EU electricity forward market at a cross-road & Nordic dilemma

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EU Electricity forward market needs reform

- EU Electricity forward market - **<u>a constant source of frustration?</u>**
- Market participants complain:
  - *Low liquidity*
  - *High collateral costs*
  - *Inadequate maturities*
- TSOs complain:
  - *Why are we forced to issue FTRs?*
  - *We're loosing money on FTRs!*
- Regulators are "between the fight"

ACER's diagnostic on why forward market struggles

Pertaining to the EU forward markets

1. **Market fragmentation** – too many markets, too many products
2. **Hedging disincentives –** harmful interventions (subsidies, CfDs, CRMs, …)
3. **Costly counterparty risk management –** high costs of collaterals
4. **Market structure –** high market concentration and supply/demand asymmetry
5. **Vulnerability to bidding zone reconfiguration**

Pertaining to cross-border hedging

5. **LTTRs contribute to market fragmentation –** by serving as hedging products on their own
6. **Accessibility of cross-border hedging products –** infrequent auctioning
7. **Inadequate maturities –** not matching the participants' hedging needs
8. **LTTRs are continuously undersold –** negative risk premia
9. **NRAs/TSOs disagree on whether to support the forward market or not**

What can energy regulators do?

Pertaining to the EU forward markets

Market fragmentation – too many markets, too many products

Hedging disincentives – harmful interventions (subsidies, CfDs, CRMs, …)

Costly counterparty risk management – high costs of collaterals

Market structure – high market concentration and supply/demand asymmetry

Vulnerability to bidding zone reconfiguration

Pertaining to cross-zonal hedging

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Key solution

1. Combine supply and demand across larger areas and bidding zones into a single integrated forward market

&

2. Do that efficiently

Physical hedging and role of TSOs

Physical hedge is an asset that generates income that exactly offsets the risk

	Generators	Consumers (suppliers)	TSOs
Asset	Generation assets	Demand assets	Interconnectors
Need hedge against	Low price	High price	Low congestion income
Offer hedge against	High price	Low price	High congestion cost

1. Integrating forward market requires matching supply and demand across borders
2. Cross-border matching is exposed to risk of congestion costs
3. TSOs are the only ones having assets that offset the risk of congestion costs

How to integrate forward markets

- ACER analysed several policy options (all of them require forward capacity allocation by TSOs)
  - (a) Option 1: Border-wise FTRs (status quo in Continental Europe)
  - (b) Option 2: Zone-to-zone FTRs
  - (c) Option 3: Zone-to-hub FTRs + Virtual hub
  - (d) Option 4: EPAD coupling + Virtual hub
  - (e) Option 5: Zonal futures coupling
- Invite to read: **ACER Policy paper on the further development of the EU electricity forward market**

Why virtual hubs + Z2H FTRs?

1. **Implicit capacity allocation** is more efficient than explicit
   - Excludes border-wise or zone-to-zone FTRs (Options 1 & 2)
2. **Minimise** the number of hedging products
   - Excludes border-wise or zone-to-zone FTRs (Options 1 & 2)
3. Option 3, 4 and 4 are all **quite good** in integrating forward markets
   - Yet, there are **important advantages** of Z2H FTRs (Option 3)

Why virtual hubs + Z2H FTRs?

4. Avoid complex market coupling governance framework
   - *EPAD or futures coupling requires NEMO designation for forward market in each MS*
   - *EPAD or futures coupling requires complex governance setup (MCO function or entity) to allow for NEMO competition*
5. Futures coupling is incompatible with continuous futures market
   - *Capacity allocation requires auctions, futures are traded continuously*
6. Futures coupling would is still (but less) vulnerable to bidding zone reconfiguration
7. Futures coupling offers less liquid hedging products in small zones
   - *Liquidity concentrated around the auctions*

Why virtual hubs + Z2H FTRs?

Virtual hub + Z2H FTRs

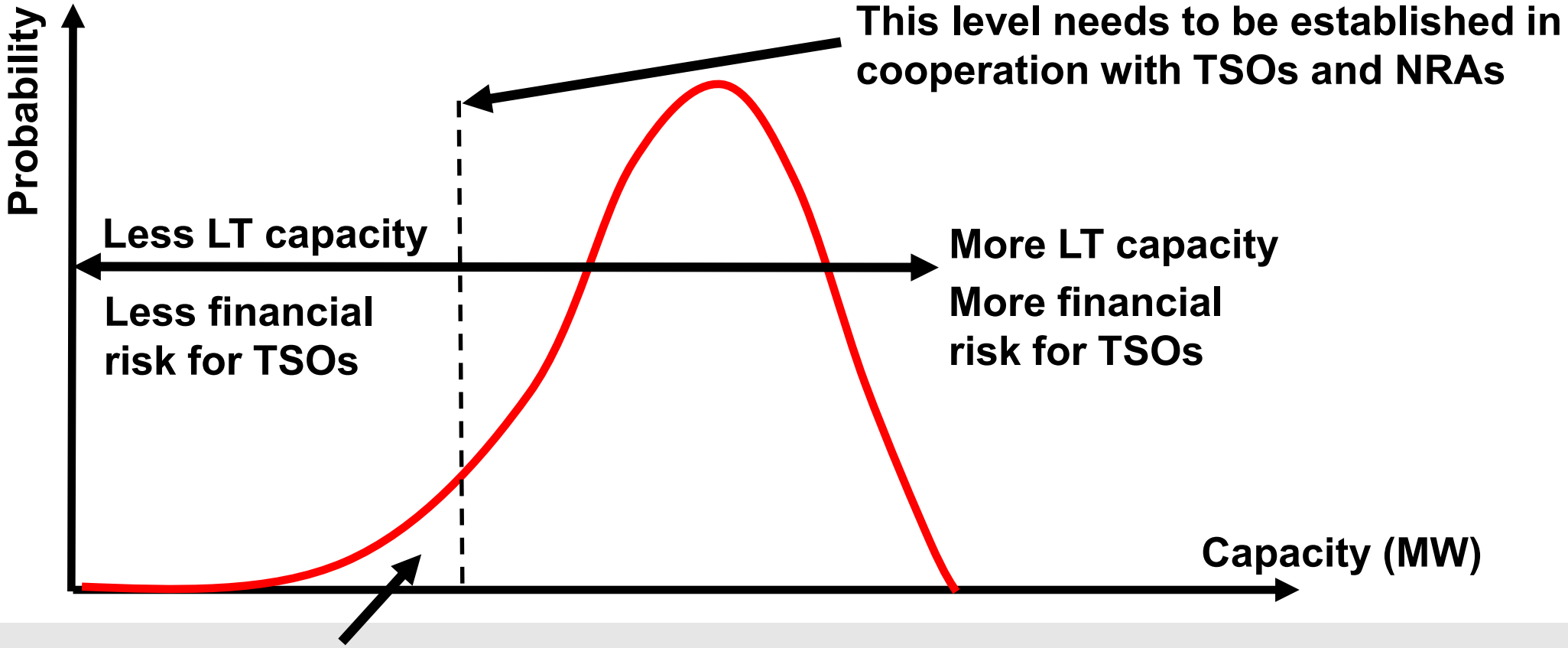
1. Forward market concentrated around hub futures
   - *Cover majority of risk, keep the continuous market, independent of capacity allocation, independent of bidding zone reconfiguration*
2. Basis risk covered by FTRs allocated by Z2H FTRs
   - *Most of the times covers minor part of the risk*
   - *Implicit capacity allocation: JAO matches supply and demand for FTRs with capacity allocation*
   - *Fully equivalent to EPADs*
3. No problems with market coupling, NEMO designation, NEMO competition, MCO governance

Complementing proposals

1. FTR products and maturities fully equivalent to hub futures
   - *Full financial firmness, FTR obligations*
   - *Same maturities as futures (Y,Q,M) up to 3 years ahead*
2. TSOs actively adjust offered capacity to the observed correlations
   - *In times of low correlations, or high congestion costs, TSOs inject additional capacity into FTR/EPAD market*
   - *In times of high correlations, offered capacity can be reduced.*
3. JAO transfers FTR open positions to a PX of choice
   - *FTRs become EPADs and can be traded in secondary market at PXs*
4. Statistical approach to capacity calculation

How do TSOs calculate capacities up to 3 years ahead?

1. Establish historical distribution of day-ahead capacities
2. Draw a value from a historical distribution



Z2H FTRs – Hub price formation

1. The hub price formation would be subject to a methodology
   - *Proposed by TSOs approved by approved by NRAs/ACER*
2. As a preliminary position weighted average day-ahead price could be used
   - *Weights need to be stable, known in advance or easily forecastable (e.g. annual consumption)*
3. Only bidding zones with good network integration should be included in the hub price calculation
   - *e.g. Core and Nordic CCR*

Existing and proposed forward market in Core region

Existing design:

12 forward markets

38 cross-zonal products

→ Fragmentation

Poor liquidity

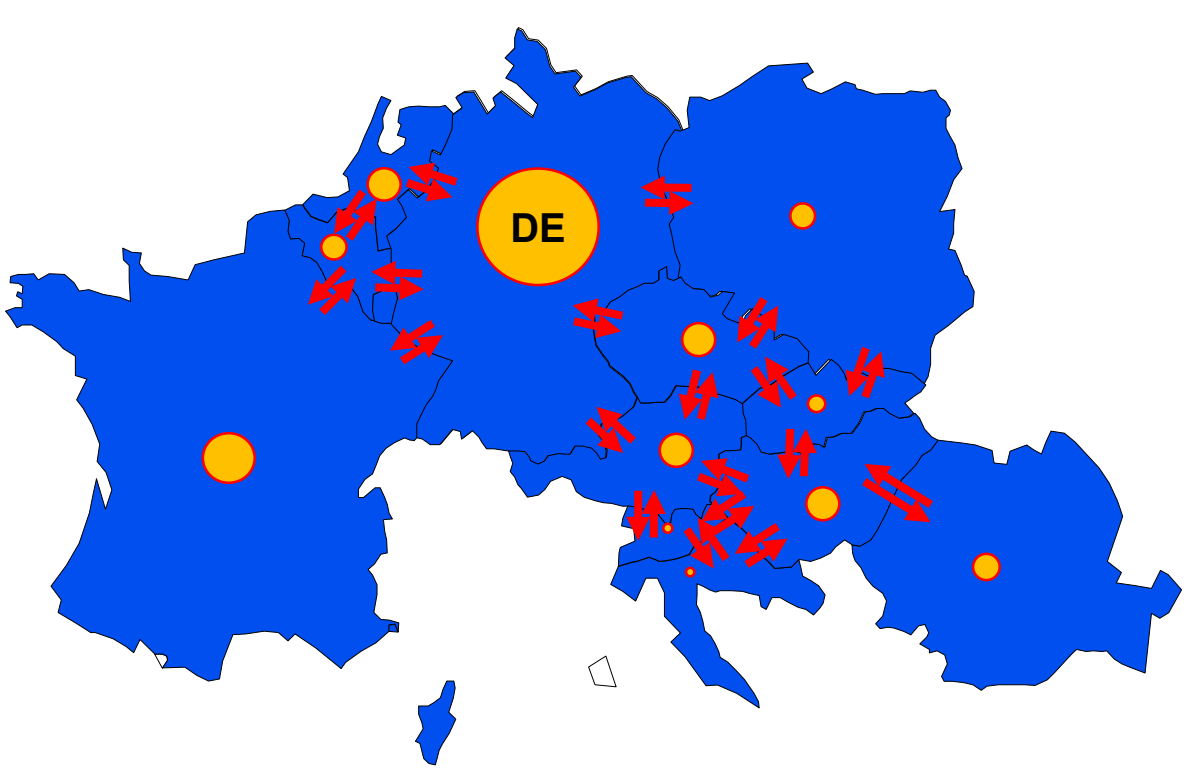
Proposed design:

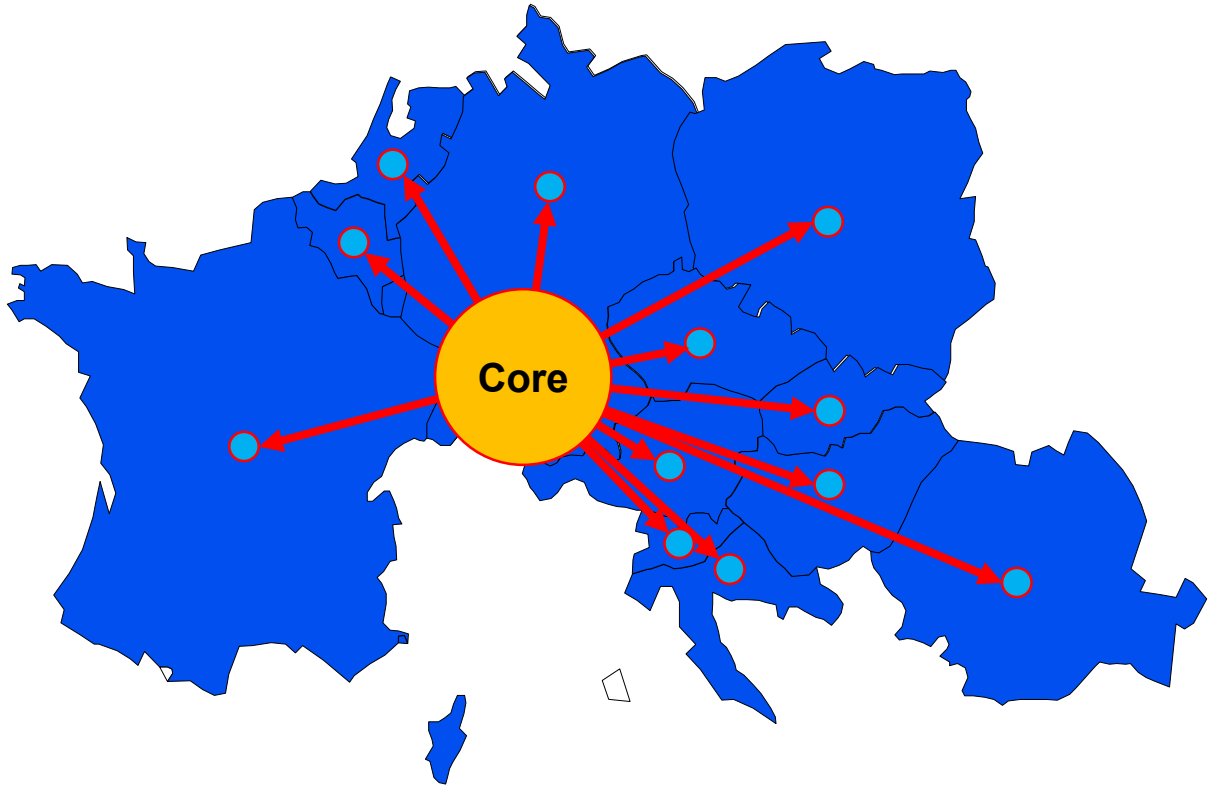
1 forward market

12 cross-zonal products

→ Integration

High liquidity



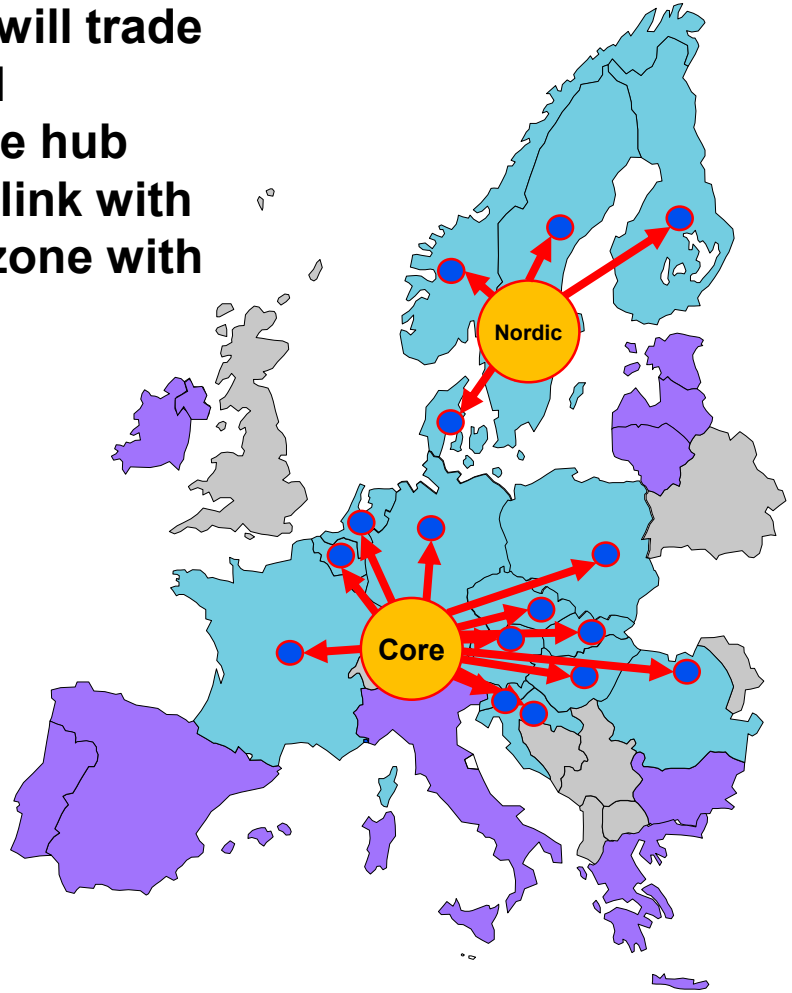


Trading with Futures/Forwards

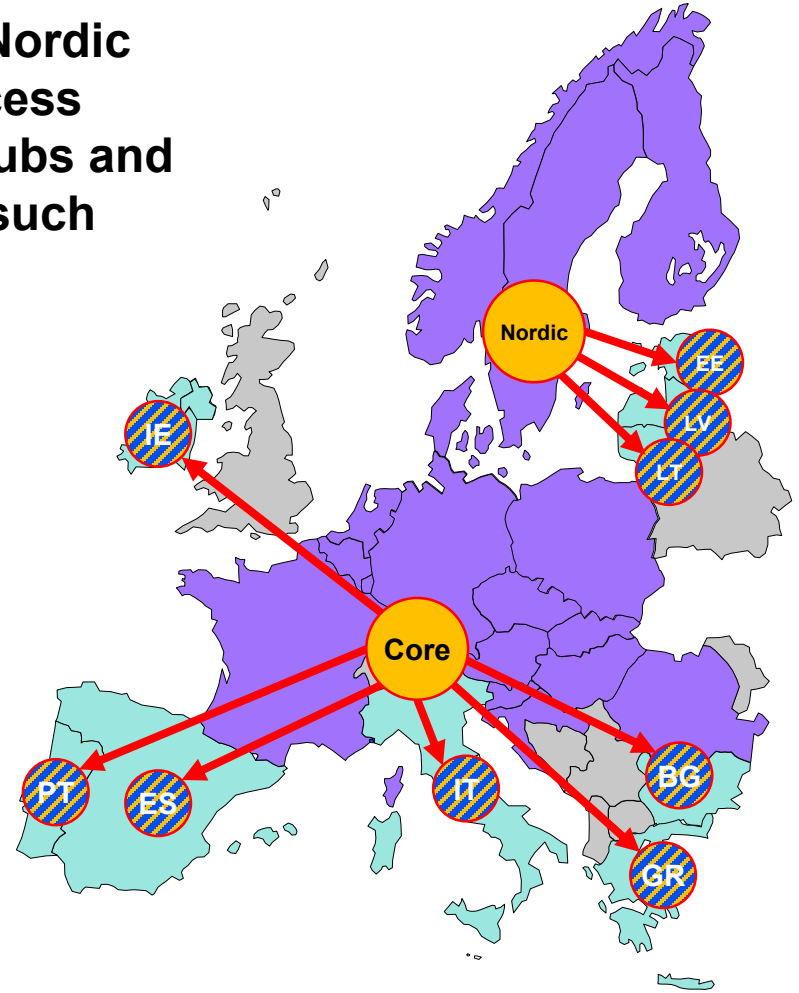
Trading with Transmission Rights

Other regions

Market participants in Core/Nordics will trade future/forward products at the hub and make the link with their bidding zone with FTRs.



Bidding zones outside Core/Nordic could also access Core/Nordic hubs and offer FTRs to such hubs.



Trading with Futures

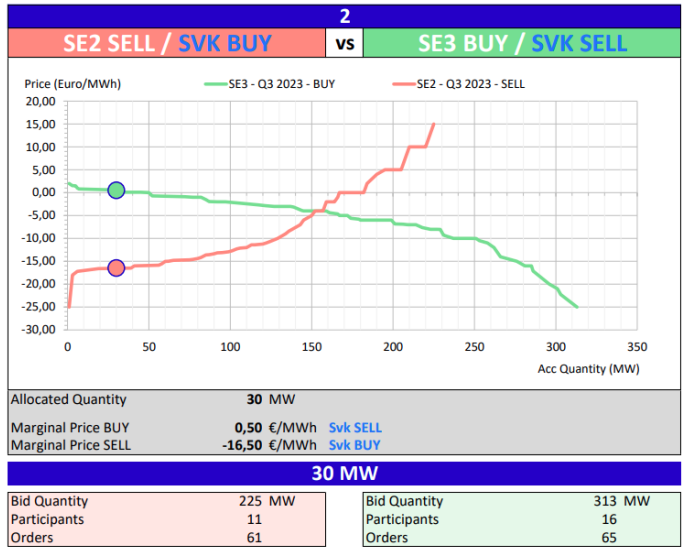
Trading with FTRs

Is Nordic hub model a failure?

In past few years, the liquidity of the Nordic hub is falling

- **Main problem:** more congestions, more price differences between the zones, lower correlations between a hub and the zones
- This makes the Nordic hub futures less good proxy hedge
- In low correlation periods cross zonal hedge products are **essential**
- EPADs (offered by Nasdaq) are not liquid
- Nordic TSOs do not offer FTRs

Swedish pilot project: TSO allocates additional EPADs



Experience from pilot project (reported by Nasdaq):

1. Inject more liquidity to EPAD market
2. Improve secondary continuous EPAD market
3. Improve liquidity of Nordic hub futures

Nordic dilemma

1. Strengthening of System price + EPAD model
   - *e.g. expanding Swedish pilot to boost and integrate the EPAD market*
   - *NRAs/TSOs by supporting EPAD market support also the system price*

OR

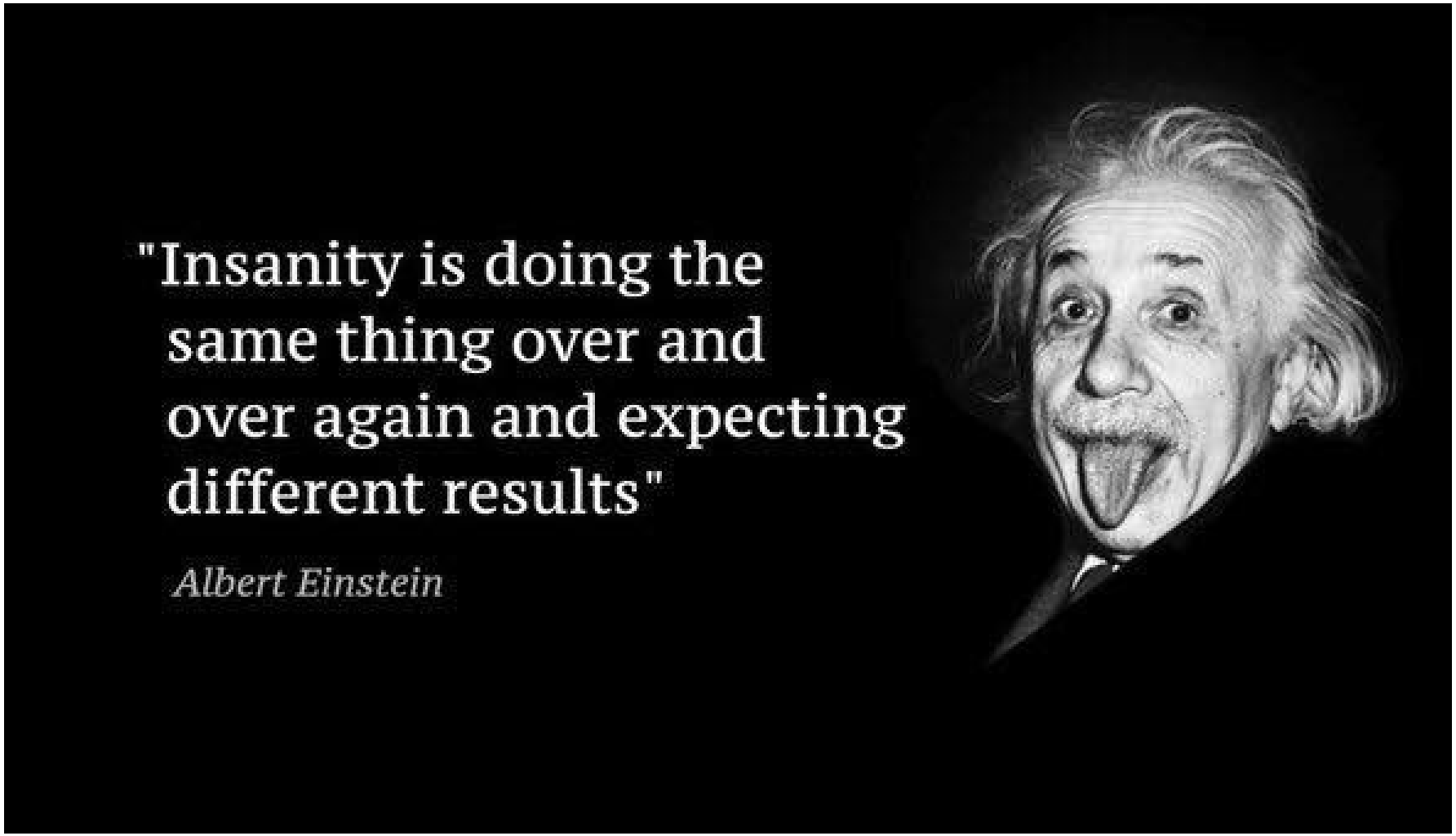
2. Let the events take their course
   - *Zonal futures, system price futures and EPAD market run in parallel without TSOs/NRAs involvement*
   - *Let the market decide which products they want use*

ACER take: Option 2 would lead to disappointing results, more market fragmentation, even less liquidity than today

Key assertions

1. Forward market needs aggregation and cross-zonal integration/coupling
2. Only TSOs can offer hedge against congestion costs – forward capacity allocation is a must
3. Three models can achieve cross-zonal integration :
   (a) Virtual hubs + Z2H FTRs
   (b) Virtual hubs + EPAD coupling
   (c) Coupling with zonal futures
4. Virtual hubs + Z2H FTRs has important advantages over other two
5. ACER invites other Nordic TSOs to join the Swedish pilot project

Courage for change is needed



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