

Commission Regulation (EU) 2016/1388 of 17 August 2016 establishing  
a Network Code on Demand Connection (Text with EEA relevance)

TITLE III

**CONNECTION OF DEMAND UNITS USED BY A DEMAND  
FACILITY OR A CLOSED DISTRIBUTION SYSTEM TO PROVIDE  
DEMAND RESPONSE SERVICES TO SYSTEM OPERATORS**

*CHAPTER I*

***General requirements***

*Article 27*

**General provisions**

1 Demand response services provided to system operators shall be distinguished based on the following categories:

a remotely controlled:

- (i) demand response active power control;
- (ii) demand response reactive power control;
- (iii) demand response transmission constraint management.

b autonomously controlled:

- (i) demand response system frequency control;
- (ii) demand response very fast active power control.

2 Demand facilities and closed distribution systems may provide demand response services to relevant system operators and relevant TSOs. Demand response services can include, jointly or separately, upward or downward modification of demand.

3 The categories referred to in paragraph 1 are not exclusive and this Regulation does not prevent other categories from being developed. This Regulation does not apply to demand response services provided to other entities than relevant system operators or relevant TSOs.

*Article 28*

**Specific provisions for demand units with demand response active power control, reactive power control and transmission constraint management**

1 Demand facilities and closed distribution systems may offer demand response active power control, demand response reactive power control, or demand response transmission constraint management to relevant system operators and relevant TSOs.

2 Demand units with demand response active power control, demand response reactive power control, or demand response transmission constraint management shall comply with the

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following requirements, either individually or, where it is not part of a transmission-connected demand facility, collectively as part of demand aggregation through a third party:

- a be capable of operating across the frequency ranges specified in Article 12(1) and the extended range specified in Article 12(2);
- b be capable of operating across the voltage ranges specified in Article 13 if connected at a voltage level at or above 110 kV;
- c be capable of operating across the normal operational voltage range of the system at the connection point, specified by the relevant system operator, if connected at a voltage level below 110 kV. This range shall take into account existing standards and shall, prior to approval in accordance with Article 6, be subject to consultation with the relevant stakeholders in accordance with Article 9(1);
- d be capable of controlling power consumption from the network in a range equal to the range contracted, directly or indirectly through a third party, by the relevant TSO;
- e be equipped to receive instructions, directly or indirectly through a third party, from the relevant system operator or the relevant TSO to modify their demand and to transfer the necessary information. The relevant system operator shall make publicly available the technical specifications approved to enable this transfer of information. For demand units connected at a voltage level below 110 kV, these specifications shall, prior to approval in accordance with Article 6, be subject to consultation with the relevant stakeholders in accordance with Article 9(1);
- f be capable of adjusting its power consumption within a time period specified by the relevant system operator or the relevant TSO. For demand units connected at a voltage level below 110 kV, these specifications shall, prior to approval in accordance with Article 6, be subject to consultation with the relevant stakeholders in accordance with Article 9(1);
- g be capable of full execution of an instruction issued by the relevant system operator or the relevant TSO to modify its power consumption to the limits of the electrical protection safeguards, unless a contractually agreed method is in place with the relevant system operator or relevant TSO for the replacement of their contribution (including aggregated demand facilities' contribution through a third party);
- h once a modification to power consumption has taken place and for the duration of the requested modification, only modify the demand used to provide the service if required by the relevant system operator or relevant TSO to the limits of the electrical protection safeguards, unless a contractually agreed method is in place with the relevant system operator or relevant TSO for the replacement of their contribution (including aggregated demand facilities' contribution through a third party). Instructions to modify power consumption may have immediate or delayed effects;
- i notify the relevant system operator or relevant TSO of the modification of demand response capacity. The relevant system operator or relevant TSO shall specify the modalities of the notification;
- j where the relevant system operator or the relevant TSO, directly or indirectly through a third party, command the modification of the power consumption, enable the modification of a part of its demand in response to an instruction by the relevant system operator or the relevant TSO, within the limits agreed with the demand facility owner or the CDSO and according to the demand unit settings;
- k have the withstand capability to not disconnect from the system due to the rate-of-change-of-frequency up to a value specified by the relevant TSO. With regard to this withstand capability, the value of rate-of-change-of-frequency shall be calculated over a 500 ms time frame. For demand units connected at a voltage level below 110 kV, these specifications shall, prior to approval in accordance with Article 6, be subject to consultation with the relevant stakeholders in accordance with Article 9(1);

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- 1 where modification to the power consumption is specified via frequency or voltage control, or both, and via pre-alert signal sent by the relevant system operator or the relevant TSO, be equipped to receive, directly or indirectly through a third party, the instructions from the relevant system operator or the relevant TSO, to measure the frequency or voltage value, or both, to command the demand trip and to transfer the information. The relevant system operator shall specify and publish the technical specifications approved to enable this transfer of information. For demand units connected at a voltage level below 110 kV, these specifications shall, prior to approval in accordance with Article 6, be subject to consultation with the relevant stakeholders in accordance with Article 9(1).
- 3 For voltage control with disconnection or reconnection of static compensation facilities, each transmission-connected demand facility or transmission-connected closed distribution system shall be able to connect or disconnect its static compensation facilities, directly or indirectly, either individually or commonly as part of demand aggregation through a third party, in response to an instruction transmitted by the relevant TSO, or in the conditions set forth in the contract between the relevant TSO and the demand facility owner or the CDSO.

#### Article 29

##### **Specific provisions for demand units with demand response system frequency control**

- 1 Demand facilities and closed distribution systems may offer demand response system frequency control to relevant system operators and relevant TSOs.
- 2 Demand units with demand response system frequency control shall comply with the following requirements, either individually or, where it is not part of a transmission-connected demand facility, collectively as part of demand aggregation through a third party:
  - a be capable of operating across the frequency ranges specified in Article 12(1) and the extended range specified in Article 12(2);
  - b be capable of operating across the voltage ranges specified in Article 13 if connected at a voltage level at or above 110 kV;
  - c be capable of operating across the normal operational voltage range of the system at the connection point, specified by the relevant system operator, if connected at a voltage level below 110 kV. This range shall take into account existing standards, and shall, prior to approval in accordance with Article 6, be subject to consultation with the relevant stakeholders in accordance with Article 9(1);
  - d be equipped with a control system that is insensitive within a dead band around the nominal system frequency of 50,00 Hz, of a width to be specified by the relevant TSO in consultation with the TSOs in the synchronous area. For demand units connected at a voltage level below 110 kV, these specifications shall, prior to approval in accordance with Article 6, be subject to consultation with the relevant stakeholders in accordance with Article 9(1);
  - e be capable of, upon return to frequency within the dead band specified in paragraph 2(d), initiating a random time delay of up to 5 minutes before resuming normal operation.

The maximum frequency deviation from nominal value of 50,00 Hz to respond to shall be specified by the relevant TSO in coordination with the TSOs in the synchronous area. For demand units connected at a voltage level below 110 kV, these specifications shall, prior to approval in accordance with Article 6, be subject to consultation with the relevant stakeholders in accordance with Article 9(1).

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The demand shall be increased or decreased for a system frequency above or below the dead band of nominal (50,00 Hz) respectively;

- f be equipped with a controller that measures the actual system frequency. Measurements shall be updated at least every 0,2 seconds;
- g be able to detect a change in system frequency of 0,01 Hz, in order to give overall linear proportional system response, with regard to the demand response system frequency control's sensitivity and accuracy of the frequency measurement and the consequent modification of the demand. The demand unit shall be capable of a rapid detection and response to changes in system frequency, to be specified by the relevant TSO in coordination with the TSOs in the synchronous area. An offset in the steady-state measurement of frequency shall be acceptable up to 0,05 Hz.

### *Article 30*

#### **Specific provisions for demand units with demand response very fast active power control**

1 The relevant TSO in coordination with the relevant system operator may agree with a demand facility owner or a CDSO (including, but not restricted to, through a third party) on a contract for the delivery of demand response very fast active power control.

2 If the agreement referred to in paragraph 1 takes place, the contract referred to in paragraph 1 shall specify:

- a a change of active power related to a measure such as the rate-of-change-of-frequency for that portion of its demand;
- b the operating principle of this control system and the associated performance parameters;
- c the response time for very fast active power control, which shall not be longer than 2 seconds.

## *CHAPTER 2*

### ***Operational notification procedure***

#### *Article 31*

#### **General provisions**

1 The operational notification procedure for demand units used by a demand facility or a closed distribution system to provide demand response to system operators shall be distinguished between:

- a demand units within a demand facility or a closed distribution system connected at a voltage level of or below 1 000 V;
- b demand units within a demand facility or a closed distribution system connected at a voltage level above 1 000 V.

2 Each demand facility owner or CDSO, providing demand response to a relevant system operator or a relevant TSO, shall confirm to the relevant system operator, or relevant TSO, directly or indirectly through a third party, its ability to satisfy the technical design and operational requirements as referred to in Chapter 1 of Title III of this Regulation.

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3 The demand facility owner or the CDSO shall notify, directly or indirectly, through a third party, the relevant system operator or relevant TSO, in advance of any decision to cease offering demand response services and/or about the permanent removal of the demand unit with demand response. This information may be aggregated as specified by the relevant system operator or relevant TSO.

4 The relevant system operator shall specify and make publicly available further details concerning the operational notification procedure.

### Article 32

#### **Procedures for demand units within a demand facility or a closed distribution system connected at a voltage level of or below 1 000 V**

1 The operational notification procedure for a demand unit within a demand facility or a closed distribution system connected at a voltage level of or below 1 000 V shall comprise an installation document.

2 The installation document template shall be provided by the relevant system operator, and the contents agreed with the relevant TSO, either directly or indirectly through a third party.

3 Based on an installation document, the demand facility owner or the CDSO shall submit information, directly or indirectly through a third party, to the relevant system operator or relevant TSO. The date of this submission shall be prior to the offer in the market of the capacity of the demand response by the demand unit. The requirements set in the installation document shall differentiate between different types of connections and between the different categories of demand response services.

4 For subsequent demand units with demand response, separate installation documents shall be provided.

5 The content of the installation document of individual demand units may be aggregated by the relevant system operator or relevant TSO.

6 The installation document shall contain the following items:

- a the location at which the demand unit with demand response is connected to the network;
- b the maximum capacity of the demand response installation in kW;
- c the type of demand response services;
- d the demand unit certificate and the equipment certificate as relevant for the demand response service, or if not available, equivalent information;
- e the contact details of the demand facility owner, the closed distribution system operator or the third party aggregating the demand units from the demand facility or the closed distribution system.

### Article 33

#### **Procedures for demand units within a demand facility or a closed distribution system connected at a voltage level above 1 000 V**

1 The operational notification procedure for a demand unit within a demand facility or a closed distribution system connected at a voltage level above 1 000 V shall comprise a DRUD. The relevant system operator, in coordination with the relevant TSO, shall specify the content

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required for the DRUD. The content of the DRUD shall require a statement of compliance which contains the information in Articles 36 to 47 for demand facilities and closed distribution systems, but the compliance requirements in Articles 36 to 47 for demand facilities and closed distribution systems can be simplified to a single operational notification stage as well as be reduced. The demand facility owner or CDSO shall provide the information required and submit it to the relevant system operator. Subsequent demand units with demand response shall provide separate DRUDs.

2 Based on the DRUD, the relevant system operator shall issue a FON to the demand facility owner or CDSO.

### Changes to legislation:

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### Changes and effects yet to be applied to :

- Regulation revoked by [S.I. 2019/533 reg. 5\(b\)](#) (This amendment not applied to legislation.gov.uk. Reg. 5 revoked on the day before IP completion day by S.I. 2019/1104, regs. 1(2), 2)

### Changes and effects yet to be applied to the whole legislation item and associated provisions

- Title 6 omitted by [S.I. 2020/1006 Sch. 2 para. 22](#)
- Signature words omitted by [S.I. 2020/1006 Sch. 2 para. 24](#)
- Annex 1 word substituted by [S.I. 2020/1006 Sch. 2 para. 25\(c\)\(i\)](#)
- Annex 1 word substituted by [S.I. 2020/1006 Sch. 2 para. 25\(c\)\(ii\)](#)
- Annex 1 word substituted by [S.I. 2020/1006 Sch. 2 para. 25\(c\)\(iii\)](#)
- Annex 1 word substituted by [S.I. 2020/1006 Sch. 2 para. 25\(c\)\(iv\)](#)
- Annex 1 word substituted by [S.I. 2020/1006 Sch. 2 para. 25\(c\)\(v\)](#)
- Annex 1 word substituted by [S.I. 2020/1006 Sch. 2 para. 25\(c\)\(vi\)](#)
- Annex 1 word substituted by [S.I. 2020/1006 Sch. 2 para. 25\(c\)\(vii\)](#)
- Annex 1 words omitted by [S.I. 2020/1006 Sch. 2 para. 25\(a\)](#)
- Annex 1 words omitted by [S.I. 2020/1006 Sch. 2 para. 25\(b\)](#)
- Annex 1 words omitted by [S.I. 2020/1006 Sch. 2 para. 25\(d\)](#)
- Annex 1 words omitted by [S.I. 2020/1006 Sch. 2 para. 25\(e\)](#)
- Annex 2 word substituted by [S.I. 2020/1006 Sch. 2 para. 26\(a\)\(iii\)\(aa\)](#)
- Annex 2 word substituted by [S.I. 2020/1006 Sch. 2 para. 26\(a\)\(iii\)\(bb\)](#)
- Annex 2 word substituted by [S.I. 2020/1006 Sch. 2 para. 26\(b\)\(iii\)\(aa\)](#)
- Annex 2 word substituted by [S.I. 2020/1006 Sch. 2 para. 26\(b\)\(iii\)\(bb\)](#)
- Annex 2 word substituted by [S.I. 2020/1006 Sch. 2 para. 26\(b\)\(iii\)\(cc\)](#)
- Annex 2 words omitted by [S.I. 2020/1006 Sch. 2 para. 26\(a\)\(i\)](#)
- Annex 2 words omitted by [S.I. 2020/1006 Sch. 2 para. 26\(a\)\(ii\)](#)
- Annex 2 words omitted by [S.I. 2020/1006 Sch. 2 para. 26\(a\)\(iv\)](#)
- Annex 2 words omitted by [S.I. 2020/1006 Sch. 2 para. 26\(a\)\(v\)](#)
- Annex 2 words omitted by [S.I. 2020/1006 Sch. 2 para. 26\(b\)\(i\)](#)
- Annex 2 words omitted by [S.I. 2020/1006 Sch. 2 para. 26\(b\)\(ii\)](#)
- Annex 2 words omitted by [S.I. 2020/1006 Sch. 2 para. 26\(b\)\(iv\)](#)
- Annex 2 words omitted by [S.I. 2020/1006 Sch. 2 para. 26\(b\)\(v\)](#)
- Art. 2(5) words substituted by [S.I. 2020/1006 Sch. 2 para. 1\(4\)\(b\)\(i\)](#)
- Art. 2(5) words substituted by [S.I. 2020/1006 Sch. 2 para. 1\(4\)\(b\)\(ii\)](#)
- Art. 3(2)(a) words substituted by [S.I. 2020/1006 Sch. 2 para. 2\(3\)](#)
- Art. 4(1)(a)(iii) word omitted by [S.I. 2020/1006 Sch. 2 para. 3\(2\)\(b\)\(i\)](#)
- Art. 4(1)(a)(iii) words omitted by [S.I. 2020/1006 Sch. 2 para. 3\(2\)\(b\)\(ii\)](#)
- Art. 4(1)(a)(ii) word omitted by [S.I. 2020/1006 Sch. 2 para. 3\(2\)\(a\)\(i\)](#)
- Art. 4(1)(a)(ii) words omitted by [S.I. 2020/1006 Sch. 2 para. 3\(2\)\(a\)\(ii\)](#)
- Art. 4(1)(b) words substituted by [S.I. 2020/1006 Sch. 2 para. 3\(2\)\(c\)](#)
- Art. 4(2)(b) words substituted by [S.I. 2020/1006 Sch. 2 para. 3\(3\)\(a\)\(i\)](#)
- Art. 4(2)(b) words substituted by [S.I. 2020/1006 Sch. 2 para. 3\(3\)\(a\)\(ii\)](#)
- Art. 4(2)(b) words substituted by [S.I. 2020/1006 Sch. 2 para. 3\(3\)\(a\)\(iii\)](#)
- Art. 4(4)(b) word omitted by [S.I. 2020/1006 Sch. 2 para. 3\(5\)\(a\)](#)
- Art. 4(4)(b) words omitted by [S.I. 2020/1006 Sch. 2 para. 3\(5\)\(b\)](#)
- Art. 6(3)(d) words omitted by [S.I. 2020/1006 Sch. 2 para. 4\(4\)\(b\)](#)
- Art. 6(3)(f) word substituted by [S.I. 2020/1006 Sch. 2 para. 4\(4\)\(c\)](#)
- Art. 19(1)(c)(i) word substituted by [S.I. 2020/1006 Sch. 2 para. 11](#)

- Art. 29(2)(f) word substituted by [S.I. 2020/1006 Sch. 2 para. 12\(b\)](#)
- Art. 29(2)(g) word substituted by [S.I. 2020/1006 Sch. 2 para. 12\(c\)\(i\)](#)
- Art. 29(2)(g) word substituted by [S.I. 2020/1006 Sch. 2 para. 12\(c\)\(ii\)](#)
- Art. 42(3)(a) words substituted by [S.I. 2020/1006 Sch. 2 para. 13](#)
- Art. 48(3)(b) words omitted by [S.I. 2020/1006 Sch. 2 para. 14\(2\)](#)
- Art. 49(2)(c) words substituted by [S.I. 2020/1006 Sch. 2 para. 15](#)