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## MEMO

# TEMPORARY RESTRICTIONS ON COUNTERTRADE ON THE WESTERN DENMARK - GERMANY BORDER

This memo contains a summary of the description of the situation with limited upward countertrade on the Western Denmark (DK1) – German border. Energinet has openly informed market participants and other stakeholders about this decision via our Nordic communication platform<sup>1</sup> and on our website<sup>2</sup>.

In July 2017, the Danish Ministry of Climate, Energy and Utilities entered into a bilateral agreement with the German Federal Ministry for Economic Affairs and Energy to ensure a minimum capacity on the Western Denmark-Germany border. The agreement was negotiated following a long period of low capacity in the southbound direction (exports to Germany) due to limitations in the German electricity grid. On the basis of this agreement, Energinet must guarantee up to 1,100 MW upward and downward regulation (increase and reduce electricity generation in Western Denmark) to handle the minimum capacities.

The original purpose of the countertrade measure was to increase export capacity from Western Denmark to Germany, which was limited most of the time. In short, countertrade must take place without negative consequences for the security of supply – this is described in both the bilateral agreement with Germany and the electricity market regulation. Based on analyses made, it is found that Energinet fulfils the requirements for this exemption, as countertrade in the present situation will have a negative impact on the security of electricity supply.

Energinet will in general not offer upward regulation in Western Denmark (DK1) for countertrade towards TenneT Germany from 3 July 2020 to 31 August 2020. Energinet will still offer downward regulation in DK1 for countertrade. Energinet will reassess the situation after the Danish holiday period, i.e. around 1 August, and again at the end of August. It is important for Energinet to underline that in cases of failures and critical instances, Energinet will assist TenneT with upward regulation at our best effort.

The reason is that generation adequacy, i.e. ensuring sufficient generation to cover consumption, will be much worsened by Energinet's obligations to ensure a level of upward regulation

<sup>1</sup> <https://www.nucs.net/outage-domain/unavailability-messages/show?uid=248a565da34c4fcfb79d0a6e79a123d0%7C10X1001A1001A248>

<sup>2</sup> <https://energinet.dk/El/Systemydelse/Nyheder-om-systemydelse/Modhandel-DK1-DE>

for countertrade towards TenneT Germany. Under the Joint Declaration, Energinet is obliged to guarantee up to 1,100 MW of upward and downward regulation every hour.

July and August 2020 have been characterized by:

- Many HVDC connection outages due to faults
- Many planned outages of thermal power plants
- Increased demand for upward regulation in DK1 and DK2 due to many planned outages in Sweden
- Several limitations in the internal German electricity grid announced by TenneT Germany. In situations with import from Germany to DK1, an exceptionally high need for upward regulation (increasing generation) in DK1 may arise given the agreements on minimum capacities on the DK1-Germany border.

Due to the above points and if no remedial actions are implemented, Energinet expects many situations where there will not be sufficient upward regulation to mitigate an outage of the largest unit (N-1). Particularly countertrade due to the minimum capacities create problems, because countertrade 'uses' the manual reserves procured to cover N-1.

Not acting and accepting the risk is unacceptable. Therefore, Energinet will temporarily limit the possibility of upward regulation as a result of minimum capacities over the summer of 2020 in order to ensure a very high level of security of electricity supply. This is based on the principle of proportionality that the risk of consumer outages is not proportional with the agreement to guarantee minimum capacities on the DK1-Germany border.

Energinet has experienced several instances, since the entry into force of the Joint Declaration, where there have not been sufficient upward regulation resources to mitigate an outage of the largest unit (N-1). The most recent example was 24 June 2020. Energinet also experienced a few instances without N-1 redundancy in the summer of 2019, some instances even occurring in operating situations where the risk of a lack of upward regulation resources was found to be significantly smaller than that of July-August 2020.

In the morning of 24 June 2020, TenneT contacted Energinet and requested countertrade in the form of upward regulation from 08:00 to 10:00, which was extended until 15:00. As a result, in hour 9, only approx. 50 MW of upward regulation bids were left on the bidding list. At the same time, there were only approx. 150 MW of upward regulation bids in Southern Sweden plus the Swedish gas turbines, which function as strategic reserves. For the remainder of the day, there were approx. 200-400 MW of upward regulation bids in surplus, i.e. a lack of full N-1 redundancy.

Specifically, this means that if we experience outages of large units under these circumstances, Energinet will ask TenneT Germany to increase electricity generation or reduce electricity consumption in Northern Germany, which may result in extensive power outages in Northern Germany or Western Denmark.

Prior to this incident, Energinet had already initiated work to analyse new countertrade models to replace special regulation in order to ensure that Energinet can minimise the risk of negative incidents in the electricity system due to countertrade going forward<sup>3</sup>.

<sup>3</sup> <https://en.energinet.dk/About-us/Events/Workshop-1-on-alternative-countertrade-models-210820>

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TenneT has been informed that as of July 3, they must alter their capacity calculation to no longer reflect the possibility of upward regulation in the Danish bidding zones. This shall not affect the minimum capacities for the day-ahead market, which would result in the need for downward regulation in the Danish bidding zones.

In terms of countertrade with TenneT Germany, July was characterised by a large volume of downward regulation (reducing generation/increasing consumption) due to high wind power generation levels in Western Denmark and Northern Germany. A few hours of upward regulation (increasing generation/decreasing consumption) have been registered. Generation adequacy was not challenged during these hours.

TenneT's limitations were announced in advance, but TenneT has guaranteed the minimum capacity in the day-ahead market up to the day of operation. There have been a few hours where the need for upward regulation was handled before the delivery hour. Energinet's decision to limit upward regulation has not, to Energinet's knowledge, reduced market capacities so far (until 13 August 2020).

Energinet expects the power situation to improve in the autumn. Several interconnectors and thermal power plants are expected to return to operation in September. Therefore, it should not be necessary to extend the period of countertrade limitation on the Western Denmark-Germany border beyond 31 August 2020.

It is difficult to predict whether critical situations will arise going forward, as this depends on the specific operating situation. Therefore, Energinet will work with market participants to develop countertrade models that ensure greater coherence between market capacities and physical capacities.