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Nordic Balancing Model

Single balance – single imbalance price model

NBM stakeholder reference group 27.11.19

Mikko Heikkilä

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Background: Assessed two high level implementation options

Option 1: Stepwise

Option 2: Simultaneous

Proposed imbalance model in short

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Current imbalance settlement

Dual price

Single price

Future imbalance settlement

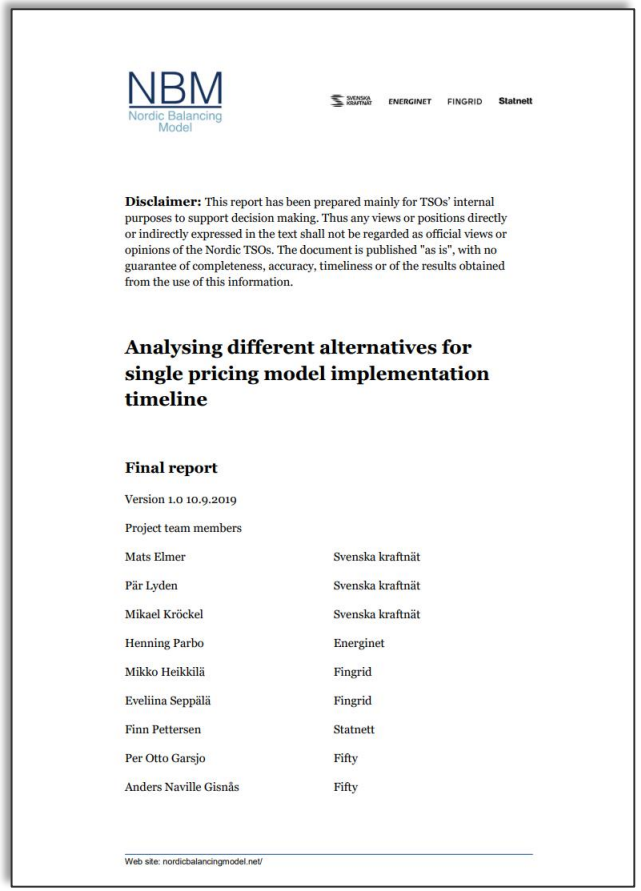
Single price

Dual price on diverging ISPs

Note: Consumption and production refers to metered values.

Why TSOs propose dual price in diverging ISPs?

- Diverging ISP = When TSOs activate both up- and down balancing energy in the same ISP
- Self-regulation may be counter-productive for system operation:
  - Too strong self-regulation – overcompensates initial system imbalance and triggers an opposite self-regulation response
  - Incentive for self-regulation is global and generates cross-border flows that overloads the transmission capacities, which in turn trigger bid activations to handle both system imbalance and bottlenecks
  - If imbalance price don't reflect local congestion inside a bidding zone, strong self regulation behavior may be counterproductive and trigger redispatch actions
- Applying dual price in diverging ISPs will disincentive self-regulation
- A separate report is available on NBM webpage.



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SVENSKA KRAFTNÄT ENERGINET FINGRID Statnett

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Analysing different alternatives for single pricing model implementation timeline

Final report

Version 1.0 10.9.2019

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Web site: nordicbalancingmodel.net/

Current situation – Diverging FRR activations

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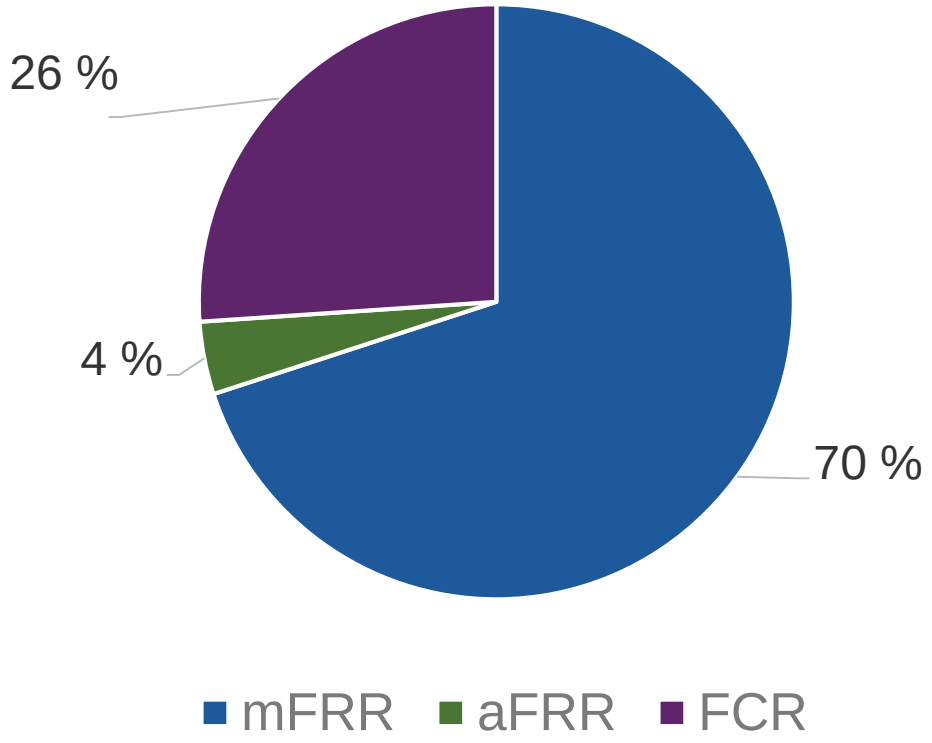
Diverging mFRR activations in 2018

Area	ISPs (hours)	% of all hours in 2018
NO1	7	0,1
NO2	53	0,6
NO3	69	0,8
NO4	28	0,3
NO5	63	0,7
SE1	149	1,7
SE2	121	1,4
SE3	19	0,2
SE4	3	0,0
FI	104	1,2
DK2	14	0,2
Nordic Synchronous area	720	8,2
DK1	27	0,3

Diverging aFRR activations in 2018 Nordic Synchronous area approximately in 70% of relevant ISPs

Activation share in the Nordic SA (estimate, 2018)



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Main design options of dual pricing in divergent ISPs

- How are divergent ISPs defined?
  - Limit based on activated energy (MWh or MW), with or without threshold
  - Limit based on trend of activated MWs
  - Limit based on share of dominant and non-dominat balancing direction
  - For mFRR only: Limit based on time or duration of mFRR activations within the ISP
- Will both mFRR and aFRR activations be considered?
- How are the prices to be defined in the dual pricing model?

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Other components to consider when implementing the single price model

- Main components included in the imbalance price (mFRR, aFRR)
- Publication of real-time or close to real-time information on balancing energy prices, imbalance prices and system balance
- Imbalance service fees
- Scarcity pricing
- Pricing in case of dispatch of strategic reserves
- Incentivising component
- Component with regards to financial neutrality

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Next steps

- Discussion paper on dual price on divergent ISPs published is available on NBM webpage
- Feedback and input is welcomed and can be sent to: info@nordicbalancingmodel.net preferably as soon as possible and at the latest 1.1.2020
- Imbalance model development will be discussed in the stakeholder reference group meetings to come
- To stay on track to go-live by June 2021, final confirmation on implementation of single price model is needed by the end of January 2020

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