Hrvatski operator prijenosnog sustava d.o.o.
(Croatian Transmission System Operator)

Kupska 4, 10000 Zagreb, Croatia
Telephone +385 1 4545 111 +385 1 4545 426
Fax +385 1 4545 187
Address 10001 Zagreb • Service

CROATIAN ENERGY REGULATORY AGENCY (HERA)
Ulica grada Vukovara 14
10000 Zagreb

OUR NUMBER: YOUR NUMBER: DATE: **29 October 2019**

RE: **Derogation from the provisions stipulated under Article 16, paragraph 8 of the Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity**
- **Submission of the request**

Dear Sir/Madam,

In Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (hereinafter: Regulation), Article 16, paragraph 8 prescribes:

> *Transmission system operators shall not limit the volume of interconnection capacity to be made available to market participants as a means of solving congestion inside their own bidding zone or as a means of managing flows resulting from transactions internal to bidding zones. Without prejudice to the application of the derogations under paragraphs 3 and 9 of this Article and to the application of Article 15(2), this paragraph shall be considered to be complied with where the following minimum levels of available capacity for cross-zonal trade are reached:*
>
> *(a) for borders using a coordinated net transmission capacity approach, the minimum capacity shall be 70% of the transmission capacity respecting operational security limits after deduction of contingencies, as determined in accordance with the capacity allocation and congestion management guideline adopted on the basis of Article 18(5) of Regulation (EC) No 714/2009;*
>
> *(b) for borders using a flow-based approach, the minimum capacity shall be a margin set in the capacity calculation process as available for flows induced by cross-zonal exchange. The margin shall be 70 % of the capacity respecting operational security limits of internal and cross-zonal critical network elements, taking into account contingencies, as determined in accordance with the capacity allocation and congestion management guideline adopted on the basis of Article 18(5) of Regulation (EC) No 714/2009.*
>
> *The total amount of 30 % can be used for the reliability margins, loop flows and internal flows on each critical network element.*

Hereinafter, compliance with Article 16, paragraph shall be referred to as compliance with the 70% target.

The said Regulation will be effective starting 1 January 2020, and as of that date, the 70% target should be fulfilled at the Croatian borders with its neighbouring Member States (HR-SI and HR-HU), i.e. at bidding zone borders that fall within the area of application of the Regulation.

Based on the currently available data, the Croatian System Transmission Operator Ltd. (hereinafter: HOPS), has assessed that the **70% target is not met** at either of the above borders, and pursuant to Article 16, paragraph 9 of the Regulation, which stipulates:

> *At the request of the transmission system operators in a capacity calculation region, the relevant regulatory authorities may grant a derogation from paragraph 8 on foreseeable grounds where necessary for maintaining operational security. Such derogations, which shall not relate to the curtailment of capacities already allocated pursuant to paragraph 2, shall be granted for no more than one-year at a time, or, provided that the extent of the derogation decreases significantly after the first year, up to a maximum of two years. The extent of such derogations shall be strictly limited to what is necessary to maintain operational security and they shall avoid discrimination between internal and cross-zonal exchanges.*
>
> *Before granting a derogation, the relevant regulatory authority shall consult the regulatory authorities of other Member States forming part of the affected capacity calculation regions. Where a regulatory authority disagrees with the proposed derogation, ACER shall decide whether it should be granted pursuant to point (a) of Article 6(10) of Regulation (EU) 2019/942. The justification and reasons for the derogation shall be published. Where a derogation is granted, the relevant transmission system operators shall develop and publish a methodology and projects that shall provide a long-term solution to the issue that the derogation seeks to address. The derogation shall expire when the time limit for the derogation is reached or when the solution is applied, whichever is earlier,*

hereby submits its request for a derogation from the requirements prescribed under Article 16(8) of the Regulation, in the sense of application to the borders between Croatia and Slovenia, and between Croatian and Hungary, to all critical elements of the transmission network, for a period of one year, beginning on 1 January 2020 to 31 December 2020, i.e. to the start of the application of the methodology prescribed under Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline for capacity allocation and congestion management (hereinafter: CACM Regulation) in the Core region for capacity calculation (hereinafter: Core CCR), with regard to the regional day-ahead capacity calculation, and the manner of activation and costs sharing for redispatching and countertrading.

The details of the conducted procedure to assess compliance with the 70% target, and the reasons for submission of this application for derogation are outlined below.

Introduction

Currently at all borders (HR-SI, HR-HU, HR-BA, HR-RS), HOPS determines the amount of available cross-zonal capacities **at a monthly level** using the **net transmission capacity** approach (bilateral NTC calculation).

The monthly NTC is still determined on the basis of the MLA Operation Handbook, Policy 4: Coordinated Operational Planning, chapter Capacity Calculation. Even though the Operation Handbook has been formally not in force anymore since 14 April 2019 (since the entry into effect of the Synchronous Area Framework Agreement (SAFA) for Regional Group Continental Europe), considering that the application of the target method of a flow-based approach to capacity

calculation (hereinafter: Core DA FB CC) has not yet begun in the Core CCR as prescribed under the CACM Regulation, the method prescribed in the Operation Handbook is applied, as stipulated under the bilateral operational agreements between HOPS and ELES (for the HR-SI border) and between HOPS and MAVIR (for the HR-HU border).

The above **uncoordinated** manner of capacity calculation enables an individual transmission system operator (hereinafter: TSO) to take into account all elements of the transmission network during the NTC calculation (including internal network elements), including those that are not directly associated with cross-zonal trading. The only coordination that exists between two TSOs, in the sense of determining cross-zonal capacities, is that after the independent NTC calculation, the lower value is taken as the joint NTC offered at auction.

The NTC value for the day-ahead (DA) market is not calculated. The values of capacities offered on the day-ahead market are determined on the basis of the monthly NTC values, in which those values are determined in the manner in which the security criteria are met for each market unit in that month.

Methods of calculating compliance with the 70% target

The assessment of compliance with the requirements prescribed under the Regulation are based on the ACER document "*Recommendation No 01/2019 of the European Union Agency for the Cooperation of Energy Regulators of 08 August 2019 on the implementation of the minimum margin available for cross-zonal trade pursuant to Article 16(8) of Regulation (EU) 2019/943" (hereinafter: ACER Recommendation)*, which is aimed at securing uniform access in application of the Regulation. Namely, pursuant to the conclusions of working meetings/working groups at the ENTSO-E and Core CCR levels, **it became evident that there are differences in the interpretation of certain provisions of this Regulation**, which has since been reduced, though not completely resolved, with the publication of the ACER Recommendation.

HOPS has conducted an assessment of compliance with the 70% target, taking into account the critical network elements (hereinafter: CNE) and unpredictable cases, i.e. contingencies of certain network elements (hereinafter: C) based on historical data for the calculation of monthly NTC values at the borders with Slovenia and Hungary. However, due to the previously outlined uncoordinated determination of the NTC and lack of a day-ahead NTC calculation, a series of assumptions and simplifications were also applied.

To assess the future state as of 1 January 2020, HOPS applied an adapted reference model. The network models for which the capacity available for cross-border trade are met in the analysis are not uniformly determined (seasonally, monthly, daily or hourly) until the day-ahead calculation is established, pursuant to the CACM Regulation, which prescribes that such calculations are based on D-2 models. Namely, the Operation Handbook recommends that the uncoordinated manner of capacity calculations for the network model should be in accordance with the cycle of capacity calculation, which in this specific case would mean that the 70% target has been met, which according to the ACER Recommendation made for the offered capacities at the D-1 level, should be conducted on the model developed for D-2. Such a model is currently not developed, and due to the cessation of validity of the Operation Handbook, no other model to be used in calculations has been prescribed; instead, it is recommended that the model be adapted in accordance with the best assessment of the state of the network. HOPS, like other TSOs, cannot have the data for development of the D-2 model without exchanges with other TSOs, and instead can only more or less successfully estimate these data (i.e. data on network switching conditions, distribution of production, generation load shift keys (GLSK), cross-border exchanges, etc.).

For the purpose of assessment of the state of the network, data from the following reports were considered: “2018 Ten Year Network Development Plan” (released by ENTSO-E), “Ten Year Transmission Network Development Plan 2019-2028 with detailed outline for the initial 3-year and 1-year periods“ (released by HOPS), and the preliminary availability plan of relevant assets (drafted in accordance with Regulation (EU) 2017/1485 of 2 August 2017 establishing a guideline on electricity transmission system operation (hereinafter: SO GL Regulation) for 2020.

From the above, it is evident that, considering the deadlines set by the SO GL Regulation, at the time of writing this request for derogation, the said preliminary plan has not yet completed the alignment phase with other TSOs, and can at this time only be considered indicative, and certainly not reliable. The data from these documents have been considered during the assessment of the state of the network.

Calculation on the adapted models have been conducted for the purpose of assessing the fulfilment of criteria as prescribed by Article 16(8) of the Regulation, both in the case of the currently applied uncoordinated bilateral calculation of NTC capacities, and in the case of the planned future Core DA FB CC.

The NTC values used during this calculation are not a fully relevant reflection of the cross-zonal capacity for HOPS, as in accordance with the Operation Handbook, the minimum values calculated by the TSOs within the coordination area (HR-SI and HR-HU) have been selected. This means that certain NTC values may be a reflection of network constraints of the neighbouring TSO (limiting elements are present outside the HOPS network, and within the coordination area).

Due to the shape and size of the Croatian electricity system, and the significant interdependencies of flows at certain borders, HOPS has given particular attention to the impact of third-country flows in its calculation, e.g. countries with which it borders but which do not fall within the area of application of the Regulation (HR-BA (Bosnia-Herzegovina) and HR-RS (Serbia)). Namely, in its letter to ACER and ENTSO-E of 16 July 2019, the European Commission established that flows resulting from cross-zonal trading with third countries may be taken into consideration only if an agreement has been concluded with all TSOs of the region for capacity calculation (for Croatia, that is the Core CCR) and the third countries.

Following the approval of the competent regulatory bodies of the Core CCR, such an agreement becomes an integral part of the capacity calculation methodology, which means that it must be fully aligned with the principles of capacity calculation as envisaged under EU regulations. Therefore, the currently applied uncoordinated capacity calculation method cannot be the subject of the impact of third-country flows. It is clear that the ACER Recommendation permits the consideration of the impact of such flows, though ultimately, HOPS cannot know whether the concluded agreement will appropriately contribute or hinder the compliance with the 70% target.

Following from this, it is evident that HOPS cannot adopt the action plans envisaged under Article 15 of the Regulation, which would be transposed into the network development plans, as without good quality input parameters, it is not possible to conduct a cost benefit analysis.

Furthermore, the criteria for assessing compliance with Article 16(8) of the Regulation are ambiguous, as a literal interpretation of the provisions could be that general compliance has been achieved only if abiding by compliance at each border, in each direction, and for each market unit, which is virtually impossible to fulfil. Therefore, the question arises concerning the criteria for assessment compliance with the requirements from Article 16(8) of the Regulation, and consequently responses are required to the following questions:

- Is the capacity offered on the intra-day market taking into consideration, and if yes, is this taking into consideration always, or only in certain (justifiable) situations?

- Are the criteria applied in both directions, or only in the direction with the positive shadow price, i.e. for the direction in demand by market participants?

- Is a reduction of the transmission capacities due to unavailibility caused by network element maintenance taking into account, i.e. can the offered capacities be reduced in that case?

- How can uncertainties in capacity calculations due to possible incorrect capacity calculation calculations in neighbouring regions be taken into account?

Conclusion

Taking the above facts and circumstances into account, **HOPS considers that operational system security will be threatened if the 70% target is in effect as of 1 January 2020**.

The arguments behind the HOPS conclusion lie in the following three reasons:

1) At this time, HOPS is not able to calculate the Margin Available for Cross Zonal Trade (MACZT) with satisfactory certainty, which in the case of an inaccurate assessment of the capacity available for cross-zonal trade could directly threaten the security of the operation of the system, if HOPS would permit the allocation of excessive quantities of cross-zonal capacities on the day-ahead market. That would mean that HOPS would be required to guarantee, i.e. secure that capacity using limited resources, even if the input assumptions used for the calculation of cross-zonal capacities would significantly differ from the actual state in the network. Calculation ambiguities are as follows:

- It is not possible to envisage the impact of flows from neighbouring countries, as there is high uncertainty in assessing cross-zonal trading due to the current manner of calculating cross-zonal capacities, which is not in compliance with the target model as prescribed by the CACM Regulation (the information required to create reliable D-2 models needed to calculate capacities for D-1 allocations are not being exchanged);
- The calculation of cross-zonal trading at borders with third countries has not been taken into account – in the time up to the conclusion of an agreement between all TSOs from the CCR (in this case the Core CCR) and third countries, it is possible that the TSOs within this CCR (in this case the Core CCR) have not adequately assessed the impacts from third-country flows (due to the bilateral NTC approach to third countries, inadequate availability of data, etc.);
- The action of neighbouring Member States in the sense of compliance with the 70% target is not known, which can result in amendments to usual patterns of power flows– it can be assumed that certain remedial actions will be taken, or perhaps excessive capacities will be allocated unjustifiable in order to comply with the 70% target, which thereby means it is possible that the N-1 condition will occasionally not be met (conscious taking of the risk of cascading contingencies outages of network elements),
- A new network element in the surroundings that may have an impact is the HVDC submarine cable between Italy and Montenegro, that will become operational at the end of this year, though the coordination procedures between TSOs upon which this cable will have the greatest impacts have not yet been developed (CGES, ELES, HOPS, NOS BiH, Terna), i.e. between the competent regional security coordinators (hereafter: RSCs), both in the planning phase and in real-time operation. Higher reliability limits must be determined for the development of such procedures while calculating cross-zonal

capacities, in order to consider the cases of cable contingencies or sudden changes in power being transmitted.

2)
To secure 70% of the available capacity on CNECs, a larger engagement of all remedial measures would be necessary, in particular redispatching. Currently, HOPS possesses very limited resources for active redispatching, which relates to:

- Lack of an appropriate legal framework – "Rules for congestion management within the Croatian electric power system (EPS), including tie lines" is currently in the process of alignment and approval before the relevant regulatory body, which may not be completed prior to 1 January 2020. Until that approval, HOPS may not adequately use the resources within the Croatian EPS, as there is no adequate activation mechanism and means to the costs sharing of redispatching activation. The same also applies for the situation in Core CCR, where the rules for redispatching and countertrading (RD & CT) at the level of the Core CCR, and the rules for sharing such costs, are still in the adoption process,
- Lack of appropriate partner agreements – HOPS has limited capabilities to influence cross-zonal trading at the borders HU-HR and HR-SI due to the lack of appropriate remedial measures for resolving congestion at those borders, e.g. caused byloop flows in central Europe, as there are no bilateral contracts with neighbouring TSOs concerning redispatching. At this time, only the "Multilateral Redispatch Agreement (MRA) of Central-European TSO Security Cooperation (TSC)" (hereinafter: MRA) is in effect, which can be used to influence congestion in Central Europe. However, participation in this agreement is not nearly a sufficient tool to activate the expected activation amounts. Namely, HOPS participates in this MRA with a restricted amount of EUR 200,000 per year, which is not sufficient for the expected needs. Furthermore, the MRA is not a reliable remedial measure, as the participation of other TSOs that could aid in resolving the usual congestion in the Croatian EPS (primarily ELES and MAVIR) is not binding.

3)
With regards to long-term disconnections in 2020, during this period, a disconnection is planned due to works to replace conductors at the OHL 220 kV Konjsko – Zakučac, which will reduce the transmission capacities of the grid and the possibility for remedial measures that would assist in meeting the 70% target, which would negatively impact the security of system operation.

Bearing in mind the outstanding issues pertaining to the operational security of the system, HOPS takes in account that the following solutions are possible:

- Amendment to the bidding zone configuration,
- Action plan,
- Request for temporary derogation from compliance with the 70% target.

With regard to amending the bidding zone configuration, it was concluded that due to the uncertainty of the calculation, the need for wide-reaching coordination with other TSOs, high cost of implementation, insufficient human resources needed for implementation, and ultimately the questionability of achieving satisfactory results, amending the bidding zone will not be pursued.

In anticipation of an action plan as a possible solution, the key premise is that the action plan results in additional investments in construction of transmission networks, which means corrections to the Development plan of the HOPS transmission network. This in turn implies a cost-benefit analysis to determine the justification of individual investments of the TSO, which should be evaluated with respect to the issue of unreliable calculations. This ultimately could lead to unnecessary (*stranded*) investments in the network (overinvestment) or insufficient investments in the network (underinvestment). Furthermore, some of the analysed solutions include multinational plans, which require even longer time for preparation.

Therefore, we believe that an Action plan may be a realistic future option, after the current unreliable input parameters for cross-zonal capacity calculation and for assessment to determine the justification of investment are ascertained with a sufficient degree of certainty.

Therefore, pursuant to Article 5.3 of the ACER Recommendation:

> *MNCC values are expected to decrease in the future, e.g. following the implementation of the CGM methodology and of the CCMs pursuant to the CACM Regulation, which will enlarge existing coordination areas to CCRs. Further, after the CCMs pursuant to the CACM Regulation are implemented, TSOs should further work on increasing the size of CCRs (which is expected gradually to diminish the flows resulting from cross-zonal exchanges outside CCRs) and, where such increase would not be efficient, to implement advanced hybrid coupling (which is expected to consider the flows resulting from cross-zonal exchanges outside CCRs within MCCC). However, until TSOs are able to implement the above-mentioned solutions, regulatory authorities and the Agency should recognise that, in some cases, the high uncertainties related to forecast cross-zonal exchanges outside coordination areas may result in a higher reliability margin in relation to cross-zonal exchanges outside the coordination area and may impede the ability of TSOs to reach the MACZT target. In such cases, the temporary relaxation of the MACZT target (e.g. through derogations) might be an appropriate instrument.*

HOPS has decided to submit a request for derogation from compliance of the 70% target, as prescribed in Article 16(9) of the Regulation, since it deems that the requested derogation period could be used to undertake measures aimed at achieving compliance with the 70% target and perform additional analyses that will lead to permanent compliance with the 70% target.

The measures that HOPS will take with the aim of complying with the 70% target:

HOPS will work in cooperation with other TSOs to remove the above mentioned reasons for the requested derogation from Article 16(8) of the Regulation, particularly with regard to the rapid implementation of the Core DA FB CC, and to establish coordinated redispatching and countertrading activation as well as cost sharing in accordance with Articles 35 and 74 of the CACM Regulation, as it deems that its implementation is a necessary requirement to comply with the 70% target.

HOPS will actively support all initiatives to conclude agreements between all TSOs from the Core CCR and TSOs from Serbia and Bosnia and Herzegovina, in order to regulate the mutual taking in account flows created from trading at cross-zonal borders of significance, which is key to ensuring the operational security of all edge countries of the Core CCR.

Furthermore, HOPS will actively support the establishment of a regional coordination for operational security, and the establishment of interregional cooperation of the competent RSCs, i.e. in order to more reliably predict the impacts of the HVDC cable between Italy and Montenegro.

HOPS will continue to improve the quality of capacity calculation, and the procurement of the appropriate software support to facilitate this is currently underway.

HOPS will give particular attention to planning and shortening the duration of works on grid elements whose unavailbility may cause reductions in transmission capacities.

Following from the above, HOPS is hereby submitting its request for derogation from the requirement prescribed by Article 16(8) of the Regulation, and is available to provide additional documentation and explanation as required.

Sincerely,

President of Management Board:

Tomislav Plavšić, Ph.D.

Enclosures:

- Results of the calculation made on reference models
- Recommendation No.01/2019 ACER of 8 July 2019 on the application of minimal margin available for cross-zonal trade pursuant to Article 16(8) of Regulation (EU) 2019/943 (English original)
- Letter of the European Commission to ACER and ENTSO-E on capacity calculations and third countries of 16 July 2019 (English original)

Co:

- System Operation Department
- Executive Office
- Archive