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Technical regulation 3.4.2

Manual load-shedding of transmission-connected demand facilities

Please note that this is a translation of the original Danish text.
In case of inconsistencies, the Danish version applies.

Contents

TECHNICAL REGULATION 3.4.2

MANUAL LOAD-SHEDDING OF TRANSMISSION-CONNECTED DEMAND FACILITIES

Pursuant to section 26(3) of the Danish Electricity Supply Act, cf. Danish Executive Order No. 119 of 6 February 2020, and pursuant to authorisation in section 7(1), no. 2, 3 and 4 of Danish Executive Order No. 652 of 18 May 2020 on transmission system operation and the use of the electricity transmission grid etc., the following is stipulated:

Part 1
Scope and definitions

1 In the event of imminent risk of grid breakdown as well as during grid breakdown and grid restoration, Energinet can, without payment, demand the necessary rerouting of generation, trade and demand, cf. section 27c (3) of the Danish Electricity Supply Act.

(2) This regulation stipulates requirements and rules for manual load-shedding of transmission-connected demand facilities in categories 3, 4, 5 and 6, cf. document 'DCC – Appendix 1 – REQUIREMENTS'; the categories have been specified by Energinet with legal basis in Commission Regulation (EU) 2016/1388 of 17 August 2016 establishing a Network Code on Demand Connection (hereinafter the DCC).

(3) The requirements of this Regulation apply to new transmission-connected demand facilities in the categories mentioned in subsection 2 which are connected to the transmission system as of the effective date of this regulation.

(4) Existing transmission-connected demand facilities are only subject to the requirements of this regulation under the following circumstances:

a) If an existing transmission-connected demand facility has been modified to such an extent that the connection agreement must be revised significantly in accordance with the procedure in the DCC, Article 4(1) (a) and
b) If the relevant regulatory authority decides that the entire facility, both new and existing installations, is governed in part or wholly by the DCC, the entire facility, both new and existing installations, will be subject to the requirements of this regulation.

(5) Expenses incurred in complying with the provisions of this regulation must be paid by the owner of the transmission-connected demand facility.

(6) Appendix 1 lists definitions used in this regulation.

Part 2
Manual load-shedding

2 Transmission-connected demand facilities must implement manual load-shedding in one of the two ways described below. Either manual load-shedding as a stepwise solution according to the following procedure:

a) Transmission-connected demand facilities connected in synchronous area CE must have 10 manual load-shedding steps of 8 per cent each.
b) Transmission-connected demand facilities connected in synchronous area N must have 16 manual load-shedding steps of 5 per cent each.
c) Load-shedding must be implemented in the steps mentioned in subsection 1, (a) or (b), calculated as a net demand effect, or

(2) Manual load-shedding as full disconnection of the transmission-connected demand facility.

a) Transmission-connected demand facilities with an allocated maximum power draw of 500 MW or more, that want to implement manual load-shedding as full disconnection, must contact Energinet to agree on the options available.

(3) Energinet's Control Centre Electricity activates manual load-shedding via secure communication, cf. section 4. Load-shedding must be completed as quickly as possible, but no later than 15 minutes after activation.

(4) Energinet's Control Centre Electricity can agree on a postponed load-shedding time limit directly with the owner of the transmission-connected demand facility.

(5) If activated load-shedding cannot be implemented within 15 minutes or at the agreed time, cf. subsection 4, load-shedding must be stopped, and the operator in charge must immediately notify Energinet's Control Centre Electricity. At Energinet's request, the owner of the transmission-connected demand facility must document the reason for the lack of load-shedding.

(6) Energinet's Control Centre Electricity can disconnect the transmission-connected demand facility completely if the situation so requires.

Part 3
Build-up of load after manual load-shedding

3 Transmission-connected demand facilities which have implemented manual load-shedding in accordance with section 2 (1) must be equipped to build up load by gradually reconnecting the steps that were disconnected during load-shedding.

(2) Transmission-connected demand facilities which have implemented load-shedding as described in section 2 (2) must be equipped to reconnect using a similar procedure as used for disconnection.

(3) Transmission-connected demand facilities can only reconnect following an activation signal from Energinet's Control Centre Electricity. Build-up of load must be completed as soon as possible, but no later than 15 minutes after activation.

(4) Energinet's Control Centre Electricity can agree to a postponed time schedule for build-up of load.

(5) If the ordered build-up of load cannot be completed within 15 minutes or at the agreed time, cf. subsection 4, due to technical faults developing in the specific situation, the build-up of load must be stopped, and the operator in charge must immediately notify Energinet's Control Centre Electricity. At Energinet's request, the owner of the transmission-connected demand facility must document the reason for the lack of build-up of load.

Part 4
Communication

4 Communication between Energinet's Control Centre Electricity and the transmission-connected demand facility must take place via secure communication, cf. Energinet's Technical regulation 5.3.4.1 Grid telegraph (Nettelegrafen).

Part 5
Conformity testing

5 The owner of the transmission-connected demand facility must, for facilities that implement load-shedding, cf. section 2(1), for a percentage of demand, as determined in accordance with section 3(1) (a) or (b), demonstrate that the transmission-connected demand facility can implement load-shedding in steps.

(2) For facilities that implement full load-shedding under section 2(2), the owner must demonstrate that the transmission-connected demand facility can implement full load-shedding.

6 Energinet is entitled to, without otherwise neglecting the requirements of this regulation:

a) permit the owner of the transmission-connected demand facility to carry out alternative tests, provided that these tests are effective and sufficient to demonstrate that the transmission-connected demand facility meets the requirements of this regulation, and
b) require that the owner of the transmission-connected demand facility carry out additional or alternative tests in the event that the information received by the Energinet in connection with conformity testing is not sufficient to demonstrate that the requirements of this regulation are met.

(2) The owner of the transmission-connected demand facility is responsible for carrying out the tests. Energinet will cooperate and not unnecessarily delay the completion of the tests.

7 Testing of manual load-shedding must be approved by the Energinet in order to obtain a final operational notification (FON).

(2) Facilities that are required to submit dynamic simulation models, cf. document 'DCC – APPENDIX 1D – SIMULATION MODEL' specified by Energinet with legal basis in the DCC, must submit a dynamic simulation model demonstrating compliance with the requirements of the regulation to obtain an interim operational notification (ION).

8 Energinet can request that the owner of the transmission-connected demand facility demonstrate that the facility complies with the requirements of the regulation throughout the service life of the facility.

Part 6

Limited operational notification

9 The owner of a transmission-connected demand facility that has been granted a final operational notification shall immediately, and no later than 24 hours after, notify Energinet if any of the following circumstances apply:

a) The transmission-connected demand facility is being significantly modified, which influences the fulfilment of one or more requirements in this regulation, or
b) equipment faults lead to non-compliance with one or more requirements in this regulation.

10 The owner of the transmission-connected demand facility applies to Energinet for a limited operational notification if the owner of the transmission-connected demand facility can reasonably expect the circumstances described in section 9 to last longer than three months.

11 A limited operational notification is issued by the Energinet and includes the following information which must be clearly identifiable:

a) The unresolved issues which have triggered a limited operational notification.
b) division of responsibilities and time limits for expected resolution of the issues, and
c) the maximum validity period which must not exceed 12 months. Initially, it is possible to set a shorter period, which can be extended if documentation is submitted, demonstrating to Energinet's satisfaction clear progress towards full compliance.

12 The final operational notification will be suspended during the validity period of the limited operational notification as regards the issues to which the limited operational notification applies.

13 The validity period of the limited operational notification can be further extended if a request for a derogation is submitted to Energinet before the expiry of the period, cf. the derogation procedure in Title V, Chapter 2 of the DCC.

14 Energinet is entitled to refuse to allow further operation of the transmission-connected demand facility when the limited operational notification expires. In such case, the limited operational notification is automatically rendered void.

Part 7
Derogation

15 If the owner of the transmission-connected demand facility wants to apply for a derogation from parts or the entire contents of this regulation, this must be referred to Energinet.

(2) The following conditions must be met for a derogation to be granted:

a) Special circumstances must apply, for instance of a local nature.
b) These circumstances must be of a technical and/or socio-economic nature and of a significant extent.
c) Any deviation must not cause noticeable deterioration of the technical quality or balance of the transmission system, neither locally nor in a larger perspective.
d) Any deviation must not cause increased burdens on other enterprises.
e) Any deviation must not be inexpedient from a socio-economic viewpoint.

(3) Derogation applications must be sent to myndighed@energinet.dk and must include a description of what the derogation covers and the reason(s) for applying, cf. subsection 2, (a)-(e).

Part 8
Enforcement and sanctions

16 Energinet can issue an order to comply with this regulation to an operator in charge of a transmission-connected demand facility that blatantly or repeatedly disregards its obligations under this regulation.

(2) In the event of failure to comply with an order, cf. subsection 1, Energinet can decide that an operator in charge be fully or partially excluded from using Energinet's services.

Part 9
Complaints etc.

17 Complaints about the content of this regulation can be referred to the national regulatory authority.

(2) Complaints about decisions made by Energinet under this regulation cannot be referred to another administrative authority but can be appealed to the courts or the ombudsman. Judicial review does not have delaying effect.

Part 10
Effective date

18 This regulation becomes effective on 01 March 2021.

Appendix 1 – Terminology and definitions

1. Existing transmission-connected demand facilities

For the purpose of this regulation, a transmission-connected demand facility is considered existing if it is already connected to the transmission system on the effective date of this regulation.

2. Net demand

The net value of active power seen from a given point in the system, calculated as (load - generation), normally expressed in kilowatts (kW) or megawatts (MW) at a given time or on average over a fixed time interval.

3. Net demand effect

Net demand effect means that load-shedding must be implemented using the respective steps (in %) in relation to the actual demand at the time of activation of load-shedding.

4. Control Centre Electricity

The transmission system operator's control room function, which handles overall control/monitoring of the whole electricity system and operates the whole transmission system.

5. Transmission-connected demand facility

A demand facility that has a point of connection to a transmission system.