

Options for reform of access rights for distribution and transmission – discussion note

Summary

This note provides an overview and initial assessment of the potential access options under consideration.

We continue to consider that there may be benefits to users in improving the choice and definition of access rights. In particular, developing options for non-firm and time-profiled access for larger users may help support the efficient use and development of network capacity. The development of shared access rights may also deliver benefits for network operators and some stakeholders (eg those with a portfolio of sites or local energy users).

We note that some users are keen to develop options for financially firm access at distribution, but we consider that there are significant feasibility issues associated with offering this type of access (ie the development of new distribution planning standards), that may make it unfeasible to deliver within SCR timescales. We also consider that the difference between transmission and distribution arrangements may not be that significant. For example, whilst financially firm access at distribution is not available, generally DNOs can only curtail distribution-connected generators with standard connections for network maintenance reasons. If a DNO wants to curtail the user in excess of this, then the DNO has to pay it via a flexibility contract.

This paper represents our initial views and we will continue to assess the feasibility of offering new access choices and quantify the potential benefits to both network users and network operators of improving the choice and definition of access rights. More information on the applicability of these options to small users will be included in our next working paper.

1.1. This note is set out as follows:

- Section 1: Provides an overview of the access options under consideration.
- Section 2: Our preliminary considerations on each individual basic access right choice.
- Section 3: Our preliminary considerations of key cross-cutting policy considerations (eg how standardised access options should be, how access rights should be monitored and enforced and how access choices could apply at transmission).
- Section 4: A summary of our preliminary views.

1.2. Network access rights define the nature of users' access to the network and the capacity they can use – how much they can import or export, when and for how long, and whether their access is to be interrupted and what happens if it is. Network access requires a connection from the user's equipment to the wider network, and then allocated capacity on the wider network. For most users, their network access is defined via their connection agreement.

1.3. Traditionally users have had little choice of access rights. In recent years DNOs have begun offering "flexible connections" as an alternative to paying and/or waiting for the

network reinforcement required for a "standard connection". Users with "flexible connections" have no defined cap on the extent to which their network access can be interrupted. The development of non-firm distribution access rights could improve choice and lead to better-defined access choices that allow users to better manage the risk of curtailment. Improved access choices may also provide more certainty to network and system operators about how users intend to use the network. This may enable better planning of the network based on users' needs.

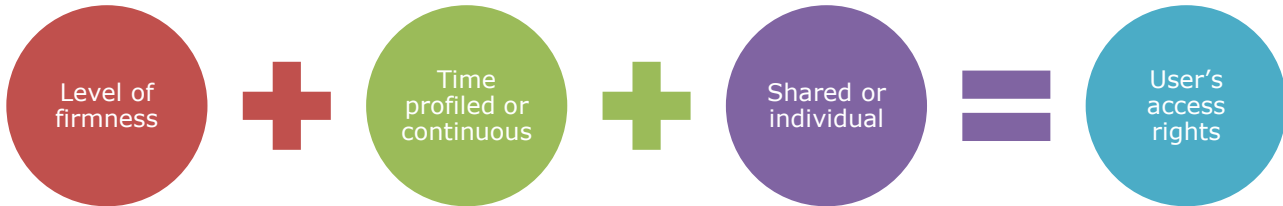
1.4. For many small users, their access rights are less well defined and the current user is generally not the party responsible for agreeing the original connection agreement (which may have been made a long time ago).¹ There is a cost associated with providing network access and users pay for this through forward-looking network charges.

1.5. For those not familiar with the current arrangements for accessing the distribution and transmission networks, this note can be read in conjunction with our Existing arrangements note.

1.6. As part of our launch letter, we stated that we would take forward a review of the definition and choice of transmission and distribution access rights. Improved choice and definition of access options may increase acceptance and could lead to more efficient use of the network (allowing users to connect more quickly and more cheaply) and improved choice to consumers. These benefits could be applied to areas with local network constraints. Or for other users, improved choice and definition of access rights could signal the willingness of the users to be flexible. Improved choice of access could also provide better information to network operators about where and when new network capacity is needed. Additionally, we will consider what information is provided to users to inform their decision on their access rights.

1.7. Users' access rights will be a combination of their decisions across each of these access choices. This is illustrated in Figure 1.²

Figure 1 – Access rights are a combination of different access choices



1.8. We expect users to be charged for the access they obtain on a cost-reflective basis. If a user obtains an access right that avoids additional network costs (eg off-peak access), we would expect this to be cheaper than an access right that drives additional network costs. We intend to do further work to analyse how the access options we are considering can be cost-reflectively charged (ie either by the connection charge or the forward-looking

¹ Where we refer to small users in this document, we are referring to those distribution-connected users who do not have an agreed capacity requirement for their DUoS charges. These users are typically those that do not have Current Transformer meters. Larger users are those distribution-connected users that do have an agreed capacity, or transmission-connected users.

² In addition to the main options shown in this figure, we are also considering others, such as; short-term time-limited access.

use of system charge). We note that, even once connected, it is possible for users to amend their access rights.

1.9. Access rights and network charges could be used as substitute approaches for valuing flexibility. For example, it is possible to rely on time-of-use charges to send signals to users and leave small users' access as a single standard option. Or, conversely access rights and network charges can be used alongside each other; for example time-profiled access being offered alongside time-of-use charges. We are considering both access and charging approaches as part of this review.

1.10. The links between access rights, forward-looking network charges and the procurement of flexibility is explored further in our link with procurement of flexibility discussion note. This chapter assesses and compares an access rights based approach to valuing flexibility, against these alternative methods of valuing flexibility. At a high-level we note that access rights provide more certainty than charges about when users access the network.

1.11. Our second working paper, that is due to be published later this year, will consider options to improve the clarity of access rights for small users and the clarity of distribution-connected users' access to the transmission network.

1.12. For those not familiar with the current access arrangements for distribution and transmission charges, this note can be read in conjunction with our Existing arrangements note.

Section 1: Options under consideration

1.13. Since we launched the SCR, we have been identifying and assessing the range of possible options to improve the definition and choice of access rights. This will help achieve our overall objective of ensuring that electricity networks are used efficiently and flexibly, reflecting users' needs and allowing consumers to benefit from new technologies and services while avoiding unnecessary costs on energy bills in general. In May, the Delivery Group published a report outlining and assessing the range of possible ways in which these access choices could be defined.³ We sought feedback from the Challenge Group on a draft of the report before finalising. This document captures our views on the options.

1.14. Existing access options will continue to be available to users. In this SCR we are looking to increase the choices available to users wanting to connect or amend their existing access rights over time. For example, whilst we are considering options to introduce time-profiled access, non-time-profiled access (ie 24/7 access) will continue to be an option for users to choose.

1.15. The basic access right choices that we are considering are:

Access right choice	What this means
Firmness of rights	This is the extent to which a user's access to the network can be restricted (physical firmness) and their eligibility for compensation (financial firmness) if it is restricted.
Time-profiled rights	This would provide choices other than continuous, year-round access rights (eg 'peak' or 'off-peak' access).

³ <http://www.chargingfutures.com/media/1343/scr-access-report-2-v12.pdf>

Shared access rights	Users across multiple sites in the same broad area obtain access to the whole network, up to a jointly agreed level.
Other arrangements we are considering	<ul style="list-style-type: none"> • Short term rights - This would provide a choice for limited duration access (eg one year) where long term access is not immediately available or where the user does not want to make a long term commitment • New access conditions - This could involve introducing conditions on access, for example 'use-it-or-lose-it' or 'use-it-or-sell-it'.

Level of firmness

1.16. The level of firmness is the extent to which a user's access to the network may be restricted (ie curtailed) and their eligibility for compensation if it is restricted. The higher the level of firmness, the less likely a user is to be curtailed. Under a "standard connection" that is available at distribution, users have a high level of firmness and users are generally only curtailed due to maintenance issues. There may be some users that are willing to be curtailed more often (within certain parameters), in exchange for a quicker connection or lower charges. There are two ways in which this access right could be defined:

- **How much a user is curtailed could be defined by physical drivers** – The extent to which a user's access to the network is restricted could be defined by the physical assets that connect them to the wider system and the design of the network at the point they are connected. For example, distribution users could choose "single circuit" or "dual circuit" access.⁴ A dual circuit could reduce the risk of interruption – because it means if one circuit fails there is a backup – but is likely to be more expensive. Alternatively, users could choose options that only constrain them for specific technical reasons (eg a thermal constraint) or could choose options that reinforce the network up to a specified level.
- **How much a user is curtailed could be defined by user experience** - The extent to which a user's access to the network is restricted could also be defined by setting limits or targets for the user's maximum experiences of curtailment. For example, measuring the number of curtailments, the aggregate time curtailed, the energy lost by curtailment or a combination of all of them. It could also be combined with time-profiled access to create time-windows when curtailment may occur. The more curtailment that a user is willing to experience, the cheaper the network access will be. If these curtailment levels are exceeded then it could trigger the network operator to take certain actions (eg reinforce the network and/or pay compensation to the user).

1.17. Regardless of how much the user agrees to be curtailed or how any curtailment is defined, the user could have choice about whether it is financially compensated when it is curtailed:

- **Non-financially firm access** would allow users to be curtailed, within specified parameters (eg specific time-periods), without financial compensation at the time of curtailment. However, users would be compensated in other ways. For example, this option could entail lower network charges than financially firm access and could also allow the user to get connected more quickly.
- **Financially firm access** would require users to be financially reimbursed when their access to the system is limited or unavailable. There are several ways in which the value of this financial compensation could be calculated. For example, it could be based

⁴ Once has a user has determined their access requirements, the DNO is required to identify the lowest cost solution to meet their access requirements.

on the value of the saving to the network operator of curtailing the user, the Value of Lost Load or the value of the potential amount of energy imported or exported if the user had not been curtailed. This option is likely to be more expensive to provide than non-financially firm access and therefore be more expensive for the individual user.

Time-profiled

1.18. At the moment, when seeking connection, users specify the level of access they need and generally receive access that provides for this level on a continuous, constant basis. We are considering improving the choice and definition of access rights options. These alternative choices might be cheaper to provide and help make better use of network capacity, such as access based on time-profiled capacity. At a high-level, the two main options are:

- **Static time-profiled** – access limits vary over time (eg half-hourly, daily, weekly, monthly, seasonally). This could lead to the development of “on-peak” and “off-peak” access.
- **Dynamic time-profiled** – access limits vary over time depending on specific conditions (eg when the wind exceeds a threshold level or when the wholesale price exceeds a specific amount). Unlike firmness defined by physical drivers, the conditions of access are not defined by the physical assets that connect the user to the wider system or the design of the network at the point they are connected.

Shared

1.19. At the moment, users secure access based on the needs of an individual site. We are considering options to allow multiple sites to share access to the whole network, up to a jointly agreed level. These sites would coordinate to ensure that they maintain their access within the limits set out in their shared access right. Examples of shared access could include; a group of demand users keeping to an aggregated import capacity, or a group of generators keeping to an aggregated export capacity or a local energy scheme balancing both demand and generation to keep within aggregated import or export capacity.

1.20. There are two high-level ways shared access could work:

- **Local shared access** – a smaller number of users in a specific constrained location on the network share access with each other.
- **Wider area shared access** – a larger number of users, within a broader constrained area of the network share access with each other.

Other options we are considering

1.21. We are considering the development of short term access to the network (eg less than a year). This could be adopted where long term access to not immediately available or where the user does not want to make a long term commitment. This was identified as a lower priority at the start of SCR, because we consider that the value to network users and the system is less clear.

1.22. We are considering options to introduce new conditions of access. For example, conditions where users temporarily release or sell their access rights if they do not take advantage of them (ie use-it-or-lose-it or use-it-or-sell it). At the start of the SCR, this was identified as a lower priority as this may be less necessary if other changes can give adequate incentives to release unused capacity (eg capacity-based charges or trading of access).

1.23. The access rights of distribution-connected users to the transmission network are not well defined. Distributed-connected users are in practice generally able to draw from or export onto the transmission network, and can increasingly access markets that have historically been dominated by transmission-connected generation (for example, they can offer services in the Balancing Mechanism). We think that better defining access rights will improve the clarity of distribution-connected users' access to the transmission network. We will consider options to achieve this (eg whether DNOs are required to agree transmission access for all distribution-connected generation) more explicitly as part of the second working paper.

1.24. Small users' access rights are not currently well-defined (eg most households' access to the system is limited only by the size of the service cable and fuse size and most users have not 'chosen' their level of access). Since small users' access needs could change significantly in the future (eg electric vehicles or heat pumps), we think there is a need to consider clearer definitions for small users' access rights. Giving clearer signals about the impact of different types of access on the network can help encourage choices that can reduce costs for all, while enabling users to get the access they need. Our second working paper will discuss further the benefits of clarifying access rights, and providing greater access choice, for small users.

Section 2: Our preliminary considerations – on each individual basic access right choice

Summary of access options and initial assessment

1.25. In this section, we outline our preliminary considerations on each of the elements which can make up an access right (level of firmness, time-profiled or anytime access, and individual or shared access). This analysis is informed by the two reports on access rights developed by the Delivery Group. For further details, refer to those reports.⁵ In the next section, we outline our preliminary considerations on cross-cutting issues which impact each element of an access right.

Level of Firmness

1.26. Defining access by physical drivers (eg single or dual circuit) is easier for network operators to determine and provide. However, firmness defined by physical drivers may be harder to understand and evaluate the risks for network users. Alternatively, defining firmness based on consumer outcomes may be more valuable to users because it better reflects their experience of access and allows users to make more informed decisions about the level and type of access that they require (eg the level of curtailment that they would be prepared to agree to). This would require network and system operators to translate access defined by physical drivers into user outcomes. They may be better able to do that than network users, but if they fail to do it effectively, then it could lead to increased system costs.

⁵ Access report 1 provides an overview of how the current approach to the design and operation of the electricity system <http://www.chargingfutures.com/media/1338/scr-access-report-1-v20.pdf>
Access report 2 provides an overview of how each access choice could be designed: <http://www.chargingfutures.com/media/1343/scr-access-report-2-v12.pdf>

1.27. Financially firm access to the transmission network currently exists for transmission connected generation users, and those distributed generation users that obtain access to the Balancing Mechanism (eg those with a Bilateral Embedded Generation Agreement).⁶

1.28. Our engagement with stakeholders has highlighted that the development of financially firm access at distribution could be valuable for users that need reliable revenue streams to make new investments. It may also help support efficient use and development of system capacity. Some stakeholders also consider that the introduction of financially firm access rights at distribution level would improve the alignment of distribution and transmission arrangements. However, we consider that the arrangements at distribution and transmission may not be significantly different. Distribution-connected parties with non-financially firm access can take action to mitigate against the risk of curtailment (eg use of storage, trading access with others or buying insurance from private insurance companies). Distributed-connected users also have the option to obtain a "standard connection". If a DNO wants to curtail a user with "standard connection" due to network constraints, then the DNO must pay the user through a flexibility contract. An area where transmission and distribution arrangements are different is that under the Connect and Manage regime at transmission, generators can be connected ahead of any wider transmission system reinforcements which may be needed. This arrangement is not available to distribution-connected users and where a user agrees to a "standard connection" the user must wait to be connected until any wider distribution reinforcement is completed.

1.29. Financially firm access requires the development of agreed planning and security standards so that network or system operators have an agreed, consistent basis to offer these access rights. These standards currently do not exist at distribution and we are concerned that there may be insufficient time to develop and implement the necessary standards in time for implementation of our SCR reforms in 2023. However, we consider that our SCR work should continue to develop financially firm access at distribution, potentially alongside the DNOs' work on distribution planning standards. We note that there is a cost associated with providing financially firm access. If financially firm access options were developed at distribution, we would expect cost reflective network charges to be designed to ensure that the users that benefit from financially firm access pay the cost of providing it. Furthermore, if financially firm access rights were developed at distribution, we would need to consider how the value of any compensation payments are calculated.

1.30. We note that non-firm access choices for generation users already exist at the distribution level (referred to as flexible connections), as well as at transmission level to a limited extent. Under current flexible connections arrangements, users face the risk of open-ended, non-compensated curtailment. Many stakeholders note that this is an unacceptable level of risk for them to accept. We consider that it should be possible to reform these non-firm access options at distribution level by 2023 (eg so that users are only at risk of being curtailed within certain parameters), ahead of the development of firm access choices.

Time-profiled access

1.31. Time-profiled access rights would provide users with alternatives to continuous, year round access. We have identified two main approaches to time-profiled access – static

⁶ Under 'Connect and Manage' arrangements, generators can connect without the need to wait for wider transmission network reinforcement. The ESO manages the associated constraints predominantly using the Balancing Mechanism, where generators and other flexibility providers are able to submit bids and offers to turn their generation or demand up or down and the ESO selects the most efficient actions to manage the system.

time-profiled access that varies based on time (eg 'off-peak access') and dynamic time-profiled access that varies over time based on specific conditions (eg weather conditions).

1.32. Based on our initial assessment of these options, we consider that time-profiled access rights could support more efficient network use and could provide additional information about when network access is valued. We note that network conditions change and that the timing of local network peak periods may also change over time. This would need to be taken into account by the network or system operator when offering this access type.

1.33. Network and system operators consider that it would be feasible for them to offer static time-profiled access rights.⁷ Stakeholders have highlighted that both static and dynamic time-profiled access rights may be very useful for them, but may require some degree of automation to ensure that users comply with them. However, network and system operators have signalled that it would be more challenging to offer dynamic time-profiled access and that it would require them to make future assumptions. For example, an access right linked to wind speed would require the network or system operator to estimate when it will be windy and make assumptions about network conditions at this time. Some stakeholders consider that this type of access may only offer limited system operation benefits. We consider that there is value in further assessing the benefits of both static and dynamic time-profiled access. We need to consider further the extent to which time-profiled access is appropriate for smaller users.

Shared access

1.34. Shared access rights would involve multiple users across multiple sites in the same broad area obtaining access to the network, up to a jointly agreed level, with the ability to coordinate between themselves how they share the access. This may be valuable to a local energy scheme that is trying balance new generation and demand across different sites or a company managing their import/export across a portfolio of different connection sites. There are two options being considered – local shared access (where some users within the same specific location share access) and wide shared access (where multiple users within a broader location share access). Where there are constraints, sharing access may lead to more efficient use of the network and avoid the need for network reinforcement.

1.35. Some stakeholders have questioned how shared access rights would work and there are practical issues to be resolved. Shared access would require access to be monitored at both an individual and aggregate level. To ensure that users remain within their shared access right, it requires an individual (eg the network users themselves, a third party or the network/system operator) or technology, to monitor and manage cumulative usage.

1.36. Sharing access across a wider area would create additional challenges (eg the value of user's access may not be equal in each location and sharing access may require an "exchange rate") and may be more difficult to implement. We need to better define how shared access could work (eg how close together sites would need to be). To implement shared access choices, we would also need to develop an agreed approach for monitoring and enforcing compliance of shared access rights. We will also need to consider how shared access works if the users sharing access have different suppliers.

⁷ However, consideration is being given to the potential new rights and obligations on both users as well as network and system operators, see paragraph 1.63.

1.37. The network is not designed and built for all users to use their maximum access rights at the same time. Instead network and system operators already account for some 'implicit' sharing of access through diversity assumptions.⁸ Some stakeholders have expressed concerns that introducing explicit shared access rights may reduce natural wider network diversity. If this occurs, then there could be less incidental spare capacity through diversity. Consequently, users' costs would likely increase, as capacity on the network that was provided for via diversity assumptions would require additional network reinforcement. We are engaging with the network operators to explore this issue further.

1.38. Several stakeholders noted the similarities of shared access and trading access.

- **Sharing access** would allow network users across multiple sites to share access (eg users could share non-firm access rights and determine amongst themselves who should be curtailed when required). This may involve more than two users. The identity of the users and the extent to which the access rights are "shared" must be agreed and fixed as part of their access rights, such as through their connection agreement.
- **Trading access** would allow network users to bilaterally trade or exchange access (eg users could trade curtailment obligations with other users). This would be limited to bilaterally trading between two users. The identity of the users, and the extent to which access rights are traded may have some network or system operator involvement, but do not need to be agreed as part of a user's access rights.

1.39. In theory, we consider that trading access should lead to the most efficient use of the network, since dynamic, market based approaches should lead to competitive price discovery. Market based trading also allows users to respond and react dynamically to live conditions, whereas renegotiating shared access rights may take considerable time to agree with the relevant network or system operator. However, there are currently very limited opportunities for trading access and they do not allow for real-time trading of access.⁹ Outside of the SCR, the ENA is developing options for exchanging access rights, this could involve short-term or long-term trading of distribution access. These options are currently in their infancy and it may take considerable time for these to become a fluid market. We consider that both trading and sharing access may deliver value for consumers and we intend to work with the ENA to better understand the potential respective roles of sharing and trading access.

Other options we are considering

1.40. We are considering options to develop short term access (for example short-term access of less than a year). This could be a valuable option for users seeking a temporary connection to the network (eg for construction projects) or a temporary amendment to their access rights. However, our initial engagement with stakeholders continues to suggest that this access choice is less valuable than other access options. This therefore continues to be a lower priority.

1.41. New conditions of access (eg 'use-it-or-lose it' or 'use-it-or-sell-it') could help develop efficient use of the network, by ensuring that access is allocated to users that actively use it. However, there are practical questions to be addressed. For example, it would require the development of thresholds for users to demonstrate that they are "using" the access rights. It may be difficult to establish these thresholds. We continue to believe that wider reforms (eg charging reforms and development of trading access) should

⁸ Diversity assumptions are when networks plan the size of their networks by assuming that users do not use their full access all the time, and consider this to be spare incidental capacity. Therefore the actual size of the network would not equal the 'agreed' size of the network.

⁹ Trading of access rights can already take place at transmission through TEC exchange.

incentivise parties to choose an appropriate level of capacity when connecting to the network, and incentivise existing users to release capacity that they do not intend to use. We will consider the need for conditions of access once we have refined wider reforms.

Section 3: Our preliminary considerations – Cross-cutting policy considerations

How these access options could fit together?

1.42. For the purpose of assessing the feasibility and value of different access options, we have assessed non-firm access, time-profiled and shared access individually. In reality, users' access rights will be a combination of their decisions across each of these access choices (see Figure 1). For example, a user could choose to have non-firm, time profiled access where it agrees for its access to the network to be restricted during certain time periods. Combining access choices could increase the complexity and volume of access options that are available to users. To date, we have not identified a combination of access choices that are incompatible with each other. As our understanding of these access choices improves, we will further consider how these options fit together. As part of our second working paper, we will outline further thinking on how distribution-connected users' access to the transmission network is defined.

Should access rights be a menu of standard options or bespoke and individually negotiated between the user and network owner?

1.43. If we increased the range of access choices available, we would need to consider the extent to which these choices are bespoke or standardised.

- **Standardised** – access would have 'off-the-peg' design choices and parameters, with a range of set choices that would fit broad groups of users' or network requirements.
- **Hybrid** – options would have alterations to standardised options to reflect certain users' or networks' requirements or where bespoke options are available within standardised bands or thresholds.
- **Bespoke** – access choices are fully tailored to fit the requirements of a user or network condition.

1.44. Currently users generally have standardised access rights, with the ability to develop bespoke arrangements. There are more opportunities for larger users to agree bespoke access arrangements.

1.45. There are advantages and disadvantages to providing standardised access options or more bespoke ones. Primarily, the key trade-off is the balance between efficiency and complexity limitations. For example, bespoke arrangements could result in greater efficiency of network utilisation, but be very complex to implement, resulting in an inefficient outcome. Where this balance between efficiency and complexity lies varies with user type. Smaller, less sophisticated users may benefit from greater standardisation of access options than larger, more sophisticated users.

1.46. In theory standardised options may result in less efficient utilisation of the network and may not meet individual users' needs. Furthermore, standardisation may reduce the ability to innovate, or the development of alternatives that can be tailored to a specific parameter, user or network requirement. However, in practice, standardised access options may be simpler for users and suppliers to understand and compare, may be more efficient to administer and charge, and may make it easier to operate the system. Standardised

options may make it easier to trade access and may make it easier for parties to compete to provide flexibility services. If we were to introduce standardised options, careful consideration needs to be given about how access options are standardised across different system and network operator regions, and across different types of network users (eg whether the same standardised options are available for generation and demand users).

1.47. In comparison, bespoke access arrangements may better meet individual users' needs, provide greater efficiency of network utilisation, and may facilitate innovation by enabling increased flexibility in commercial arrangements. Larger users (demand and generation) are those most able to maximise the opportunities of bespoke arrangements, with a greater capability to manage their access characteristics and be flexible.

1.48. It is important that access choices are charged on a cost-reflective basis. Under current arrangements, distribution-connected users are able to negotiate bespoke access rights and the value of the avoided network reinforcement is reflected in the user's bespoke connection charge. However, if we move to a shallow connection charging boundary we would need to reflect the value of avoided network reinforcement via use of system charges. This may require more granular or bespoke use-of-system charges and could be difficult to implement. It may result in increased administrative burdens, system operation challenges and additional risk of regulatory arbitrage. Furthermore, small users may find bespoke access arrangements undesirable because of additional burden of assessing bespoke options, contractual arrangements' interactions and technical requirements. Further discussion on the links between potential access and charging reforms are outlined in our links with procurement discussion note.

1.49. Hybrid options could include the provision of standardised access options that can be altered to meet individual network or user requirements. This could provide access options that are easy to understand, but with the ability to tailor these to meet users' needs, resulting in options that meet users' needs whilst supporting efficient network development. There would still be an increased complexity of systems, but this approach could facilitate innovation whilst maintaining a degree of commonality. Furthermore, there may be limits or parameters on the extent a standardised option can be tailored, for example derived from the limits on the granularity of network charging.

Transmission access rights – incremental change or fundamental reform?

1.50. As part of the Significant Code Review we are reviewing the definition and choice of distribution *and* transmission access rights. For example users at transmission or distribution may benefit from alternative levels of firmness, time-profiled or shared access (eg if it helps them connect to the network more quickly).

1.51. We are aware that the existing range of transmission access choice is different to the range of distribution access choice. For example, financially firm access and time-limited short term access (ie short-term TEC) are both already available for transmission-connected generators, but these are not available for distribution-connected generators.

1.52. We acknowledge that the design of the existing transmission access choices may influence the applicability of new access choices. For example, whilst enhancing the scope of non-firm, time-profiled or shared access at transmission may have merit, users are

unlikely to choose these options whilst the charges (and speed of connection) they would face are equivalent to the charges for firm access.¹⁰

1.53. If required, our wide-ranging review of DUoS charges allows us to undertake significant changes to DUoS charges to implement new access choices. We will consider the applicability of these reforms to the transmission charging arrangements.

1.54. Transmission-connected demand users generally have less well defined access rights. Some of the options we are considering to reform transmission demand charges would require these users to have better defined access rights. For example, a move towards capacity-based charges would require these users to better define a maximum import capacity. Further discussion on the options for reforming transmission demand charges is outlined in our Network Charge Design discussion note.

1.55. We note that the scope of the SCR includes clarifying access rights of distribution-connected users to the transmission system and reviewing how distributed-connected users are charged (or credited) to reflect the impact of their behaviour on the transmission network. In the second working paper, we will look at distribution-connected users access rights to the transmission network. We will consider the options for change and assess these options.

How can access rights be monitored and enforced?

1.56. As part of their access rights, users currently agree to defined limits on their right to access the network (eg a maximum import or export capacity). Compliance with access rights is necessary to deliver the benefits of reforming access rights (eg avoided reinforcement and system operation costs), and it reduces the risk of safety and supply issues for wider users. Better defined access rights may therefore require greater monitoring of access rights and changes to the enforcement regime.

1.57. At a high level, there are three approaches that could be used to deal with exceedance of access rights:

- **Financial consequences** – a charge for exceeding access rights.
- **Contractual consequences** – contractual obligations for the user to take specific actions if they exceed their access rights (eg the user is obliged to increase their access rights or install equipment that limits the risk of the user continuing to exceed their access rights, or the user might lose their preferred access choice and have imposed default access terms).
- **Physical consequences** – the network/system operator could install equipment to limit the ability of the user exceeding their access rights, or it could curtail or temporarily disconnect the user if they exceed their access rights. Ultimately a user could face disconnection or de-energisation if it repeatedly exceeds their access rights.

1.58. We consider that the consequences of exceeding access rights should be visible, understandable and proportionate to the impact of overrunning access rights. If consequences are too severe, it may cause users to over invest inefficiently to avoid the risk of exceeding their access rights. The network and system operators take a

¹⁰ We note that in May 2019 the Balancing Services Charges Task Force published their conclusion that it was not feasible to charge any components of balancing service charges in a more cost reflective and forward looking manner (which would positively influence network user behaviour), and that balancing service costs (including the constraint management costs of the Connect and Manage regime) should be treated on a cost-recovery basis. <http://www.chargingfutures.com/media/1348/balancing-services-charges-task-force-final-report.pdf>

proportionate approach to monitoring and enforcing access rights. The approach varies depending on the type of user, the impact of the user exceeding their access right and the frequency of non-compliance. A network or system operator's response to a small generator marginally exceeding their access rights on a single occasion, is different to their response to a large user causing supply quality issues by regularly exceeding their access right by a significant amount.

1.59. The development of new access arrangements may require changes to the current approach to monitoring and enforcement access rights. If a user agrees to an alternative access right, the network or system operator is likely to require additional network monitoring and additional usage data to ensure that it remains within its access limits. A network or system operator may also need to take appropriate enforcement action to ensure that users stay within their access limits. The user may install automated technology to ensure that it complies with their access rights.

1.60. For example if a distribution-connected user opts for a time-profiled connection, then the DNO may need to install additional equipment to monitor usage over time. To ensure that it avoids the need to reinforce the network, the user (or their supplier) or the DNO may also need to install equipment that limits the ability of the user to exceed their access rights.

1.61. The approach to enforcing access rights may be another area where we can introduce greater choice of access rights for users. Physical consequences provide more certainty to network/system operators and may therefore be cheaper for network/system operators to provide or specify. Some stakeholders have suggested that they would be willing for their network operator to introduce physical limitations on their ability to exceed their access rights, if this resulted in a cheaper connection.

1.62. To ensure that the potential benefits of access rights are achieved, there must also be consequences for the network or system operator if they fail to provide the user with the agreed level of access. For example, if a user agrees to be curtailed up to 10 hours per month, but the user experiences additional curtailment, then the network operator should be obligated to take action (eg undertake network reinforcement or procure flexibility) or pay compensation to the user.

1.63. The Delivery Group's initial assessment of the current approach to monitoring and enforcing access rights, and the potential changes that may be required if we introduce new access rights choices will be published on the Charging Futures website.

Links with other markets

1.64. For some users, their ability to sell services in different markets may vary depending on their network access. Some users have highlighted that this influences their access choices. For example, some distribution-connected generators opt into a Bilateral Embedded Generation Agreement (BEGA) to gain Transmission Entry Capacity (ie explicit transmission access) to actively participate in the Balancing Mechanism.

1.65. There is a range of current wider markets that users may want to sell services to -

- Wholesale market – where electricity is bought and sold (ie generators sell electricity and companies that consume energy (or have customers that consume energy) buy energy).
- Capacity Market – The Capacity Market was introduced by government to achieve long term security of supply. The Capacity Market provides regular payments to reliable

forms of energy capacity, in return for that capacity being available when the system is tight.

- Contracts for Difference (CfD) – This is the government’s main mechanism or supporting low-carbon generation. At times of low wholesale market prices, CfDs provide a financial top-up to a pre-agreed ‘strike price’ (and the reverse happens when wholesale market prices are high). This provides certain and stable revenue stream for low-carbon generators.
- Balancing services – Balancing services (eg frequency response services, reactive power services, reserve services and system security services) are procured by the NG ESO to balance demand and supply and to ensure the security of electricity supply across the transmission system. The NG ESO is currently undertaking a review of these markets.
- NG ESO and DNO flexibility services – flexibility services procured by the NG ESO or local DNO to reduce network costs (eg reduce need for reinforcement, avoid interruptions or reactive power services). For DNOs, these markets are still in their infancy.

1.66. Based on our initial assessment, a user’s choice of access right could impact their ability to sell services in different markets. For example, parties with short term access rights (ie less than a year) would be unable to agree a Contract for Difference contract since these contracts are 15 years long and only parties with firm, 24/7 access can provide black start services to NG ESO. The Delivery Group’s initial assessment of the interactions between new access choices and wider flexibility markets will be published on the Charging Futures website.

1.67. We note that the markets where we identified the most significant potential barriers are currently under review or still in development. For example, we are undertaking a five year review of the Capacity Market,¹¹ and, with support from other industry participants, NG ESO is undertaking a review of all balancing services to simply products and ensure routes to market for all participants.¹² The DNO flexibility markets are also still in development and the rules for how these markets will operate are not yet fixed. We therefore intend to work with government, NG ESO and the ENA and any new markets that emerge to remove undue barriers for users with alternative access choices from operating in these markets.¹³

Section 4: Summary of our preliminary views

1.68. We continue to consider that there may be benefits to users in improving the choice and definition of access rights. We consider that further work is required to understand and quantify these potential benefits. We welcome the development of different options and trials by DNOs as we develop proposals.

1.69. We continue to consider that improving the choice and definition of access rights for larger users should support more efficient use and development of network capacity. We are still working to understand whether better defining access rights for small users would deliver benefits. More information on this will be included in the next working paper.

1.70. In particular, we currently consider that developing options for non-firm and time-profiled access will help support the efficient use and development of network capacity. We

¹¹ <https://www.ofgem.gov.uk/publications-and-updates/five-year-review-capacity-market-rules-first-policy-consultation>

¹² <https://www.nationalgrideso.com/insights/future-balancing-services>

¹³ https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/817409/2019.07.16_BEIS-Ofgem_Joint_Letter.pdf

note that users are still keen to develop options for financially firm access at distribution, but continue to consider that there are significant feasibility issues with offering this type of access (ie the development of new distribution planning standards), that may make it unfeasible to deliver in our SCR timescales. We also consider that there are not significant differences between the arrangements at transmission and distribution. For example, generally DNOs can only curtail distribution-connected users with standard connections for network maintenance reasons, otherwise the DNO has to pay the user via a flexibility contract to curtail.

1.71. The development of shared access may deliver benefits for network operators and some stakeholders (eg those with a portfolio of sites seeking to add new equipment) are keen to be able to be able to share access. However we want to consider the interaction between trading and sharing access further.

1.72. In our links with procurement of flexibility discussion note we outline our initial thinking on the links between access, charging and the procurement of flexibility. We intend to develop our thinking on this further.

1.73. Ongoing input from the Challenge Group and Delivery Group will continue to be critical. In particular, we want to continue to work with them to assess the feasibility of offering new access choices and quantify the potential benefits to both network users and network operators of improving the choice and definition of access rights.