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REFERENCE	Capacity remuneration mechanism

High-level ontwerp capaciteitsmechanisme

Inputverzoek voor technische klankbordsessies

Introduction and document structure

The Dutch Ministry of Economic Affairs (EZK), TenneT and ACM are jointly developing a **market-wide capacity mechanism**. To streamline and accelerate the state aid approval by the European Commission, the [CISAF](#) has been used as a basis for the design elements to prioritize a fast implementation process. We follow another structure for discussing the design (see table 1). Our aim is to align the design of the capacity mechanism as closely as possible with the CISAF framework .

For each design element, a preferred design direction has been identified. We would like to validate these design choices with sector organizations. It is important for EZK, TenneT and ACM to understand whether, under these design choices, your members would be able to participate in the capacity mechanism. For this reason TenneT, EZK and ACM will organize a technical sounding board sessions. To prepare these sessions TenneT, EZK and ACM therefore kindly request your input on the following questions to better understand the impact on the different sectors:

1. Please complete the attached survey, indicating your level of agreement with each proposed design choice on a 5-point scale (strongly disagree – strongly agree).
2. For each design element, what is the expected impact of the proposed design choice on potential participants in your sector?
3. Which three design elements are the most important to discuss during the technical sounding board sessions? Please explain why these elements should be prioritized.
4. For which design elements or technical topics would you like to involve technical experts to share relevant expertise and experience? Based on your input, we may organise dedicated expert sessions to discuss these topics in more detail.
5. Are there any additional aspects we should consider that are not yet covered in this document? For example, best practices or lessons learned from capacity mechanisms in other countries. Please elaborate.

Tabel 1: High-level ontwerp elementen

#	Ontwerp element
1.	Following CISAF yes/no
2.	Payback obligation
3.	Monitoring and penalties
4.	Delivery period and multi-year contracts
5.	Pre-qualification and participation
6.	Avoid overcompensation
7.	CO2 emission limits
8.	Relation to congestion management
9.	De-rating factors
10.	Minimum bid size and aggregation

11.	Participation of foreign capacity
12.	Dimensioning of capacity need
13.	Auction design
14.	Price caps and exceptions
15.	Auction rhythm and amount of auctions
16.	Secondary market
17.	Financing mechanism
18.	Other CISAF elements

This document is structured as follows. For each design element, we first give an explanation, followed by the design choice.

Thank you for your input.

Yours sincerely,

TenneT, EZK & ACM

1. Following CISAF yes/no

The design of the capacity mechanism should balance speed, regulatory certainty and a practical implementation. Therefore, our aim is to follow the CISAF framework ([CISAF Annex I](#)) as closely as possible. However, there are three areas where we intend to deviate. The reasoning behind these deviations is explained under the relevant design elements.

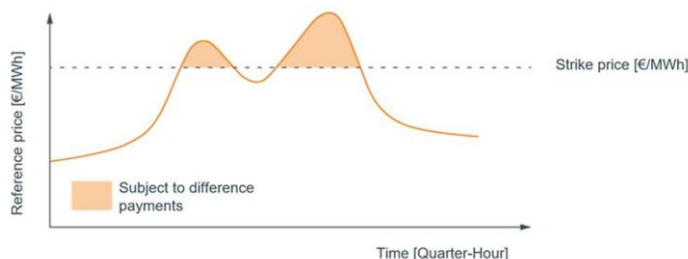
Summary of choice:

Following CISAF mostly but deviate for:

- a.) Using the MVZ instead of the ERAA for the calibration of maximum auction parameterisation, including volume dimensioning, and de-rating factors (design element 9 and 12);
- b.) Pay-as-Bid (with an intermediate price cap) instead of pay-as-cleared (design element 13);
- c.) Ask for derogation on direct cross-border participation (design element 11)

2. Payback obligation

With a payback obligation, generation capacity is required to repay (part of) its capacity payments when the day-ahead price exceeds a pre-defined day-ahead strike price. This design element is also known as a reliability option. The payback obligation is not a penalty, but it prevents generators from receiving both high market revenues and full capacity payments, while maintaining incentives to generate during scarcity events. The repayments also reduce the net cost of the capacity mechanism for consumers during periods of high



electricity prices.

A bidding obligation could be considered for demand response. This ensures that demand response is made available to the market during scarcity events, while avoiding the need to apply the payback obligation.

Batteries are exempt from the payback obligation to ensure a level playing field for storage. A payback obligation could distort charging and discharging incentives and negatively affect the business case for battery storage, since they also pay high prices for charging the battery.

Summary of choice:

- a.) Introduce a payback obligation for generation, potentially combined with a bidding obligation for demand response.
- b.) Cap the payback obligation at the annual capacity payments, with repayments deducted from the monthly capacity payments.
- c.) Exempt battery storage from the payback obligation to ensure a level playing field for storage participation.

3. Monitoring and penalties

To enable testing and monitoring of participating capacity, smart meter data must be available to TenneT. This will be a precondition for participation in the auction. Pre-delivery monitoring of new-built assets will be implemented, with potential sanctions to ensure timely delivery.

The capacity contract contains an availability obligation, which means capacity providers are obliged to offer their contracted capacity to the market. In such a delivery period, the availability obligation is monitored using smart-meter data, available to TenneT (including DSO-connected capacity).

Testing will be carried out primarily during the winter months, when the risk of scarcity is highest, if there is (repeated) unobserved availability in monitoring. Non-availability during tests can result in financial or regulatory penalties.

Summary of choice:

- a.) Require access to participants' smart meter data as a precondition for participation in the capacity mechanism.
- b.) Differentiate between existing and new capacity in the monitoring framework. For new capacity, introduce a sanction mechanism to ensure timely delivery.
- c.) Conduct testing primarily during the winter months.

4. Delivery period and multi-year contracts

The delivery period will be aligned with CISAF and follows a one-year cycle from 1 November to 31 October and is in line with neighboring Belgium. Using a harmonised timing across borders facilitates participation for market participants.

The assessment of multi-year contracts will be carried out by ACM in line with CISAF. In general, the contract duration is linked to the investment cost of the asset, allowing higher upfront investments to be remunerated over a longer period. Following CISAF each €25,000 per de-rated MW results in one additional contract year, with a maximum of 15 years. For example, beneficiaries investing 50 000 EUR / de-rated MW

may be offered contracts of up to 2 years; beneficiaries investing 150 000 EUR / de-rated MW may be offered contracts of up to 6 years.

This approach supports investment recovery while avoiding overcompensation, with an overall cap of 15 years. The assessment of the contract length will be done during the pre-qualification phase.

Summary of choice:

- a.) Following CISAF and BE for delivery period Nov-Oct.
- b.) Follow CISAF regarding eligibility for multi-year contracts with a limit to 15 years.

5. Pre-qualification and participation

Our intention is to have voluntary participation and a pre-qualification process. The mechanism is open to all technologies, beneficiaries and projects that meet transparent, objective and non-discriminatory technical and environmental requirements. Minimum size for participation of assets is 1 MW-derated, with the possibility to aggregate smaller assets. Pre-qualification will be carried out on an asset-based approach, while TenneT will explore whether communication is possible on a portfolio basis. In line with CISAF, enterprises in financial difficulty or under operational aid will be excluded based on a self-declaration. Capacity remuneration will be paid during the delivery period in 12 monthly instalments.

Summary of choice:

- a.) Intention to have voluntary participation and pre-qualification.
- b.) Pre-qualification will be carried out on an asset-based approach. Minimum participation size is 1 MW-derated, aggregation possible
- c.) Open to all technologies, beneficiaries and projects that meet transparent, objective and non-discriminatory technical and environmental requirements.

6. Avoid overcompensation

Participation in the CRM should generally not be combined with other forms of public support for the same investment or capacity.

For certain technologies or schemes where investment is already fully or largely supported (e.g. full SDE++ categories or future CfD-like schemes), participation in the CRM may be excluded to prevent double support. For partial or technology-specific subsidies (e.g. CCS components or alternative transmission rights), participation is still possible. As part of the prequalification process, the asset owner must submit a self-declaration confirming that the asset does not receive other forms of public support for the same investment

or capacity

Where possible, transparency measures will be introduced, including publication of participating capacity and sharing of relevant identifiers (e.g. project/company/EAN level where feasible), enabling cross-checks with other authorities and subsidy schemes. For cross-border participation, TSO-TSO arrangements will ensure information exchange on received subsidies and prevent the same capacity from participating in multiple capacity mechanisms.

Summary of choice:

- a.) exclude participation of units that already receive state support through other mechanisms in line with CISAF.
- b.) Self-declaration as part of the prequalification process, whereby participants declare that they are not receiving other forms of public support for the same investment or capacity.
- c.) Being transparent about which units are awarded in the capacity mechanism and publish this.

7. CO₂ emission limits

The CO₂ emission criteria in CISAF refer to the Electricity Regulation (EU) 2019/943, Article 22(4), which sets the following limits:

- **Generation capacity from 4 July 2019 onwards:** exclusion of units with emissions above 550 g CO₂/kWh
- **Generation capacity installed before 4 July 2019:** exclusion of units with emissions above 550 g CO₂/kWh and exceeding 350 kg CO₂ per kW per year

In addition, participation of low- and zero-CO₂ technologies such as demand response and storage is facilitated by ensuring equal participation.

No additional requirement for CO₂-free readiness is introduced, as this would not be practically enforceable in situations where, for example, very high hydrogen costs would lead to non-use of converted assets or even plant retirement. Such requirements could therefore undermine security of supply.

Summary of choice:

- a.) Meet CO₂ emission criteria stated in the Electricity Regulation.

8. Relation to congestion management

It has been decided not to introduce locational incentives, given the limited implementation time and the priority to ensure a quick rollout. Adding locational design elements would increase complexity and reduce regulatory certainty for the state aid approval. Congestion management is primarily addressed through other instruments outside the capacity mechanism.

Outside the capacity mechanism, capacity will be contracted as much as possible at locations required for managing grid congestion, with access to energy market and ancillary services, where possible. In that way, contracted capacity can also contribute to resource adequacy. Any remaining capacity needed for security of supply can subsequently be contracted by TenneT through the capacity mechanism, where location is no longer a determining factor.

A requirement for participation in the auction is having a (prospect to) grid connection.

Summary of choice:

- a.) No additional locational incentives.
- b.) Grid connection pre-condition for new-builds.
- c.) Organise separate flextenders for specific locational congestion issues and allow access to energy markets and ancillary services thereby contributing to resource adequacy.

9. De-rating factors

De-rating factors reflect the contribution of different technologies to system adequacy by adjusting installed capacity for expected availability during system stress situations. The product of the de-rating factor and installed capacity determines the capacity eligible for participation in the mechanism (in MW). De-rating factors are proposed in the calibration report, to be consistent with MVZ assumptions and results,. The detailed methodology for determining these factors will be developed at a later stage. De-rating factors are included in the capacity contract, and valid for the total duration of the contract.

Individual capacity providers may deviate from the standard technology de-rating factor by up to 15%. In such cases, providers may be subject to penalties linked to their customized de-rating factor.

Summary of choice:

- a.) Follow CISAF and use de-rating factors. Specific methodology to be determined.

10. Minimum bid size and aggregation

A minimum bid size of 1 MW of derated capacity and a minimum delivery duration of one hour will be applied.

Aggregation will be permitted, allowing multiple smaller assets to combine their capacity and participate in the capacity mechanism. Both following CISAF.

Summary of choice:

- a.) Set a minimum bid size of 1 MW of derated capacity, with a minimum delivery duration of one hour.
- b.) Allow aggregation to enable smaller assets to participate.

11. Participation of foreign capacity

The intention is to opt for a derogation for the obligation to allow direct participation of foreign capacity. This is partly necessary for meeting the ambitious timeline. Without any alternative this does imply we need to incorporate direct participation at a later stage. For the alternative we intend to further develop a concept to organize coordinated/shared auctions with neighbours with a capacity mechanism for improving cross-border participation in the EU.

Summary of choice:

- a.) Ask derogation for direct participation.

12. Dimensioning of capacity need

For each delivery year, the capacity need will be determined through a dimensioning process. TenneT will prepare a proposal for the input assumptions, which will be assessed by ACM. The Ministry of Economic Affairs (EZK) will then take the final decision. The same governance process will apply to the resulting capacity requirement.

The Reliability Standard (RS) will be set using ACER's Value of Lost Load (VoLL) and the Cost of New Entry (CONE).

We intend to base the dimensioning in a calibration report where we will utilise the synergy with the scenario and modelling results of the Monitor Voorzieningszekerheid MVZ, as it provides the most up-to-date outlook on expected system adequacy and reflects the latest developments in the Dutch electricity system. Using the MVZ allows for more options to incorporate specific developments and expectations for the Netherlands.

Summary of choice:

- a.) Set RS on ACERs VoLL and CONE.
- b.) Specific dimensioning aligned with MVZ.

13. Auction design

For the auction design, the chosen direction is a **pay-as-bid** auction combined with an **Intermediate Price Cap (IPC)** and a Global Price Cap (GPC). As different asset categories (new-build and existing assets) are subject to different price caps and the length of the contract can differ, the auction does not represent a fully competitive market with a homogeneous product. As a result, the theoretical advantages of a pay-as-cleared auction are less relevant.

A pay-as-bid auction also better reflects the objective of the capacity mechanism: compensating **missing money** while limiting **windfall profits**. Under a pay-as-cleared design, all successful bidders receive the clearing price, which may result in windfall profits for assets with lower revenue requirements. Under a pay-as-bid design, participants are remunerated based on their own bid, allowing bids to better reflect their actual missing money.

A participant that needs to bid above the Intermediate Price Cap (IPC) due to higher missing money will be able to request an exception. As part of this procedure, the participant will need to demonstrate and substantiate its missing money.

Finally, a pay-as-bid auction is also consistent with the approach adopted in Belgium and Germany. Aligning the auction design with neighbours could reduce the barriers for further harmonization of EU CRMs

Summary of choice:

- a.) Pay-as-Bid auction, deviating from CISAF.

14. Price caps and exceptions

The intermediate price cap (IPC) limits the risk of overcompensation for existing assets while ensuring that capacity with typical revenue requirements can participate in the auction. The global price cap provides an overall ceiling on bids and safeguards the cost-effectiveness of the mechanism.

To ensure that assets with higher revenue requirements are not excluded, an exemption process will allow bids above the IPC. Participants requesting an exemption will be required to demonstrate and substantiate their missing money to the ACM. The detailed design of this process, including the assessment methodology and governance, will be developed at a later stage.

Summary of choice:

- a.) Introduction of an intermediate price cap (IPC) for existing assets.
- b.) Introduction of a global price cap applicable for all assets
- c.) Introduction of an exemption process allowing bids above the IPC, subject to demonstrating higher missing money. This process has to be further developed.

15. Auction rhythm and amount of auctions

It is proposed to start with Y-4 and Y-1 auctions from 2028 onwards. In line with CISAF, the Y-4 auction will procure 75–90% of the expected capacity requirement. Holding the main auction four years ahead of delivery allows new-build assets to compete alongside existing assets, taking project lead times into account.

An adjustment auction (Y-1) will be held one year before the delivery year to procure any remaining capacity needs. However, for the first three auction years, 100% of the required capacity will be procured through the Y-1 auction, as no Y-4 auction will have taken place for those delivery years.

For future delivery years, the option to move the main auction to Y-5 or Y-6 will remain open if a four-year lead time proves insufficient for new-build projects. Y-4 is chosen as the starting point due to uncertainty around demand growth and the need to ensure sufficient retention of existing capacity.

Leveringstermijn / veilingjaar	2029-2030	2030-2031	2031-2032	2032-2033	2033-2034	2034-2035	2035-2036	2036-2037	
2028	100% T-1			75-90% T-4					
2029		100% T-1			75-90% T-4				
2030			100% T-1			75-90% T-4			
2031				10-25% T-1			75-90% T-4		
2032					10-25% T-1			75-90% T-4	
....						...			

Summary of choice:

- a.) Start with Y-1 and Y-4 auctions in 2028.
- b.) Y-4 for 75-90% of expected capacity needs in line with CISAF.

- c.) For the first three auction years, 100% of the required capacity will be procured through the Y-1 auction

16. Secondary market

The implementation of a secondary market allows participants to transfer (part of) their contractual capacity obligation to another eligible participant during the delivery period. This provides flexibility in cases where the original contract holder is no longer (temporarily) able to meet its availability obligation. A secondary market helps participants manage financial and operational risks.

Summary of choice:

- a.) Implement a secondary market to managing financial and availability risk by participations during their contractual period (transferable contract).

17. Financing mechanism (out of scope technische klankbordgroep)

A methodology will be developed that allocates costs to consumers based on predefined expected scarcity / most expensive SDAC hours. A NBNL code proposal is currently being developed. This is, why it's outside the scope of the technische klankbordgroep.

This approach aims to predefine tariffs and relevant time periods in advance, based on a risk-based methodology. For smaller connections, this may be integrated into a system of time-of-use tariffs. For larger connections, a new tariff structure may be developed, based on a kWh-based approach. The design should avoid cascading tariff effects between higher and lower grid levels, in either direction.

This follows partly CISAF which requires that at least 90% of capacity mechanism costs are allocated based on consumption during the highest-priced 1–5% of hours, in order to strengthen scarcity pricing signals and incentivise demand response during system stress periods.

Inputs can be tivand and discussions can be held in the formal processes for code proposals.

Summary of choice:

- a.) Allocation of cost on consumers based on predefined expected scarcest/most expensive SDAC hours. NBNL code proposal in the making (out of scope technische klankborgroep)

18. Other CISAF elements

All participation rules and competitive bidding process requirements must be published at least 6 weeks before the deadline for submitting bids.

Summary of choice:

- a.) The process will follow the European Commission state aid procedure, including the development of a market reform plan (out of scope technische klankbordgroep).
- b.) In terms of timing, and in line with CISAF, all rules on participation and requirements for a competitive bidding process will be published at least six weeks before the deadline for submission of bids.