The Next Evolution of Flexibility and Renewables Hedging: TBx and Hourly Block Futures

EEX Power Derivatives

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Renewables are driving the evolution of wholesale power markets

Renewable growth is reshaping price profiles

Driver: rising renewable generation is reshaping power price profiles

1

More volatile midday

High solar pushes midday prices structurally lower while morning/evening peaks remain - widening intraday spreads.

2

Bigger daily spreads

Larger gaps between the cheapest and most expensive hours create both battery arbitrage value and new risk to manage.

3

Shape not captured by Base/Peak

Standard base and peak products do not adequately hedge midday depressions or weekday-vs-weekend structure.

Over time EEX has tracked these shifts with trading participants and adapted the product portfolio accordingly.

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EEX's response: Extend the Toolbox for Renewables Hedging

Existing products plus new families

Existing toolbox

- Day & Weekend Futures - rollout continuing
- Year Future expiries extended to Cal+10
  - DE, ES, IT, FR, NL, Nordic System Price

New product families (WIP)

- Top-to-Bottom (TB2 / TB4) Futures
- Extended Peak Futures (06–22)
- Weekend Futures extension
- Solar Block Futures (12–16)

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Top-to-Bottom (TBx) Futures

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TBx : Why a Price-Only Benchmark?

Standardising wholesale spread exposure to build liquid, exchange-cleared derivatives

Liquidity Aggregation

- **Attracts Non-BESS Desks:** Pure price-spread futures draw in utilities, cross-commodity traders, and financial desks.
- **Consolidates Market Flow:** Prevents liquidity fragmentation across bespoke asset profiles, aggregating two-way trading volume into a common reference point.
- **Broad Market Applicability:** Multi-segment participation delivers liquidity potential and lower execution risk for hedgers.

Utilities • Proprietary Traders • BESS Operators • Origination Desks

Transparent Replicability

- **Exchange-Cleared Integrity:** Settles against transparent, published day-ahead auction prices, not opaque model outputs.
- **Zero Black-Box Assumptions:** Eliminates debatable assumptions around degradation, state-of-charge, cycling limits, or proprietary dispatch logic.
- **Confidently Back-testable:** Enables risk committees, lenders, and algorithmic optimizers to model and price risk with full empirical certainty.

BESS Optimisers • Storage Owners • Risk Committees • Project Lenders

Durability & Benchmarking

- **Permanent Contract Standard:** Futures benchmarks endure for decades, whereas models and technologies change over time.
- **Rising Merchant Importance:** As ancillary services rapidly saturate across Europe, wholesale spread capture will rise in importance as a battery revenue driver.
- **Industry Price Reference: EPEX TBx Indices** and **EEX TBx Futures** provide transparent benchmarks for long-term tolling agreements, bilateral deals, and structured products.

Infrastructure Funds • Tolling Counterparties • Commercial Banks • Originators

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TBx Futures: Methodology & Settlement

Transparent price-only spread methodology: from Day-Ahead auction to futures cash settlement

PRICE-ONLY METHODOLOGY

STEP 1: NON-CONSECUTIVE RANKING

- **Sort Day-Ahead MTUs:** Sort all Day-Ahead auction MTUs across the 24h delivery day (00:00–24:00) from highest to lowest by price.
- Non-consecutive price selection.

STEP 2: TOP-TO-BOTTOM SPREAD FORMULA

- **TB2:** Mean of 8 highest vs. 8 lowest 15-min MTUs (2 hours).
- **GB TB2 :** Mean of 2 highest vs. 2 lowest 60-min MTUs (2 hours).
- **TB4:** Mean of 16 highest vs. 16 lowest 15-min MTUs (4 hours).

STEP 3: FINANCIAL CASH SETTLEMENT

- **Final settlement:** The arithmetic mean of daily TBx spreads across the delivery tenor (Month / Quarter / Year).
- **Central Clearing (ECC):** 100% financially cash-settled via ECC.

ILLUSTRATIVE SETTLEMENT: WEEKLY TB2 FUTURE

Day	Avg 8 highest 15-min	Avg 8 lowest 15-min	Daily TB2 (€/MWh)
Mon	91.36	58.24	**33.12**
Tue	103.70	61.42	**42.28**
Wed	124.71	54.40	**70.31**
Thu	112.82	63.91	**48.91**
Fri	96.84	41.50	**55.34**
Sat	87.56	12.30	**75.26**
Sun	73.35	0.50	**72.85**
Week TB2 Settlement	—	—	**56.87 €/MWh**

**Illustrative weekly example (€/MWh). Final settlement = arithmetic mean of the 7 daily spreads.*

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TBx Futures: Products, Markets, Maturities

Standardized TB2 and TB4 profiles across key European power markets

Live 21 September 2026					
Market / Hub	**Product**	**DA Auction Reference**	**Duration & MTU**	**Rationale**	**Maturities**
Germany (DE)	**TB2**	EPEX	2 Hours • 8 × 15-min MTUs	Operational fleet dominated by 2h BESS (~1.5+ GW).	▪ Curr.+9 Months ▪ 11 Quarters ▪ 6 Years
Great Britain (GB)	**GB TB2**	EPEX	2 Hours • 2 × 60-min MTUs	Europe's most mature BESS market (~4 GW operational).	
France (FR)	**TB2**	EPEX	2 Hours • 8 × 15-min MTUs	Emerging storage market focused on 2h duration to complement nuclear baseload	
Italy (IT)	**TB2 & TB4**	GME	2h and 4h • 8 & 16 × 15-min MTUs	Fast-growing 2h merchant battery fleet in Northern Italy. MACSE regulatory auctions mandate & finance 4h storage	
Spain (ES)	**TB4**	OMIE	4 Hours • 16 × 15-min MTUs	Extreme midday solar penetration creates prolonged 4h–6h price depressions	

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TBx Location Spreads: Cross-Border Flexibility

Exchange-traded spread instruments across Continental TB2 markets (Germany, France, Italy)

Leg A Product	Market	Leg B Product	Market	Tenors	Spread Type	Pricing
EEX DE Power TB2	DE	**EEX FR Power TB2**	FR	Month, Quarter, Year	TB Location Spread	EUR
EEX DE Power TB2	DE	**EEX IT Power TB2**	IT	Month, Quarter, Year	TB Location Spread	EUR
EEX FR Power TB2	FR	**EEX IT Power TB2**	IT	Month, Quarter, Year	TB Location Spread	EUR

Cross-Border Flexibility Arbitrage

Trade structural price shape differentials between interconnected European bidding zones, with guaranteed simultaneous execution of both legs.

Portfolio Hedging & Optimization

Enables pan-European storage operators and renewable developers to manage geographic basis risk across multi-country battery assets.

Capital & Margin Efficiency

Centrally cleared by ECC with direct cross-margining margin offsets between correlated TB2 outright contracts.

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TBx Futures: Contract Volume & Settlement Price Formation

Contract specification details and key links

Contract Volume & Sizing

- **1 Lot = 1 MW Nominal Capacity:** Across all TBx contracts, lot size represents 1 MW nominal capacity (the lot size is not 2 MW or 4 MW).
- **Volume Calculation Formula:** Total contract volume equals 1 MW × Daily Profile Duration × Days in Delivery Period (MWh).
- **TB2 Futures (2h Profile):** Daily Volume = 2 MWh/day (62 MWh per lot for a 31-day month).
- **TB4 Futures (4h Profile):** Daily Volume = 4 MWh/day (124 MWh per lot for a 31-day month).

To the EEX Contract Specifications

To the EEX Price List and ECC Price List

Settlement Price Formation & Access

- **Daily Settlement Procedures:** Standard EEX settlement price procedures apply for daily settlement pricing, supported by market input and model-based valuation for illiquid maturities: Settlement Price Procedure
- **Full Curve Transparency:** EEX will establish settlement prices for all maturities: Curr.+9 months, 11 quarters, 6 years, providing market view on future spread values.
- **Free Access via Market Data Hub:** Prices are available freely on the EEX Market Data Hub (dropdown: TB products; table/graph views; rolling 6-week historical series).
- **Extended Subscriptions:** Access beyond 6 weeks and automated data feeds are available via EEX price subscriptions: EEX Group Webshop

To the EEX Market Data Hub

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TBx Futures: One Hedge, Three Sources of Value

Commercial benefits and target market segments: utilities, CCGTs, storage, financials

1 Utilities & CCGTs

- Gas-fired plants (CCGTs/peakers) set marginal top prices: TBx hedges peak generation margins without midday solar drag.
- Utilities own/operate BESS fleets and act as primary counterparties to third-party storage & tolling deals.
- **Vital risk transfer** for price risk and counterparty credit risk, freeing limits to conclude more bilateral deals with better terms.

Utilities • CCGT / Peaker Hedgers • BESS Operators • Origination

2 Storage & Renewables

- BESS operators monetize battery flexibility forward without volumetric or dispatch penalties.
- Renewable & solar generators hedge midday price cannibalization and avoid negative-price capture discounts.
- Lock in forward price spreads up to Cal+6 to stabilize merchant returns.

BESS Optimisers • Storage Owners • Solar IPPs & Developers

3 Financials

- Trade renewable shape volatility without managing physical assets, grid balancing, or dispatch logistics.
- Express macro views on gas-to-power peaking margins, renewable build-out penetration, or cross-border spread differentials.

Proprietary Trading Desks • Commodity Trading Houses • Market Makers

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TBx Futures: Contract Specifications at a Glance

	TB2 (DE, IT, FR)	GB TB2 (GB)	TB4 (IT, ES)
Product type	Cash-settled power futures	Cash-settled power futures	Cash-settled power futures
Underlying	Day-Ahead auction prices (00:00–24:00)	Day-Ahead 60-min auction prices	Day-Ahead auction prices (00:00–24:00)
Index basis	8 highest vs 8 lowest 15-min MTUs	2 highest vs 2 lowest 60-min MTUs	16 highest vs 16 lowest 15-min MTUs
Contract volume	1 MW × 2h × days in period	1 MW × 2h × days in period	1 MW × 4h × days in period
Min lot	1 contract	1 contract	1 contract
Pricing / tick	EUR/MWh, 0.01 tick	GBP/MWh, 0.01 tick	EUR/MWh, 0.01 tick
Settlement window	17:05–17:15 CE(S)T	17:05–17:15 CE(S)T	17:05–17:15 CE(S)T
Maturities	Curr.+9 months, 11 quarters, 6 years	Curr.+9 months, 11 quarters, 6 years	Curr.+9 months, 11 quarters, 6 years

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EPEX TBx Index Suite

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EPEX SPOT TBx Indices: Available Now

- **TB2 & TB4:** daily indices reflecting the theoretical spread available for 2-hour and 4-hour profiles, for all Epexspot markets.
- **Order by 31 December 2026** and receive the first 12 months of access free of charge.
- **Internal & external usage** is included in the promotional first year, subject to the applicable contract terms*.
- **EPEX SPOT Members** on the Premium and Advanced tiers receive the data for free.
- **Subscription:** Subscribe online or email marketdata.sales@epexspot.com
- Index technical description available on Epexspot website

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*After the one-year free period, the applicable data subscription fee for internal usage, as displayed on the webshop, will apply unless the subscription is cancelled at least two months prior to renewal.

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EPEX SPOT TBx Indices: Published Data View

- Via Market Data SFTP: One csv file per auction and per year (only 2026 for the moment), updated daily, and containing both daily TB2 and TB4 indices

Example: EPEX_SPOT_TB_Index_france_2026.csv

	A	B	C	D	E	F	G
1	IndexName	Modality	BusinessProduct	ReferenceIndex	DeliveryDay	IndexPrice	Currency
2	FR epex DA TB2	Auction	Day-Ahead Auction	epex DA TB2	29/08/2026	151.56	EUR
3	FR epex DA TB4	Auction	Day-Ahead Auction	epex DA TB4	29/08/2026	142.39	EUR
4	FR epex DA TB2	Auction	Day-Ahead Auction	epex DA TB2	28/08/2026	155.47	EUR
5	FR epex DA TB4	Auction	Day-Ahead Auction	epex DA TB4	28/08/2026	136.45	EUR
6	FR epex DA TB2	Auction	Day-Ahead Auction	epex DA TB2	27/08/2026	98.14	EUR
7	FR epex DA TB4	Auction	Day-Ahead Auction	epex DA TB4	27/08/2026	80.14	EUR
8	FR epex DA TB2	Auction	Day-Ahead Auction	epex DA TB2	26/08/2026	95.15	EUR
9	FR epex DA TB4	Auction	Day-Ahead Auction	epex DA TB4	26/08/2026	80.32	EUR
10	FR epex DA TB2	Auction	Day-Ahead Auction	epex DA TB2	25/08/2026	101.79	EUR
11	FR epex DA TB4	Auction	Day-Ahead Auction	epex DA TB4	25/08/2026	88.27	EUR
12	FR epex DA TB2	Auction	Day-Ahead Auction	epex DA TB2	24/08/2026	191.41	EUR
13	FR epex DA TB4	Auction	Day-Ahead Auction	epex DA TB4	24/08/2026	182.08	EUR
14	FR epex DA TB2	Auction	Day-Ahead Auction	epex DA TB2	23/08/2026	167.4	EUR
15	FR epex DA TB4	Auction	Day-Ahead Auction	epex DA TB4	23/08/2026	162.35	EUR
16	FR epex DA TB2	Auction	Day-Ahead Auction	epex DA TB2	22/08/2026	175.94	EUR
17	FR epex DA TB4	Auction	Day-Ahead Auction	epex DA TB4	22/08/2026	170.78	EUR
18	FR epex DA TB2	Auction	Day-Ahead Auction	epex DA TB2	21/08/2026	146.22	EUR
19	FR epex DA TB4	Auction	Day-Ahead Auction	epex DA TB4	21/08/2026	117.92	EUR
20	FR epex DA TB2	Auction	Day-Ahead Auction	epex DA TB2	20/08/2026	126.69	EUR
21	FR epex DA TB4	Auction	Day-Ahead Auction	epex DA TB4	20/08/2026	117.13	EUR

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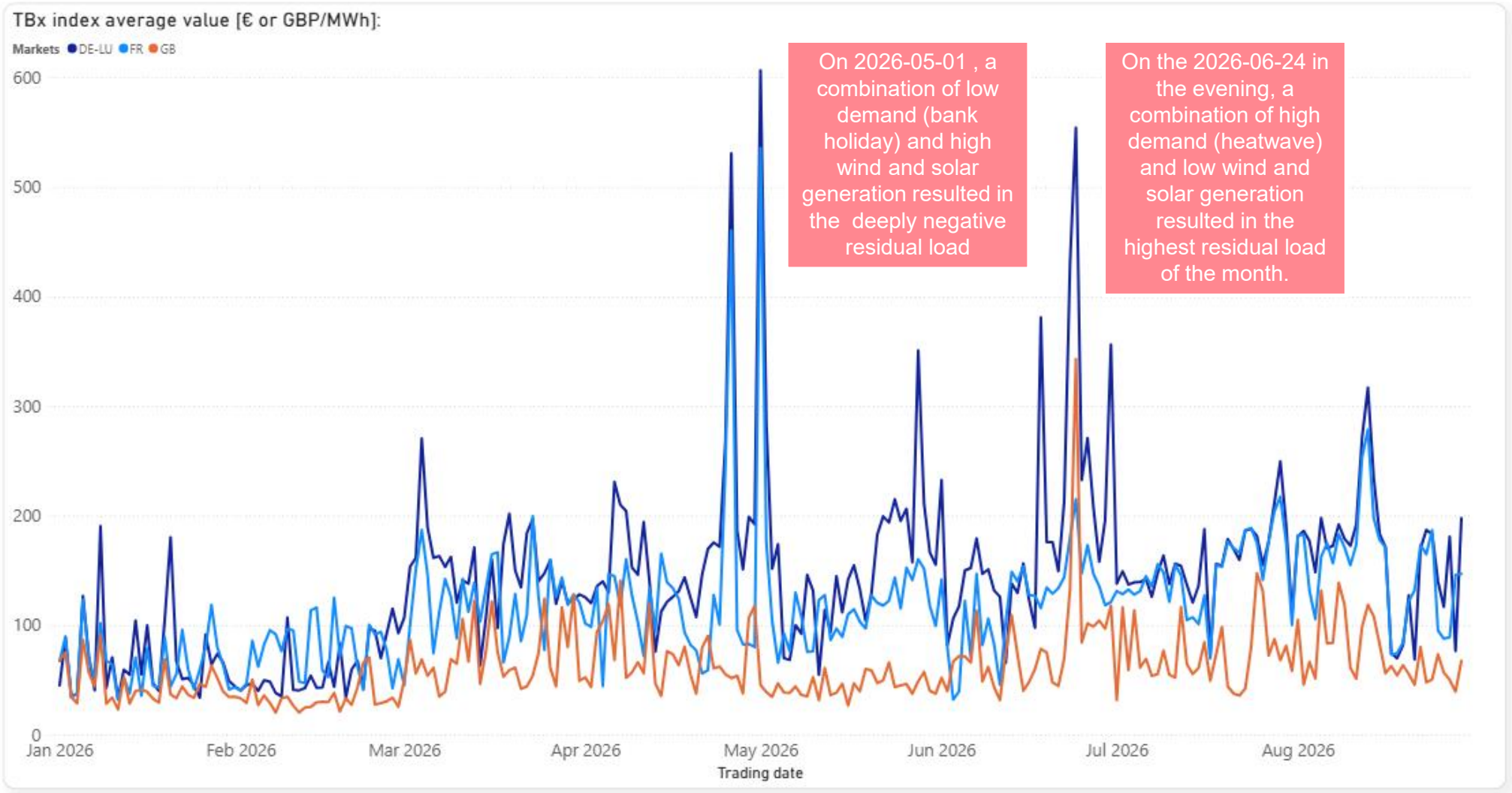
EPEX SPOT TBx Indices: Historical Data View

TB2 daily Index value [€ or GBP / MWh]



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Hourly Block & Weekend Futures

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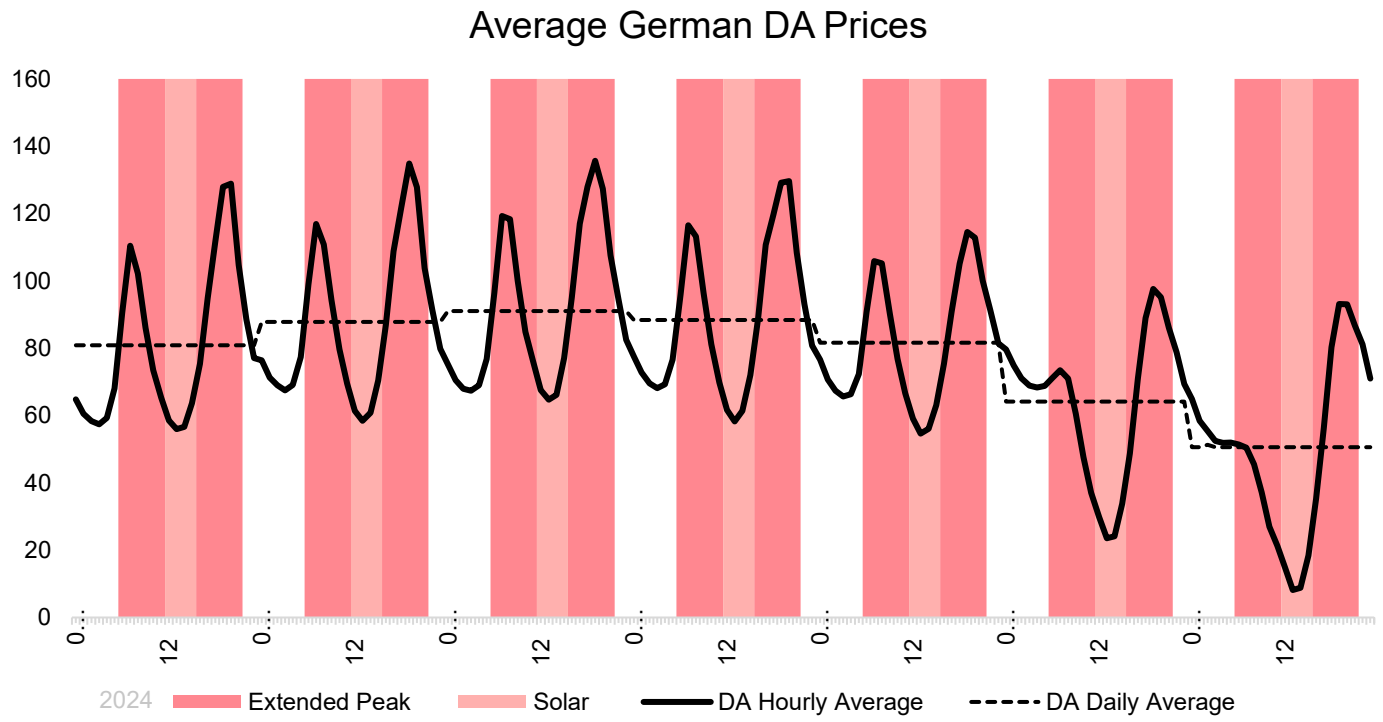
Why hourly blocks & weekends

Rising solar and wind create shape risk to hedge



- Weekday midday prices are structurally lower than morning/evening levels.
- Weekends show distinct load and renewable profiles vs. weekdays.
- **Base and peak products do not adequately hedge this long-term shape risk.**

OTC desks already trade hourly blocks and weekday vs. weekend spreads. The market needs exchange-listed products to reflect these structures.

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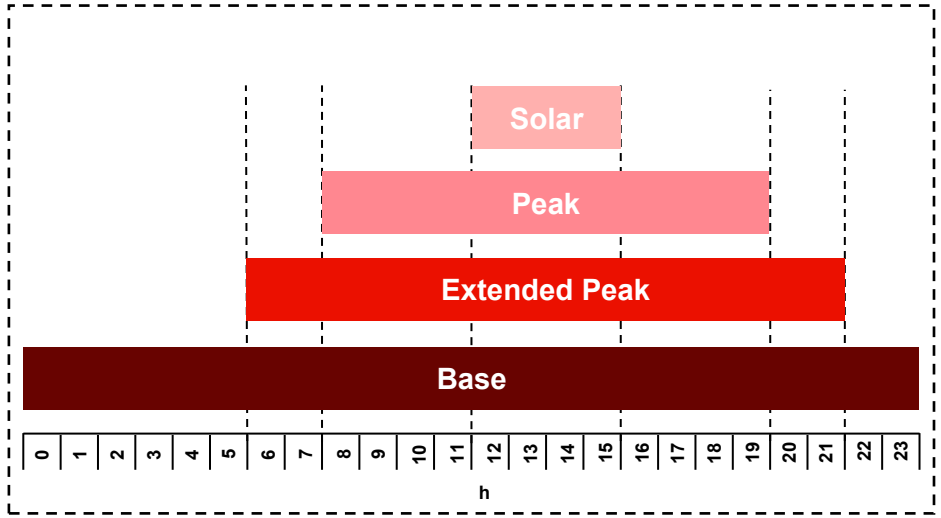
Proposed listing

Limited listing, broad hedging coverage

Hourly block	Window	Maturities	Purpose
Extended Peak	Mon–Fri 06–22	W, M, Q, Y	Working-day load & flex block
Weekend Base	Sat–Sun	M, Q, Y	Hedge weekend risk to long-term
Solar Block	Mon–Fri 12–16	We, W, M, Q, Y	Solar-heavy midday block
Weekend Solar	Sat–Sun 12–16	M, Q, Y	Weekend midday optimisation



For DE and FR markets.

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Who uses these — and why

Both physical and financial participants benefit

Physical: utility / retailer / CCGT

- Buy 06–22 to hedge the main daytime/evening retail load
- Use Base or Off-peak for night hours; add Weekend Base for weekends
- CCGT producers lock margins over their real operating window

Financial & proprietary trading

- Shape spreads: Extended Peak vs Peak, Base vs Weekend
- Calendar & locational spreads, e.g. DE vs FR Extended Peak

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Hourly blocks: contract specifications at a glance

	Extended Peak 06–22	Weekend	Solar Block 12–16
Product type	Cash-settled power futures	Cash-settled power futures	Cash-settled power futures
Underlying	DA auction prices 06:00–22:00	DA auction prices, Sat & Sun	DA auction prices 12:00–16:00
Index basis	Mean of 15-min DA MTUs in window, Mon-Fri	Mean of 15-min DA MTUs, all weekend hours	1. Mean of 15-min DA MTUs in window, Mon-Fri 2. Mean of 15-min DA MTUs in window, Sat-Sun
Contract volume	1 MW × 16h × days	1 MW × 24h × days	1 MW × 4h × days
Pricing / tick	EUR/MWh, 0.01 tick	EUR/MWh, 0.01 tick	EUR/MWh, 0.01 tick
Settlement window	17:05–17:15 CE(S)T	17:05–17:15 CE(S)T	17:05–17:15 CE(S)T
Maturities	Curr.+4 weeks, 9 months, 11 quarters, 6 years	9 months, 11 quarters, 6 years	5 weekends, curr.+4 weeks, 9 months, 11 quarters, 6 years

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For more information:
sales@eex.com

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