Access and Forward-looking charges

Financial Firmness Considerations Note

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	

Contents

1 Background

1.1 This note is to capture considerations for, and the implications of, the inclusion of a Financial Firmness Access choice in shortlisting. It is collated from the thinking of members of the Access SCR subgroup.

1.2 Subject to wider access and charging reforms, if Financial Firmness were to make it through shortlisting there could, potentially, be a requirement for a whole-system approach given that more generation is expected to come from distributed energy resources (DER) (generation/storage) which could support decarbonisation.

1.3 One of the questions put to the Access sub-group was whether minimum technical standards are needed to be able to offer "financially firm" access rights and a section on that is included.

2 Financial Firmness Arrangements at Transmission

2.1 If a generator has "firm" Transmission Entry Capacity (TEC), meaning it is physically connected in a manner compliant with the System Quality and Security Standards (SQSS), they can export at any time, at any MW up to the TEC. In circumstances where the generator is prevented from exporting, the financial compensation they receive will be dependent on the nature of the interruption.

2.2 Financial compensation, where applicable, will be given as follows:

- The Balancing Mechanism. Generators will submit a physical notification, bid/offer prices and the relevant MW amounts. Compensation will be given where the ESO curtails them, according to the bid price and MW amount submitted.
- The constraint payment can be a "pay as you go" type – i.e. dependent on the MWh that would otherwise be generated, or can be a year-long contract, giving the generator a steadier revenue forecast, but requiring the generator to reduce MW or trip whenever required to do so.

2.3 Note: circumstances may exist where, as a result of the ESO conducting a cost benefit analysis, the SQSS compliant design is not progressed and instead a reduced scheme/non-build solution is put in place that achieves the equivalent connection arrangements for generators that would otherwise have been delivered by a SQSS compliant solution.

2.4 Under some circumstances, a generator can claim an Interruption Payment, if they are not otherwise compensated. The Interruption Payment is divided into two categories:

1. Planned interruption - the financial compensation is basically a refund of their TNUoS payment, pro-rata by the days of interruption over 365 days; and
2. Unplanned interruption - the financial compensation is dependent on the MWh that will otherwise be generated.

2.5 Not all generators are regarding as having firm TEC as there are often a few clauses in the Bilateral Connection Agreement (BCA) between National Grid Electricity System Operator (NGESO) and the generator, which specify the scenarios under which the generators may be tripped off (or instructed to reduce MW export). The generator gets very limited (or even zero) financial compensation under these circumstances.

3 What is meant by firmness?

Fault vs curtailment

3.1 It's important to distinguish between a true fault scenario and curtailment. A possible distinction could be that curtailment is a forced reduction in output to maintain system stability at the point of connection. The generator remains on supply but export is restricted. A fault is an event which interrupts the electrical system at the point of connection to the extent the generator is off supply entirely.

Connection firmness at distribution

3.2 At distribution, very few generators are connected via firm connections, i.e. they are connected via a single circuit. The term "firm connection" is not codified and is not the same as firmness when described for transmission. Due to the fact this part of the connection to the system is sole-use, curtailment for this element is only going to happen if there is a fault on these specific assets (or the ones they connect to) or they were not sized properly for the connection. Necessary planned outages for normal network activity e.g. for maintenance or to connect other customers should not be considered as curtailment. For a fault on these specific assets, it could be argued this is covered under normal arrangements such as Interruption Incentive Scheme (IIS) and Guaranteed Standards (EGS). This is likely to be a "repair time" outage but this is something the customer has accepted by choosing a single circuit.

Wider distribution system firmness

3.3 When the generator requests a connection and it is determined that wider system conditions will not be able to support the full output of the generator at all times, e.g. under system intact or N-1 first circuit outage conditions , the generator is offered the choice between a standard connection, with associated reinforcement, or a flexible connection. A flexible connection comes with an expectation of curtailment due to wider network conditions (i.e. on shared use assets) and/or other customers' behaviour. The standard connection, where reinforcement has been funded by the connecting generator comes with an expectation of significantly improved network availability/reduced curtailment.

4 Technical Standards

4.1 With SQSS normally being a condition of financial firmness at transmission, it seems reasonable to have a parallel for technical resilience in distribution for generation as a pre-qualifier for financial firmness (planning and design standards in distribution support network resilience for demand). The authors of this note believe that minimum network resilience standards or minimum connections design standards would be an appropriate starting point for financial firmness. If it is deemed appropriate for there to be financial firmness arrangements at distribution, similar to those that exist at transmission, there is a need to define (somewhere) when a connection is sufficiently firm/sufficiently uncurtailed to support network resilience/security. Under what circumstances (if any) would giving some degree of financial firmness to a generator on a non-firm curtailed connection be a reasonable thing for DUoS customers to fund?

4.2 Treating an assessment of a generator and a connection's ability to provide network support, as a purely DNO local commercial matter (perhaps by only combining a connection agreement and a flexibility agreement (with no technical assessment), may pave the way to a quicker solution for a proxy for financial firmness, however without the development of further guidance/ common methodology, is likely to create inconsistencies across DNOs. DNO local interpretation might be ok for short-term trials and innovation projects but could lead to challenges in the medium and long-term on consistency and potential claims of undue discrimination.

5 Where might Financial Firmness Apply at distribution?

5.1 The authors of this note suggest that any consideration of financially firm payments/compensation in distribution should be focused on curtailment as a result of wider distribution system issues (rather than local) as this is where the DNO has the greatest opportunity to make wider efficiency decisions that account for multiple customers and are not covered by other mechanisms. Local connection firmness, on the other hand, is a decision by a single customer affecting only their service quality and direct faults are covered by IIS and EGS. Such an approach also appears to have greater parallels with arrangements at transmission, where Financial Firmness normally only applies where the relevant part of the electricity network is compliant with the SQSS.

6 What customers pay/have paid

6.1 Under current arrangements in distribution, it could be argued that customers that experience curtailment (e.g. via a flexible connection in an Active Network Management Scheme) have already been "compensated" by a cheaper connection charge. However, this isn't perfect as there may be a cliff edge when reinforcement is required between getting a cheap "firm" connection and getting a cheap flexible connection. Also, if reinforcement does subsequently take place (at the expense of a new connecting party), all existing customers previously connected on flexible connections will benefit (noting that the Electricity (Connection Charges) Regulations ECCR (2002 and 2017) are designed to recover costs from subsequent connectees for the benefit of the initial contributor, but not from ones already connected).

7 What could compensation look like?

7.1 This section sets out options and potential proxies for compensation.

Drivers/valuation for distribution curtailment

7.2 Distribution curtailment is driven purely by physical network constraints (rather than a market mechanism) and therefore this is the appropriate valuation of curtailment in distribution. There would need to be a process that essentially values compensation at a level that ensures it is an efficient alternative to reinforcement (or a service used to bridge the lead-time of reinforcement). This starts to point towards 2 potential proxies for financial firmness:

- The use of flexibility procurement. Whilst not currently used for generation constraints, its use may become more commonplace with the establishment of clearer definition of non-firm access rights, e.g. the introduction of annual curtailment caps. Where curtailment caps are exceeded, flexibility contracts for the management of constraints, inclusive of financial compensation mechanism, may be introduced on either a short-term basis (until network reinforcement or network modifications have been completed) or longer-term, dependent upon the DNO's assessment of which option provides the most efficient and economic network solution.
- Constraint payments to the constrained/curtailed user. This could be utilised where the percentage level of constraint is deemed beyond a previously agreed threshold, perhaps using the principle of the ENWL curtailment index (currently DNOs do not agree thresholds but may provide estimated curtailment levels).

7.3 In circumstances where an agreed percentage threshold is breached, or likely to be breached, the DNO could have the following options available to it:

1. Traditional reinforcement of the network;
2. The employment of flexibility procurement; or
3. The provision of compensation (financial payments) to generation in return for curtailment actions (as an alternative to reinforcement expenditure).

7.4 The DNO's decision in relation to which of the above options to employ will be dependent upon a cost benefit analysis, giving consideration to implementation of the most economic and efficient overall solution. Curtailment payments could therefore come into play and to ensure fairness of the level of payment provided, consideration of the level of access agreed at the time of each connection should be given.

Valuation of flexibility in distribution

7.5 Proxy compensation through flexibility payments would vary depending on the DNO's assessment of the value of flex at each location and potentially may also vary based on the reliability of the network support that a customer and its connection could provide. Flexibility procurement is likely to be based on tendered services, at least in the early years. The price would be based on bids received (and as valued by the DNO) and be locational specific rather than based on a published price.

7.6 There are a range of circumstances in which proxy compensation could be offered by the DNO. For example, in generation constrained areas it could be offered to existing connected parties, in return for accepting increased levels of curtailment, thus facilitating new connections in advance (or instead) of reinforcement works. It could also be offered to existing generation as an alternative to reinforcement where higher than anticipated levels of curtailment were being experienced by connected parties. In both circumstances, users could have the option to participate in tenders, accepting or rejecting compensation based on their assessment of its financial value versus alternatives.

7.7 Local DSO assessment of value of flex may not be the only issue e.g. if transmission needed generation/storage support at a GSP but the DNO itself had no flex requirement in that location. It is important therefore that a "whole system" perspective is taken by network operators in relation to the valuation of flex and when it is employed.

Value of deferred reinforcement

7.8 If compensation is valued on the NPV of deferred reinforcement (i.e. constraint costs) it is not clear if generators would consider it "financially firm" as it may not reflect their lost revenue from lack of access to the market. Using the NPV of deferred reinforcement may enable compensation values to be published, but again it would be locational specific. It is not clear whether this price would be best value for consumers either, as flexibility bidders may offer services at greater than the reinforcement price, so this may be further justification for the value in flexibility procurement being more reflective of the situation to be resolved or objectives to be met.

8 How would compensation be funded?

Funding in transmission

8.1 At transmission, compensation is funded through Balancing of Services Use of System (BSUoS) along with all other balancing services costs. BSUoS is recovered from all GB customers indiscriminately on a cost recovery basis as all customers benefit from the system stability it provides, noting that arrangements for recovery of BSUoS are currently under review as part of the Targeted Charging Review.

Potential funding in distribution

8.2 It may be reasonable for compensation payments to generators to be funded from DUoS in certain circumstances, e.g. where the associated costs of curtailment are less than those associated with reinforcement or other forms of flexibility procurement. Additionally, it should be noted that the generators most likely to be curtailed (as they are most likely to be directly controlled by the active network management (ANM)) are those larger sites connected to, and direct contributors to, the costs of active network management schemes i.e. rather than the significantly larger volume of less visible low voltage connected generators, including micro-generation.

8.3 Could compensation payments go on the general cost-base, i.e. inside price control and end up on the RAV, etc. or be treated as pass-through more akin to BSUoS (noting again that BSUoS arrangements are under review)? This would have an impact on the concept of evaluating compensated curtailment alongside traditional reinforcement as the cash-flow would be very different.

9 Other points to consider in distribution

Customer perception

9.1 The DNO does not currently balance the system in the same way the ESO does. Under existing arrangements, the DNO manages constraints and voltages, although this role could change in the future (in a whole system context).

9.2 Distributed generation has the option to contract with the ESO for BM services and as a result receive payments through the BM for transmission constraints, as described earlier in this paper. From a customer perception perspective, distribution constraints may be seen as the same as transmission constraints.

9.3 Flexibility contracts for generation rich areas are not currently pursued and ANM is the preferred solution as it protects the assets.

Suitability for particular access combinations

9.4 Financial firmness may suit particular access and charging packages e.g. shallower charging and locational DUoS for generation rich areas with reinforcement being avoided or deferred through flexibility agreement. With a shallower connections boundary flexible access products may have more value, again to avoid/defer reinforcement.