. The owner or operator of the private network manages the on-site capacity needs of the users both individually and collectively as a 'controlling hand'.
- 3.5 However, it would be wrong to assume that arrangements on private networks provide an off-the-shelf mechanism for local shared access for a number of reasons including:
- In a Sharing Group the individual Users would have connection terms with the licenced distributor and on a private network they would not.
 - Industry arrangements for private networks are not clear and complete, including DUoS billing arrangements and a DCUSA change (DCP 328) has been raised to address this.
 - The licenced network operator has no visibility of the maximum power requirements of individual customers or capacity sharing arrangements within a private network and nor does it need to.
 - There is no evidence that Users on a private network have collective responsibilities for compliance with the agreed boundary ceiling capacity which may be a requirement on users in a Sharing Group.
 - Arrangements on different sizes and types of private networks are likely to vary, with no standard business model.
- 3.6 The most obvious reason for Users to form a Sharing Group is to share local access behind a particular network constraint to realise network efficiency benefits. It is likely that there would also be other Users connected behind the same constraint who would not join the Sharing Group.

- 3.7 Figure 1 below shows a simple example of sharing arrangement where Company 1 owns the 2 sites but has a shared access agreement for 1.5MW to cover its two User sites. Company 1 is legally responsible for compliance with the 1.5MW shared Access Right. Because Company 1 owns both sites it is also responsible if one of the sites breaches its agreed capacity.

A company (1) owns a wind farm with a MEC of 1 MVA and a Solar Farm with a MEC of 1 MVA and holds an export Access Right of 1.5 MW



Figure 1: Simple Sharing Group of 2 sites with shared access¹

4 Summary of assessment against guiding principles

- 4.1 An assessment of the local shared access choice is in Annex 5 to this paper. This is summarised in this section.
- 4.2 Defining and introducing access choices for small users has not been shortlisted and so shared access for groups of small users is not been assessed in this note.
- 4.3 For local area shared access to support efficient use and development of the network a Sharing Group needs to provide clear network benefits e.g. genuine reductions in total capacity to defer or avoid network reinforcement. Ensuring that eligibility criteria are met, and compliance checks of the ceiling capacity creates a new area of administration for network operators. To be practical and proportionate the network benefits need to outweigh the administrative burden.
- 4.4 The required ceiling capacity needs to deliver a genuine reduction in total capacity that delivers capacity savings beyond any network diversity assumptions already taken into account or could be reasonably assumed by the network operator.

¹ SCR Access paper ["Sharing and Trading Explained"](#)

- 4.5 For Sharing Groups to support efficient use of the local network by deferring or avoiding network reinforcement they need to be stable and so this access choice needs to be an enduring arrangement (not a short-term access choice).
- 4.6 Large Sharing Groups may be more unstable than smaller Sharing Groups. Larger Sharing Groups increase the risk that some Users may need to change the use at one or more of its sites or remove sites from the group. This access choice is likely to be more beneficial to small Sharing Groups that should be inherently more stable.
- 4.7 Users would assign their access to the Lead User or Sharing Group Manager for the group and so if a User wanted to remove a site from the group it would need to reapply to the network operator for its own separate access right. This would put continuity of access at risk in contrast to the principle of appropriateness for an essential service.
- 4.8 The risk of loss of continuity of access means that local shared access is likely to suit larger well-informed Users or larger customers with multiple sites who can fully assess the commercial implications of what they are signing up for.
- 4.9 The most appropriate use case for this access choice is likely to be a smaller group of larger customers forming to accommodate a new site or cater for additional access for individual sites within a group (underneath a shared access ceiling).
- 4.10 Depending on the network charging and billing solution sites may need to have the same supplier, or at least the same data collector and data aggregator, and this may be potentially too restrictive for some Users.
- 4.11 The potential for benefits from this type of access for transmission Users are limited as there are a number of existing distinct features of transmission that already share access across Users.
- 4.12 If stakeholders could envisage this enduring access choice or larger groups of smaller customers, such stakeholders should provide feedback on addressing the issues in respect of group stability to provide long-term network benefits and User's enduring need for essential use for individual sites e.g. ahead of a trial for proof of concept.

5 Current arrangements

- 5.1 Neither distribution nor transmission commercial governance rules (at code level) provide for shared access rights at the moment and currently, for legislative reasons, access is controlled and agreed by the network operator for individual premises (not for a group of premises). So, the sharing concept, as a matter of policy at code level, is actually starting from zero in both distribution and transmission sectors.
- 5.2 Individual network operators have established Active Network Management schemes to proactively share capacity and defer reinforcement, Facilities for commercial sharing and peer-to-peer arrangements have also been created that are similar to local shared access. DNOs have also encouraged consortia approaches to connecting customers. This paper focussed on a common local shared access choice that could be supported by code changes.

- 5.3 A key attribute of local access sharing proposal is the ability for Users to agree between themselves the conditions for which they intend to share their combined access ceiling. A review of the current principals applied in Transmission suggests that there are no existing mechanisms available to TO's or the SO to provide a such a facility to Transmission connected Users.
- 5.4 Access right e.g. the maximum import or export capacity (MIC/MEC) of a specific User premises is consistent with the physical connection rights and should not exceed the rating of the connection for safety reasons.
- 5.5 Arrangements for local shared access need to recognise that current legislation supports connection rights for individual premises and not the rights of a group of Users acting together. New sharing arrangements will need to ensure that the network remains manageable in a way that is transparent to its owner/operator. Currently network operators only record MIC and MEC at premises level so shared access rights may need new data layers in network operator, Sharing Group and market visible data.

6 How this option could work at transmission

- 6.1 The concepts noted in this paper for distribution could also be used at transmission in limited scenarios, for example, for Users wanting to share a local substation asset or local connection assets (e.g. spurs) if they felt it was necessary to form a contractual Sharing Group to do so. The benefits of doing this however are not clear. At transmission, the working group's assumption is that 'local sharing' of access will only relate to shared connection assets. However, the potential for additional systems benefits from this type of access are limited as there are a number of existing features of transmission that already share assets and access across Users, including:
- Connect and manage.
 - Financial firmness.
 - The wider meshed transmission system is already shared.
 - The Balancing Mechanism ensuring balancing across the whole system.
 - 'Collector hubs' in Scotland to connect a number of Users multiple parties.
- 6.2 The benefits of an additional local access sharing choice in transmission would therefore be minimal. The rest of this section sets out relevant features should stakeholders identify potential additional benefits in the future.
- 6.3 This section considers the possibilities and potential features of a shared Local Access choice on transmission systems i.e. systems above 132kV in England and Wales or 132kv and above in Scotland. The key point to note is that the GB transmission system consists mainly of a very large meshed network shared by very large customers and so the opportunities for customers to share local discrete local parts of a transmission systems are expected to be very limited.
- 6.4 Under any local sharing agreement individual transmission Users would retain obligations under the CUSC, including for their own TEC.
- 6.5 Common connection circuits, substations and 'collector hubs' can be shared at transmission today, with connection agreements noting any conditions on their usage.

- 6.6 Users with a TEC may request additional TEC through Short Term TEC (STTEC) or Limited Duration TEC (LDTEC) requests or opt to Temporarily Donate TEC, however these types of applications are processed through the NGENSO and not directly between Users. In these cases, any capacity requested or surrendered by a User will be redistributed on a first come first served basis by the SO. Transmission connected Users can also engage in a Temporary TEC exchange between themselves, however a Temporary TEC exchange is managed again by the SO. However, these options can be considered as capacity trading and do not create local access sharing.
- 6.7 A proposal to consider capacity sharing between Transmission connected generators was raised under CUSC amendment proposal CAP163 (Transmission Access – Entry Capacity Sharing). This proposal considered a mechanism where generators may share local capacity on a real-time basis in the period prior to wider reinforcement works taking place. The sharing of rights would be facilitated by the introduction of arrangements to allow generators to connect via a local only connection, without wider system access rights. Such a generator would instead share the wider rights provided to an existing generator. The local only application would permit Users to become connected and begin to operate before any ‘wider’ reinforcement works are completed on the transmission system. This proposal was considered in 2009 but ultimately rejected.

7 Design of a local shared access group

Purpose of a Sharing Group

- 7.1 The formation of a Sharing Group should have a clear purpose with a clear set of operating principles. The network operator will need to check the proposed Sharing Group against the eligibility criteria and ensure that the benefits to network and to the customers are explicit. This is important as Sharing Groups should not be a route to financial savings from the pre-existing usage diversity of the sites in the group or used as a method of avoiding due charges. The sharing should not be a paper exercise and should deliver real benefits, for example to deliver network benefits for deferred reinforcement or enable the connection of additional low carbon technologies equipment within an agreed collective access ceiling. The operating principles should clearly support the purpose of the Sharing Group.
- 7.2 At a high level the value of shared access rights is in Users agreeing that if they combine their access requirements, then it would be less in total than if individually agree access rights. For example, two Users may consider that individually they require 20MW each (i.e. 40MW), but if they worked together to share access then they would only require 30MW.
- 7.3 A Sharing Group might be formed to deliver benefits that have value to the network to defer reinforcement. A reduction in the total amount of capacity required may also reduce the total amount of flexibility that needs to be procured. Any genuine reduction (beyond assumed diversity) may therefore be beneficial.

- 7.4 The Sharing Group’s principles need to be clear which objectives and services will be met and provided collectively by the group and which activities would be carried out by individual Users, for example, the Sharing Group might only exist to make capacity requirement savings whilst leaving individual User’s site free to participate in the balancing market or provide frequency response services.
- 7.5 Where a Sharing Group delivers demand side management services the services delivered and the principle for incentive payments should be the same as other relevant contracts for flexibility service.
- 7.6 Table 1 below shows the potential purpose of different Sharing Groups and how delivered benefits might be reflected in charges or payments:

Table 1: Potential purposes of a Sharing Group and potential charges or payments:

Purpose	How	Potential Charges or payments
To connect more customers or more equipment by a group.	<ul style="list-style-type: none"> Connecting more sites within the agreed collective access capacity Connecting more equipment at existing sites within the agreed collective access capacity. Potentially buying additional access. 	<ul style="list-style-type: none"> Discounted/ or same level of DUoS capacity charges. More equipment connected without increasing capacity charges.
To manage down the group’s Access needs and potentially trade away any surplus.	<ul style="list-style-type: none"> Reducing the collective agreed access capacity for the group. Trade/sell the surplus 	<ul style="list-style-type: none"> DSO payment for reduced capacity requirement or reduced collective demand.
To deliver financial savings or energy bills across a group of sites.	<ul style="list-style-type: none"> Reducing the collective agreed access capacity for the group. Reducing agreed access capacities for individual sites (MIC or MEC). Potentially selling spare access. 	<ul style="list-style-type: none"> Retrospective discounted DUoS capacity charges (comparing before and after). Reduced capacity charges. DSO payment for reduced capacity requirement or reduced collective demand.

General Eligibility Criteria

- 7.7 The shared ceiling capacity needs to be less than the sum of the parts (i.e. less than the sum of the individual User’s site MIC and MEC) and deliver a genuine reduction in total capacity. Capacity savings need deliver savings beyond any network diversity assumptions already taken into account or could be reasonably assumed by the network operator.
- 7.8 The user’s connections: the network supporting those connections and the network between the users needs to be sufficient to support both the MIC/MEC of each user and the group’s collective ceiling capacity.
- 7.9 For this access choice to deliver material explicit network benefits the shared ceiling capacity of a newly formed group may need be less than the existing diversified combined total import or export of the User’s sites.

- 7.10 The value of shared local access to the network is low or nil where spare capacity exists that is ample for expected general load growth on the relevant part of the network. The value of shared local access increases where the network is constrained. The working group considers that the availability of shared local access as a choice should be limited to locations where network constraints are present, and reinforcement is likely or planned to accommodate more Users or more usage.
- 7.11 The network operator will need the right to determine if a Sharing Group meets the eligibility criteria. Compliance with the eligibility criteria would need to be re-assessed if the Sharing Group requested a modification to the group's access.
- 7.12 The common connection charging methodology (CCCMS) has a definition of 'Relevant Section of Network' which may be useful in this context.
- 7.13 'Relevant Section of Network' is that part or parts of the Distribution System which require(s) Reinforcement. Normally this will comprise:
- the existing assets, at the voltage level that is being reinforced, that would have been used to supply you (so far as they have not been replaced) had sufficient capacity been available to connect [a new User] without Reinforcement; and/or
 - the new assets, at the same voltage level, that are to be provided by way of Reinforcement.
- 7.14 Where it is unclear what assets would have supplied the Customer in the event that sufficient capacity had been available, the existing individual assets with the closest rating to the new assets will be used.

Specific Eligibility Criteria

- 7.15 There needs to be clear and transparent eligibility criteria to ensure that the Sharing Groups access delivers the required benefits to the network and its customers in return for the value credited to their access choice. Specific eligibility criteria envisaged include:
- The Sharing Group must be approved by the Distribution Network Operator as helping to deliver a more efficient network.
 - Users must be connected to the same local constraint/ Relevant Section of Network.
 - Users must have an existing connection agreement (or an accepted connection offer).
 - Users must sign a Sharing Group Participation Agreement.
- 7.16 In defining "local" shared access customers will need clarity on the limitations on the ability of specific sites share access i.e. eligibility criteria. The location of constraint is pertinent to the locality of sharing and so both the network Operator and the Sharing Group will need to be clear on the nature of the network constraint that Sharing Group is providing network benefits for. The constraint needs to be tangible and clearly local to the sites in the Sharing Group. For example, all the sites in a Sharing Group are connected to the same relevant part of the network at the relevant voltage, where the all the sites' imports or exports having the same general effect on the network.
- 7.17 Examples of the 'local network' and connections to it include that User's sites:
- Must be connected to network at the same voltage level as other Users in the group.
 - Where connected at low voltage must be connected to the same distribution substation or to substations on common circuits to the same primary substation.
 - Connected to the same HV circuit to the common constraint.

- Where connected at HV must be connected to the same primary substation.
- Must be located behind a defined constraint.
- Where connected at EHV must be connected to the same EHV or GSP constraint behind the same single constraint at the same voltage level on the same local network.
- Where connected at EHV must be connected to the same GSP constrained at transmission behind the same single constraint at the same voltage level on the same local network.
- Where connected at transmission must be connected customers sharing the same common circuit assets.

7.18 The network operator may reject a request to form a Sharing Group if its principles or purpose don't meet the general or specific eligibility criteria; or for other network technical reasons.

Shared Access as an Enduring Access Choice

7.19 For local area shared access to support efficient use and development of the network, Sharing Groups need to provide clear network benefits e.g. reductions in total capacity to defer or avoid network reinforcement. For Sharing Groups to support efficient use of the local network by deferring or avoiding network reinforcement they need to be stable and so this access choice needs to be an enduring option (not a short-term or medium-term flexibility contract).

7.20 Given the importance of group stability each User's financial solvency and its compliance with its connection agreement must be maintained. Smaller Sharing Groups of larger well-informed Users are more likely to be able to form long-term sharing arrangements and satisfy themselves that other Users in the group are stable business entities. For example, 3 large generators may opt to share a level of access for the life of the generators e.g. where 2 existing Users form a Sharing Group with a new connectee so that the new User can be connected without contributing to reinforcement. The new connectee would be identified by the DNO and this would not be a facility for jumping connection queues. This access would be either enduring or very long-term until local reinforcement was completed due to other network drivers e.g. general growth in small scale low carbon technologies.

The Size of a Sharing Group at Distribution

7.21 Local shared access, by its very nature, is unlikely to create Sharing Groups of a size greater than the rating of typical primary substation 12- 40MVA. The notable exception would be if a Sharing Group of EHV customer formed in respect of a specific EHV constraint or constrained GSP. The DNO would not consider a Sharing Group entity as a single User, for example if a Sharing Group had a ceiling capacity in excess of 100 MW the DNO would not see it as a single entity in respect of grid code compliance, liability for TNUoS payments or entitlement to apply for BEGAs or BELLAs. A Sharing Group forms to share access with the prime purpose of delivering network utilisation benefits not to form a single trading entity.

7.22 As highlighted above, for a Sharing Group to be able to accommodate sharing as an enduring access choice the group will need to remain stable, with minimum requests to modify its access conditions over the life of the group. The practicalities of managing a large group may naturally limit the size of Sharing Groups, including, for example, the sharing of the consequences of any non-compliance and the requirement to renegotiate access rights if a User leaves. The DNO's previous work to try and encourage connections consortiums has highlighted the challenges of trying to get larger groups of Users to agree requirements.

Agreed capacity (MIC and MEC)

- 7.23 The importance of an individual site's agreed maximum import capacity (MIC) or maximum export capacity (MEC) should not be lost in developing shared access choices. The MIC/MEC reflects legislative requirements to establish a 'maximum power requirement' at the time a connection is first made. This ensures the connection meets the customer's needs and provides clarity on the level of capacity the network needs to support. The MIC and MEC can be increased through processes for modifying connections or reduced at the request of the customer.
- 7.24 Any request to modify an individual Users' MIC or MEC within a group would need to be made by the Sharing Group Manager so as to be coordinated with the wider Sharing Group. The Sharing Group Manager and the network operator need to ensure the eligibility criteria continue to be met e.g. a User could not seek to increase its MEC to more than cumulative level of shared access.
- 7.25 The MIC and MEC are the agreed physical capacities of the connection to a User's site and dictate the size of the User's sole use assets at the time of connection. Outside of a shared access group, the MIC and MEC are also the values for commercial access and charging for a stand-alone site. Outside of a shared access group and over time Users may agree a MIC/MEC reduction with the network operator. When a User's site joins a Sharing Group its commercial access will be agreed within the group and its assigned access may be less than its MIC/MEC or the time of use of its MIC /MEC may be restricted by the group to coordinate with other Users. The individual User's access would be dependent on the terms agreed between the Users participating within the sharing access.
- 7.26 Arrangements for access choices should ideally avoid the need for industry parties to record and use different capacity values in industry systems unless these are clear cost benefits e.g. for MIC and assigned import capacity as losing track of a site's MIC or MEC could create safety issues, therefore the use of MIC and MEC in industry systems cannot change. The requirements in suppliers' systems and links to metering systems are other reasons for preserving the MIC and MEC. The MIC/MEC for an individual site will need to be retained for technical reasons although the User at a site would no longer have control over commercially agreed access for that site; the site's access to the wider network would be defined by the agreed shared access of the Sharing Group it was part of.
- 7.27 A Sharing Group may assign capacity values to sites within a Sharing Group for the purpose of managing coincidental and collective access, but this should be used for internal purposes within the group.
- 7.28 Some aspects of Use of system charges for a particular site may need to stay aligned to MIC/MEC because that is the level of access capacity that the network is supporting for a particular site, with 'discounts' for shared access potentially provided outside of DUoS . This suggests that charging arrangements for crediting savings realised by a Sharing Group at group level may need to take place outside of the current use of system billing to suppliers in respect of an individual site.
- 7.29 Outputs of the SCR programme in respect of access choices are likely to define access as a combination of MIC and MEC with associated conditions e.g. conditions for time-profiling or 'firmness'.

Sharing Group Manager or Lead User

- 7.30 The network operator needs absolute clarity on how the Sharing Group will manage its shared access and clarity of which party or entity will be responsible for any breach by the group and any associated liability. The party needs to be a specific legal entity and could be the Lead User, owner of all the sites in the group and an appointed third-party agent.
- 7.31 Having a Lead User as the responsible party may simplify administration and billing arrangement. One of the Users in the group agrees to take responsibility for its own compliance and the responsibility for compliance of the Sharing Group against the shared ceiling capacity. There may be a way of using the 'associated MPAN process to facilitate billing, but this will need careful thought and further development. The associated MPAN process is typically used to link 2 MPANs for 2 metered circuits that form part of the same connection/connection point e.g. twin feeder connections. The headline concept is in Option 2a in the charges and billing options section.
- 7.32 If none of the Users in the group opted to be Lead User, then a Sharing Group Manager would be needed and potentially Option 3 in the charges and billing options section may be the most appropriate billing solution. The introduction of a Sharing Group Manager creates a new function in industry arrangements and any additional administrative burden need to balance against network benefits.
- 7.33 The Sharing Group Manager will need to be clearly identified in the Sharing Group Participation Agreement and in the customer's request for form a Sharing Group. The Sharing Group Manager may not necessarily be a separate agent appointed by the group or paid service provider; however, it is probably appropriate for some types of Sharing Groups. There are a range of options for who the Sharing Group Manager may be; some potential options are set out in the table below:

Table 2: Options for the Sharing Group Manager

Sharing Group	Sharing Group Manager
2 X 1MVA D connected customer (demand or Gen).	One of the customers (Lead User) or dual signatories to the sharing agreement (jointly liable for the group's compliance).
3 X 1MVA D connected customer (demand or Gen).	One of the customers (Lead User) or joint signatories to the sharing agreement (jointly liable for the group's compliance).
6 Local authority owned sites.	The local authority.
10 Commercial properties with the same supplier.	Electricity supplier.
10 Commercial Properties with different suppliers.	Third party agent, which could be an aggregator performing 2 roles.

- 7.34 The rights and responsibilities of the Sharing Group Manager are set out in Annex 1.

Charging and billing options

- 7.35 The working group has identified three options for charging. Option 2a *Lead User holds shared capacity* may be the most appropriate where there is a lead User and Option 3: *Hybrid with DSO payment* appears to be the most appropriate where there is a Sharing Group Manager. Option 3 recognising the benefits delivered by a Sharing Group via DSO payments to the Sharing Group. is the most practical and proportionate as it has the least impact on network charging, billing and the contractual interface with suppliers. The three options are set out below and the pros and cons of each option are assessed in Annex 4:
- **Option 1: Assigned capacity at site level.** DUoS billing for each site on User's assigned capacity rather than MIC and MEC. Other billing components unchanged. But individual Users can still export up to MEC so long as max exports for Users are at different times. Requires additional assigned capacity data available to the Supplier and within EDCM and CDCM.
 - **Option 2: Ceiling capacity at group level.** Combined DUoS bill in respect of ceiling capacity for the whole group. Supplier's combined bill goes to the Sharing Group Manager not to Users. The Sharing Group Manager may be an agent/entity with no physical connection or registered metering and therefore no MPAN to bill in respect of. Issues with billing is premises have different suppliers where the supplier billing the Sharing Group Manager may not have all the data to validate network charge e.g. DUoS bills. EDCM/CDCM changes required for supra-site charging.
 - **Option 2a: Lead User holds shared capacity.** Bills ceiling capacity at group level to the Lead User. The lead User would hold the groups shared ceiling capacity such that the capacity element of the charges only gets billed once to a single party. Further development would determine whether there would be a single combined DUoS bill to the Lead User or if each User gets a bill, but only the Lead User is billed for capacity. This option may be facilitated by a different use of the current 'associated MPAN' facility.
 - **Option 3: Hybrid with DSO payments.** DUoS billed as normal to the supplier in respect of each User's site with no supplier issues or EDCM/CDCM complications. DSO payments go to the Sharing Group in respect of the collective capacity saving delivered by the group. No DUoS bill to the Sharing Group Manager. This may be the most practical and proportionate option as it has the least impact on network charging, billing and the contractual interface with suppliers.
- 7.36 Consideration needs to be given to which charges may apply in respect of the group's ceiling capacity and whether this collective shared capacity should attract certain charges at certain charge threshold. For example, under Option 2 the Sharing Group would effectively be charged as a single User, so if the group's ceiling capacity was in excess of 100MW, then liability for transmission charges e.g. TNUoS payments.

Sharing Group or DSO agreement

- 7.37 There will need to be a formal agreement between a Sharing Group and the network operator. The agreement may be with all of the Users collectively or the Sharing Group Manager. This would set out the terms and parameters of the shared Access, including the shared ceiling capacity. The legal entity responsible for receiving any payments or non-compliance notices would need to be clear in the agreement. It could take the form of a DSO agreement where the DSO recognises the value being delivered by the group.

- 7.38 This difference between this and a traditional connection agreement is that it relates to a group's access rather than the parameters of a single User's connection. The Users' individual connection agreements may also need updating to reflect the new co-dependency of the sites within the group.

Sharing Group Participation Agreement

- 7.39 This is a formal agreement sitting between the groups Users and potentially the Sharing Group Manager e.g. if that is a separate entity. The network operator DNO would not be party to this agreement. It would capture the purpose, operating principles, members, rules and applicable liabilities for a Sharing Group. This has been given the working title of a 'Sharing Group participation agreement'.
- 7.40 Under the Lead User approach this agreement may not be needed, but in any case, this agreement is a recommended feature and a decision for the Users in the group.
- 7.41 The potential contents of a Sharing Group participation agreement are set out in appendix 3. While its contents are not necessarily information that the network operator needs, the network operator needs confidence that a commercial agreement is in place between all Users to allow the Sharing Group to function.
- 7.42 Stakeholder views are welcome on whether there also needs to be a Sharing Group Connection Agreement noting that the group as an entity does not have its own connection. It may be sufficient to rely on the connection terms applicable to the individual sites combined with the participation agreement.

Modifying a group's access

- 7.43 The Sharing Group's principles will need to be clear in respect of the process for how the group will approach the network operator to request a modification to its agreed shared access. Where a Sharing Group User requires additional capacity or seeks permission to add equipment e.g. if the User is planning to extend its site or change its use it will need to do so via the group. The group has negotiated access on behalf of all of the Users and so the group would need to renegotiate access with the network operator on the User's behalf.
- 7.44 An existing User could join a Sharing Group it meets the eligibility criteria. A User joining the Sharing Group could be treated in a similar way to a User requesting to decrease its individual access requirements. Its request it should lead to more efficient use of the network although the MIC/MEC for a site may not change.
- 7.45 A User leaving the Sharing Group loses its access rights and its actions could lead to less efficient use of the network. The User will need to be treated as a User seeking a new type of access or as a User wanting to increase its access requirements.
- 7.46 Mechanisms need to be in place for the DNO to impose modified access restrictions on the Sharing Group if it can be demonstrated that Sharing Group may have a detrimental impact on the network or other Users.

Assignment of a User's access

- 7.47 The individual User or connection agreement signatory holds the connection rights, including the MIC/ MEC for a particular premise. It can be amended with the agreement of the system/network operator. Connection rights have pre-conditions, including technical compliance with the terms of the connection agreement. For sites with simple stand-alone traditional access the connection rights will be the same as the commercial access rights.
- 7.48 For a Sharing Group to operate effectively a User may need transfer its site's individual access rights to the Sharing Group for management by the group. An individual site would retain its right to be connected under the National Terms of Connection up to its MIC/MEC but the rights to negotiate commercial access would sit collectively with the Sharing Group or its manager. If a site needed more capacity it would need to be requested from the network operator by the Sharing Group as a request for a modified access. A request for increased connection capacity for an individual side would therefore need to be in 2 parts, firstly a connection modification request and secondly a request to modify the shared access ceiling if required. Sharing Group terms need to ensure the Sharing Group's activities do not undermine the connection rights of an individual site, including MIC/MEC and that visibility is maintained by individual Users.
- 7.49 If a site exits the Sharing Group, the User will lose its access via the group and need to apply to the DNO for its own access right. This will include a review of the User's connection agreement and MIC/MEC. The Sharing Group will also need to reduce its cumulative access rights to ensure compliance with the eligibility criteria.
- 7.50 In principle a User might only assign part of its access right during certain hours, or a portion of its total access rights, if this was the case the Sharing Group's purpose would need to be clear how the group might use such a feature and be clear in its operating principles.

Impact of Access Trading on a Sharing Group

- 7.51 If the Sharing Group had temporarily traded away MIC/MEC, restrictions will be needed until the temporary trade period finishes. Where the Sharing Group had relinquished or sold MIC/MEC, the User's MIC/MEC levels would need to be adjusted accordingly.
- 7.52 Any capacity relinquished by the Sharing Group and handed back to the network operator may be redistributed including to new connectees via queue management rules. Therefore, upon exiting a Sharing Group, the User may need to relinquish a portion of their MEC/MIC.

Potential High-Level Process

7.53 The following figure outlines a potential high-level process for a shared access agreement:

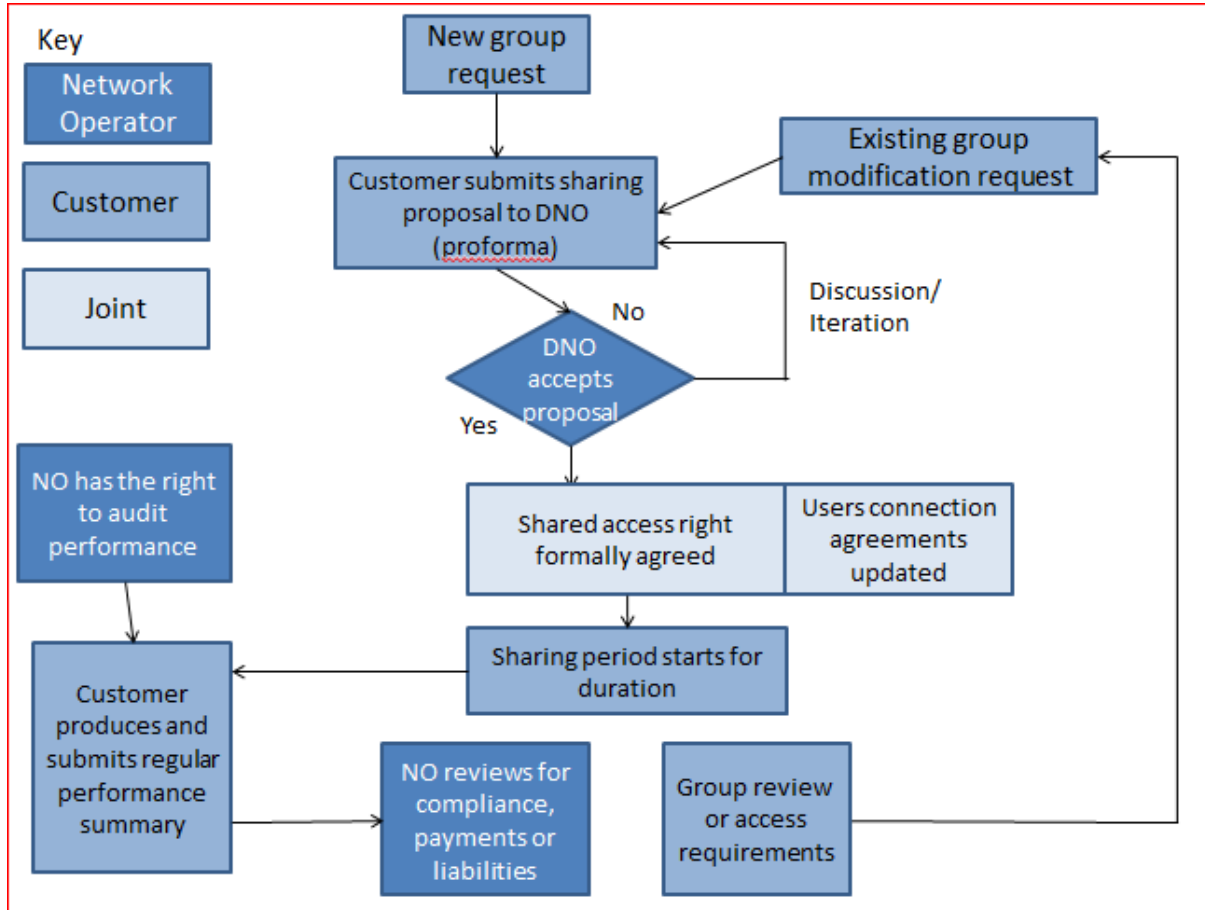


Figure 2: Potential high-level process for a shared access agreement

Annex 1: Rights and Responsibilities of the Sharing Group Manager

Rights and responsibilities of the Sharing Group Manager

1. The Sharing Group Manager will be responsible for the administration and control of the Sharing Group Users. The exact scope of the Sharing Group Manager's role can be developed through trials and may depend on the appetite of stakeholders to form Sharing Groups. Other determining factors will include how stakeholder saw the group operating and for what purpose. The role would be much more than a figurehead or savings collector and would include management of all penalties and incentive payments, in accordance with the Sharing Group Participation Agreement.
2. Potential functions of the Sharing Group Manager include:
 - Submitting a request to form a Sharing Group including the purpose and principle.
 - Signing the Sharing Group participation agreement.
 - Holding the assigned capacity for User sites.
 - Protecting the needs of the User's and their sites in respect of sufficient capacity.
 - Can trade capacity on behalf of the group.
 - Receives payments/discounts on behalf of the group (subject to the work of product 4).
 - Responsible for breach of collective access and any liabilities.
 - Management of all penalties and incentive payments/discounts in accordance with the Sharing Group Participation Agreement.
 - Maintain an audit plan for the Sharing Group e.g. to ensure compliance with the access ceiling.
3. The role would include management of commercial and administration as defined in Sharing Group Participation Agreement, including:
 - Agreeing with the network operator the start date for the Sharing Group, the 'effective from date'.
 - Representing the Sharing Group from the 'effective from date'.
 - 'Notice of accession and secession of Users to the Sharing Group.
 - Maintenance of identities of sharing parties or the Sharing Group's legal identity (aka name(s), address(s), company reg(s)) and unique Sharing Group identifier .
 - Representing the group for change request for collective access.
 - Representing the group for termination of the Sharing Group.
 - Management of any network payments required of the group (where not paid directly by Users in the Sharing Group).
 - Manage the groups participation in the energy balancing market, if applicable.
4. Management of the group would not include the following. which will remain with each User:
 - Maintaining technical compliance e.g. G99/G98 compliance for generation and storage.
 - Upkeep of any liabilities agreed in each Users Connection Agreement.
 - Monitoring the solvency of each site, including the solvency of their parent company.

Annex 2: Sharing Group Proforma

Set out below is a potential proforma for establishing Sharing Group. This could capture the Sharing Group’s details including its purpose and operating principles. This would give clarity to the network owner of the benefits that the Sharing Group proposes to deliver to the network. New sites could be added to the group (or sites removed) by agreement with the DNO capturing any changes.

The Sharing Group’s applicant would need to obtain a statement of authority that the applicant is authorised by the Users to negotiate on their behalf.

Sharing Group Proforma		
Name of the Sharing Group		
Lead User, Sharing Group Manager or participation agreement co-signatories		
Effective from date and agreement period		
Purpose of the Sharing Group		
Including network benefits to be delivered, operating efficiencies, additional LCT to be connected etc.		
Operating principles		
To be set out by the Sharing Group Manager or customer co-signatories.		
Collective Access rights for the Sharing Group		
Description of the collective access right once agreed		
Sites in the Sharing Group (list of sites in the group)		
Site address	MPAN	MIC/MEC

Annex 3: Sharing Group Participation Agreement

Sharing Group Participation Agreement

This appendix sets out the potential contents of a Sharing Group Participation Agreement sitting between the Users. While this isn't necessary information that the DNO needs, the DNO requires confidence that a financial agreement is in place between all Users to allow the Sharing Group to function.

Headline topic	Content detail
Commercial Details of User Group	With effect from date (representing the start of the Sharing Group)
	Entitlements to 'sharing discounts'
	Liabilities for payments
	Liability for non-compliance/ breach
	How any TNUoS payments accumulated by the group will be managed
	Details of how incentive payments and penalties will be managed within the User group.
Technical Management of User Group	Details of the management system that will be employed to manage the collective capacity of the Sharing Group.
	Any collective technical responsibilities in addition to the User site's connection terms.
Administrative Control Details of User Group	Identities of sharing parties or the Sharing Group's legal identity (name(s), address(s))
	company registration numbers (s)
	Potential unique Sharing Group identifier
	Contact details of Users and for key roles
	Record of accession to the Sharing Group
Disbanding or cessation of access for breach	Contingency plans if Users disband the Sharing Group.
	Which User(s) will be responsible for any outstanding payments owed to the DNO.
Audit and compliance arrangements	A record of audit plans applicable to the Sharing Group as a whole and its User sites.

Annex 4: Charging Options Pros and Cons

The working group has identified three options for charging. The options from the paper are repeated below the table in this Annex for ease of reference. Option 2a *Lead User holds shared capacity* may be the most appropriate where there is a Lead User for the group and Option 3: *Hybrid with DSO payments* appears to be the most appropriate where there is a Sharing Group Manager that has no MPAN, especially in terms of practicality. All of the options would need to be developed under DCUSA governance including to consider the implications of the Targeted Charging Review (TCR). The pros and cons of the 3 options are set out in Table 3 below:

Table 3: Billing options pros and cons

Billing Option	Pros	Cons
Option 1: Assigned capacity at site level	<ul style="list-style-type: none"> • Credits the User directly for its contribution to the capacity savings of the group. • Users could have different suppliers. • Competition in supply is protected. • Maintains existing billing relationships. 	<ul style="list-style-type: none"> • Would require new data items in industry systems to recognise Assigned capacity i.e. the capacity assigned to the User by the group. • Potentially disproportionate DCUSA changes to EDCM and CDCM • Safety risks from losing track of or failure to maintain MIC/MEC values.
Option 2: Ceiling capacity at group level. (combined DUoS bill)	<ul style="list-style-type: none"> • Combined DUoS bill in respect of ceiling capacity recognises the group saving. 	<ul style="list-style-type: none"> • Would require major changes to DCUSA. • A supplier would need to somehow register as the supplier for the group. • Issues with data collation. • As the bills need to be combined so all Users may need the same supplier. • Competition in supply potentially unsupported. • The Sharing Group entity may not have a connection and so has no meter or MPAN to register.
Option 2a: Lead User holds shared capacity (ceiling capacity billed to one User).	<ul style="list-style-type: none"> • Single bill for ceiling capacity recognises the group saving. • Single DUoS bill to Lead User or separate bills for Users. • May be able to have different suppliers subject to 'associated MPAN' rules. 	<ul style="list-style-type: none"> • Implications for the TCR from associated MPAN facility. • DCUSA Changes required. • Required Users' suppliers to use same data collector and same data aggregator.
Option 3: Hybrid with DSO payments.	<ul style="list-style-type: none"> • DSO payment recognises the group saving. • Users can have different suppliers. • Maintains existing billing relationships. • No change to industry data items. 	<ul style="list-style-type: none"> • None identified.

Option 1: Assigned capacity at site level. DUoS billing for each site on User's assigned capacity rather than MIC and MEC. Other billing components unchanged but individual Users can still export up to MEC so long as max exports for Users are at different times. Requires additional assigned capacity data available to the Supplier and within EDCM and CDCM.

Option 2: Ceiling capacity at group level. Combined DUoS bill in respect of ceiling capacity for the whole group. Supplier's combined bill goes to the Sharing Group Manager not to Users. The Sharing Group Manager may be an agent/entity with no physical connection or registered metering and therefore no MPAN to bill in respect of. Issues with billing is premises have different suppliers where the supplier billing the Sharing Group Manager may not have all the data to validate network charge e.g. DUoS bills. EDCM/CDCM changes required for supra-site charging.

Option 2a: Lead User holds shared capacity. The lead User would hold the groups shared ceiling capacity such that the capacity element of the charges only gets billed once to a single party. Further development would determine whether there would be a single combined DUoS bill to the Lead User or if each User gets a bill, but only the Lead User is billed for capacity. This option may be facilitated by a different use of the current 'associated MPAN' facility.

Option 3: Hybrid with DSO payments. DUoS billed as normal to the supplier in respect of each User's site with no supplier issues or EDCM/CDCM complications. DSO payments go to the Sharing Group in respect of the collective capacity saving delivered by the group. No DUoS bill to the Sharing Group Manager. This may be the most practical and proportionate option where there is a Sharing Group Manager has it has the least impact on network charging, billing and the contractual interface with suppliers

Annex 5: Assessment of potential examples scenario against SCR Guiding Principles

The table below Table 4 assesses the potential the example scenarios against the SCR guiding principles. As highlighted earlier in the paper, one of the key aspects of this enduring access choice is the need for the Sharing Group and the User site within to remain intact and stable in a business context. The risk of instability increases with the number of Users in the group due potential site operational changes, changes of use or even site closures. The management complexity of the group also increases with the number of sites in the group, as does the impracticality.

The Access SCR Guiding Principles are:

1. Arrangements support efficient use and development of system capacity.
2. Arrangements reflects the needs of consumers as appropriate for an essential service.
3. Any changes are practical and proportionate.

Table 4: Assessment against SCR principles

Assessment criteria	Assessment: Positive/Negative/Neutral	Summary
1. Arrangements support efficient use and development of system capacity		
Access arrangements support network capacity being allocated in accordance to Users' needs and the value they ascribe to network usage	Positive	Several stakeholders have expressed interest in sharing access across multiple sites. Shared Access could support access being allocated in accordance with their needs.
Arrangements provide signals that reflect the costs and benefits of using the network at different times and places, to support efficient use of capacity, and ensure no undue cross-subsidisation between Users	Likely positive	The group will need to provide genuine network benefits beyond natural or assumed diversity. Benefits reflected via appropriate payments, discounts or credits for capacity savings achieved by the group. Billing arrangements could be complex so a DSO payment solution may be preferable.
They provide effective signals for where new network capacity is justified	Likely positive	The value of the benefits of this access choice should be higher where capacity is scarce. In contrast, the value will be lower and could be nil where there is ample spare capacity.
Arrangements reduce barriers to entry and enable new business models where these can bring value for the system.	Likely neutral	Assessment suggests this enduring access choice may be more beneficial to smaller and inherently stable groups of larger Users. There are practicality issues for use of this choice by larger groups of customers which reduces the scope for new business models.
2. Arrangements reflects the needs of consumers as appropriate for an essential service		

<p>Electricity provides an essential service, and for small Users in particular we need to ensure that arrangements do not lead to inappropriate outcomes or unacceptable impacts, particularly for those in vulnerable situations.</p>	<p>Likely positive for larger generators and storage export. Likely positive for larger demand Users. Potentially negative for small Users.</p>	<p>Users joining Sharing Groups need to be commercially mature and fully cognisant of the implications and risk created by the group's obligations in respect of the shared ceiling capacity.</p>
<p>Users, or suppliers/intermediaries on their behalf, are able to understand arrangements and have sufficient information to be able to reasonably predict their future access and charges.</p>	<p>Likely positive for larger Users Potentially negative in respect of two billing options Likely neutral in respect of one billing option</p>	<p>Three billing options had been identified with two of them creating complexities that would need to be assessed alongside wider charging reforms. One option maintains current arrangements for suppliers.</p>
<p>3. Any changes are practical and proportionate</p>		
<p>Data collection, processing and analysis requirements considering whether the option requires changes to the way in which data is currently collected, processed or analysed, and whether new data may need to be collected.</p>	<p>Potentially negative in respect of two billing options Likely neutral in respect of one billing option</p>	<p>Three billing options had been identified with two of them creating complexities that would need to be assessed alongside wider charging reforms. One option maintains current arrangements for suppliers. The Sharing Group will need arrangements for sharing and analysing data.</p>
<p>Existing systems, assets and equipment considering whether new IT/operational systems (e.g. billing systems) may be required to implement the option and the degree to which new metering and monitoring equipment requires to be installed and the practicality of doing so.</p>	<p>Potentially negative</p>	<p>Metering requirements are unlikely to change, but additional monitoring and control equipment may be needed in some circumstances. The extent to which commercial access arrangements can be relied upon to assist or defend a network constraint needs further consideration. Additional monitoring and control equipment may be needed to protect against commercial breach e.g. breach of the shared ceiling capacity.</p>
<p>Charge calculation and settlement considerations, where the option requires parties who calculate charges to update their charging methodology or models and the extent to which this is required.</p>	<p>Potentially negative in respect of two billing options Likely neutral in respect of one billing option</p>	<p>Three billing options had been identified with two of them creating complexities that would need to be assessed alongside wider charging reforms. One option maintains current arrangements for suppliers.</p>
<p>Engineering and planning standards, assessing whether a particular option would require changes to engineering or planning standards, the scale of change required and the expected implementation timescales.</p>	<p>Likely Neutral</p>	<p>The subgroup has not identified any issues.</p>

<p>Customer engagement or commercial agreements, considering any changes that would be required to how customers are engaged and managed and any impact on existing commercial arrangements.</p>	<p>Likely neutral on existing agreements</p>	<p>New commercial agreements will need to be developed. Envisaged are a Sharing Group Agreement between the network operator and the Users and Sharing Group Participation Agreement between the Users and potentially the Sharing Group Manager.</p>
<p>The ease with which the options can be implemented, considering the need for any legislative changes as part of the implementation requirements, and whether transitional arrangements are required.</p>	<p>Potentially negative but need legal assessment.</p>	<p>Existing legislation recognises the relationship between the Network Operator and the connectee or customer and has not been designed to accommodate a one-to-many relationship. Existing legislation recognises the maximum power requirement of a connecting party, but not the maximum power requirement of a group of Users acting in concert.</p>

Annex 6: Glossary

Term	Definition
Access Assignment	Working definition: Assigning an amount, quantity, or level of access to a member User in a Sharing Group.
Access Right	Working definition: An Access Right is a commercial contractual arrangement between the connection agreement signatory and the system/ network operator that is defined at the time of connection and can be amended, shared or traded with the agreement of the system/network operator.
Connection Site(s)	Working definition: A premises with one or more connections to Users (with MPANs) under the control of a customer.
Group Trader	Working definition: Where relevant, a legal entity employed by a Sharing Group to trade capacity on the group's behalf e.g. to secure additional capacity or to sell spare capacity.
Lead User	A User in the Sharing Group may opt to take the role of Lead User and hold the ceiling capacity on behalf of all the Users (and the responsibility that goes with that). This may facilitate a billing solution via 'associated MPANs'.
Relevant Section of Network	As defined in the CCCMS. 'Relevant Section of Network' is that part or parts of the Distribution System which require(s) Reinforcement. Normally this will comprise...
Sharing Group	Working definition: A group of clearly identifiable of User's connections, that can be listed, connected in a geographical area behind the same constrained network asset.
Sharing Group Manager	Working definition: A formal entity responsible for the obligations and liabilities of the Sharing Group (could be one of the Users).
User	Working definition: A User of a connection (that has an MPAN). The person or legal entity responsible for the connection and compliance with the National Terms of Connection.