DGD

[the following new definitions to be added to the DGD section of the D Code]

Demand Facility	An installation under the control of a **Customer** where electrical energy is consumed and is connected at one or more ~~connection~~ **Connection Ppoint**s to the **DNO's Distribution System**.
Demand Services Provider	A party who contracts with the **DNO** to provide a demand side service. The party might be a **Customer** contracting bilaterally with the **DNO** for the provision of services, or may be a third party providing an aggregated service from many individual **Customer**s. In the latter case there will be a specific contract for the provision of the services to the **DNO** and will include compliance by that third party with the requirements of DPC9 in relation to each **Demand Unit** included in the aggregated service.
Demand Unit	An appliance or a device whose **Active Power Demand** or **Reactive Power** production or consumption is being actively controlled by the **Customer** in whose **Demand Facility** it is installed and which has been commissioned on or after ~~9 September 20191717~~18 August 2019 in pursuance of a contract to this end with the **DNO**. Where there is more than one **Demand Unit** in a **Demand Facility**, these **Demand Units** shall together be considered as one **Demand Unit** if they cannot be operated independently from each other. Such an appliance or device commissioned before this date, but which has been materially altered will also be included in this definition. **Demand Units** of **Customers** where the **Customer** has concluded a final and binding contract for the purchase of a **Demand Unit** before 07 September 2018 are not included the scope of DPC9. The **Customer** must have notified the **DNO** of the conclusion of this final and binding contract by 07 March 2019. Any **Demand Unit** including storage, with the exception of a pumped storage **Power Generating Module**, as a component part is also excluded from the requirements of DPC9.

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Manufacturers' Information	Information in suitable form provided by a manufacturer in order to demonstrate compliance with one or more of the requirements of the Distribution Code. Where equipment certificate(s) as defined in EU 2016/631, or 2016/1388 cover all or part of the relevant compliance points, the equipment certificate(s) demonstrate compliance without need for further evidence for those aspects within the scope of the equipment certificate

[A new ~~stand alone~~stand-alone section of the Distribution Code]

DISTRIBUTION PLANNING AND CONNECTION CODE 9

DPC9 DEMAND SIDE SERVICES

DPC9.1 Scope

DPC9.1.1 This DPC9 applies to **Demand Service Providers** and **Customers** (both in their own right and acting as **Demand Service Providers)** in relation to the ~~it~~ **Demand Units** that are providing any of the demand side services defined in DPC9.2. For the avoidance of doubt it does not apply to **Customers'** installations and **Equipment** in general.

~~DPC9.1.2 DPC9 also applies to **Demand Service Providers.**~~

DPC9.2.1 **Active Power** control – a service where a ~~**Customer**~~ **Demand Service Provider** makes available the modulation by the **DNO** of **Demand** within ~~the~~ one or more **Customer~~'~~s' Demand Facilities~~y~~**. ~~This service can also be provided by a **Demand Service Provider** from a collection of **Demand Units** in various **Demand Facilities.**~~

DPC9.2.2 **Reactive Power** control – a service where a ~~**Customer**~~ **Demand Service Provider** makes available the modulation by the **DNO** of ~~the~~ one or more **Customer~~'~~s'** reactive power production or consumption within ~~the~~ one or more **Customer~~'~~s' Demand Facilities~~y~~**. ~~This service can also be provided by a **Demand Service Provider** from a collection of **Demand Units** in various **Demand Facilities.**~~

DPC9.3 Technical Requirements

DPC9.3.1 Voltage Ranges

DPC9.3.1.1 Any **Demand Unit** must be able to remain connected and operating normally when the supply voltage is within the range of 0.90pu to 1.~~06pu~~ 10pu of nominal declared voltage.

~~DPC9.3.1.2 Any **Demand Unit** must be able to remain connected and operating normally for up to 15 minutes when the supply voltage is within the range of 1.06pu to 1.10pu of nominal declared voltage.~~

DPC9.3.2.1 The **System Frequency** could rise to 52Hz or fall to 47Hz in exceptional circumstances. Any **Demand Unit** must be able to remain connected and operating normally in accordance with the following table:

Frequency Range	Requirement
47Hz - 47.5Hz	Operation for a period of at least 20 seconds is required each time the **Frequency** is below 47.5Hz.

47.5Hz - 49.0Hz	Operation for a period of at least 90 minutes is required each time the **Frequency** is below 49.0Hz.
49.0Hz - 51Hz	Continuous operation is required
51Hz - 51.5Hz	Operation for a period of at least 90 minutes is required each time the **Frequency** is above 51Hz.
51.5Hz - 52Hz	Operation for a period of at least 15 minutes is required each time the **Frequency** is above 51.5Hz.

DPC9.3.2.2 **Demand Units** must remain connected and operating normally for rates of change of frequency up to 1 Hzs^{-1} measured over 500 ms.

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DPC9.3.3 Modulation

DPC9.3.3.1 A **Demand Unit** or **Demand Units** must be capable controlling its **Demand** or **Reactive Power** production or consumption over the range specified in any contract with the **DNO**.

DPC9.3.3.2 **Demand Units** must be equipped to receive modulation instructions either directly, or indirectly via a **Demand Service Provider**, from the **DNO**.

a) **DNOs** currently are developing active network management approaches and there is no common standard for communication protocols.

b) The **DNO** will provide details of the method to be employed ~~on a site by site basis, or as will be deployed~~ between the **DNO** and the **Demand Service Provider**. Protocols currently in use between **DNOs** and **Demand Service Providers** ~~**Customers**~~ include simple current loop; DNP3; IEC 61850.

c) The **DNO** will agree with the ~~**Customer** for each **Demand Facility, or with the**~~ **Demand Service Provider** ~~as appropriate,~~ the protocol to be used.

d) By default if nothing it specified by the **DNO** then the interface will take the form of a simple binary output that can be operated by a simple switch or contactor. When the switch is closed the **Demand Unit** or **Demand Facility** can operate normally. When the switch is opened the **Demand Unit** will modulate its **Demand** (**Active Power** consumption or **Reactive Power** production or consumption) as required by the contract. The signal from the **Demand Unit** that is being switched can be either AC (maximum value 240 V) or DC (maximum value 110 V).

DPC9.3.3.3 The **DNO** will publish the standard response times it expects for the services it wishes to contract for. Having received the signal or command from the **DNO**

the **Demand Unit** will modulate its behaviour to the full extent of the contract within the standard response time, unless agreed otherwise with the **DNO**. In the absence of a specific published **DNO** requirement the response time will be ~~180 s~~5 minutes.

DPC9.3.3.4 The modulated behaviour will be maintained for the duration of the signal to do so from the **DNO** unless otherwise agreed with the **DNO**.

DPC9.3.3.5 If the modulation, or any part of it, ceases to be fully available for operation at any time, either temporarily or permanently, unless otherwise agreed with the **DNO** the ~~**Customer**, or~~ **Demand Service Provider** ~~as appropriate,~~ will notify the **DNO** without delay, and no more than 12 hours after the modulation ceases to be fully available.

DPC9.3.3.6 The **DNO** will advise the **Demand Service Provider** what operational monitoring and/or metering is ~~to be installed in a **Demand Facility**, or agreed with a **Demand Service Provider**~~required. For **Demand Facilities** connected at **HV** the **DNO** in some cases will install the **DNO's** own telemetry which can form part of the necessary operational monitoring.~~,~~

DPC9.4 Operational Notification

DPC9.4.1 As part of the contractual arrangements for the provision of demand side services to the **DNO**, the **Demand Service Provider** ~~**Customer**~~ must provide the following information one month, or other such time as agreed with **DNO**, in advance of the commencement of the ~~services a~~ contracted ~~for~~ demand side services:

a) Full contact details of the **Demand Service Provider;**

~~a)~~b) Full contact details of the **Demand Facility** owner (if different from (a));~~.~~

~~b)~~c) The exact address and location of the **Demand Facility**;

~~c)~~d) The capacity of the modulated behaviour of the **Demand Unit** expressed in kW or kVAr (including production or consumption) as appropriate;~~.~~

~~d)~~e) Confirmation that the **Demand Unit** complies with the technical and modulation requirements of DPC9.3;

~~e) The undertaking that the Demand Service Provider Customer has entered into a Demand Service Provider Agreement and the~~

DPC9.4.2 Unless agreed otherwise with the **DNO** ~~T~~the above information, together with the statement of compliance required by DPC9.5.~~1.~~4 below shall be submitted by ~~either~~ the ~~**Customer**, or~~ **Demand Services Provider** ~~as appropriate,~~ on the proforma provided by the **DNO** for that purpose.

DPC9.4.3 Unless agreed otherwise with the **DNO** The **Demand Services Provider** must notify the **DNO** of any~~Any~~ planned change or modification to the capabilities of the **Demand Unit** ~~must be notified~~ at least one month in advance. ~~to the **DNO**~~.

DPC9.4.4 Unless otherwise agreed with the **DNO** the **Demand Services Provider** must notify the **DNO** of any ~~Any~~ unplanned incident or failure of a **Demand Unit** ~~should be notified to the **DNO**~~ immediately, which means within the same day.

~~DPC9.4.5 In the case of an aggregated service, the **Demand Service Provider** must notify the **DNO** of any planned changes to the specification and availability of the contracted service at least one month in advance of the planned implementation date.~~

DPC9.4.~~7~~6 For any **Demand Facility** connected at **HV**, the demand side services cannot be called upon until the **DNO** has issued a final operational notice to the **Customer** responsible for the **Demand Facility**. The **DNO** will issue the final operational notice to the customer on receipt of the complete information required in DPC9.4.1. The **DNO** will recognize practical difficulties in completing all appropriate tests for confirmation of compliance in specific situations and will not unreasonably withhold the issuing of the final operation notification.

DPC9.5 Compliance

~~DPC9.5.1 Where the **Customer** has a direct contract with the **DNO:**~~

DPC9.5.~~1.~~2 The **Demand Service Provider** ~~**Customer**~~ must demonstrate the modulation of behaviour of the **Demand Unit**s on receipt of the appropriate signal (or simulated sign) from the **DNO**. Where appropriate such tests can be undertaken off site, for example by the manufacturer.

DPC9.5.~~1.~~3 To the extent that the **Demand Service Provider** ~~**Customer**~~ requires the **DNO** to assist or participate in compliance testing the **DNO** will co-operate to achieve an agreed timetable.

DPC9.5.~~1.~~4 The **Demand Service Provider** ~~**Customer**~~ will supply to the **DNO** a statement of compliance detailing how compliance with the relevant parts of DPC9 has been demonstrated. The statement can include **Manufacturer's Information** to support the demonstration of compliance.

~~DPC9.5.2 Where the **DNO** has contracted with a **Demand Service Provider** who is not a single **Customer** and is aggregating a response from many **Customer**s:~~