Regulatory Update & The Hybrid Approach | How will the introduction of FCA 2.0 affect TSO support for the Nordic market?

19-21 May 2026 | Split, Per Kamperin

Nord Pool Market Forum 2026

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Regulatory Update

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Introduction

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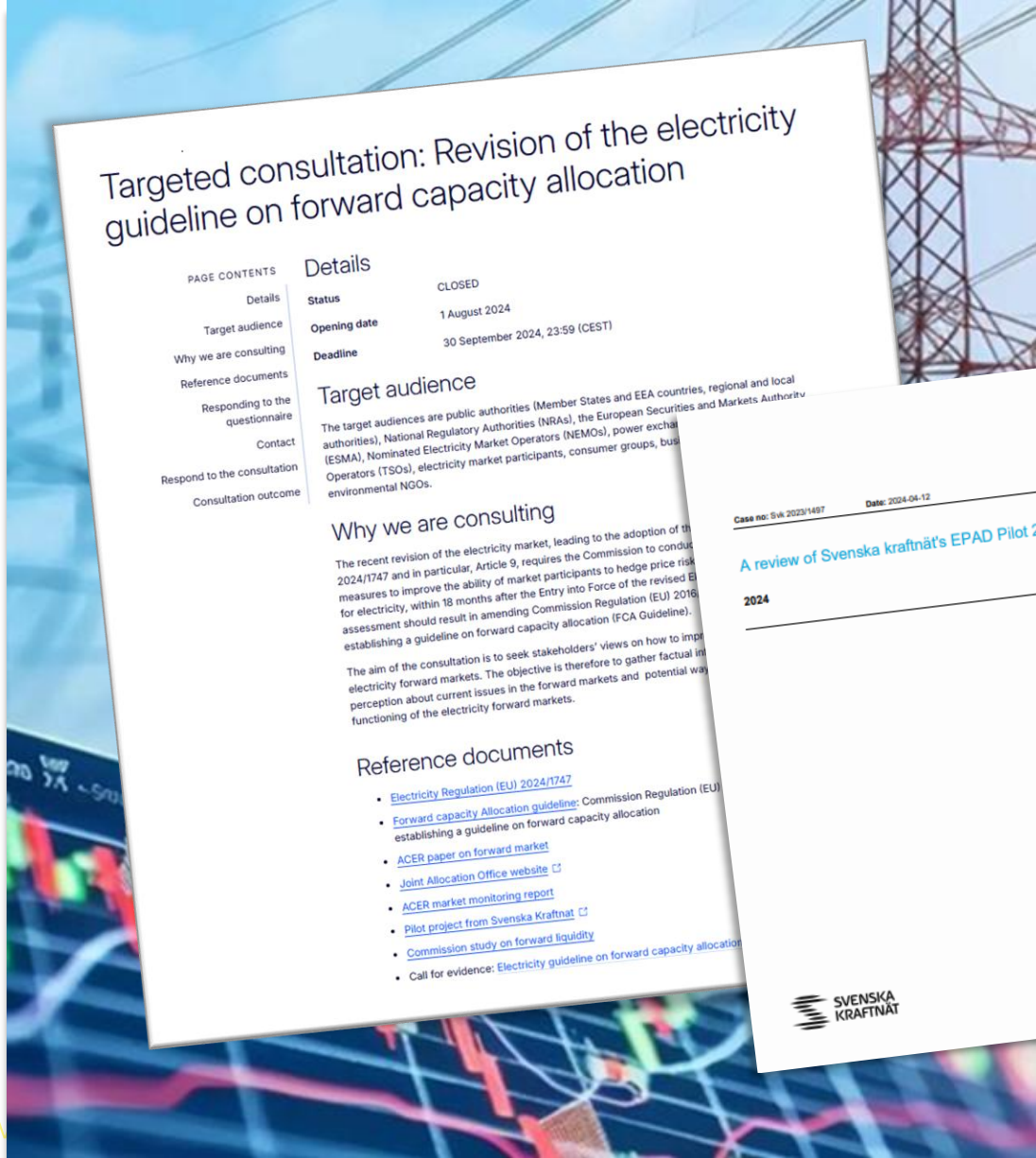
2 min read

EC proposes Nordic-style virtual power hubs

(Montel) The European Commission has proposed setting up Nordic-style regional virtual power hubs to increase forward trading liquidity as part of draft market design reforms published on Tuesday.

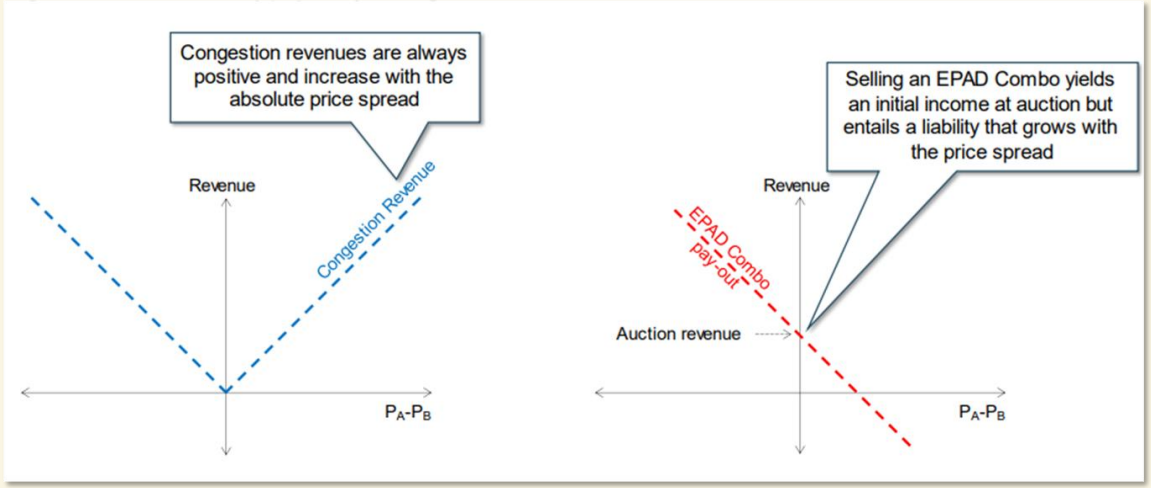
- The Nordic model, with its multiple bidding zones and auctions of “firm” standardized linear financial instruments (EPADs), bears many similarities to the concepts and ideas being discussed in anticipation of FCA 2.0.
- SVK's EPAD-report (April, 2024) – one of few explicit reference documents in the European Commission's consultation ahead of the review of the FCA GL.



FCA – Background

"Promote effective long-term cross-zonal trade and hedging opportunities for market participants."

1. TSOs are given this task because the ownership of physical transmission capacity in financial terms corresponds to a "long" option position.
2. By offering the market hedging opportunities, TSOs also hedge their own congestion revenues – though not mentioned in FCA.

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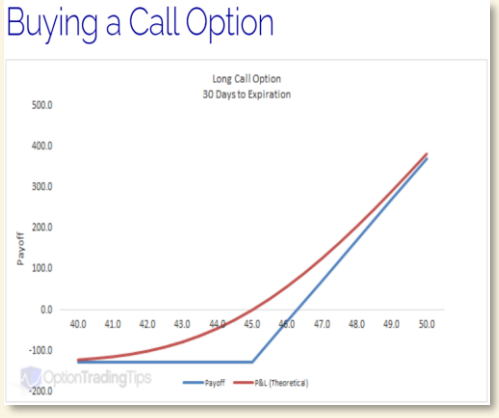
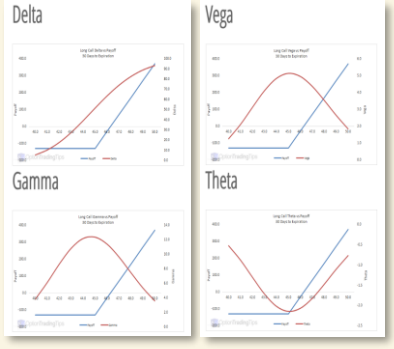
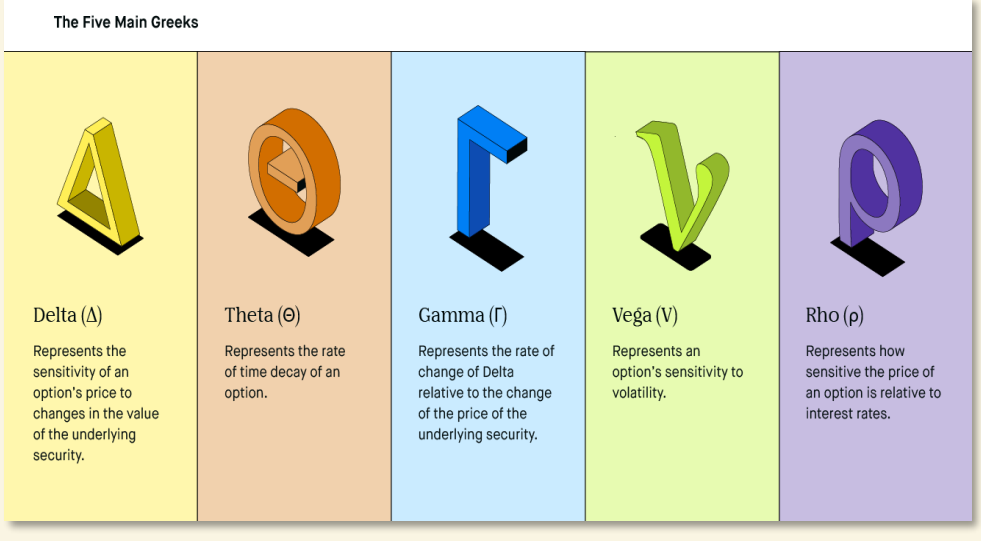
establishing a guideline on forward capacity allocation

The FCA 2.0 impact assessment shall cover possible;

1. Changes to the **frequency** of allocation for long-term transmission rights.
2. Changes to the **maturities** of long-term transmission rights, in particular maturities extended up to at least three years.
3. Changes to the nature of long-term transmission rights:
   - *From curvature to "linearity"..*
   - *And towards "firmness"..*
4. Ways to strengthen the **secondary market**.
5. Introduction of **regional virtual** hubs for the forward markets.







If ”obligations” were to be implemented..

Going short the Straddle => “Perfect Hedge”

- TSOs will need to engage in delta hedging and remain long gamma and vega (volatility).
- Nordic small and medium-sized MPs are not interested in either cross border trading or options trading - instead, they primarily want to hedge their own (local) bidding zone price risk with linear instruments, not via LTTRs.

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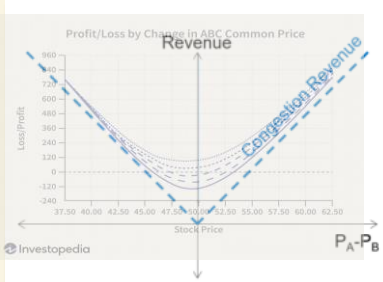
Expected benefits of the preferred option

FTR obligations with full financial firmness are expected to:

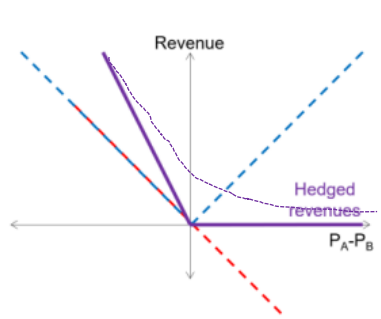
(i) reduce hedging costs and access to the forward market;
(ii) simplify the valuation of FTRs from market participants as well as benchmarking and forecasting for TSOs and regulatory authorities;
(iii) promote risk-free arbitrage between forward markets;
(iv) decrease market fragmentation (one single standard product per bidding zone);
(v) increase competition (due to (i) and (iii) as well as capacity netting and secondary market with capacity leftovers);
(vi) reduce undervaluation (easier valuation and more competition).

Initial TSO-position: ”Long Straddle”



TSO’s Delta Hedge: ”Short future”

Net position: ”Long Put”

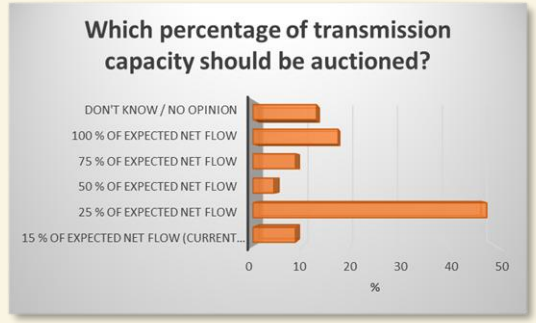


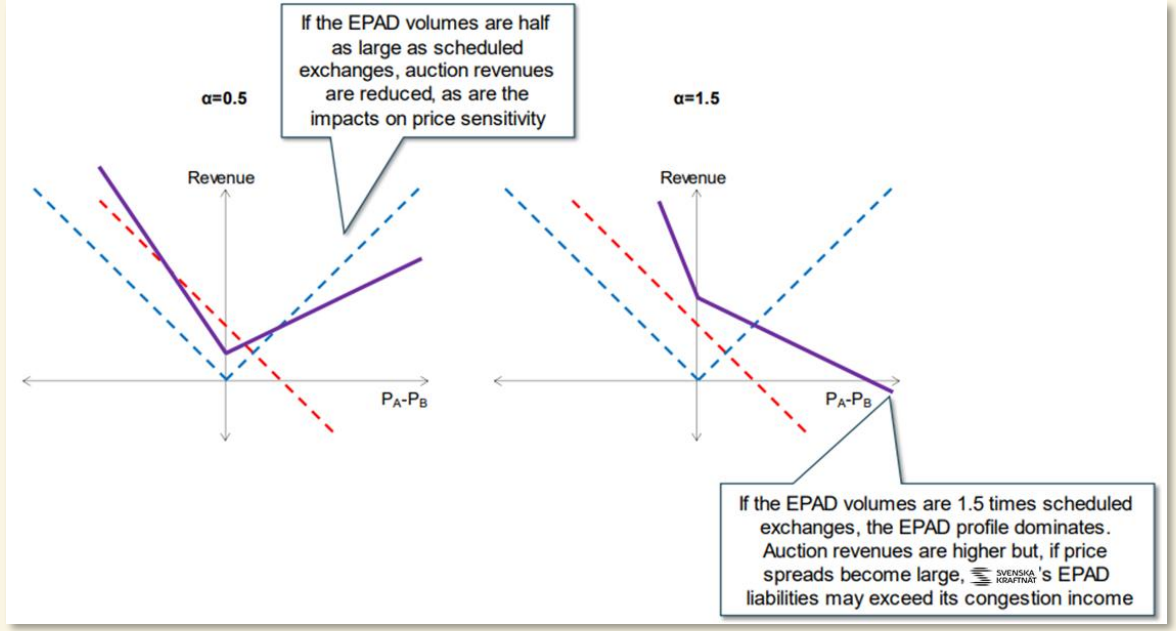
Auction volumes

3 complementary approaches are proposed for assessing hedging needs (ENTSO-E):

1. A fundamental analysis, based on factors such as production data and hedging ratios.
2. A market equilibrium approach, comparing expected net trade flows to offered hedging volumes.
3. Market surveys, capturing MPs' preferences, e.g. Svenska kraftnät 2025 Survey.

Survey (2025):





Summary of proposals..

At present (May 2026), it is considered that the Nordic model can - for the most part - be kept entirely intact, possibly with only a few minor design adjustments:

1. New Auction Platform - JAO?
2. Transfer from JAO to Nord Pool?
3. Higher auction volumes?
    a. Currently: 15%
    b. MPs view: 25%
    c. ACERs view: 70-80%

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1. Move to FTR obligations (full firmness)
2. Define FTRs from any zone to a hub
3. Allow FTR bidding from any zone to any zone
4. Allow buying and selling of FTRs
5. Increase FTR maturities and number of auctions
6. Dynamic volume adjustment
7. Mark to market/auction settlement
8. **Allow regions to transfer FTRs to a PX of choice (e.g. Nordic EPADs)**
9. Socialisation of high impact forced outages (full firmness)

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FCA 2.0 – Design improvements

1. Changes to the frequency of allocation for long-term transmission rights
2. Changes to the maturities of long-term transmission rights, in particular maturities extended up to at least three years
3. Changes to the nature of long-term transmission rights
   - *From curvature to "linearity"*..
   - *Towards "firmness"*..
4. Ways to strengthen the secondary market
5. Introduction of regional virtual hubs for the forward markets

1. We conduct biweekly EPAD-auctions.
2. Maturities extended up to three years, currently auctioning Cal-27 & Cal-28.
3. EPADs are futures (obligations) with a linear risk profile, they are "fully firm".
4. EPADs are standardized instruments, i.e. traded at an exchange and cleared at a CCP with daily MTM and fully integrated with the continuous market (incl. liquidity providers/market makers.)
5. EPADs were designed specifically to link individual bidding zones with a regional virtual hub (in order to facilitate management of basis risk).

Market Support
("Marknadsvård")
&
Market Making?

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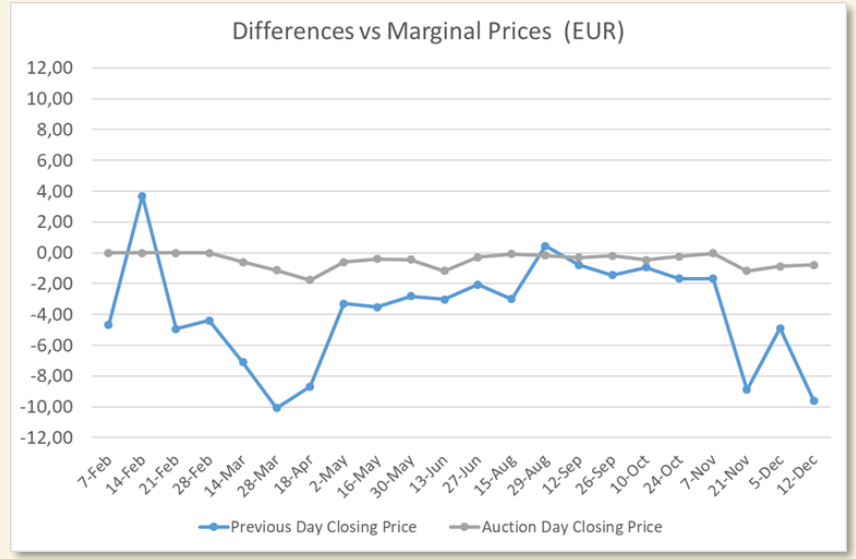
Background

Liquidity & Price Discovery in less liquid bidding zones – "size", "market concentration" and "asymmetry"...

1. Price formation in the continous market often characterized by discrete jumps!

2. Auction marginal prices compared to (i) previous day close and (ii) auction day's closing price.



The Five Dimensions of Liquidity..

1. **Tightness** – How expensive it is to trade
2. **Immediacy** – How fast you can trade when needed
3. **Depth** – How much volume the market can absorb
4. **Breadth** – How many and how diverse participants are
5. **Resiliency** – How quickly prices recover after shocks

- *True liquidity exists only when trading is cheap, fast, sizable, broadly supported, and stable after shocks.*

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Market Making:

➢ Continuous two-sided quotes

✓ Improves tightness, immediacy (and depth?)

Auctions:

➢ Periodic, coordinated trading events

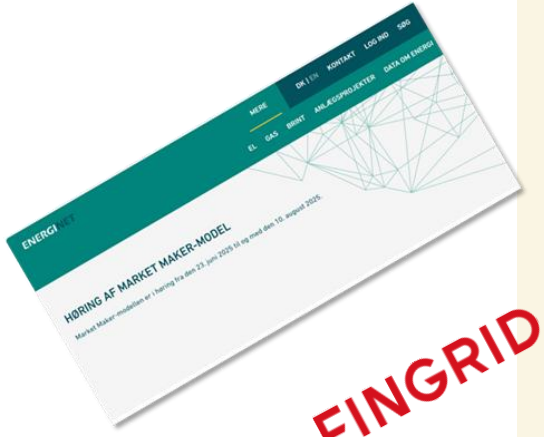
✓ Improve breadth, resiliency and price anchoring

Hybrid (Market making & Auctions):

❖ Covers all 5 dimensions (at least in theory ☺...)

The Hybrid Approach

- At a conceptual level, the hybrid model rests on the recognition that liquidity provision in forward electricity markets requires both exogenous and endogenous liquidity mechanisms.



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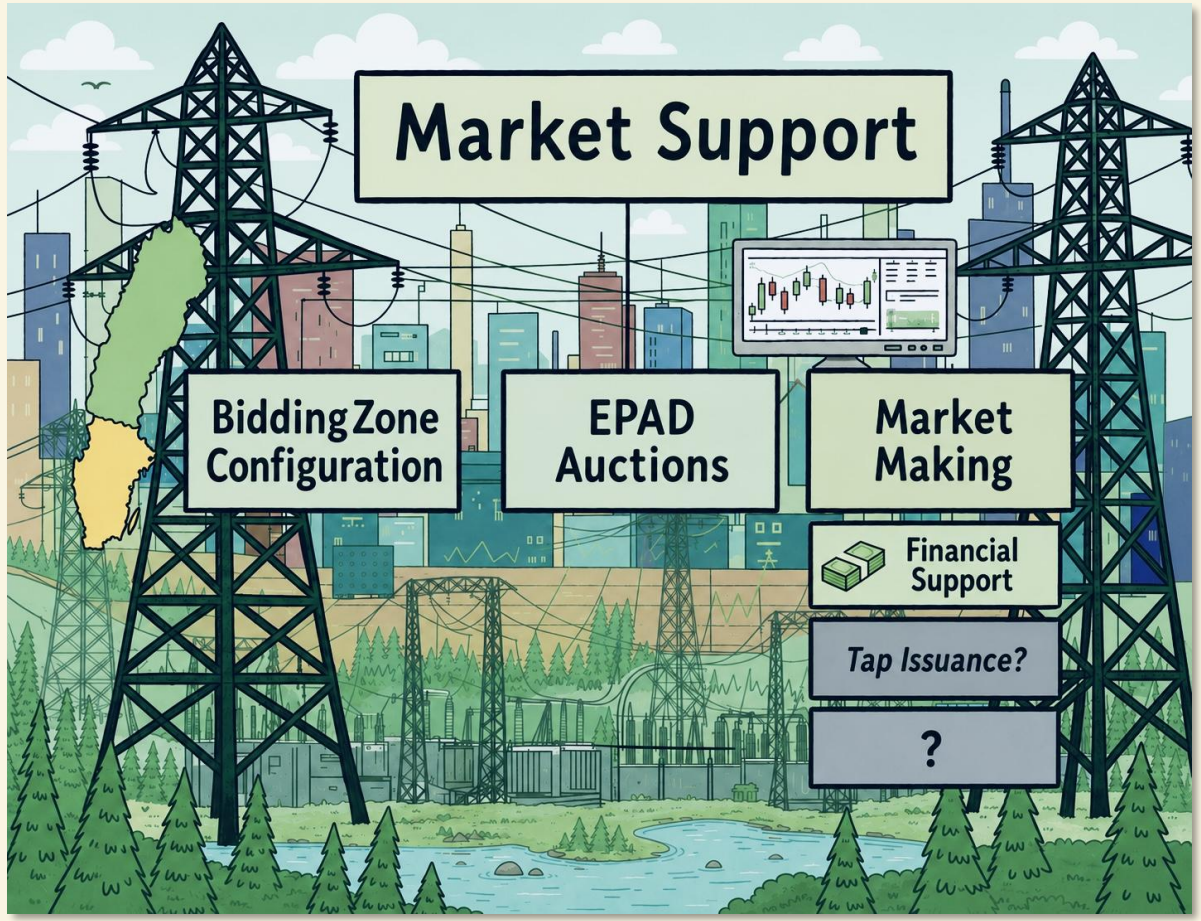
- The hybrid model - combining TSO-run EPAD auctions with an incentive-based scheme for independent market makers - differs from e.g. Energinet's draft Market Maker Model not only in its operational design but also in its underlying regulatory logic and expected market-structural effects.

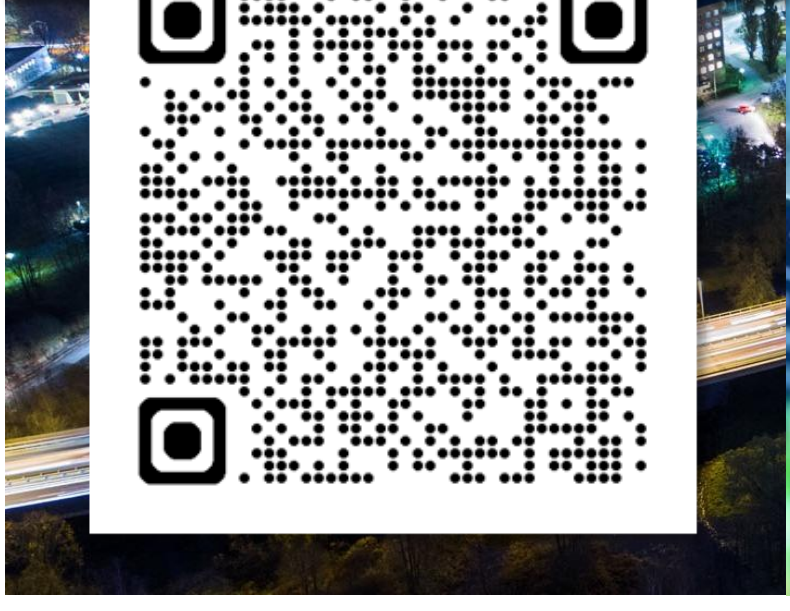
  - ✓ Exogenous liquidity is already introduced through TSO-operated EPAD auctions, which inject price-independent volumes into bidding zones where forward markets fail to generate sufficient hedging opportunities on their own.

Market Support

- Liquidity & Price Discovery in less liquid bidding zones – ”size”, ”market concentration” and ”asymmetry”...
- Svenska kraftnät plans to launch a study aimed at highlighting the potential benefits incl. pros and cons of engaging in (i) supporting market making and/or (ii) providing other assistance to the continuous market.
- Svenska kraftnät values and look forward to continuing a constructive dialogue with Nord Pool, MPs and brokers!



Thank you!



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Extra Slides

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Correlations in the Nordics..

- Liquidity - the hub product must be actively traded to ensure it can be easily bought and sold.
- Price correlation - the hub's price must closely reflect price movements in the bidding zone where the market participant has an open risk position (e.g. above 0.8)

ACER's electricity virtual hub price simulator tool - 2024 vs 2025:

Area	Virtual Hub	System Price	Diff. w/ Sys. Price
SE4	0,75	0,60	0,15
SE3	0,90	0,79	0,11
SE2	0,75	0,82	-0,06
SE1	0,77	0,83	-0,06
NO5	0,81	0,79	0,03
NO4	0,52	0,69	-0,17
NO3	0,78	0,79	-0,01
NO2	0,72	0,62	0,09
NO1	0,86	0,78	0,08
LV	0,64	0,37	0,28
LT	0,64	0,37	0,28
FI	0,81	0,57	0,25
EE	0,68	0,38	0,30
DK2	0,61	0,41	0,20
DK1	0,54	0,38	0,16

Area	Virtual Hub	System Price	Diff. w/ Sys. Price
SE4	0,88	0,71	0,18
SE3	0,95	0,78	0,17
SE2	0,65	0,64	0,01
SE1	0,66	0,65	0,01
NO5	0,75	0,68	0,07
NO4	0,43	0,47	-0,04
NO3	0,60	0,67	-0,07
NO2	0,84	0,68	0,16
NO1	0,86	0,70	0,16
LV	0,68	0,54	0,14
LT	0,68	0,55	0,13
FI	0,83	0,66	0,17
EE	0,68	0,53	0,15
DK2	0,72	0,58	0,15
DK1	0,73	0,58	0,15

The “Nordic model”

The System Price can be viewed as a regional virtual hub for the Nordic electricity market, where:

- Futures contracts are used for hedging the Nordic system price.
- EPADs (futures referencing the difference between an area price and the hub) allow traders to hedge the basis risk.

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Area	Virtual Hub	System Price	Diff. w/ Sys. Price
DK1	0,87	0,84	0,04
DK2	0,90	0,86	0,04
EE	0,91	0,83	0,08
FI	0,93	0,84	0,09
LT	0,91	0,83	0,08
LV	0,91	0,84	0,08
NO1	0,91	0,88	0,03
NO2	0,90	0,88	0,02
NO3	0,58	0,64	-0,06
NO4	0,61	0,67	-0,06
NO5	0,90	0,88	0,02
SE1	0,60	0,65	-0,05
SE2	0,60	0,65	-0,05
SE3	0,97	0,91	0,06
SE4	0,93	0,87	0,05

ACER’s electricity virtual hub price simulator tool

* EPAD – Electricity Price Area Differential, or a Contract of Difference (CfD)

Longer Maturities

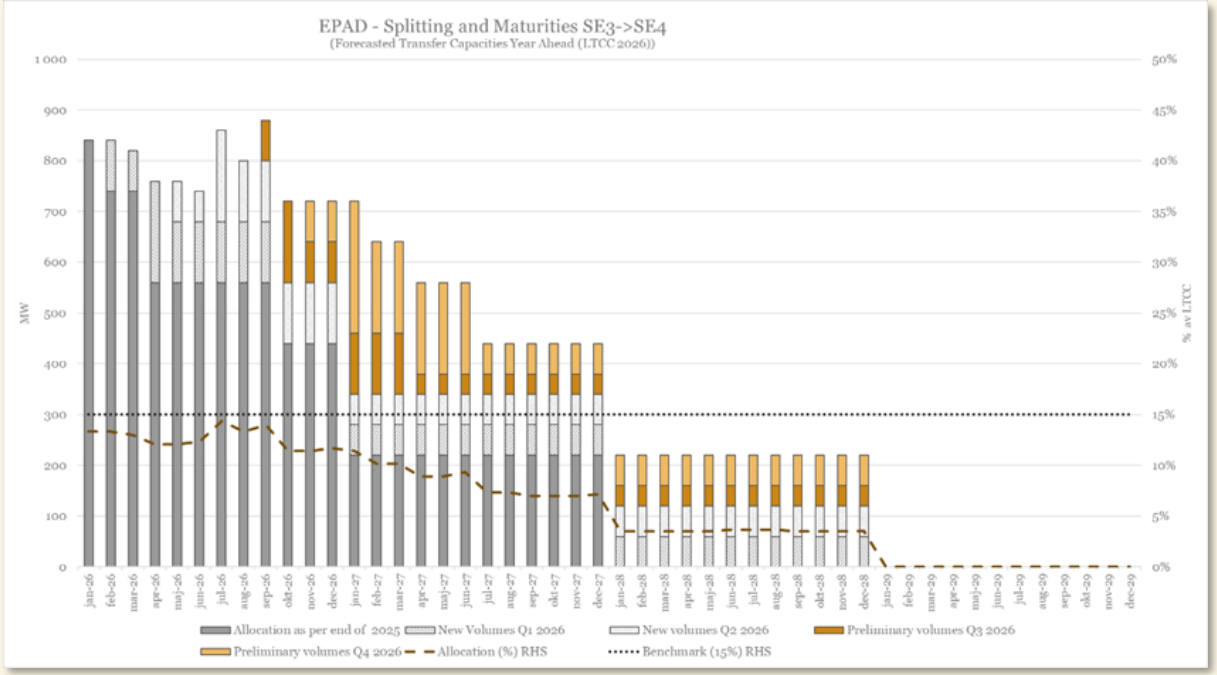
- Approx. 800MW in settlement - equals 15% of CZC (SE3 – SE4).
- Frequent auctions mean that, over time, SVK auctions EPADs at average market spreads.
- Smaller volumes at each auction allow for a gradual build-up of positions.
- This works as a fairly good hedging strategy - if volumes are held constant over time.

EPAD Auction Schedule

27 Jan 2026

Product	Qty
SYSUNAFUTBLMFEB-26	50 MW
SYSTOAFUTBLMFEB-26	50 MW
SYMALAFUTBLMFEB-26	50 MW
SYSUNFUTBLQ2-26	20 MW
SYSTOFUTBLQ2-26	20 MW
SYMALFUTBLQ2-26	20 MW
SYSUNFUTBLQ3-26	20 MW
SYSTOFUTBLQ3-26	20 MW
SYMALFUTBLQ3-26	20 MW
SYSUNFUTBLYR-27	10 MW
SYSTOFUTBLYR-27	10 MW
SYMALFUTBLYR-27	10 MW
SYSUNFUTBLYR-28	10 MW
SYSTOFUTBLYR-28	10 MW
SYMALFUTBLYR-28	10 MW

Spread SE2 vs SE4 (Cal -27):



Secondary markets

“Financial markets are different from physical markets”

- ✓ Dialogue and cooperation with market participants in order to facilitate market development.
  - Alignment with the existing market structure.
  - Flexibility towards local and regional prerequisites.
- ✓ Low entry barriers and a level playing field - with a particular focus on supporting small and medium-sized MPs access to auctions.

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1. The unique feature may not be the zone-to-hub-like structure of EPAD contracts that are used by SVK - we are contract-agnostics.
2. Rather, the key for efficient TSO market support lies in using products that in themselves provide effective hedging opportunities to MPs.
3. ..and linear instruments are superior to options in almost every aspect.
4. (And futures are superior to forwards.)

Current auction design

- In the auctions, a symmetric volume is offered to *buy* or *sell* EPADs in each bidding zone.
- For SVK to enter into transactions and accept buy and sell bids there needs to be a positive price difference.
- A more advanced algorithm, adapted to “Flow-based”, multiple borders and simultaneous auctions has been developed, but is not illustrated here.