4. Content elaboration

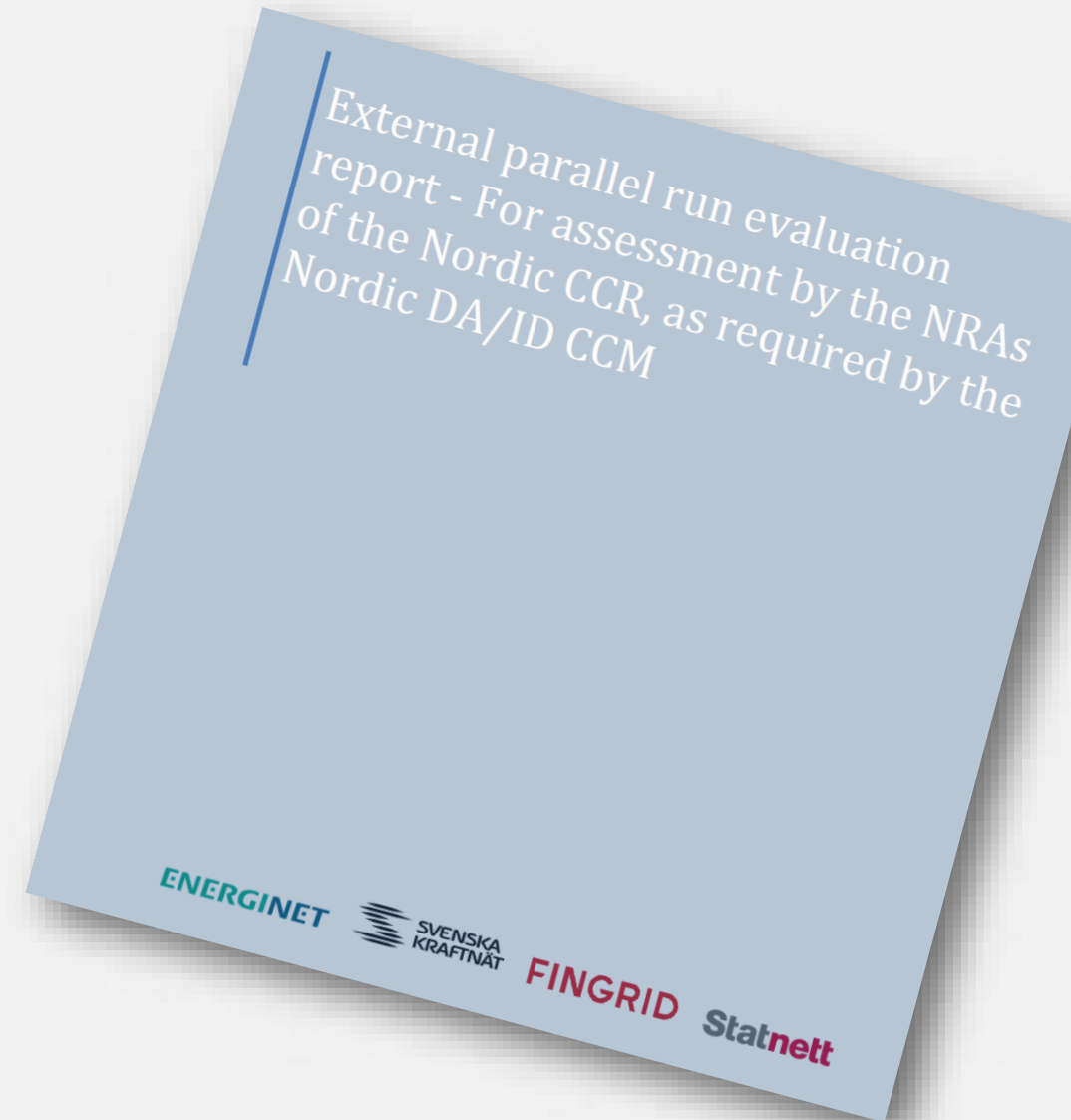## Nordic CCM Stakeholder Meeting
3 May 2023

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What do we consult upon?

- The consultation concerns an external parallel run evaluation report for assessment by the NRAs of the Nordic CCR, as required by the Nordic DA/ID CCM that was approved by the NRAs of the Nordic CCR on October 14th, 2020.

- This report is the reporting of the KPIs put forward by the Nordic NRAs at the time of the approval of the latest version of the Nordic CCM.
  - The KPIs reflect the functionality of the FB operation and should be monitored in a 3-month period followed by a report showing the result of the monitoring.
  - The report covers the three-months period: Dec 12, 2022 – March 12, 2023
  - All KPIs have been met as there are no fallbacks or delays being observed related to the DA capacity calculation process for the 3-month period.

External parallel run evaluation report - For assessment by the NRAs of the Nordic CCR, as required by the Nordic DA/ID CCM

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Recap of the executive summary

- The Nordic development of a FB market approach was initiated in 2012 due to the increasing complexity of the Nordic power system.

- The complexity makes it increasingly difficult to provide market capacities by the NTC approach that ensures efficient grid utilization and operational security.

- This is amongst others driven by the rapidly increasing amounts of wind and solar and new large-scale electricity consumption. To manage the congestions in the grid, the FB method will provide tools to consider the grid elements and their contribution and limitations to host power flows.

- This is acknowledged in the legislation as well, as the FB approach is the default method in the European legislation. The Nordic capacity calculation methodology (CCM) has been approved by the regulatory decisions.

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Recap of the executive summary

- In short, during the three-months evaluation period, the FB approach has demonstrated the following features:
  - The FB capacity calculation process is stable and functions as planned
  - The utilization of the Nordic power system has been improved by the FB approach
  - The total social economic welfare has increased in the Nordic CCR
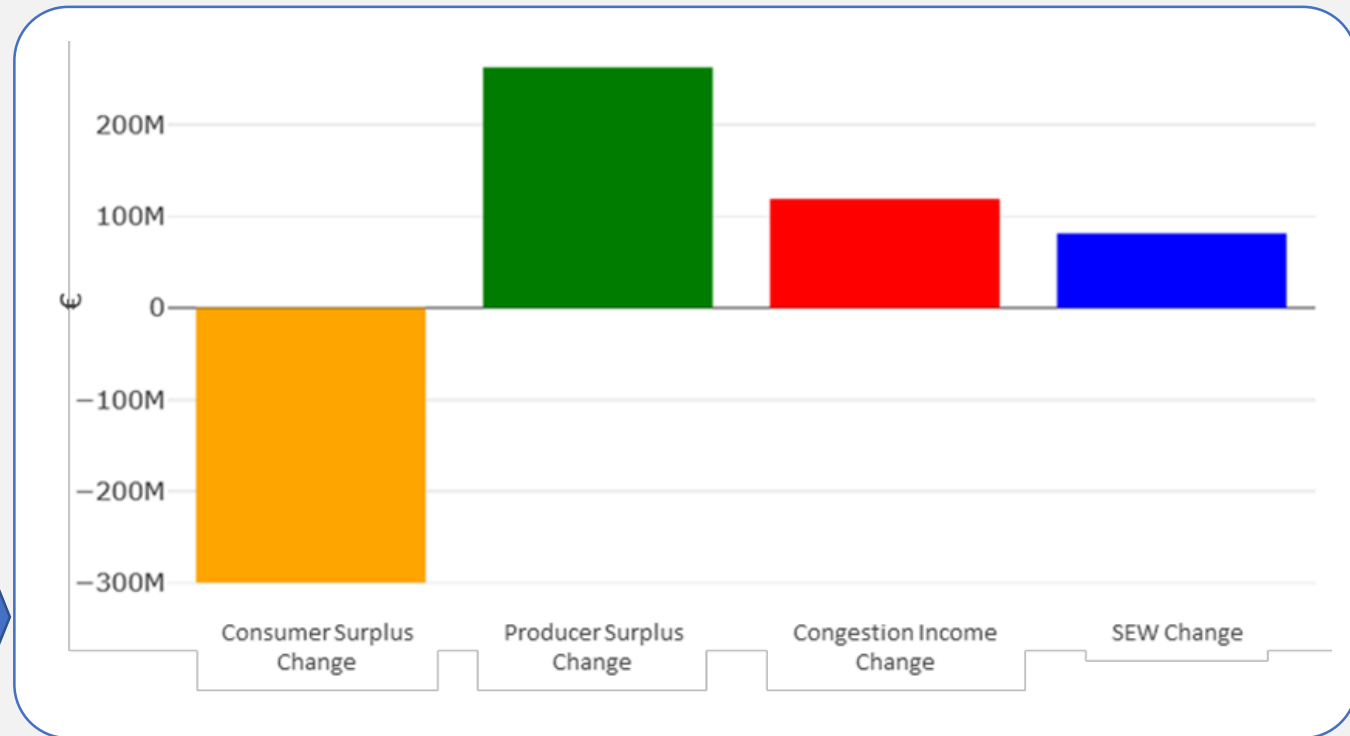
When looking at the absolute values, and distribution, of the social economic welfare gain, one should bear in mind that the FB market simulations are assessed by using the real-world order books, that are based on the operational NTC capacities. Indeed, bidding strategies might be different, e.g. in hydro-dominated bidding zones, when FB is the applied approach.

Recap of the executive summary

- The FB capacity calculation is still in its project phase, and it is a huge learning process.

- To move towards the deployment of the new coordinated capacity calculation method requires a good dialogue among us all – TSOs, NEMOs, market actors, other stakeholders, and NRAs.

- There is still work to be done to make sure that the method is mature enough and its functioning understandable to the market actors.

- On the way towards go-live, a 6-month long external period will provide the sound comparison basis that will be of high importance to the market actors as no major changes or developments will take place.

- This period is foreseen to start after the regulatory assessment of this 3-month period, which is first subject to your review and the public consultation.
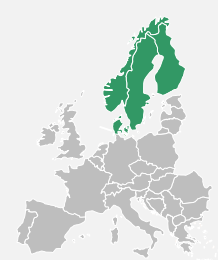
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Structure of the 3-months evaluation report

Table of content:

The stakeholder feedback part of the report will be filled after the public consultation, based on your written inputs!

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Structure of the 3-months evaluation report

- The overall approach has been to firstly present the total results on the welfare numbers and net positions for the Nordics, and hereafter to present disaggregated results to obtain a better understanding.

  - In order to understand how FB improves the grid management, a zoom on a few individual hours is provided.

- Within the chapters some explanatory boxes are provided. These can be skipped by the expert reader, but are included as a service in case some background understanding is needed.

are only willing to pay the prices, reflected in the demand curve, if the good provide as least the same level of utility as they could obtain by alternatively purchasing another good. Based on this reasoning, the logic deduction is that the area between the two curves can be defined as social economic welfare, SEW. SEW can be split into consumer and producer surplus, thus SEW = CS+PS. CS is defined as the area below the demand curve and the equilibrium price, P, where PS is the area above the supply curve and the equilibrium price, P.
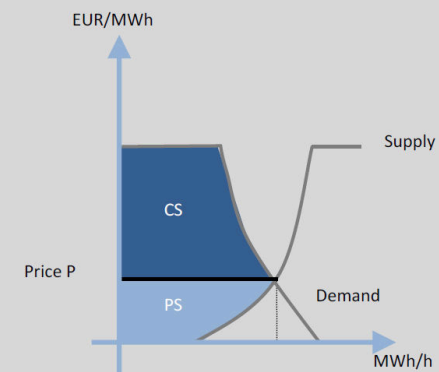
What the Single Price Coupling algorithm, Euphemia, does is that DA prices and quantities are computed with the goal of maximising the SEW subject to the constraints in the system, NTC or flowbased. For the external parallel run, the TSOs have applied flowbased parameters in the Euphemia algorithm and computed the impact on PS and CS, with the NTC PS and CS as the reference.

However, in this setting some of the social gain, SEW will materialise as congestion income, CI to the cable owners, the TSOs. This is the standard approach of computing the social impact when the market contains constraints that materialise in two or more local market areas. Seen from the market player perspective, the congestion income is a cost of transportation, but materialises as a gain at the TSO, making this an element of focus in the computation.

Turning to the approach for computing the impact of flowbased, the two-zone model below can be applied. The point of departure is little or no interconnector capacity. Then the capacity is increased (e.g. by substituting the NTC capacities with the flow based parameters), which will lead to new price and volume equilibria and thus having an impact on the three components, CS, PS and CI.