Third report of Elia System Operator SA detailing the methodology and projects that shall provide a long-term solution to the operational security risk which the derogation granted to Elia System Operator SA seeks to address, in accordance with Article 16(9) of Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (recast)

30 Jun 2023

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Whereas

(1) Article 16(9) of Regulation 2019/943 prescribes that upon request of transmission system operators in a capacity calculation region, the relevant regulatory authorities may grant a derogation from the requirement of Article 16(8) of Regulation 2019/943 ("CEP70 requirement") on foreseeable grounds where necessary for maintaining operational security. The derogation 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 a derogation shall be strictly limited to what is necessary to maintain operational security and shall avoid undue discrimination between internal and cross-zonal exchanges.

(2) Elia System Operation SA has submitted a request for derogation on Oct 5, 2021 for all Belgian CNECs participating to the day ahead capacity calculation process in CWE respectively Core based on the foreseeable ground *"loop flows above an acceptable level"*, for 1 year starting from the 1st of January 2022.

(3) Following consultation of other NRAs and a public consultation, this request for derogation has been granted by the Belgian NRA (CREG) in its decision (B)2297 on Dec 2, 2021.

(4) Article 16(9) of Regulation 2019/943 prescribed that "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 the derogation seeks to address.

ELIA REPORTS ON THE LONG-TERM SOLUTIONS THAT ALLEVIATE THE FORESEEABLE GROUNDS JUSTIFYING THE DEROGATION GRANTED TO ELIA FOR THE PERIOD JAN 1 2022 TILL DEC 31 2022

Article 1.　　Overview of required long-term solutions

(1) The following CACM and SOGL methodologies are to be implemented in the Core CCR to alleviate the foreseeable ground on excessive loop flows:

    a. The day-ahead capacity calculation methodology as referred to in Article 21 of the CACM Regulation;

    b. The operational security coordination methodology as referred to in Article 76 of the SOGL Regulation;

    c. The coordinated redispatching and countertrading methodology as referred to in Article 35 of the CACM Regulation;

    d. The redispatching and countertrading cost sharing methodology as referred to in Article 74 of the CACM Regulation.

(2) **Contribution of the Core DA CCM (pursuant to CACM Art. 20) is twofold**

    a. Article 10(5) of the Core DA CCM offers each Core TSO the possibility to individually define the initial setting of its own non-costly and costly remedial actions, based on the best forecast of their application and with the aim to reduce the loop flows on its cross-zonal CNECs below a loop flow threshold that avoids undue discrimination. The same loop flow threshold is also considered as a constraint in the non-costly remedial action optimiser, as described in Article 16 of the Core DA CCM. This is important in the Belgian context as the Belgian PSTs contribute to the reduction of loop flows;

    b. Article 20 of the Core DA CCM enables "coordinated validation", implying there will be a process that consolidates the prediction and usage of available remedial action on Core level. This creates a necessary visibility on the ability to maintain operational security in a coordinated way when applying the minimum 70% requirement. This is important in the Belgian context. Firstly, because the local remedial action potential is insufficient to alleviate the impact of loop flows. Secondly, because there is no guarantee that the implementation of the action plan to enable the minimum 70% requirement in the Federal Republic of German will in itself reduce loop flows below an acceptable level.

(3) **Contribution of the Core SOGL 76 and CACM 35 methodologies:** if Elia faces congestions as a result of the application of the CEP70 requirement, SOGL 76 and CACM 35 should allow finding solutions in a coordinated way in the Core region to relieve these congestions. The fact that the SOGL 76 methodology and CACM 35 methodology are not yet in place prevents Elia to rely on cross-border remedial actions as existing bilateral redispatching contracts do not enable an efficient use due to the manual procedures involved and the limited visibility on the future availability of redispatching potential.

(4) **Contribution of the Core CACM 74 methodology:** in addition to the implementation of SOGL 76 and CACM 35, which alleviate operational security risk, CACM 74 should enable a fair cost sharing, ensuring that the TSOs of the bidding zone(s) at the origin of the loop flows above an acceptable level bear the costs of the remedial actions, in accordance with the polluter-pays principle as described in Article 16(13) of Regulation 2019/943.

Article 2.   Implementation roadmap of the long-term solutions

(1) Below table summarizes the latest available information regarding the implementation of the four Core methodologies listed in Article 1:

| Methodology	Status	Currently foreseen implementation date
Core DA CCM	Operational since Jun 8th 2022	
Core DA CCM: coordinated validation	To be started	A proposal for implementation is due 18 months after go-live thus by Dec 2023. Q4 2025
Core SOGL 76 + CACM 35 + CACM 74	Implementation ongoing	Implementation of ROSC + Cost Sharing with DA CROSA by Q2 2025, followed by ID CROSA by Q4 2025 – Q2 2026 * OR Implementation of ROSC + Cost Sharing with DA+ID CROSA by Q4 2025 – Q2 2026 *

* The decision to go-live with the Regional Operational Security Coordination methodology (ROSC methodology) and Cost Sharing in either one or two phases is planned to be taken in 2024 by Core TSOs. In case of a go-live in two phases, the first phase would consist of the Day-Ahead Coordinated Regional Operational Security Assessment (DA CROSA) subject to the Cost Sharing rules whereas the activation of remedial actions in intraday is to be supported through a Fast Activation Process (FAP) not subject to Cost Sharing rules, and this until the Intraday Coordinated Regional Operational Security Assessment (ID CROSA) goes live in the second phase. The impacts of such phased implementation are to be evaluated within the ROSC implementation project.

Article 3.   Conclusion

(1) As from day 1 of the go-live of Core DA CC, Elia makes use of the possibility to reduce excessive loop flows by adapting the taps on the Belgian PSTs. Below image illustrates the impact of the Belgian PSTs in the period from the 9th of June to the 31st of December 2022 (F2537EN.pdf (creg.be)). The data points above the red-dotted line are - as the annotations show - hours where the loop flows have increased following the optimization, while the data points below are those where the loop flows have decreased. It can be observed that:

    a. About 90% of the data points are below the red-dotted line thus indicating that the PST optimization successfully reduced excessive loop flows.

    b. The higher the loop flows, the more frequent the PST optimization kicks in.

    c. The average reduction in excessive loop flows amounts to 273 MW. This reduction translates into an increase of the minRAM target applied on Belgian CNECs as per the methodological approach incorporated in the derogation.

Impact of using phase shift transformers on loop flows through the Belgian network
Hourly loop flows before (horizontally) and after PST optimisation (vertically) since the Core DA FBMC go-live

Source: calculations CREG based on data Elia
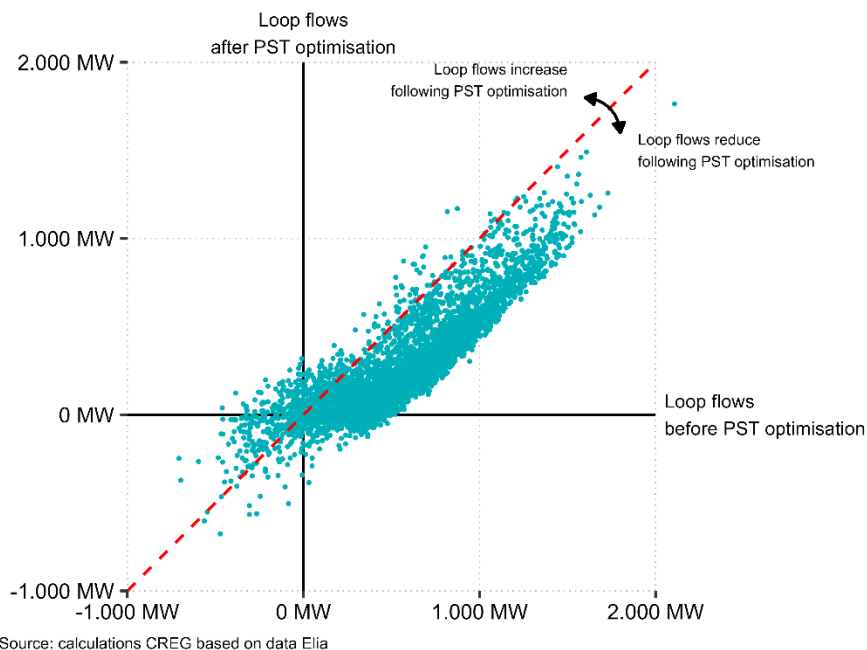
(2) In the years to come, the implementation of the remaining listed Core methodologies is to be further monitored as it is driving the evaluation of the need for derogation for excessive loop flows. As this implementation is not expected to be completed before 2025, Elia will submit in 2023 a request for derogation for excessive loop flows for the period Jan 1st 2024 until Dec 31st 2024.