



LT CC and new NUCS processes

CCM Stakeholder meeting
29.06.2022



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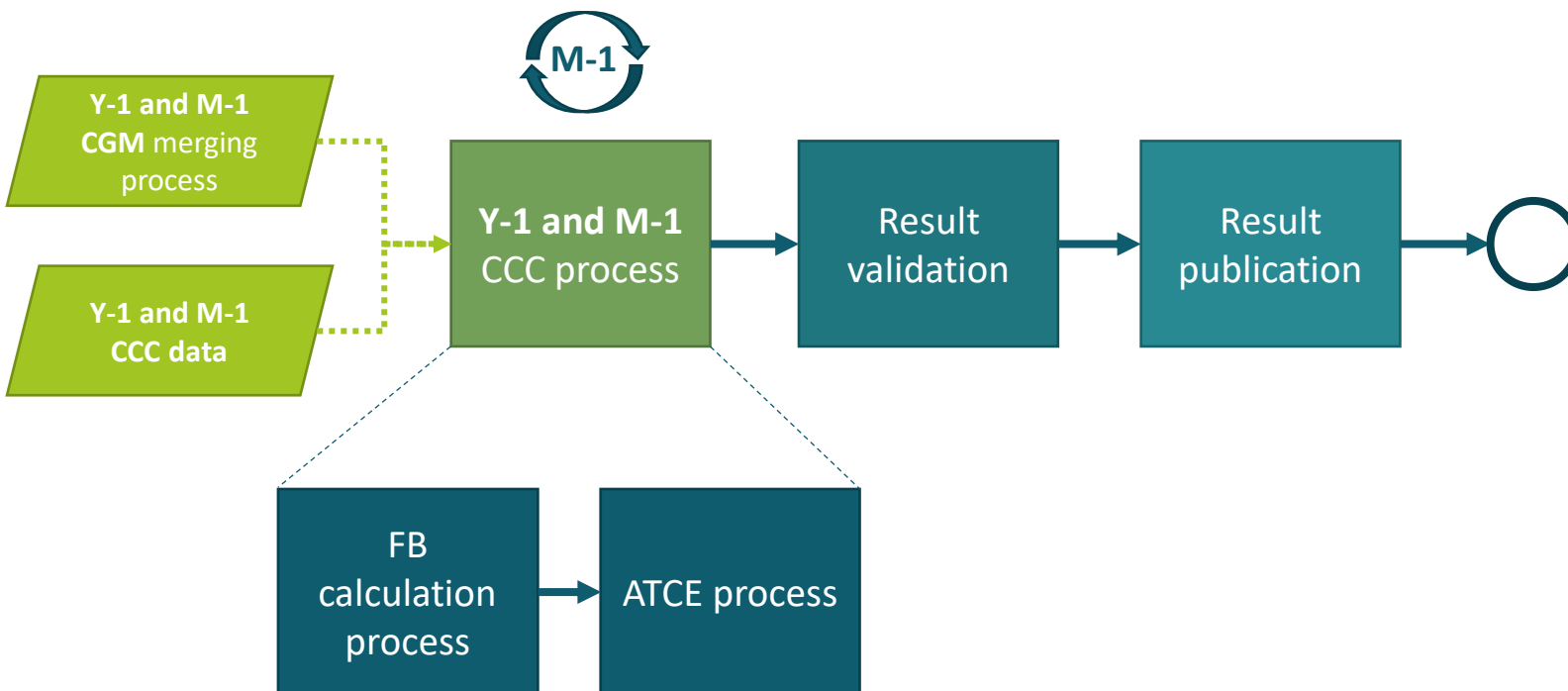
Background

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- The implementation of the LT CC processes and the new NUCS processes are regulatory requirements
- **Nordic CCR Long-term Capacity Calculation Methodology**
 - Requires the LT CC processes to be implemented latest year after Nordic DAFB go-live
- **Transparency Regulation**
 - When Nordic LT CCM has gone live with the FB methodology, it is also expected that the NUCS processes need to be adapted

LT CC processes

High-level business process illustration

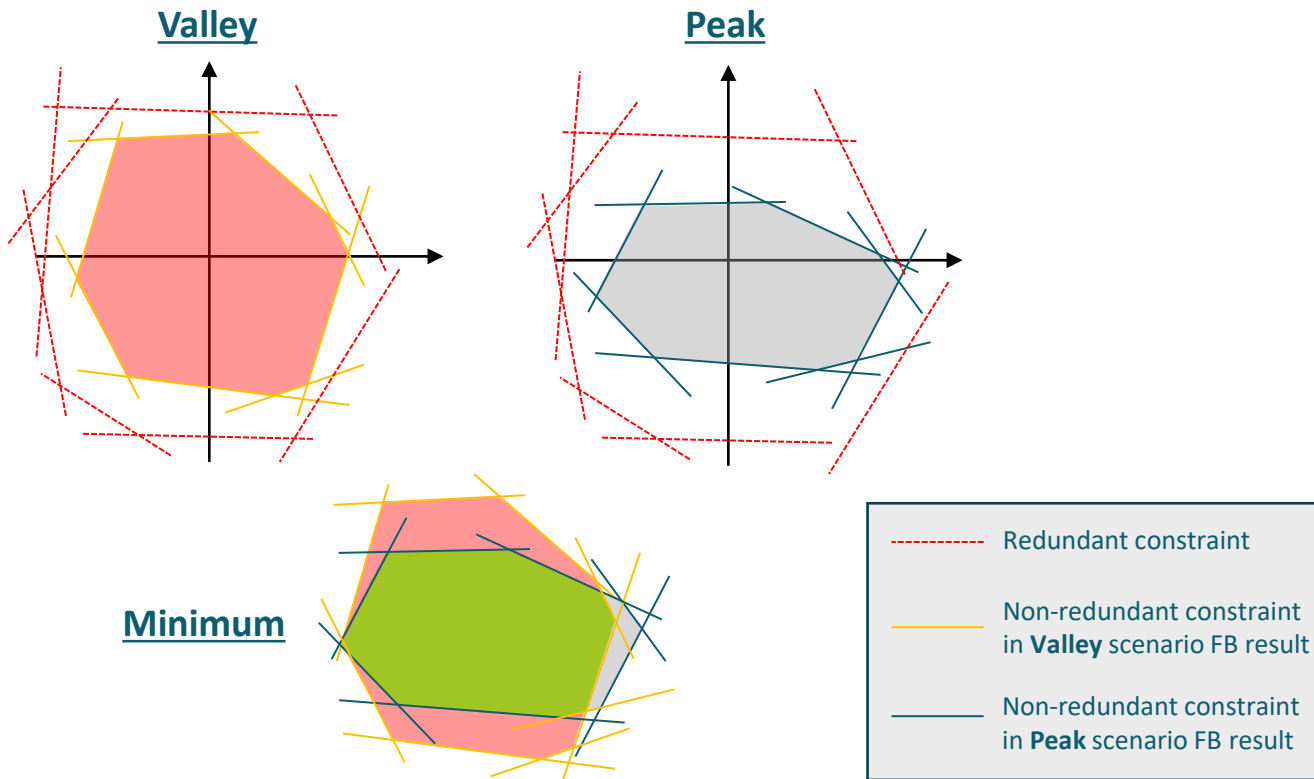


Scenario-based FB calculation process

- As the CGMM defines the Y-1 and M-1 CGMs to be scenario-based, the FB calculation process will need to consider this aspect as well
- In the **CGM merging process** context:
 - There will be a *Peak and Valley* scenario merging corresponding to a specific season/month (Y-1/M-1)
- In the **FB calculation process** context:
 - There will be a *Peak and Valley* scenario calculation to a specific month/day (Y-1/M-1)
 - There will be a *Minimum* scenario calculation that considers the result from the *Peak and Valley* scenario to a specific month/day
 - In total there will therefore be:
 - 36 CCC results for a Y-1 CCC process (12 months, 2 scenario types + min. calculation)
 - 84-93 CCC results for a M-1 CCC process (28-31 days, 2 scenario types + min. calculation)
- In the next slide, the minimum calculation process is illustrated in more detail

Calculation of the minimum FBdomain from the Peak and Valley result

1. Extract all the constraints (incl. PTDFs and RAM and its subcomponents) resulted from the Peak and Valley calculations
2. Perform an additional quantities computation (defining the non-redundant constraints) with all the extracted constraints
3. Obtain the new *minimum* FBDomain formed by the new non-redundant constraints

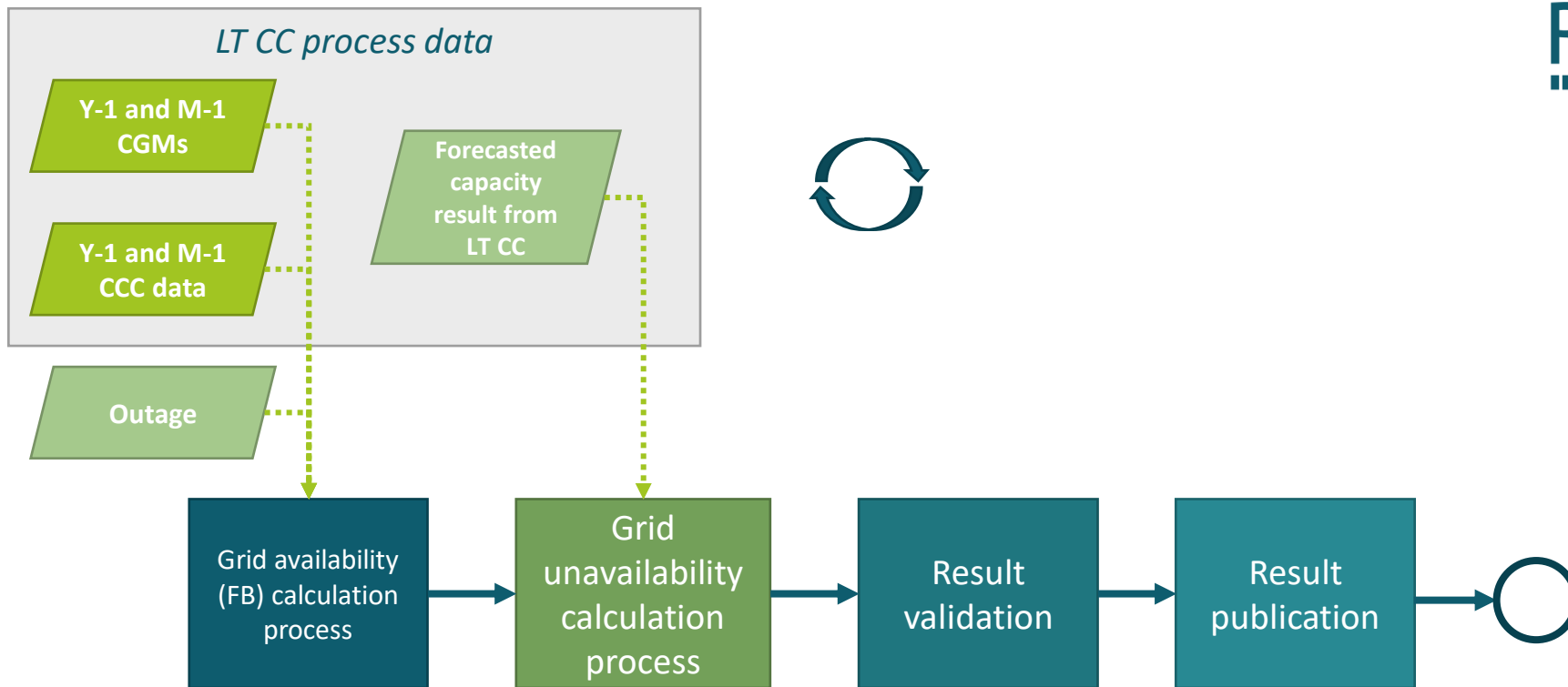


LT CC in relation to NUCS process

- Within the new NUCS process, the LT CCC process result can be seen as the *forecasted capacity* (“intact grid”) of the given period (Y-1, M-1)
- In addition, the same FB calculation process illustrated in previous slides is executed within the new NUCS process
 - The only difference is that now the outage has been applied to the grid model before computing the FB parameters
- The new NUCS processes are presented in the next slides

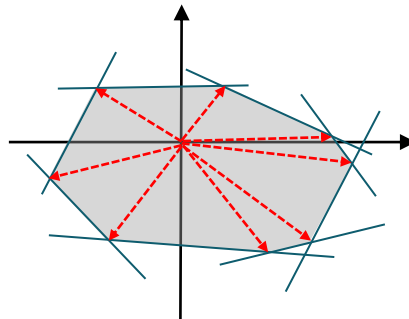
New NUCS processes

High-level business process illustration



Calculation of the reduction in cross-zonal capacity due to unavailability of transmission infrastructure with FB methodology

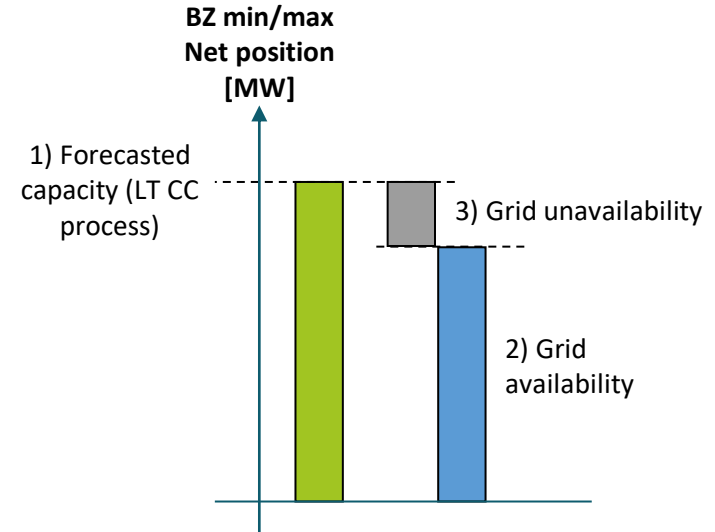
- As the FB methodology defines capacities in a form of a FB Domain, calculating a *reduction in cross-zonal capacity* due to an outage with FB methodology is not “well fitting”
- Therefore, the Nordic CCR has considered an alternative parameter to reflect the outage impact on the cross-zonal exchange:
 - The impact of the outage on the *minimum* and *maximum* net positions for each Bidding Zone associated to the FB Domain formed by the constraints
 - In which the *minimum net position* defines the *maximum import* capability (within the FBDomain constraints) of each BZ
 - And the *maximum net position* defines the *maximum export* capability (within the FBDomain constraints) of each BZ
 - The needed reference would be the LT CCC process result
- In the next slide the illustration for calculating the unavailability due to an outage with above-mentioned parameter is shown



The corner points of the formed FBDomain contain the minimum and maximum net positions for each BZ

Presenting the grid unavailability due to an outage with FB methodology

- In order to compute the **grid unavailability** due to an outage, the results from following processes are expected:
 - 1) Result from LT CC process (*forecasted capacity*)
 - 2) Result from the **grid availability** (after outage) process
- The result, the **grid unavailability** for each BZ impacted by the outage, is the “delta” between these two results
- In addition, the FB parameters (PTDFs and RAMs) of the non-redundant constraints associated to the results could also be published to NUCS platform
- The publication of results per outage would therefore contain the following information:
 - 1) *Forecasted capacity (LT CC process)*
 - 2) *Grid availability (per BZ impacted)*
 - 3) *Grid unavailability (per BZ impacted)*
 - 4) *FB parameters associated to grid availability calc.*



NUCS Platform impact

- As the presentation of the unavailability is expected to change with FB methodology, changes to NUCS platform are also expected
- The detailed design, how the expected data will be visualized in NUCS platform, is a work in progress
- No detailed design has yet been made on NUCS platform side, but initial discussions have begun



Thank you!