

EBSG | Co-optimisation R&D

28 October 2026



1. Co-optimisation R&D

As part of R2, NEMOs and TSOs, together with N-SIDE, worked on the Phase 1 prototype with the following characteristics:

- Limited geographical scope to the Baltic region with ATC constraints
- Considering 5 markets (energy, aFRR-up, aFRR-down, mFRR-up, mFRR-down)
- New additional bidding tools: Cross Product Parent-Child Links and Exclusive Groups, Maximum Power Groups, Scheduling Order Groups
- Common bid linking strategy with flat costs for all considered power plants to capture the cost structure and technical limits.
 - Decreasing marginal cost features are not available yet, but will be considered at a later stage.

Data used for Phase 1 simulations:

- **Historical bids do not exist due to the completely new character of integrated energy – balancing capacity bids**
- Synthetic bids derived from bottom-up model of Baltic energy and balancing-capacity markets
- Historical SDAC energy bids from 8 to 14 of September 2025, further scaling was applied to the dataset to ensure feasibility as not all required features were implemented yet

Results:

- Results largely confirmed the adequacy of newly implemented features, but also revealed significant principal challenges regarding optimality and pricing in a complex multi-product setting
- **Simulations covered multiple days with flat costs and linked bids and provided initial insights into the interplay of 5 products and helped to better understand co-optimisation features and challenges.**

2. Co-optimisation R&D

Phase 1 results demonstrates viability of several aspects, but important methodological and design questions remain before conclusions can be drawn.

R2 Intermediate report



- Intermediate report shared with ACER (10 Aug 2026)
- Cross-border price convergence observed
- Upward BC prices closely linked to energy prices
- aFRR and mFRR prices converge through product substitution
- Decreasing marginal costs not yet included in Phase 1 prototype.

Market convergence potentially observed

ACER feedback



- Clarification on pricing, ramp conditions, parent-child ratios, partially accepted blocks, balancing activation and storage approaches.
- Explanations on simulation dates/plant count, comparison with energy-only SDAC.
- Editorial: terminology, acronyms, repetition, typos, and unclear wording.
- Feedback on the proposed design of storage orders and reasoning.

Potential improvements to R2 phase identified

Next steps on R2 scope

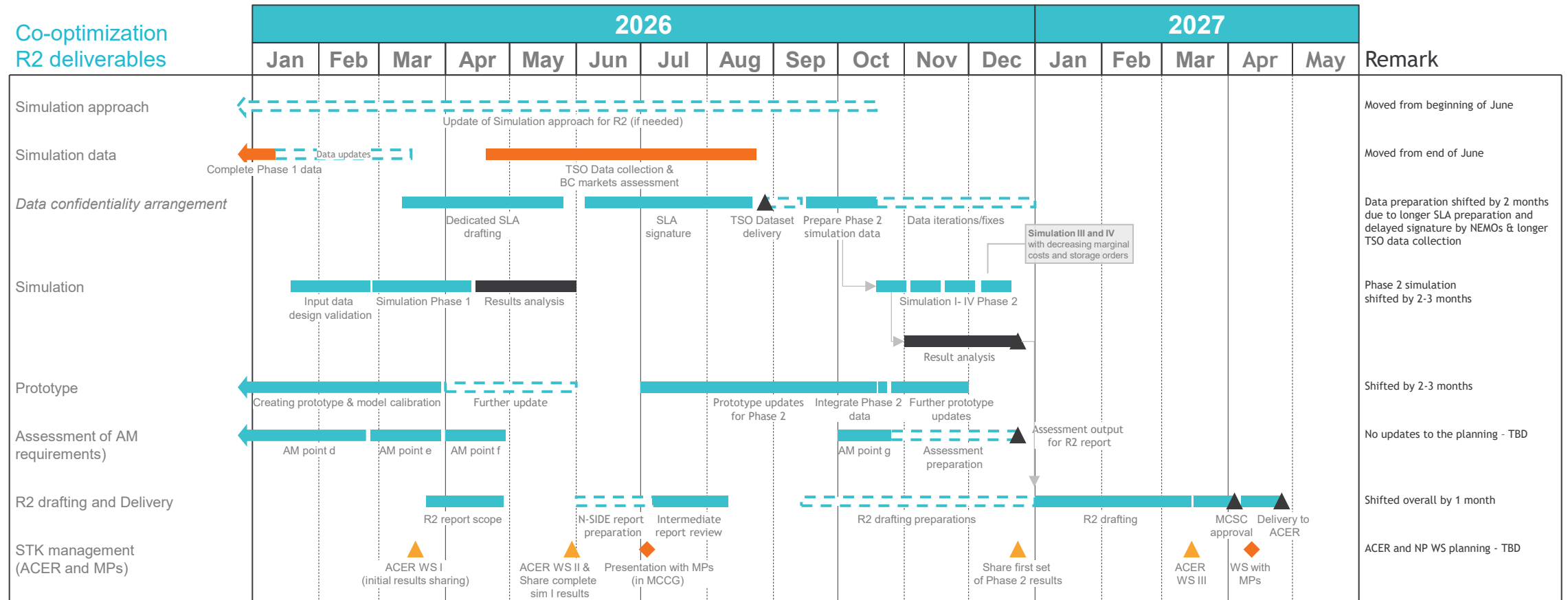


- Phase 2 simulations will utilize data from SDAC region
- ▶ Simulation data development by Magnus Energy has started based on the signed Co-optimisation SLA.
- Further updated prototype with combined bids, especially thermal bids, storage bids and FB allocations.

Phase 2 simulations to start mid-October.

3. Co-optimisation R&D: Current Timeline and detailed Planning

- The timeline below is a working version aimed at showing realistic planning given the current status.



The Co-opt SG timeline has shifted due to a delay in the signing of the SLA and late conclusion of Phase 1. The updated roadmap approved by MCSC on 16/09 is above.