



Hafslund

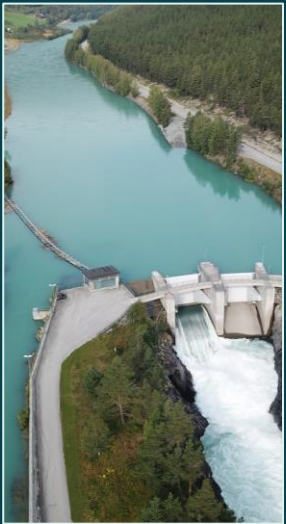
Nordic CCM stakeholder meeting

Per Arne Vada - February 7, 2024

Agenda

- About Hafslund
- General views on FB MC
- FB under extreme weather
- Remaining challenges





Hydropower



Temperature-regulation



Grid



Offshore wind



Charging



Fiber



New energy solutions

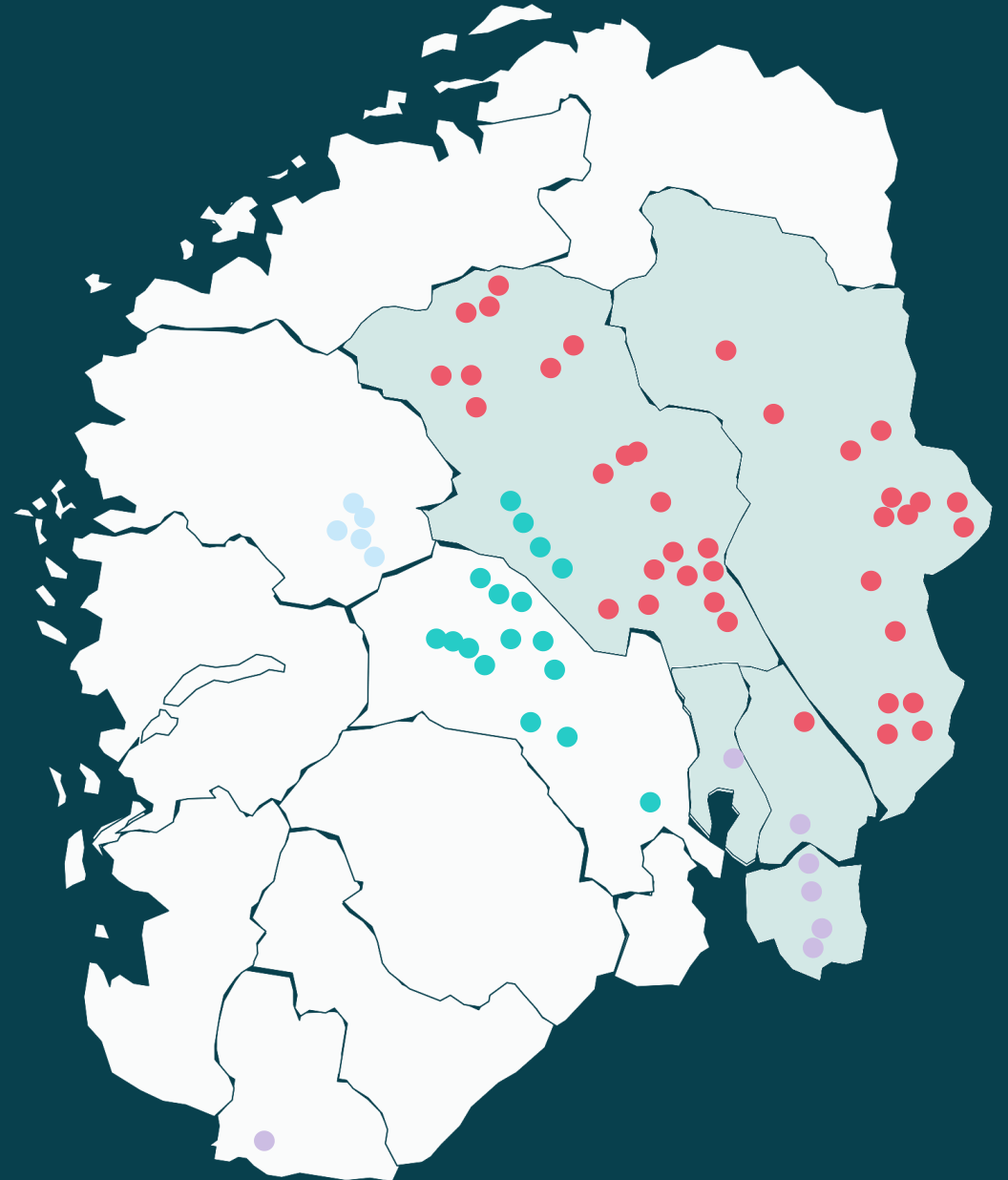


Hafslund
Eco

Our 81 hydro power plants

- Powerplan area Aurland (3,3 TWh)
- Powerplan area Hallingdal og Valdres (5,3 TWh)
- Powerplan area Innlandet (8,0 TWh)
- Powerplan area Glomma (4,8 TWh)
- Elvia

21 TWh og 5,3 GW



Our general views on FBMC



FBMC shows robust **SEW** gains and enables more efficient use of resources and infrastructure to **aid the green transition**

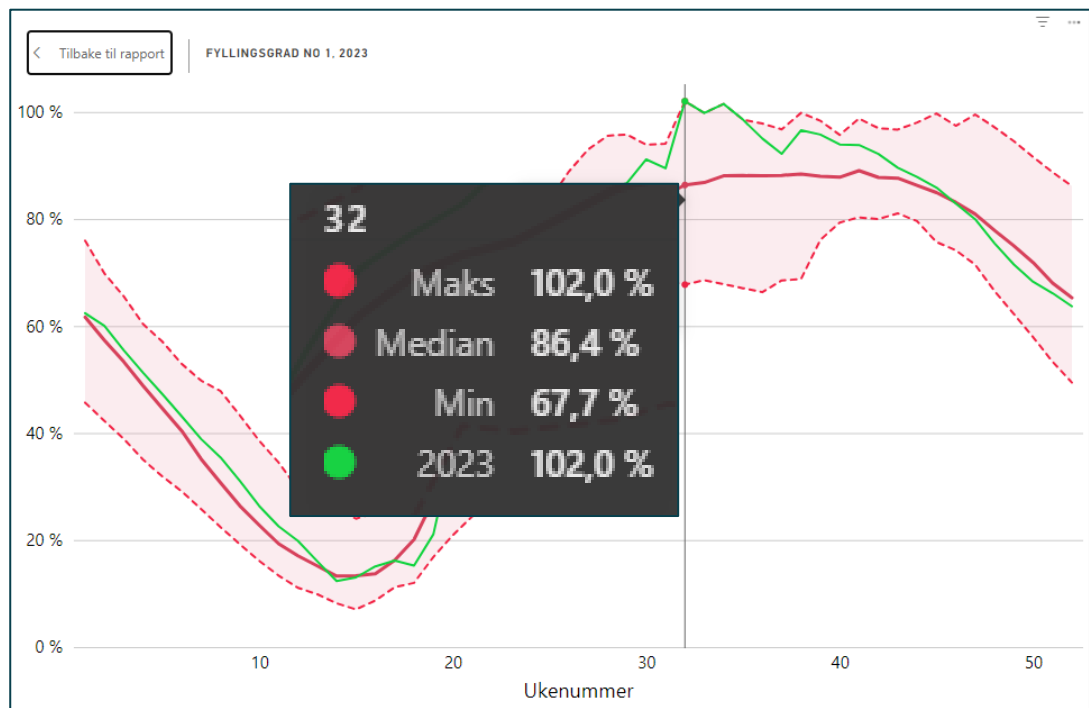


More efficient market coupling gives **better price signals** and **positive knock-on effects** on other markets



It requires effort, new tools, information and some **challenges remain**

Extreme weather «Hans» week 32, 2023



Kilde: NVE



Nesbyen | Foto: Thomas Mørch



FB v. NTC after «Hans»

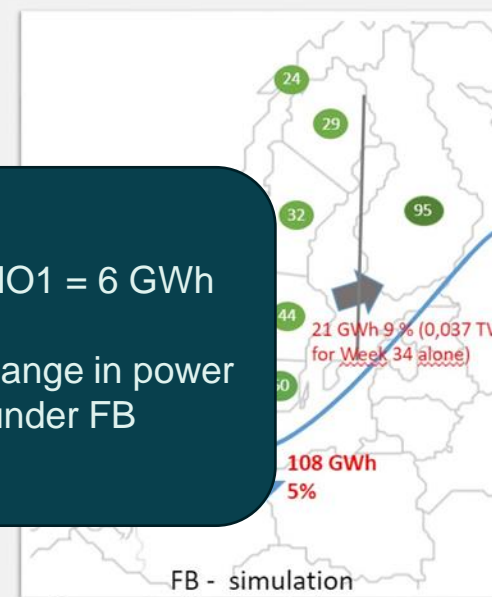


Average prices in the Nordic region week 33-34

- High prices seen in NO2, DK1, DK2 and FI in both FB and NTC
- Lower FB prices in high price area and NO5. Higher prices for remaining BZ
- FB increases the... the continent w
- FB allows for 42... increased flow t
- High export incr... FI during week 3
- This indicate that most of the extra electricity produced in the northern Nordics are used by consumers in the southern Nordic areas.



Day-ahead market coupling results (NTC)



FB - simulation

*See operational learning point document

! Change net position for NO1 = 6 GWh
→ In fact, no significant change in power from flooded areas under FB



[Bi-weekly stakeholder meeting on EPR results, Sept 28 2023](#)



Challenge I – Information, information, information

Hypothesis

To deliver SEW gains from FB, market participants should, in theory, do the same calculations as RCC across multiple market models and time horizons

Needs

Grid models
Assumptions
Algorithms
UMMs
Short and long term
+++

Possible actions

Close co-operation between
MPs and TSOs/RCC going
forward

Complete and consistent
information easily accessible



Challenge II – Going live under uncertainty

Hypothesis

All aspects of FB will not be fully understood at go-live, so market participants will need to learn on the job and deal with uncertainty

Critical risks?

Compliance
Operational
Markets

Possible actions

MPs should dedicate resources early on to understand risks

TSOs and RCC to scale user guidance



To summarize

- In our opinion, FB shows robust **welfare gains**
- There are some **challenges** for market participants
- But they are **solvable**



Thank you!

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