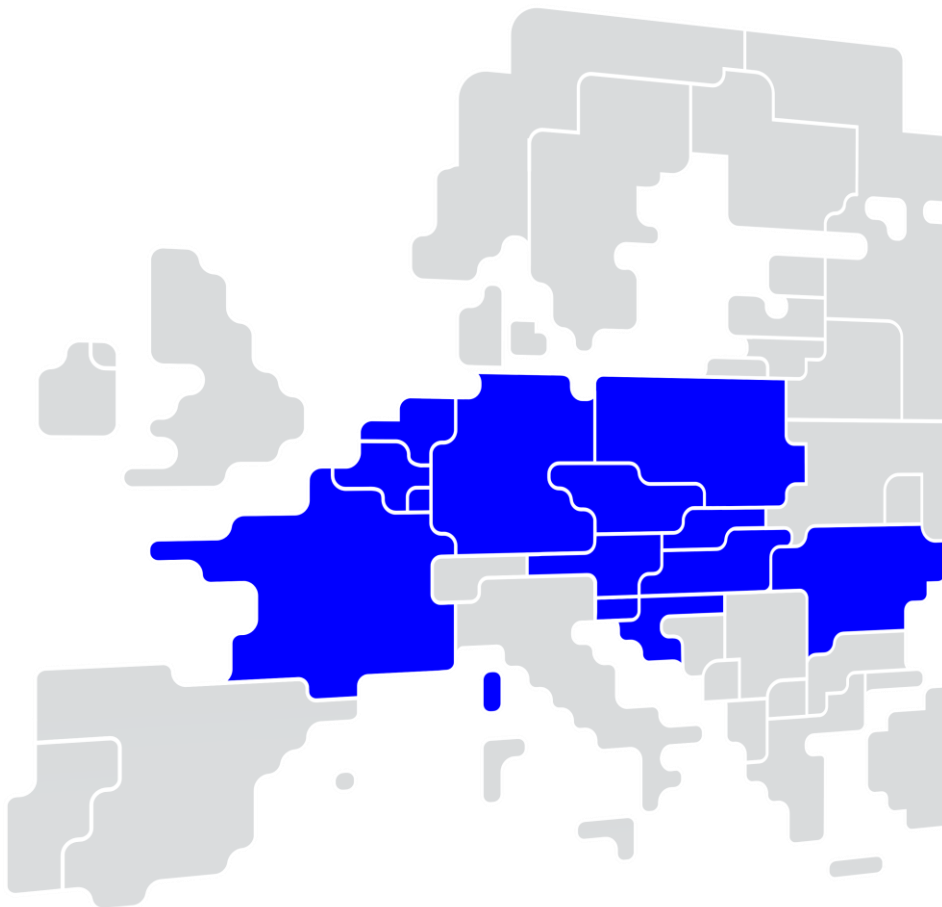
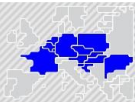




Core DA CC Quarterly report – Reading Guide



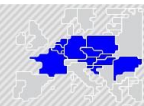


Version	0.4
Date	February 2026

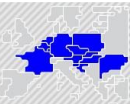
Version history

Version	Date	Summary of changes
0.4	February 2026 (as of Q4 2025 report)	Addition of note related to Time Unit resolution after 15min MTUs go-live in SDAC. • MTU: Market Time Unit – 15min resolution – SDAC time units • CCTU: Capacity Calculation Time Unit – 60min resolution – DA CC process time units QX_20XX_Reductions and QX_20XX_Reductions-statistics files are impacted. For more information see related section in the reading guide (2.2)
0.3	March 2023 (as of Q4 2022 report)	Addition of footnotes related to: - Art. 27(5)(c) from Introduction - Art. 7(3)(b)(i)-(ii) from Chapter 1. Allocation constraints - Art. 20(13)(e) from Chapter 2. Reductions of cross-zonal capacity Addition of note related to the file QX_20XX_Reductions.xlsx, worksheet Reductions_02, column Presolved. For more details, please see dedicated section in the reading guide
0.2	December 2022 (as of Q3 2022 report)	Additions related to the introduction of occurrences of RAM<20% Fmax as part of Chapter 2. Reductions of cross-zonal capacity. List of affected files, for more details please see dedicated sections in the reading guide: - QX_20XX_Reductions.xlsx, worksheet Reductions_01 - QX_20XX_Reductions-statistics.xlsx, worksheet Reductions-statistics_03 Note on consideration of ALEGrO-related constraints from Chapter 1. Allocation constraints Additions on DAVinCy TSOs (Austrian, German and Dutch TSOs) particularities and impact on statistics. For more details, please see dedicated sections in the reading guide: - <i>Extension of footnote 3</i> - QX_20XX_Reductions-statistics_04_2 - <i>Volume of applied reductions</i> - <i>Estimated loss of economic surplus of applied reductions</i>
0.1	Q2 2022 report	First version

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INTRODUCTION

According to the Core DA CCM and the Core DA CCM 1st amendment, the quarterly reporting obligations following the implementation of this methodology are as follows:

Art. 27(5): “The CCC, with the support of the Core TSOs where relevant, shall draft and publish a quarterly report satisfying the reporting obligations set in Articles 7, 20, 25 and 28 of this methodology:¹

- (a) According to Article 7(3)(b), the CCC shall collect all reports analysing the effectiveness of relevant allocation constraints, received from the concerned TSOs during the period covered by the report, and annex those to the quarterly report – within scope of this report*
- (b) According to Article 20(13), the CCC shall provide all information on the reductions of cross-zonal capacity, with a supporting detailed analysis from the concerned TSOs where relevant – within scope of this report*
- (d) According to Article 25(2)(g), Core TSOs shall report on flows resulting from net positions resulting from SDAC on each CNEC and external constraint of the final flow-based parameters – within scope of this report*

Additionally, the report covers reporting obligations from:

- Article 26(5) of Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on Capacity Allocation and Congestion Management (hereafter referred to as the “CACM regulation”)
- Article 16(3) of Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (hereafter referred to as the “IME regulation”)

The report follows the calendar quarters and consists of three main parts. Part 1 deals with allocation constraints, as per Article 7(3)(b); Part 2 deals with reductions of cross-zonal capacity, as per Article 20(13); Part 3 deals with flows resulting from net positions resulting from SDAC, as per Article 25(2)(g).

The report contains several raw data files (in the form of xlsx files), as well as Annexes. **Annex I – QX_20XX_Allocation constraints** addresses additional information provided by the Core TSOs that utilize allocation constraints, if applicable; **Annex II – QX_20XX_Core TSOs measures for reductions** addresses the Core TSOs proposed measures and action plans for avoiding future capacity reductions.

This document is meant as a reading guide, with the aim of introducing the reader to how all the reporting requirements are fulfilled and the location of each of the data item among the list of files attached.

¹ Obligation from Art. 27(5)(c) is applicable only from beginning of parallel run until Core FB MC go-live, thus not in scope of this report



1. ALLOCATION CONSTRAINTS

1.1 Reporting obligations from DA CCM

As per Article 7(3)(b) of the Core DA CCM:

“External constraints may be used by ELIA, TenneT B.V. and PSE during a transition period of two years following the implementation of this methodology in accordance with Article 28(3) and in accordance with the reasons and the methodology for the calculation of external constraints as specified in Annex 1 to this methodology. During this transition period, the concerned Core TSOs shall:

- (b) In case the external constraint had a non-zero shadow price in more than 0.1% of hours in a quarter, provide to the CCC a report analysing: (i) for each DA CC MTU when the external constraint had a non-zero shadow price the loss in economic surplus due to external constraint and the effectiveness of the allocation constraint in preventing the violation of the underlying operational security limits and (ii) alternative solutions to address the underlying operational security limits. The CCC shall include this report as an annex in the quarterly report as defined in Article 27(5)”*

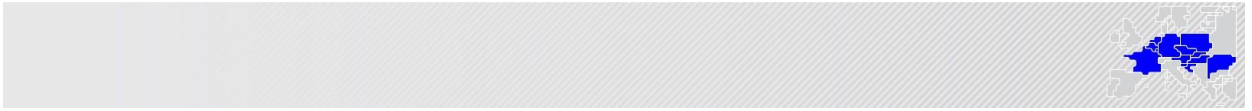
The above reporting obligations are covered in this report as follows:²

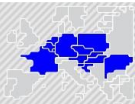
- Article 7(3)(b)(i): loss of economic surplus (for each DA CC MTU when the external constraint had a non-zero shadow price) – covered by the raw data file **QX_20XX_Allocation constraints.xlsx** and Annex I – **QX_20XX_Allocation constraints.pdf**

Note: There are 4 external constraints related to the DE-BE HVDC interconnector ALEGrO (BE_AL_import, BE_AL_export, DE_AL_import, DE_AL_export). These external constraints are of a different nature (they describe the 1000 MW technical capacity of the interconnector), thus they are not included in the allocation constraints-related data of this report.

² Following reporting requirements were moved to the annual report, following agreement with Core NRAs in Core IG call 20200415:

- Article 7(3)(b)(i): effectiveness of the allocation constraint in preventing the violation of the underlying operational security limits
- Article 7(3)(b)(ii): alternative solutions to address the underlying operational security limits





1.2 Reading guide for raw data

The raw data per MTU is available in the file **QX_20XX_Allocation constraints.xlsx**, worksheet *raw data*. The following columns are included, with the respective column description, expected format.

Column name	Expected format	Description
TimeInterval	YYYY-MM-DDTHH:mmZ	MTU, in UTC
TSO	text	TSO owner of the allocation or external constraint (ELIA, PSE and TenneT B.V.)
Shadow Price	Number (in €/MWh)	Shadow Price of external constraint for correspondent TimeInterval, in €/MWh

Additionally, in the file **QX_20XX_Allocation constraints_overview.xlsx**, worksheet *Overview*, an overview is provided for each of the Core TSOs that use external or allocation constraints (ELIA, TenneT B.V. and PSE) on the percentage of DA CC MTUs when the external constraint had non-zero shadow price.

The following columns are included, with the respective column description, expected format.

Column name	Expected format	Description
TSO	text	TSO owner of the allocation or external constraint (ELIA, PSE and TenneT B.V.)
Percentage of DA CC MTUs from analysed quarter when external constraint has non-zero shadow price [%]	Value (in %)	Value (in %) of DA CC MTUs from the analysed quarter when external constraint had a non-zero shadow price

For any of the concerned TSOs, where there are more than 0.1% of MTUs where external constraint had non-zero shadow price, additional required information is provided in **Annex I – QX_20XX_Allocation constraints**, which contains information related to Article 7(3)(b)(i) as described in subchapter **1.1 Reporting obligations from DA CCM** of this reading guide.



2. REDUCTIONS OF CROSS-ZONAL CAPACITY

2.1 Reporting obligations from DA CCM

As per Article 20(13) of the Core DA CCM:

“Every three months, the CCC shall provide in the quarterly report all the information on the reductions of cross-zonal capacity, separately for coordinated and individual validations. The quarterly report shall include at least the following information for each CNEC of the pre-solved domain affected by a reduction and for each DA CC MTU:³

- (a) The identification of the CNEC*
- (b) All the corresponding flow components pursuant to Article 25(2)(d)(vii)*
- (c) The volume of reduction, the shadow price of the CNEC resulting from the SDAC and the estimated market loss of economic surplus due to the reduction*
- (d) The detailed reason(s) for reduction, including the operational security limit(s) that would have been violated without reductions, and under which circumstances they would have been violated*
- (f) If an internal network element with a specific contingency was exceptionally added to the final list of CNECs during validation: a justification why adding the network elements with a specific contingency to the list was the only way to ensure operational security, the name or the identifier of the internal network elements with a specific contingency, the DA CC MTUs for which the internal network elements with a specific contingency was added to the list and the information referred to in points (b) and (c) above*
- (g) The remedial actions included in the CGM before the day-ahead capacity calculation – reporting requirement fulfilled by reporting the initial PST tap settings before the Non-costly Remedial Action Optimisation phase, as per agreements with NRAs in Core IG calls 20200122 and 20200415*
- (h) In case of reduction due to individual validation, the TSO invoking the reduction*
- (i) The proposed measures to avoid similar reductions in the future”*

Additionally, as per Article 20(14) of the Core DA CCM:

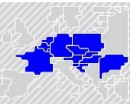
“The quarterly report shall also include at least the following aggregated information:

- (a) Statistics on the number, causes, volume and estimated loss of economic surplus of applied reductions by different TSOs*
- (b) General measures to avoid cross-zonal capacity reductions in the future”*

Finally, as per Article 20(15) of the Core DA CCM:

“When a given Core TSO reduces capacity for its CNECs in more than 1% of DA CC MTUs of the analysed quarter, the concerned TSO shall provide to the CCC a detailed report and action plan

³ In the Core DA CCM 1st amendment, Art. 20(13)(e) was removed.



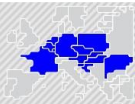
describing how such deviations are expected to be alleviated and solved in the future. This report and action plan shall be included as an annex to the quarterly report.”

Considering that for the analysed reporting period the Coordinated Validation process step is not in place, the scope of this report covers only capacity reductions applied in the Individual Validation process step.

In addition to the reporting obligations mentioned above, and in order for Core TSOs to improve the transparency and visibility of occurrences of RAM<20% Fmax.

The above reporting obligations are covered in this report as follows:

Core DA CCM reporting obligation	Location of provided information
Article 20(13):	
(a)	QX_20XX_Reductions.xlsx , worksheets: - Reductions_01 - Reductions_02
(b)	QX_20XX_Reductions.xlsx , worksheet Reductions_02
(c)	QX_20XX_Reductions.xlsx , worksheet Reductions_01
(d)	QX_20XX_Reductions.xlsx , worksheet Reductions_01
(f)	QX_20XX_Reductions.xlsx , worksheets: - Reductions_01 - Reductions_02 - Reductions_03
(g)	QX_20XX_Reductions.xlsx , worksheet Reductions_04
(h)	QX_20XX_Reductions.xlsx , worksheet Reductions_01
(i)	QX_20XX_Reductions.xlsx , worksheet Reductions_01
Article 20(14):	
(a)	QX_20XX_Reductions-statistics.xlsx , worksheets: - Reductions-statistics_01 - Reductions-statistics_02 - Reductions-statistics_03 - Reductions-statistics_04_01 - Reductions-statistics_04_02 - Reductions-statistics_04_03 - Reductions-statistics_05_01 - Reductions-statistics_05_02 - Reductions-statistics_05_03 - Reductions-statistics_06_01 - Reductions-statistics_06_02 - Reductions-statistics_06_03



(b)	Annex II – QX_20XX_Core TSOs measures for reductions.pdf
Article 20(15):	
Indication of Core TSOs that applied reductions for more than 1% of DA CC MTUs	QX_20XX_Reductions-statistics.xlsx, worksheet Reductions-statistics_02
Detailed report and action plan to avoid future reductions	Annex II – QX_20XX_Core TSOs measures for reductions.pdf

The reporting obligations as per CACM Article 26(5) are covered in this report as follows:

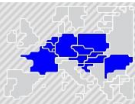
CACM Art. 26(5) reporting obligation	Corresponding Core DA CCM reporting obligation
Location of reductions in cross-zonal capacity	Article 20(13)(a)
Amount of reductions in cross-zonal capacity	Article 20(13)(c)
Reasons of reductions in cross-zonal capacity	Article 20(13)(d)

The reporting obligations as per IME Article 16(3) are covered in this report as follows:

IME Art. 16(3) reporting obligation	Corresponding Core DA CCM reporting obligation
Reductions of capacity	Reporting obligations related to reductions of cross-zonal capacity from individual validations – Article 20(13)
Deviations from coordinated actions	-
Assessment of incidences	Article 20(14)(a)
Recommendations	-

The additional reporting information related to occurrences of RAM<20% Fmax is provided in this report as follows:

Additional reporting information related to occurrences of RAM<20%	Location of provided information or corresponding Core DA CCM reporting obligation
Indication per CNEC and MTU of RAM value in percentage of Fmax	QX_20XX_Reductions.xlsx, worksheet Reductions_01
Aggregated information per TSO: - CNECs with RAM<20% Fmax +3MW	Article 20(14)(a)



- Distinct MTUs with CNECs having $RAM < 20\% F_{max} + 3MW$ - CNECs with 0 RAM - Distinct MTUs with CNECs with 0 RAM	
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2.2 Reading guide for raw data and statistics files

The raw data per MTU/CCTU is available in the files mentioned below.

The raw data per MTU/CCTU is available in the file **QX_20XX_Reductions.xlsx**. The worksheets are described below.

Note: Since the go-live of 15min MTUs in SDAC, two different time unit resolutions are defined:

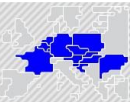
- MTU: Market Time Unit – 15min resolution – SDAC time units
- CCTU: Capacity Calculation Time Unit – 60min resolution – CC process time units

QX_20XX_Reductions_01

The following columns are included, with the respective column description, expected format.

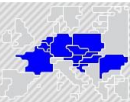
Column name	Expected format	Description
CCTU (UTC)	YYYY-MM-DDTHH:mmZ	CCTU, in UTC
TSO	text	TSO that applied respective reduction
CNEC name	text	Name of CNEC
CNEC ID	text	Unique identifier of CNEC
IVA [MW]	number	Volume of reduction (in MW) applied on respective CNEC from individual validation step
Share of IVA reducing the domain (Optional)	number	Share from volume of reduction (in MW) that effectively contracts the Flow-based domain; <i>Applicable for DAVinCy TSOs (AT, German TSOs, NL)⁴</i>
Overloaded network element TSO (Optional if identical to CNEC with IVA)	text	TSO owning the forecasted overloaded network element

⁴ When the DAVinCy validation process identifies the need to contract the flow-based domain in a direction where it is bounded by a foreign CNEC, IVA is applied on a “substitute” CNEC from a DAVinCy TSO instead. As the substitute CNEC is initially outside of the domain, a part of its IVA is needed to shift it to the edge of the domain, and only the remainder is effectively contracting the domain.



		<i>Applicable for DAVinCy TSOs (AT, German TSOs, NL)⁵</i>
Overloaded network element name (Optional if identical to CNEC with IVA)	text	Name of the forecasted overloaded network element <i>Applicable for DAVinCy TSOs (AT, German TSOs, NL)</i>
Overloaded network element EIC Code (Optional if identical to CNEC with IVA)	text	EIC code of the forecasted overloaded network element <i>Applicable for DAVinCy TSOs (AT, German TSOs, NL)</i>
Overloaded network element UCT From Node (Optional if identical to CNEC with IVA)	text	UCT node From of the forecasted overloaded network element <i>Applicable for DAVinCy TSOs (AT, German TSOs, NL)</i>
Overloaded network element UCT To Node (Optional if identical to CNEC with IVA)	text	UCT node To of the forecasted overloaded network element <i>Applicable for DAVinCy TSOs (AT, German TSOs, NL)</i>
Contingency X TSO (Optional if identical to CNEC with IVA)	text	TSO owning the contingency X associated with the forecasted overloaded network element <i>Applicable for DAVinCy TSOs (AT, German TSOs, NL)</i>
Contingency X UCT From Node (Optional if identical to CNEC with IVA)	text	UCT node From of the contingency X associated with the forecasted overloaded network element <i>Applicable for DAVinCy TSOs (AT, German TSOs, NL)</i>

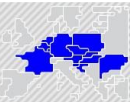
⁵ The DAVinCy individual validation process is jointly performed by the Austrian, German and Dutch TSOs. Due to simulated application of remedial actions, network element/contingency combinations (be it CNECs or not) whose overloading cannot be prevented by all available remedial actions can differ from the CNECs of the flow-based domain that are needed to restrict the cross-zonal capacity, such that such overloading is prevented. This is because the flow-based domain is based on the zonal GLSK model, whereas DAVinCy performs generator-precise redispatch to optimally level the network loading in order to restrict the reduction of RAM to the minimum extent necessary. As a consequence, overloading of a network element/contingency combination in the grid of one TSO may be addressed by IVA on a CNEC of another TSO. Moreover, network elements that are no CNECs might give rise to the need for a capacity reduction in case their overloading cannot be prevented by all available remedial actions. For these reasons, the overloaded network elements and contingencies are reported separately from the CNECs on which the reductions were applied. Consequently, when reporting reductions and their relation to the TSOs owning the overloaded elements, a single reduction can be counted several times (namely if overloaded elements causing that reductions were located in the areas of several TSOs).



Contingency X UCT To Node (Optional if identical to CNEC with IVA)	text	UCT node To of the contingency X associated with the forecasted overloaded network element <i>Applicable for DAVinCy TSOs (AT, German TSOs, NL)</i>
Core NP X	text	Core Net Position of bidding zone X considered for the forecasted overloaded network element
Comment	text	Optional column with additional information regarding the respective applied reduction
Was fallback applied?	TRUE/FALSE	Indication of whether the respective applied reduction was applied as (1) as outcome of the individual validation tool (<i>FALSE</i>) or (2) as fallback, due to individual validation tool being unavailable (<i>TRUE</i>)
Measures to Avoid Future Reductions	text	Column with proposed measures to avoid future reductions for respective applied reduction
Shadow Price	Number (in €/MWh)	Shadow Price of CNEC affected by reduction, in €/MWh
Estimated market loss	Number (in €)	Estimated market loss of CNEC affected by reduction, in € <i>The value for loss of economic surplus of applied reductions is approximated by multiplying the shadow price with the volume (in MW) of the applied reduction. This constitutes an upper estimate of the actual effect as price elasticity is ignored.</i>
Presolved	TRUE/FALSE	If the value is <i>TRUE</i> then the corresponding Network Element with Contingency constraints the flow-based domain, <i>FALSE</i> means a redundant Network Element with Contingency not constraining the flow-based domain
RAM [% of Fmax]	Number, in %	Remaining Available Margin, expressed in percentages of Fmax, computed with the following formula: $\frac{RAM0_{Core} + AMR - CVA - IVA + 3^*}{F_{Max}}$ <i>*Core TSOs have agreed to add a margin of 3 MW in the formula that represents the rounding that can occur during the process</i>

QX_20XX_Reductions_01 PT15M

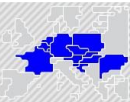
This sheet contains the same information as the QX_20XX_Reductions_01, but considering 15min MTU resolution.



QX_20XX_Reductions_02

The following columns are included, with the respective column description, expected format.

Column name	Expected format	Description
TimeInterval	YYYY-MM-DDTHH:mmZ	CCTU, in UTC
DeliveryDate	YYYY-MM-DD	Business Day
Period	Number (1..23/24/25)	Timestamp
NEC_ID	text	Unique identifier of Network Element with Contingency
NE_EIC	text	EIC code of the Network Element
NE_Name	text	Name of Network Element
NE_from	text	UCT node From of the Network Element
NE_to	text	UCT node To of the Network Element
NE_ElementName	text	Element Name of the Network Element
NE_OrderCode	number	Order Code of the Network Element
Contingency_ID	text	Unique identifier of Contingency
Contingency_Name	text	Name of Contingency
TSO	text	TSO owning the Network Element with Contingency
CNEC	TRUE/FALSE	Indication of type of Network Element with Contingency <i>TRUE: Network Element with Contingency passed the 5% PTDF rule and will be part of the pre-solved dataset</i> <i>FALSE: Network Element with Contingency was filtered out by the 5% PTDF rule</i> Only pre-solved CNECs (CNEC = <i>TRUE</i>) are reported, as per Art. 20(13)(b) of the Core DA CCM
MNEC	TRUE/FALSE	Indication of whether Network Element with Contingency is a monitored network element, as per the Core DA CCM
F_max	Number, in MW	Maximum allowable power flow on the corresponding Network Element with Contingency
FRM	Number, in MW	Flow Reliability Margin
F_ref	Number, in MW	Reference Flow
F_totalLTN	Number, in MW	Flow after consideration of LTN $F_{total_LTN} = F_{0,core} + F_{LTN}$
RAM	Number, in MW	Remaining Available Margin
F_0core	Number, in MW	Flow per Network Element with Contingency in the situation without commercial exchanges within the Core CCR



RAM_0core	Number, in MW	Remaining Available Margin in the situation without commercial exchanges within the Core CCR
MinRAMFactor	Number, in %	Target for minimum margin for the totality of market exchanges (including non-Core exchanges)
F_uaf	Number, in MW	Flow resulting from assumed commercial exchanges outside the Core region
F_0all	Number, in MW	Flow per Network Element with Contingency in the situation without commercial exchanges between bidding zones within Continental Europe and between bidding zones within Continental Europe and bidding zones of other synchronous areas
F_LTN	Number, in MW	Flow resulting from Long Term Nominations
AMR	Number, in MW	Adjustment for minimum RAM
LTA_margin	Number, in MW	Flow margin for LTA inclusion $LTA_margin = \max(F_{LTAmax} + FRM - AMR - Fmax; 0)$
CVA	Number, in MW	Coordinated value adjustment resulting from coordinated validation process
IVA	Number, in MW	Individual value adjustment resulting from individual TSO validation process
Presolved	TRUE/FALSE	If the value is <i>TRUE</i> then the corresponding Network Element with Contingency constraints the flow-based domain, <i>FALSE</i> means a redundant Network Element with Contingency not constraining the flow-based domain <i>Note: The file only contains entries of pre-solved CNECs (Presolved = TRUE), as required by the DA CCM</i>
PTDF_XX	Number	One column per hub with the Power Transfer Distribution Factor value

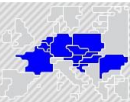
QX_20XX_Reductions_03

The following columns are included, with the respective column description, expected format.

Column name	Expected format	Description
TimeInterval	YYYY-MM-DDTHH:mmZ	CCTU, in UTC
CNEC ID	text	Unique identifier of Network Element with Contingency exceptionally added

QX_20XX_Reductions_04

The following columns are included, with the respective column description, expected format.



Column name	Expected format	Description
CCTU (UTC)	YYYY-MM-DDTHH:mmZ	CCTU, in UTC
TSO	text	TSO applying initial PST tap settings
From node	text	UCT node From of the PST
To node	text	UCT node To of the PST
Element Name	text	Element Name of the PST
Initial PST Tap	Number	Initial PST tap setting

Additionally, statistics/overviews on aggregated data are presented in the file **QX_20XX_Reductions-statistics.xlsx**. The worksheets are described below.

QX_20XX_Reductions-statistics_01

In this worksheet, an overview on the following indicators:

- Number of BDs from the quarter
- Number of CCTUs from the quarter
- Number of CCTUs without applied reductions
- Number of CCTUs with applied reductions

The following columns are included, with the respective column description, expected format.

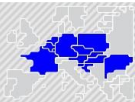
Column name	Expected format	Description
Total BDs from quarter	number	Number of BDs from the analysed quarter
Total CCTUs from quarter	number	Number of CCTUs from the analysed quarter
Total CCTUs without applied reductions	number	Number of CCTUs from the analysed quarter that have no reductions applied
Total CCTUs with reductions applied	number	Number of CCTUs from the analysed quarter that have reductions applied (from one or multiple TSOs)

QX_20XX_Reductions-statistics_02

In this worksheet, an overview is provided on the percentage of DA CCTUs from the analysed quarter where each Core TSO has applied capacity reductions.

The following columns are included, with the respective column description, expected format.

Column name	Expected format	Description
TSO	Text	TSO that has applied capacity reductions in the analysed quarter
Percentage of DA CC CCTUs from	Value (in %)	Value (in %) of DA CCTUs from the analysed quarter where Core TSO has applied capacity reductions



analysed quarter where Core TSO has applied capacity reductions [%]		
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The following statistics are provided in below worksheets, as per Article Article 20(14)(a) of the Core DA CCM:

Number of applied reductions

QX_20XX_Reductions-statistics_03

In this worksheet, an overview is provided on the number of applied reductions over the analysed reporting period. A distinction is made between total number of applied reductions and number of distinct CCTUs with applied reductions, per TSO.

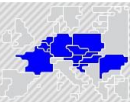
The following columns are included, with the respective column description, expected format.

Column name	Expected format	Description
TSO	Text	TSO that has applied capacity reductions in the analysed quarter
Number of applied reductions	Number	Number of applied capacity reductions from the analysed quarter, from respective TSO
Number of distinct CCTUs with applied reductions	Number	Number of distinct CCTUs with applied capacity reductions from the analysed quarter, from respective TSO
Number of CNECs with RAM<20% Fmax + 3 MW	Number	Number of pre-solved CNECs with RAM<20% Fmax + 3 MW, from respective TSO
Number of distinct CCTUs with CNECs with RAM<20% Fmax + 3 MW	Number	Number of distinct CCTUs with pre-solved CNECs with RAM<20% Fmax + 3 MW, from respective TSO
Number of CNECs with 0 RAM	Number	Number of pre-solved CNECs with RAM=0, from respective TSO
Number of distinct CCTUs with CNECs with 0 RAM	Number	Number of distinct CCTUs with pre-solved CNECs with RAM=0, from respective TSO

Causes of applied reductions

QX_20XX_Reductions-statistics_04_1

In this worksheet, an overview is provided on the number of applied reductions that occurred as a result of system security assessment performed by the TSOs individual validation tools vs the number of applied reductions due to individual validation tool being unavailable (and fallback options were used by TSOs to apply reductions).



The following columns are included, with the respective column description, expected format.

Column name	Expected format	Description
TSO	Text	TSO that has applied capacity reductions in the analysed quarter
Reductions applied as outcome of individual validation tool	Number	Number of applied capacity reductions from the analysed quarter as outcome of the individual validation tool, from respective TSO
Reductions applied as fallback	Number	Number of applied capacity reductions from the analysed quarter as fallback (due to individual validation tool being unavailable)

QX_20XX_Reductions-statistics_04_2

Additionally for the first category from previous worksheet (reductions applied as a result of system assessment performed by the TSOs individual validation tools), in this worksheet an overview is provided on the number of applied reductions from a TSO due to own overloaded network element vs overloaded network element of another TSO; this is only relevant for the TSOs of Austria, Germany and the Netherlands, who perform the individual validation assessment jointly).

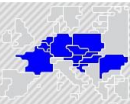
Since a single reduction can be related to overloaded elements of two or more TSOs (see footnote 5), reductions can be counted several times in this and all following statistics linking reductions to TSOs of the overloaded elements. This leads to a systematic overestimation of the figures for the DAVinCy TSOs.

The following columns are included, with the respective column description, expected format.

Column name	Expected format	Description
TSO	Text	TSO that has applied capacity reductions in the analysed quarter
Reductions applied for forecasted overloaded network element in TSO own area	Number	Number of applied capacity reductions from the analysed quarter when reduction was applied for forecasted overloaded network element in TSO own area, from respective TSO (as outcome of the individual validation tool)
Reductions applied for forecasted overloaded network element in other TSO area	Number	Number of applied capacity reductions from the analysed quarter when reduction was applied for forecasted overloaded network element in other TSO area, from respective TSO (as outcome of the individual validation tool)

QX_20XX_Reductions-statistics_04_3

Last worksheet on the causes of applied reductions focuses on the reductions applied by a TSO for a forecasted overloaded network element in a different TSO area (second category from previous file; this is only relevant for the TSOs of Austria, Germany and the Netherlands, who perform the individual



validation assessment jointly). This worksheet provides a breakdown on number of applied reductions for a forecasted overloaded network element from own TSO area or from another TSO area.

The following columns are included, with the respective column description, expected format.

Column name	Expected format	Description
TSO applying reductions	Text	TSO A that has applied capacity reductions
TSO owning the forecasted overloaded network element	Text	TSO B that owns the forecasted overloaded network element for which reduction was applied (can be the same as TSO A)
Occurrences	Number	Number of applied reductions from TSO A due to forecasted overloaded network element from TSO B area

Volume of applied reductions

Note: The “volume of applied reductions” refers to the IVA values. The TSOs of Austria, Germany and the Netherlands apply parts of their IVAs on CNECs that are not pre-solved. These CNECs are used as substitutes in cases when foreign CNECs, on which no IVA may be applied during individual validation, determine the market limits in the relevant direction(s). The IVA on the substitute CNECs is then partly needed to shift the CNEC to the edge of the CZC domain. Only the remainder of the IVA after this shift effectively reduces the size of the domain. Therefore, the “volume of reductions” (i.e. complete IVA) overstates the effective impact on the domain for these TSOs.

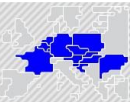
QX_20XX_Reductions-statistics_05_1

In this worksheet, an overview is provided on the total volume of applied reductions that occurred as a result of system security assessment performed by the TSOs individual validation tools vs the total volume of applied reductions due to individual validation tool being unavailable (and fallback options were used by TSOs to apply reductions).

The following columns are included, with the respective column description, expected format.

Column name	Expected format	Description
TSO	text	TSO that has applied capacity reductions in the analysed quarter
Volume of reductions applied as outcome of individual validation tool	Number, in MW	Total volume (sum) of applied capacity reductions from the analysed quarter as outcome of the individual validation tool, from respective TSO
Volume of reductions applied as fallback	Number, in MW	Total volume (sum) of applied capacity reductions from the analysed quarter as fallback (due to individual validation tool being unavailable)

QX_20XX_Reductions-statistics_05_2



Additionally for the first category from previous worksheet (reductions applied as a result of system security assessment performed by the TSOs individual validation tools), in this worksheet an overview is provided on the total volume of applied reductions from a TSO due to own overloaded network element vs overloaded network element of another TSO.

The following columns are included, with the respective column description, expected format.

Column name	Expected format	Description
TSO	Text	TSO that has applied capacity reductions in the analysed quarter
Volume of reductions applied for forecasted overloaded network element in TSO own area	Number, in MW	Total volume (sum) of applied capacity reductions from the analysed quarter when reduction was applied for forecasted overloaded network element in TSO own area, from respective TSO (as outcome of the individual validation tool)
Volume of reductions applied for forecasted overloaded network element in other TSO area	Number, in MW	Total volume (sum) of applied capacity reductions from the analysed quarter when reduction was applied for forecasted overloaded network element in other TSO area, from respective TSO (as outcome of the individual validation tool)

QX_20XX_Reductions-statistics_05_3

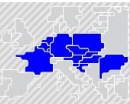
Last worksheet on the volume of applied reductions focuses on the reductions applied by a TSO for a forecasted overloaded network element in a different TSO area (second category from previous file; this is only relevant for the TSOs of Austria, Germany and the Netherlands, who perform the individual validation assessment jointly). This worksheet provides a breakdown on the total volume of applied reductions for a forecasted overloaded network element from own TSO area or from another TSO area.

The following columns are included, with the respective column description, expected format.

Column name	Expected format	Description
TSO applying reductions	Text	TSO A that has applied capacity reductions
TSO owning the forecasted overloaded network element	Text	TSO B that owns the forecasted overloaded network element for which reduction was applied (can be the same as TSO A)
Volume	Number, in MW	Total volume (sum) of applied reductions from TSO A due to forecasted overloaded network element from TSO B area

Estimated loss of economic surplus of applied reductions

In the report, the value for loss of economic surplus of applied reductions on a CNEC in an MTU is approximated by multiplying the shadow price with the volume (in MW) of the applied reduction. It is to



be noted that this approximation provides an upper bound of the actual loss of economic surplus – it assumes inelastic supply/demand prices of infinite amount (i.e. absence of partial or even full price convergence).

Moreover, the following aggregated figures are determined by adding up the CNEC-wise estimates from the raw data. However, a smaller capacity reduction on a given CNEC would reduce the shadow prices of all other CNECs (with non-zero shadow price) in the same MTU. This means that lowering reductions on two CNECs in an MTU would yield less market gain than the sum of the individual CNECs' estimates (which are already upper estimates, see previous paragraph).

In addition, the remark concerning the reductions applied by the TSOs of Austria, Germany and the Netherlands, as mentioned in the previous section "Volume of applied reductions", leads to overstating of the impact on these reductions on the market.

Due to the aforementioned effects the statistics systematically overestimate the actual total market loss of the applied reductions to an unknown extent.

QX_20XX_Reductions-statistics_06_1

In this worksheet, an overview is provided on the total estimated loss of economic surplus of applied reductions that occurred as a result of system security assessment performed by the TSOs individual validation tools vs the estimated loss of economic surplus of applied reductions due to individual validation tool being unavailable (and fallback options were used by TSOs to apply reductions).

The following columns are included, with the respective column description, expected format.

Column name	Expected format	Description
TSO	Text	TSO that has applied capacity reductions in the analysed quarter
Estimated market loss of reductions applied as outcome of individual validation tool	Number, in k€	Estimated market loss of applied capacity reductions from the analysed quarter as outcome of the individual validation tool, from respective TSO
Estimated market loss of reductions applied as fallback	Number, in k€	Estimated market loss of applied capacity reductions from the analysed quarter as fallback (due to individual validation tool being unavailable)

QX_20XX_Reductions-statistics_06_2

Additionally for the first category from previous worksheet (reductions applied as a result of system security assessment performed by the TSOs individual validation tools), in this worksheet an overview is provided on the estimated market loss of applied reductions from a TSO due to own overloaded network element vs overloaded network element of another TSO.

The following columns are included, with the respective column description, expected format.

Column name	Expected format	Description
TSO	Text	TSO that has applied capacity reductions in the analysed quarter



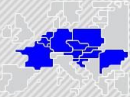
Estimated market loss of reductions applied for forecasted overloaded network element in TSO own area	Number, in k€	Estimated market loss of applied capacity reductions from the analysed quarter when reduction was applied for forecasted overloaded network element in TSO own area, from respective TSO (as outcome of the individual validation tool)
Estimated market loss of reductions applied for forecasted overloaded network element in other TSO area	Number, in k€	Estimated market loss of applied capacity reductions from the analysed quarter when reduction was applied for forecasted overloaded network element in other TSO area, from respective TSO (as outcome of the individual validation tool)

QX_20XX_Reductions-statistics_06_3

Last worksheet on the estimated market loss of applied reductions focuses on the reductions applied by a TSO for a forecasted overloaded network element in a different TSO area (second category from previous file; this is only relevant for the TSOs of Austria, Germany and the Netherlands, who perform the individual validation assessment jointly). This worksheet provides a breakdown on the estimated market loss of applied reductions for a forecasted overloaded network element from own TSO area or from another TSO area.

The following columns are included, with the respective column description, expected format.

Column name	Expected format	Description
TSO applying reductions	Text	TSO A that has applied capacity reductions
TSO owning the forecasted overloaded network element	Text	TSO B that owns the forecasted overloaded network element for which reduction was applied (can be the same as TSO A)
Estimated market loss	Number, in k€	Estimated market loss of applied reductions from TSO A due to forecasted overloaded network element from TSO B area



3. FLOWS RESULTING FROM NET POSITIONS RESULTING FROM SDAC

3.1 Reporting obligations from DA CCM

As per Article 25(2)(g) of the Core DA CCM:

“The CCC shall include in its quarterly report as defined in Article 27(5) the flows resulting from net positions resulting from the SDAC on each CNEC and external constraint of the final flow-based parameters.”

The above reporting obligation is covered in this report by the raw data file **QX_20XX_Resulting-flows-SDAC.csv**

3.2 Reading guide for raw data

The raw data per MTU is available in the file **QX_20XX_Resulting-flows-SDAC.xlsx**.

The following columns are included, with the respective column description, expected format.

Column name	Expected format	Description
TimeInterval	YYYY-MM-DDTHH:mmZ	MTU, in UTC
DeliveryDate	YYYYMMDD	Business Day
Period	Number (1..23/24/25)	Timestamp
NEC_ID	text	Unique identifier of Network Element with Contingency
NE_EIC	text	EIC code of the Network Element
NE_Name	text	Name of Network Element
NE_from	text	UCT node From of the Network Element
NE_to	text	UCT node To of the Network Element
NE_ElementName	text	Element Name of the Network Element
NE_OrderCode	number	Order Code of the Network Element
Contingency_ID	text	Unique identifier of Contingency
Contingency_Name	text	Name of Contingency
TSO	text	TSO owning the Network Element with Contingency
CNEC	TRUE/FALSE	Indication of type of Network Element with Contingency <i>TRUE: Network Element with Contingency passed the 5% PTDF rule and will be part of the pre-solved dataset</i> <i>FALSE: Network Element with Contingency was filtered out by the 5% PTDF rule</i>



Resulting_Flow_SDAC	Number, in MW	Flow after consideration of SDAC Net Positions
F_totalLTN	Number, in MW	Flow after consideration of LTN $F_{total_LTN} = F_{0,core} + F_{LTN}$
Ftotal(SDAC+LTN)	Number, in MW	Flow resulting from Net Positions resulting from SDAC Computed with following formula: $Resulting_Flow_SDAC + F_{totalLTN}$
Presolved	TRUE/FALSE	If the value is <i>TRUE</i> then the corresponding Network Element with Contingency constraints the flow-based domain, <i>FALSE</i> means a redundant Network Element with Contingency not constraining the flow-based domain
PTDF_XX	Number	One column per hub with the Power Transfer Distribution Factor value
NP_XX	Number	One column per hub with the SDAC Net Position value