

Practical note

Monitoring the margin of capacity available for cross-zonal trade

pursuant to Article 16(8) of the Electricity Regulation

Jointly developed by ACER and the National Regulatory Authorities

12 April 2022

The practical note presents the common approach to monitoring the levels of margin available for cross-zonal trade (MACZT). ACER and national regulatory authorities (NRAs) developed this approach jointly.

Guarantying a minimum level of available capacity for cross-zonal trade is a legal obligation

In 2019, The Electricity Regulation¹ of the Clean Energy for All Europeans Package (CEP) set new measures for electricity markets. One aim of the reform was to make sufficient capacity, or margin, available for cross-zonal trade, or MACZT.

The associated measure, so-called ‘minimum 70% target’, applies since 1 January 2020. It requires transmission system operators (TSOs) to offer 70% of MACZT. Member States may adopt transitory measures to reach the target gradually by the end of 2025.

Different approaches to evaluating available cross-zonal capacity for trade lead to different outcomes

ACER published in 2019 a recommendation² detailing a methodology for monitoring TSOs’ MACZT. The methodology aims to ensure a harmonised approach to implementing and monitoring the MACZT. Such recommendation was solicited by the Electricity Cross-Border Committee and is the result of numerous interactions with NRAs and TSOs.

Since 2020, ACER, NRAs and TSOs have monitored the levels of MACZT. It resulted in the publication of various reports, applying different methods and differing in conclusions.

Such differences raised concerns among market participants. During the Market Stakeholder Committee of 1 December 2021³, associations of market participants emphasized the need for coordination to achieve a harmonized monitoring.

In line with stakeholders’ considerations, ACER and NRAs agreed on a common approach to monitoring margin available for cross-zonal trade

ACER and NRAs defined a common approach to monitor the MACZT. The approach is meant to be used in the relevant reports from ACER, NRAs and TSOs. NRAs will communicate the common approach (which also make explicit the few remaining differences) to their TSOs producing a report monitoring MACZT so that they can also follow it. NRAs may complement their monitoring with additional elements of analysis.

¹ Regulation (EU) 2019/943 of the European Parliament and of the Council of 5 June 2019 on the internal market for electricity (recast), available at:

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32019R0943&from=EN>

² ACER Recommendation No 01/2019 of 8 August 2019 on the implementation of the minimum margin available for cross-zonal trade pursuant to Article 16(8) of Regulation (EU) 2019/943, available at:

https://documents.acer.europa.eu/Official_documents/Acts_of_the_Agency/Recommendations/ACER%20Recommendation%2001-2019.pdf

³ The minutes of the Market Stakeholder Committee of 1 December 2021 are available at:

https://eepublicdownloads.azureedge.net/clean-documents/Network%20codes%20documents/MESC/2022%20MESC%20documents/211201_MESC%20Minutes_vFINAL.pdf

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The practical note first lists harmonised principles, charts, and period of publication (the “common approach”) and content for monitoring the MACZT that will be followed by ACER and NRAs when reporting on the MACZT. The note also specifies the differences from the common approach for a few NRAs and aspects. The practical note then describes how NRAs will report about compliance with the minimum 70% target from 2021 onwards. Finally, the practical note lists potential future monitoring improvements.

I. Common approach for the monitoring of MACZT

The common approach to monitoring the MACZT entails:

1. methodological principles, detailed in **Table 1**;
2. a set of charts to be used in the reports, in **Table 2**;
3. a periodicity for publishing MACZT reports, in **Table 3**.

Table 1 further lists the specific NRAs that informed that they will partly use a different approach. Such differences will be highlighted in the relevant reports.

Table 1: Summary of the common methodological principles to monitor the MACZT

#	Topic	Principle	Will be implemented by
1	Timestamps	<p>The 70% or transitory target is in general to be met at all times (see specific situations below). Therefore all market time units should be evaluated.</p> <p><i>Specific situations:</i></p> <ul style="list-style-type: none"> Maintenance on network elements is by default considered by using the hourly network model that reflect the situation. This means the concerned element cannot be CNE nor contingency, but the 70% target on remaining CNECs still apply. This is without prejudice for a TSO to request a derogation for a maintenance. If the 70% target is not met under exceptional and unpredictable circumstances, TSO may justify it demonstrating that meeting the target would have put the security of the network at risk. 	All NRAs except the French NRA
2a	Timeframes	<p>For the time being, the monitoring of the MACZT will continue to assess the capacity available in the day-ahead timeframe.</p> <ul style="list-style-type: none"> Flows induced by long-term nominations should be taken into account when estimating the MACZT, both for flow-based and NTC. Considering long-term allocation (LTA) inclusion under flow-based requires developing a specific methodology to be agreed upon. If LTA inclusion increases RAM it will be by default included. 	All NRAs
2b		<ul style="list-style-type: none"> TSOs should aim at meeting the 70% target for the day-ahead timeframe. Under specific circumstances, intraday capacity can contribute to the target. A methodology detailing when and how to include intraday capacity should be first agreed. 	All NRAs except the German and Danish NRA
3	Third countries	<p>Two different MACZT values should be computed to estimate the impact of third country flows:</p> <ul style="list-style-type: none"> One considering only exchanges between EU Member States, and exchanges between EU countries and third countries when an agreement has been concluded with these countries; The other considering exchanges with all countries, i.e. both EU and non-EU. 	All NRAs except the German and French NRAs
4	Allocation constraints	<p>Two different MACZT values should be computed to assess the impact of allocation constraints on MACZT, i.e. how much an allocation constraint could potentially reduce the MACZT on CNECs:</p> <ul style="list-style-type: none"> including allocation constraints; excluding allocation constraints. <p>All types of allocation constraints should be studied, including the allocation constraints needed for operational security or implemented for technical efficiency.</p>	All NRAs except the Polish NRA
5	Transitory target vs 70% target	Both the progress towards the transitory targets and the 70% final target should be monitored. Compliance should be assessed on the transitory targets.	All NRAs

6	MNCC (flows from outside the region)	In line with the principle of netting, flows from outside the region can either reduce or increase the capacity available on CNECs. Consequently, flows from outside the regions ("MNCC") should be computed based on forecast exchanges. The uncertainty stemming from the prediction of these flows should be part of the reliability margin within the remaining 30%, as prescribed by Regulation. This is irrespective of possible derogations to cope with 'excessive' uncertainty of flows outside the region, e.g. until coordinated capacity calculation is implemented.	All NRAs except the German NRA
7a	CNECs to be monitored: Flow-Based	All CNECs introduced in the capacity calculation should be monitored.	All NRAs except the French NRA
7b	CNECs to be monitored: NTC	For the time being (2021 monitoring), the MACZT target should be assessed only on the limiting CNEC(s), using the final MACZT that is effectively made available by the TSO. Discussions on harmonised data provision for non-limiting CNECs will be carried out for monitoring beyond 2021.	<i>All NRAs</i>
8	Uncoordinated NTC	In the absence of coordinated capacity calculation on a given border, the MACZT should be assessed on the limiting CNEC of each TSO of the border, independently of which TSO is ultimately limiting the capacity calculation.	<i>All NRAs</i>
9	Grid models	As soon as technically feasible for TSOs, the MACZT should be calculated using one grid model per market time unit.	<i>All NRAs</i>
10	Common period for publication	All reports monitoring or assessing compliance for the year N of ACER and NRAs should be published in June or July of the year N+1.	<i>All NRAs</i>

Notes:

- 1: The French NRA looks at all market time unit but considers that the target must be met only on the market time units when there is no price convergence.
- 2b: The German NRA will consider intraday capacities using its own methodology until a common methodology is agreed upon. The Danish NRA considers that there is a 70% requirement for the day-ahead timeframe that can be fulfilled with day-ahead and long-term capacities only.
- 3: The German and French NRAs will not provide a view without third countries flow.
- 4: The Polish NRA does not consider allocation constraints relevant for the monitoring of the MACZT and therefore it will not analyse their impact of on the MACZT.
- 6: The German NRA does not consider netting of flows in MNCC and calculates MNCC using NTCs instead of forecasted schedules.
- 7a: The French NRA looks at all CNECs but considers that the target must be met only on the CNECs of the presolved domain.

Table 2: Main common principles to be followed when producing charts for the reports

#	Principles
1	Both DC and AC bidding-zone borders will be monitored, in separate charts.
2	In line with statement 1, the charts will present the results for all market time units.
3	In line with statement 3, the charts will represent the results both including and excluding third countries flows.*
4	In line with statement 4, the charts will represent both the results including and excluding allocation constraints.*
5	In line with statement 5, the charts will represent both the comparison with the 70% target and, when possible, with the comparison the transitory target (if any).
6	In line with statements 7a and 7b, the charts will take into account that the target shall be met for: <ul style="list-style-type: none"> • All CNECs for flow-based capacity-calculation • Limiting CNECs for NTC capacity-calculation (non-limiting CNECs could be considered in the future subject to further regulatory discussions and possible update of ACER's Recommendation)

*Except countries that follow a different approach, see Table 1.

Table 3: List of minimum charts to be included in ACER's and NRAs' reports⁴

#	Borders	Chart	Essential / Optional	Agreed by
1	DC	Percentage of the time when the minimum 70% target was met on the limiting CNECs.	Essential (main chart)	All NRAs except the French NRA
2	AC NTC and FB	Percentage of the time when the minimum 70% target was reached on all CNECs (for flow-based)/all limiting CNECs (for NTC) CNECs.	Essential (main chart)	All NRAs except the German and French NRAs
3	AC NTC and FB	Average MACZT over the year for the CNECs below 70%.	Essential	All NRAs except the German and French NRAs
4	AC and DC	Equivalent charts (to 1 to 2 as applicable) on transitory targets (when explicit targets exist).	Essential	All NRAs except the German NRA
5	AC FB	Density function of: <ul style="list-style-type: none"> • Minimum hourly MACZT • MACZT on all CNECs 	Optional	All NRAs

Notes:

- 1 to 3: The charts produced by the French NRA represents the MACZT only on hours with no price convergence and, for flow-based, on CNECs of the presolved domain (see notes below Table 1)
- 2: The German NRA will not represent the minimum MACZT per market time unit. Instead, the German NRA calculates the minimum MACZT per CNE and market time unit and represents all these values in a chart.
- 3: The German NRA will not produce this chart.
- 4: The German NRA will not provide a separate chart but will include ranges related to the transitory target in the charts monitoring the 70%.

⁴ For further guidance, see ANNEX – Common principles and examples

II. How NRAs will report on compliance from 2021 onwards

NRAs are responsible for assessing compliance of their TSOs with the 70% target or transitory target. From 2021 on, NRAs plan to report on compliance of their respective TSOs as follows:

Table 4: Approach to assess compliance of the 70% minimum target by the NRAs from 2021 onwards

Approach to report on compliance		Countries
Explicit approval of a TSO's report	Countries with an action plan	Austria, Croatia, Germany, Hungary, Netherlands, Poland, Romania
	Countries without an action plan	Bulgaria, Greece
Publication of a report by the NRA		Belgium, Estonia, France, Italy, Latvia, Lithuania, Portugal
Rely on ACER's report, possibly adding some supplementary analyses, in particular if possible, cases of incompliance are raised		Czechia, Denmark, Finland, Ireland, Slovakia, Slovenia, Spain, Sweden
Not applicable		Norway, Luxembourg
No monitoring		<i>None</i>

III. The common approach to monitoring may be further improved in the future

The common approach to monitoring the MACZT tackles the majority of issues for current monitoring. Some topics may require further technical discussions for improvements in future reports, involving all parties (NRAs, ACER, TSOs). This includes:

- The inclusion of long-term allocation for flow-based;
- The consideration of additional margin made available in intraday: circumstances that justify it, how to include it at CNEC level;
- The reporting on non-limiting CNECs for coordinated NTC capacity calculation regions.

In addition, some aspects may need to be adapted in the future to take into account the evolution of the regulation (e.g., amendment of the CACM guideline).

ANNEX – Common principles and examples on the minimum set of charts

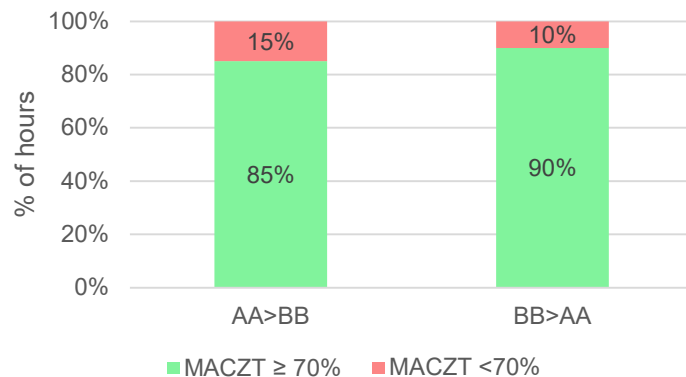
Essential main chart on DC borders

Principles:

- The charts will represent when the MACZT on the limiting CNEC is below and above 70%, for each country. NB: for the majority of borders/hours, the limiting CNEC is the interconnector itself but it can be that an AC CNEC in the TSO's network is limiting the capacity of the DC interconnector;
- The chart will represent each oriented bidding-zone border;
- A separate colour (e.g., a 'lighter green') will be used to represent the market time units when the border was out of service.

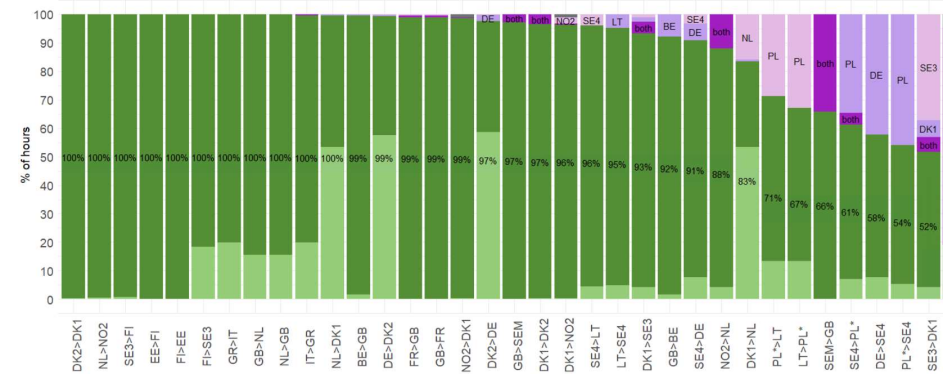
Dummy example:


Percentage of the time when the minimum 70% target was reached on oriented DC borders – 2021 (% of hours)





Example in ACER's report for 2020:


Percentage of the time when the minimum 70% target was reached on oriented DC borders – second semester of 2020 (% of hours)



 Both bidding-zones of the border meet the min. 70% target

 All interconnectors of the border were out of service

 Both bidding-zones are simultaneously below the min. 70% target

 One bidding-zone (indicated in the label) is below the min. 70% target

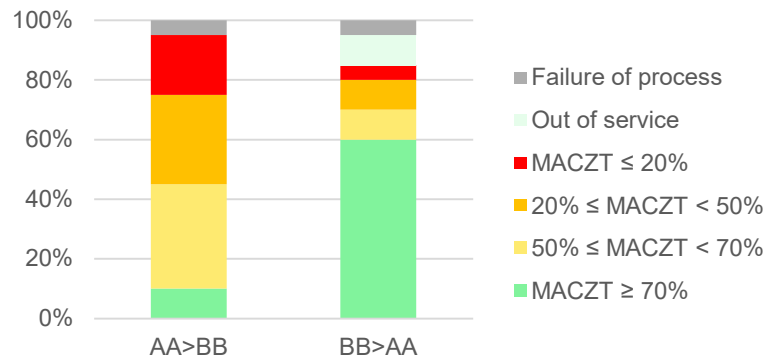
Essential main chart on AC borders

Principles:

- The charts will represent the minimum hourly MACZT over all CNECs (for flow-based) or all limiting CNECs (for NTC);
- The charts will represent separately each country, and each oriented coordination area (for NTC) or coordination area (for flow-based);
- The chart will represent the different ranges of MACZT (>70%, 50-70%, 20-50%, <20%);
- A separate colour (e.g., a 'lighter green') will be used to represent for the market time units when the coordination area was out of service, i.e., capacity was 0 MW;
- A separate colour (e.g., grey) will be used to represent the market time units when no CNEC was provided (e.g., failure of process);
- For coordinated NTC, a separate colour (e.g., white) will be used when the limiting CNEC is in another TSO's control area (in general: country).

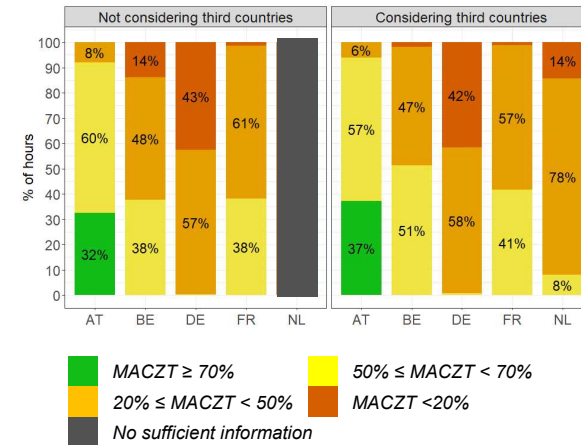
Dummy example:

Percentage of the time when the minimum 70% target was reached, per country and oriented coordination area –2021 (% of hours)

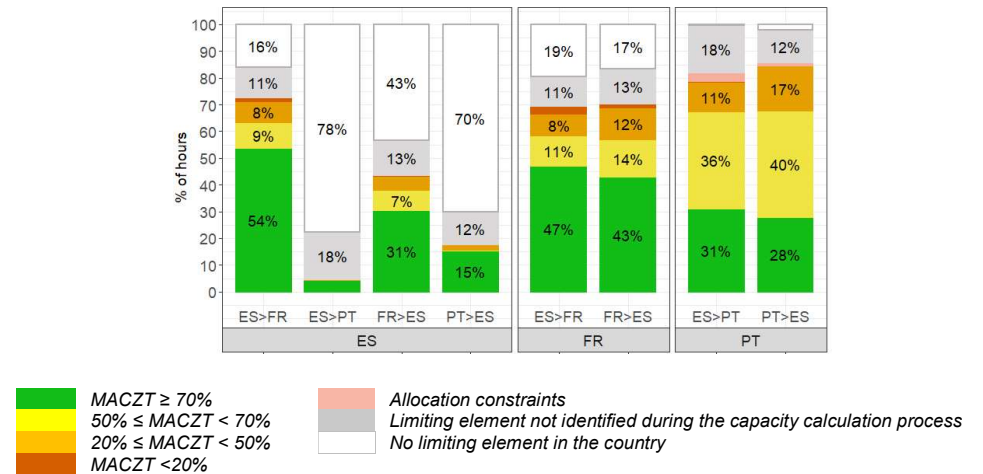


Examples in ACER's report for 2020:

Percentage of the time when the minimum 70% target was reached in the CWE region – second semester of 2020 (% of hours)



Percentage of the time when the minimum 70% target was reached in the SWE region – second semester of 2020 (% of hours)



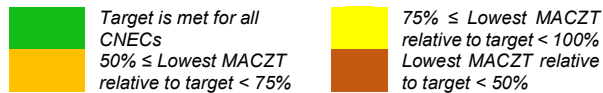
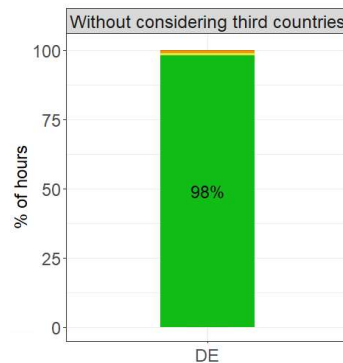
Essential charts on transitory targets

Principles:

- When there are explicit transitory targets, additional charts will be produced. They should replicate the same layout as the general charts above, but be adapted e.g. with ‘new ranges’ in view of the transitory targets;
- For example, when an action plan sets a target per CNEC, the chart should be replicated using the target set by the action plan, instead of the “70%” (see an example below);
- When the derogation does not set a transitory target, ACER and NRAs will not make a chart showing “100% compliance” and will instead inform on the absence of a transitory target.

Example in ACER’s report for 2020:

Percentage of the time when the target set by action plan is met on all CNECs for Germany for the CWE region – second semester of 2020 (% of hours)



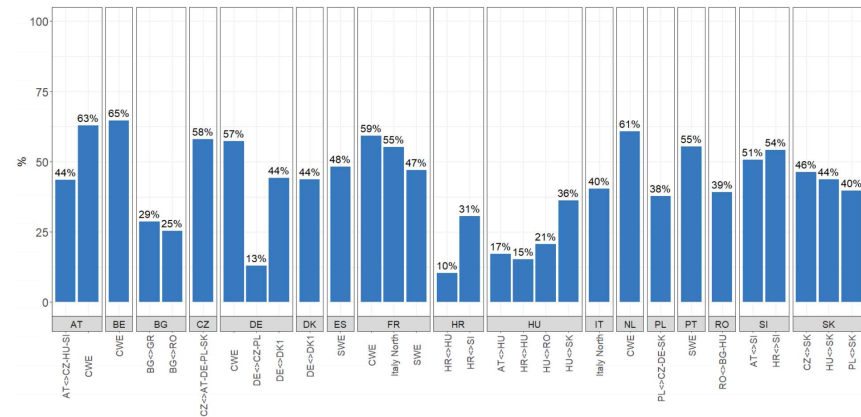
Essential additional chart on AC borders

Principle:

A chart to complement the analysis of the AC borders will present the average over the year of the MACZT on the CNECs that do not reach 70%.

Example in ACER’s report for 2020:

Average margin available on elements where the minimum 70% target is not reached – second semester of 2020

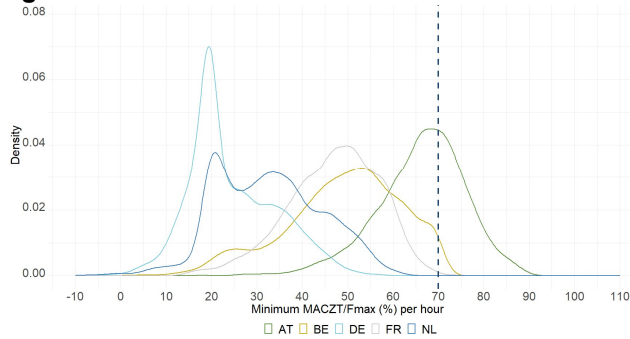


Optional additional charts for flow-based

Density function of minimum hourly MACZT

Example in ACER's report for 2020:

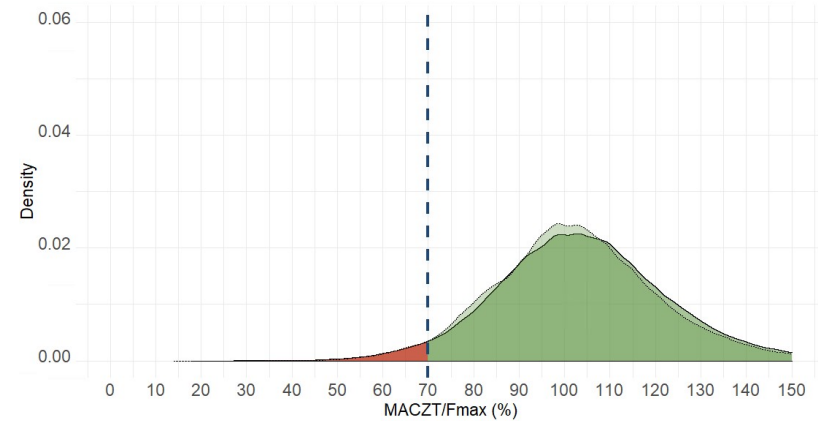
Density function of the lowest hourly relative MACZT per country, in the CWE region – second semester of 2020



Density function of MACZT over all CNECs over the year

Example in ACER's report for 2020:

Density function of the relative MACZT for all CNECs declared by Austria for CWE region – second semester of 2020



- | | | | |
|---|---|---|--|
|  | <i>CNECs with relative MACZT < 70%, not considering exchanges with third countries</i> |  | <i>CNECs with relative MACZT ≥ 70%, not considering exchanges with third countries</i> |
|  | <i>CNECs with relative MACZT < 70%, considering exchanges with third countries</i> |  | <i>CNECs with relative MACZT ≥ 70%, considering exchanges with third countries</i> |