
**Responses to public consultation of the amended Nordic synchronous
area proposal for ramping restrictions for active power output in
accordance with Article 137(3) and (4) of the Commission Regulation
(EU) 2017/1485 of 2 August 2017 establishing a guideline on
electricity transmission system operation**

1. Public consultation

Article 11 of the SO Regulation states that: *“TSOs responsible for submitting proposals for terms and conditions or methodologies or their amendments in accordance with this Regulation shall consult stakeholders, including the relevant authorities of each Member State, on the draft proposals for terms and conditions or methodologies listed in Article 6(2) and (3). The consultation shall last for a period of not less than one month.”*

This Proposal has been consulted in the period 3 August to 4 September 2020. The appendix to this document includes the views of stakeholders resulting from the consultations and explains if and how these views have been taken into account in the proposal.

Appendix: Results of Public Consultation

Article 11(3) of the SO Regulation states that: *"The TSOs responsible for developing the proposal for terms and conditions or methodologies shall duly take into account the views of stakeholders resulting from the consultations prior to its submission for regulatory approval. In all cases, a sound justification for including or not including the views resulting from the consultation shall be provided together with the submission of the proposal and published in a timely manner before, or simultaneously with the publication of the proposal for terms and conditions or methodologies."* Table 1 lists the views of stakeholders on this proposal resulting from the consultations and explains if and how these views have been taken into account in the Proposal.

Table 1: Views of stakeholders resulting from the consultations and explains if and how these views have been taken into account in the Proposal.

no.	organisation	comment	response TSOs
1	Norsk Hydro	<p>The proposal concerns the NordLink HVDC interconnection between Norway and Germany. The TSOs propose to implement the same ramping restrictions for this HVDC interconnection as for the other HVDC interconnections from the synchronous Nordic area. They currently allow for a maximum change per cable of 30 MW/min and max 600 MW change from one hour to the next. With these ramping restrictions it will take 4h and 40 min to change the flow on NordLink from one direction to the other. With the limited time until commercial operation of NordLink and without an overall review of the ramping restrictions as a whole this is probably the practical way to do it.</p> <p>However, the fact that NordLink is proposed to be implemented under the same ramping restrictions as the other HVDC cables means that the Nordic power system would even before NordLink be able to support such change. This means that the 30 MW/min and 600 MW/hour could already have been allocated to the existing HVDC interconnections and reduced the time to change the direction of the flow on the interconnections. For all we know, the Nordic power system could support an even faster flow change than what is now proposed to be allocated to NordLink. It seems that the current ramping regime is not utilizing the full potential of changing the direction of the flow on the HVDC interconnections. This way of distributing ramping restrictions will require more time to change the direction than what is optimal, which in turn will lead to lower bottleneck revenues and to the underutilization of the resources in the power systems in both ends of the HVDC interconnections.</p>	<p>Comment acknowledged and did not result in a change of the Proposal.</p> <p>The TSOs acknowledge that the total ramping on all Nordic HVDC interconnectors may increase because also NordLink will now be allowed to ramp. However, the TSOs do not agree with the respondent's conclusion that the ramping now allocated to NordLink could have been allocated to other HVDC interconnectors before. Conversely, allocating ramping allowance to NordLink will likely have negative impact on the frequency quality in general and meeting the FRCE target parameters of the Nordic LFC block in particular. For this reason, the TSOs are currently studying how this impact could be minimised and the TSOs may propose additional measures to mitigate the impact on frequency quality (see also response to no. 2 and 3).</p>
2	Norsk Hydro	<p>Another aspect to this discussion is the policy of allocating the same ramping restrictions on all HVDC cables independently of the price differences on each cable. Today it does not matter whether the price difference is high or low, the same ramping restrictions will apply. This will lead to lower total bottleneck revenues as a whole compared to a ramping policy where the HVDC connection with the highest price difference is prioritized and allowed to change direction at a faster pace.</p>	<p>Comment acknowledged and did not result in a change of the Proposal.</p> <p>The TSOs agree with the respondent that the allocation of ramping allowance does not always seem optimal. For this reason, the TSOs are studying alternative methodologies. The TSOs may propose</p>

			alternative measures that better optimise the allocation of ramping restrictions (see also response to no. 1 and 3).
3	Norsk Hydro	With new HVDC connections from the Nordic power system to even more countries, next year the new HVDC connection from Norway to the UK will start operation, it can be expected that not all HVDC interconnections will change directions at the same time. In such situations it should be considered to allow for a faster ramping to optimize the bottleneck revenues and the utilization of the resources.	<p>Comment acknowledged and did not result in a change of the Proposal.</p> <p>The Nordic TSOs share the respondent's expectation that ramping on different interconnectors may not take place at the same time. At this moment, the TSOs are studying alternative methodologies that better take into account the different ramping patterns on different HVDC interconnectors. The TSOs may propose alternative measures that better take into account these patterns (see also response to no. 1 and 2).</p>
4	Norsk Hydro	If the ramping restrictions on the HVDC cables are optimized in line with what is described above, it will lead to higher bottleneck revenues as a whole but also to a redistribution between the different HVDC interconnections. For this to be accepted we deem it necessary to develop an agreement for the distribution of this extra revenues on the different HVDC interconnections.	<p>Comment acknowledged and did not result in a change of the Proposal.</p> <p>The TSOs consider that the HVDC interconnectors shall serve the market as optimal as possible within the operational constraints. The study and the resulting proposals mentioned under no. 1-3 above intend to reach this situation. The TSOs therefore do not consider developing agreements for redistribution of HVDC interconnector revenues.</p>
5	Norsk Hydro	<p>With this submission we encourage the Nordic TSOs to:</p> <ul style="list-style-type: none"> - Start to evaluate the optimal ramping restrictions on the HVDC interconnections in line with the abovementioned input - Start calculate the increased bottleneck revenues from the optimal model and make them transparent for the public - Initiate negotiations on the distribution of the extra bottleneck revenues from the optimal model <p>The ambition to have an optimized model for ramping restrictions should be in due time of the commercial operation of the new HVDC interconnections between Norway and UK scheduled for next year</p> <p>In this process it is important to involve relevant stakeholders in all the Nordic countries for alignment and approval.</p>	<p>Comment acknowledged and did not result in a change of the Proposal.</p> <p>The TSOs are studying further operational and market optimisation of the ramping restrictions. Depending on the conclusions of the study, the TSOs may propose alternative measures that better optimise the allocation of ramping restrictions (see no. 1, 2 and 3). The TSOs will carefully consider the respondent's suggestions and is pleased with the respondent's offer to be involved in further discussion.</p>

		We are available for further discussion	
6	Fortum	<ul style="list-style-type: none"> Fixed 600 MWh/h ramping limit per interconnector <ul style="list-style-type: none"> We wonder why Nordic TSOs are not planning to use group ramping for all HVDC interconnectors between the Nordic synchronous area and other synchronous areas. Group ramping (ramping limits set as a sum for all interconnectors between the Nordic synchronous area and other synchronous areas) is possible to use in the market algorithm and would increase socioeconomic welfare. 	<p>Comment acknowledged and did not result in a change of the Proposal.</p> <p>The TSOs are studying further operational and market optimisation of the ramping restrictions, including 'group ramping' (or sum restrictions). Depending on the conclusions of the study, the TSOs may propose alternative measures that better optimise the allocation of ramping restrictions.</p>
7	Fortum	<ul style="list-style-type: none"> Also according to SO GL 137(1) ramping limits should be defined as a combined maximum: <i>"determining a combined maximum ramping rate for all HVDC interconnectors connecting one synchronous area to another synchronous area"</i>. 	<p>Comment acknowledged and did not result in a change of the Proposal.</p> <p>The TSOs acknowledge the quoted article. However, this Proposal reflects SOGL article 137(3) which provides <i>"all connecting TSOs of an HVDC interconnector"</i> with the right to determine <i>"common restrictions for the active power output of that HVDC interconnector"</i>. Article 137(3) further requires that <i>"All TSOs of a synchronous area shall coordinate these measures within the synchronous area."</i></p> <p>Since this proposal basically covers all the ramping restrictions, the TSOs did not make explicit use of the right to specify ramping restrictions on a synchronous area level, as stipulated in article 137(1). However, implicitly this proposal includes the upper limit per synchronous area.</p>
8	Fortum	<ul style="list-style-type: none"> Allowed changes to the trading plans from one hour to another are based on requirements on synchronous area level (FRCE target parameters defined for the LFC block) – also from this point of view it would be logical to use sum / group ramping limits 	<p>Comment acknowledged and did not result in a change of the Proposal.</p> <p>The TSOs refer to the response to comment no.5 and 6.</p>
9	Fortum	<ul style="list-style-type: none"> Introduction of 15 min resolution is not taken into account the proposal <ul style="list-style-type: none"> Nordic TSOs should aim to introduce 15 min ISP and markets as soon as possible, this would reduce the need for ramping restrictions in a market based way. 	<p>Comment acknowledged and did not result in a change of the Proposal.</p> <p>The TSOs agree that the introduction of 15 min ISP and markets likely reduces the need for ramping</p>

			restrictions. Accordingly, the TSOs are working on the implementation of a 15 minutes ISP.
10	Fortum	<ul style="list-style-type: none"> Proposal should also include a target to minimize the impact of the ramping restrictions to the market <ul style="list-style-type: none"> Possibility to apply dynamic restrictions taking into account the changes in the system? 	<p>Comment acknowledged and did not result in a change of the Proposal.</p> <p>The TSOs are studying further operational and market optimisation of the ramping restrictions. Depending on the conclusions of the study, the TSOs may propose alternative measures that better optimise the allocation of ramping restrictions.</p>
11	Fortum	<ul style="list-style-type: none"> According to Article 3(3) of the proposal and SO GL Art 137(2). "The restrictions in paragraph 1 shall not apply for imbalance netting, frequency coupling as well as cross-border activation of FRR and RR over HVDC interconnectors." <ul style="list-style-type: none"> We wonder what is the justification for this. If restrictions are based on physical limitations, why wouldn't they apply to TSOs? 	<p>Comment acknowledged and did not result in a change of the Proposal.</p> <p>Referring to article 137(3) of the SOGL (which includes the same text as quoted by respondent), the TSOs literally implement this text in Article 3(4) of their proposal and are not allowed to do this differently.</p>
12	EFET	We understand that the proposed change concerns the addition of NordLink and no other material amendments to the original proposal have been made. We have no objections to this amendment. However, we would like to make some additional comments and proposals.	<p>Comment acknowledged and did not result in a change of the Proposal.</p> <p>The TSOs confirm that the addition of NordLink was the only change.</p>
13	EFET	EFET in general questions the application of system ramping restrictions, especially the introduction of maximum changes to the trading plans from one hour to the next. We find that there is insufficient justification for these restrictions. As long as the aggregate of market participants act according to their trading plans, and they will, there is no need for measures to alleviate concerns that large changes in the trading plans (e.g. change from full export to full import (or vice versa) in all DC interconnectors) would have a serious negative impact on the frequency of the Nordic system.	<p>Comment acknowledged and did not result in a change of the Proposal.</p> <p>The TSOs note that the ramping restrictions are required because market participants have hourly energy obligations for which there is a certain freedom to schedule the power during the hour. The TSOs consider that large (step) changes disturb the momentary balance and may consequently have impact on the system frequency. Consequently, the Nordic TSOs require ramping restrictions to limit these step changes.</p>
14	EFET	As long as system ramping restrictions are deemed necessary, EFET proposes to apply a sum limitation to all DC interconnectors connected to the synchronous Nordic system, instead of limitations on each DC interconnector individually. Such a sum limitation	Comment acknowledged and did not result in a change of the Proposal.

		would allow trade across one DC interconnector to remain unrestricted if trade across another DC interconnector would anyhow not result in changing trade schedules. This solution would allow the Nordic TSOs to limit large variations in the Nordic power balance with fewer limitations to cross-zonal trade. Therefore, the forthcoming amendment must be used to replace individual limitations by sum limitations, as far as possible.	The TSOs are studying further operational and market optimisation of the ramping restrictions, including the use of sum restrictions. Depending on the conclusions of the study, the TSOs may propose alternative measures that better optimise the allocation of ramping restrictions.
15	EFET	Furthermore, priority should be given to the prompt introduction of an imbalance settlement period (ISP) of 15 minutes. This should relieve the balancing/ ramping challenges and thus, result in less restrictive ramping restrictions on DC interconnectors.	<p>Comment acknowledged and did not result in a change of the Proposal.</p> <p>The TSOs agree that the introduction of 15 min ISP and markets likely reduces the need for ramping restrictions. Accordingly, the TSOs are working on the implementation of a 15 minutes ISP.</p>
16	EFET	Finally, NSL - the new DC interconnector between the UK and Norway - is not mentioned and should also be covered as it is supposed to come online early next year.	<p>Comment acknowledged and did not result in a change of the Proposal.</p> <p>The TSO are currently studying the ramping restrictions, including the treatment of NSL. Depending on the conclusions of the study, the TSOs may propose alternative measures that better optimise the allocation of ramping restrictions.</p>
17	Statkraft	We generally believe that the application of system ramping restrictions, especially the introduction of maximum changes to the trading plans from one hour to the next, should be better justified.	<p>Comment acknowledged and did not result in a change of the Proposal.</p> <p>The TSO are currently studying the ramping restrictions and issued a report on 14 July 2020 to the Nordic NRAs in which the efficiency of the ramping restrictions has been analysed.</p>
18	Statkraft	As long as system ramping restrictions are deemed necessary, we would like to see sum limitation to all DC interconnectors connected to the synchronous Nordic system, alternative - if it can be justified - to a country or bidding area, instead of limitations one each DC interconnector individually. Such a sum limitation would allow trade across one DC interconnector to remain unrestricted if trade across another DC interconnector would anyhow not result in changing trade schedules. If this is not possible to implement this in the Euphemia algorithm, at least spare capacity due to a more flexible implementation of the ramping restriction could be used in the Intraday market or balancing markets	<p>Comment acknowledged and did not result in a change of the Proposal.</p> <p>The TSOs are studying further operational and market optimisation of the ramping restrictions, including the use of sum restrictions. Depending on the conclusions of the study, the TSOs may propose alternative measures that better optimise the allocation of ramping restrictions.</p>

