

MCSC Informal Survey

Webinar

11.10.2024 13:00 – 15:00



Agenda

	TOPIC		TIMING
1	Welcome & Introduction	<ul style="list-style-type: none"> • Webinar objectives and survey introduction 	13:00 – 13:15
2	Co-Optimisation	<ul style="list-style-type: none"> • Why co-optimisation? • What is co-optimisation? • How is the design of co-optimised markets developed to establish essential conceptual considerations? • Current R&D timelines 	13:15 – 14:00
3	Informal Survey	<ul style="list-style-type: none"> • Informal survey content and Q&A 	14:00 – 15:00

Webinar Objectives & Survey Introduction

Understanding of
Co-optimisation
framework & status

Explanation of MCSC
Informal survey purpose
and content

Getting valuable insights
for further development of
Co-optimisation concept

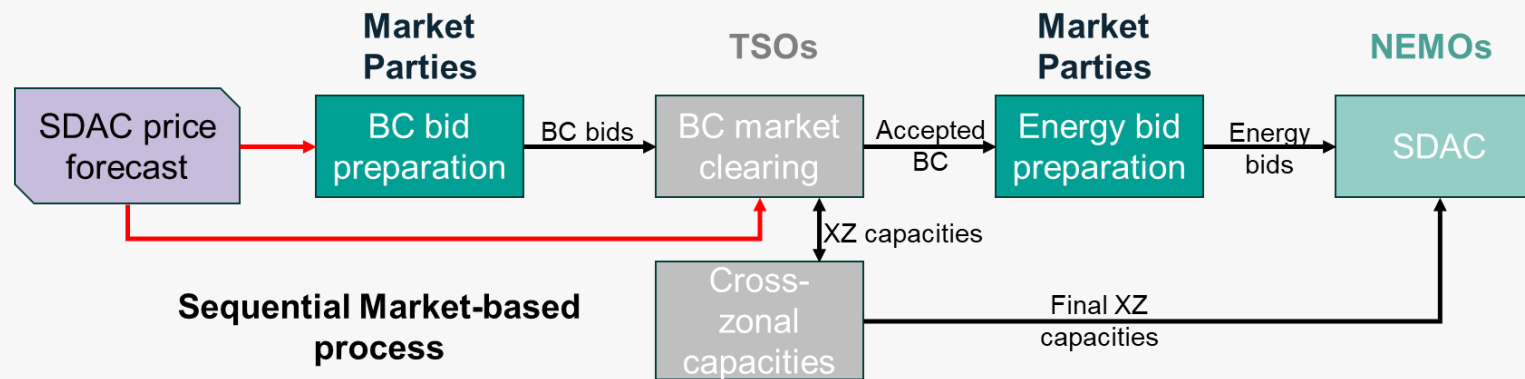
MCSC NEMOs and TSOs active in SDAC, in cooperation with ENTSO-E, are conducting an informal survey among market participants regarding the future use of co-optimised balancing capacity and energy markets.

- **Why:** to collect inputs about cost structures and their impact on bid designs and to avoid developing concepts that do not fit the market needs upon implementation.
- **When:** 07/10 - 06/11/2024.
- **How:** as an informal survey via the ENTSO-E public consultation platform with an introductory webinar hosted on 11.10.2024.
- **Who:** MCCG & EBSG participants - reaching as many MPs & BSPs as possible.

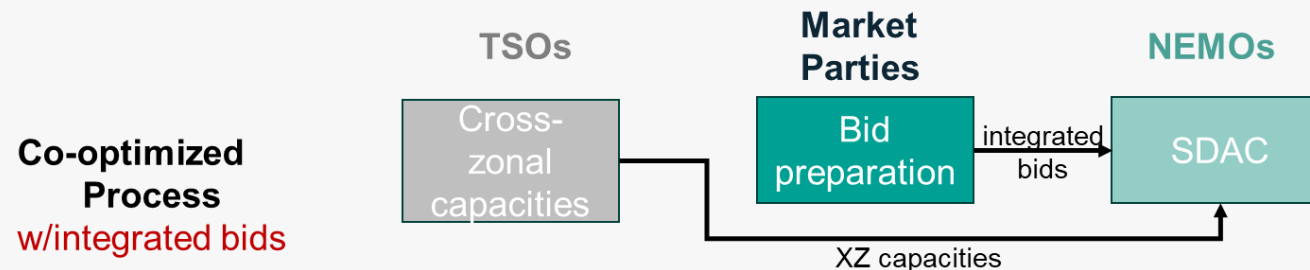
Procurement of Balancing Capacity

- Balancing **Capacity** is procured by TSOs to ensure the ability to activate Balancing **Energy** in real time
- Today, Balancing Capacity is mainly procured on a national basis
- However, trade in general reduces costs, and this is not different for Balancing Capacity

Two models for exchange of balancing capacity are relevant:



Used in the Nordics since December 2022



Model with “explicit bids” is also considered

Why Co-Optimization?

Balancing capacity is a product and the market is the best way to procure it



Electricity Balancing GL

Art. 40 of EBGL lists co-optimised allocation process as one of three **alternatives for two or more TSOs to exchange balancing capacity or sharing of reserves**.

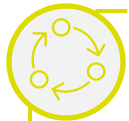
Co-optimisation shall apply for the exchange of cross-zonal balancing capacity or sharing of reserves with a contracting period of not more than one day and where the contracting is done not more than one day in advance of the provision of the balancing capacity.

Co-optimisation Methodology & Algorithm Methodology

The **process shall be integrated, after a successful R&D providing proof of performance, with the SDAC algorithm** and allocate cross-zonal capacities for exchange of balancing capacity or sharing of reserves.

Algorithm methodology amendment took place in 2024 and focused on the required R&D and the introduction of a basic set of requirements for Co-optimisation.

What Is Co-Optimization?



Allocation in one (co-optimised) step



Clearing based on the same bids or based on separate bids



Market liquidity and efficient process

Co-optimization is a process where the cross-zonal capacity for Balancing capacity is **allocated as part of the SDAC market coupling calculation process** – with potential for higher economic efficiency.

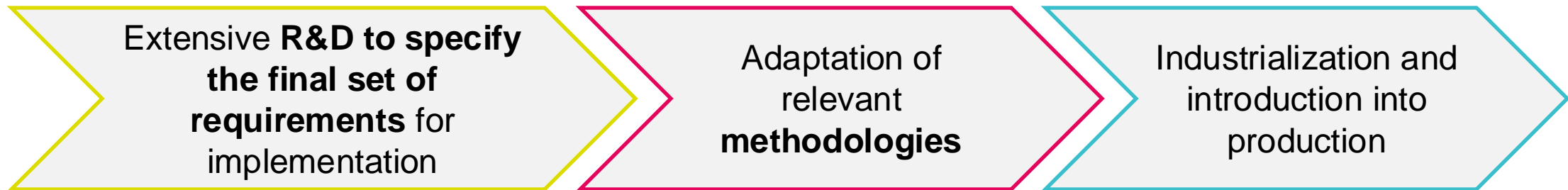
In theory, both day-ahead and balancing capacity markets can be cleared based on the same bids **assuming that balancing capacity prices are mainly defined by the opportunity costs** resulting from the day-ahead market profits. As an alternative, separate bids for day-ahead energy and balancing capacity may be used.


Co-optimisation can overcome the drawbacks of market-based allocation concerning forecast errors and coordination inefficiencies and allows the **liquidity of the day-ahead market to also be directly accessible to balancing capacity markets.**

The objective optimisation function is the maximization of the sum of the economic surplus for energy and balancing capacity per trading day.

Conceptual design

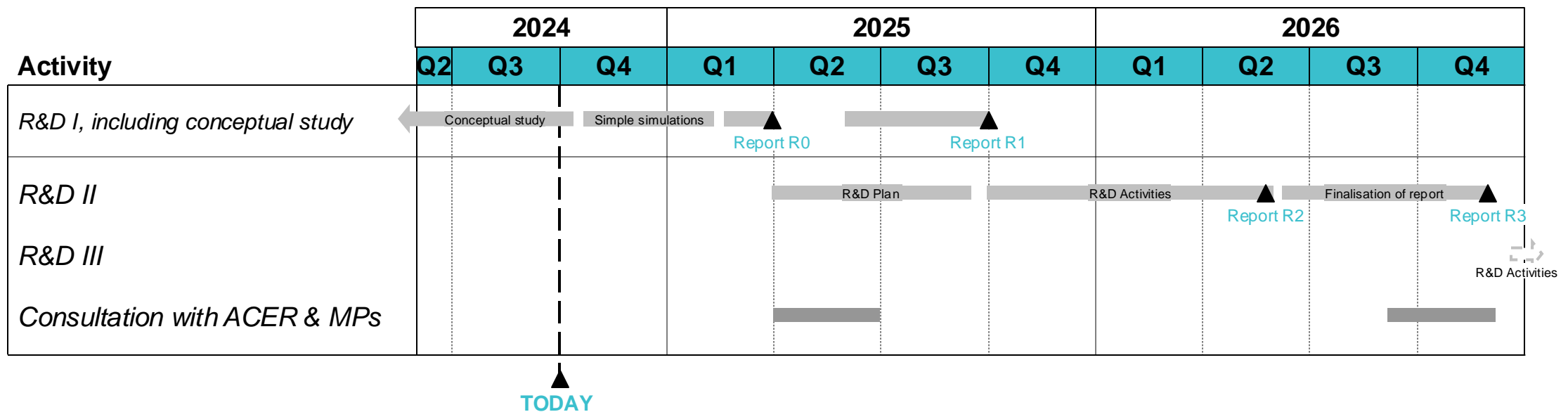
Implementation of Co-Optimization in SDAC Requires:



 MCSC NEMOs and TSOs initiated work on the **conceptual study as the initial step of the R&D work** to research bidding alternatives and basic design considerations. Aim is to analyse as many impacts as possible of different models.

Co-Optimization Timeline

Several Stages of R&D Are Planned Before implementation:



Newly approved Algorithm methodology [\[LINK\]](#) provides the basis for the introduction of co-optimisation and sets out a basic timeline for the R&D for the upcoming two years.

Informal Survey Questions

1. What are the name, contact details (email) and company of the respondent
2. **What assets** does your company own or operate?
 - a. Renewable generation
 - i. Wind
 - ii. Solar
 - iii. Biomass
 - iv. Other
 - b. Conventional thermal generation (Coal, gas, nuclear, etc)
 - c. Run-of-river hydro generation
 - d. Storage
 - i. Batteries
 - ii. Pumped Hydro Storage
 - iii. Hydro Storage
 - e. Industrial demand
 - f. Boilers
 - g. Heat Pump
 - h. Other , please specify
3. **Are you currently participating** in a balancing capacity market? YES/NO
4. Do you currently **see opportunities** to decrease or increase demand/production on short notice, provided this would be profitable? If your answer is no, please elaborate on the reasons.
5. In case yes:
 - Would you use a **specific asset** (e.g., battery, demand response), or a **combination of assets**? If it's a combination, what factors influence the 'shift' between different assets or technologies?
 - What characteristics or market conditions might prevent the participation of a single asset?
 - Is it possible to reserve this capacity the day before operation?

Informal survey questions

6. **What kind of costs** would you incur by reserving, for example, 1 MW for a specific period the next day to provide balancing services to the TSO?
- For instance, reducing demand/consumption could decrease your production, but this may or may not be recoverable later. Heat can be stored, so temporarily reducing the demand of a boiler may not affect output, but could incur other costs. Please note that TSOs and NEMOs are interested in understanding the **cost structures** in the form of fixed costs (independent of the volume of offered balancing capacity) and variable costs (dependent on the volume of offered balancing capacity), **rather than specific costs in EUR** (or other currencies).
7. The simplest option, from the market design perspective, would be to use offers consisting of a volume in MW and a price in Euro/MW for one or several MTUs the next day. What additional attributes would be necessary for a balancing capacity bid in a co-optimised setup to help you optimise the utilisation of your asset(s), aside from MW(h) and Euro/MW(h)
- For example, would you need dependencies between assets, dependencies with off-takers, efficiency rates, minimum/maximum delivery time, or resting time?

Informal survey questions

8. If activated by the TSO to deliver balancing energy in real time following the D-1 procurement of balancing capacity bid for, for example, one MTU, how would this impact your ability to deliver in the same direction (up or down) in the subsequent MTUs?
 - For instance, a battery fully charged at 2 MWh may deliver 1 MW for two hours, but then it needs to be recharged, which could lead to a violation of your balancing capacity procurement obligation. Similar constraints may pertain to other assets.
9. What would be necessary for you to consider **continuing or starting participation in future markets for balancing capacity under a co-optimised design**, assuming attractive profit opportunities exist? Which design choices (e.g., bid attributes) do you find important?
10. Additionally, please **share any ideas for a future bid design** in a co-optimisation setup that have not been covered by the questions above.
11. Would you be willing to provide additional information in a potential future interview?

Informal survey is organised via ENSTO-E Public consultation platform [[LINK](#)]

Thank you for your attention!

