
RIIO-ED2 Regulatory Instructions and Guidance – Interruptions

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RIIO-ED2 is the price control for electricity distribution network operators (DNOs) from 1 April 2023 to 31 March 2028.

This document is part of the regulatory instructions and guidance (RIGs) for RIIO-ED2.

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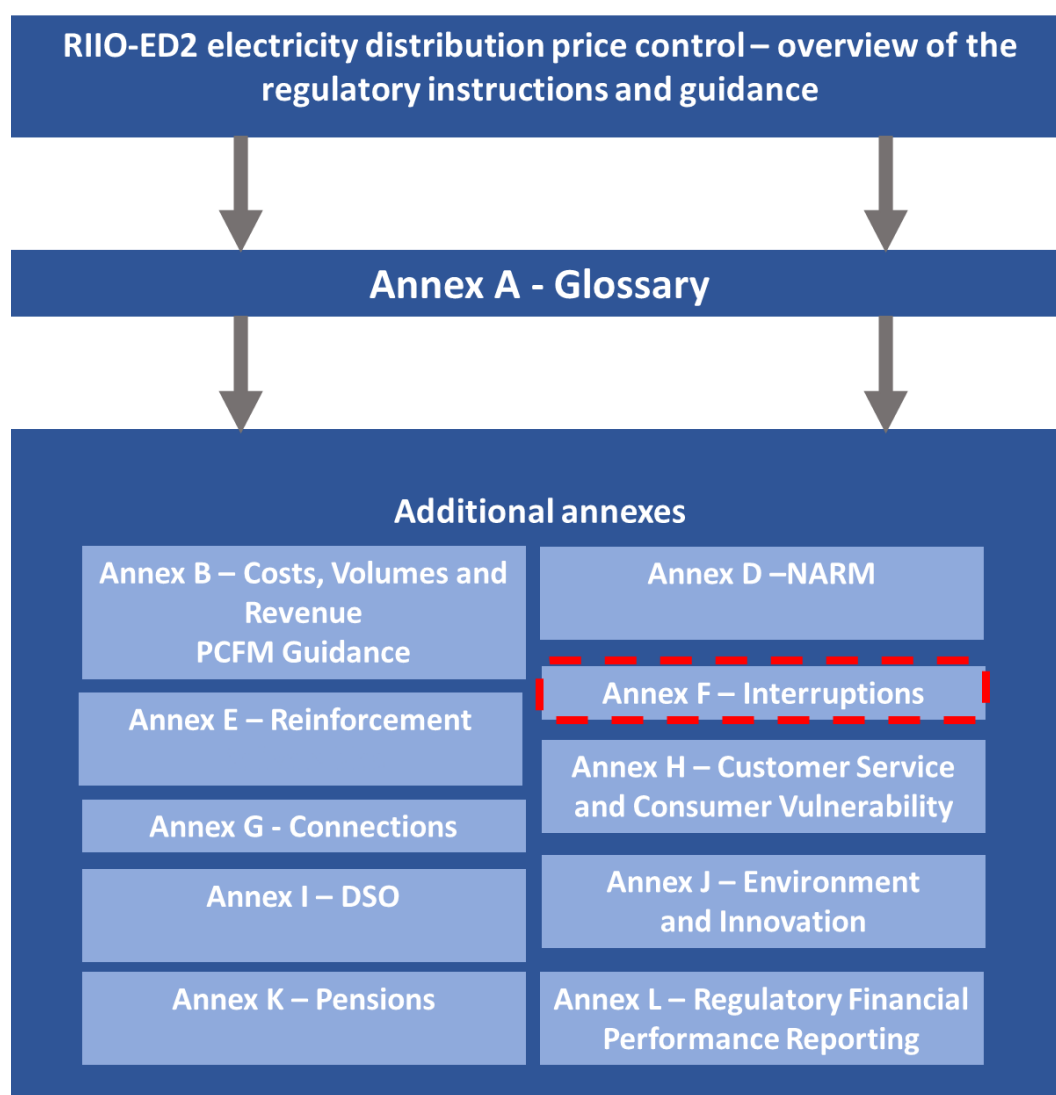
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1. Introduction

Scope of this document

- 1.1 This document is part of the regulatory instructions and guidance (RIGs) for RIIO-ED2. The term RIGs refer to a collection of documents – our instructions and guidance, and the reporting packs and commentaries the electricity distribution network operators (DNOs) must fill out.
- 1.2 Figure 1.1 shows all the instructions and guidance documents for the RIIO-ED2 RIGs. This document, circled in Figure 1.1, is one of a series of annexes containing instructions and guidance. It provides DNOs with information on how to fill in the interruptions reporting packs that they are required to submit to us.

Figure 1.1: Map of the RIIO-ED2 instructions and guidance



- 1.3 This document should be read in conjunction with:
- the RIIO-ED2 – Overview of the Regulatory Instructions and guidance document
 - Annex A – Glossary for the regulatory instructions and guidance
 - the associated Microsoft® Excel reporting packs named:
 - “QoS Interruptions Stage Data Reporting Pack”
 - “QoS HV Disaggregation Reporting Pack”
 - “Occurrences Not Incentivised Reporting Pack”
 - “Guaranteed Standards of Performance Reporting Pack”.
- 1.4 The purpose of collecting information in the QoS Interruptions Stage Data and QoS HV Disaggregation Reporting Packs is to monitor DNOs’ performance against the interruptions incentive scheme (IIS) and to provide underlying data to assist with target setting for future price controls.
- 1.5 The purpose of collecting information in the Occurrences Not Incentivised Reporting Pack is to monitor DNO reporting under the Safety and Security of Supplies Enquiry Service, beyond that reported for the IIS. For example to consider the impact of faults on unmetered supplies such as street lighting and street furniture. Another purpose is to capture short interruptions data for potential use in setting an incentive for the price control after RIIO-ED2.
- 1.6 The purpose of the Guaranteed Standards of Performance Reporting Pack is to collect information that allows Ofgem to monitor DNO performance against the guaranteed standards and adherence to The Electricity (Standards of Performance) Regulations 2015 as amended (“the Regulations”).

Instructions for completing the changes log and revenue link tables

- 1.7 The Changes Log must be used by the DNOs to record any amendments (formulae or presentation) that are made to the reporting pack, including the date those changes were made. Ofgem will also record any changes made to the reporting pack in this worksheet.
- 1.8 The QoS Interruptions Stage Data Reporting Pack and Guaranteed Standards of Performance Reporting Pack each contain a worksheet named Revenue Link Table. This worksheet does not require any input from DNOs. This worksheet links to other worksheets in the reporting pack. The values from the Revenue Link Tables should be used to populate the R5 – ODI table in the Costs, Volumes and Revenue Reporting pack for the relevant licence terms.

2. Instructions for completing quality of service reporting worksheets

Quality of Service Interruptions

Introduction

2.1 The purpose of this chapter is to provide instructions and guidance for quality of service (QoS) reporting. It sets out instructions and guidance for the reporting of the following which are defined in Annex A – Glossary:

- Customers Interrupted (CIs)
- Customer Minutes Lost (CMLs) (duration of interruptions to supply))
- Short Interruptions (SIs)
- Customers Re-interrupted (RIs)
- Occurrences Not Incentivised (ONIs).

Information sources

2.2 Most DNOs use the National Fault and Interruption Reporting Scheme (NaFIRS) which is administered by the Energy Networks Association (ENA). Others use an equivalent system. These systems collect information on the number of Customers interrupted and duration of interruptions to supply.

Definitions

2.3 In addition to those definitions listed in paragraph 2.1 above, other relevant key terms for the purpose of quality of service outputs reporting are defined in Annex A – Glossary:

- *132kV Systems*
- *EHV Systems*
- *HV Systems*
- *LV Systems*
- LV Services
- Customer
- Total Number of Customers
- Total Number of New Customers
- Total number of Disconnected Customers
- Unplanned Incident
- Pre-arranged Incident
- Incident on Other Systems
- Non-Damage Incident
- Damage Incident
- Interruption
- Restoration Stage
- Temporary Supply Arrangement
- Temporary Connections
- Temporary Disconnections

- Interruptible Contracts
- Non-Firm Contracts
- Clock Stopping
- Exceptional Events
- Severe Weather Exceptional Events
- Other Exceptional Events.

Customer

- 2.4 Only one Customer should be identified at each connection point. This means that multiple (or secondary) MPANs which arise due to the type of tariff (or equivalent) and/or metering arrangements (eg import/export meters), but are associated with a single connection point, must not be counted.
- 2.5 In some cases (eg flats), the connection point may be from the Distribution System to wiring owned by a landlord or a facilities manager. In such cases, individual Customers supplied by such wiring are classed as Customers of the Distribution System where they are identifiable from MPANs.
- 2.6 Any changes to the method used by DNOs to identify Customers from MPANs must be agreed in advance with Ofgem. Ofgem want to ensure that, as far as possible, DNOs use a consistent method for identifying Customers.

Incident

- 2.7 Occurrences that are classed as an incident lasting three minutes or longer include:
- Any physical break in the circuit upstream of the Customers interrupted (or circuit affected), due to automatic or manual operation of switchgear or fusegear, or due to any other open circuit condition.
 - The unprogrammed isolation of any circuit or item of equipment, energised at power system voltage, which has not been classified as a pre-arranged incident.
 - Failures of non-system equipment (eg pilot cables, oil and gas alarms, voltage control equipment etc) which result in the disconnection of equipment energised at power system voltage.
 - Incorrect operations of protection equipment which result in the disconnection of a circuit energised at power system voltage.
 - Failure of protection equipment to operate. This includes incidents where the main protection fails to operate and a fault clearance is initiated by back-up protection or protection at another point on the network.
 - The loss of infeed from other connected systems, including those owned by NGET/transmission companies (in Scotland), other distribution companies and distributed generators.
 - The pre-arranged isolation of any circuit or item of equipment energised at power system voltage that results in loss of supply.
- 2.8 Occurrences that would not lead to an incident are as follows:

- Maintenance outages and malfunctions of non-system equipment (eg pilot cables etc) which do not result in the disconnection of a circuit or item of equipment energised at power system voltage.
- Failures and overloads on Customers' equipment or another connected system, which are cleared by the correct operation of the DNO's protection and which do not interrupt the supply to other Customers of the DNO.
- Pre-arranged works affecting Customers for the purposes of meter changes, voltage standardisation and work on service cables and distributors' fuses (including service de-looping).
- Interruptions to supply resulting from load shedding in compliance with statutory and/or licence obligations following upstream incidents relating to either transmission or generation activities.
- Occurrences that are as a result of cut-outs (metered or unmetered) or any wiring and equipment connected after cut-outs, including cut-out fuse operations, are not an incident even where such occurrences have resulted in the operation of a fuse at the DNO's substation. Where the substation fuse is removed or other means of isolation (such as cutting a cable live) is carried out, and customers not connected to the faulty cut-out are interrupted in order to facilitate work to remedy that particular issue, separate occurrences should be created and treated as incidents, and the associated CIs and CMLs reported.

2.9 Any additional incidents which affect part of the network and/or Customers already affected by an incident must also be reported as additional incidents. Two or more incidents may then be active concurrently and the number and duration of interruptions and the number of re-interruptions must be calculated accordingly.

Incident start

2.10 The incident start time is the earlier of the date and time at which:

- the first report is received of a loss of supply^{1,2,3} or other abnormality which prevents a circuit or other item of equipment from carrying normal load current or being able to withstand through fault current for three minutes or longer, or the relevant circuit is automatically, deliberately or otherwise disconnected.

Report received time

2.11 The report received time is the earliest time that a DNO became aware of a loss of supply, an abnormality, or a suspected abnormality. It must be the earliest of the date and time at which:

¹ Neutral alarms or indication of reduced feeder load should not be taken as the start time.

² Where a customer (or customers) reports low volts then this should not be treated as a loss of supply, until the DNO confirms that the customer(s) is off supply. Equally, where a report of reverse polarity is received by the DNO, the customer(s) should be considered on supply until the DNO confirms that the customer(s) is off supply, or needs to be disconnected in order to carry out repairs to the DNO's network.

³ An incident is considered to have started when either the first no supply call or confirmation from site of an abnormality is received.

- a Customer (or other person) first contacted the DNO to advise of no supply, an abnormality or suspected abnormality
 - an alarm was received by the DNO indicating a loss of supply, abnormality or suspected abnormality, or
 - a DNO employee or agent identified the existence of a loss of supply, abnormality or suspected abnormality.
- 2.12 Single premises power outage alerts originating from a smart meter are not reasonably expected to indicate no supply. Where an outage alert is received, the DNO should contact the customer as soon as reasonably practicable thereafter to check whether the customer is without power, but only between 8am and 9pm. However, this should not restrict the DNO from contacting a customer outside of those hours if the DNO considers it in the customer's interest to do so. The single premises power outage alert originating from a smart meter will be deemed to have been received at the earliest of either 8am or when there is contact with the customer.
- 2.13 For reports that are associated with a loss of supply or other abnormality which prevents a circuit or other item of equipment from carrying normal load current or being able to withstand through fault current for three minutes or longer, the report received time will coincide with the incident start time. For other reports the report received time may precede the incident start time, for example:
- when deliberate disconnection is undertaken sometime after the report is received, or
 - when some faults are held by arc suppression.
- 2.14 In respect of loss of supply, some DNOs wait for a second report before initiating action. However, for the purposes of reporting the incident start time must be based on the time of the first report received. The date and time of an incident is the time at which the DNO first becomes aware of the incident by any means.
- 2.15 In respect of calls related to low voltages, the response of the DNO will vary depending on the information that has been provided by the Customer (or Customers). The advice given to the Customer will determine the DNOs recorded incident start time or not as per the guidance outlined in 2.11 to 2.13, for example:
- if a DNO advises a Customer to isolate their supply, then the time of this advice being given shall be recorded as the start time of this incident.

Incident completion

- 2.16 The determination of when an incident is considered complete is dependent on whether or not a temporary supply arrangement has been used to restore supplies.

- 2.17 Where a temporary supply arrangement has not been used to restore supplies, an incident is considered complete when supplies have been restored to all Customers involved in the incident for a period of at least 3 hours. This does not require the Restoration of the normal network configuration and open points.
- 2.18 Where a temporary supply arrangement has been used to restore supplies, an incident is considered complete when supplies have been restored to all Customers involved in the incident for a period of at least 18 hours.
- 2.19 As outlined in 2.17 and 2.18 any interruptions to supply caused by the removal of a temporary supply to reconnect, where done within 18 hours of restoring supplies via that temporary connection, must be counted as a re-interruption to supply. Any failures of a temporary supply arrangement, such as a generator running out of fuel, must be treated as a new interruption to supply and reported accordingly if this takes place after supplies have been restored to all Customers involved in the incident for a period of at least 18 hours, otherwise this must be treated as a re-interruption.
- 2.20 If there is a further loss of supply due to an unrelated occurrence, eg an incident on an adjacent circuit, to some or all of the same Customers before incident completion, then this must be treated as a separate incident and the losses of supply must be counted as interruptions.
- 2.21 If there is a further loss of supply to some or all of the same Customers after incident completion, this must be treated as a separate incident and the losses of supply must be treated as interruptions.
- 2.22 Where an incident start time and completion time/date span two reporting years, the incident must be allocated to the year in which it started.

Pre-Arranged Incident

- 2.23 A pre-arranged incident which requires a number of switching operations involving an interruption to supply to Customers must be treated as a single incident, provided that the outage start time is within the period stated on the notification provided to the Customer(s). Whether or not the outage Restoration time is outside the period stated on the notification provided to the Customer(s), the full length of the outage must be recorded as part of the planned incident. A record must also be kept of the times notified to the Customer(s) and the actual interruption times. Where the affected Customers have agreed to a shorter notice period for a pre-arranged interruption or this interruption starts before the original notice period at the request of Customers, the interruptions to these

Customers must be recorded as pre-arranged incidents, but only where there is auditable evidence, eg a note in the incident log detailing the revised interruption time.

- 2.24 Where the outage start time is before the period stated on the notification provided to the Customer(s) and the affected Customers have not agreed to or requested the earlier start time, the interruption of supply to the Customer(s) must be recorded as an unplanned incident.
- 2.25 Where statutory notification has not been provided to one or more Customers or the Customer(s) has not agreed a shorter notice period, then the Customer(s) must be recorded separately as part of an unplanned incident. The interruption to supply of all of the Customers that received statutory notice (or agreed a shorter notice period) must still be reported as a pre-arranged incident.

Interruption sequences

- 2.26 An incident may include both a loss of supply of less than 3 minutes' duration and a loss of supply of 3 minutes or longer. Under such circumstances, where the loss of supply of less than 3 minutes' duration occurs first, it must be reported as a short interruption. Where an interruption lasts for 3 minutes or longer, further losses of supply of less than 3 minutes' duration during the course of the same incident must not be recorded either as part of the incident or as a short interruption.
- 2.27 In determining interruption sequences above, Restorations of less than 3 minutes must be ignored, ie the interruption sequence would be determined as if there had been no such Restoration. For example, where a Customer is interrupted for 2 minutes, restored for 2 minutes, then interrupted for 30 minutes and subsequently restored for 3 minutes or more, the duration of the interruption would be 34 minutes.
- 2.28 In the case of Customers using more than one phase, supply is considered as being interrupted when:
- one or more phases is interrupted and/or
 - one or more phases do not have the correct vector relationship.

Occurrences Not Incentivised

- 2.29 Each occurrence must be identified by a reference number, along with the voltage, the start time and date of the occurrence.

Short Interruption

- 2.30 In the case of multi-shot reclosing schemes, only one short interruption is to be counted where the successful Restoration is achieved by a sequence of multiple operations in less than three minutes, where these are identifiable. Where the sequence of operations is not identifiable, a simple count of all operations of automatic reclosing devices could be used, excluding those operations recorded elsewhere, eg those associated with other incidents or routine switching.
- 2.31 The number of Customers interrupted must be identified in the same way as for incidents (ie those situations where Customers are off supply for three minutes or longer). If a DNO uses periodic counts of recloser operations to calculate the number of short interruptions, the number of Customers interrupted will be based on an estimate of those Customers who would have been interrupted. The DNO must base this estimate on the assumption that the circuit affected was configured normally, unless the DNO has robust information that there were abnormal feeding arrangements in place at the time.
- 2.32 The dates and times of short interruptions are not required where short interruptions are identified from a periodic count of circuit breaker operations. The counters must be read annually between 1 January and 31 March to ensure a reasonable approximation to a 12-month total.

Restoration Stage

- 2.33 Where a Customer's supply is restored for a period of less than three minutes, the calculation of the duration of interruptions to supply must ignore the time for which Customers' supplies were restored, ie the minutes for which the Customers are restored will be included in the count of minutes lost as if there were no Restoration.
- 2.34 There must be no limit to the number of Restoration Stages for an incident.

Start of a Restoration Stage

- 2.35 The start of a Restoration Stage is the date and time at which supply to Customer(s) is interrupted and/or a circuit or part of a circuit is de-energised.

End of a Restoration Stage

- 2.36 The end of a Restoration Stage is the date and time at which Customer(s) have their supply restored and/or a circuit or part of a circuit is re-energised.

Customers involved in a Restoration Stage

- 2.37 The Customers involved in a Restoration Stage are defined as the Customers connected to that part of the DNO's distribution network restored in the Restoration Stage, including restorations from mobile generators and temporary connections.
- 2.38 The number of Customers interrupted for single-phase and two-phase LV incidents may be calculated on a pro rata basis, ie $\frac{1}{3}$ or $\frac{2}{3}$ of the total number of Customers connected to the LV circuit, or part of circuit, affected. Customers with a three-phase LV supply (where these can be identified) are considered to be interrupted when supply is interrupted to one or more of the three phases. Individual Customer phase connections do not need to be identified for the purpose of reporting. To assist in the audit process, DNOs can record the number and phases of fuses that have operated in the event of an incident on the LV system.
- 2.39 For HV incidents, in the interest of simplicity and consistent reporting, if one phase of a three-phase circuit is disconnected it must be considered that two-thirds of Customers connected downstream of the point of disconnection had their supplies interrupted.
- 2.40 Where a connectivity model is in place it must be used consistently⁴ to derive the number of Customers interrupted on a particular element (eg LV feeder) of the network modelled. Where the section of network involved is a subset of a modelled network element (eg LV service), the number of Customers interrupted may be derived from records or from information available on site, supported by an appropriate audit trail, eg the property numbers involved, the location of the open circuit fault.
- 2.41 Customers involved for HV, EHV and 132kV must take account of the real-time changes to 132kV/EHV/HV network configuration during Restoration, which may be identified from a connectivity model.
- 2.42 Customers involved in each Restoration Stage may be identified from a connectivity model in which Customer information is individually linked with the appropriate section of network to which they are connected.

⁴ As such where the number of calls exceeds the number of customers predicted as being off supply the DNO must adhere to the model, taking account of any three-phase LV customers, although Ofgem would expect to see robust processes in place to identify and correct mis-allocated customers.

- 2.43 The date and time of interruption and the date and time of Restoration must be recorded for each Restoration Stage. The numbers of Customers involved and the elapsed time in each Restoration Stage will be used to calculate the number of Customers interrupted and duration of interruptions to supply.

Temporary Connection

- 2.44 An LV backfeed that is a permanent feature of the Distribution System must not be treated as a temporary connection. The bunching of two phases or the use of a temporary loop service is to be treated as temporary connections.

Clock Stopping

- 2.45 On or after 00:00 on 1 April 2019⁵ DNOs may apply Clock Stopping only if:
- The DNO cannot continue work to provide a Restoration because of circumstances outside its control;
 - There is no alternative means of Restoration available to the DNO; and
 - One of the circumstances in paragraph 2.46 applies.
- 2.46 This paragraph applies where:
- (i) Access to the DNO's equipment, which is necessary to restore supplies, is not possible due to the DNO's equipment being submerged in flood water.
 - (ii) Access to the DNO's equipment, which is necessary to restore supplies, is not possible because routes⁶ that would otherwise give access are blocked (such that a four wheel drive vehicle that is suitable for off-road conditions could not pass) because of one or more of the following: flooding, fallen trees, landslides, or snow.
 - (iii) Access, which is necessary to restore supplies, is explicitly prevented by the emergency services⁷, but only during the period of time in respect of which access is denied.
 - (iv) Access, which is necessary to restore supplies, is explicitly prevented by government authorities (Central Government⁸ or Local Government⁹),

⁵ For Clock Stopping events before 00:00 on 1 April 2019 licensees should refer to Version 4 of Annex F of the Regulatory Instructions and Guidance.

⁶ Route means a way that may be travelled to a particular destination, including the means of accessing that destination ie the asset concerned.

⁷ A Police Force, an Ambulance Service, a Fire and Rescue Service or Her Majesty's Coastguard

⁸ A department, company or agency (<https://www.gov.uk/government/organisations>) through which the government of the United Kingdom (or one of the devolved administrations) exercises its executive authority.

⁹ A unitary, county, district, borough, city, town or parish council.

including the military, but only during the period of time in respect of which access is denied.

- (v) Access, which is necessary to restore supplies, is explicitly prevented by other utilities¹⁰, but only during the period of time in respect of which access is denied.
- (vi) A Customer¹¹ requests that Restoration work (permanent or temporary) that the DNO is undertaking or needs to undertake on the Customer's premises is delayed, but only during the period of time requested by the Customer, eg overnight.
- (vii) A DNO has taken all reasonable steps to contact a Customer but has been unable to do so and access to the Customer's premises is necessary to provide a Restoration. A DNO asking a Customer whether the Customer would accept having its supplies restored at a later time is not a valid reason for Clock Stopping. The DNO may apply Clock Stopping from the time at which access to the Customer's premises is necessary, not from the time at which the DNO has failed to make contact with the Customer. For the DNO to be able to apply Clock Stopping in this scenario, the DNO must attempt to contact the Customer for 72 hours from the date of the Incident or until the DNO successfully makes contact with the Customer, whichever is sooner. Where a DNO has been unable to contact the Customer directly, it should make efforts to contact the Customer via their supplier.
- (viii) Access, which is necessary to provide a Restoration, is prevented and the DNO does not have the legal powers to immediately obtain the necessary access without recourse to or application to third parties (*this paragraph does not apply where the DNO cannot access its assets on another entity's premises because it has not negotiated appropriate access rights*). The DNO may apply Clock Stopping from the time at which access was prevented. This includes where access is necessary to premises or the public highway, such access is prevented or impacted by a third party and the DNO does not have a right to obtain the necessary access.

2.47 Where the DNO applies Clock Stopping in accordance with paragraph 2.46, it must restart the clock where:

- (i) in respect of paragraph 2.46(i), the flooding has receded such that the DNO is able to access its assets;
- (ii) in respect of paragraph 2.46(ii), as soon as it becomes aware that a route is reopened that allows access to the relevant asset;

¹⁰ A company or other organisation responsible for infrastructure relating to water, gas, electricity, rail or telecommunications.

¹¹ In this scenario this may include an individual empowered to act on behalf of the Customer.

- (iii) in respect of paragraphs 2.46(iii), (iv), (v) and (vii), as soon as it becomes aware that access is available;
- (iv) in respect of paragraph 2.46(vi), at the time the DNO agrees with the Customer that the delay in Restoration work would end. The DNO must not restart the clock at the time of Restoration. Where the Customer requests that Restoration work is delayed overnight and the DNO and the Customer do not agree a time at which Restoration work will restart, the DNO must restart the clock at the earliest of either: 07:00am on the day following the Customer's request for a delay or the time at which access is available.
- (v) in respect of paragraph 2.46(viii), when the circumstances under that scenario no longer apply.

2.48 Where the DNO applies Clock Stopping under paragraph 2.46 it must retain an auditable, evidence-based record so as to allow an after the event review to confirm the validity of each occasion on which the DNO applied Clock Stopping. Examples of the type of evidence a DNO could retain are:

- (i) in respect of paragraph 2.46(i), photographs showing flooding of its assets or post-event photographs showing flood lines;
- (ii) in respect of paragraph 2.46(ii), photographs evidencing that routes are blocked;
- (iii) in respect of paragraphs 2.46(iii), (iv), and (v), the relevant organisation's incident number or the name or identification number of the individual preventing access or a document issued by the relevant organisation confirming that access is or was prohibited;
- (iv) in respect of paragraph 2.46(vi), evidence setting out the details of the agreement (this could include the name of the Customer, their contact details and a summary of the discussion with the Customer where a verbal agreement is made) to delay Restoration work, which clearly show that the Customer has chosen for the Restoration work to be delayed;
- (v) in respect of paragraph 2.46(vii), evidence of the DNO's efforts to contact the Customer (in the first instance) directly and, where the DNO has been unable to do so, via the Customer's supplier; and
- (vi) in respect of paragraph 2.46(viii), records which enable the DNO to demonstrate (i) why it was prevented from undertaking Restoration work; and (ii) that it was prevented from continuing to carry out Restoration work.

2.49 The DNOs may only apply Clock Stopping to IIS and must not apply Clock Stopping to the Guaranteed Standards of Performance. In the event that a DNO wishes to apply an exemption from making a payment in respect of a failure of a

Guaranteed Standard, the DNO must do so in accordance with the Electricity (Standards of Performance) Regulations 2015.

Deemed Restoration

2.50 The circumstances below describe when a Restoration can be deemed to have been made:

- (i) Where the DNO is in a position to restore supplies on a permanent basis, but the Customer either requests:
 - to be left off supply; or
 - to be present at its own equipment when Restoration takes place.

In the above circumstances, the time at which the DNO was able to restore supplies but did not do so due to the Customer's request shall be the Restoration time.

Paragraph 2.49(i) does not apply if:

- the DNO must undertake further work that is not contingent on the actions of the Customer in order to provide a Restoration; or
 - The DNO asks a Customer whether the Customer would accept having its supplies restored at a later time.
- (ii) Where a Customer has its own generator and, therefore, refuses the provision of a temporary generator from the DNO, and the DNO has:
 - a) provided the Customer with fuel for its generator, which the Customer accepted;
 - b) offered to reimburse the Customer for fuel used for its generator as a result of the Interruption, which the Customer accepted; or
 - c) made a reasonable offer to provide fuel or appropriate reimbursement for fuel to the Customer and the Customer refuses that offer.

The time at which either a), b) or c) occurs shall be the Restoration time.

- (iii) Where the DNO has a contract with the Customer, which stipulates a minimum agreed capacity. The Restoration time shall be the time at which that minimum agreed capacity (as required by the contract) has been restored.
- (iv) Where the DNO has applied Clock Stopping under paragraph 2.46(vii), has discharged the requirements of that paragraph and has not been able to gain

access after 72 hours. In such circumstances the DNO may deem Restoration to be made at the time at which access to the Customer's premises was necessary, not from the time at which the DNO has failed to make contact with the Customer. When reopening the Incident, or creating a new Incident, the DNO must make the link to the earlier Incident clear.

2.51 Where the DNO applies deemed Restoration under paragraph 2.49, it must retain an auditable, evidence-based record so as to allow an after the event review to confirm the validity of each occasion on which the DNO deemed Restoration to have occurred. Examples of the type of evidence the DNO could retain are:

- (i) in respect of paragraph 2.49(i), evidence setting out the details of the agreement to delay Restoration work, which clearly show that the Customer has chosen for the Restoration work to be delayed;
- (ii) in respect of paragraph 2.49(ii), a copy of any offers made to Customers (if such offers have been made in writing, including by e-mail) or recordings of conversations with Customers (if such offers are made over the telephone) and any response from Customers to any such offers;
- (iii) in respect of paragraph 2.49(iii), the relevant contracts; and
- (iv) in respect of paragraph 2.49(iv), evidence of the DNO's efforts to contact the Customer (in the first instance) directly and, where the DNO has been unable to do so, via the Customer's supplier.

Updating the connectivity model

2.52 It is important that the connectivity model is kept up to date. The accuracy with which the number and duration of interruptions to supply are reported is, in part, determined by the frequency with which the connectivity model is updated. A reasonable timeframe for updating the connectivity model is likely to be within 14 days of the DNO being formally notified of any permanent changes to the network or Customer connections. (For example, a change expected to be in place for at least 28 consecutive days may be regarded as a permanent change). In addition, the numbers of Customers in the model could be reconciled with the total number of connected Customers on a monthly basis.

Reporting requirements

Customers

2.53 DNOs are required to report information on the number of Customers according to the following categories:

- total number of Customers
- total number of new Customers
- total number of disconnected Customers.

Disaggregation of incidents

2.54 It is necessary to collect information on the number of Customers interrupted and duration of interruptions to supply at a disaggregated level. This will help in comparing performance across DNOs, setting performance targets and determining appropriate audit samples, and could be used for making adjustments within the incentive scheme. There are seven types of mutually exclusive disaggregation required, these are:

- by incident and Restoration Stage
- by source, voltage level and main equipment involved (MEI)
- by duration band (both pre-arranged and unplanned CI)
- by frequency band (higher voltage unplanned CI only)
- by HV circuit
- by reason for Clock Stopping
- by Exceptional Event category.

Disaggregation by both incident and Restoration Stage

2.55 In addition to reporting on the effect on Customers of all incidents arising on the Distribution System, the number of Customers interrupted and duration of interruptions to supply must be reported separately by incident and Restoration Stage.

Disaggregation by source, voltage level and main equipment involved (MEI)

2.56 DNOs are required to report whether an incident is damage related for all categories other than LV Services, incidents on the systems of NGET or the transmission companies (in Scotland), incidents on the systems of distributed generators, and incidents on any other connected systems. The incident must be identified according to the following categories:

1 – An incident where there is a relevant damaged component as defined under ENA ER G43.

0 – Any other incident that does not come under 1 above.

2.57 DNOs are required to provide cause code, Main Equipment Involved (MEI) information and, where appropriate, contributory cause codes for every unplanned incident. A list of cause codes are provided in Appendix 3 and MEI

Codes are in Appendix 4. For incidents at HV DNOs must also provide the unique circuit identification number as set out in paragraph 2.72.

- 2.58 DNOs are also required to provide incident and stage information relating to:
- incidents on the systems of NGET or the transmission companies (in Scotland)
 - incidents on the systems of distributed generators
 - incidents on any other connected systems – which must be identified.
- 2.59 DNOs are required to identify pre-arranged incidents on the Distribution System by voltage level, and by the following classifications:
- LR – Load Related
 - NLR – Non-Load Related
 - INS – Inspections
 - RAM – Repair and Maintenance
 - TC – Tree Cutting
 - NI – Network Innovation Competition or Network Innovation Allowance
 - LT2 – Second Tier Funding for LCN Fund projects
 - SIF – Strategic Innovation Fund

Reason for Clock Stopping

- 2.60 DNOs are required to report information on the use of Clock Stopping in the QoS Interruptions Stage Data Reporting Pack under the Reason for Clock Stop column, according to the following categories for Incidents after 00:00 on 1 April 2019:¹²
- FW – where access is denied under paragraph 2.46(i),
 - AP – where access is not possible under paragraph 2.46(ii),
 - ES – where access is prevented under paragraph 2.46(iii),
 - GA – where access is prevented under paragraph 2.46(iv),
 - UT – where access is prevented under paragraph 2.46(v),
 - CD – where access is delayed under paragraph 2.46(vi),
 - CC – where access is delayed under paragraph 2.46(vii), and
 - LB – where access is prevented or delayed under paragraph 2.46(viii).
- 2.61 In such cases where multiple clock stops in relation to the same incident stage apply, each clock stop detail should be entered on a separate restoration stage, utilising the former clock restart time as both the restoration time of the first restoration stage and the interruption time of the second restoration stage. The second (and any subsequent) restoration stage(s) should also have the 'Reinterruption' field marked as 'Y'.
- 2.62 DNOs are required to report information on the use of deemed Restorations under the Restoration column, where they occur on or after 00:00 on 1 April 2020

¹² For Clock Stopping events before this time the codes in Version 4 of Annex of the Regulatory Instructions and Guidance should be used.

(DNOs may use these codes prior to this time), according to the following categories:

- R1 – under the scenario described in paragraph 2.49(i),
- R2 – under the scenario described in paragraph 2.49(ii),
- R3 – under the scenario described in paragraph 2.49(iii), and
- R4 – under the scenario described in paragraph 2.49(iv).

Exceptional Event Category

2.63 DNOs are required to report information on the category of Severe Weather Exceptional Event or Other Exceptional Event that they believe an incident may be part of in the QoS Interruptions Stage Data Reporting Pack under the EE Category column, according to the following categories:

- 1 means a category one Severe Weather Exceptional Event
- 2 means a category two Severe Weather Exceptional Event
- 3 means a category three Severe Weather Exceptional Event
- 9 means an Other Exceptional Event

2.64 The relevant category should then have a letter (A, B, C, and so forth) appended such that 2A would reflect the first Category 2 Severe Weather Exceptional Event, 9B would be the second Other Exceptional Event for that reporting year. These letter appendages will restart every Reporting Year.

2.65 The thresholds of the various categories are provided in Part 3 of Schedule 2 of the Electricity (Standards of Performance) Regulations 2015 as amended and Appendix 11 of the Special Condition 4.4 (Interruptions incentive scheme output delivery incentive). Similarly they appear in the QoS Interruptions Stage Data Reporting Pack on the Interruptions worksheet.

Exceptional Events impact

2.66 The Exceptional Events (EE) Impact worksheet provides a summary of the Exceptional Events (both Severe Weather and Other) claimed for (and not subsequently withdrawn) during the reporting year. It calculates a net position for the licensee, before and after weightings have been applied. A summary of the individual event impacts can be found on the Cover Page worksheet.

2.67 Following submission of the QoS Interruptions Stage Data Reporting Pack, Ofgem will verify the impact of each Exceptional Event claim and populate columns AI, AJ, and AK of the Unplanned worksheet accordingly. Ofgem will also populate the relevant "Percentage of claim accepted by Ofgem" cells on the EE Impact worksheet in relation to any Other Exceptional Event(s).

- 2.68 This completed workbook will then be provided to the licensee as part of the annual determinations process.
- 2.69 Once the workbook has been returned to the licensee, both the EE Impact worksheet and the Cover Page worksheet will show Ofgem's view of the event(s), which will align with the determination letter.

Disaggregation by duration band (pre-arranged and unplanned CI only)

- 2.70 DNOs should use the existing formulae in the Disaggregation by Duration table where they feel it meets their individual requirements. If they prefer, they are permitted to replace the formula in this table with actual values. The Customer minutes lost used for this disaggregation must be post any Clock Stopping.
- 2.71 DNOs must report separately both the pre-arranged and unplanned number of Customers interrupted (excluding re-interruptions and re-interruptions only) by the following duration bands:
- 3 minutes up to but excluding 1 hour
 - 1 hour up to but excluding 2 hours
 - 2 hours up to but excluding 3 hours
 - 3 hours up to but excluding 6 hours
 - 6 hours up to but excluding 12 hours and from 12 hours onwards,
- in 6-hour bands up to and including the longest time any Customers have been recorded as being off supply. Time bands with no Customers interrupted must be reported with a zero count.

Disaggregation by frequency band (higher voltage unplanned CI only)

- 2.72 DNOs must report the unplanned number of Customers interrupted (excluding re-interruptions) by frequency band starting with Customers experiencing zero higher voltage interruptions and rising in single increments up to Customers experiencing 10 higher voltage interruptions. The DNO must also identify the total number of Customers experiencing more than 10 higher voltage interruptions and the largest number of higher voltage interruptions experienced by any Customer. (Higher voltage interruptions include HV, EHV and 132kV interruptions).

Disaggregation by HV circuit

- 2.73 The number of unplanned incidents, Customers interrupted and duration of interruptions to supply arising on HV systems need to be reported by HV circuit to support work on comparing quality of service performance.
- 2.74 For each HV circuit DNOs must report the following circuit characteristics and performance information:
- the unique circuit identifier (where possible this must be the same as for previous years so that comparisons can be made over time)
 - the voltage level (eg 6.6 kV, 11 kV, 22 kV)
 - the number of connected Customers (on 31 March)
 - the length of overhead line in kilometres (on 31 March)
 - the length of underground cable in kilometres (on 31 March)
 - the number of incidents affecting the circuit
 - the total number of Customer minutes lost
 - the total number of Customers interrupted (excluding re-interruptions).
- 2.75 Two versions of the HV circuit information must be provided:
- Containing all HV incidents and associated Customers interrupted and Customer minutes lost
 - Excluding HV incidents, Customers interrupted and Customer minutes lost for the duration of events for which Exceptional Event exemptions have been requested and which meet the criteria set out in Special Condition 4.4 (Interruptions incentive scheme output delivery incentive) of the electricity distribution licence. The approach to treating such events must be agreed with Ofgem in advance of the data being provided. DNOs must provide summary data for the events which have been excluded including: the number of days' performance which has been removed, the number of incidents, Customers interrupted and Customer minutes lost.¹³ This data is subject to change following Ofgem's final decision on Exceptional Events.
- 2.76 DNOs must also provide total number of incidents, total number of Customers interrupted and total number of Customer minutes lost for any incidents that are not attributable to specific circuits. These must be grouped into one of the two following categories:
- changes to HV topology or misallocation (eg circuit removed during the reporting period)
 - loss of HV circuit infeed (eg a fault on an 11 kV bus-bar).
- 2.77 In addition to the above, for each loss of HV circuit infeed, the number of Customers interrupted and number of Customer minutes lost for each incident must be provided.

¹³ The performance figures excluding Exceptional Events plus the summary data for those events should reconcile with the information containing all incidents.

- 2.78 The incidents, total number of Customers interrupted and total number of Customer minutes lost for the disaggregated reporting for HV circuits plus unattributable HV performance must reconcile with the total HV performance.

Definition of a HV circuit

- 2.79 The DNOs have submitted their existing mix of circuit types to Ofgem. Any change in the definition of HV circuits to be used when reporting performance on a disaggregated circuit-by-circuit basis must be agreed with Ofgem in advance of the data being provided.

Circuits with non-zero length and non-zero connected Customers

- 2.80 These are valid circuits and must be included in the HV circuit dataset submitted by DNOs.

Circuits with non-zero length and zero connected Customers

- 2.81 These are valid circuits that would normally be used to provide alternative supplies to one or more Customers. These circuits must be included in the HV dataset submitted by DNOs. However, Customers interrupted and Customer minutes lost per Customer would be inconsistent with zero connected Customers. Therefore it will be necessary for DNOs to re-attribute any incidents, Customers interrupted and Customer minutes lost as if the network were normally configured.

Circuits with zero length and non-zero connected Customers

- 2.82 This classification of circuits is present for two reasons:
- a circuit exists but there is actually no circuit length, eg the exit point of a Customer's connection is the circuit breaker
 - a circuit exists and there is actual circuit length that is not being reported by the functionality of the mapping system or GIS.
- 2.83 In both cases, these are valid circuits that must be included in the HV circuit dataset submitted by DNOs. However, in order to include such circuits in the dataset, a nominal circuit length of 100 metres must be attributed to each of these circuits.

Circuits with zero length and zero connected Customers

- 2.84 These HV circuits are not valid and must not be included in the HV circuit dataset submitted by DNOs. Where appropriate any incidents, Customers interrupted and

Customer minutes lost must be re-attributed as if the network were normally configured.

Disaggregation by Occurrences Not Incentivised

2.85 For the purpose of reporting, DNOs are required to report the total number of Occurrences Not Incentivised according to the following categories:

- power system voltage equipment/no unplanned incident
- other occurrences (not affecting power system voltage equipment)
- calls logged in reporting system but not causing DNO activity.

2.86 These categories should comprise of incidents as outlined here:

- Power system voltage equipment/no unplanned incident, which contains:
 - Emergency disconnections
 - Streetlights/Street Furniture/Unmetered Services/Unmetered Cut Outs
 - Cut Outs (Metered Services) Cut Out Fuses Only (Metered Services)
 - Asset repairs instigated by trouble calls.
- Other occurrences (not affecting power system voltage equipment), which contains:
 - Abortive visits – no immediate work required
 - Responding to critical safety calls
 - Pilot wire failures.
- Calls logged in reporting system but not causing DNO activity, should include:
 - Occurrences not requiring site visits
 - All other calls logged but not pursued by DNO.¹⁴

2.87 DNOs are required to report the total number of Occurrences Not Incentivised incidents for each classification according to the following categories in the respective categories:

- Incident reference number
- Voltage
- Start date and time of incident.

Short Interruptions

2.88 DNOs are required to report the total number of short interruptions and disaggregated number of short interruptions that are due to the following causes:

- Auto re-close (NAFIRs cause code 10)
- Auto change-over (NAFIRs cause code 11)
- Auto close (NAFIRs cause code 12)
- Auto telecontrol restoration scheme (NAFIRs cause code 13)
- Total manual restoration of automatic disconnection (NAFIRs cause code 20)

¹⁴ DNOs are to input the total number of occurrences related to this category in the total worksheet.

- Restored by telecontrol following completion of auto telecontrol restoration scheme (NAFIRS cause code 21)
 - Planned manual short interruption (NAFIRS cause code 30)
 - Unplanned manual short interruption (NAFIRS cause code 31)
 - Loss of infeed due to another participating Company (NAFIRS cause code 40)
 - Loss of infeed due to NGC (National Grid Company) (NAFIRS cause code 41)
 - Loss of infeed due to generator (NAFIRS cause code 42)
- 2.89 DNOs should disaggregate short interruptions by voltage. The type of short interruption, the count of customers interrupted by the short interruption and the NAFIRS cause code of the interruption (see previous paragraph) should be inputted. If the interruption was identified by the system, the start and end time of the interruption should also be inputted and one row of data is required per short interruption stage. If the interruption was identified by manual count, the start and end time of the interruption is not required. Instead the number of times of circuit breakers had been operated should be inputted. One row of data is required for each manual device on the network that has operated.
- 2.90 In the 'Total' tab of the Occurrences Not Incentivised reporting pack, DNO customer numbers should be inputted as per the QoS IIS submission. Two frequency of short interruptions tables should be populated, one with the total short interruptions experienced by customers downstream of a manual device, who will also experience additional short interruptions from system-generated devices. The other table should be populated with manual counts only.

Required level of accuracy for reporting interruptions data

- 2.91 Ofgem considers that it is important that information used to implement the incentive scheme is sufficiently accurate to enable comparisons to be made over time and if appropriate between DNOs. Ofgem has specified minimum levels of accuracy for the reporting of:
- the number of Customers interrupted – at the 132kV and EHV, the HV and LV levels
 - the duration of interruptions to supply – at the 132kV and EHV, the HV and LV levels.
- 2.92 Table 2.1 specifies the minimum levels of accuracy required for the reporting of the number of Customers interrupted and duration of interruptions to supply. DNOs are required to meet the minimum levels of accuracy for the three voltage categories shown below. Meeting one of the required levels of accuracy is not sufficient to satisfy the requirements.

Table 2.1 Accuracy thresholds

Voltage	Overall accuracy	Initial stage accuracy (smaller sample)
EHV and 132kV	97 per cent	99 per cent
HV	95 per cent	97 per cent
LV	90 per cent	93 per cent

Other exceptional events knowledge sharing

- 2.93 One of the considerations for Ofgem in calculating the impact of any claimed (and not subsequently withdrawn) Other Exceptional Event is that it was a consequence of a cause external to the DNO.
- 2.94 To facilitate awareness and learning across the industry of events that have arisen, solutions tried, and lessons learned which other DNOs should be aware of, DNOs are therefore required to share with DNO members and Ofgem their initial learning points from such events within three months of the event. This can be through industry forums, directly between DNOs or through the Quality of Service working group.
- 2.95 In addition, when the Appropriate Auditor has completed their report, this report shall be shared with DNOs through the Quality of Service working group.

3. Guidance on the guaranteed standards of performance

Introduction

- 3.1 Electricity Distribution Network Operators (DNOs) are required to meet the Guaranteed Standards of Performance (“Guaranteed Standards”) under The Electricity (Standards of Performance) Regulations 2015 as amended (“the Regulations”). This chapter provides guidance on how DNOs must report performance against those Guaranteed Standards of Performance, as required under standard condition 11 (Reporting on performance) of the electricity distribution licence.
- 3.2 In accordance with the Regulations, DNOs are required to publish guidance for Customers on the Guaranteed Standards, known as the “Notice of Rights”, at least once in any period of 12 months.¹⁵ This guidance includes a description of each of the Guaranteed Standards, and is published on DNOs’ websites.
- 3.3 This chapter sets out Ofgem’s requirements for reporting under the Regulations. However, in the event of any dispute as to the application of the Guaranteed Standards, the Regulations will be the definitive point of reference.

Guaranteed Standards of Performance Reporting Pack

- 3.4 The Guaranteed Standards of Performance Reporting Pack provides an annual quantification of a DNO’s performance. It includes data regarding: (i) failures to meet the Guaranteed Standards; (ii) any exemptions invoked against those failures; (iii) the number of valid claims for payments; (iv) the number and value of payments made; and (v) the number and value of Ex-gratia Payments made.
- 3.5 To ensure the Guaranteed Standards of Performance Reporting Pack is completed in a consistent manner, full explanations of each reporting requirement have been included on the ‘Main’ tab. DNOs must complete the Guaranteed Standards of Performance Reporting Pack in accordance with the specified reporting requirements. A brief explanation is also provided to aid the reader but the Regulations remain the definitive point of reference.

¹⁵ Regulation 22, The Electricity (Standards of Performance) Regulations 2015.

- 3.6 Exemptions from a failure to meet each guaranteed standard must be reported on the relevant exemption tab, each of which links to the Main tab. The relevant exemptions tab must be used to record the number of times the DNO failed to meet a guaranteed standard but applied an appropriate exemption to that failure, such that the DNO did not make a payment to the Customer under the Regulations. A summary of each of the exemptions is included on the relevant exemptions tab in the Guaranteed Standards of Performance Reporting Pack.
- 3.7 To facilitate comparison of DNOs' performance across regulatory years, the Guaranteed Standards of Performance Reporting Pack reads across from left to right, year on year.
- 3.8 To facilitate reporting, each guaranteed standard has a reference number beginning with "EGS". For example, regulation 5 (duty to restore supply within 12 hours following a fault – under normal conditions) will be reported upon as EGS2.
- 3.9 The range of Guaranteed Standards, their EGS reference numbers, whether payment under a guaranteed standard is claimable by or is automatically payable to a Customer for each guaranteed standard are summarised in Table 3.1.
- 3.10 The Guaranteed Standards of Performance Reporting Pack includes a calculated "pass rate" for those Guaranteed Standards where it is possible to do so. The "pass rate" indicates the rate at which the DNO was not liable to make a payment under the Regulations ie, the relevant guaranteed standard was either met or, if the relevant guaranteed standard was failed, an exemption was applicable.
- 3.11 A "pass rate" cannot be calculated for EGS2A and EGS4 because the DNO does not know the total number of failures on which to base the calculation. Customers have to claim failure payments under EGS2A and EGS4.
- 3.12 Each calculated formula within the Guaranteed Standards of Performance Reporting Pack has been locked by Ofgem, to avoid errors in submissions.
- 3.13 If a DNO fails EGS2, EGS2B, EGS11A, EGS11B, or EGS11C and does not restore the supply by the end of a time band of 12 hours that is in addition to the initial relevant period, the number of additional time bands of 12 hours must be reported. For example, under EGS11A, a Customer who is off supply for 49 hours would be reported as two additional time bands ie one time band of 24 hours to 35 hours and 59 minutes and one time band of 36 hours to 47 hours and 59 minutes (the time band of 48 hours to 59 hours and 59 minutes has not been exceeded).

Table 3.1: Guaranteed Standards of Performance- Electricity Distribution

Regulation	Activity	Reporting code	Automatic (A) or Claimable (C)
11	Responding to operation of distributor's fuse	EGS1	A
5	Supply restoration – normal conditions	EGS2	A
10	Supply restoration – multiple interruptions	EGS2A	C
6	Supply restoration – normal conditions (5,000 or more premises interrupted)	EGS2B	A
8	Supply restoration – rota disconnections	EGS2C	A

Guidance – RIIO-ED2 Regulatory Instructions and Guidance – Interruptions

Regulation	Activity	Reporting code	Automatic (A) or Claimable (C)
12	Notice of planned interruption to supply	EGS4	C
13	Investigation of voltage complaints	EGS5	A
17	Making and keeping appointments	EGS8	A
19	Notification and making of payments owed under the guaranteed standards	EGS9	A
7	Supply restoration – category 1 Severe Weather conditions	EGS11A	A
7	Supply restoration – category 2 Severe Weather conditions	EGS11B	A

Guidance – RIIO-ED2 Regulatory Instructions and Guidance – Interruptions

7	Supply restoration – category 3 Severe Weather conditions	EGS11C	A
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General guidance and interpretation

- 3.14 DNOs must not apply Clock Stopping to the Guaranteed Standards. Clock Stopping is only applicable to the IIS.
- 3.15 In respect of EGS2, EGS11A, EGS11B and EGS11C, single premises power outage alerts originating from a smart meter are not reasonably expected to indicate no supply. Where an outage alert is received, the DNO should contact the customer as soon as reasonably practicable thereafter to check whether the customer is without power, but only between 8am and 9pm. However, this should not restrict the DNO from contacting a customer outside of those hours if the DNO considers it is in the customer's interest to do so.¹⁶ For the purpose of EGS2, EGS11A, EGS11B and EGS11C, a single premises power outage alert originating from a smart meter will be deemed to have been received at the earlier of either 8am the following day or when there is contact with the customer. If the DNO is unable to contact the customer as soon as reasonably practicable after receipt of a single premises outage alert, the DNO shall not treat the alert as being a report of no supply.
- 3.16 If the DNO applies "deemed Restoration" in accordance with paragraph 2.49 of Annex F – Interruptions of the RIGs, the time at which the supply is restored for the purposes of EGS2, EGS11A, EGS11B and EGS11C will equate to the time of "Deemed Restoration".

Reporting of Payments

- 3.17 In respect of EGS2, EGS2B, EGS2C, EGS11A, EGS11B and EGS11C, numbers and amounts of payments reported under "Domestic Premises" must exclude Priority Services Register ("PSR") Customers. Numbers and amounts of payments to PSR Customers must be reported separately under "PSR Customers".
- 3.18 A check line has been included for each category of Customer, against which each guaranteed standard is reported, in order to highlight if, for any reason, Payments Made is not equal to Payments Due.

¹⁶ For example, a DNO may consider it appropriate to contact customers on the Priority Services Register outside of those hours, particularly if they are in a high priority group (such as those who may be medically dependent on an electricity supply). DNOs should prioritise contacting those customers who are most at risk during a (potential) outage.

- 3.19 Where DNOs identify that a PSR Customer has been affected by a fault and is due a payment in respect of the DNO's failure to meet either EGS2, EGS2B, EGS2C, EGS11A, EGS11B or EGS11C, DNOs should automatically make the relevant payment to the PSR Customer and must not await the receipt of a claim. Accordingly, the number reported under "payments due" for PSR Customers includes failures of the relevant guaranteed standard regardless of whether or not a PSR Customer made a claim.
- 3.20 If a DNO fails or reasonably believes it has failed EGS2, EGS2B, EGS2C, EGS11A, EGS11B or EGS11C and an exemption is not applicable, the DNO must use reasonable endeavors, over the three months following the date on which the supply was restored, to identify and make the relevant failure payment to all non-PSR Customers. Customers are required to make a claim in respect of failures of EGS2A and EGS4 but do not need to make a claim in respect of any of the other Guaranteed Standards, although the DNO must consider all claims that are made.
- 3.21 For the purposes of the Guaranteed Standards of Performance Reporting Pack only, the terms "Ex-gratia Payment", "Severe Weather Ex-gratia Payment" and "Goodwill Payment" are defined as follows:
- **Ex-gratia Payment** means a payment a DNO chooses to make to a Customer in the event that the DNO has failed to meet a guaranteed standard and which is either:
 - (1) In addition to the failure payment the DNO is liable to make to the Customer under the Regulations;
 - (2) Where the DNO has applied an exemption to a failure and, therefore, is not liable to make a payment to the Customer under the Regulations; or
 - (3) For EGS2A and EGS4, which are claimable standards, where an affected Customer has not made a claim but the DNO has identified that a failure has occurred and so makes a payment to the Customer in respect of that failure.
 - **Severe Weather Ex-gratia Payment** means, for EGS11A, EGS11B and EGS11C only, either an ex-gratia payment or any other payment a DNO chooses to make to a Customer that is not in respect of a failure to meet the requirements of EGS11A, EGS11B or EGS11C but is in respect of a supply interruption that occurred during the relevant severe weather
 - **Goodwill Payment** means a payment a DNO chooses to make to a Customer in relation to a guaranteed standard where the DNO has not failed to meet

that standard and so is not liable to make a payment to the Customer under the Regulations.

- 3.22 Severe Weather Ex-gratia payments are subject, for the purposes of Special Condition 4.4, to a cap that is applicable to each DNO. In the event that a DNO makes Severe Weather Ex-gratia payments in excess of the cap applicable to that DNO, the DNO shall include those Severe Weather Ex-gratia Payments in the Guaranteed Standards of Performance Reporting Pack and, in doing so, is not required to differentiate between payments made up to that cap and payments made in excess of that cap.
- 3.23 If, following submission of the Guaranteed Standards of Performance Reporting Pack for a regulatory year, a DNO makes an Ex-gratia Payment or a Severe Weather Ex-gratia Payment in respect of any relevant standard, the DNO will report that payment in the Guaranteed Standards of Performance Reporting Pack for the subsequent regulatory year.
- 3.24 Reporting of goodwill payments within the Guaranteed Standards of Performance Reporting Pack is not required.
- 3.25 For the purposes of EGS2 and in circumstances where the DNO is not able to identify which Customers are connected to which phase of a circuit affected by the relevant fault, the DNO may for example report:
- a) The number of customers affected by the fault as being 1/3 of the total number of Customers connected to that circuit, if only one phase was affected by the fault;
 - b) The number of customers affected by the fault as being 2/3 of the total number of Customers connected to that circuit, if two phases were affected by the fault;
 - c) The number of customers affected by the fault as being the total number of Customers connected to that circuit, if all phases were affected by the fault;
 - d) The number of failure payments due, in the event that the supply is not restored within 12 hours, as being 1/3 of the total number of Customers connected to that circuit, if only one phase was affected by the fault;
 - e) The number of failure payments due, in the event that the supply was not restored within 12 hours, as being 2/3 of the total number of Customers connected to that circuit, if two phases were affected by the fault; and
 - f) The number of failure payments due, in the event that the supply is not restored within 12 hours, as being the total number of Customers connected to that circuit, if all phases were affected by the fault.

- 3.26 Also for the purposes of EGS2, if the supply was not restored within 12 hours and the DNO decided to make a payment to any or all of the remaining Customers connected to the relevant circuit, to whom the DNO had not made a failure payment, those payments will be classified as goodwill payments and, therefore, shall not be included in the Guaranteed Standards of Performance Reporting Pack.
- 3.27 There is no requirement for a Customer to mention the Guaranteed Standards when making a claim in respect of EGS2A or EGS4. Consequently, DNOs must adopt a common-sense view of what constitutes a claim and must not insist on a formal claim being made. If, for example, a Customer contacting a DNO about lengthy or frequent supply interruptions or an un-notified planned interruption gives the DNO reason to believe that the Customer is seeking recompense of some kind for the inconvenience caused by such interruption(s) (as opposed to compensation for damaged appliances, lost freezer contents, etc.), or is clearly expressing dissatisfaction with the supply interruption(s), then the DNO must treat this contact as a claim under the relevant guaranteed standard. Claims must be accepted by letter, e-mail, telephone or personal call.
- 3.28 Where the failure, act or omission of a DNO results in the failure of any of the Guaranteed Standards in respect of Customers directly connected to a distribution system owned by another Electricity Distributor (the "Connected Distributor"), then the DNO will be required to make all or part of an equivalent compensation payment directly to the Connected Distributor. The interaction between the DNO and the Connected Distributor in such circumstances must be in accordance with the provisions of clause 49 of the Distribution Connection and Use of System Agreement (the "DCUSA").¹⁷
- 3.29 Should a DNO be liable to make payment to a Connected Distributor's Customers, the number of failures should not be recorded in the DNO's Guaranteed Standards of Performance Reporting Pack. The Connected Distributor will include the payments made and number of failures in the Connected Distributor's Guaranteed Standards of Performance Reporting Pack to avoid double reporting. The DNO will include the total value of payments made to a Connected Distributor in the "IDNO / Other relevant Distributor" section on the Main tab in the DNO's Guaranteed Standards of Performance Reporting Pack and will report that total value in its regulatory cost return.

¹⁷ [DCUSA v15.1 \(dcusa-cdn-1.s3.eu-west-2.amazonaws.com\)](https://dcusa-cdn-1.s3.eu-west-2.amazonaws.com)

- 3.30 Where the failure, act or omission of a Connected Distributor results in the failure of any of the Guaranteed Standards in respect of Customers directly connected to a DNO's distribution system, then the Connected Distributor will be required to make all or part of an equivalent compensation payment directly to the DNO. The interaction between the Connected Distributor and the DNO in such circumstances must be in accordance with the provisions of clause 49 of the DCUSA.
- 3.31 Should a Connected Distributor be liable to make payment to a DNO's Customers, the number of failures should not be recorded in the Connected Distributor's Guaranteed Standards of Performance Reporting Pack. The DNO will include the payments made and number of failures in the DNO's Guaranteed Standards of Performance Reporting Pack to avoid double reporting. The Connected Distributor will include the total value of payments made to a DNO in the "IDNO / Other relevant Distributor" section on the Main tab in the Connected Distributor's Guaranteed Standards of Performance Reporting Pack and will report that total value in its regulatory cost return.

4. Appendix 1 – Quality of service

Purpose of information

4.1 Table A1.1 outlines the purpose for which the information provided and described in detail in Chapter 2 of this document, will be used. It does not specify how this information will be used in the incentive scheme.

Table A1.1: Purpose for collecting specified information

Information relating to number of Customers interrupted and duration of interruptions	Purpose	
	Incentive scheme	Other
Number of Customers interrupted by short interruptions of less than three minutes, including disaggregated by cause		Yes
Number of Customers interrupted for three minutes or more	Yes	
Duration of interruptions to supply of three minutes or more	Yes	
Number of Customers interrupted and duration of interruptions to supply of three minutes or more disaggregated by: incident and Restoration Stage source, voltage level and MEI duration band frequency of interruption, and HV circuit.	Yes Yes	Yes Yes Yes
Aggregate number of Customers re-interrupted		Yes

Formulae for the purposes of reporting

4.2 This appendix sets out formulaic expressions for:

- the number of Customers interrupted in the relevant year t (excluding re-interruptions)
- the duration of interruptions to supply in the relevant year t .

Formulae Definitions

- CI_t = the number of Customers interrupted in the relevant year t , **excluding re-interruptions**.
- CML_t = the duration of interruptions to supply in the relevant year t , **including re-interruptions**.
- i = an unplanned incident on the distribution system.
- j = a pre-arranged incident on the distribution system.
- k = an incident on a transmission system such as the systems of NGET or transmission companies in Scotland.
- l = an incident on a distributed generator's system.
- m = an incident on any other connected system.
- r = a Restoration Stage in any incident i, j, k, l, m .
- t = relevant year (that financial year for the purposes of which any calculation falls to be made).
- TC_t = total connected Customers in the relevant year t .
- TR_{rit} = the restoration time of Restoration Stage r of an unplanned incident i in the relevant year t .
- TR_{rjt} = the restoration time of Restoration Stage r of a pre-arranged incident j in the relevant year t .
- TR_{rkt} = the restoration time of Restoration Stage r of an incident k on NGET's system or a transmission company's system in Scotland in the relevant year t .
- TR_{rlt} = the restoration time of Restoration Stage r of an incident l on a distributed generator's system in the relevant year t .
- TR_{rmt} = the restoration time of Restoration Stage r of an incident m on any other connected system in the relevant year t .
- TI_{rit} = the interruption time prior to the restoration time of Restoration Stage r of an unplanned incident i in the relevant year t .
- TI_{rjt} = the interruption time prior to the restoration time of Restoration Stage r of a pre-arranged incident j in the relevant year t .
- TI_{rkt} = the interruption time prior to the restoration time of Restoration Stage r of an incident k on NGET's system or a transmission company's system in Scotland in the relevant year t .
- TI_{rlt} = the interruption time prior to the restoration time of Restoration Stage r of an incident l on a distributed generator's system in the relevant year t .
- TI_{rmt} = the interruption time prior to the restoration time of Restoration Stage r of an incident m on any other connected system in the relevant year t .

and:

- ND_{rit} = Number of Customers interrupted in Restoration Stage r of an unplanned incident i in the relevant year t , excluding re-interruptions to supply.
- ND_{rjt} = Number of Customers interrupted in Restoration Stage r of a pre-arranged incident j in the relevant year t , excluding re-interruptions to supply.
- ND_{rkt} = Number of Customers interrupted in Restoration Stage r of an incident k on NGET's system or a transmission company's system in Scotland in the relevant year t , excluding re-interruptions to supply.

- ND_{rIt} = Number of Customers interrupted in Restoration Stage r of an incident I on a distributed generator's system in the relevant year t , excluding re-interruptions to supply.
- ND_{rmt} = Number of Customers interrupted in Restoration Stage r of an incident m on any other connected system in the relevant year t , excluding re-interruptions to supply.
- NN_{rit} = Number of Customers interrupted in each Restoration Stage r of an unplanned incident i in the relevant year t , including re-interruptions to supply.
- NN_{rjt} = Number of Customers interrupted in Restoration Stage r of a pre-arranged incident j in the relevant year t , including re-interruptions to supply.
- NN_{rkt} = Number of Customers interrupted in Restoration Stage r of an incident k on NGET's system or a transmission company's system in Scotland in the relevant year t , including re-interruptions to supply.
- NN_{rIt} = Number of Customers interrupted in each Restoration Stage r of an incident I on a distributed generator's system in the relevant year t , including re-interruptions to supply.
- NN_{rmt} = Number of Customers interrupted in Restoration Stage r of an incident m on any other connected system in the relevant year t , including re-interruptions to supply.

Formulae

- 4.3 CI_t is the number of Customers interrupted per year in the relevant year t and is derived from the following formula:

$$CI_t = CIA_t + CIB_t + CIC_t + CID_t + CIE_t$$

Where:

- CIA_t is the number of Customers interrupted per year arising from unplanned incidents on the distribution system in the relevant year t and is derived from the following formula:

$$CIA_t = \frac{(\sum_i \sum_r ND_{rit}) \times 100}{TC_t}$$

- CIB_t is the number of Customers interrupted per year arising from pre-arranged incidents on the distribution system in the relevant year t and is derived from the following formula:

$$CIB_t = \frac{(\sum_j \sum_r ND_{rjt}) \times 100}{TC_t}$$

- CIC_t is the number of Customers interrupted per year arising from incidents on the systems of NGET or transmission companies in Scotland in the relevant year t and is derived from the following formula:

$$CIC_t = \frac{(\sum_k \sum_r ND_{rkt}) \times 100}{TC_t}$$

- CIDt is the number of Customers interrupted per year arising from incidents on the systems of distributed generators in the relevant year t and is derived from the following formula:

$$CID_t = \frac{(\sum_l \sum_r ND_{rlt}) \times 100}{TC_t}$$

- CIEt is the number of Customers interrupted per year arising from incidents on any other connected systems in the relevant year t and is derived from the following formula:

$$CIE_t = \frac{(\sum_m \sum_r ND_{rmt}) \times 100}{TC_t}$$

4.4 Each of the terms CIAt, CIBt, CICT, CIDt and CIEt should be separately identified.

4.5 CMLt is the duration of interruptions to supply in the relevant year t and is derived from the following formula:

$$CML_t = CMLA_t + CMLB_t + CMLC_t + CMLD_t + CMLE_t$$

- CMLAt is the duration of interruptions from unplanned incidents on the distribution system in the relevant year t and is derived from the following formula:

$$CMLA_t = \frac{\sum_i \sum_r (NN_{rit} * (TR_{rit} - TI_{rit}))}{TC_t}$$

- CMLBt is the duration of interruptions from pre-arranged incidents on the distribution system in the relevant year t and is derived from the following formula:

$$CMLB_t = \frac{\sum_j \sum_r (NN_{rjt} * (TR_{rjt} - TI_{rjt}))}{TC_t}$$

- CMLC_t is the duration of interruptions arising from incidents on the systems of NGET or transmission companies in Scotland in the relevant year t and is derived from the following formula:

$$CMLC_t = \frac{\sum_k \sum_r (NN_{rkt} * (TR_{rkt} - TI_{rkt}))}{TC_t}$$

- CMLD_t is the duration of interruptions arising from incidents on the systems of distributed generators in the relevant year t and is derived from the following formula:

$$CMLD_t = \frac{\sum_l \sum_r (NN_{rlt} * (TR_{rlt} - TI_{rlt}))}{TC_t}$$

- CMLE_t is the duration of interruptions arising from incidents on any other connected systems in the relevant year t and is derived from the following formula:

$$CMLE_t = \frac{\sum_m \sum_r (NN_{rmt} * (TR_{rmt} - TI_{rmt}))}{TC_t}$$

- 4.6 Each of the terms CMLA_t, CMLB_t, CMLC_t, CMLD_t and CMLE_t should be separately identified.

Other formulae

- 4.7 This section sets out formulaic expressions for:

- the number of Customers interrupted by short interruptions in the relevant year t (excluding re-interruptions), and
- the number of Customers re-interrupted in the relevant year t.

Formulae Definitions

- RIt = the number of Customers re-interrupted in the relevant year t.
- n = a short interruption due to the automatic operation of distribution network switchgear where the supplies of some or all of the Customers involved are successfully restored by automatic switching within less than three minutes of the first interruption.
- o = a short interruption due to the automatic operation of distribution network switchgear where the supplies of some or all of the Customers involved are successfully restored by manual or remote control switching within less than three minutes of the first interruption.

- p = a short interruption due to the manual or remote operation of distribution network switchgear for reasons such as deliberate disconnection for operational or emergency reasons.
- q = a short interruption due to the operation of switchgear on the networks of NGET/transmission companies (in Scotland) or other connected systems and distributed generators.
- SIt = the number of short interruptions to supply in the relevant year t.
- NSnt = the number of Customers interrupted by a short interruption in category n in the relevant year t.
- NSot = the number of Customers interrupted by a short interruption in category o in the relevant year t.
- NSpt = the number of Customers interrupted by a short interruption in category p in the relevant year t.
- NSqt = the number of Customers interrupted by a short interruption in category q in the relevant year t.

Formulae

4.8 SIt is the number of Customers interrupted by short interruptions in the relevant year t and is derived from the following formula:

$$SIt = SIA_t + SIB_t + SIC_t + SID_t$$

Where:

- SIA_t is the number of Customers interrupted by short interruptions in the relevant year t due to the automatic operation of distribution network switchgear where the supplies of some or all of the Customers involved are successfully restored by automatic switching within less than three minutes of the first interruption and is derived from the following formula:

$$SIA_t = \frac{\left(\sum_n NS_{nt} \right) * 100}{TC_t}$$

- SIB_t is the number of Customers interrupted by short interruptions in the relevant year t due to the automatic operation of distribution network switchgear where the supplies of some or all of the Customers involved are successfully restored by manual or remote control switching within less than three minutes of the first interruption and is derived from the following formula:

$$SIB_t = \frac{(\sum_o NS_{ot}) * 100}{TC_t}$$

- SICT is the number of Customers interrupted by short interruptions in the relevant year t due to the manual or remote operation of distribution network switchgear for reasons such as deliberate disconnection for operational or emergency reasons and is derived from the following formula:

$$SIC_t = \frac{(\sum_p NS_{pt}) * 100}{TC_t}$$

- SIDt is the number of Customers interrupted by short interruptions in the relevant year t due to the operation of switchgear on the networks of NGET/transmission companies (in Scotland) or other connected systems and distributed generators and is derived from the following formula:

$$SID_t = \frac{(\sum_q NS_{qt}) * 100}{TC_t}$$

4.9 Each of the terms SIAt, SIBt, SICT and SIDt should be separately identified.

4.10 RIt is the number of Customers re-interrupted in the relevant year t and is derived from the following formula:

$$RI_t = RIA_t + RIB_t + RIC_t + RID_t + RIE_t$$

where:

- RIAt is the number of Customers re-interrupted in the relevant year t arising from unplanned incidents on the distribution system and is derived from the following formula:

$$RIA_t = \frac{\left(\sum_i \sum_r (NN_{rit} - ND_{rit}) \right) * 100}{TC_t}$$

- RIBt is the number of Customers re-interrupted in the relevant year t arising from pre-arranged incidents on the distribution system and is derived from the following formula:

$$RIB_t = \frac{\left(\sum_j \sum_r (NN_{rit} - ND_{rit}) \right) * 100}{TC_t}$$

- RICt is the number of Customers re-interrupted in the relevant year t arising from incidents on the systems of NGET or transmission companies in Scotland and is derived from the following formula:

$$RIC_t = \frac{\left(\sum_k \sum_r (NN_{rkt} - ND_{rkt}) \right) * 100}{TC_t}$$

- RID_t is the number of Customers re-interrupted in the relevant year t arising from incidents on the systems of distributed generators and is derived from the following formula:

$$RID_t = \frac{\left(\sum_l \sum_r (NN_{rlt} - ND_{rlt}) \right) * 100}{TC_t}$$

- RIE_t is the number of Customers re-interrupted in the relevant year t arising from incidents on any other connected systems and is derived from the following formula:

$$RIE_t = \frac{\left(\sum_m \sum_r (NN_{rmt} - ND_{rmt}) \right) * 100}{TC_t}$$

Auditing and estimating the accuracy of interruptions reporting

Audit preparation

- 4.11 At the end of the reporting year each DNO must submit information on CI and CML at each voltage by incident and Restoration Stage.
- 4.12 If Ofgem chose to audit, we will select a sample of 150 incidents, split between 132kV and EHV, HV and LV according to the respective contribution to CI and CML (with a minimum of 50 LV incidents). A proportion of the sample will be held back until the time of the audit, and where a DNO agrees, the entire sample will be held back.

Audits

- 4.13 The audits of interruption reporting accuracy for the purposes of the scheme will then involve the following steps:

Stage 1 – Calculation of MPAN accuracy¹⁸

4.14 The HV MPAN accuracy will be calculated using the following formula:

$$\left(\frac{\text{Total number of primary traded MPANs assigned to true feeders at HV}}{\text{Total number of primary traded MPANs}} \right) \times 100$$

4.15 The LV MPAN accuracy will be calculated using the following formula:

$$\left(\frac{\text{Total number of primary traded MPANs assigned to true feeders at LV}}{\text{Total number of primary traded MPANs}} \right) \times 100$$

4.16 The 132kV and EHV MPAN accuracy will be calculated using the following formula:

$$\left(\frac{\text{Total number of primary traded MPANs assigned to true feeders at 132kV and EHV}}{\text{Total number of primary traded 132kV and EHV MPANs}} \right) \times 100$$

Stage 2

4.17 Ofgem's auditors will seek to audit at least five 132kV and EHV (where possible) 45 HV (50 if there are not enough 132kV and EHV incidents) incidents and 30 LV incidents.¹⁹

4.18 The auditors will then calculate the mean, standard deviation and mean plus/minus 4 standard deviations of the errors in the reported Restoration Stage figures.

4.19 The auditors will exclude any incidents containing outlier Restoration Stages (ie where the errors of any stage are outside the mean plus/minus 4 standard deviations).

4.20 The auditors will then calculate the accuracy of incident reporting for CI and CML for the 132kV and EHV, HV and LV data sets using the following formula:

$$\frac{\text{Sum of reported CI/ CML for remaining restoration stages}}{\text{Sum of audited CI/ CML for remaining restoration stages}}$$

¹⁸ True feeders are feeders which can generate CI and CML.

¹⁹ Where incidents that are too difficult to audit are substituted by a relevant spare incident.

- 4.21 The auditors will calculate the combined MPAN and incident reporting accuracies (for each of the three voltage categories) using the following formula:

$$[\text{MPAN accuracy} * \text{accuracy of incident reporting}] * 100$$

- 4.22 This is expressed as a percentage less than 100 using the following formula:

$$100 - \text{modulus}[100 - \text{combined accuracy}]$$

- 4.23 If the 132kV and EHV accuracy results are greater than or equal to 99 per cent, the DNO will be deemed to have met the accuracy levels set out in the RIGs. If not, the remaining 132kV and EHV sample will be audited at Stage 3.
- 4.24 If the HV accuracy results are greater than or equal to 97 per cent, the DNO will be deemed to have met the accuracy levels set out in the RIGs. If not, the remaining HV sample will be audited at Stage 3.
- 4.25 If the LV accuracy results are greater than or equal to 93 per cent, then the DNO will be deemed to have met the accuracy levels set out in the RIGs. If not, the remaining LV sample will be audited at Stage 3.

Stage 3

- 4.26 If appropriate, the auditors will audit the remaining incidents in the 132kV and EHV, HV and LV samples and recalculate the incident reporting accuracies and combined accuracies using the same method as set out in Stage 2.
- 4.27 If the DNO fails to meet the 97 per cent minimum 132kV and EHV level of accuracy required for the reporting of the number of Customers interrupted and duration of interruptions set out in Table 3.1 in Chapter 3, Ofgem will make the appropriate adjustments²⁰ to performance.
- 4.28 If the DNO fails to meet the 95 per cent minimum HV level of accuracy required for the reporting of the number of Customers interrupted and duration of interruptions set out in Table 3.1 in Chapter 3, Ofgem will make the appropriate adjustments²¹ to performance.
- 4.29 If the DNO fails to meet the 90 per cent minimum LV level of accuracy required for the reporting of the number of Customers interrupted and duration of

²⁰ Where data is found to fail the 97 per cent minimum 132kV and EHV level of accuracy, the data will be made 100 per cent accurate.

²¹ Where data is found to fail the 95 per cent minimum HV level of accuracy, the data will be made 100 per cent accurate.

interruptions set out in Table 3.1 in Chapter 3, Ofgem will make the appropriate adjustments²² to performance.

²² Where data is found to fail the 90 per cent minimum LV level of accuracy, the data will be made 100 per cent accurate.

5. Appendix 2 – Mapping to Costs & Volumes

IIS Reporting Incident template	Reporting Categories will be continued for RIIO-ED2
LV services overhead	LV service Overhead
LV services underground	LV service Underground
LV P&E link boxes only	Plant & Equipment LV link boxes only
LV non-damage	LV Supply Restoration by Switching Only (Non Damage Fault)
LV underground mains damage	LV UG Cables (Non CONSAC)
	LV UG Cables (CONSAC)
LV overhead mains damage	LV OH Lines - Asset Repair
LV all other switchgear, P&E	LV All Other Switchgear, Plant & Equipment (excluding LV link boxes)
HV non-damage	HV Supply Restoration by Switching Only (Non Damage Fault)
HV damage	HV UG Cables - Asset Repair
	HV OH Lines - Asset Repair
	HV Pole Mounted Switchgear Circuit Breakers
	HV Pole Mounted Switchgear (All Types ex CB)
	HV Pole Mounted Transformers
	HV All Other Plant and Equipment (inc GM transformers)
	HV Submarine Cables
EHV non-damage	EHV Supply Restoration by Switching Only (Non Damage Fault)
EHV damage	EHV UG Cables (Pressure Assisted) - Asset Repair
	EHV UG Cables (Non Pressure Assisted)
	EHV OH Lines - Asset Repair
	EHV All Other Plant and Equipment
	EHV Submarine Cables
132kV non-damage	132kV Supply Restoration by onsite switching only
132kV damage	132kV UG Cables (Pressure Assisted)
	132kV UG Cables (Non Pressure Assisted)
	132kV OH Lines - Asset Repair

	132kV All Other Plant and Equipment
	132kV Submarine Cables

6. Appendix 3 – Cause Codes

ID	Description
01	Lightning
02	Rain
03	Snow and Ice
04	Ice
05	Freezing Fog & Frost
06	Wind and gale (including windborne material)
07	Solar heat
10	Airborne deposits (excluding windborne material)
14	Condensation
15	Corrosion
16	Mechanical shock or vibration
17	Ground subsidence
18	Flooding
19	Fire not due to faults
21	Windborne Material
22	Disruption of intended indoor environment
23	Falling live trees (not felled)
24	Falling dead trees (not felled)
25	Growing Trees
26	Corrosion due to atmosphere/environment
30	Birds (including swans and geese)
32	Vermin, wild animals and insects
33	Farm and domestic animals
39	Wilful damage, interference
40	Metal theft
41	Accidental Contact, Damage or Interference by Cable TV companies or their contractors
42	Accidental Contact, Damage or Interference by Public Telecoms Operator (eg. BT, Mercury etc) or their contractors
43	Accidental Contact, Damage or Interference by Gas Company or their contractors
44	Accidental Contact, Damage or Interference by water/sewage companies or their contractors
45	Accidental Contact, Damage or Interference by highway authorities or their contractors

48	Accidental Contact, Damage or Interference Involving farm workers or farm implements
49	Accidental Contact, Damage or Interference Involving aircraft or unmanned balloons
50	Accidental Contact, Damage or Interference by private individuals (excl. Aircraft/Balloons/Leisure Pursuits)
53	Accidental Contact, Damage or Interference by unknown third parties
54	Accidental Contact, Damage or Interference by local building authorities or their contractors
55	Accidental Contact, Damage or Interference by private developers or their contractors
56	Accidental Contact, Damage or Interference involving leisure pursuits
57	Accidental Contact, Damage or Interference by other third parties
58	3rd Party - By Cable Communications Operators or their Contractors
60	Accidental Contact, Damage or Interference by DNOC or their contractors
61	Switching error by DNOC staff
62	Testing or commissioning error by DNOC staff
63	Incorrect or inadequate system records, circuit labelling or identification
64	Corrosion due to Bi-Metal Contact
65	Incorrect application of equipment by DNOC staff
66	Faulty installation or construction by DNOC staff
67	Load current above previous assessment
68	Incorrect or Unsuitable protection settings or fuse rating
69	Unsuitable protection settings
70	Inadequate rupturing or short circuit capacity
71	Deterioration due to ageing or wear (excluding corrosion)
72	Fault on equipment faulting adjacent equipment
73	Unsuitable paralleling conditions
74	Failure of infeed from Adjacent Distribution Network
75	Operational or safety restriction
76	Extension of Fault Zone due to Fault Switching (including ASC held faults)
77	Inadequate or faulty maintenance
78	Extension of Fault Zone due to incorrect operation of equipment (includes slow opening CB's)
80	Failure of Supply from Generating Company or NGC
81	Switching Error by Contractors
82	Testing or commissioning error by Contractors
83	Incorrect application of equipment by Contractors
84	Faulty Installation or Construction by Contractors

85	Fault on customers network causing operation of Network Protection
86	Interruption to remove local generator or restore temporary connections. (where in use >18 hours)
87	Local generation failure (isolated system)
88	Distribution equipment affected by National Grid Company personnel or equipment
89	Distribution equipment affected by private generator or authorised electricity operator (not NGC)
90	Faulty manufacturing, design, assembly or materials
97	No Fault Found
98	Cause Unclassified
99	Cause Unknown
A1	Transient Fault - No Repair
A2	Premature Insulation Failure
D	Dummy - Do not set
X	NONE

7. Appendix 4 – MEI Codes

ID	Description	Equipment Group	Voltage
0	OH Lines		HV+ voltages
1	UG Cables		HV+ voltages
2	Switchgear/Fusegear		HV+ voltages
2A	Busbars		HV+ voltages
2B	Switchgear & Fusegear		HV+ voltages
3	Transformers/Reactors		HV+ voltages
4	Protection		HV+ voltages
5	Miscellaneous		HV+ voltages
6	Surge Divertor		HV+ voltages
8	Not Applicable		HV+ voltages
9	Unknown		HV+ voltages
X	None		HV+ voltages
00	Overhead Main	OH Mains	LV
01	OH Main - Bare Conductors	OH Mains	LV
02	OH Main - Insulated Conductors	OH Mains	LV
03	OH Main – ABC	OH Mains	LV
09	OH Main - Mixed Conductors	OH Mains	LV
10	Overhead Service(metered)	OH Service	LV
11	OH Service - Bare Conductors	OH Service	LV
12	OH Service - Insulated Conductors	OH Service	LV
13	OH Service - Mixed Conductors	OH Service	LV
14	OH Service - Concentric	OH Service	LV
15	OH Service - Duplex / Triplex	OH Service	LV
16	OH Service – ABC	OH Service	LV
19	OH Service - Other	OH Service	LV
20	Surface Wiring Main	OH Mains	LV

21	Surface Wiring Main - Outdoor	OH Mains	LV
22	Surface Wiring Main - Indoor	UG Mains	LV
30	Surface Wiring Service	OH Service	LV
41	UG Main – PLCS	UG Mains	LV
42	UG Main - Consac	UG Mains	LV
44	UG Main - Waveform (Alpex)	UG Mains	LV
45	UG Main - Disticable	UG Mains	LV
49	UG Main - Mixed or Unclassified	UG Mains	LV
51	UG Service - PLCS	UG Service	LV
52	UG Service - Plastic Insulated Concentric	UG Service	LV
53	UG Service - Consac	UG Service	LV
54	UG Service - Waveform	UG Service	LV
55	UG Service - Disticable	UG Service	LV
59	UG Service - Mixed or Unclassified	UG Service	LV
60	Switchgear / Fusegear	Fusegear/Switchgear	LV
61	Switchgear - Circuit Breaker	Fusegear/Switchgear	LV
62	Switchgear - Pole Mounted Isolator	Fusegear/Switchgear	LV
63	Switchgear - S/S Fuseboard / Pillar / TMFC	Fusegear/Switchgear	LV
64	Switchgear - Pole Mounted Fusegear	Fusegear/Switchgear	LV
65	Switchgear - Street Feeder Pillar	Fusegear/Switchgear	LV
66	Switchgear - Multi-Service Pillar or Turret	Fusegear/Switchgear	LV
67	Switchgear - Linkbox	Fusegear/Switchgear	LV
68	Switchgear - Fused Wall Box	Fusegear/Switchgear	LV
69	Switchgear - Other	Fusegear/Switchgear	LV
71	Cut-outs (metered)	UG Service	LV
72	OH Service Cut-Out Metered	OH Service	LV
73	UG Service Cut-Out Metered	UG Service	LV
82	OH Service Unmetered	OH Service	LV
83	UG Service Unmetered	UG Service	LV
90	Other		LV
99	Other (Including Unknown)		LV
S1	Suspect UG Fault - possibly overload	UG Mains	LV
S2	Suspect UG Fault - possibly damage	UG Mains	LV
S3	Suspect UG Fault - other	UG Mains	LV
S4	Suspect OH Fault - possibly overload	OH Mains	LV

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S5	Suspect OH Fault - possibly tree related	OH Mains	LV
S6	Suspect OH Fault - other	OH Mains	LV
X	NONE		