

# TSOs call for alternatives to Virtual Hub model for the forward markets<sup>1</sup>

3 July 2024



## Key Message

Current possible shortcomings of the electricity forward markets such as limited liquidity in some bidding zones should not be addressed in legislative acts by imposing disruptive regional Virtual Hubs, which are untested solutions that are not supported by market participants. Instead, promising alternatives such as an improved auction design based on options, or on obligations, which could be implemented and deliver benefits within the next years, should be assessed.

ENTSO-E welcomes the mandate to the European Commission to launch an impact assessment of different potential solutions in the forward market before a final decision is taken according to Article 9 of the Electricity Regulation pursuant the Electricity Market Design Reform. Throughout the assessment, all potential models should be analysed in consultation with stakeholders, to address unclear points and evaluate thoroughly all consequences.

**ENTSO-E is further assessing more promising alternatives to the Virtual Hub model** that can be implemented as target model/s for all TSOs upon positive regional assessments (see table below). The models under evaluation entail keep-

ing the current border wise approach. Hedging between non-neighbouring bidding zones can still be done via power exchanges by means of spread products.

## Model 1. Improved auction design based on options

ENTSO-E recommends implementing **'low-hanging fruits' measures: this would allow results in an earlier and reasonable period**, operating within the current market setup and potentially within the current framework of the Forward Capacity Allocation Regulation (FCA), rather than relying on strong assumptions or theoretical expectations from an untested instrument like the Virtual Hub. Among the options to do so, we highlight:

› **Increasing the auction frequency:** the frequency should be based on market participants' feedback and be re-

viewed on a regular basis. The idea would be to increase the frequency slowly to gain experience (i. e., monthly) and avoid too low volumes for each auction. The volume to be allocated and the number of auctions need to be adjusted among allocation timeframes within each border, based on the liquidity of each bidding zone border, and the hedging needs of market participants.

› **Lengthening the product maturities to at least two years to align TSOs' products with current market liquidity and hedging needs of market participants.**<sup>2</sup>

## Model 2. Improved auction design based on obligations

In addition to the two features of Model 1, TSOs could **issue existing products being traded today in the commercial forward markets**<sup>3</sup>. By combining two commercial products such as zonal Futures or Contract for Differences (i. e., Electricity Price Area Differentials [EPADs]) with the same maturity and quantity, TSOs create a synthetic Long-Term Transmission Right (LTTR) with full financial firmness and as an obligation.

› **TSOs could perform auctions** and market participants could use commercial power exchanges for secondary trading (resulting traded positions would stay at JAO or would be cleared at the clearing house).

› Hereby TSOs would use **existing forward products** at existing marketplaces as there would be no difference in the products being auctioned and traded continuously. In this model, the TSOs provide hedging opportunities across

borders and therefore inject liquidity directly into the existing forward markets. The liquidity could be pooled and enhanced, instead of splitting it among different hedging products (i. e., LTTRs and existing commercial products).

Collaterals (margins) requirements are likely to be imposed on TSOs depending on how the secondary trading is organised, for instance, in case secondary trading is organised through a clearing house, whilst this would not be the case if the traded positions stay at JAO. TSOs costs for these collaterals and/or JAO's risks exposure need to be financed via e. g. grid tariffs and/or congestion revenues.

To match existing traded products at power exchanges and brokers, full financial firmness would be required.

1 See also: [Electricity\\_Forward\\_Market\\_PolicyPaper.pdf \(europa.eu\)](#)

2 YA+1 liquidity is making up to ca. 75 % of overall maturities. See: Progress of EU electricity wholesale market integration – 2023 MMR (europa.eu).

3 A pilot of this setup is already implemented by SVK since February 2023. Stattnet is also planing to implement a similiar pilot.

	Model 1	Model 2	Model 3
<b>Description</b>	Improved auction design based on options	Improved auction design based on obligations (through existing commercial products)	ACER's Virtual Hub model
<b>Volume determination</b>	Alternatives to flow-based such as statistical NTC and supply function to be assessed as well	Alternatives to flow-based such as statistical NTC and supply function to be assessed as well	Flow-based (statistical and/or scenario based)
<b>Increasing the frequency of LTRs auctions</b>	Yes	Yes	Yes with 'Forward co-optimisation'
<b>Increasing LTRs' maturities to at least two years</b>	Yes	Yes	Yes with 'Forward co-optimisation'
<b>Switching from options to obligations</b>	No	Yes	Yes
<b>Full financial firmness</b>	Optional	Yes	Yes
<b>Secondary markets</b>	Return in a subsequent auctions	Continuous market on exchanges (only primary auctions at JAO, no further involvement from TSOs)	1. Return in a subsequent auction 2. Transfer among market participants – Continuous market on exchanges
<b>Collaterals imposed on TSOs</b>	No (under today's regulation)	No, if the position stays at JAO Yes, if the position is handed over	No, if the position stays at JAO Yes, if the position is handed over
<b>LTA inclusion removal</b>	To be decided	To be decided	Yes
<b>Overall implementation effort</b>	Low	Medium	High

Table 1: High level comparison of possible TSO involvement in the forward market

## Views on the Virtual Hub models<sup>4</sup>

After a thorough evaluation, ENTSO-E disagrees with ACER's assessment that a regional Virtual Hub model addresses the challenges of the electricity forward market. In fact, the added value of an such approach is mostly not demonstrated:

- 1) The main risk is that the trading will not move to the hub, creating a **liquidity split** between hub and large zones, while harming the efficiency of all hedging products.
- 2) ENTSO-E is not convinced that the Virtual Hub will provide higher and more stable correlations (which are preconditions for the Virtual Hub concept to work) compared to the current situation with big Bidding Zones acting as natural hub for proxy hedging. Based on experience from the Nordics it is very challenging – if not impossible – to create a hub price with these characteristics.
- 3) The benefits of the Virtual Hub might be observed only in case of a significant reconfiguration of existing bidding zones into many small bidding zones would happen (i. e., in the absence of a natural physical hub), which is not

given at the moment. Therefore, **the decision to introduce a Virtual Hub should not be taken ahead of this consideration.**

- 4) The market should decide by itself rather than being subject to an 'imposed' hub: in fact, recent market developments have registered a broader use of zonal futures<sup>5</sup>.

Further concerns<sup>6</sup> from ENTSO-E are related to the lack of maturity of the Virtual Hub model, which is **far from being proven at this stage**. On top of that, several particular design elements such as **local matching, forward co-optimisation and the increased complexity to hedge between bidding zones belonging to different hubs<sup>7</sup> remain questionable**. The model should be designed to facilitate hedging and add liquidity to existing markets. It should not establish a new market or trading venue in parallel to existing ones, where TSOs overtake a large part of the commercial power exchanges market.

4 See also: [Electricity\\_Forward\\_Market\\_PolicyPaper.pdf \(europa.eu\)](#)

5 EEX launched zonal futures in Nordic bidding zones in March 2024.

6 See Energy Traders Europe and Eurelectric Florence Forum joint presentation on 28 May for Florence Forum

7 See EEX document on 'Why zonal futures are more conducive to liquidity than regional virtual trading hubs'

# General considerations and open points for the further development of cross-border forward markets

In addition to the previous remarks, there are some additional considerations that are worth a detailed analysis during the impact assessment:

## 1. Collaterals

Collateral requirements which would be imposed on TSOs in case of Virtual Hubs **raise major concerns for TSOs. These concerns are also present in 'Model 2' if secondary trading is organised through a clearing house.** TSOs would need to secure large amounts of liquidity (up to several billion euros) via credit lines, which could come at a high cost for TSOs and, consequently, for tariff payers. Lastly, collaterals would strongly increase TSOs' debt ratio, leading to a risk of degraded credit rating and therefore reducing the possibility for TSOs to invest in the grid.

Access to additional TSO-funding needs to be granted by NRAs. The opportunity for TSOs to trade as a single player to lower margin calls has to be looked further into. The extent of required margins needs to be carefully analysed as well as it represents a huge concern for TSOs, together with the application of financial market regulation to the TSOs' positions.

In addition, increased collateral requirements on products offered by TSOs for market participants could harm the liquidity.

## 2. Volume Determination

LTTRs are risk-hedging products. The goal of LTTRs is not to bring the futures/forwards market prices together (although it could be a consequence) as forward/futures prices are based on the underlying contract – being the futures price spread of the concerned bidding zone border. It is thus not necessary to organise competition between borders in allocation.

Therefore, welfare from LTTRs does not arise from maximising quantity, but from market's risk exposure for the adequate volume. This means, TSOs should also base LTTR amounts to be allocated on market participants' hedging needs. In practical terms, the way the volume should be determined

for options and obligations remains to be assessed due to the different nature of the products. A flow-based approach to determine and allocate the volumes offered by TSOs is thus not a pre-condition, neither for the Virtual Hub model nor for the alternatives developed in this paper. Possible alternatives for volume determination such as an improved statistical NTC approach, using a supply function, etc., could be beneficial and need further investigation. Moreover, under the current objective function for long-term allocation, the objective of market risk hedging from Article 3 of FCA<sup>8</sup> is not sufficiently addressed. Therefore, a fundamental rethink is necessary.

## 3. Revenue adequacy (Full financial firmness / LTA-Inclusion)

TSOs are open to evolve LTTRs into fully firm products as long as there is an agreed cost-recovery mechanism from regulators. This approach, in fact, impacts both how congestion income is being used and how revenue adequacy is achieved, while not impacting the operation of short-term markets.

For that purpose, today's link between day ahead and long-term markets (i. e., the principle of long-term allocation inclusion) remains to be assessed.

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8 FCA Article 3.a: 'promoting effective long-term cross-zonal trade with long-term cross-zonal hedging opportunities for market participants.'

# ENTSO-E Mission Statement

## Who we are

ENTSO-E, the European Network of Transmission System Operators for Electricity, is the **association for the cooperation of the European transmission system operators (TSOs)**. The 40 member TSOs, representing 35 countries, are responsible for the **secure and coordinated operation** of Europe's electricity system, the largest interconnected electrical grid in the world. In addition to its core, historical role in technical cooperation, ENTSO-E is also the common voice of TSOs.

ENTSO-E **brings together the unique expertise of TSOs for the benefit of European citizens** by keeping the lights on, enabling the energy transition, and promoting the completion and optimal functioning of the internal electricity market, including via the fulfilment of the mandates given to ENTSO-E based on EU legislation.

## Our mission

ENTSO-E and its members, as the European TSO community, fulfil a common mission: Ensuring the **security of the interconnected power system in all time frames at pan-European level** and the **optimal functioning and development of the European interconnected electricity markets**, while enabling the integration of electricity generated from renewable energy sources and of emerging technologies.

## Our vision

ENTSO-E plays a central role in enabling Europe to become the first **climate-neutral continent by 2050** by creating a system that is secure, sustainable and affordable, and that integrates the expected amount of renewable energy, thereby offering an essential contribution to the European Green Deal. This endeavour requires **sector integration** and close cooperation among all actors.

Europe is moving towards a sustainable, digitalised, integrated and electrified energy system with a combination of centralised and distributed resources.

ENTSO-E acts to ensure that this energy system **keeps consumers at its centre** and is operated and developed with **climate objectives** and **social welfare** in mind.

ENTSO-E is committed to using its unique expertise and system-wide view – supported by a responsibility to maintain the system's security – to deliver a comprehensive roadmap of how a climate-neutral Europe looks.

## Our values

ENTSO-E acts in **solidarity** as a community of TSOs united by a shared **responsibility**.

As the professional association of independent and neutral regulated entities acting under a clear legal mandate, ENTSO-E serves the interests of society by **optimising social welfare** in its dimensions of safety, economy, environment, and performance.

ENTSO-E is committed to working with the highest technical rigour as well as developing sustainable and **innovative responses to prepare for the future** and overcoming the challenges of keeping the power system secure in a climate-neutral Europe. In all its activities, ENTSO-E acts with **transparency** and in a trustworthy dialogue with legislative and regulatory decision makers and stakeholders.

## Our contributions

**ENTSO-E supports the cooperation** among its members at European and regional levels. Over the past decades, TSOs have undertaken initiatives to increase their cooperation in network planning, operation and market integration, thereby successfully contributing to meeting EU climate and energy targets.

To carry out its **legally mandated tasks**, ENTSO-E's key responsibilities include the following:

- › Development and implementation of standards, network codes, platforms and tools to ensure secure system and market operation as well as integration of renewable energy;
- › Assessment of the adequacy of the system in different timeframes;
- › Coordination of the planning and development of infrastructures at the European level (Ten-Year Network Development Plans, TYNDPs);
- › Coordination of research, development and innovation activities of TSOs;
- › Development of platforms to enable the transparent sharing of data with market participants.

ENTSO-E supports its members in the **implementation and monitoring** of the agreed common rules.

**ENTSO-E is the common voice of European TSOs** and provides expert contributions and a constructive view to energy debates to support policymakers in making informed decisions.

# Abbreviations

<b>ACER</b>	The European Union Agency for the Cooperation of Energy Regulators
<b>EC</b>	European Commission
<b>ENTSO-E</b>	European Network for Transmission System Operators in Electricity
<b>EPADs</b>	Electricity Price Area Differentials
<b>EU</b>	European Union
<b>FCA</b>	Forward Capacity Allocation Regulation
<b>JAO</b>	Joint Allocation Office
<b>LTTR</b>	Long-Term Transmission Right
<b>TSO</b>	Transmission System Operator

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