

ENTSO-E consultation on their report on Deterministic Frequency Deviations



EFET response – 3 February 2020

Introduction

We thank ENTSO-E for giving us the opportunity to comments on their work on deterministic frequency deviations (DFDs). This comprises both the report on the report on the January 2019 frequency deviations in Continental Europe dated April 2019¹, and the report on DFDs dated November 2019².

As noted in the introduction to the consultation, the November report was drawn up as a follow-up to the recommendations and actions of the April report. Like other market participant representatives³, EFET was surprised of the narrative chosen by ENTSO-E with regard to the January 2019 frequency deviations. While the main cause of the two-day frequency deviation is acknowledged to be a frozen measurement on four tie lines between Austria and Germany, the 44-page report of April dedicates only one page to the analysis and mitigation measures for such long-lasting deviations caused by measurement errors. Meanwhile, the analysis and mitigation measures for DFDs occupy 11 pages⁴. Likewise, three out of the five recommendations of the report concern DFDs – with detailed actions attached to each of them – while only two recommendations tackle measurement errors, the root cause of the January frequency

¹ ENTSO-E report on Continental Europe significant frequency deviations – January 2019, dated April 2019 and available at:

https://docstore.entsoe.eu/Documents/News/2019/190522_SOC_TOP_11.6_Task%20Force%20Significant%20Frequency%20Deviations_External%20Report.pdf.

² ENTSO-E report on Deterministic Frequency Deviations, dated 4 November 2019 and available at:

https://consultations.entsoe.eu/system-development/deterministic_frequency_deviations_report/user_uploads/report_deterministic_frequency_deviations_final-draft-for-consultation.pdf.

³ See notably the Eurelectric presentation on the April report of ENTSO-E at the MESC meeting of 2 July 2019, available at:

https://docstore.entsoe.eu/layouts/15/WopiFrame.aspx?sourcedoc=/Documents/Network%20codes%20documents/Implementation/stakeholder_committees/MESC/2019-07-02/7.0_MESC_20190702_ENTSO-E%20frequency%20deviation%20report_Eurelectric%20view_FINA.pdf&action=default.

⁴ Respectively page 25 for long-lasting frequency deviations, and pages 27 to 37 for DFDs, see report referred to in footnote 1.

deviations – with no detailed actions attached to them. Both the April and December report end up presenting the faulty measurement by the TSOs only as the second reason for the frequency deviations of January, despite daily evidence that DFDs do not cause long-lasting frequency deviations. It is important for us to set the record straight with regard to the January 2019 events, and that the responsibility (and the blame) of the incident is not shifted from system operators to the market.

As a result of the January 2019 events, we believe that an open discussion about TSOs' monitoring and control systems is in order. We hope to see very soon a full detailed report – not unlike the 80-page report of December on DFDs – analysing and providing comprehensive recommendations regarding the definition and implementation of fail-safe measurement and telecommunication standards for all interconnectors values used by LFC across continental Europe (CE), the definition and implementation of control system functionality standards to detect “frozen” LFC values across CE, and the establishment of centralised processes and tools to facilitate the timely resolution of frequency deviation incidents by the TSOs, as laid out as recommendations in the April report.

All this being said, we welcome the comprehensive report of the TSOs and ENTSO-E on DFDs. We acknowledge the importance of the subject, especially in light of their tendency to increase over the years. We see this report as a good basis to further investigate existing practices and develop appropriate tools in order to limit DFDs in a way that does not constrain the market.

Questions

1. Do you see any effects of Deterministic Frequency Deviations on consumers or generation units in your portfolio today?

As a representative organisation, EFET itself does not have a portfolio of assets or contracts.

2. Are you already participating in any initiative to reduce frequency variations in Continental Europe ? If so, which one(s)?

As a representative organisation, EFET itself does not participate in initiatives to reduce DFDs.

If initiatives currently exist in certain control areas to reduce DFDs, we would appreciate more details on those initiatives in the report. For any initiative that may be undertaken, we believe that the governance should be clarified: TSOs should not decide unilaterally without consulting the market on the structural solutions that may be chosen.

3. One of the proposed solutions is to move towards 15 minute Market Time Unit for internal and cross-border energy exchanges. What would be the positive or negative effects of this on your business?

As per article 8 of the Electricity Regulation 2019/943, the imbalance settlement period as well as the market time unit for day-ahead and intraday products shall be harmonised to 15 minutes by 1 January 2021, unless regulatory authorities grant a derogation or an exemption.

We already expressed in the past our support for the harmonisation of ISPs to 15 minutes⁵. Likewise, we support the implementation of a market time unit of 15 minutes in day-ahead and intraday, provided that the coupling algorithms are able to withstand the additional complexity of this new feature.

In the context of the gradual transition towards a harmonised 15-minute ISP in Europe, where some TSOs will comply with the 2021 deadline while others will maintain longer ISPs for some more time because of exemptions and derogations, we attract the attention of ENTSO-E and the TSOs to the problem posed by the mismatch of ISPs and market time units in different Member States: indeed, if cross-border market time units in day-ahead and intraday are reduced from one hour to 15 minutes wherever the ISP is set at 15 minutes, but maintained at one hour or 30 minutes in other places, the order books for day-ahead and intraday will be fragmented, leading to multiple day-ahead and intraday markets for each market time units. Until all ISPs in Europe are aligned – not before 2025 – cross-border transmission capacity in day-ahead and intraday can only be provided according to the longest ISP on the two sides of a given border. This means that MRC and XBID will have to deal with a variety of product granularity and transmission capacity granularity. If the market time unit for day-ahead and intraday markets is reduced before all coupled markets align their ISPs, it is vital that a system of cross-products matching is established in order to keep these markets whole and not negatively affect cross-border trading⁶.

4. What do you see as main (remaining) hurdles to move towards 15 Minute Market Time Unit for Intraday and Day-Ahead energy markets?

We see two main hurdles:

- **Algorithm performance:** at the MESC meeting of 18 December, the NEMOs indicated that the introduction of 15-minute products, combined with other changes to DA and ID market design (CORE DA and ID flow-based, different MNAs, IDAs...) will increase the complexity of the algorithm calculations and could multiply the calculation time of Euphemia by 10, for instance. The NEMOs have committed to provide more detailed assessments how each new market design element contributes to this complexity. Thus it will be easier to understand whether algorithm performance in DA and ID is significantly affected or not by the introduction of 15-minute products.

⁵ EFET comments on the last available draft of the Electricity Balancing Guideline before its adoption, dated 9 March 2017 and available at:

https://efet.org/Files/Documents/Downloads/EFET%20comments%20EB%20GL_09032017.pdf.

⁶ See more detailed explanations and recommendations on this topic in the EFET response to the ACER consultation on the NEMOs amended methodology proposal for the price coupling algorithm and the continuous trading matching algorithm, dated 15 November 2019 and available at:

https://efet.org/Files/Documents/Downloads/EFET_ACER%20consult%20algorithm_15112019.pdf.

- **Non-harmonised ISPs:** until all control areas in Europe have an ISP of 15 minutes, there will remain many areas where 15-minute DA and ID products are simply not an option, given that BRPs are settled on a 30 or 60-minute basis.
- **Liquidity split:** risk of liquidity split in cross-border trading between countries with different ISPs, until ISPs are harmonised to 15 minutes – see our response to Q3.

5. One of the proposed solutions is to set requirements on ramping for Generation units. Do you have fast-acting generation units (ramping up or down in less than 5 minutes) in your portfolio?

As a representative organisation, EFET itself does not own or operate generation units.

Generally, solutions to reduce DFDs should not result in the imposition of new ramping constraints for market participants (be they generation, storage or demand asset operators/contract holders). TSOs should rather investigate incentives for market participants to better match their needs, or, where need be, procure the necessary services in a market-based manner.

6. Would you be willing to enable slower ramp up and ramp down (5 minutes or more) of these fast-acting generation units? What would you need in terms of rules or regulations?

If the need of the TSOs is for slower ramping up and ramp down, appropriate market signals should be developed to incentivise market participants. A further reduction of the ISP could be investigated.

7. An identified cause of deterministic frequency deviations is the simultaneous starting or stopping of generation units or significant load at specific moments in time, usually at the change of an hour. Would you be willing to spread start and stop of units over a longer period? What would you need in terms of rules or regulations to be able to do this?

If spreading start and stop times of assets is identified as one of the possible solutions to reduce DFDs, it should be appropriately incentivised by market signals.

8. One of the proposed solutions is to have ramping included in all Schedule exchanges between ISPs. What do you see as main hurdles towards implementation of such a solution?

The question of the inclusion of ramps was extensively debated during the discussions on the establishment of the standard balancing products, and on the design of the future balancing exchange platforms. The decision was to define ramping rates, but to exclude delivery of energy during ramping from scheduled exchanges.

This solution aims to tackle the root cause of the DFDs. The root cause is that market participants may currently be incentivised to dispatch their assets with high ramp rates to avoid any structural imbalances. As noted in our answers to the two previous questions, the TSOs should seek to provide the right incentives that can serve as signals for market participants to adjust ramping to their needs.

The report presents a number of practices in various control areas. The Swiss solution (labelled “adapted schedules for accounting process” and described in section 4.1.3) attracted our attention, as it aims to provide incentives for slower ramping up and down. Although we are open to investigating a “Swiss-like solution”, we have serious concerns on the solution as sketched in section 4.2.3. In particular, we believe that the basic idea should be to correct or adapt schedules for settlement purposes only. It should definitely not prescribe a certain ramping behaviour. It should therefore not aim to monitor and penalise deviations from a certain ramping behaviour. Also we believe that any solution similar to the Swiss solution should apply generally to all Balance Responsible Parties and should thus not distinguish between schedules from generators, consumers, suppliers or traders. It should be a generic solution.

Like many other initiatives taken in individual control areas, we have no full understanding of the Swiss solution and its impact on the market. We therefore invite ENTSO-E to provide a more thorough analysis of this and other initiatives identified in the report. With a better understanding of each existing practice and their impact on the market, more concrete recommendations could be developed by the TSOs, in cooperation with market participants.

9. Would the introduction of ramping in schedules lead to slower ramping of generation units in your case? What would you need in terms of rules or regulations?

As a representative organisation, EFET itself does not have a portfolio of assets or contracts.

10. Do you see a future in having Battery Storage participating to Fast Frequency Reserves, which would help to reduce DFD? Do you have access to Battery Storage with such capability?

As mentioned in our answer to question 5, TSOs should investigate incentives for market participants to better match their needs, or, where need be, procure the necessary services in a market-based manner. So far, the report does not clearly identify the need for “Fast Frequency Reserve”.

If indeed TSOs need to procure services – beyond developing incentives for adapted ramping mentioned earlier in our response – then the procurement of such service needs to happen in a non-discriminatory, market-based manner.

We would welcome clarification whether the concept of “Fast Frequency Reserve” refers to FCR or a new type of reserve. In any case, we welcome the participation of all actors and technologies to Fast Frequency Reserves, including battery storage

operators. As a rule, market participants or technologies should compete on an equal footing for the provision of services to the TSOs. As long as an operator is able to fulfil the technical requirements laid down by the TSOs, they should be allowed to provide such services, without regard which technology they use.

11. Do you have any other important comment to share on the report?

The ramping of HVDC interconnectors between synchronous areas should be reviewed. In particular, we suggest that HVDC interconnectors are ramped “fully smoothly”. This means that ramping is done at the lowest ramping rate possible, to ramp over the full time unit. At the same time system ramping restrictions on HVDC interconnectors (between the different synchronous areas) that are still being applied in the Nordic system should be abolished.

Overall, EFET suggests the following approach to mitigate DFD:

1. Move towards a 15 minute Market Time Unit for internal and cross-border energy exchanges as soon as possible. Indeed, a study made by ENTSO-E in 2011 points out the clear benefits of this approach: it shows that frequency spikes remain but with a much lower amplitude than today.
2. In the meantime, TSOs should develop appropriate incentives for market participants – irrespective of technology/portfolio – to adapt ramping, without imposing a specific ramping behaviour. Best practice from individual control areas should be studied further.
3. Should incentives be insufficient, TSOs should procure the necessary ancillary services (FCR amongst others) in order to cope with frequency spikes. TSOs could also analyse further the relevance of faster frequency reserve products and if relevant, procure those in a market-based way.
4. Introduce as slow as possible ramping (smooth ramping over the full market time unit) for HVDC interconnectors between the different synchronous areas.

We believe that the four above-mentioned actions should considerably mitigate the problem of DFDs. If new services need to be procured by TSOs, the relating products should be technology neutral.