

## Demand Side Response Installation Documents – Explanatory note.

For DNO contracted DSR, the Demand Response Unit Document and the Installation Document are one and the same document.

However there are two versions of this document:

DSR 1 for is for Demand Response Providers who are individual Customers, individual customers,

DSR 2 is for Demand Response Providers who are aggregating the demand services from individual Customers (ie aggregators), for aggregators.

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DSR 3 should be completed for each **Demand Unit** reported under DSR 1 or DSR 2 – either on a site by site basis or once only as a type test certification, the details of which can be quoted on DSR 1.

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It is the aggregator's responsibility to ensure **Distribution Code** compliance for each **Demand Unit** included within their DSR 2 submission.

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DSR 4 – Demand Unit Decommissioning form.

The following definitions are used in these forms:

### **Demand Facility**

An installation under the control of a **Customer** where electrical energy is consumed and is connected at one or more **Connection Points** to the **DNO's Distribution System**.

### **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 07 September 1718 August 2019 in pursuance of a contract to this end with the DNO. 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.

### **Fully Type Tested**

A **Demand Unit** which has been tested to ensure that the design meets the relevant technical and compliance requirements of DPC9, and for which its manufacturer has declared that all similar **Demand Units** supplied will be constructed to the same standards and will have the same performance.

### **Type Tested**

A product which has been tested to ensure that the design meets the relevant requirements of DPC9, and for which the manufacturer has declared that all similar products supplied will be constructed to the same standards and will have the same performance. The declaration will define clearly the extent of the equipment that is subject to the tests and declaration.

DSR 1 - Demand Unit - Installation Document

Please complete and provide this document for every Demand Facility (ie each premise)-

Part 1 should be completed for the Demand Facility.

Part 2 should be completed for each Demand Unit(s) being commissioned. Where the installation is phased the form should be completed and returned to the DNO as each part-phase of the installation is commissioned.

DSR 1 - Part 1 Demand Facility

To ABC electricity distribution DNO  
99 West St, Imaginary Town, ZZ99 9AA abced@wxyz.com

Customer Details:

Customer (name)	
Address	
Post Code	
Contact person (if different from Customer)	
Telephone number	
E-mail address	
MPAN(s)	
Customer signature	

Installation details

Address	
Post code	

**Summary details of Demand Units - where one or more Demand Units will exist within one premises.****Demand Facility**

Manufacturer / Reference	Date of commissioning	Technology Type eg Air Conditioning Refrigeration Heating EV / Battery Charging Demand reduction via DG operation	Manufacturers Ref No. (Product ID) or other identification	<b>Demand Unit</b> Rated Capacity in kW	Modulation Capacity (kW)	Modulation Capacity (kVAr)

**Commissioning Checks**

Description	Confirmation
Operational <b>m</b> Monitoring provides the appropriate data to the <b>DNO</b> .	Yes / No*
DSR3 Compliance Verification Report completed for each <b>Demand Unit</b>	Yes / No*

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DSR 1 - Part 2 Demand Unit	
Demand Unit Type/Description	
Manufacturer name	
Other identification information	
Commissioning Checks	
Operational <u>m</u> Monitoring provides the appropriate data to the DNO.	Yes / No*
*Circle as appropriate. If "No" is selected the <b>Demand Unit</b> is deemed to have failed the commissioning tests and the <b>Demand Unit</b> shall not be put in service for <u>DSR-contractual</u> purposes (although it can continue to be used normally).	
Additional comments / observations:	
Declaration – to be completed by Customer or the <b>Customer's</b> Appointed Technical Representative	
I declare that for the <b>Demand Unit</b> :	
1. Compliance with the requirements of the Distribution Code is achieved.	
2. The commissioning checks have been successfully completed.	
Name:	
Signature:	Date:
Company Name:	
Position:	
Declaration – to be completed by <b>DNO</b> Witnessing Representative if applicable. Delete if not witnessed by the <b>DNO</b> .	
I confirm that I have witnessed the commissioning checks in this document on behalf of	
_____ and that the results are an accurate record of the checks	
Name:	
Signature:	Date:
Company Name:	

## DSR 2 – Aggregator’s Compliance Document

Please complete and provide this document for every **Demand Facility**.

Part 1 should be completed for the Aggregator’s details.

Part 2 should be completed to list each **Demand Unit** forming part of the contract with the **DNO**.

### DSR 2 - Part 1 Aggregator’s Details

Contract Reference:

To     ABC electricity distribution     **DNO**  
99 West St, Imaginary Town, ZZ99 9AA     abcd@wxyz.com

#### Aggregator Details:

Aggregator  
(name)

Address

Post Code

Contact person

Telephone number

E-mail address

**Customer**  
**Aggregator**  
signature

#### Summary details of Demand Units.

Number of <b>Demand Units</b>		Number
Aggregate modulated Active Demand		MW
Aggregate modulated Reactive Demand		MVA <sub>r</sub>

#### Commissioning Checks

Description	Confirmation
Confirmation that all the <b>Demand Units</b> associated with the <b>DNO</b> contract responds to the <b>DNO</b> ’s command signal within <u>the time specified by the <b>DNO</b> (or by the default in DPC9 of the <b>Distribution Code</b> if not</u>	Yes / No*

specified by the <del>DNO</del> 5s and that the response is held for the duration of the signal (not less than five minutes) and that unmodulated behaviour resumes when the signal is removed.		
Operational <del>m</del> Monitoring provides the appropriate data to the DNO.		Yes / No*
If "No" is selected the <del>Demand Unit</del> aggregator is deemed to have failed the commissioning tests and the <b>Demand Units</b> included in the contract shall not be put in service for <del>DSR contract</del> purposes (although <del>it</del> they can continue to be used normally).		
Declaration – to be completed by Customer or the <b>Customer's</b> Appointed Technical Representative/ <del>Aggregator</del>		
I declare that for all the <b>Demand Units</b> associated with this contract:		
1. Compliance with the requirements of the Distribution Code is achieved.		
2. The commissioning checks have been successfully completed.		
Name:		
Signature:		Date:
Company Name:		
Position:		
Declaration – to be completed by <b>DNO</b> Witnessing Representative if applicable. <del>Delete if not witnessed by the DNO.</del>		
I confirm that I have witnessed the commissioning checks in this document on behalf of		
_____ and that the results are an accurate record of the checks		
Name:		
Signature:		Date:
Company Name:		

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## DSR 2 - Part 2 Demand Facility and Demand Unit

List of Demand Facilities yes and Demand Units associated with this DSR contract.

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### DSR 3 - Compliance Verification Report for Demand Units

This form should be used by the **Manufacturer** to demonstrate and declare compliance with the requirements of the **Distribution Code**. The form can be used in a variety of ways as detailed below:

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1. To obtain **Fully Type Tested** status

The **Manufacturer** can use this form to obtain **Fully Type Tested** status for a **Demand Unit** by registering this completed form with the Energy Networks Association (ENA) Type Test Verification Report Register.

2. To obtain **Type Tested** status for a product

This form can be used by the **Manufacturer** to obtain **Type Tested** status for a product which is used in a **Demand Unit** by registering this form with the relevant parts completed with the Energy Networks Association (ENA) Type Test Verification Report Register.

3. One-off Installation

This form can be used by the **Manufacturer** or **Installer** to confirm that the **Demand Unit** has been tested to satisfy all or part of the requirements of the **Distribution Code**. This form must be submitted to the **DNO** as part of the compliance assessment.

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A combination of (2) and (3) can be used as required.

Note:

If the **Demand Unit** is **Fully Type Tested** and registered with the Energy Networks Association (ENA) Type Test Verification Report Register, the Installation Document (Form DSR 1) should include the **Manufacturer's** reference number (the Product ID), and this form does not need to be submitted.

Where the **Demand Unit** is not registered with the ENA Type Test Verification Report Register or is not **Fully Type Tested** this form (all or in parts as applicable) needs to be completed and provided to the **DNO**, to confirm that the **Demand Unit** has been tested to satisfy all or part of the requirements of this **Distribution Code**.

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Demand Unit Type/Description			
Manufacturer name			
Address			
Tel		Web site	
E:mail			
Capacity of modulated active power.		kW	
Capacity of modulated reactive power.		kVAr	
Maximum ramp rate(s) (if applicable)		kW and/or kVAr per second	
Minimum ramp rate(s) (if applicable)		kW and/or kVAr per second	
There are four options for Testing: (1) <b>Fully Type Tested</b> , (2) Partially <b>Type Tested</b> , (3) one-off installation, (4) tested on site at time of commissioning. The check box below indicates which tests in			



this Form have been completed for each of the options. With the exception of <b>Fully Type Tested Demand Units</b> tests marked with * may be carried out at the time of commissioning.					
Tested option:		1. Fully Type Tested	2. Partially Type Tested	3. One-Off Man. Info.	4. Tested on Site at time of Commissioning
0. <b>Fully Type Tested</b> - all tests detailed below completed and evidence attached to this submission			N/A	N/A	N/A
1. Operating Range				N/A	N/A
2. Demand modulation tests*					
* may be carried out at the time of commissioning. Document reference for <b>Manufacturers' Information</b> including the ENA Type Test Verification Report Register Product ID number where applicable:					
<b>Manufacturer</b> compliance declaration. - I certify that all products supplied by the company with the above <b>Type Tested Manufacturer's</b> reference number will be manufactured and tested to ensure that they perform as stated in this document, prior to shipment to site and that no site <b>Modifications</b> are required to ensure that the product meets all the requirements of the <b>Distribution Code</b>					
Signed		On behalf of			
Name					
Note that testing can be done by the <b>Manufacturer</b> of an individual component or by an external test house. Where parts of the testing are carried out by persons or organisations other than the <b>Manufacturer</b> then that person or organisation shall keep copies of all test records and results supplied to them to verify that the testing has been carried out by people with sufficient technical competency to carry out the tests.					

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### DSR 3 - Compliance Verification Report –Tests for Demand Units

**1. Operating Range:** Eight tests should be carried out; four with the **Demand Unit** operating at **Rated Capacity**, and four operating at maximum modulation.

Frequency, voltage and **Active and Reactive Power** measurements at the output terminals of the **Demand Unit** shall be recorded every second. The tests will verify that the **Demand Unit** can operate within the required ranges for the specified period of time.

Note – if the **Demand Unit** contains no components which are appropriately sensitive to voltage or frequency, and there is no possibility of the **Demand Unit** either disconnecting or failing for voltage and frequency variations within the ranges of these tests, the manufacturer or **Customer** can indicate so by ticking here [ ] and waiving the operating range tests.

	Rated Capacity	Fully modulated
<b>Test 1</b> Voltage = 90% of nominal ((207.0 V), Frequency = 47 Hz, Period of test 20 s		
<b>Test 2</b> Voltage = 90% of nominal (207.0 V), Frequency = 47.5 Hz, Period of test 90 minutes		
<b>Test 3</b> Voltage = 110% of nominal (253 V), Frequency = 51.5 Hz, Period of test 90 minutes		
<b>Test 4</b> Voltage = 110% of nominal (253 V), Frequency = 52.0 Hz, Period of test 15 minutes		

## 2 Modulation

Confirmation that the <b>Demand Unit</b> responds to the <b>DNO's</b> command signal within <u>the time specified by the <b>DNO</b> (or by the default in DPC9 of the <b>Distribution Code</b> if not specified by the <b>DNO</b>)</u> 5-s and that the response is held for the duration of the signal (not less than five minutes) and that unmodulated behaviour resumes when the signal is removed.	Yes / <u>NANo</u>
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Additional comments

DSR 4 –Decommissioning Confirmation

Confirmation of the decommissioning of the ~~DSR-demand service~~ capability of a Demand Unit

Form DSR 4 - Decommissioning Confirmation		
Demand Facility Details		
Demand Facility Address (inc post code)		
Telephone number		
MPAN(s)		
Distribution Network Operator (DNO)		
Demand Unit Details		
Demand Unit Type/Description		
Manufacturer name		
Other identification information		
Voltage of Connection	Modulated Active Power (kW)	Modulated Reactive Power (kVA)