

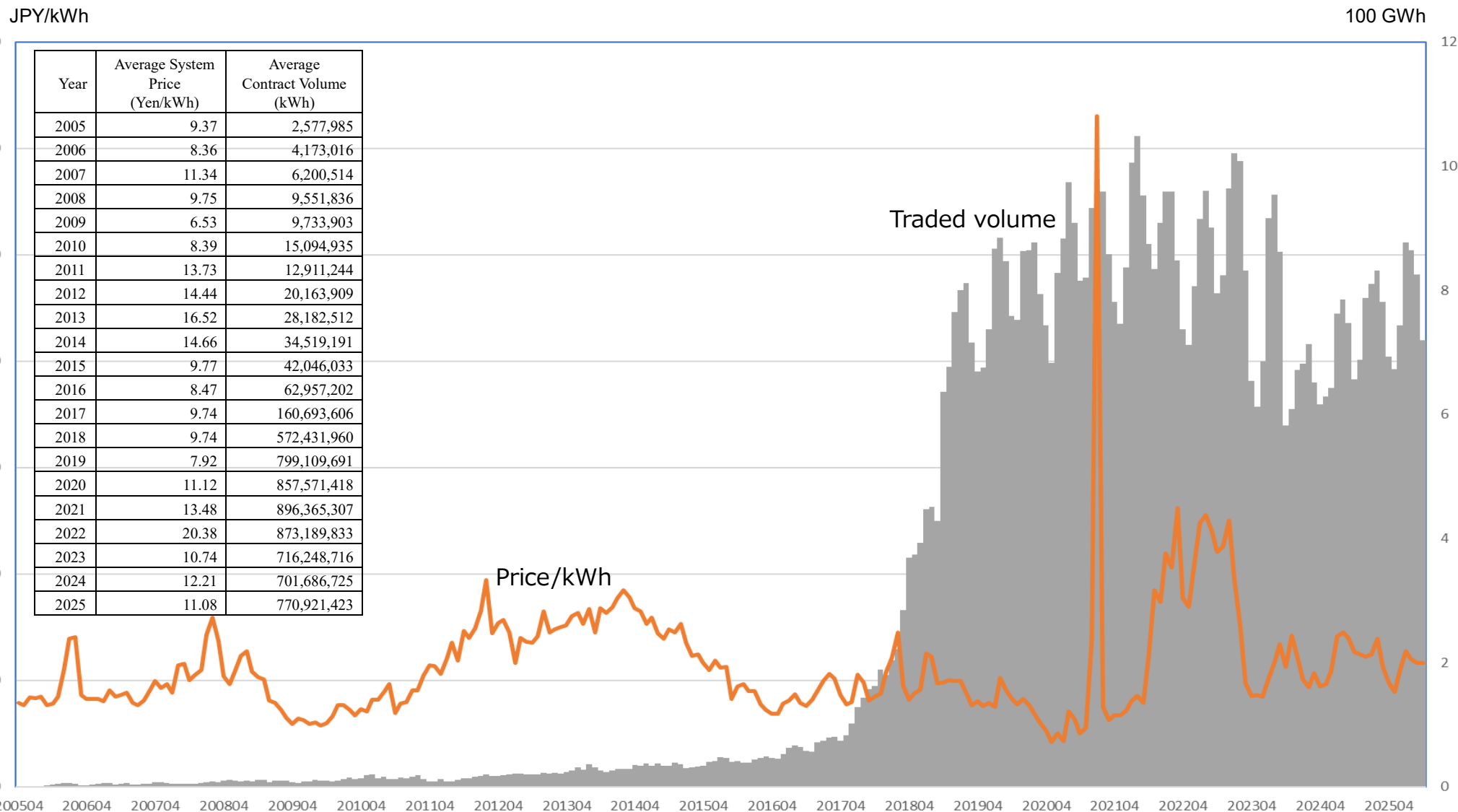
# JEPX Power Markets

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- JEPX Power Markets:
  - Day Ahead Auction: 30–40% of total electricity demand in Japan
  - Intraday Continuous Trading: About 3 % of Day Ahead. This is small compared with the EU.
  - Forward Trading: Yearly, Monthly, and Weekly products. Trading is scarce.
  - Baseload Auction: Mostly yearly products for the next year. Auctions 4 times a year. The maximum volume per year, 1.07 GW, was achieved in 2022.
  - Indirect (Financial) Transmission Rights Auction: A weekly 24-hour product, traded approximately two months prior.
- Environmental Value Trading
  - Non-Fossil Value Trading
- JEPX currently has only 10 employees.

# Day Ahead Auction: Traded Volumes and Prices



- ‘Real Traders’ only: A connection and supply contract (or a demand response contract) with a TSO is required. Financial traders are not permitted.
- No negative price: Minimum price of 0.01 yen/kWh.
- Large suppliers who are likely to possess market power are strongly urged to offer all surplus electricity at marginal costs.
- The contract rate for block orders is low: The contract rate for blocks is about 5% in Japan and 20% in Europe.
- Complicated block products are not offered: Only simple blocks, link blocks with one parent and one child, and loop blocks with two blocks.
  - In February 2025, an N-Side optimization solver was introduced, and the range of product types can be expanded in the future.
  - Market design choices: Either more complicated block products such as exclusive blocks, or scalable complex orders and 3 part offer types.

- The utilization rate of standard blocks is around 50%. In contrast, the utilization rates for link and loop blocks are much lower at 4% and 0.01%, respectively.
  - Utilization rate = block offer volume / total sell offer volume.
- Contract rates for standard and link blocks are low at around 5% and 0.02%, respectively. In contrast, the contract rate for blocks in Europe is around 20%.
  - Contract rates in Japan are volume-based. The contract rate in Europe is transaction-based. Contract rate = contract transactions / offered transactions.
- The contract rate for loop blocks is high at 16.4%.

- Continuous trading with pay-as bid only; no auctions.
- The JEPX Intraday Market is less liquid than in those in EU countries.
- FIT forecast errors are not bid into the intraday market. They are in the balancing market.

## Day Ahead and Intraday Trading Volumes in 2024

Country (Market Operator)	Day-Ahead	Intraday	Intraday /(Day-Ahead+Intraday)
Germany (EPEX SPOT)	291 TWh	102 TWh	25.9%
France (EPEX SPOT)	140 TWh	20 TWh	12.4%
Italy (GME)	284 TWh	35 TWh	11.1%
Spain (OMIE)	175 TWh	41 TWh	19.0%
Japan (JEPX)	266 TWh	7 TWh	2.7%

- Forward Market: Continuous trading. Pay as bid. Financial traders are not allowed.
  - Almost no transactions. Why so illiquid?
- Baseload Auction: Large-scale power generators must submit offers to the baseload market.
  - The maximum offer price is the average cost of a supplier's baseload power units.
  - The Agency for Natural Resources and Energy sets the minimum amount of electricity that must be supplied to the market.
- JJ-Link Service:
  - JEPX and TOCOM jointly provide a linkage service between spot and futures trading.
  - This enables the procurement of physical commodities equivalent to TOCOM futures positions through JEPX spot transactions.

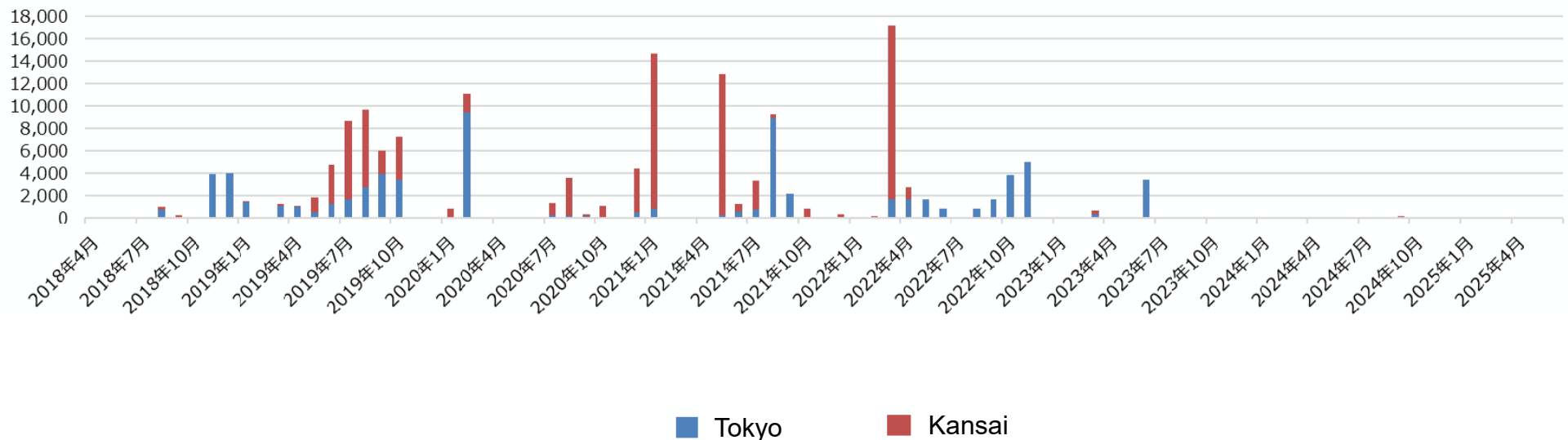
# Forward Market Transaction Volumes

Forward market contract and bid volume from April to June of 2025.

Unit: MWh

Item	Total	Daytime- Weekly	Daytime- Monthly	24-hour - weekly	24-hour - monthly	24-hour - Annual
Contract Volume	0	0	0	0	0	0
Selling Bid Volume	539,124	27,216	504,408	7,500	0	0
Purchase Bid Volume	28,258	22,008	0	6,250	0	0

Forward market contract volume from April 2018 to April 2025 (MWh)





- The Indirect Transmission Rights Market: The Japanese version of the financial transmission market.
- Idiosyncratic Features of the JEPX Indirect Transmission Rights Market:
  - Financial traders are not allowed to participate.
  - The quantity of indirect transmission rights settled is capped at the quantity of spot market transactions.
  - Currently, there are no medium- or long-term products. Only a weekly, 24-hour product is traded approximately two months prior.
  - The market price is much lower than the average price difference between zones.
  - As of 2025, incumbents own most of the financial transmission rights and receive the price differences between zones. This transitional arrangement will end at the end of the 2025 fiscal year.
- Reform of the indirect transmission rights market has been under consideration.

## 平均発生値差・間接送電権の平均約定価格（2019年度～2023年度）

- 比較的ニーズが高いと考えられる中部→東京間、九州→中国間を含め、結果的に生じた値差に比して、平均約定価格が低くなる傾向がある。また、売入札価格である0.01円/kWhで約定されるケースも多いことがうかがえる。



※ 間接送電権の平均約定価格は、取引日を基準として各年度別に集計。

※ 平均発生値差は、各年度に取引される間接送電権の対象期間（間接送電権の約定がなかった期間も含む）中に発生した値差の平均。