Italy North Quarterly report for Article 16.3 of EU Regulation 2019/943 – Reading guide

D2, ID and LT Coordinated Capacity Calculation on the Italy North region

Version 1.2

RCC

Information Classification: ☒ *Public* ☐ *Restricted* ☐ *Confidential*

Version	1.2
Date	29th August, 2025

Version history

Version	Date	Document status & Summary of changes
1.0	October 2024 (as of Q3 2024 report)	Initial draft of the reading guide for IN CCR based on the reading guide documentation format used also for the Core CCR. - A similar documentation is also prepared for the SWE region in accordance with the feedback from ACER to both TSCNET and Coreso as responsible RCC in all three capacity calculation regions.
1.1	February 2025 (as of Q4 2024 report)	Addition of the LTCC reading guide and minor update on the ID and D2 section to reflect the changes contained within the accompanying excel report data.
1.2	August 2025 (Update is applicable for all reports – past and future)	The time format for the relevant reported timestamps for DACC, IDCC and LTCC has been highlighted to ensure that readers are informed. For DA/ID - each MTU is reported in CET time, for LTCC each MTU is reported in UTC time.

Table of Contents

List of Acronyms

ANTC	Additional Net Transfer Capacity
ANTCfinal	Additional Net Transfer Capacity required to be 70%minMargin compliant
ANTCfeasible	Feasible Additional Net Transfer Capacity to be adjusted
BD	Business Day
CACM	Capacity Allocation and Congestion Management
CC	Capacity Calculation
CCR	Capacity Calculation Region
CNE	Critical Network Element
CNEC	Critical Network Element Contingency
CRA	Curative Remedial Actions
D2	D-2 process
ID	Intraday process
IN	Italy North
MinMargin	Minimum Margin
NTC	Net Transfer Capacity
RA	Remedial Actions
RCC	Regional Coordination Centre
TS	Timestamp
TSO	Transmission System Operator
TTC	Total Transfer Capacity
TTCAdj	Total Transfer Capacity after the adjustment process
Export Corner Calculation	The common capacity calculation when at least one country is expected to be importing capacities from Italy

1. INTRODUCTION

The capacity calculation (CC) process for Italy North (IN) Capacity Calculation Region (CCR) is performed by Coreso and TSCNET appointed by the Central Europe System Operation Region (Central SOR) as Regional Coordination Centre on the 1st of July 2022. The CC task is provided to IN region as described in the latest version of the Day-Ahead Capacity Calculation (D2CC), Intraday Capacity Calculation (IDCC) and Long-Term Capacity Calculation (LTCC) methodologies approved by IN NRAs.

"Methodology for an intraday common capacity calculation in accordance with Article 21 of Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management within Italy North CCR"

And

"Methodology for a common D2 capacity calculation in accordance with Article 21 of Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management within Italy North CCR".

And

"Methodology for long-term cross-zonal capacity calculation for Italy North CCR in accordance with Article 10 of the Common Regulation (EU) 2016/1719 of 26 September 2016 establishing a Guideline on Forward Capacity Allocation"

Since entering into force on the 1st of July 2022, the Clean Energy Package (CEP) Commission Regulation (EU) 2019/943 mandated that part of the roles and responsibility for Regional Coordination Centres (RCCs) includes performing the reporting task as contained within Article 16.3 of the regulation for all RCC task contained within Article 37.1. The amended Article 37.1 regulation went into force on the 17th of July 2024. As a consequence of the amendment, RCCs are now required to also deliver the Art. 16.3 reporting task to ACER and the NRAs for the LTCC timeframe.

This report is provided in fulfilment of the RCC reporting obligations as covered within:

1. Article 16.3 of Commission Regulation (EU) 2019/943.
2. For the IDCC and D2CC process, the content of this report also covers the reporting requirements according to Article 26.5 of Commission Regulation (EU) 2015/1222 towards the IN NRAs.
3. For the IDCC and D2CC process, the report also contains the results of TSs for each quarter in which the 70% adjustment could not be performed due to a lack of costly RA capacity provided by the TSOs in accordance with Art 13.2. of the Capacity Calculation Methodology for Italy North CCR.

Starting from the 29th of November 2023 the Export Corner capacity calculation for the Intraday process successfully went live for the Italy North Region, in accordance with the Article 21 of Commission Regulation (EU) 2015/1222 of 24 July 2015. The quarterly report for the IDCC process consists of results from the Export Corner computation; such that TSCNET and CORESO could report on instances were TTC reduction occurred either in the

cases with Export Corner triggered or in the import direction towards Italy. The two scenarios are classified as:

1. TTC Import Scenario: – Timestamps where all the capacity calculated are towards Italian import.
2. TTC Transit Scenario: – Timestamps where any, but not all for same timestamp, of the participating TSOs triggered export corner for the possibility of capacity import from Italy. This scenario has the total transfer capacity for the region split into "TTC Import" towards Italy and "TTC Export" from Italy.

The quarterly report for the D2CC process consists of results of full import capacity calculation process towards Italy and since 19th of June 2024 also consist of Export Corner result data for the Day-Ahead process. Export Corner for the D2CC process successfully went live on the 19th of June 2024. The two scenarios classified above for the IDCC process applies for the D2CC process in the region.

The quarterly report for the LTCC process consists only of timestamps impacted by cross-zonal capacity reduction between Italy and its neighbouring regions as a result of individual validation and adjustment step performed on each TSOs side. The report also contains the reason for the capacity reduction as provided by the TSO and the direction of flow the reduction is applied. More detail is contained within the LTCC section of the reading guide.

1.1. Description of the Report - D2CC and IDCC

For the D2 process, 24 TSs are covered, while for the ID process, 12 TSs are covered. The relevant TSs in CET time for analysis in both D2 and ID process are:

- The cases when TSOs reduce the TTC calculated by RCCs during the local validation step – this reduction could be a global or bilateral incidence. Since Export Corner go-live, this reduction could also occur either in the *"TTC Import Scenario"* – with no export corner triggered or the *"TTC Transit Scenario"* when export corner is triggered by one or more TSOs.
- TTC reduction as a result of smoothing ramp implementation within the tool.
- The TSs where 70% reduction occurred during the adjustment and or local validation step of the process.
- Cases when the TTC calculation process failed are not considered – such cases correspond to instances when the "*LimitedBy*" variable within the TTC_Adjustment is defined as: "*ScheduledTTC"*.
- We also do not consider cases where a Redflag raised by the TSOs during the local validation step results in capacity increase and instances where the reduction of less 1MW occurred due to rounding errors during the computation process, resulting to no accompanying Redflag to the reduction.

More details on the information and reporting data submitted by CORESO and TSCNET to ACER and Italy North NRAs in fulfilment of the reporting obligation of both RCCs for the D2CC and IDCC process can be seen on the excel file accompanying the report file package: **XXXXQX_Summary_Art16.3_D-2_ID_Report_Data.xlsx**. The excel file contains extensive data for all corresponding reporting period for both the intraday and the day-ahead

process. Starting from Q42024: the full result data for all timestamps of each quarter is reported in sheet: **"ID Results YYYYQX".**

1.2. Description of the Report - LTCC

For the LTCC process, the report highlights the timestamps in UTC time for each quarter where cross-zonal reductions occurred, reasons for reduction, and associated metadata for Import and Export directions. The report consists of multiple sections, each corresponding to a border of the Italy North (IT North) region - Borders Covered:

- Italy – France (IT-FR)
- Italy – Austria (IT-AT)
- Italy – Switzerland (IT-CH)
- Italy – Slovenia (IT-SI)

Direction of Flow- Each border includes two sections:

- Import: Cross-zonal capacities for power flowing into Italy.
- Export: Cross-zonal capacities for power flowing out of Italy.

More details on the information and reporting data submitted by CORESO and TSCNET to ACER and Italy North NRAs in fulfilment of the reporting obligation of both RCCs for the LTCC process can be seen on the excel file accompanying the report file package: **YYYYQX_Summary_Art16.3_LTCC_Report_Data**.

2. DESCRIPTION OF THE REPORTED REDUCTIONS OF CAPACITY

According to Article 16.3 of the Commission Regulation (EU) 2019/943:

"Regional coordination centres shall carry out coordinated capacity calculation in accordance with paragraphs 4 and 8 of this Article, as provided for in point (a) of Article 37(1) and in Article 42(1).

Regional coordination centres shall calculate cross-zonal capacities respecting operational security limits using data from transmission system operators including data on the technical availability of remedial actions, not including load shedding. Where regional coordination centres conclude that those available remedial actions in the capacity calculation region or between capacity calculation regions are not sufficient to reach the linear trajectory pursuant to Article 15(2) or the minimum capacities provided for in paragraph 8 of this Article while respecting operational security limits, they may, as a measure of last resort, set out coordinated actions reducing the cross-zonal capacities accordingly. Transmission system operators may deviate from coordinated actions in respect of coordinated capacity calculation and coordinated security analysis only in accordance with Article 42(2).

By 3 months after the entry into operation of the regional coordination centres pursuant to Article 35(2) of this Regulation and every three months thereafter, the regional coordination

centres shall submit a report to the relevant regulatory authorities and to ACER on any reduction of capacity or deviation from coordinated actions pursuant to the second subparagraph and shall assess the incidences and make recommendations, if necessary, on how to avoid such deviations in the future."

Based on our interpretation of the regulation, this report is required to contain three key components:

1. Reporting cases of reduction of capacity or deviation from coordinated actions per timestamps (TS) for the region.
2. Assessing the incidences related to (1) – data analysis of how many TS were affected on a quarterly basis.
3. Making recommendations, if necessary, on how to avoid such deviations in the future.

The

2.1. Reduction of capacity after 70% adjustment

The Italy North (IN) region performs a coordinated Total Transmitted Capacity (TTC) Adjustment process. The adjustment is done by calculating the margin required on the limiting Critical Network Elements (CNEs) to fulfil the 70% minMargin requirement and adjusting the capacity accordingly by the use of costly remedial actions made available by the TSOs. In case the capacity available for adjustment is lower than the required amount to be adjusted, it is considered that the capacity has been reduced since it cannot fulfil the 70% margin required. For the IDCC process, in a given instance that the 70% MinMargin requirement was already fulfilled in the D2CC process for the corresponding IDCC business day and timestamps, the IDCC process takes this into account.

It has to be taken into account that the adjustment cannot always be performed since for some TS there is no grid information due to any possible issue on the TTC Calculation process (previous step to TTC Adjustment). Therefore, adjustment process could be performed only on these calculated TSs which are classified as:

- No adjustment: timestamps in which no adjustment was performed either because there was no input data to perform the TTC calculation process or due to failure of TTC calculation process.
- 70% minMargin Compliant: timestamps in which the adjustment could be performed but there was no need to perform it because the calculated capacity is already compliant with the 70% minMargin.
- Adjustment: timestamps in which some adjustment was required and there was enough capacity to perform the adjustment.
- Adjustment and reduction: timestamps in which some adjustment was required and there was not enough capacity to perform the adjustment to the 70% minMargin, thus for these timestamps.

2.2. Reduction of cross-zonal capacity after TSOs validation process

The TSOs of IN region can apply a local validation of the adjusted TTC results, to avoid violation of the security limits. The validated TTC results are then used to compute the final bilateral NTC values. The reduction can be a global or a bilateral incidence. A global validation by a TSO result in a reduction of the total TTC calculated for the Northern Italian borders. A bilateral validation results in a reduction that concerns only the border of the country that is reducing the capacity. The TSO(s) that apply the reduction provide a reason that justifies it. Moreover, this reduction of capacity can also imply that the 70% minMargin required in any given TS is not reached. For each TS, the instances where TTC reduction occurred both in the Import and the transit scenarios, and cases where they did not occur within the relevant reporting period are classified as follows:

- TTC Reduction Import: TSs in which the local validation step by the TSO resulted in a capacity reduction and a red flag on the NTC1 file, with export corner not triggered.
- TTC Reduction Transit: TSs in which the local validation step by the TSO resulted in a capacity reduction and a red flag on the NTC1 file, with export corner triggered.
- No Reduction Import: TSs in which no capacity reduction was requested by the TSO during the validation step and red flag raised with export corner not triggered.
- No Reduction Transit: TSs in which no capacity reduction was requested by the TSO during the validation step and red flag raised, with export corner triggered.
- No red flag raised: TSs in which no capacity reduction was requested by the TSO during the validation step and no red flag raised
- Red flag raised and reduction and 70% minMargin not reached: TSs in which the local validation step by the TSO resulted in a 70% capacity reduction.

3. REDUCTION OF CAPACITY AFTER 70% ADJUSTMENT 70%

3.1. Reading Guide for D2CC & IDCC Process Raw Data – 70% reduction

The raw data per MTU for the timestamps in CET time within each reporting quarter were the incidence of 70% minMargin requirement is not reached after the Adjustment step of the capacity calculation process are reported in the excel file: *XXXXQX_Summary_Art16.3_D-2_ID_Report_Data.xlsx*; within the worksheet: ***ID_70%_Reduction and DA_70%_Reduction***. Only the impacted timestamp per quarter is reported.

The following columns description are relevant for the expected format contained within the worksheet.

Column name	Expected format	Description
Business Day	YYYYMMDD	Corresponding business day for a given month in each quarter
Month	text	From January to December, each month corresponding to the respective months contained within a given quarter.
TS	HHmm	MTU in CET

TTC_Full_Import	Number (in MW)	Total Transfer Capacity computed for a given MTU assuming a scenario of Full Import towards Italy in the region
TTCImport	Number (in MW)	Total Transfer Capacity (TTC) computed for a given MTU with the ExportCorner Transit scenario computation triggered. The TTC_Import represent the total capacity allocated for Italian import for the respective MTU.
TTCExport	Number (in MW)	Total Transfer Capacity (TTC) computed for a given MTU with the ExportCorner Transit scenario computation triggered. The TTC_Import represent the total capacity allocated for Italian export for the respective MTU.
ANTCfinal	Number (in MW)	The final Available Net Transfer Capacity (ANTC) is the maximum of the ANTC computed for each limiting CNEC per MTU. $ANTC_{Final} = \max_{Each\ limiting\ CNEC}(ANTC_{CNEC})$ If the minMargin capacity was already offered in the D-1, the ANTCfinal will be equal to zero.
ANTCfeasible	Number (in MW)	The feasible Available Net Transfer Capacity (ANTC) gives the feasible additional NTC from each TSOs within the CCR in order to reach the required final NTC to ensure that the limiting CNEC's ANTC is fulfilled and also that the minMargin requirement is reached.
LimitedBy_Adjustment	text	The "LimitedBy_adjustment" attribute provides the reason text per MTU associated with the major reason the final secured computed capacity was limited. Essentially, providing the explanation why the volume of allocated capacity for a given MTU could not be increased any further.
70% reduction	Number (in MW)	The values captured within this column shows the quantity of capacity that was not reached towards the 70% minMargin requirement due to not enough feasible NTCs (costly remedial actions) from the TSOs.
% reduction	Number (in percentages)	This column provides the percentage value of how much of the minMargin capacity was not reached. In the case that the minMargin was reached after the adjustment process, the LimitedBy reason will indicate that the capacity was reached.
Category	Text and numbers (MW)	This column provides the current category we use to report the level of the quantity of minMargin not reached in MW

3.2. Assessment of Incidences – 70% Reduction

Within the ***ID_70%_Reduction*** and ***DA_70%_Reduction*** worksheet, we have provided visualization charts to help the reader to visualize some of the key information and assessment on the 70% reduction reported data for each quarter.

- Here, we assessed the capacity required for adjustment on the TSs that the 70% reduction occurred due to not enough redispatch capacity potential (costly remedial actions) to fulfil the required 70% minMargin after the adjustment process.
- The distribution of required capacity to be adjusted in the relevant cases to meet the 70% minMargin CEP requirement is provided in the worksheet. The figures also show the average of feasible capacity from the adjustment on those TSs after the application of available costly remedial action during the adjustment step of the computation process.

4. REDUCTION OF CROSS-ZONAL CAPACITY AFTER TSO VALIDATION PROCESS

4.1. Reading Guide for D2CC & IDCC Process Raw Data – Validation reduction

The raw data per MTU for the timestamps in CET time within each reporting quarter were the incidence of capacity reduction occurred because of the individual validation process step performed by the TSOs in the capacity calculation process are reported in the excel file: *XXXXQX_Summary_Art16.3_D-2_ID_Report_Data.xlsx*; within the worksheet: ***DA_Validation_Reduction & ID_Validation_Reduction***. Only the impacted timestamp per quarter is reported.

The following columns description are relevant for the expected format contained within the worksheet.

Column name	**Expected format**	**Description**
Business Day	YYYYMMDD	Corresponding business day for a given month in each quarter
Month	text	From January to December, each month corresponding to the respective months contained within a given quarter.
TS	HHmm	MTU in CET
TTC_Full_Import	Number (in MW)	Total Transfer Capacity computed for a given MTU assuming a scenario of Full Import towards Italy in the region
TTCImport	Number (in MW)	Total Transfer Capacity (TTC) computed for a given MTU with the ExportCorner Transit scenario computation triggered. The TTC_Import represent the total capacity allocated for Italian import for the respective MTU.

TTCExport	Number (in MW)	Total Transfer Capacity (TTC) computed for a given MTU with the ExportCorner Transit scenario computation triggered. The TTC_Import represent the total capacity allocated for Italian export for the respective MTU.
ANTCfinal	Number (in MW)	The final Available Net Transfer Capacity (ANTC) is the maximum of the ANTC computed for each limiting CNEC per MTU. $$ANTC_{Final} = \max_{Each\ limiting\ CNEC}(ANTC_{CNEC})$$ If the minMargin capacity was already offered in the D-1, the ANTCfinal will be equal to zero.
ANTCfeasible	Number (in MW)	The feasible Available Net Transfer Capacity (ANTC) gives the feasible additional NTC from each TSOs within the CCR in order to reach the required final NTC to ensure that the limiting CNEC's ANTC is fulfilled and also that the minMargin requirement is reached.
LimitedBy_Adjustment	text	The "LimitedBy_adjustment" attribute provides the reason text per MTU associated with the major reason the final secured computed capacity was limited. Essentially, providing the explanation why the volume of allocated capacity for a given MTU could not be increased any further.
LimitedBy_NTC1	text	The "LimitedBy_NTC1" attribute provides the reason text per MTU associated with the actual most limiting constraint on the final secured computed capacity delivered to market was limited. Essentially, providing the explanation why the volume of allocated capacity for a given MTU could not be increased any further.
ANTC_NTC1	Number (in MW)	Available Net Transfer Capacity (ANTC) value after NTC Calculation
TTC_Reduction_Import	Number (in MW)	Reduction of TTC in the import direction
TTC_Reduction_Transit	Number (in MW)	Reduction of TTC in the export direction
Reduction_TTC_and_70%	Number (in MW)	Value of how much of the minMargin capacity was not reached as well as the reduction in either import or export direction.
Reason_for_TTC_Reduction (Smoothing Ramp)	text	Reasons for reduction per TSO, including due to Smoothing Ramp.
Reason_for_TTC_Reduction (TSO)	text	

Reason_for_TTC_Reduction (MNII, MIEC, MEEC, NTCBilateral)	Number (in MW)	
Reason_for_TTC_Reduction (Reason)	text	

4.2. Reading Guide – D2CC & IDCC Validation Reduction Flag Processing

The validation process for IDCC and D2CC per quarter is limited by different types of flags providers and constraints defined within the detailed calculation methodology:

- Flags sent by SWG,
- Flags sent by RTE,
- Flags sent by APG,
- Flags sent by ELES,
- Flags sent by Terna,
- Smoothing ramp process: this validation is part of the NTC Calculation methodology. This process can cause a possible reduction of the adjusted capacity since the difference of capacity between the hours of the day should not be higher than 1500MW.

Types of flags are classified depending on if they were global or bilateral:

- Global flags: are red flag send by a TSO that is limiting the total exchange of the region.
- Bilateral flags: are red flag sent by a TSO that is only limiting their border with Italy.

We report all the associated flags for each timestamp and not only the most limiting flag sent by each TSO. This approach provides more details on all the flags that contributed to the reduction of capacity for a given timestamp within the reporting period. Figure in ***ID_Flag_Processing*** and ***DA_Flag_Processing*** presents the share of each type of flag during the reported quarter. The raw data per MTU for the timestamps within each reporting quarter where the Flag processing assessment was performed are reported in the excel file: *XXXXQX_Summary_Art16.3_D-2_ID_Report_Data.xlsx*; within the worksheet: ***ID_Flag_Processing*** and ***DA_Flag_Processing***.

The following columns description are relevant for the expected format contained within the worksheet.

Column name	**Expected format**	**Description**
Country (TSO)	text	Country code of one of the five in the Italy North region namely AT, IT, CH, SI, FR
Description	text	Short description of flag sent by TSO for validation
Long Description	text	Long description of the flag sent by TSO for validation
Type	text	Classification of flags done based on the reason provided by the TSOs

# of TS	Number	Number of TS for each type of flag
CB	text	Name of Critical Branch listed on flag that limited the computed total capacity in the region either bilaterally or globally for the reporting period, resulting capacity reduction after the individual validation process.
CO	text	Name of Critical Outage listed on flag that limited the computed total capacity in the region either bilaterally or globally for the reporting period, resulting capacity reduction after the individual validation process.

4.3. Reading Guide for LTCC Process Data

The raw data per MTU for the timestamps in UTC time within each reporting quarter were the incidence of capacity reduction occurred because of the individual validation process step performed by the TSOs in the LTCC process are reported in the accompanying excel file for the reading guide with name format: **"YYYYQX_Summary_Art16.3_LTCC_Report_Data.xlsx". The Excel file contains five different "sheets" namely {IT, FR, CH, AT, SI}**. The sheets represent the reported data for each quarter for the five Italy North TSOs: Italy (Terna), France (RTE), Switzerland (SwissGrid), Austria (APG) and Slovenia (ELES) respectively. Each sheet contains the same columns and rows formats as captured in the table below. The reduction for each TSO is reported either indicating it's in the import or export direction towards Italy.

The following columns description are relevant for the expected format contained within the worksheet.

Column Name	**Expected Format**	**Description**
Day	YYYYMMDD	The calendar day of the adjustment.
Position	Number (1-24)	Hourly position within the day (1 to 24).
Volume of Reduction (MW)	Number (in MW)	Adjustment in megawatts (MW): positive for increase, negative for reduction.
Exceptional Contingencies or Forced Outages	Text	Indicates whether the adjustment is due to contingencies or outages.
Detailed Reason(s)	Text	Explains the reason for the capacity adjustment.
Out Domain (Import) / In Domain (Export)	Text	Specifies the source (Import) or destination (Export) of capacity changes.
Coordinated/Individual	Text	Indicates if the adjustment was coordinated or individual.

Invoked by	Text	Specifies the entities initiating the adjustment (e.g., <Country1>-<Country2>).

5. CONCLUSION

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 sheets contained within the accompanying excel file. The reading guide provides the reader the framework on how to make sense of the reported data for each quarter. The report provides a structured overview of cross-zonal capacity reduction in the Italy North region, ensuring transparency and compliance with regulatory requirements. It also highlights a possibility to note key trends in capacity reductions and their underlying causes, supporting effective coordination among TSOs.

For each quarter the corresponding Art. 16.3 report submitted to ACER and Italy North NRAs is also published publicly on the JAO Platform - **https://www.jao.eu/in-ccr-quarterly-reporting**.