

CROSS-BORDER CAPACITY RESERVATION

Initial description of options

April 2016

Overview of reservation methodologies

1. Co-Optimization Approach
2. Market Based Reservation
3. Inverted Market Based
4. Economic Efficiency Analysis (not analyzed)

Descriptive comparison of methodologies

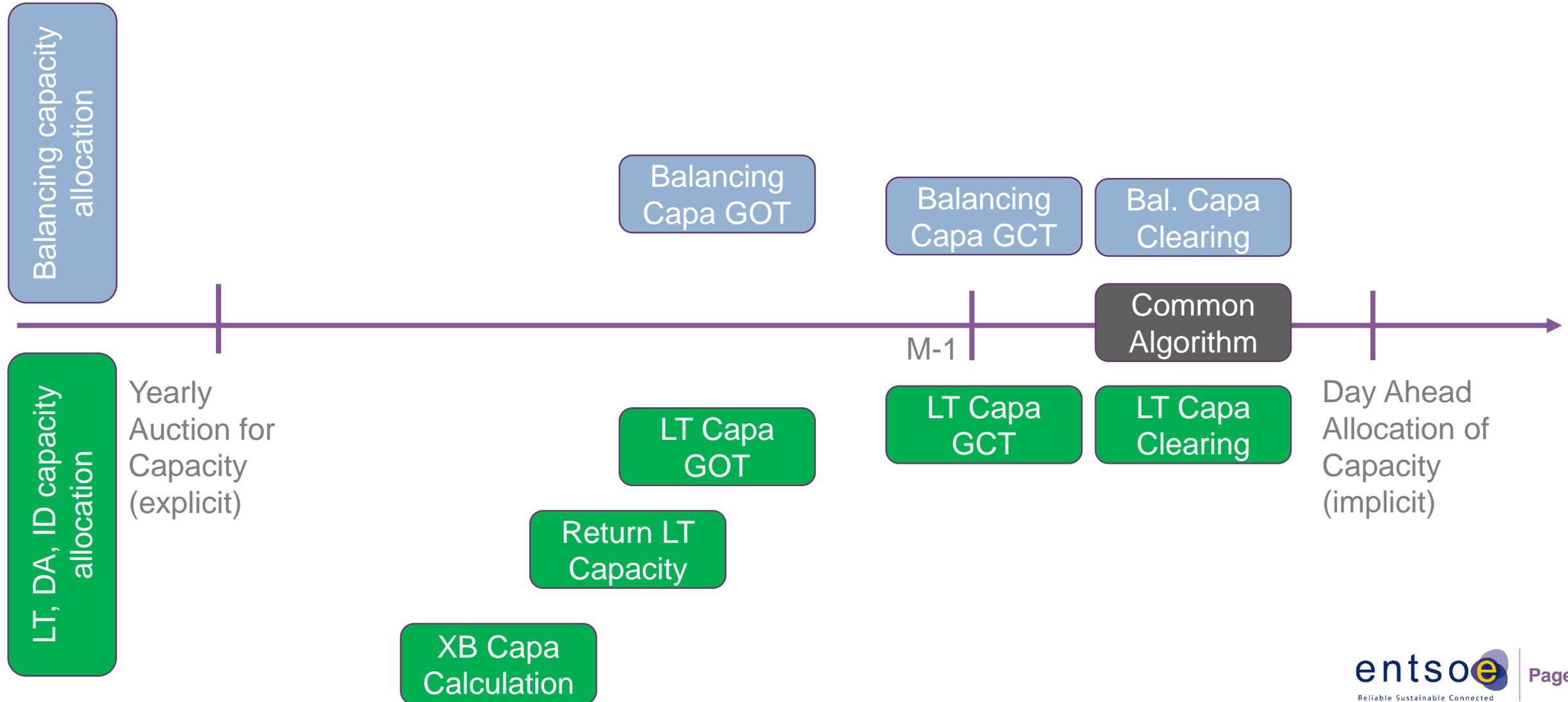
	Value from Balancing Market	Value from Energy Market	Value of the XB-Capacity	Possible Times for XB-Capacity reservation (for balancing)
Probabilistic Approach	-	-	Opportunity after intraday (currently =0)	not necessary
Co-Optimization	Actual Value	Actual Value	Actual Market Value	Regular Capacity Allocation (implicit or explicit) & Balancing Reserve Procurement must run in parallel
Market Based Reservation	Actual Value	Forecasted Value	Forecasted Market Value	During Balancing Reserve Procurement
Economic Efficiency Analysis	Forecasted Value	Forecasted Value	Forecasted Market Value	At any point in time (long term oriented)
Inverted Market Based	Forecasted Value	Actual Value	Forecasted Market Value	During Regular Capacity Allocation (implicit or explicit)

“value” to be defined

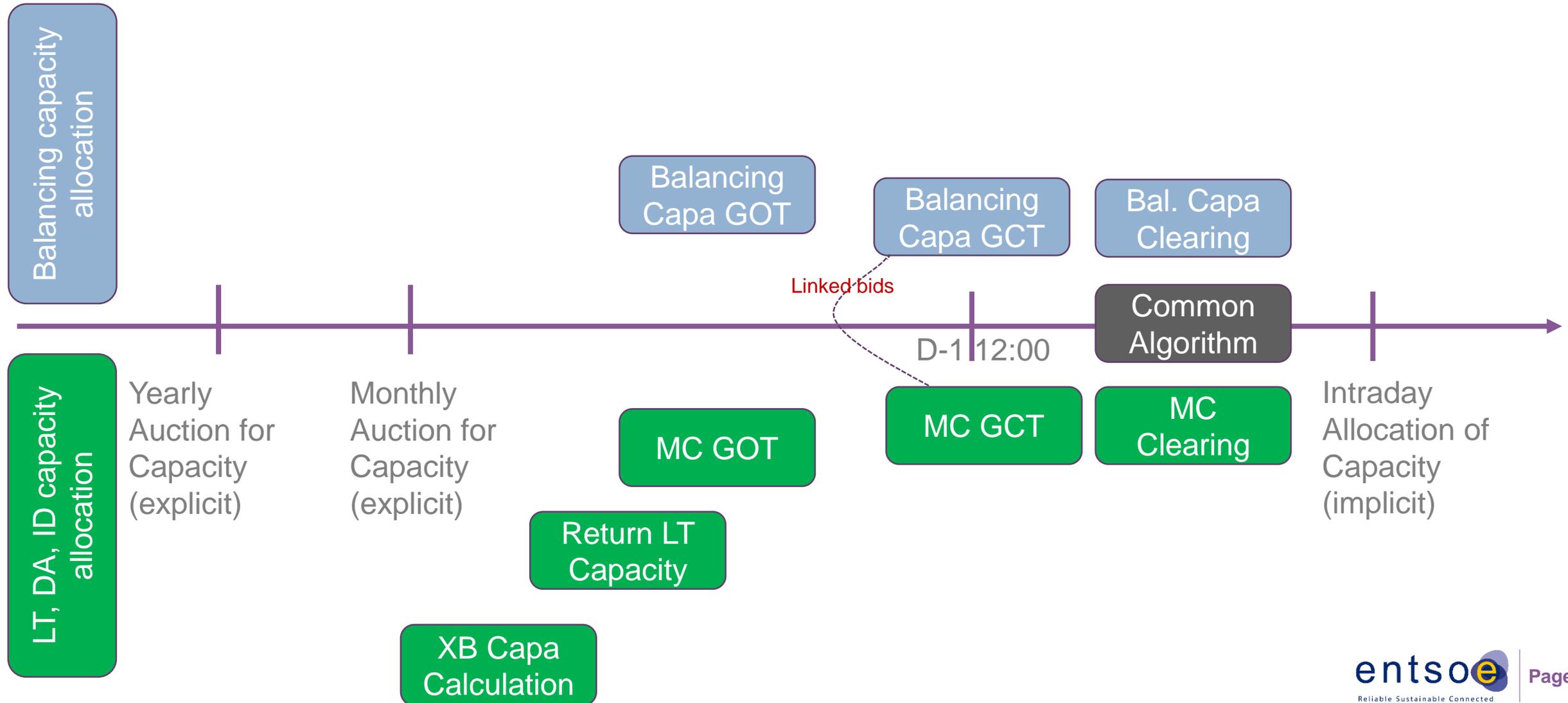
Co-Optimization Approach

- Single optimization process for allocation of cross-zonal capacity between energy market and balancing market (both implicit and explicit auctioning) accounting for different market structures and principles (linked balancing markets,...)
- TSOs shall bid the Market Value into the co-optimized allocation.
- Procurement of balancing reserves must take place in parallel to a existing XB-capacity allocation auction or DA market coupling.
- Co-optimization to account for impact on welfare for both market segments

Co-optimization: Timeline in Long Term Capacity allocation



Co-optimization: Timeline in Day ahead

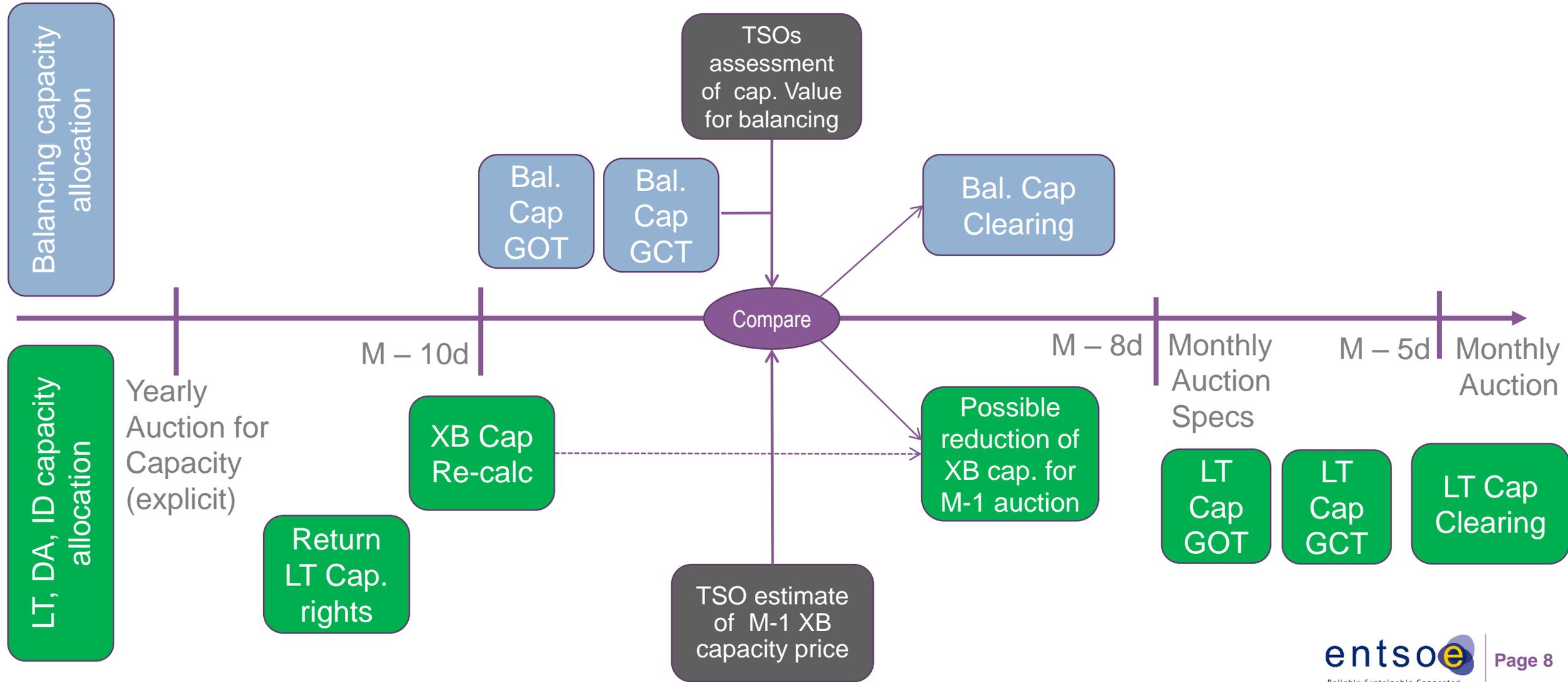


Market Based Reservation

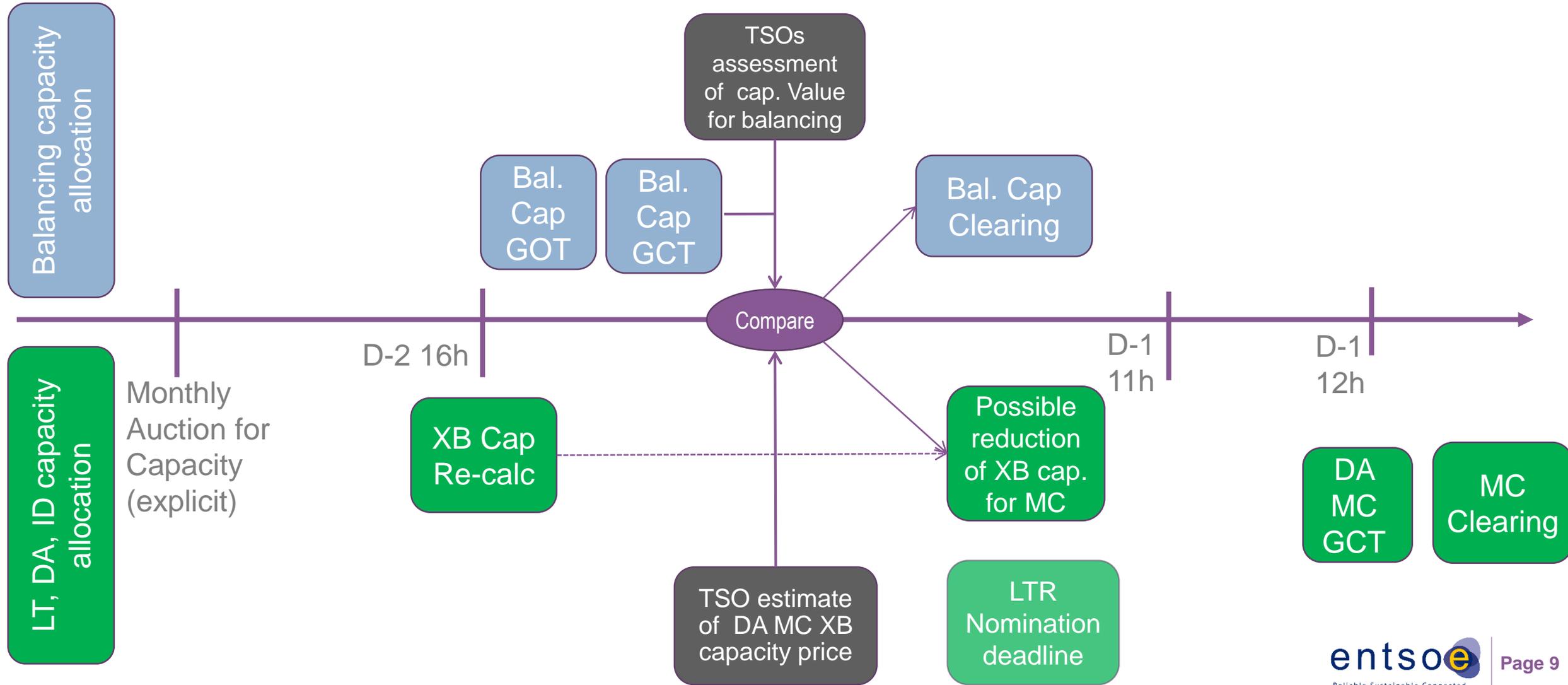
- Methodology has to be developed 2 years after EIF of NC EB.
- Market Based Reservation shall compare the actual market value of XB-capacity for balancing with the forecast market value of XB-capacity for the energy market.
- Reservation could take place whenever* balancing reserves shall be procured → for instance weekly or in D-2 before the DA allocation

*provided coherence with capacity calculation and allocation processes is ensured

Market Based: Timeline in Long Term Capacity allocation



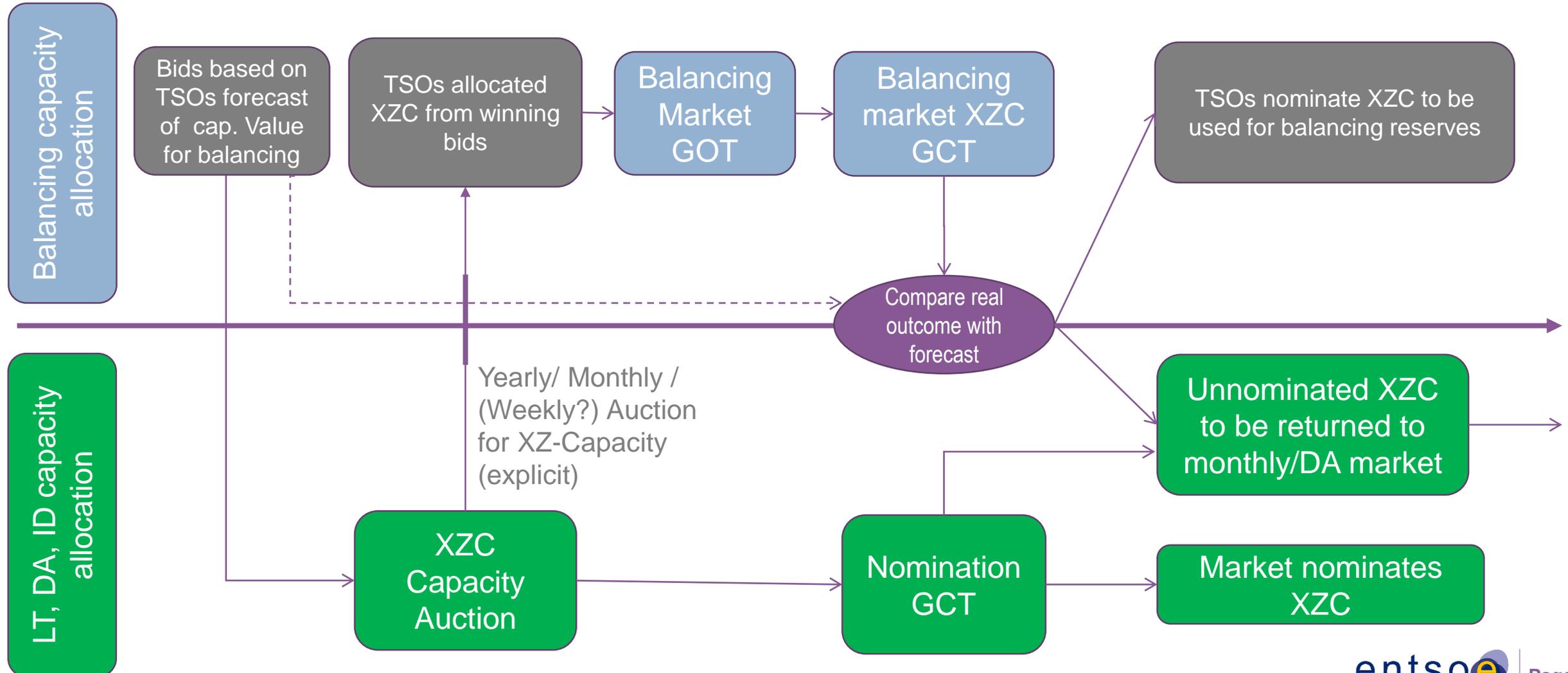
Market Based: Timeline in Day-Ahead



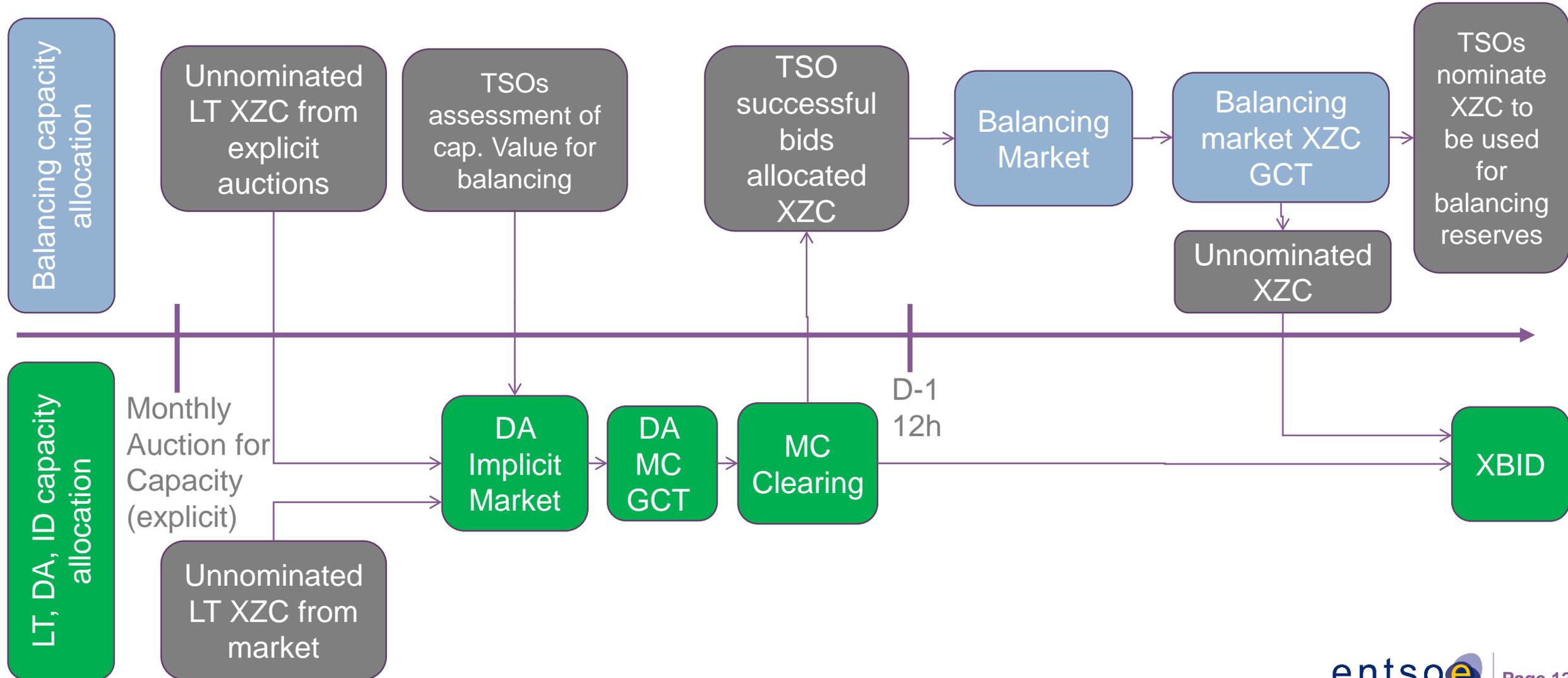
“Inverted Market Based”

- Not presently foreseen by draft NC EB
- Create additional capacity only product in the DA market (like co-optimization) or TSOs bid for capacity in explicit auctions.
- XB-capacity bid by TSOs allocated by algorithm together with capacity and/or energy products.
- Reservation can take place in any given XB-capacity allocation auction before the procurement of balancing reserves.
- Remaining Capacity can be given back to the market in subsequent timeframe depending on the balancing market auctioning outcome.

Inverted Market Based: Timeline in LT Capacity allocation



Inverted Market Based: Timeline in Day-Ahead



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