

Market Coupling Consultative Group

Webinar

08th of July 2026

Q&A via [Slido.com](https://www.slido.com)
Enter code: **1184334**



Welcome!

MCCG is led by three Co-convener:

Market Participants Co-convener:

Max SCHNEIDER, EURELECTRIC

TSO Co-convener:

Andreas PAPANAKLIS, IPTO / ADMIE

NEMO Co-convener:

Karol NICIA, NORD POOL

Agenda

	TOPIC	PRESENTER	TIME
1	Welcome & Introduction	Max Schneider, Karol Nicia, Andreas Papanaklis (MCCG)	09:00 – 09:10
-	Welcome, Agenda and Action Points Review		(10 min)
2	SIDC Corrective Measures	Vladimír Satek (SIDC QARM)	09:10 – 09:40
			(30 min)
3	SDAC Fallback Improvements	Iwona Grude (ANDOA OPSCOM),	09:40 – 10:40
-	Main Takeaways From the 09/06 PCG WS		(60 min)
-	Update on survey: Research Around the Fallback Concept for the SDAC	Lara Visone, Gergő Holló (FEG)	
-	Volume Allocation: Overview of Implementation Timeline	Hanna Blomfelt (Core NEMO)	
-	Information on the 03/06 Training Session and Upcoming Training Sessions	Miloš Tomić (SDAC OPSCOM)	
4	30 min IDCZGCT updates	Gergő Holló (30 min IDCZGCT SPoC)	10:40 – 10:50
			(10 min)
	Break		10:50 – 11:00
5	SDAC Storage Orders Public Consultation	Timo Suhonen, Marja Eronen (SDAC MSD)	11:00 – 11:15
			(15 min)
6	Co-optimisation R2 Update & View on 1st R&D Simulation Results	Gerard Doorman (Co-opt SG)	11:15 – 11:40
			(25 min)
7	IT Infrastructure Study	Jan Rönback (ITA TF)	11:40 – 11:55
			(15 min)
8	SDAC-SIDC Roadmap and Key Projects		11:55 – 12:10
-	Overview of Activities	André Estermann (MCSC Co-Chairs)	(15 min)
-	Flow-Based in Intra-Day	Lara Visone, David Myška (SIDC MSD)	
9	Update on consultations	Chiara Vitelli, Christoforos Zoumas (NEMO Tech TF)	12:10 – 12:20
-	SDAC PM		(10 min)
-	AM update for the IDAs-FB incorporation		
10	AOB & Closure	Max Schneider, Karol Nicia, Andreas Papanaklis (MCCG)	12:20 – 12:30
			(10 min)

Scope of MCCG Discussion

- ▶ This overview aims to clarify which topics and discussions fall within the scope of MCSC/MCCG versus CCRs. Only the main/overlying topics currently discussed in the respective projects are listed.
- ▶ As the main guiding principle, only topics directly stemming from the CACM guidelines and considered as MCO matters are discussed in MCCG.
- ▶ NEMOs and TSOs would like to make clear that some requests cannot be channelled through MCCG. It is up to the market participants to raise it in the proper forum.

	MCSC / MCCG	CCRs (Capacity Calculation Regions)
General scope	- Capacity allocation	- Capacity Calculation (CC) (Core Flow Based, Nordic Flow Based)
Intraday Auctions (IDAs)	- Timings - Products & central algorithm functionalities - Central testing	- Capacity Calculation (IDCC in Core CCR)
Advanced Hybrid Coupling	- Testing allocation algorithm - Central testing	- Design & Implementation into DACC - Impact assessment
SDAC & SIDC 15 Min MTU	- Timings - Products & central algorithm functionalities - Central testing	- Regional testing

Q&A and Review of Action Points

Q&A from the previous MCCG meetings are available on [[NEMO Committee](#)] & [[ENTSO-E](#)] websites

Overview of action points from the last MCCG:

Date	Responsible	Description	Deadline / Status
04/03/2026	MCSC NEMOs	Provide clarity on the timeline and updated list of corrective measures under consideration for coordinated application. [LINK]	13/05/2026 - Closed

SIDC Corrective Measures

Vladimír Satek (SIDC QARM)

Q&A via [Slido.com](https://www.slido.com)
Enter code: **1184334**

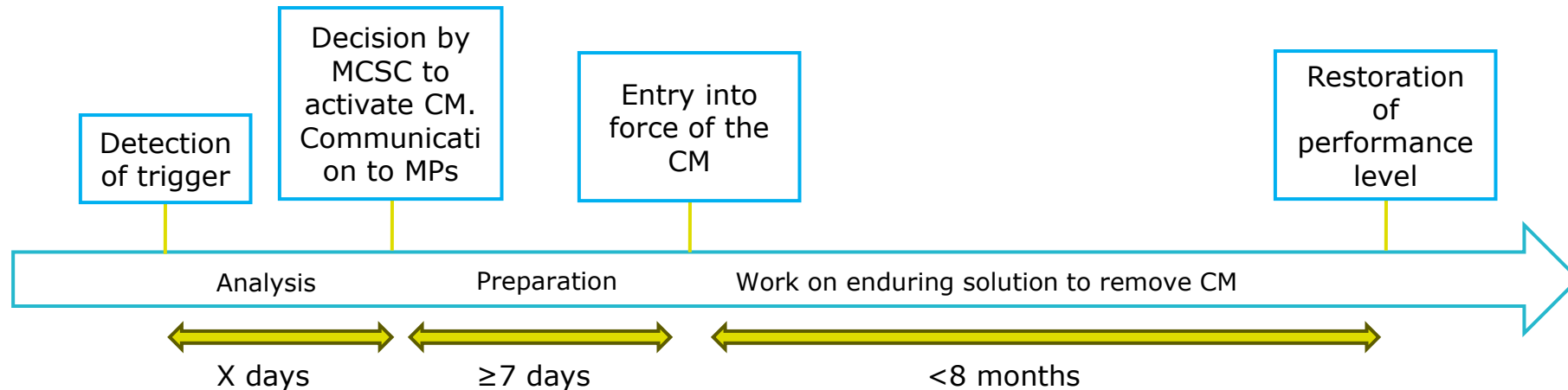


SIDC Corrective Measures

Process

Background

- ▶ Corrective measures are:
 - ▶ **Last resort** intervention, and by definition, **interim**
 - ▶ **Targeted and proportionate**
 - ▶ Potentially a combination of several measures can be selected



Key takeaways: NEMOs and TSOs prepared a clear process. **Market participants will be informed by MCSC and via the relevant NEMO at least one week before the activation of the CM itself.**

SIDC Corrective Measures – Status (1/2)

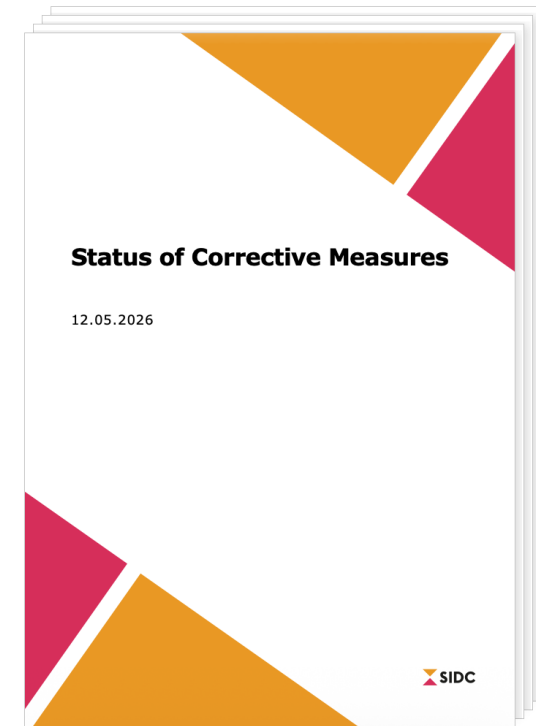
Corrective Measures in XBID

Background

- ▶ NEMOs and TSOs have agreed on several corrective measures, with 2 more under investigation.
 - ▶ All stakeholders have been informed of the status of corrective measures in a paper published on 12/05.
 - ▶ SIDC Overarching document is under finalization (end of summer) – it addresses, among others, activation thresholds, monitoring metrics, etc.

Updates

- ▶ Corrective measures — agreed by MCSC:
 - ▶ Increase in Price Tick Size (testing with MPs ongoing)
 - ▶ Decrease in Order Book Depth (2nd testing at the end of Summer)
 - ▶ Downstream processes (offered capacity evolution for publication in the transparency platform – testing in early Summer) – see the next slide
- ▶ Corrective measures — under investigation:
 - ▶ Order management measures (final clarification of the scope/deliverables with the external provider)



Available on [ENTSO-E](#) and [NEMO Committee](#) websites

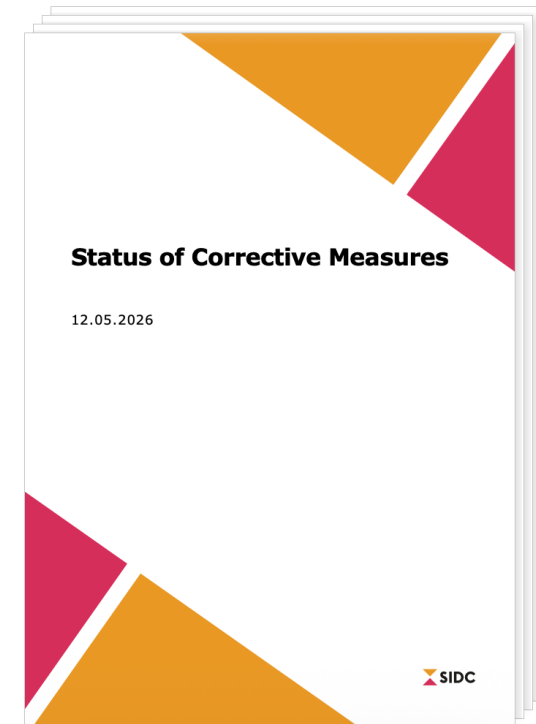
Key takeaways: NEMOs and TSOs have agreed on several corrective measures, with 1 more under investigation. Stakeholders have been informed of the status of corrective measures in a paper published on 12/05. Overarching document is under finalization.

SIDC Corrective Measures – Status (2/2)

Corrective Measures in XBID

Updates

- ▶ Corrective measures — agreed by MCSC:
 - ▶ Downstream processes (offered capacity evolution for publication in the transparency platform – testing in early Summer)
 - ▶ SIDC consist of trading module (SOB) and other modules which are responsible for processing of capacities (CMM) and pre parathion of output files for TSOs, 3rd parties as ENTSO transparency platform (CMI) and data needed for electricity shipping processes (SM). CMI and SM are considered downstream systems.
 - ▶ The downstream corrective measures are primarily focused on ensuring of timely delivery of output files to TSOs. In case there is higher latency than defined, as detailed in SIDC overarching document, then OCC switch off (offered capacity evolution for publication in the transparency platform) is activated. In case this is not sufficient, then the CMs related to the order management (i.e. order to trade ratio or number of orders per timeframe) may be activated.
 - ▶ The downstream process corrective measures are inseparable part of the overarching document..



Available on [ENTSO-E](#) and [NEMO Committee](#) websites

Key takeaways: The downstream systems need to keep up with the trading module. In case this cannot be done, the downstream systems may be activated.

SIDC - XBID Release 5.0 – Operational experience

Corrective Measures in XBID

Background

- ▶ Since introduction of 15-min MTU, in combination with the natural market growth, continuous trading was suffering from latencies in the peak situations.
 - ▶ NEMOs and TSOs have agreed on XBID Release 5.0, which, among others, delivered performance improvements in trading module and downstream systems

Updates

- ▶ XBID Release 5.0 was deployed on June 11th in a very smooth process
- ▶ Initial two weeks of operation indicates roughly **25 percent increase in the number of submitted order transactions** and **10 percent in trades**
 - ▶ Order transactions per day – maximum achieved on 19/06/2026 – **53,105 mil**
 - ▶ Trades per day - maximum achieved on 19/06/2026 – **2,256 mil**
- ▶ Individual NEMOs monitoring shows **Order Transaction latency has significantly dropped** done since deployment of XBID Release 5.0
 - ▶ The central extended monitoring of Key Performance Indicators is expected to be deployed shortly (serving also as a tool for monitoring thresholds of corrective measures).
- ▶ The same **positive trade is observed in CMI** during generation of output files

Key takeaways: XBID Release 5.0 has substantially decreased latencies in both trading module and downstream systems while increasing number of order transaction.

SDAC Fallback Improvements

Karol Nicia (MCCG)

Iwona Grude (ANDOA OPSCOM)

Hanna Blomfelt (Core NEMO)

Lara Visone, Gergő Holló (FEG)

Milos Tomic (SDAC OPSCOM)

Q&A via [Slido.com](https://www.slido.com)
Enter code: **1184334**



SDAC Fallback Improvements

Main Takeaways From the 09/06 PCG Workshop

Background

- ▶ NEMOs, TSOs, ACER, and NRAs are continuing the investigation into operational robustness.
- ▶ In Q1 2026 MCCG, an update on all measures was provided.
- ▶ Through dedicated PCG workshops, NEMOs and TSOs are engaged with ACER to propose measures and are coordinating on their implementation or analysis. The latest WS was on 09/06.

WS1 – Prevention of Partial Decoupling

- ▶ NEMOs will implement the new daily operational process for orderbook early pre-check and validation. Each NEMO will generate a “test” order book, validating LTS functionality earlier in a day, before GCT. The timings and process is described ([see slide 13](#)).
- ▶ It is clarified that the process is already implemented on central level. NEMOs already performing the daily check are: EPEX, NordPool, OMIE, BSP, HUPX, SEMOpX, CROPEX, IBEX and BRM
- ▶ NEMOs will report the status of the process following completion of implementation (expected in 2027).

SDAC Fallback Improvements

Main Takeaways From the 09/06 PCG Workshop

WS2 – Relaxing the 15.30 Nomination Deadline

- ▶ TSOs confirm that under the assumption that shadow auctions are removed and IntraDay Continuous Trading (SID CT)* becomes the fallback process for cross-border capacities allocation, the nomination deadlines can be postponed to 16:00 in case of full decoupling.
- ▶ A survey was conducted with market parties for SIDC CT as fallback for capacity allocation. Additional information on the outcomes from the survey is included as part of WS4 (see slide 14)

WS3 – Further Optimisation of Operational Timeline/Procedures

- ▶ NEMOs and TSOs will continue the analysis of the existing procedures and timings and propose further improvements to be reported in future workshop(s)

*Other alternatives than SID CT as fallback for CZC allocation are currently being discussed. The postponement of nomination deadlines has only been assessed with this scenario up to now. If any other alternative is chosen, TSOs will have to re-perform the assessment.

SDAC Fallback Improvements

Main Takeaways From the 09/06 PCG Workshop

WS4 – SIDC CT as Fallback for Capacity Allocation

- ▶ NEMOs and TSOs have collected inputs from market participants via a dedicated survey. The results provide more information for NEMOs and TSOs about the feasibility of continuous intraday market as fallback mechanism (see slide).
- ▶ In addition, NEMOs and TSOs are investigating alternative options to SIDC CT as fallback (see slide).

WS5 – Preventing Multiple SDAC Prices Within BZs in Case of Partial Decoupling

- ▶ Core NEMOs and TSOs share the latest status of the implementation of Volume Allocation in Core MNA bidding zones (see slide).
 - ▶ BSP, CROPEX, EPEX, EXAA and Nord Pool report that they have already implemented the volume allocation in the operations in all bidding zones they operate (BSP and CROPEX will deploy it in production after Slovenian and Croatian MNA will go-live).
 - ▶ BRM and OPCOM report that are ready for implementation when Romanian MNA is approved (expected soon) while TGE expects the implementation until July.

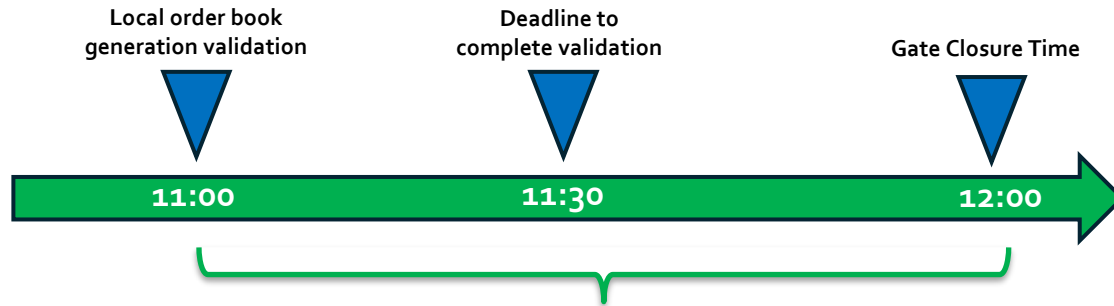
WS6 – Ensuring a Single SDAC Reference Price in Every Bidding Zone in Case of Full Decoupling

- ▶ Further discussion on various options will be proposed by TSOs and NEMOs at the upcoming workshop(s).

SDAC Fallback Improvements – WS1

Prevention of Partial Decoupling

□ High-Level process for validating the order book generation in LTS



- **Local order book generation** validation is performed **without any impact on order submission** by members.
- Validation of **order book generation** between **11:00 and 11:30** enables **early issue detection and resolution – ca. 1 hour before GCT**.
- **NEMOs will monitor the execution** of the order book generation validation.
- **Issues** can be **resolved before GCT**, helping to **avoid MCS disruption** and allowing **more time before the partial decoupling deadline**.
- If issues remain unresolved by GCT, the processes defined in the existing procedure will be followed.
- **Additional local validation** is performed **during system updates and releases** to confirm compatibility (DST, version changes, topology changes, product changes).

□ Measures to increase the resiliency of LTSs by all NEMOs:

3-pillar framework with KPIs

- **Pillar 1 – Connectivity resilience (order collection from members)**
- **Pillar 2 – Trading & infrastructure resilience**
- **Pillar 3 – Operational, cloud & scalability resilience**

- The framework highlights what **capabilities are in place**, setting a **common reference for minimum expectations** and a **shared understanding of resilience**.
- It serves as a **guideline**, while allowing each NEMO **flexibility** in how it implements solutions.
- Framework will be **regularly reviewed and updated** to **address new risks and changing market or technology needs**.
- NEMOs have agreed to set key performance indicators, creating a transparent way to identify areas for improvement and drive efficiency.
- **KPIs** help NEMOs set **clear expectations, monitor progress and accountability**.
- This approach supports **proactive risk management** and enables **decisions grounded in measurable outcomes**.

SDAC Fallback Improvements – WS4

Update on Survey: Research Around the Fallback Concept for the SDAC

Background

- ▶ In March 2026, MCSC FEG and MCCG conducted a survey among the market participants to collect their feedback on the proposed fallback solution, taking into account the potential new timing with the shift of nomination deadline.

Main conclusions from the survey

▶ No one's really happy

- ▶ Despite the fact that there is a consistent share of members/associations who declare to fully support the usage of CT as fallback for both allocation of CZC and price formation (with cleared volumes), there is no response that finds the concept feasible as it's been proposed in the survey: i) with limited time window for trading before the snapshot, ii) without proper reassurance on the postponement of the nominations deadline.

▶ Postponement of nominations deadline

- ▶ All market participants responding to the survey claim that they need more time for nominations.

▶ Too risky for closing individual positions

- ▶ Most of the market participants, also those reacting positively toward the fallback concept, claim that even if they would find a suitable way to convert their OBK into the CT market, their biggest concern is the high risk of not being able to close their position in time for the nominations deadline (which they wish to postpone anyway).

▶ Single and reliable price

- ▶ Market participants like the idea of having a single price and they are quite critical against the current mechanism for fallback. They emphasize though the need for having a proper mechanism to define the ref. price.

▶ More time to SDAC to be given

- ▶ No matter what alternative is eventually selected, market participants would like to be given more and as much time as possible to avoid the fallback event.

SDAC Fallback Improvements – WS4

Investigated Fallback Options

Core MNA Areas

#	Fallback options with SIDC CT for CZC allocation	CZC allocation**	Volume clearing	Unique SDAC reference price formation
#1	CZC goes to SIDC CT +only SIDC CT volume clearing	Cross-border continuous trading	-ID Continuous Trading -No possibility for matching in DA	WAP calculated based on trades executed on the day of fallback for D+1, within a defined time window
#2	CZC goes to SIDC CT +DA volume allocation (shared/individual)	Cross-border continuous trading	-Volume Allocation (shared among NEMOs/locally executed) -SIDC CT opens as usual	TBD. For example from SIDC (index) or historical SDAC prices
#3	CZC goes to SIDC CT +Intra-BZ DA auction*	Cross-border continuous trading	-DA intra-BZ auction with shared order book of NEMOs active on the BZ	DA results from the intra-BZ auction

Core MNA Areas + Potential Other BZs (to be Discussed)

	Fallback options – design alternatives	CZC allocation**	Volume clearing	Unique SDAC reference price formation
#4	Regional Coupling	Coupling	Coupling	Coupling
#5	Delayed SIDC IDA 1	Coupling	Coupling	Coupling

*Option #3 is applicable also to non-MNA areas, as monopoly NEMOs will run local auctions

** Not considering external Core borders

SDAC Fallback Improvements – WS5







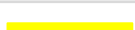

Volume Allocation: Overview of Implementation Timeline

Background

- ▶ In alignment with changes to Energy Regulation Art 7.2(ca), Core Joint parties have started changes related to partial decoupling of NEMOs in MNA areas.
- ▶ In Core JSC, it was determined that a joint go-live would not be possible. Therefore, NEMOs are implementing Volume Allocation in case of partial decoupling individually.

An overview of go-lives for NEMO with Volume Allocation is shared below:

- ▶ The status of the NEMO applies to all Bidding Zones where this NEMO is active.

NEMO	Status	Implementation timeline
BSP		To be implemented with introduction of the Slovenian MNA
BRM		Awaiting the Romanian MNA approval
CROPEX		To be implemented with the introduction of the Croatian MNA
EPEX		Live as of 19/03
EXAA		Live as of 21/04
Nord Pool		Live as of 16/02
OPCOM		Expected in early June and awaiting the Romanian MNA approval
TGE		Awaiting the confirmation from UKNF, local implementation ongoing, expected GL date to be defined

Key takeaways: NEMOs are implementing Volume Allocation in case of partial decoupling individually.

SDAC Fallback Improvements

Training Session With Market Participants – Full Decoupling and Shadow Auctions

Background and Objectives

- ▶ Following the 19/11 training session, which experienced some issues, SDAC OPSCOM has been gathering feedback from participating parties and market participants to identify areas for improvement in future trainings. Based on the feedback received, post-test analysis was conducted and the following improvement areas were identified:
 - ▶ Test Execution (dry runs, communication templates, readiness and availability of parties)
 - ▶ Participation (test scenarios, clear objectives, MP outreach)
 - ▶ Added value for participants (Fallback Manual training, involvement on lessons learned and improvements)
- ▶ To execute on the identified improvement areas, multiple initiatives was started. These include, but are not limited to: a process checklist, implementation of a pre-dry-run step, outreach to MPs for feedback, etc. These initiatives are implemented in all future training sessions.

Updates and Points of Attention – see next slide

SDAC Fallback Improvements

Training Session With Market Participants 03/06 – Full Decoupling (with cancellation of the Preliminary Results) and Shadow Auctions

Updates and Points of Attention

- ▶ On 03/06, NEMOs, TSOs and JAO executed one of the bi-annual full decoupling sessions. The test was supervised by SDAC OPSCOM and aimed at enhancing market participants' readiness in case a decoupling situation occurs.
- ▶ The organisation of the decoupling training sessions was established to give market parties the opportunity to practice rarely occurring fallback scenarios, for instance Shadow Auctions following the Full Decoupling and the Nomination afterwards.
- ▶ The tested scenario was, as announced, Full Decoupling (with cancellation of the Preliminary Results) and Shadow Auctions, were newly introduced operational messages were tested.
- ▶ The interest from Market Parties was reasonable (47 unique companies registered with JAO), however during the Nomination of acquired capacities TSOs have noted a lower participation.
- ▶ First part of the test (until the declaration of Full decoupling) together with sharing of operational messages was performed without issues. However, certain issues appeared in the JAO system during the Shadow Auctions process, which prevented them from publishing the results for some of the borders (mostly the external borders of the Core region).
- ▶ JAO is actively working on the root cause analysis of the issues to prepare the systems for the second test of the year. The next test is expected to be scheduled for the end of Q3 or the beginning of Q4 2026 (exact test scenario still to be confirmed).
- ▶ Comments and proposals from the Market Parties (on test scenarios and overall process) are always more than welcome.

Key takeaways: NEMOs, TSOs and JAO executed one of the bi-annual full decoupling sessions on 03/06. The test was partly performed successfully. However, issues related to shadow auctions was experienced. The issues are being investigated in preparation for the second test of the year.

30 Min IDCZGCT updates

Gergő Holló (30 Minute IDCZGCT SPoC)

Q&A via [Slido.com](https://www.slido.com)
Enter code: **1184334**

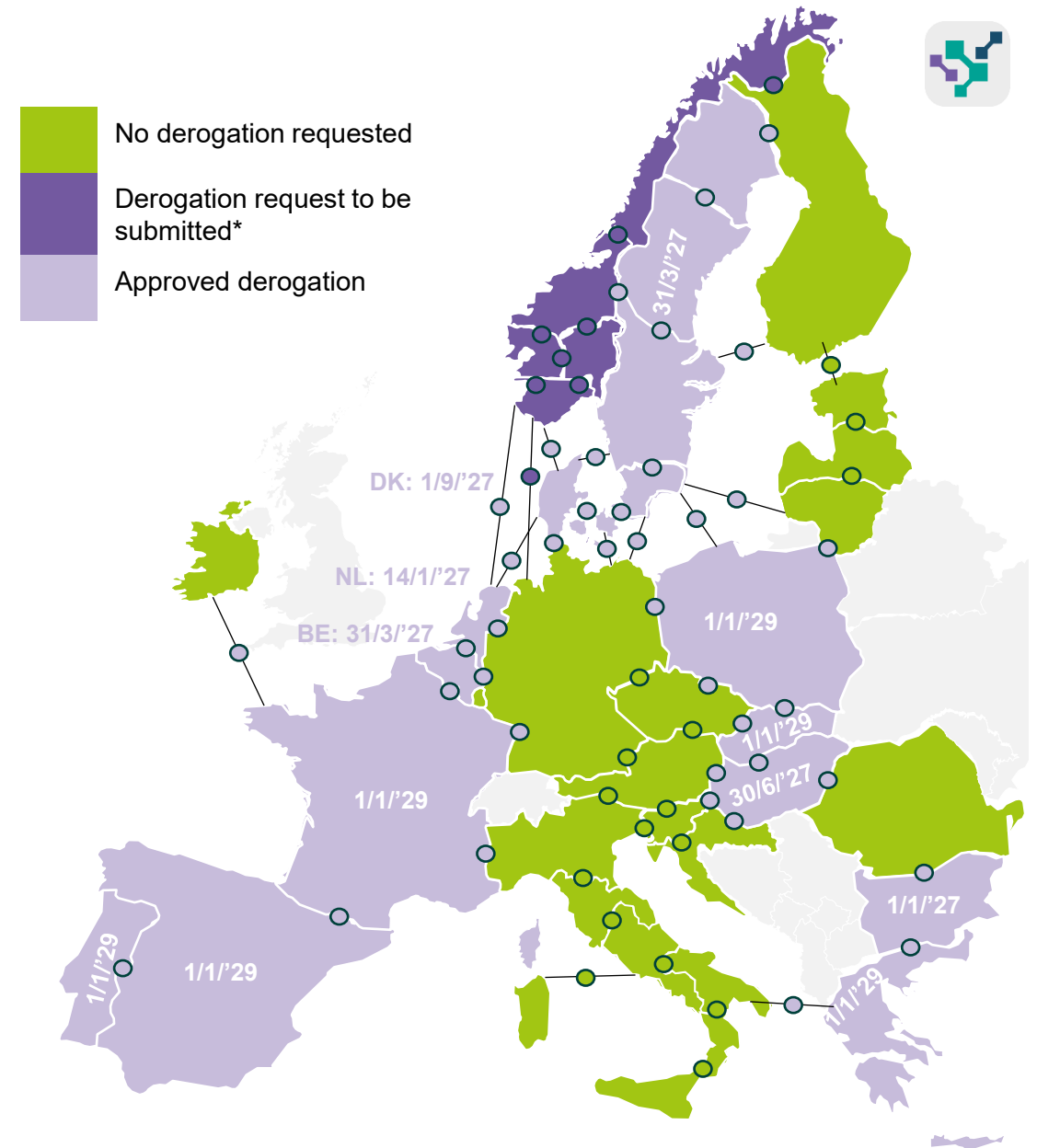


30 Min IDCZGCT

Update on Derogations and Planned Go-Lives

- **IPTO also received the derogation**, which led to a complete picture for EU countries.
- TSOs have updated their go-live plans for the upcoming period:

Borders	Planned go-live
NL-DE	October 2026
BG-RO	Q1 2027
HU-RO	Q1 2027
HU-AT	Q1 2027
HU-SI	Q1 2027
HU-HR	Q1 2027
SE-FI	March 2027
SE-DE	March 2027
SE-LT	March 2027
BE-NL	01/04/2027
BE-DE	01/04/2027
Remaining borders**	Q4 2028



* Derogation request will only be officially submitted by Statnett after transposition of relevant regulation in Norway.

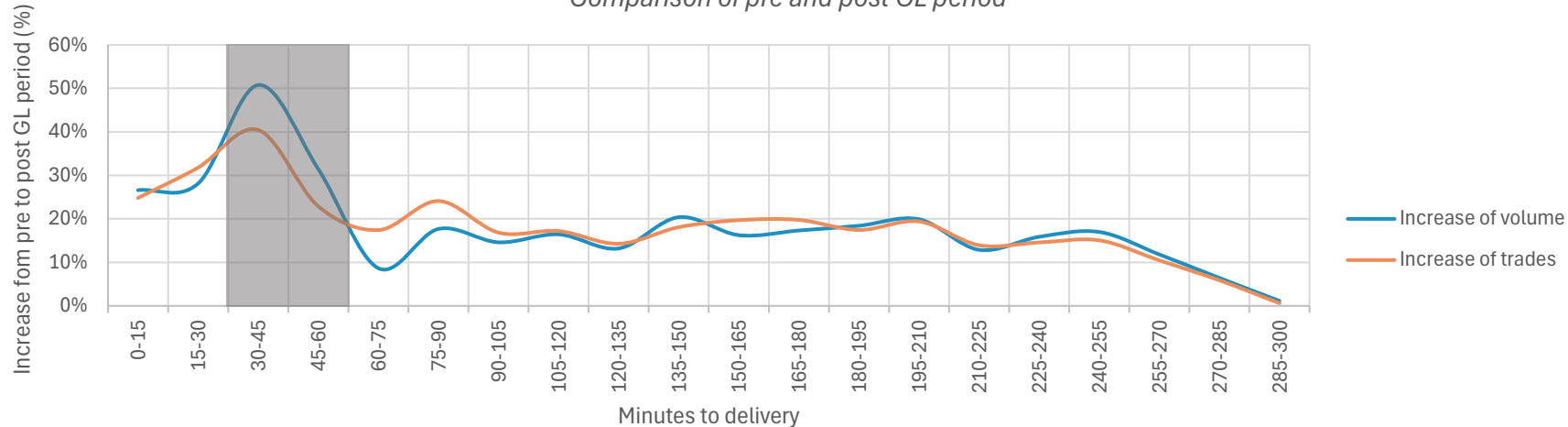
** Energinet has appealed the derogation decision by the Danish Regulator. Planning will be updated later.

30 Min IDCZGCT

Impact Assessment of 14/01 Go-Live

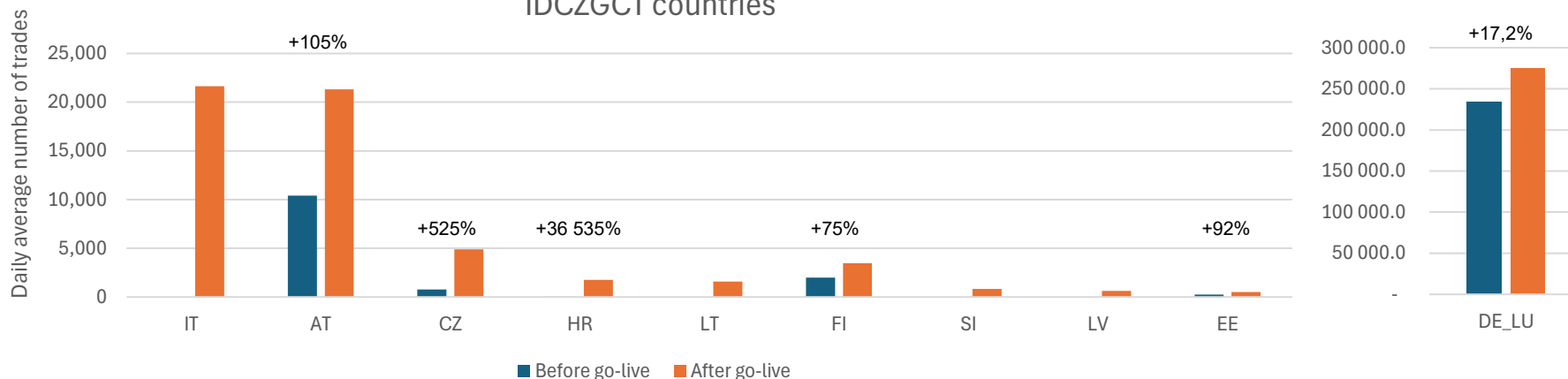


Increase of total traded volume and number of trades per quarter-hour to delivery
Comparison of pre and post GL period



- There is a significant increase in traded volume and number of trades in the 30-45 period.
- There are higher traded volumes in 45-60 period but the number of trades is not significantly higher than in other quarter-hours.

Daily average number of trades in the last hour before delivery for 30min
 IDCZGCT countries



- Increased trading activity in the last hour before delivery is clearly driven by the shortened GCT in IT, LT, SI and LV.
- While it is probably mostly driven by the shortened GCT in AT, CZ, HR, FI, EE and DE.

SDAC Storage Orders Public Consultation

Timo Suhonen, Marja Eronen (SDAC MSD)

Q&A via [Slido.com](https://www.slido.com)
Enter code: **1184334**



SDAC Storage Orders Public Consultation

Summary

Background

- ▶ The R&D phase has been completed as part of the Euphemia Lab work during spring 2026.
- ▶ The configuration options for Storage Order bidding are being assessed by SDAC MSD.
- ▶ Based on simulation results so far, the Storage Orders need to be aggregated with pre-defined criteria to keep the performance impact on an acceptable level.
 - ▶ The public consultation shall present the design and aggregation options and ask market participants preferences.

Update

- ▶ **The public consultation was launched at the beginning of June.** All relevant information is available on [NEMO website](#) and [ENTSO-E website](#), including a link to provide input to the questionnaire.
 - ▶ **Webinar with market participants was held on 16th June**, which attracted strong interest from market participants. Since many questions were raised including the request for extending the deadline of the public consultation, SDAC MSD agreed to extend the public consultation by 2 weeks. The **deadline for submitting input is now set for 14th July 2026.**
 - ▶ The recording of the webinar is available on [NEMO](#) and [ENTSO-E](#) websites.
- ▶ Based on market participants' feedback, the final configuration option shall be approved in SDAC MSD.
 - ▶ Key open points remain the approach to the aggregation of storage orders and the minimum storage order size.
- ▶ Final simulations shall be run during 3Q/2026 implementing market participants' feedback from the public consultation.
- ▶ The update on Storage Order final configuration and performance implications shall be presented in the next MCCG after July (in Autumn).
- ▶ The target go live is in late 2027.

Key takeaway: public consultation started in the beginning of June 2026 and will be extended by 2 weeks to end by 14th July 2026.

Co-Optimisation R2 Update & View on 1st R&D Simulation Results

Gerard Doorman (Co-opt SG)

Q&A via [Slido.com](https://www.slido.com)
Enter code: **1184334**



Co-Optimisation R&D: R&D Scope

First Step & MP Feedback

Focus on initial assessment of bidding products, bid design and pricing design options with the following outcomes:

- Implicit bidding.
- Substitutability.
- BC Products – mFRR & aFRR (up and down).
- Linked and combined bids with specific parameters, current bid designs (e.g. block bids) and suitable alternatives.
- Current pricing (No PAB) to be kept with possible assessment of NUP if required.

Better Understanding

Focus on simulation of the R1 proposed design to understand co-opt implications on algorithm, results (price trends, flows, liquidity) and draw further design and conceptual findings on Co-opt requirements compatibility:

- Simulations
 - Baltic & SDAC simulation runs using synthetic BC bids to run co-optimised SDAC.
 - Simulation of linked and combined bids with flat & decreasing marginal costs.
 - Complex aspects such as sharing of reserves, storage orders and curtailment management.
- Conceptual assessment
 - Qualitative assessment of AM, SOGL and EBGL requirements.
 - Curtailment.

Advanced Design

Based on AM the scope of R3 is:

- Backup and fallback procedures for energy and balancing capacity.
- Bid information exchanges and governance of operation activities between NEMOs and TSOs, including data governance.

Note: towards the end of the R2 phase, exact scope of R3 report and focus of the 3rd R&D phase needs to be discussed and agreed with ACER. To be agreed in a workshop before R2 submission.

NOW

R&D Phase 1 - R1 report
2024 – Nov 2025

R&D Phase 2 – R2 report
Summer 2025 – Q1 2027

R&D Phase 3 – R3 report
2027 – 2028+

NEMOs and TSOs note that any methodology/requirements changes are possible only once the performance and co-optimisation overall feasibility are proven in R&D.

Co-Optimisation R&D: R&D Challenges

Data Preparation

- ▶ Lesson learned from Phase 1 data preparation shows that the **Phase 2 data integration and modification** (from separated BC and DA Energy bids into merged Co-opt bids, thus securing the overall offered energy in the market remains unchanged) is a **significant task and will take more time & effort than originally anticipated**; also the confidentiality of part of the data limits the resourcing possibilities.

Computation

- ▶ The **full and realistic representation of the bidding cost structure** (for example the decreasing marginal cost).
 - ▶ The cost elements impact both computation time and pricing.

Bidding Cost Structure

- ▶ Building the **bid structures that allow the most realistic representation of the market participants costs and constraints**.
 - ▶ A perfect representation will not be possible and bid optimality will be constrained for individual assets. This leads to a loss of optimality in the dispatch of resources, that may or may not be compensated by a better co-ordination across portfolios. Further simulations and reviews with market participants will be needed to gain insight in the possible bidding behaviours.

Key takeaway: Current R&D track revealed several challenges that illustrate the complexity of co-optimisation and will need to be addressed by NEMOs and TSOs in alignment with ACER & NRAs.

Co-optimisation Prototype & Simulations

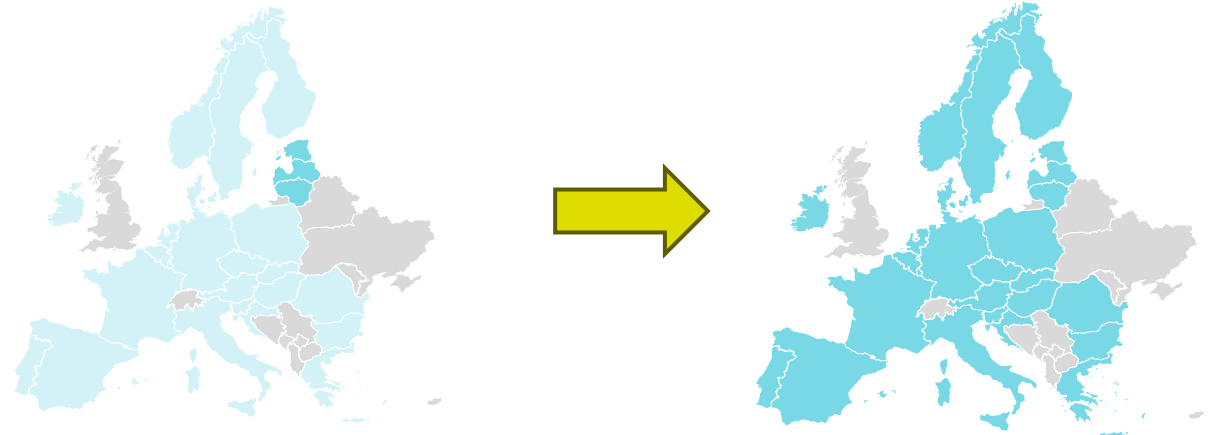
Introduction

In Co-opt SG NEMOs and TSOs initiated prototype building using the current version of Euphemia with the support of N-SIDE at the end of 2025 based on the R1 report conclusions.

- ▶ NEMOs and TSOs deem it essential to have a realistic representation of products and costs.
- ▶ Several challenges have occurred that result in a delayed timeline in the 1st half of 2026.

Simulations are organised in 2 phases:

- ▶ Phase 1: test of prototype and concepts with limited geographical scope
- ▶ Phase 2: full SDAC test with defined KPIs



Timeline impact

- ▶ TSOs and NEMOs communicated the updated timeline on a regular basis via MESC and MCCG.
- ▶ There is currently a half-year shift compared to the original schedule. The final planning depends on the progress & satisfactory outcomes of simulations.

NEMOs and TSOs note that simulations for R2 are based on several assumptions which as a result impact the realism of simulations and representativeness of results. NEMOs and TSOs remind that no final conclusions (on prices/market results or design) can be made based on these outcomes.

Status of Co-Optimisation Prototype & Simulations (Phase 1)

Objectives

Phase 1 aims to:

- ▶ Implement and test a **simplified simulation approach** for co-optimization using a **limited geographical scope** and simplified bidding assumptions.
- ▶ **Validate** the results and evaluate the **interpretability** of market prices for energy and BC, impacts on balancing capacity and cross-zonal capacity allocation, changes in liquidity, infeasibilities, etc.
- ▶ Use a set of meaningful scenarios/stress tests to compare and **analyse multiple simulation outcomes** and evaluate a conceivable magnitude of effects.

Status of Co-Optimisation Prototype & Simulations (Phase 1)

Modelling of Integrated Energy - Balancing Capacity Bids

Modelling approach to create synthetic bids:

- ▶ Only thermal units provide balancing capacity.
- ▶ Cost curve split in startup cost + indivisible minimum load block.
- ▶ One additional divisible block with linked blocks for aFRR/mFRR up- and downward capacity.

Links between MTUs:

- ▶ Block bids not used for MTU-linking of integrated energy – balancing capacity bids.
- ▶ Scheduling Order Groups provide MTU-linking without predetermination of engagement period.

Non-convexities:

- ▶ Non-convexities (like startup costs and minimum load) challenging for optimisation: performance and pricing.
- ▶ Decreasing marginal costs add additional, challenging non-convexities.
- ▶ Initial idea was to model units with 3-5 additional, divisible load blocks with decreasing cost.
- ▶ This appeared difficult to handle.
- ▶ Separate activity planned to address importance/relevance of modelling decreasing marginal costs.

Status of Co-Optimisation Prototype & Simulations (Phase 1)

Available Prototype Features

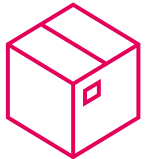


Balance for all 5 products: *energy*, $aFRR^{up}$, $aFRR^{down}$, $mFRR^{up}$, $mFRR^{down}$

Cross-product bid linking

Focus on 'bid types' already in SDAC

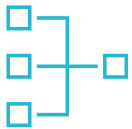
- Parent-child links
- Exclusive groups: classic version
- Exclusive groups: New 'max power output per group'



Cross MTU linking considering start-up costs

Combined bids in Phase 1

Focus on 'bid types' with an already existing energy-only counterpart in SDAC



Cross-product CZC allocation → ATC

- ATC constraints $aFRR^{up}$, $aFRR^{down}$, $mFRR^{up}$, $mFRR^{down}$ ensuring reserve deliverability

Simulation considerations

- Certain **compromises were necessary for Phase 1 with the Baltic scope**,
 - These were caused specifically by the fact that the **sharing of reserves is not yet implemented**, while it is a central feature of the Baltic market.
- Once implemented, we do not see the need for differences between smaller and bigger areas.

Phase 1: Co-Optimisation Prototype & Simulations

Introduction

Phase 1 Results

- ▶ At the beginning of Phase 1 the linking of MTUs was not available in the prototype. To bridge this gap the new scheduling order group was implemented to the prototype by the end of April, while the expected plan for the Phase 1 simulations finalisation was the beginning of May.
- ▶ The results show recurring **unexplained downward FRR curtailment & maximum prices** and the causes are being scrutinised.
 - ▶ There are strong indications that they are caused by a combination of cost structures, constraints and the pricing algorithm, which may need adjustments.

Key Considerations:



Deep dive analysis looking in detail into bid acceptances vs market prices needed to better understand the results while the prototype model correctness is confirmed by the service provider.



The complexities and challenges in the simulations are, in part, inherent to the topic, arising from the interactions between energy and balancing capacity products.



This makes it challenging to understand why allocations across products may be optimal, or how specific pricing rules may impact the final results.

Phase 1: Co-Optimisation Prototype & Simulations

Simulation Results

Simulations

- ▶ The simulation focuses on the Baltic area (isolated) based on historical marked data: SDAC session 08-09-2025 (60 MTU) and synthetic BC bids created starting from a set of real thermal and hydro plant in the region.
- ▶ Since the plants already participate to the SDAC market, the historical energy supply has been adapted to account for the “double counting” of the plant's energy supply.
- ▶ The FRR demand was obtained from the Baltic Transparency Platform.

Results Summary

- ▶ The investigation of the input data has revealed three explanations for the issue:
 - ▶ The limits imposed to the FRR (for each plant that is able to deliver) may be too conservative.
 - ▶ The relative scaling of the FRR bids and their energy parents together with the low demand in energy may make impossible to accept the FRR.
 - ▶ The full FRR demand may be too high due to the absence of reserve sharing in the prototype.

Phase 1: Co-Optimisation Prototype & Simulations

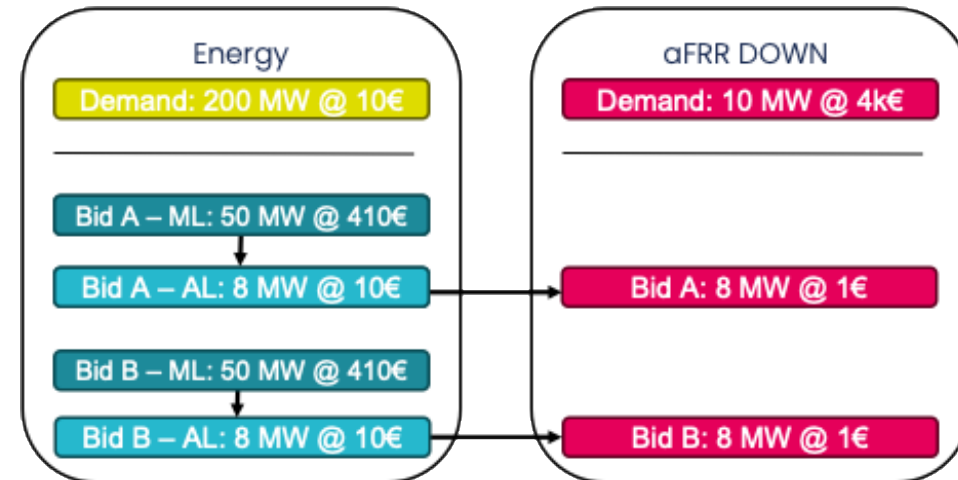
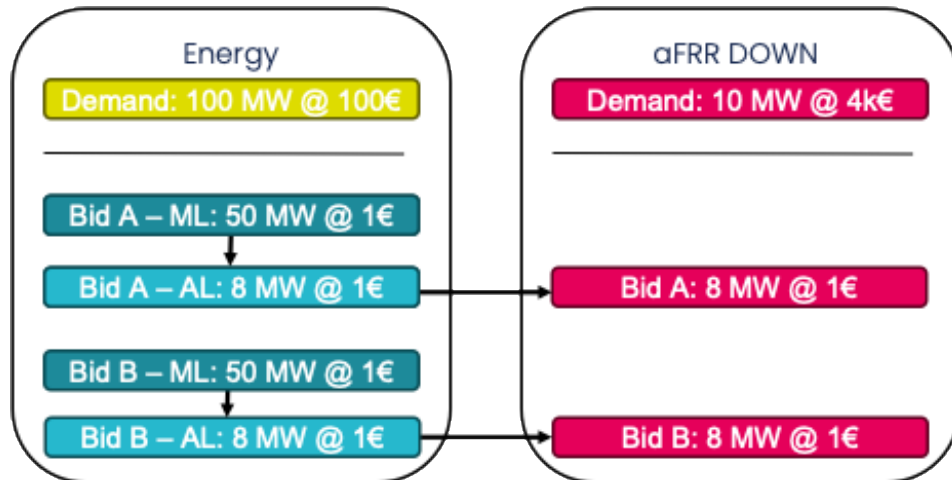
Explanatory Examples

Example 1: Energy Demand Saturation

- ▶ Due to the minimal load bids, to activate 10 MW of aFRR supply we need to activate 110MW of energy. However, there is not sufficient energy demand for this to happen.

Example 2: The Welfare Optimal Allocation is to Accept aFRR Down Curtailment (Too High Min. Load Costs to Avoid it)

- ▶ Since the ML bids are losing 400 €/MW, the aFRR bids must produce 40'000€ of profit to be accepted.
- ▶ This requires the aFRR price to be 4'001 €/MW, which makes curtailing the FRR demand and rejecting the FRR supply welfare-optimal.



Outlook of Co-Optimisation R&D

Preparation for Phase 2 – Scope

Phase 2 Has the following Core Objectives

- ▶ Implement and test full R2-compliant co-optimisation solution for **SDAC topology**
 - ▶ Evaluate the algorithm's **performance** (computation time) and overall compatibility with co-optimization ("fit-for-purpose") using a large-scale simulation perimeter (SDAC) and higher bid complexity (technologies, portfolios).
- ▶ Validate the results and validate the interpretability of market prices for energy and BC, impacts on balancing capacity allocation, changes in liquidity, infeasibilities, etc.
 - ▶ **Effects** of co-optimization on market price levels for energy and balancing capacity.
 - ▶ **Allocation of cross-zonal capacity and actual exchanges** for energy and balancing capacity with and without co-optimization.
 - ▶ The impact of **limited liquidity in the BC market**.
 - ▶ Impact on **"leftover" capacity in the intraday timeframe**.
- ▶ Address and discuss the **transparency** of price formation and **interpretability** of market outcomes.
- ▶ Evaluate the **suitability and flexibility of bid formulation** considering different technological portfolios of market parties.

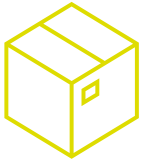


Key takeaway: NEMOs and TSOs deem it important to address outstanding co-optimisation challenges discovered in Phase 1 (with limited scope) before launching the full-scale simulation across the entire SDAC. For NEMOs and TSOs a concluded Phase 1 before moving to Phase 2, provides the necessary basis for larger geographical scope simulation and meeting all listed objectives. In any case, NEMOs and TSOs cannot rule out facing further challenges in Phase 2 and beyond.

Outlook of Co-Optimisation R&D

Preparation for Phase 2 – Functionalities

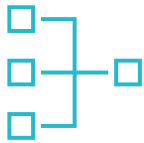
Co-optimisation prototype requires further updates for Phase 2. These cover mainly the following:



Combined bids in Phase 2

Focus on 'bid types' without an already existing energy-only counterpart in SDAC

- ▶▶ Thermal bids = 3-part bids with multiple start-ups/shutdowns, minimum up/down times, ramping
- ▶▶ Storage bids considering managing activation uncertainties impacting state-of-charge



Cross-product CZC allocation allowing for flow-based for both upward and downward reserves in scope



Qualitative analysis of decreasing costs features (to allow better bid representation of costs)

Reserve sharing consideration → is only expected once the first part of the phase 2 simulation is completed.

Key takeaway: NEMOs and TSOs believe that developing prototypes and running simulations in phases allow us to stay focused on critical points, optimise the overall development and secure initial results with controlled and mature changes to the input data and prototypes.

Co-opt R&D: Open Points

Recap

The recent period proofed to Co-opt SG NEMOs and TSOs that the completion of Phase 1 needs to be treated with priority prior to moving forward with Phase 2 and some further topics for R2 (e.g. qualitative assessment of decreasing costs)

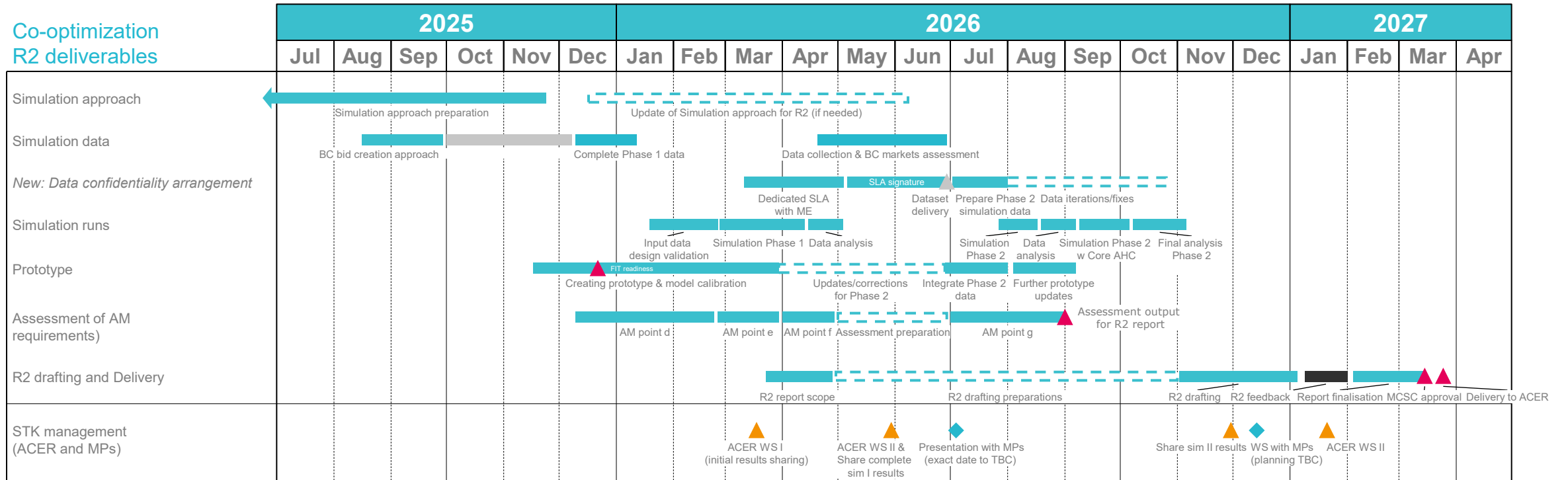
- ▶ Functioning prototype is a basis for further work, meaning that R1 results must be well understood and explained.
- ▶ There are design aspects and the interplay of the products that increase complexity. However, it is central to facilitate good cost representation to obtain true optimality.
- ▶ Discussion needs to progress on key features - decreasing costs and storage orders to allow for accurate cost modelling.
 - ▶ Due to decreasing heat rates, thermal assets may exhibit significant decreasing marginal costs (“increasing returns to scale”) whose proper representation may be important for co-optimization to capture the full benefits from an improved, coordinated allocation. Other asset classes may also benefit from such a bid feature. Decreasing (marginal) costs is a green field and requires qualitative assessment to understand the market and prototype performance impacts.
 - ▶ Batteries and other storage assets currently have limited options for trading energy in SDAC and R&D efforts started several years ago to properly consider them in allocation. The Addition of storage orders for co-optimization is even more challenging due to the need for charging or depletion between balancing energy activations. This will play a key role given the ongoing market evolutions.

Key takeaway: NEMOs and TSOs recognise the delayed Phase 1 finalisation and see the need for a realistic assessment of planning, priorities and expectations.

Outlook of Co-optimisation R&D

Reviewed Planning

- ▶ NEMOs and TSOs updated the timeline based on the initial prototyping delay and further issues with simulations.
- ▶ In parallel with simulations, NEMOs and TSOs are working on the assessment of AM requirements (points d)-g) of AM Article 4(15)) as an input for the R2 report.



Key takeaway: MP involvement is expected via webinars (MCCG or dedicated) towards the end of 2026 – beginning of 2027 to share R2 findings and R3 scope outlook. No active provision of data for simulations is envisaged at this stage, rather feedback to specific observations or new design elements. Information about future sessions will be shared in advance.

IT Infrastructure Study

Jan Rönback (ITA TF)

Q&A via [Slido.com](https://www.slido.com)
Enter code: **1184334**



Background for IT Architecture Assessment

Single Day-Ahead Coupling - increasing complexity and performance challenges

- SDAC market coupling was introduced as hourly markets in 2014 covering North-West Europe and UK.
- Since then successfully,
 - the rest of the EU, TSOs, NEMOs and market participants have joined.
 - granularity has been adopted to 15 minutes.
 - flow-based has been introduced in multiple regions.
 - Multiple NEMOs have been accompanied for.
- Delivered market While the underlying application architecture has been only incrementally updated

Single Intraday Coupling – volatile resources drive the need for performance

- SIDC was launched on the current XBID platform in 2018 for North-West Europe
- Since then with success,
 - the rest of EU has joined in multiple go-live waves.
 - markets and borders have shifted to 15 minute resolution.
 - intraday auctions have been tightly integrated to XBID.
 - Amount of orders and trades has sky-rocketed stemming from smaller time resolution and increasing intermittent resources.

A cross-market assessment

Detailed description of current IT architecture

Assessment of the existing IT architecture

Mapping of High-Level desirable future functionalities

Proposal for potential improvements/amendments to the existing IT architecture

Further Proposal on Outcomes

Detailed description of current IT architecture

- All members of the taskforce are familiar with the current MC IT architecture.
- Creation of visualised functional description of MC IT architecture including integrations to adjacent systems considering regional HLA 's.
- Creation of a list of IT assets included in the MC IT architecture including relevant data such as technology, ownership, year of release.

Assessment of the existing IT architecture

- Concrete list of current and expected pain points categorized (performance, incidents, cybersecurity...).
- Cost assessment for the current MC IT architecture.
- Performance assessment based on functional processes.
- Ownership/beneficiary assessment for assets in the current MC IT Architecture.

Mapping of high-level desirable future functionalities

- Complete list of proposed future capabilities.
- Prioritised list to MCSC.
- A proposal for high-level architecture based on pain points and future needed capabilities which is future-proof for the next ten years.

Proposal for potential improvements/a mendments to the existing IT architecture

- Complete list of potential improvements and assessment to be assessed and prioritized.
- Scenarios for MCSC.
- A roadmap for the future based on MCSC prioritisation.

Approach to the Work

Data-Driven

- Gathering data from different aspects in the initial phase.
- Tech assets, pain points, HLA 's, incidents, costs...

Business Capabilities

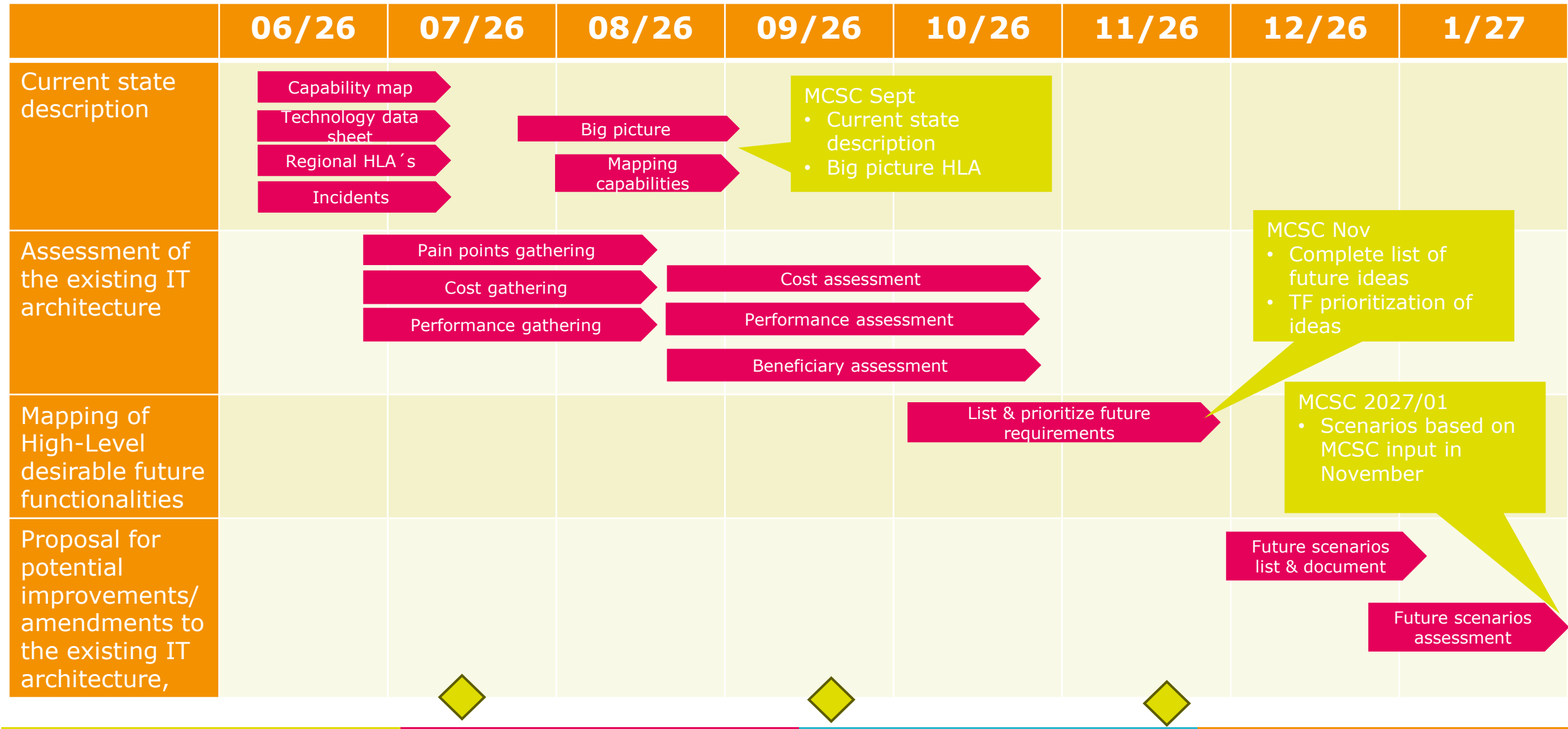
- Scope of IT architecture in systems related to joint market coupling capabilities.
- Create a capability map of market coupling.
- Map technology, systems, incidents, pain points on business capability map.
- Create a complete list of integrations, key data flows and technologies.
- Create "big picture HLA" across all market coupling markets.
- Gather ideas future changes to business capabilities and their criticality

Future Architecture

- Create scenarios?
- Prioritisation by TF and later MCSC

To be detailed later

WORK PLAN – DRAFT



MCGG
08/07

MCSC
15-16/09

MCSC
24-25/11

SDAC-SIDC Roadmap and Key Projects

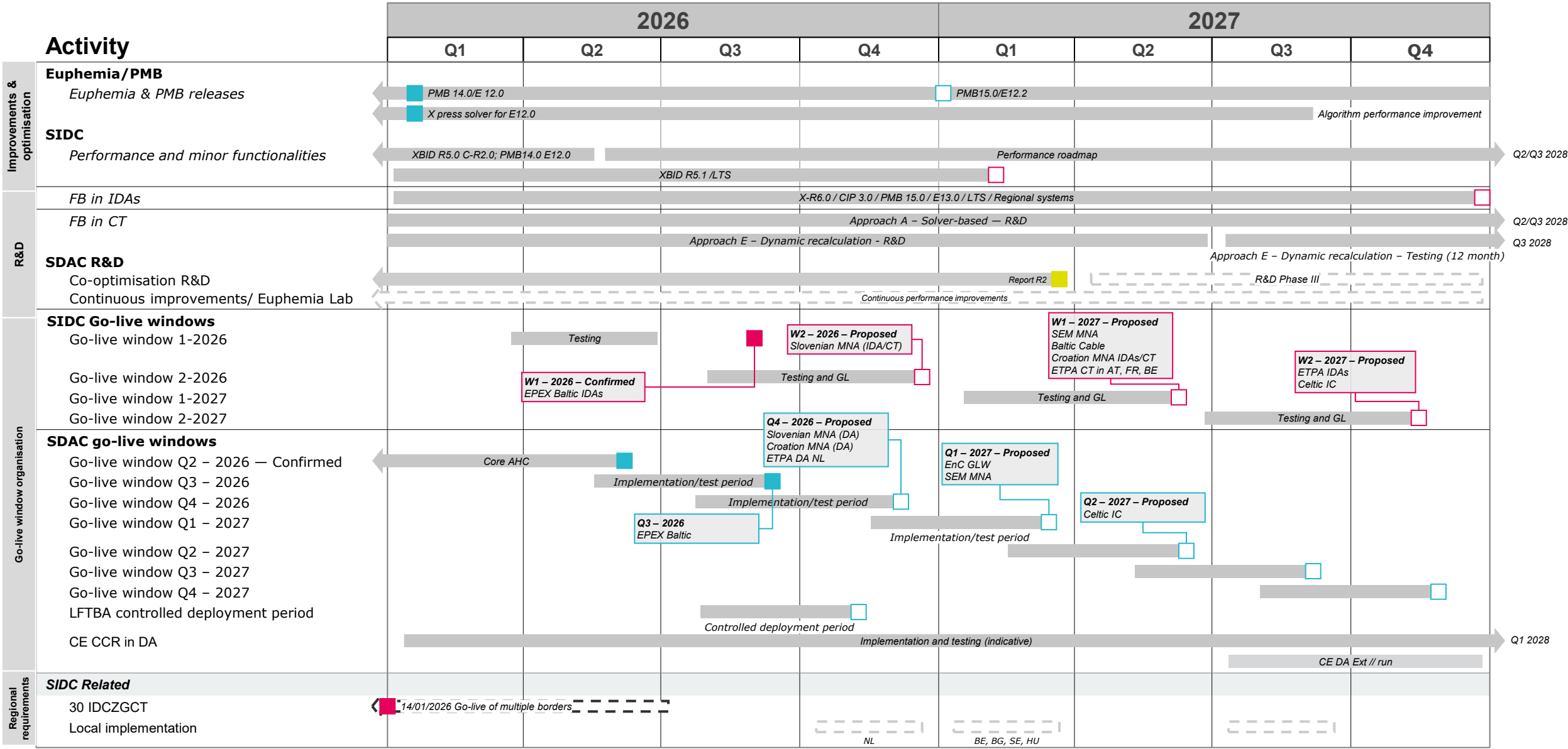
André Estermann (MCSC Co-Chair)

Lara Visone, David Myška (SIDC MSD)

Q&A via [Slido.com](https://www.slido.com)
Enter code: **1184334**



SDAC-SIDC Roadmap and Key Projects



■ Confirmed planning
□ Indicative planning

SIDC Roadmap and Key Projects

Flow-Based in IDA

Achieved milestones and next steps

- ▶ Design phase - completed
- ▶ Implementation phase - planned and started
 - ▶ XBID R6.0 (FB in IDA) was extended with CMM module infrastructure changes addressing performance impact of FB in IDA foreseen by the XBID provider.
- ▶ Testing phase
 - ▶ Detailed planning is prepared considering XBID R5.1 (performance and other improvements) and R6.0 (FB in IDA) simultaneous testing.
 - ▶ Member testing is expected to take place in October 2027 and go-live in the month after.

Key takeaways: TSOs and NEMOs optimized the implementation and testing for FB in IDAs to allow the go-live in 2027.

SIDC Roadmap and Key Projects

Flow-Based in SIDC

FB R&D CT Workstreams

▶ Approach A: solver based

- ▶ All topology data (RAM/PTDF + ATC) as constraints are used by a solver directly in the coupling-stage - the capacity calculation in XBID and allocations are based directly on these data.
- ▶ Status: Simulations carried out with a standalone prototype - developed with support from an external provider - show that the pairwise matching of active-passive orders is slower than the baseline driven by the existing ATC matching algorithm. However, the achieved ratio is considered adequate for the current project phase. The standalone prototype was recently extended to include passive-passive order matching, using an approach prioritising the continuous nature of the matching. An alternative approach, prioritising multi-order matching and enabling the evaluation of a discrete-time matching process, is still under development. Discussions have also started regarding the impact of the flow-based approach on local order book view building.

▶ Approach E: dynamic ATC recalculation

- ▶ The coupling-stage works further with ATCs as today - this approach eliminates flow-based capacity allocation at the coupling stage. Frequent repetitive ATC extraction being newly part of the allocation stage is done as pre-processing of FB data.
- ▶ Status: a corresponding change request has been handed over to the IT provider for further analysis, with discussions expected to continue in early summer.

Update on consultation

Chiara Vitelli, Christoforos Zoumas (NEMO Tech TF)

Q&A via [Slido.com](https://www.slido.com)
Enter code: **1184334**



Update on consultation

SDAC PM

Background

- ▶ The NEMOs have launched a public consultation on the need for revision of SDAC PM, following the standard bi-annual revision process.
- ▶ Public consultation was run since May 18 till June 18, 2026.
- ▶ On May 27, 2026, a dedicated workshop was organized to illustrate the proposal to the stakeholders

▶ Updates

- ▶ Feedback received: 8 answers from MPs and a shadow opinion from ACER
- ▶ Currently NEMOs are assessing the feedbacks received
- ▶ By mid/end-July a final proposal will be submitted to ACER, and the outcomes of the public consultation will be published on the NC website.

Update on consultation

Algorithm Methodology update for the IDAs-FB incorporation

Background

- ▶ The NEMOs, in cooperation with TSOs, have consulted a minimum set of adjustments in the timing of the IDAs process included in the Algorithm Methodology (AM) for the implementation of the flow-based allocation method in IDAs.
- ▶ Public consultation was run since May 13 till June 12, 2026.
- ▶ On June 2, 2026, a dedicated workshop was organized to illustrate the amendments to the stakeholders

Updates

- ▶ Feedback received: an answer from MPs and a shadow opinion from ACER
- ▶ Currently NEMOs and TSOs are assessing the feedbacks and possible improvements based on the respondents requests.
- ▶ By mid/end-July a final proposal will be submitted to ACER, and the outcomes of the public consultation will be published on the NC website.

AOB & Closure

Max Schneider, Karol Nicia, Andreas Papanaklis (MCCG)

Q&A via [Slido.com](https://www.slido.com)
Enter code: **1184334**



Closing Remarks & Further Information

The Q&A from the webinar will be available on the NEMO Committee and ENTSO-E websites. The links will be sent out via email.

The next meeting will be scheduled in Q4 2026 - details & date will be shared soon.

Thank you for your participation!

Market Coupling Consultative Group
Webinar

08 July 2026

Annex

Abbreviations

ACER	Agency for the Cooperation of Energy Regulators	MP	Market Participant
AM	Algorithm Methodology	MTU	Market Time Unit
BE	Balancing Energy	NEMO	Nominated Electricity Market Operator
BZ	Bidding Zone	NRA	National Regulatory Authority
CC	Capacity Calculation	OBK	Orderbook (context: Orderbook Depth)
CCR	Capacity Calculation Region	OPSCOM	Operations Committee (context: SDAC OPSCOM, SIDC OPSCOM)
CM	Corrective Measure	POM	Performance Optimisation Measure
CT	Continuous Trading (context: SIDC-CT)	QARM	Quality Assurance and Risk Management (context: SIDC QARM)
DACC	Day-Ahead Capacity Calculation	R&D	Research and Development
Go-live	The date when a new process/system becomes operational	RfC	Request for Change
HMMCP	Harmonised Maximum and Minimum Clearing Prices	SDAC	Single Day-Ahead Coupling
IDA	Intraday Auction	SIDC	Single Intraday Coupling
IDCC	Intraday Capacity Calculation	SLA	Service Level Agreement
IDCZGCT	Intraday Cross-Zonal Gate Closure Time	TF	Task Force (context: NEMO Tech TF)
IDGCT	Intraday Gate Closure Time	TSO	Transmission System Operator
LTS	Local Trading System	TTFS	Time To First Solution
MCCG	Market Coupling Consultative Group	WS	Workstream / Workshop
MCSC	Market Coupling Steering Committee	XBID	Cross-Border Intraday (European intraday electricity trading platform)
MNA	Multi-NEMO Arrangement		