Ministry of Economy,
Trade and Industry

Monitoring report of voluntary efforts and competitive status
October to December 2024 period
(Tentative translation)

Monday, March 31, 2025

電力・ガス取引監視等委員会
Electricity and Gas Market Surveillance Commission

Overview of market trends in the October to December 2024 period (1/2)

1. This period's **wholesale electricity market prices did not change significantly, but were higher in the east and lower in the west**. Specifically, from October to early November, the eastern area's prices were relatively higher, while those in the western area trended low. **The price difference widened in October, due to reduced service capacity for Tokyo-Chubu (FC), which caused the splitting rate to exceed 90%**. (Maximum of 6.5 yen/kWh as a daily average.) Conversely, **the price difference between the east and the west shrank from mid-November onward. This resulted from service capacity recovery, a reduced Tokyo-Chubu (FC) splitting rate, and more aggressive buying bidding in the western area**.
   A price hike to 30 yen or higher occurred a total of 7 times (4 times in October, 1 time in November, and 2 times in December; 4 times in the same period last year). Of which, 6 price hikes occurred in the western area, primarily affected by high temperatures and out of season weather events.

   - See pp. 12-13 for changes in day-ahead market prices and p. 24 for trends (the background) of day-ahead market prices.

2. In this period, **the contracted volume in the day-ahead market was 65.4 billion kWh, 1.1 times that of the same period last year**, and **the contracted volume in the intraday market was 1.57 billion kWh, 1.2 times that of the same period last year**. In the contracted volume in the day-ahead market, the contracted selling volume by general electric utilities was 1.4 times that of the same period last year, boosting the total contracted volume. As for the intraday market, the contributing factors include: some uncontracted volume from the day-ahead market, and supply of electricity by general electric utilities under capacity contracts in the capacity market to the intraday market after receiving a notification of supply capacity provision, which is issued by the Organization for Cross-regional Coordination of Transmission Operators, JAPAN (OCCTO) at 17:30 or later on the day before a day on which the cross-regional reserve margin is predicted to fall below 8%.

   - See pp. 6-11 for trends in the bidding volume and contracted volume in the day-ahead market and pp. 18-20 for trends in the contracted volume in the intraday market.

Overview of market trends in the October to December 2024 period (2/2)

3. Looking at the market splitting status, splitting rates increased for 7 out of 10 interconnection lines compared to the same period last year, and are trending relatively higher in general. Among them, splitting rates for Kansai-Shikoku and Chugoku-Shikoku used to hover lower (at a maximum of around 21%), but they surged to 50% or more in November and December. The surge is presumably attributable to reduced service capacity due to Kansai-Shikoku interconnection line work, as well as increased power flow due to an increase in the selling volume at lower prices.

   - See pp. 16-17 for changes in the market splitting status and power flow.

4. **The contracted volume in the futures market was 23.79 billion kWh, four times that of the same period last year**. At the European Energy Exchange (EEX), which accounts for most of the trading, the number of companies participating in trading increased*1 and the hedge demand increased for products across short-, medium-, and long-term categories, resulting in higher liquidity and growing trading volumes. *1: From 67 companies at the end of December 2023, to 89 at the end of December 2024

   - See p. 23 for trends in the contracted volume in futures market transactions.

5. In the retail market, in December 2024, **for low-voltage unit prices, regulated tariffs were equivalent to or greater than the voluntary rates in all areas.** Meanwhile, fuel cost-adjusted regulated tariffs remain above the upper limit in some areas, and future developments require continued monitoring.

   - See pp. 56-57 for trends in average unit price of low-voltage rates (by area).

Electricity market monitoring report

【 Quarterly report 】

- **Wholesale electricity market**
  - JPEX market
    - Day-Ahead market
    - Intraday market
    - Forward transaction market

- **Voluntary efforts by general electric utilities, etc.**
  - Supply of surplus electricity to JEPX market
  - Trading status and sell bid withdrawal status in the intraday market
  - Status of block selling bidding
  - Supply of power source to the market for wholesale electricity utilities
  - Status of bidding, etc. for public hydroelectricity business
  - Status of OTC transactions

【Medium- to long-term trend report】

- **Wholesale electricity market**
  - JPEX market
    - Trends in contracted volume
    - Trends in contracted price
    - Trends in the market splitting occurrence rate
  - JEPX spot price and fuel cost

- **Retail market**
  - Trends in new entrants share by area
  - Market share by area
  - Trends in electricity unit price
  - Trends in switching
  - Average unit price of low-voltage rates

- **Gas market**
  - Status of OTC transactions of general gas utilities
  - Usage status of Start-up wholesale measure

2024年
10月～12月期

Major indicators

- The major indicators for this period are as follows.

				October to December 2024	Same period last year (October to December 2023)	FY2023 (April 2023-March 2024)	FY2022 (April 2022-March 2023)
JEPX market	Percentage to electricity sales*3			35.3%	31.1%	33.4%	40.1%
	Day-Ahead market	Bidding	Sell volume compared to the same period last year	1.1×	0.9× (※5 1.1×)	1.0× (1.1×※5)	1.0×
			Buy volume compared to the same period last year	1.2×	0.8× (※5 1.0×)	0.9× (1.0×※5)	0.9×
		Contract	Contracted volume	65.4 billion kWh	57.1 billion kWh	261.5 billion kWh	318.5 billion kWh
			Contracted volume compared to the same period last year	1.1×	0.7× (※5 0.9×)	0.8× (0.9×※5)	1.0×
			Average contracted price (system price)	12.5yen/kWh	12.6yen/kWh	10.7yen/kWh	20.4yen/kWh
		Occurrence rate of market splitting between the east and west market		54.5%	48.8%	33.7%	34.9%
	Intraday market	Contract	Contracted volume	1.57 billion kWh	1.28 billion kWh	6.17 billion kWh	4.94 billion kWh
			Average contracted price	13.4yen/kWh	13.2yen/kWh	11.7yen/kWh	22.9yen/kWh
	Forward market	Contract	Contracted volume	0kWh	0kWh	0.003 billion kWh	0.017 billion kWh
Futures market*4		Contract	Contracted volume	23.79 billion kWh	6.14 billion kWh	30.47 billion kWh	-
OTC transactions		Supply to outside the group		16.25billionkWh	9.25 billion kWh	38.62 billion kWh	56.43 billion kWh
Retail market (Reference)*1	Electricity sales			190.1 billion kWh※2	187.6 billion kWh※2	801.6 billion kWh	805.4 billion kWh
		New entrants	Electricity sales	37.0 billion kWh	30.7 billion kWh	133.8 billion kWh	154.6 billion kWh
			Electricity sales compared to the same period last year	1.2×	0.9×	0.9×	0.9×
			Share of new entrants	20.1%(as of December)	17.0%(as of December)	-	-

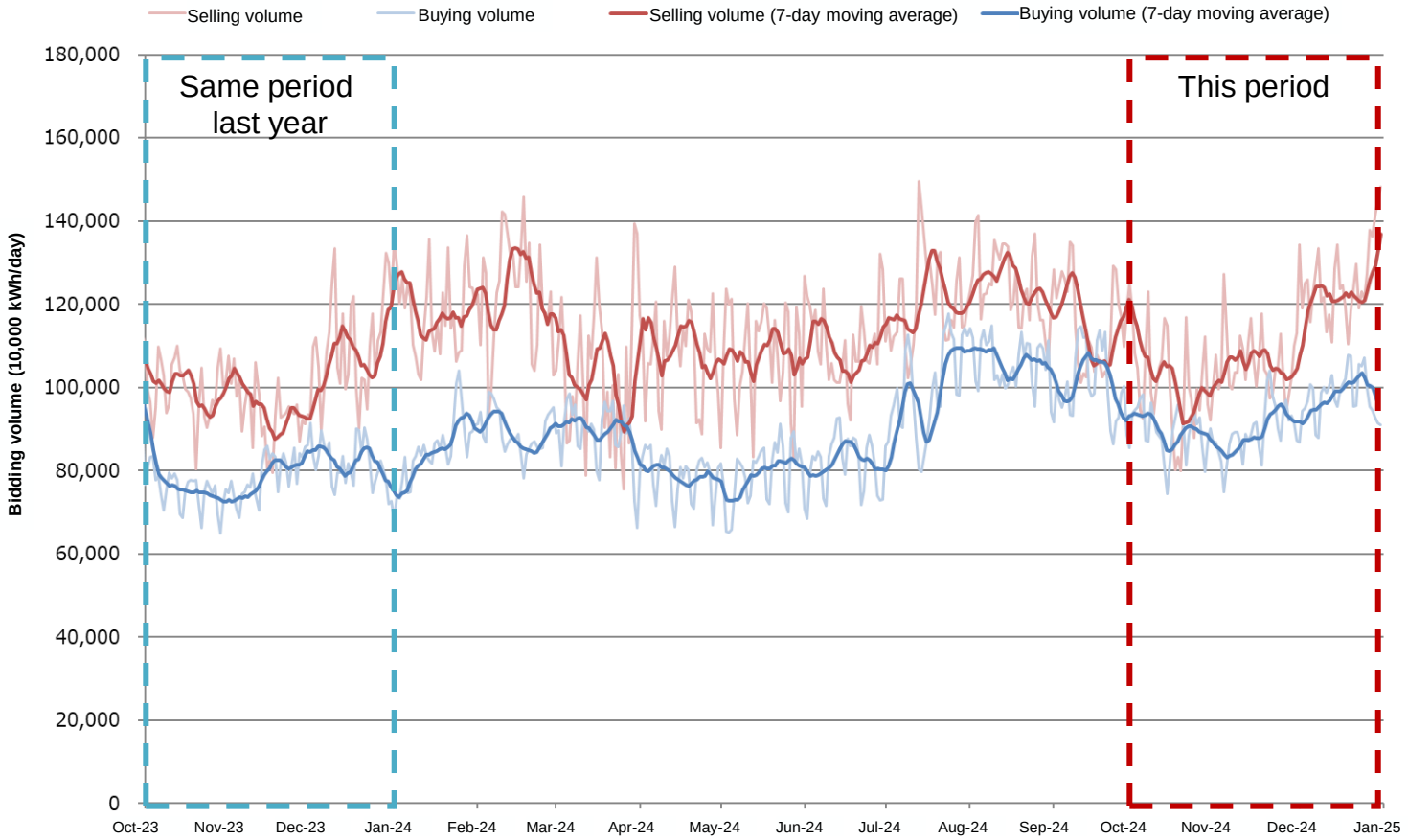
※1Source: Electricity Trading Report
※2 To avoid placing an excessive burden on businesses for tabulating data, the Electricity Trading Report allows businesses to report their electricity sales volume and sales amount recorded from the meter reading date of N – 1 month to the day before the meter reading date of N month as the data for N month. Since most companies report their results up to the meter reading date like this, these figures do not exactly match the actual results for the demand in N month.
※3 The percentage of electricity sales indicates the average value for the relevant period.
※4 Data added from the October-December 2023 reporting period. (Based on data published on the JPX and EEX websites)
※5 The comparison is based on the volume obtained by deducting the gross bidding volume for internal demand from the bidding volume of general electric utilities in the same period last year. Gross bidding volumes are calculated from the questionnaire results on higher buy-back prices in gross bidding reported by general electric utilities.
(Where general electric utilities refer to Hokkaido Electric Power, Tohoku Electric Power, TEPCO Energy Partner, Chubu Electric Power Miraiz, Hokuriku Electric Power, Kansai Electric Power, Chugoku Electric Power, Shikoku Electric Power, and Kyushu Electric Power.)

October to December 2024 period

Bidding volume in the day-ahead market

- For this period, the bidding volume in the day-ahead market was 101.8 billion kWh for selling and 84.8 billion kWh for buying.
- In year-on-year comparison, the selling volume was 1.1 times that of the same period last year, and the buying volume was 1.2 times.

Day-Ahead market: Trends in bidding volume
(October 1, 2023 to December 31, 2024)



Main data

Selling volume (October to December 2024)
101.8 billion kWh

Comparison with the selling volume for the same period last year (vs. October to December 2023)
1.1 ×

Buying volume (October to December 2024)
84.8 billion kWh

Comparison with the buying volume for the same period last year (vs. October to December 2023)
1.2 ×

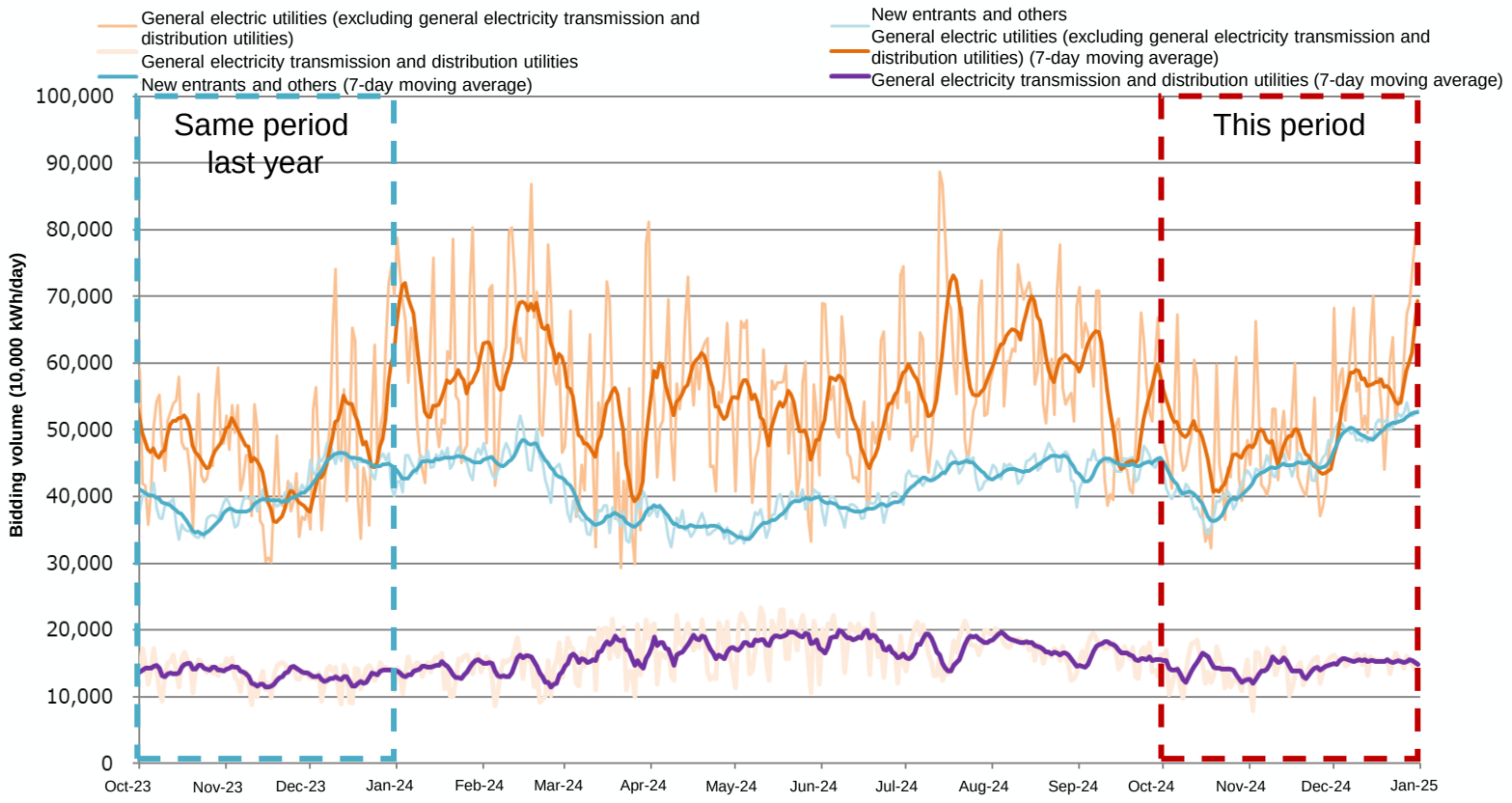
* Gross bidding by general electric utilities has been suspended since October 1, 2023.

October to December 2024 period

Selling volume in the day-ahead market by business operator category

- The selling volume in the day-ahead market for this period was 47.0 billion kWh for general electric utilities (excluding general electricity transmission and distribution utilities), 41.4 billion kWh for new entrants and other business operators, and 13.4 billion kWh for general electricity transmission and distribution utilities.
- In year-on-year comparison, the volume was 1.1 times that of the same period last year for general electric utilities, 1.1 times for new entrants and other business operators, and 1.1 times for general electricity transmission and distribution utilities.

Day-Ahead market: Trends in selling volume (October 1, 2023 to December 31, 2024)



Main data

Selling volume by general electric utilities (excluding general electricity transmission and distribution utilities) (October to December 2024)	47.0 billion kWh
Comparison with the selling volume by general electric utilities (excluding general electricity transmission and distribution utilities) for the same period last year (vs. October to December 2023)	1.1×
Selling volume by new entrants and other business operators (October to December 2024)	41.4 billion kWh
Comparison with the selling volume by new entrants and other business operators for the same period last year (vs. October to December 2023)	1.1×
Selling volume by general electricity transmission and distribution utilities (October to December 2024)	13.4 billion kWh
Comparison with the selling volume by general electricity transmission and distribution utilities for the same period last year (vs. October to December 2023)	1.1×

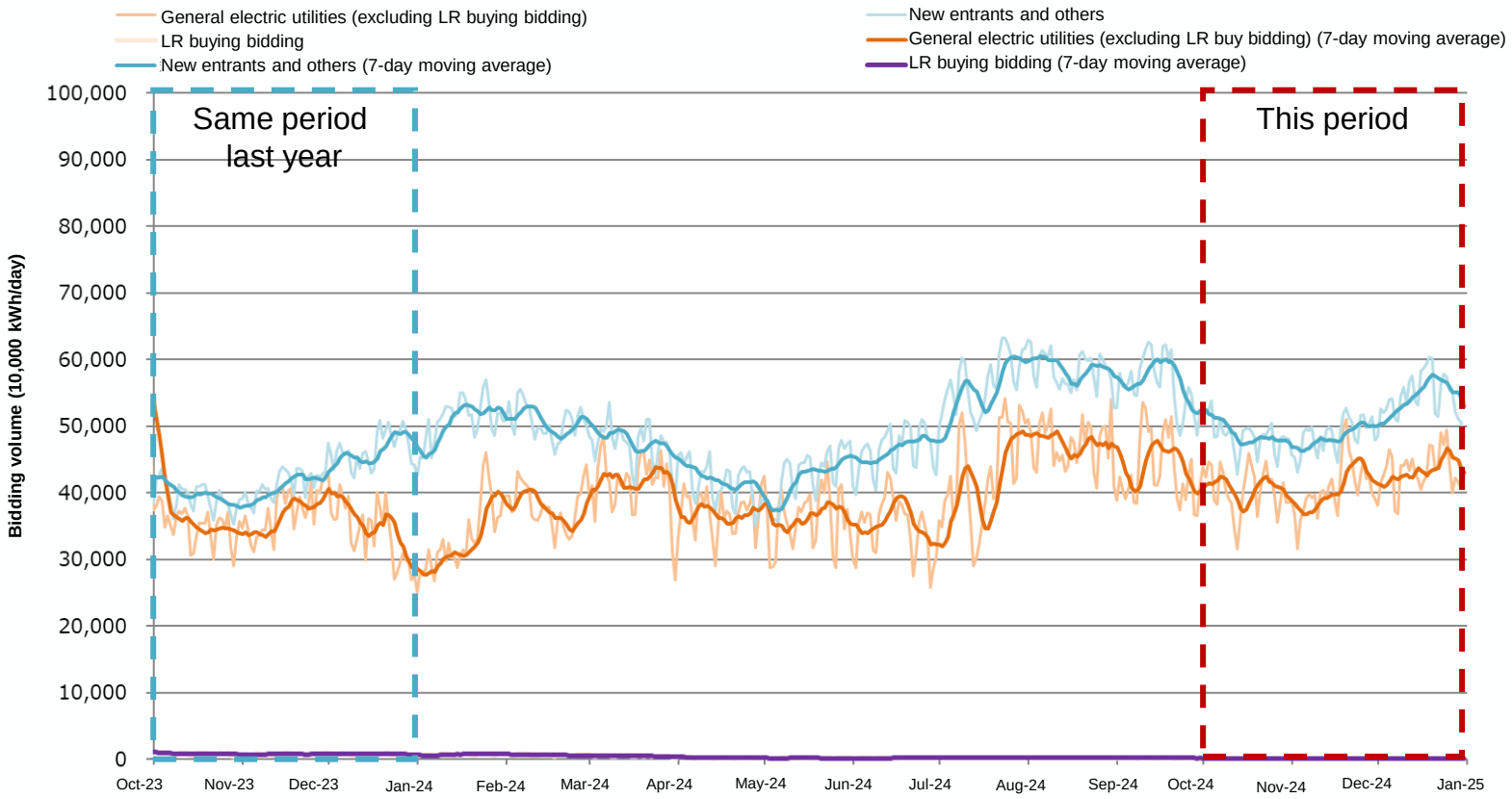
* The FIT selling volume by general electricity transmission and distribution utilities has been excluded from the selling volume by general electric utilities, and a new line plotting the selling volume by general electricity transmission and distribution utilities has been added.
* General electric utilities include Hokkaido Electric Power, Tohoku Electric Power, TEPCO Energy Partner, TEPCO Renewable Power, Chubu Electric Power Miraiz, Hokuriku Electric Power, Kansai Electric Power, Chugoku Electric Power, Shikoku Electric Power, Kyushu Electric Power, and JERA.
* General electricity transmission and distribution utilities include Hokkaido Electric Power Network, Tohoku Electric Power Network, TEPCO Power Grid, Chubu Electric Power Grid, Hokuriku Electric Power Transmission and Distribution, Kansai Electric Power Transmission and Distribution, Chugoku Electric Power Network, Shikoku Electric Power Transmission and Distribution, and Kyushu Electric Power Transmission and Distribution.
* Gross bidding by general electric utilities has been suspended since October 1, 2023.

October to December 2024 period

Buying volume in the day-ahead market by business operator category

- The buying volume in the day-ahead market for this period was 38.2 billion kWh for general electric utilities (excluding LR*1 buying bidding) and 46.5 billion kWh for new entrants and other business operators, and LR buying volume by general electricity transmission and distribution utilities was 0.1 billion kWh.
- In year-on-year comparison, the volume was 1.2 times that of the same period last year for general electric utilities (excluding LR buying bidding) and 1.2 times for new entrants and other business operators.

Day-Ahead market: Trends in buying volume
(October 1, 2023 to December 31, 2024)



Main data

Buying volume by general electric utilities (excluding LR buying bidding) (October to December 2024)	38.2 billion kWh
Comparison with the buying volume by general electric utilities for the same period last year (excluding LR buying bidding) (vs. October to December 2023)	1.2 ×
Buying volume by new entrants and other business operators (October to December 2024)	46.5 billion kWh
Comparison with the buying volume by new entrants and other business operators for the same period last year (vs. October to December 2023)	1.2 ×
LR buying volume by general electricity transmission and distribution utilities (October to December 2024)	0.1 billion kWh
Comparison with the LR buying volume by general electricity transmission and distribution utilities for the same period last year (vs. October to December 2023)	0.2 ×

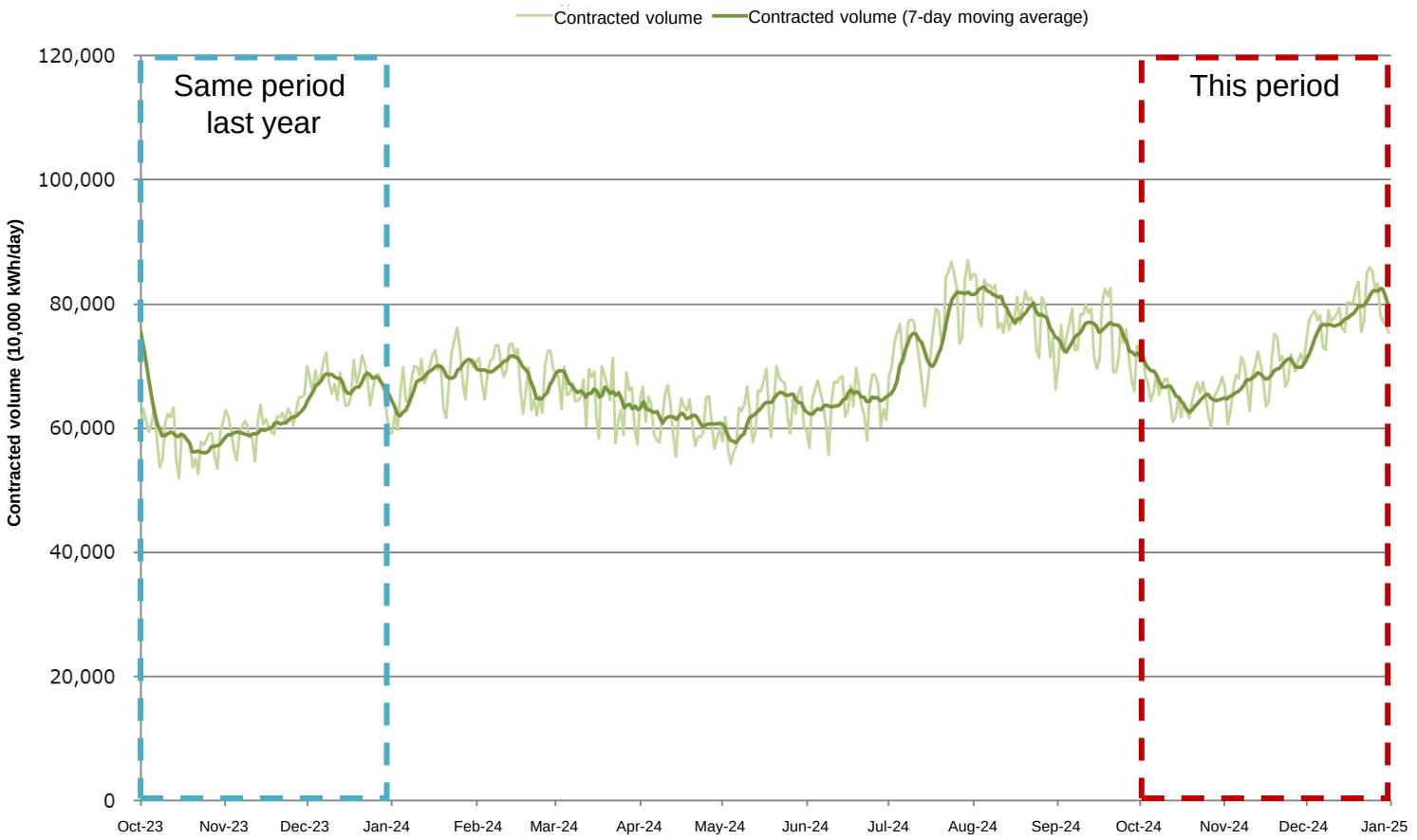
* General electric utilities include Hokkaido Electric Power, Tohoku Electric Power, TEPCO Energy Partner, TEPCO Renewable Power, Chubu Electric Power Miraiz, Hokuriku Electric Power, Kansai Electric Power, Chugoku Electric Power, Shikoku Electric Power, Kyushu Electric Power, JERA, and general electricity transmission and distribution utilities.
* General electricity transmission and distribution utilities include Hokkaido Electric Power Network, Tohoku Electric Power Network, TEPCO Power Grid, Chubu Electric Power Grid, Hokuriku Electric Power Transmission and Distribution, Kansai Electric Power Transmission and Distribution, Chugoku Electric Power Network, Shikoku Electric Power Transmission and Distribution, and Kyushu Electric Power Transmission and Distribution.
* Gross bidding by general electric utilities has been suspended since October 1, 2023.
*1 This refers to the last resort supply. Local general electricity transmission and distribution utilities are obliged to supply electricity under the last resort supply agreement to ensure electricity consumers the final source of electricity supply in the event that they fail to conclude a supply contract with any of the electricity retailers.

October to December 2024 period

Contracted volume in the day-ahead market

- The contracted volume in the day-ahead market for this period was 65.4 billion kWh.
- In year-on-year comparison, the volume was 1.1 times that of the same period last year.

Day-Ahead market: Trends in contracted volume (October 1, 2023 to December 31, 2024)



Main data

Contracted volume (October to December 2024)
65.4 billion kWh

Comparison with the contracted volume for the same period last year (vs. October to December 2023)
1.1×

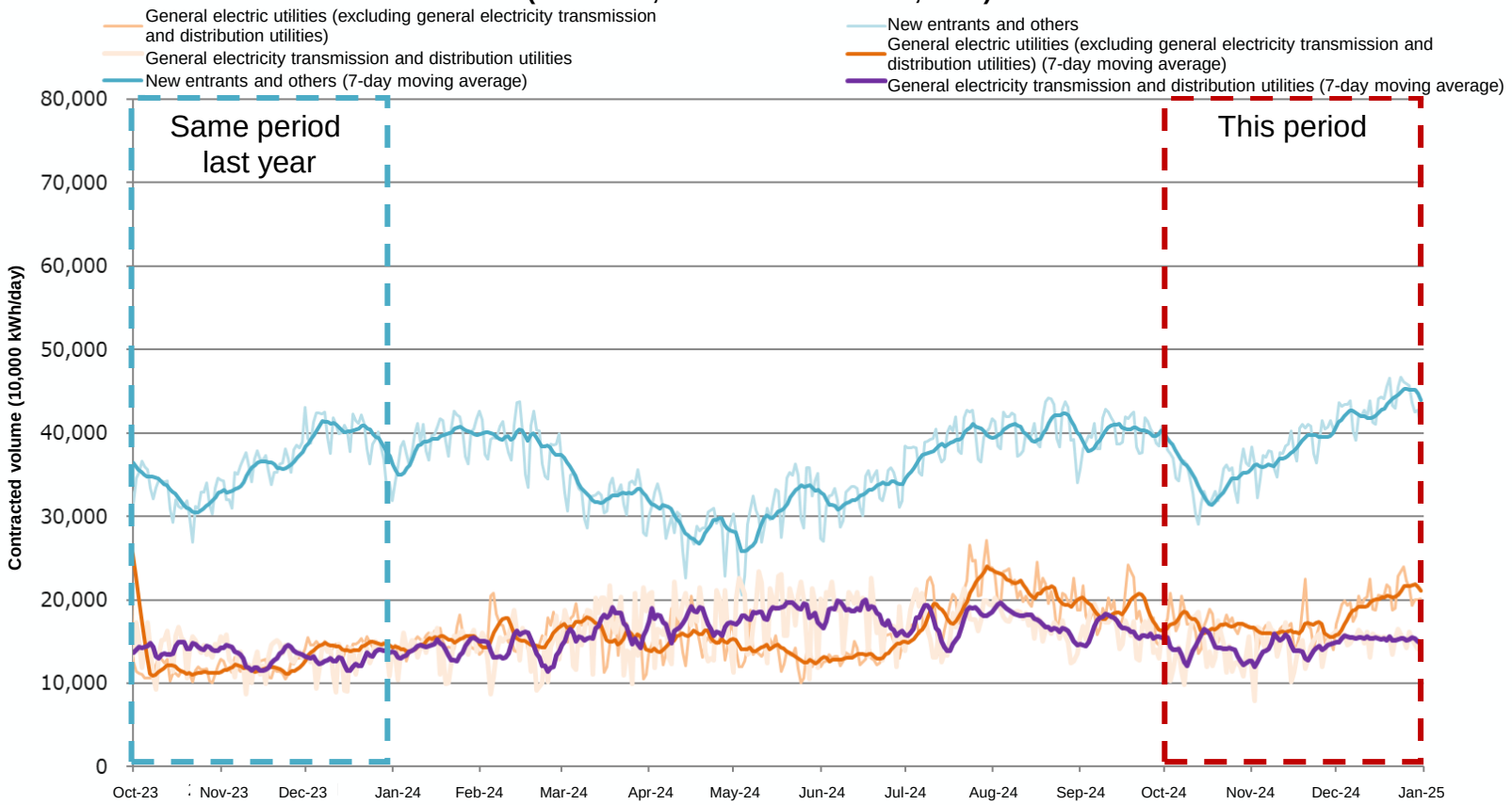
* Gross bidding by general electric utilities has been suspended since October 1, 2023.

October to December 2024 period

Contracted selling volume in the day-ahead market by business operator category

- The contracted selling volume in the day-ahead market for this period was 16.4 billion kWh for general electric utilities (excluding general electricity transmission and distribution utilities), 35.6 billion kWh for new entrants and other business operators, and 13.4 billion kWh for general electricity transmission and distribution utilities.
- In year-on-year comparison, the volume was 1.4 times that of the same period last year for general electric utilities, 1.1 times for new entrants and other business operators, and 1.1 times for general electricity transmission and distribution utilities.

Day-Ahead market: Trends in contracted selling volume (October 1, 2023 to December 31, 2024)



Main data

Contracted selling volume by general electric utilities (excluding general electricity transmission and distribution utilities) (October to December 2024)
16.4 billion kWh

Comparison with the contracted selling volume by general electric utilities (excluding general electricity transmission and distribution utilities) for the same period last year (vs. October to December 2023)
1.4×

Contracted selling volume by new entrants and other business operators (October to December 2024)
35.6 billion kWh

Comparison with the contracted selling volume by new entrants and other business operators for the same period last year (vs. October to December 2023)
1.1×

Contracted selling volume by general electricity transmission and distribution utilities (October to December 2024)
13.4 billion kWh

Comparison with the contracted selling volume by general electricity transmission and distribution utilities for the same period last year (vs. October to December 2023)
1.1×

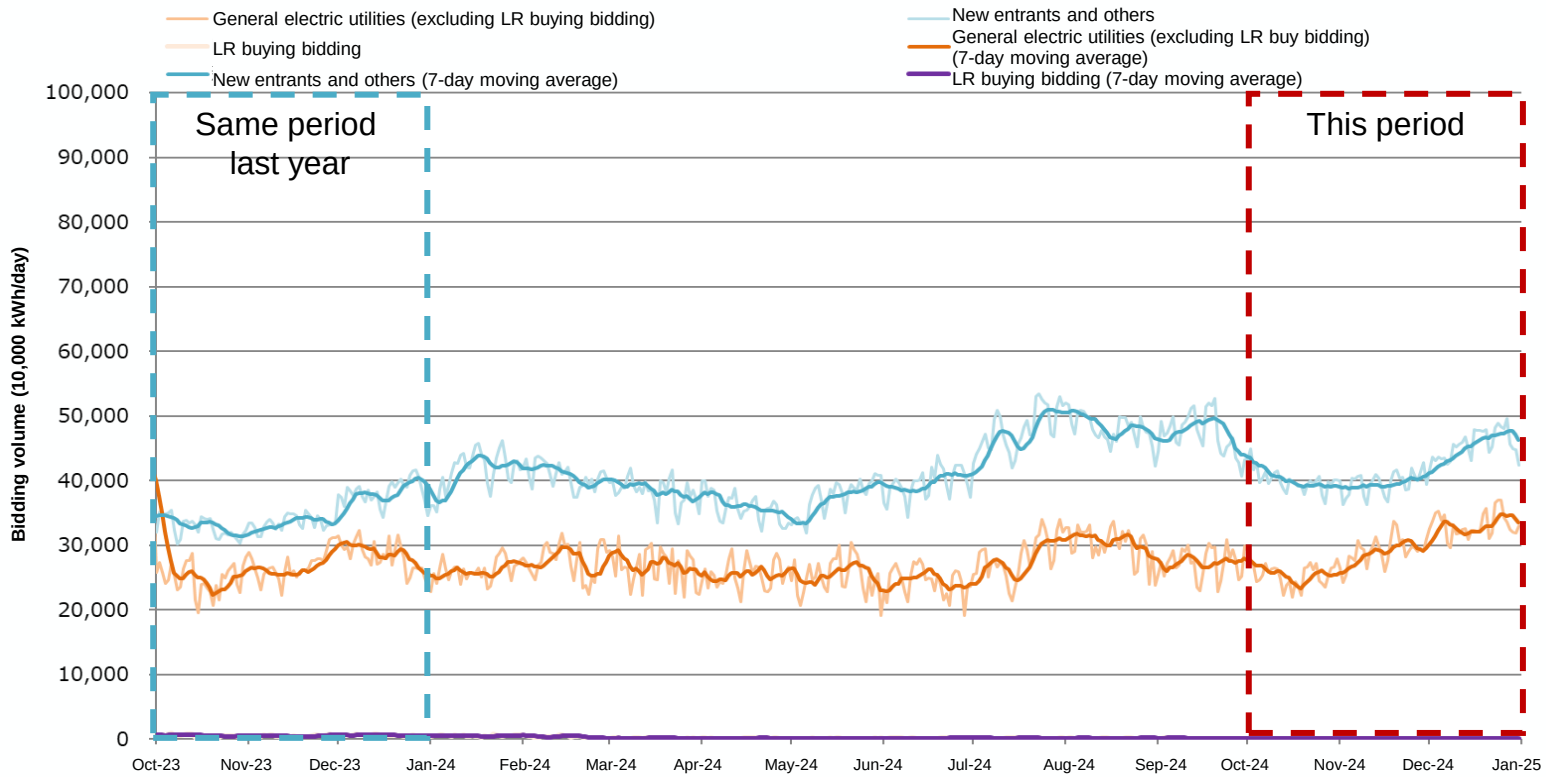
* The contracted FIT selling volume by general electricity transmission and distribution utilities has been excluded from the contracted selling volume by general electric utilities, and a new line plotting the contracted selling volume by general electricity transmission and distribution utilities has been added.
* General electric utilities include Hokkaido Electric Power, Tohoku Electric Power, TEPCO Energy Partner, TEPCO Renewable Power, Chubu Electric Power Miraiz, Hokuriku Electric Power, Kansai Electric Power, Chugoku Electric Power, Shikoku Electric Power, Kyushu Electric Power, and JERA.
* General electricity transmission and distribution utilities include Hokkaido Electric Power Network, Tohoku Electric Power Network, TEPCO Power Grid, Chubu Electric Power Grid, Hokuriku Electric Power Transmission and Distribution, Kansai Electric Power Transmission and Distribution, Chugoku Electric Power Network, Shikoku Electric Power Transmission and Distribution, and Kyushu Electric Power Transmission and Distribution.
* Gross bidding by general electric utilities has been suspended since October 1, 2023.

October to December 2024 period

Contracted buying volume in the day-ahead market by business operator category

- The contracted buying volume in the day-ahead market for this period was 26.9 billion kWh for general electric utilities (excluding LR buying bidding) and 38.4 billion kWh for new entrants and other business operators, and the contracted LR buying volume by general electricity transmission and distribution utilities was 0.1 billion kWh.
- In year-on-year comparison, the volume was 1.1 times that of the same period last year for general electric utilities (excluding LR buying bidding) and 1.2 times for new entrants and other business operators.
- The market condition continues where the contracted buying volume by general electric utilities exceeds their contracted selling volume. Also for new entrants and other business operators, their contracted buying volume has remained above their contracted selling volume, since the January to March 2024 period.

Day-Ahead Market: Trends in contracted buying volume (October 1, 2023 to December 31, 2024)



Main data

Contracted buying volume by general electric utilities (excluding LR buying bidding) (October to December 2024)	26.9 billion kWh
Comparison with the contracted buying volume by general electric utilities for the same period last year (excluding LR buy bidding) (vs. October to December 2023)	1.1 ×
Contracted buying volume by new entrants and other business operators (October to December 2024)	38.4 billion kWh
Comparison with the contracted buying volume by new entrants and other business operators for the same period last year (vs. October to December 2023)	1.2 ×
Contracted LR buying volume by general electricity transmission and distribution utilities (October to December 2024)	0.1 billion kWh
Comparison with the contracted LR buying volume by general electricity transmission and distribution utilities for the same period last year (vs. October to December 2023)	0.2 ×

* General electric utilities include Hokkaido Electric Power, Tohoku Electric Power, TEPCO Energy Partner, TEPCO Renewable Power, Chubu Electric Power Miraiz, Hokuriku Electric Power, Kansai Electric Power, Chugoku Electric Power, Shikoku Electric Power, Kyushu Electric Power, JERA, and general electricity transmission and distribution utilities.

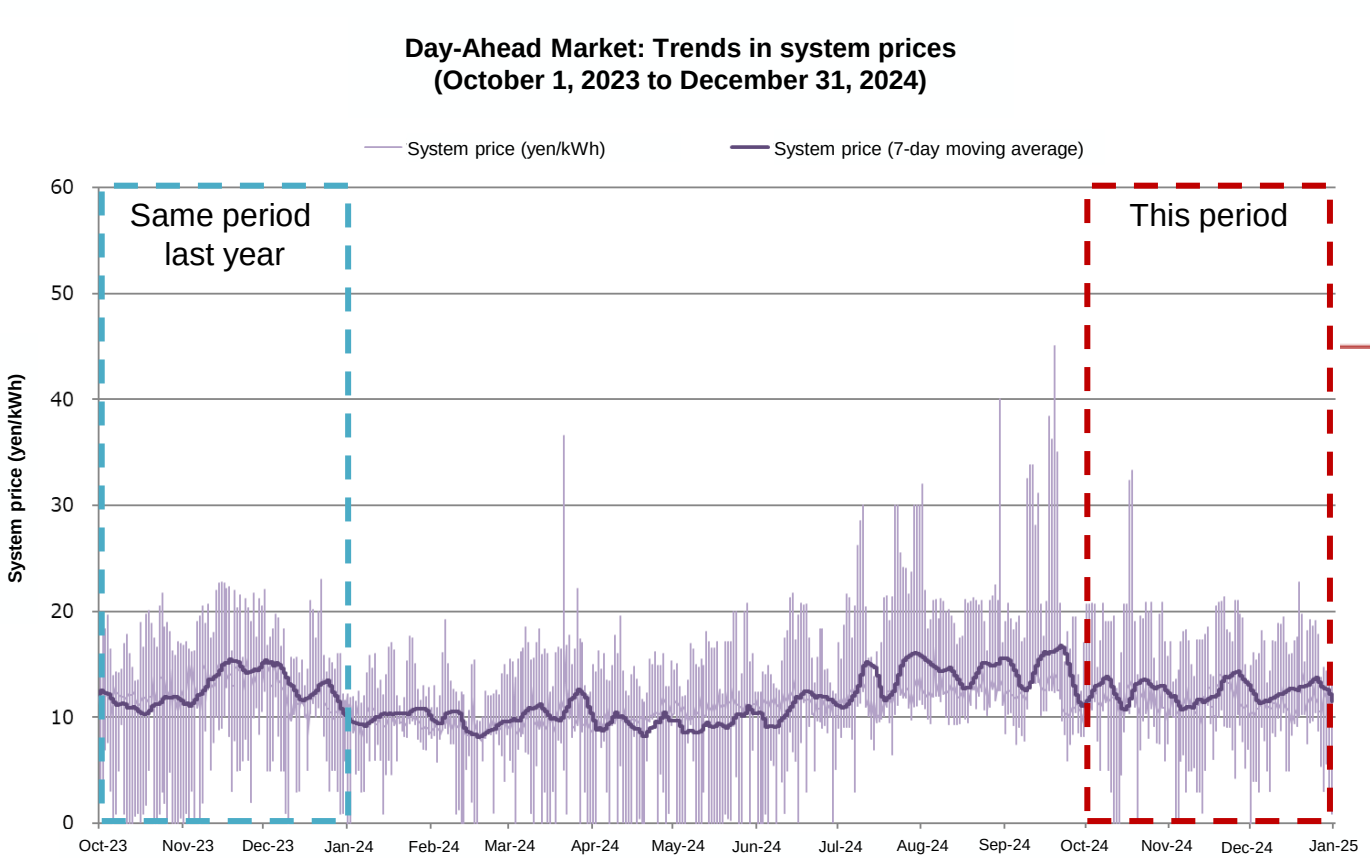
* General electricity transmission and distribution utilities include Hokkaido Electric Power Network, Tohoku Electric Power Network, TEPCO Power Grid, Chubu Electric Power Grid, Hokuriku Electric Power Transmission and Distribution, Kansai Electric Power Transmission and Distribution, Chugoku Electric Power Network, Shikoku Electric Power Transmission and Distribution, and Kyushu Electric Power Transmission and Distribution.

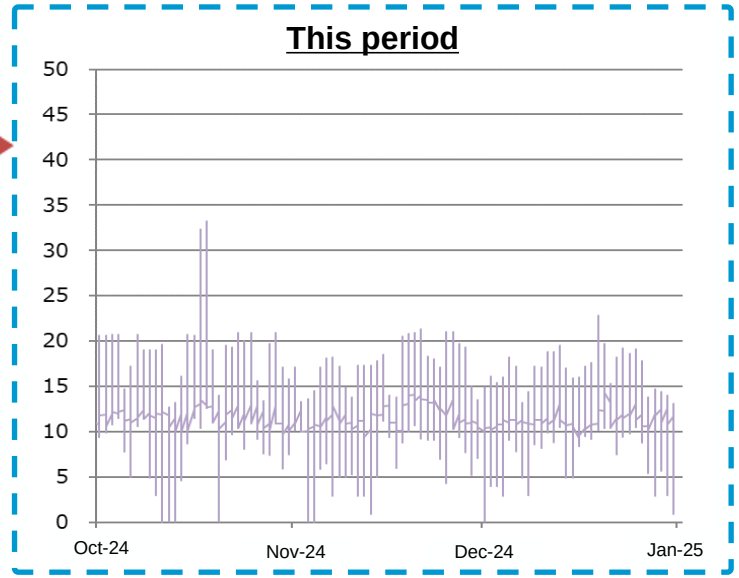
* Gross bidding by general electric utilities has been suspended since October 1, 2023.

October to December 2024 period

System price in the day-ahead market

- The average system price in the day-ahead market for this period was 12.5 yen/kWh, almost at the same level as that for the same period last year at 12.6 yen/kWh.
  (LNG spot price decreased from an average of $15.3/MMBtu for the same period last year to an average of $14.0/MMBtu for this period. The yen also strengthened, with the exchange rate shifting from an average of 148.0 yen per dollar for the same period last year to an average of 152.4 yen per dollar for this period.)





Main data

Unit: yen/kWh

	This period	Same period last year	Difference
Average system price	12.5	12.6	-0.1
Highest price	33.3	23.0	+10.3
Lowest price	0.01	0.01	+0.0

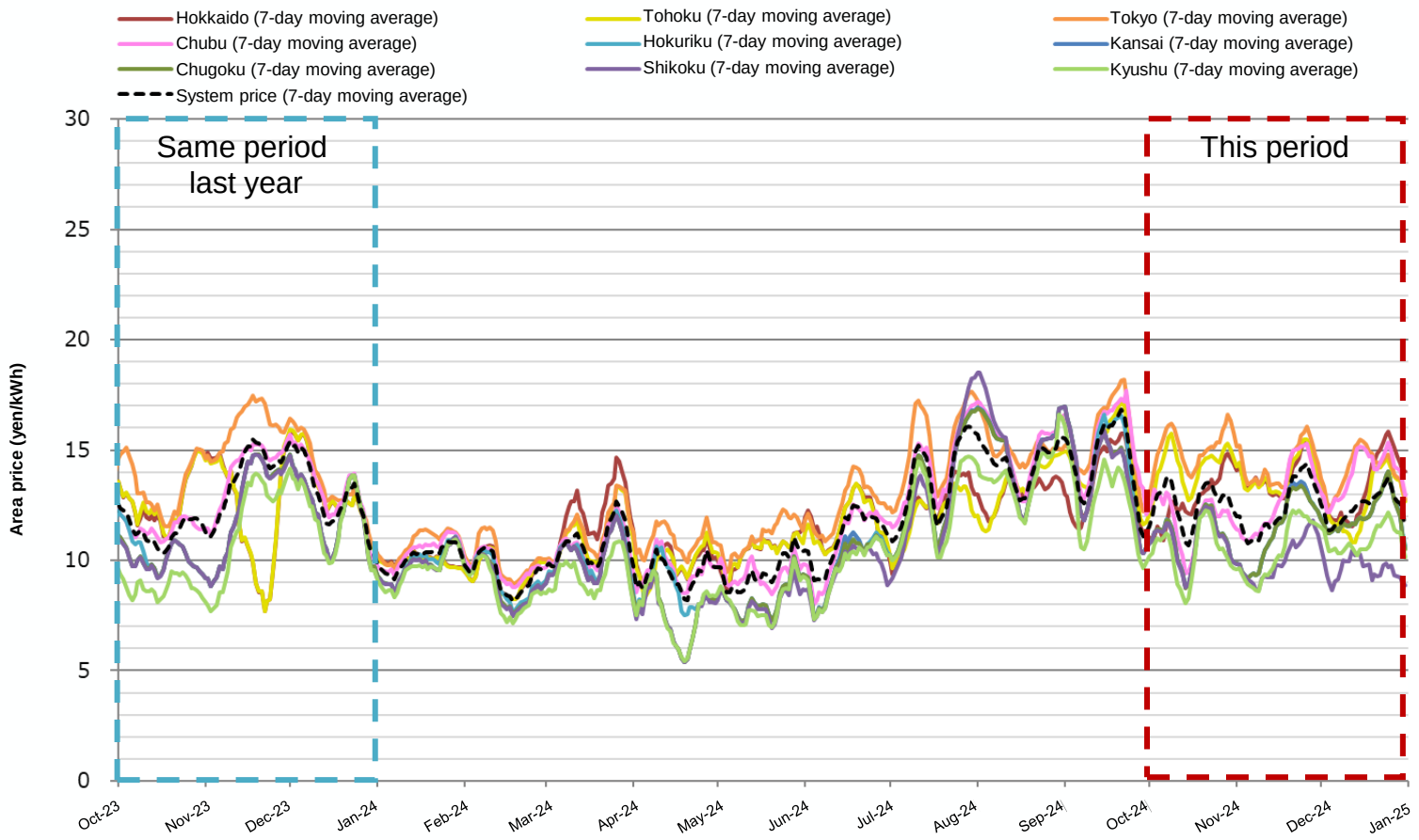
*1 Highest price for this period: 1 day, 1 frame in total
*2 Lowest price for this period: 5 days, 38 frames in total

October to December 2024 period

Area price in the day-ahead market

- The number of days with soaring prices (to 30 yen/kWh or more) increased from 4 days in the same period last year to 7 days in this period, but average area prices in the day-ahead market for this period were in many areas almost at the same level as those for the same period last year.
- The price difference from the average for the same period last year was the largest in the Shikoku area with 1.4 yen/kWh, which is presumably attributable to reduced service capacity due to Kansai-Shikoku interconnection line work, an increase in the selling volume at lower prices, and a surge in the market splitting rates from Honshu.

Day-Ahead Market: Trends in area price (October 1, 2023 to December 31, 2024)



Average price during the period

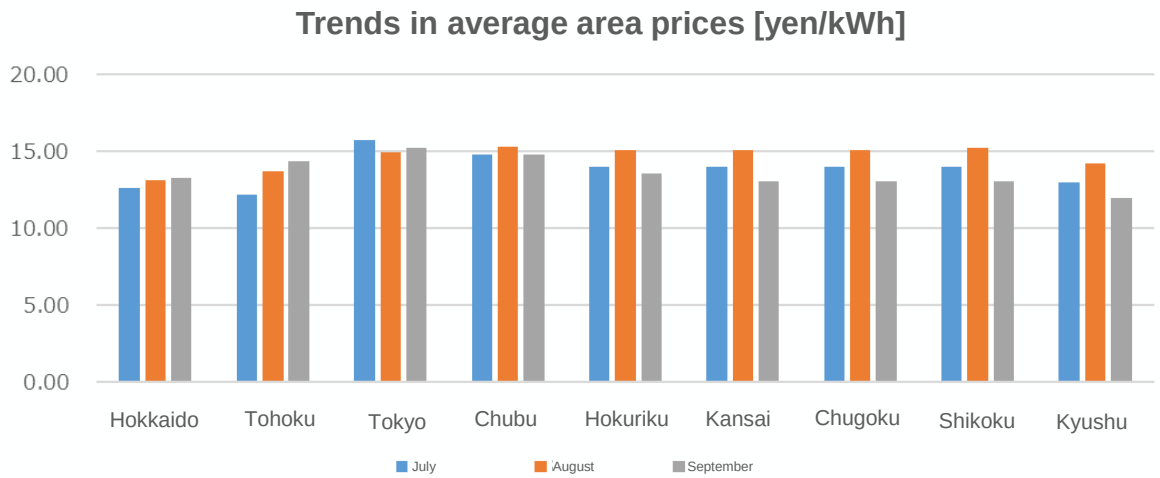
Unit: yen/kWh

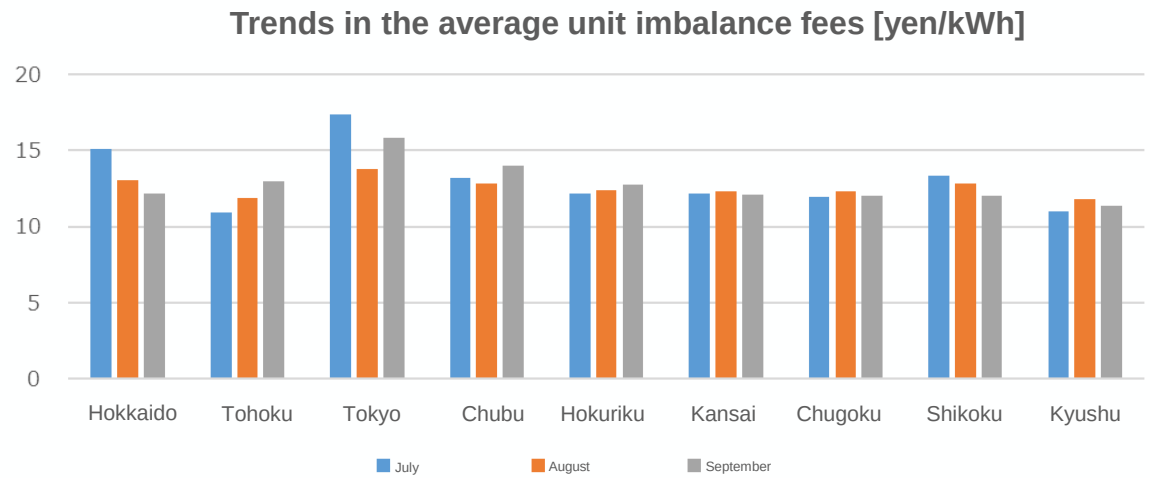
	This period	Same period last year	Difference
System price	12.5	12.6	-0.1
Hokkaido	13.4	12.6	0.8
Tohoku	13.6	12.6	1.0
Tokyo	14.5	14.2	0.3
Chubu	12.9	12.8	0.1
Hokuriku	11.5	11.6	-0.1
Kansai	11.5	11.5	-0.1
Chugoku	11.4	11.5	-0.1
Shikoku	10.1	11.5	-1.4
Kyushu	10.6	10.8	-0.2

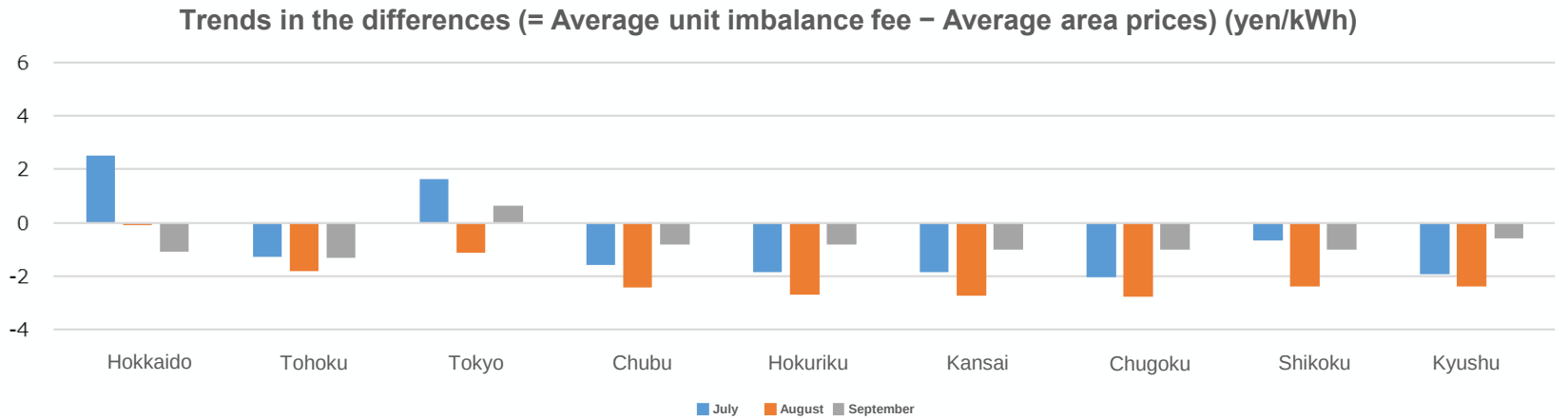
October to December 2024 period

Unit imbalance fees and area prices

- A comparison of trends in the unit imbalance fees and area prices in each area (monthly averages) indicates a discrepancy of about 1 yen/kWh or less except in Hokkaido in December. In general, the area prices exceeded the unit imbalance fees.
- The differences between the two values were 1.65 yen/kWh at the maximum, 0.03 yen/kWh at the minimum, and 0.57 yen/kWh on average.







Source: Prepared by the Electricity and Gas Market Surveillance Commission Secretariat based on the final values of the imbalance volume (as of January 28, 2025) published on the Imbalance Prices Calculation Service website.
* The structure of the imbalance fees system was changed on April 1, 2022.

October to December 2024 period

Day-Ahead market splitting status between areas

- The average market splitting occurrence rates were relatively high during this period in general, at the 50% level for Tokyo-Chubu (FC), at the 40% level for Chubu-Kansai and Chubu-Hokuriku, and at the 30% level for Kansai-Shikoku and Chugoku-Shikoku.
- In particular, the rates significantly increased compared to the same period last year for Kansai-Shikoku and Chugoku-Shikoku in November and December. This increase is presumably attributable to reduced service capacity due to Kansai-Shikoku interconnection line work, as well as increased power flow due to an increase in the selling volume at lower prices. In addition, the splitting rates for Tokyo-Chubu in October were 90% or greater, which was likely due to a massive drop in service capacity from interconnection line work.
- The splitting rates for Chubu-Kansai and Chubu-Hokuriku in November and December were 50% or greater. This was likely caused by a reduction in the supply capacity, an increase in the selling volume at low prices, and a resultant increase in the power flow.

Monthly splitting occurrence rate for interconnection lines between each area

Hokuriku-Kansai interconnection line

	July	August	September	October	November	December	Average for this period
	0.0%	0.1%	15.3%	0.2%	0.2%	1.0%	0.5%
(Same period last year)				9.7%	0.1%	0.0%	3.3%

Chubu-Hokuriku interconnection line

	July	August	September	October	November	December	Average for this period
	37.9%	23.5%	38.6%	32.1%	53.5%	59.6%	48.3%
(Same period last year)				43.8%	46.5%	40.3%	43.5%

Hokkaido-Honshu interconnection line

	July	August	September	October	November	December	Average for this period
	20.4%	27.5%	33.9%	34.9%	11.4%	25.1%	23.9%
(Same period last year)				6.1%	4.7%	6.3%	5.7%

Kansai-Chugoku interconnection line

	July	August	September	October	November	December	Average for this period
	0.5%	0.3%	0.1%	0.3%	0.9%	0.7%	0.6%
(Same period last year)				0.0%	0.0%	0.0%	0.0%

Tohoku-Tokyo interconnection line

	July	August	September	October	November	December	Average for this period
	67.8%	41.1%	28.0%	22.0%	14.3%	29.6%	22.1%
(Same period last year)				11.7%	52.4%	15.0%	26.1%

Chugoku-Shikoku interconnection line

	July	August	September	October	November	December	Average for this period
	21.1%	3.9%	1.5%	4.0%	50.1%	61.4%	38.4%
(Same period last year)				0.7%	1.1%	0.7%	0.8%

Tokyo-Chubu interconnection line (FC)

	July	August	September	October	November	December	Average for this period
	37.3%	45.1%	44.5%	90.7%	51.0%	21.6%	54.5%
(Same period last year)				62.3%	53.6%	30.5%	48.8%

Chugoku-Kyushu interconnection line

	July	August	September	October	November	December	Average for this period
	26.6%	27.5%	32.8%	17.2%	31.3%	34.1%	27.5%
(Same period last year)				26.8%	19.7%	5.1%	17.2%

Kansai-Shikoku interconnection line

	July	August	September	October	November	December	Average for this period
	21.6%	4.2%	1.5%	4.3%	50.1%	61.7%	38.6%
(Same period last year)				0.7%	1.1%	0.7%	0.8%

Chubu-Kansai interconnection line

	July	August	September	October	November	December	Average for this period
	37.9%	23.5%	54.0%	32.2%	53.7%	60.3%	48.7%
(Same period last year)				53.4%	46.5%	40.3%	46.7%

* The numbers (percentages) in the tables show the market splitting occurrence rate in each interconnection line, which is the number of products in which market splitting occurred as a percentage of the number of products handled in each month (48 frames per day every 30-minutes x number of days).
* Occurrences of market splitting include those caused by interconnection line work.

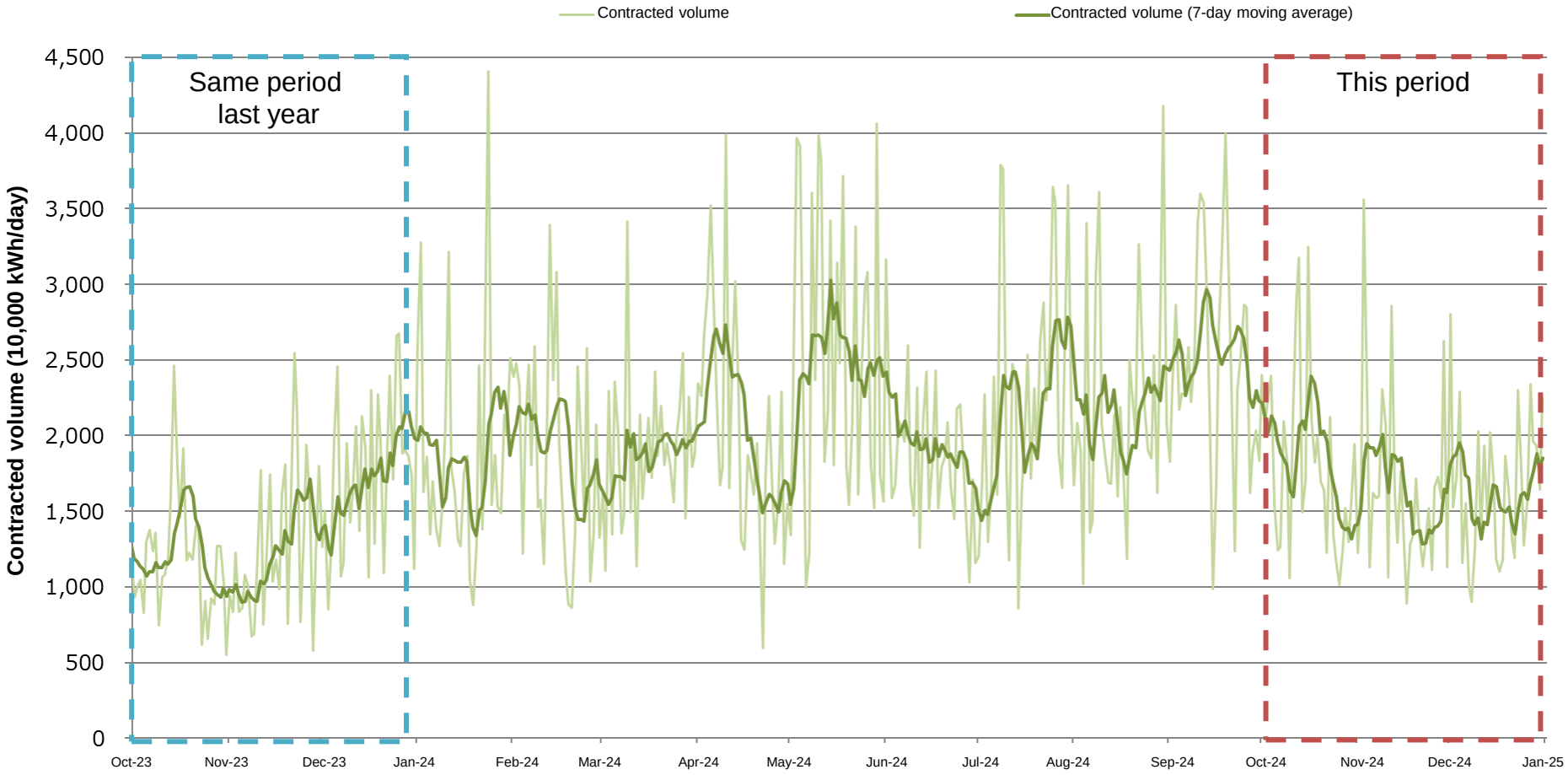
October to December 2024 period

Contracted volume in the intraday market

- The contracted volume in the intraday market for this period was 1.57 billion kWh.
- In year-on-year comparison, the volume was 1.2 times that of the same period last year.

Intraday market: Trends in contracted volume

(October 1, 2023 to December 31, 2024)



Main data

Contracted volume (October to December 2024)
1.57 billion kWh

Comparison with the contracted volume for the same period last year (vs. October to December 2023)
1.2 ×

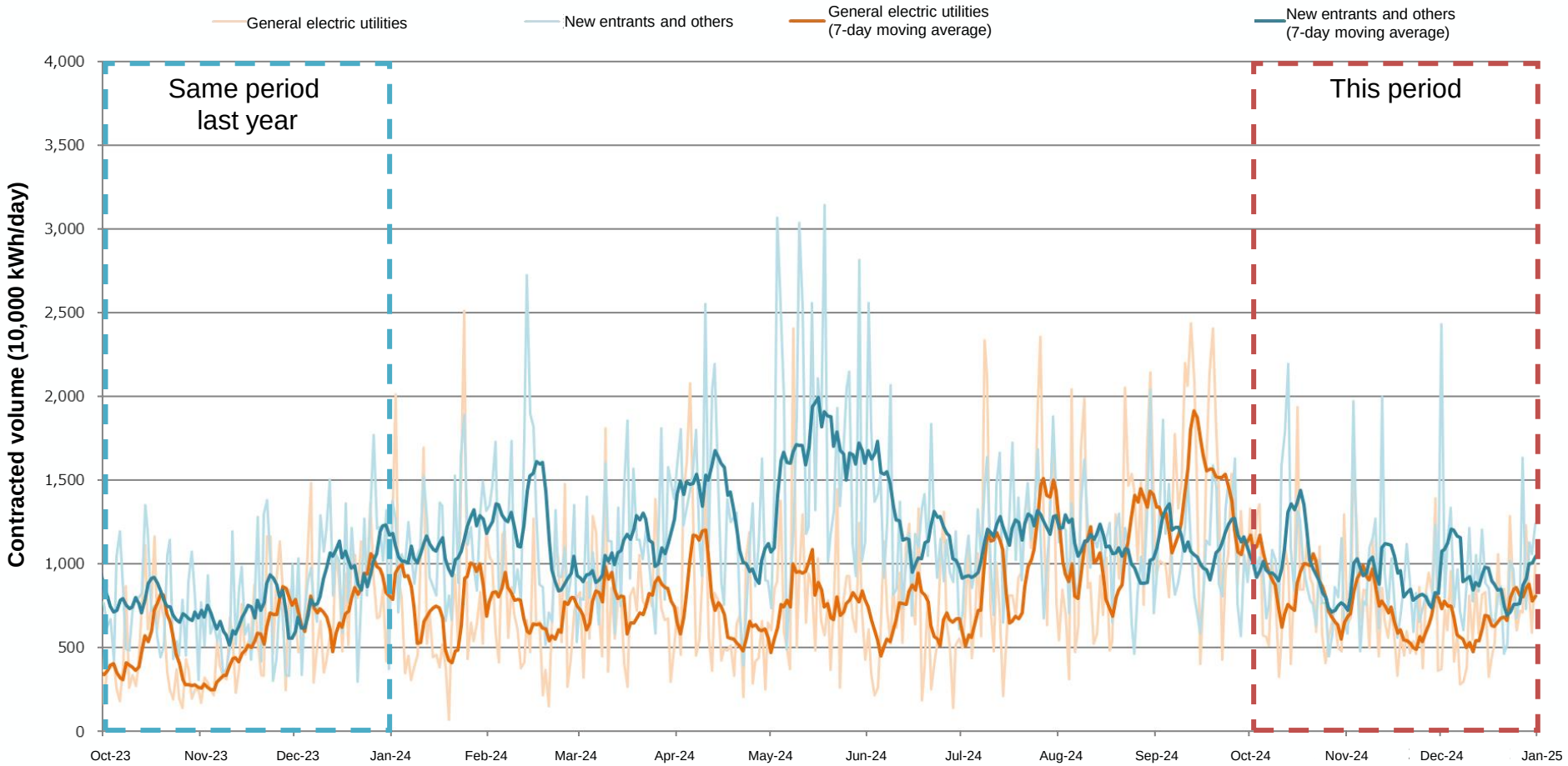
October to December 2024 period

Contracted selling volume in the intraday market by business operator category

- The contracted selling volume in the intraday market for this period was 0.69 billion kWh for general electric utilities and 0.88 billion kWh for new entrants and other business operators.
- In year-on-year comparison, the volume was 1.3 times that of the same period last year for general electric utilities, and 1.2 times for new entrants and other business operators.

Intraday market: Trends in contracted selling volume

(October 1, 2023 to December 31, 2024)



Main data

Contracted selling volume by general electric utilities (October to December 2024)
0.69 billion kWh

Comparison with the contracted selling volume by general electric utilities for the same period last year (vs. October to December 2023)
1.3 ×

Contracted selling volume by new entrants and other business operators (October to December 2024)
0.88 billion kWh

Comparison with the contracted selling volume by new entrants and other business operators for the same period last year (vs. October to December 2023)
1.2 ×

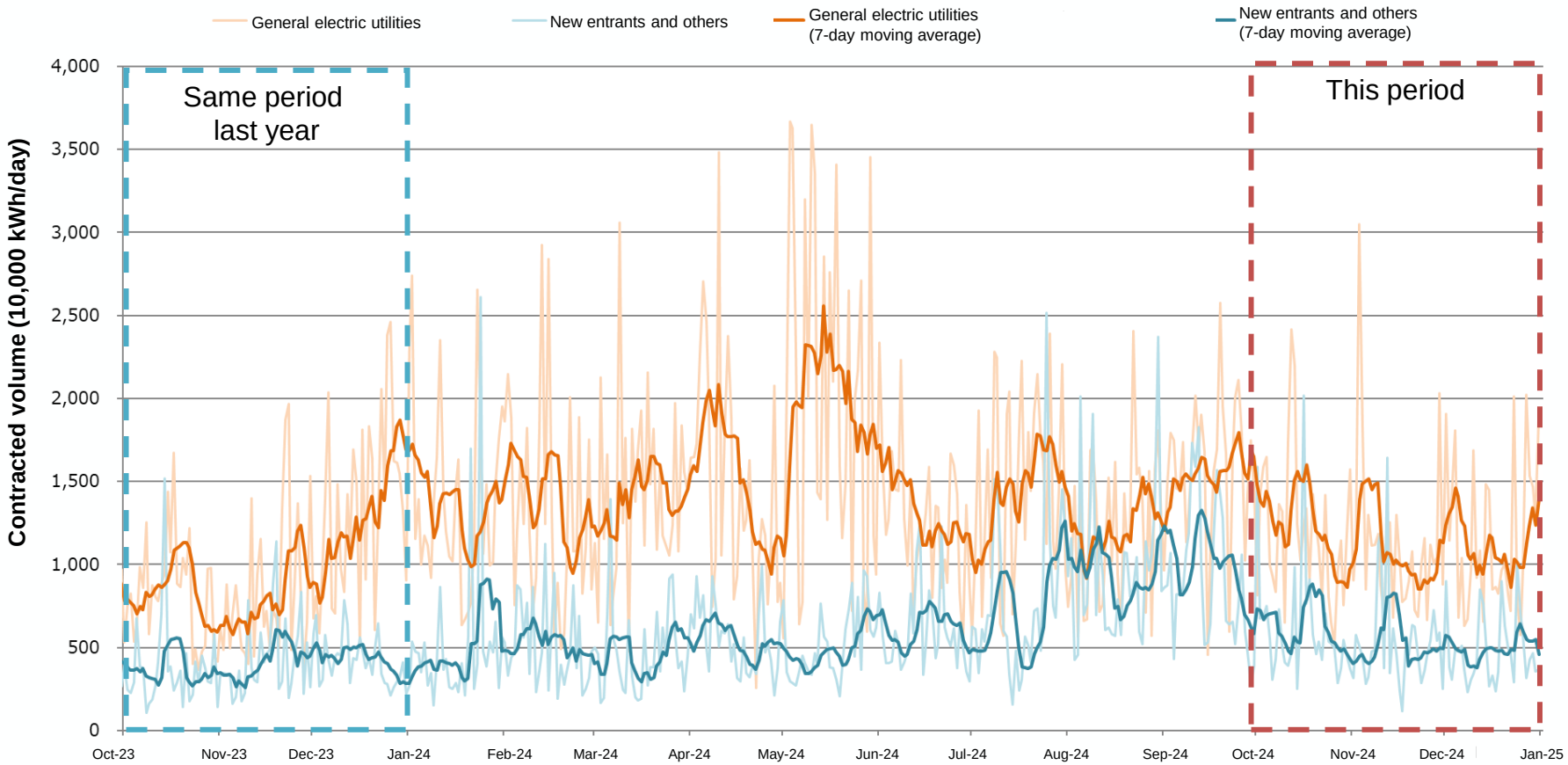
* General electric utilities include Hokkaido Electric Power, Tohoku Electric Power, TEPCO Energy Partner, TEPCO Renewable Power, Chubu Electric Power Miraiz, Hokuriku Electric Power, Kansai Electric Power, Chugoku Electric Power, Shikoku Electric Power, Kyushu Electric Power, and JERA.

October to December 2024 period

Contracted buying volume in the intraday market by business operator category

- The contracted buying volume in the intraday market for this period was 1.07 billion kWh for general electric utilities and 0.50 billion kWh for new entrants and other business operators.
- In year-on-year comparison, the volume was 1.2 times that of the same period last year for general electric utilities, and 1.4 times for new entrants and other business operators.
- The contracted buying volume by general electric utilities exceeded their contracted selling volume, and the contracted selling volume by the new entrants and other business operators exceeded their contracted buying volume.

Intraday market: Trends in contracted buying volume
(October 1, 2023 to December 31, 2024)



Main data

Contracted buying volume by general electric utilities (October to December 2024)
1.07 billion kWh

Comparison with the contracted buying volume by general electric utilities for the same period last year (vs. October to December 2023)
1.2 ×

Contracted buying volume by new entrants and other business operators (October to December 2024)
0.50 billion kWh

Comparison with the contracted buying volume by new entrants and other business operators for the same period last year (vs. October to December 2023)
1.4 ×

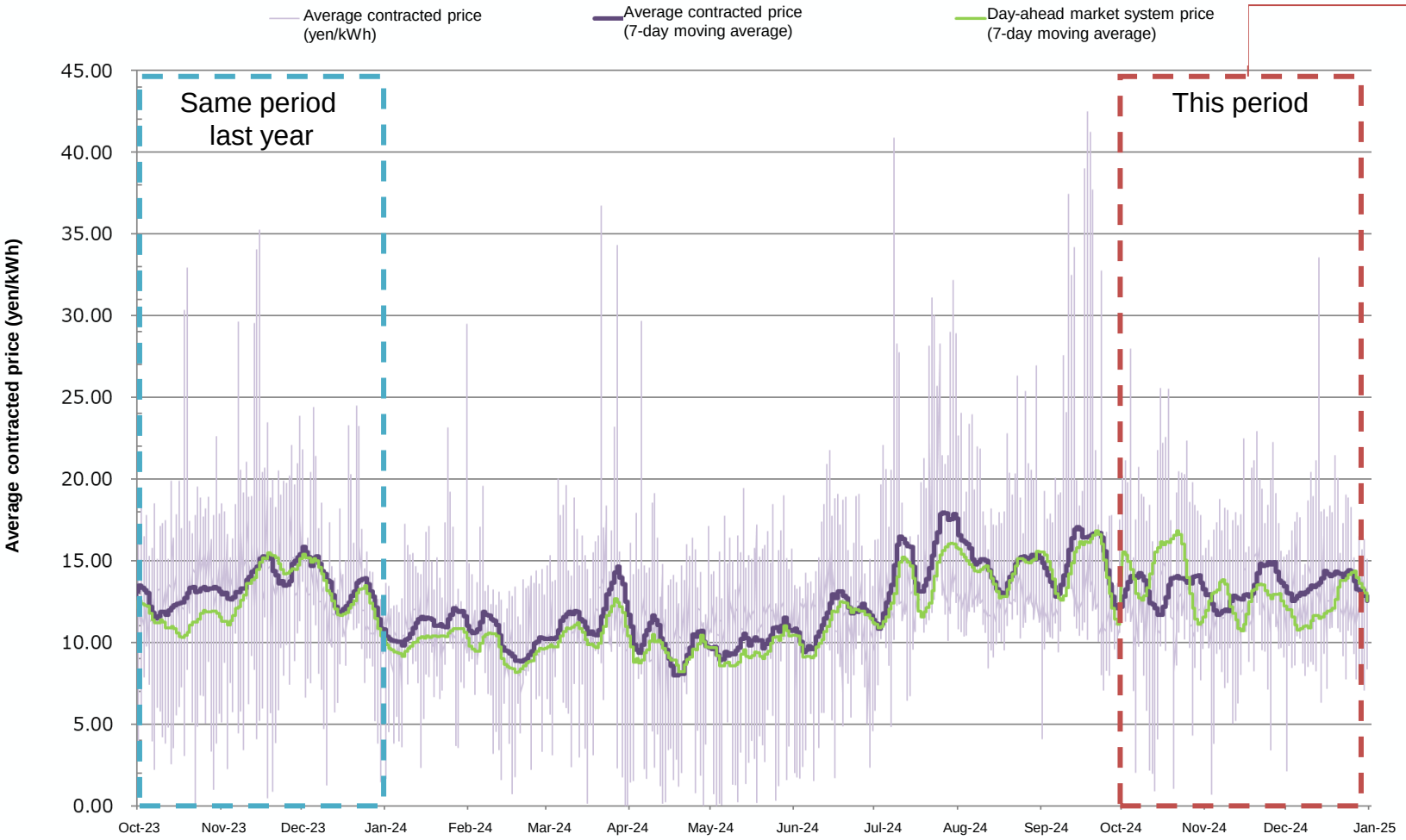
* General electric utilities include Hokkaido Electric Power, Tohoku Electric Power, TEPCO Energy Partner, TEPCO Renewable Power, Chubu Electric Power Miraiz, Hokuriku Electric Power, Kansai Electric Power, Chugoku Electric Power, Shikoku Electric Power, Kyushu Electric Power, and JERA.

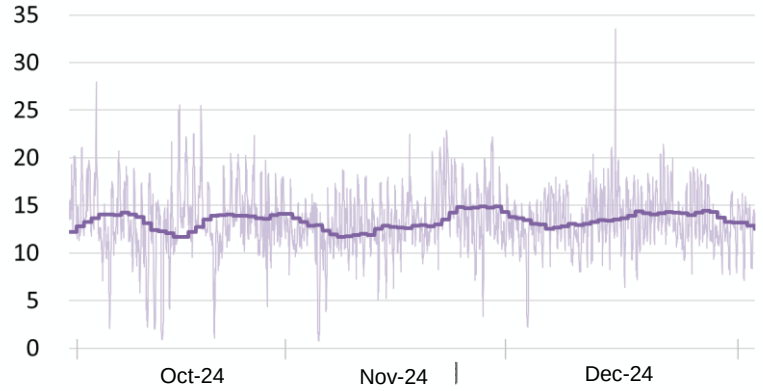
October to December 2024 period

Average contracted price in the intraday market

- The average contracted price in the intraday market for this period was 13.4 yen/kWh. This was a 1.5% increase compared to the average of 13.2 yen/kWh for the same period last year.
- The average contracted price in the intraday market for this period exceeded the average system price (12.5 yen/kWh).

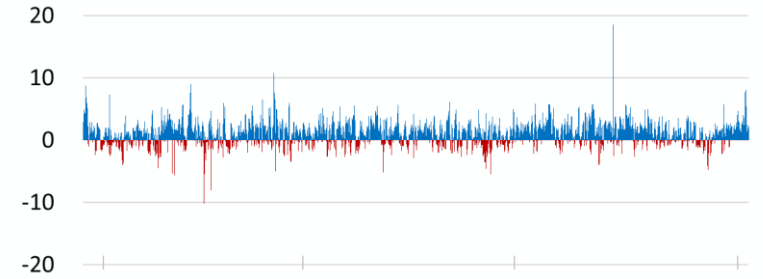
Intraday market: Trends in the average contracted price
(October 1, 2023 to December 31, 2024)





Price difference (Average intraday market price − System price)

Maximum difference (positive): +18.51 yen/kWh (06:00, December 13)
Maximum difference (negative): −10.18 yen/kWh (16:30, October 17)



Highest price: December 13, 1 frame in total
Lowest price: November 3, 1 frame in total

Main data

Unit: yen/kWh

	This period	Same period last year	Difference
Intraday market average contracted price	13.4	13.2	+0.2
(Reference) Day-ahead market average system price	12.5	12.6	-0.1
Highest price	33.5	35.2	-1.7
Lowest price	0.74	0.18	+0.56

October to December 2024 period

Overview of contracted volume and bidding volume in the forward market transactions

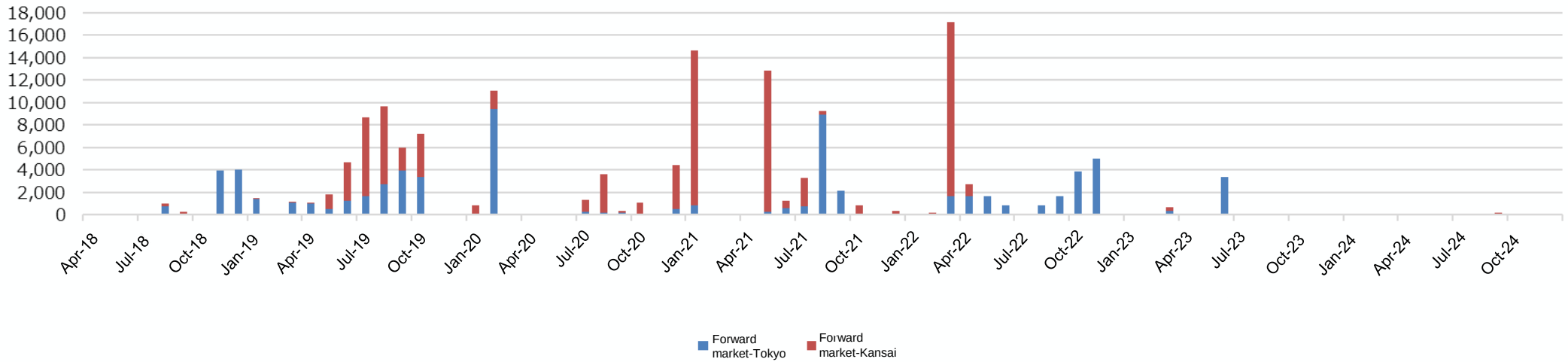
- There was no contracted volume in the forward market for this period.

Contracted volume/bidding volume during the period*1

(Unit: MWh)

Item	Area	Total (This period)	Daytime: Weekly	Daytime: Monthly	24-hour: Weekly	24-hour: Monthly	24-hour: Yearly	(Reference) Total (Same period last year)
Contracted volume	Total	0	0	0	0	0	0	0
	Tokyo	0	0	0	0	0	0	0
	Kansai	0	0	0	0	0	0	0
Selling volume	Total	690,496	115,416	547,680	27,400	0	0	881,358
	Tokyo	635,416	71,736	547,680	16,000	0	0	311,458
	Kansai	55,080	43,680	0	11,400	0	0	569,900
Buying volume	Total	269,150	210,840	0	58,310	0	0	5,513,442
	Tokyo	268,950	210,840	0	58,110	0	0	123,424
	Kansai	200	0	0	200	0	0	5,390,018

Contracted volume in forward market transactions [MWh]



*1 Forward market data was obtained by converting the contracted volume of each product into kWh (for 24-hour products, total number of days including holidays × 24 hours; for daytime products, number of days excluding holidays × 10 hours) and aggregating the results by contracted month.

October to December 2024 period

Overview of contracted volume and bidding volume in the futures market transactions

- Electricity futures trading contracted for this period was approximately 0.30 billion kWh (2.2 times that of the same period last year) for TOCOM and approximately 23.49 billion kWh (4.0 times that of the same period last year) for EEX.

Contracted volume in the futures market*1 (TOCOM and EEX) during the period

(TOCOM *2)

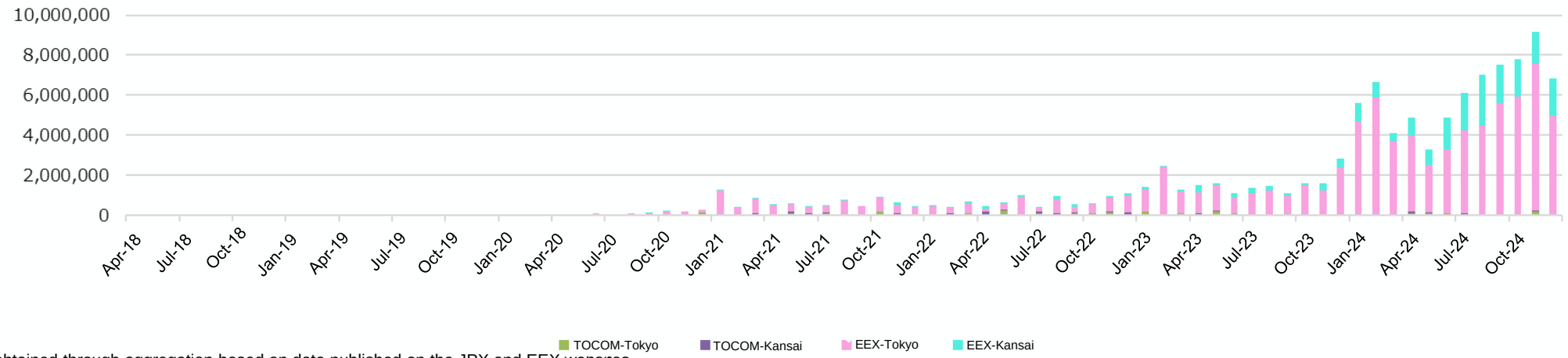
(Unit: MWh)

Item	Area	Total (This period)	Base load	Daytime load	(Reference) Total (Same period last year)
Contracted volume	**Total**	**300,014**	**294,257**	**5,758**	**137,071**
	Tokyo	248,452	245,290	3,162	97,506
	Kansai	51,563	48,967	2,596	39,565

(EEX)

Item	Area	Total (This period)	Base load	Peak load	(Reference) Total (Same period last year)
Contracted volume	**Total**	**23,486,400**	**21,962,448**	**1,523,952**	**5,892,324**
	Tokyo	18,165,828	16,785,744	1,380,084	4,958,892
	Kansai	5,320,572	5,176,704	143,868	933,432

Contracted volume in futures market transactions [MWh]

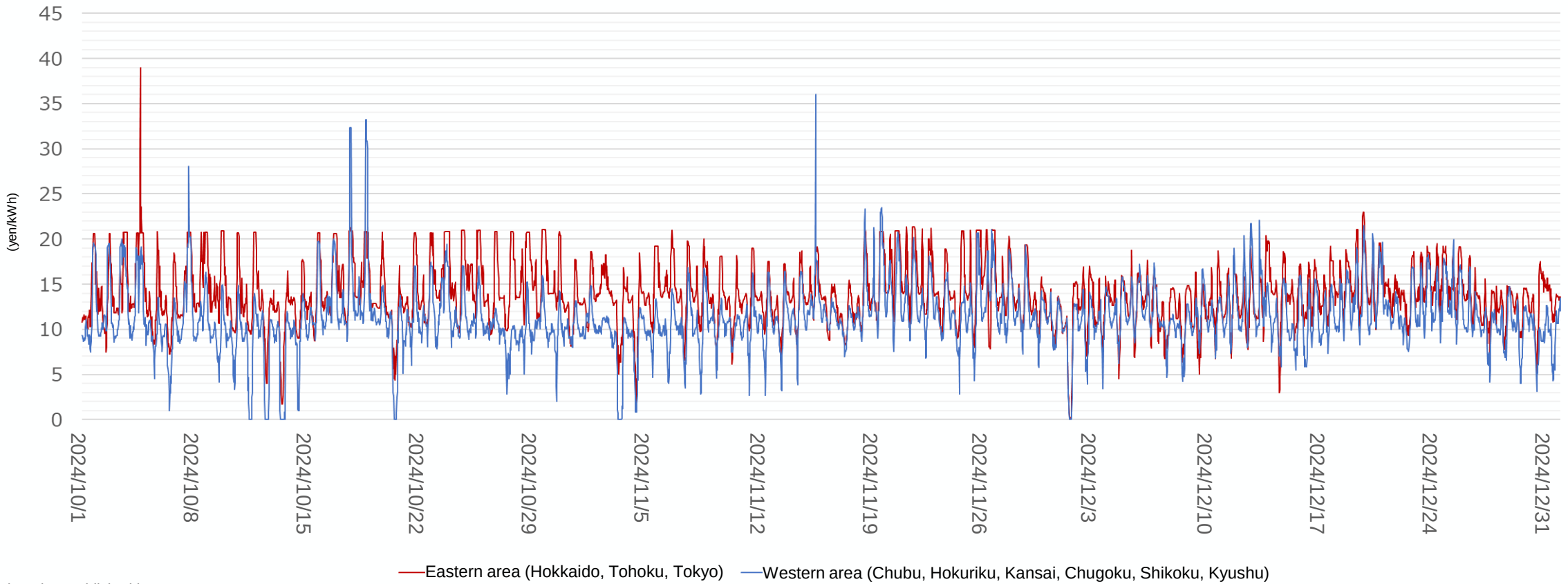


*1 The data was obtained through aggregation based on data published on the JPX and EEX websites.
*2 The data aggregation method has been changed, effective from the reporting for the April to June 2024 period.

October to December 2024 period

Trends (background) of day-ahead market prices in the October to December 2024 period

- The market prices did not change significantly, but were higher in the east and lower in the west. (Average area price: eastern area was 14.28 yen/kWh in October, 13.90 yen/kWh in November, and 13.32 yen/kWh in December; western area was 10.98 yen/kWh in October, 11.42 yen/kWh in November, and 11.56 yen/kWh in December.) Specifically, from October to early November, the eastern area's prices were relatively higher, while those in the western area trended low. The price difference between the east and the west widened particularly in October, due to reduced service capacity for Tokyo-Chubu (FC), which caused the splitting rate to exceed 90%. (Maximum of 6.5 yen/kWh as a daily average.)
- The price difference between the east and the west shrank from mid-November onward. This resulted from service capacity recovery, a reduction in the Tokyo-Chubu (FC) market splitting rate to 51.0% in November and further down to 21.6% in December, and more aggressive buying bidding in the western area.
- Daily day-ahead market prices exceeded 30 yen/kWh 7 times in total (1 time in eastern area and 3 times in western area in October, 1 time in western area in November, and 2 times in western area in December; 4 times in the same period last year). The primary causes were high temperatures and out of season weather events.



Based on data published by JEPX.

Electricity market monitoring report

【 Quarterly report 】

- **Wholesale electricity market**
  - JPEX market
    - Day-Ahead market
    - Intraday market
    - Forward transaction market

- **Voluntary efforts by general electric utilities, etc.**
  - Supply of surplus electricity to JEPX market
  - Trading status and sell bid withdrawal status in the intraday market
  - Status of block selling bidding
  - Supply of power source to the market for wholesale electricity utilities
  - Status of bidding, etc. for public hydroelectricity business
  - Status of OTC transactions

【Medium- to long-term trend report】

- **Wholesale electricity market**
  - JPEX market
    - Trends in contracted volume
    - Trends in contracted price
    - Trends in the market splitting occurrence rate
  - JEPX spot price and fuel cost

- **Retail market**
  - Trends in new entrants share by area
  - Market share by area
  - Trends in electricity unit price
  - Trends in switching
  - Average unit price of low-voltage rates

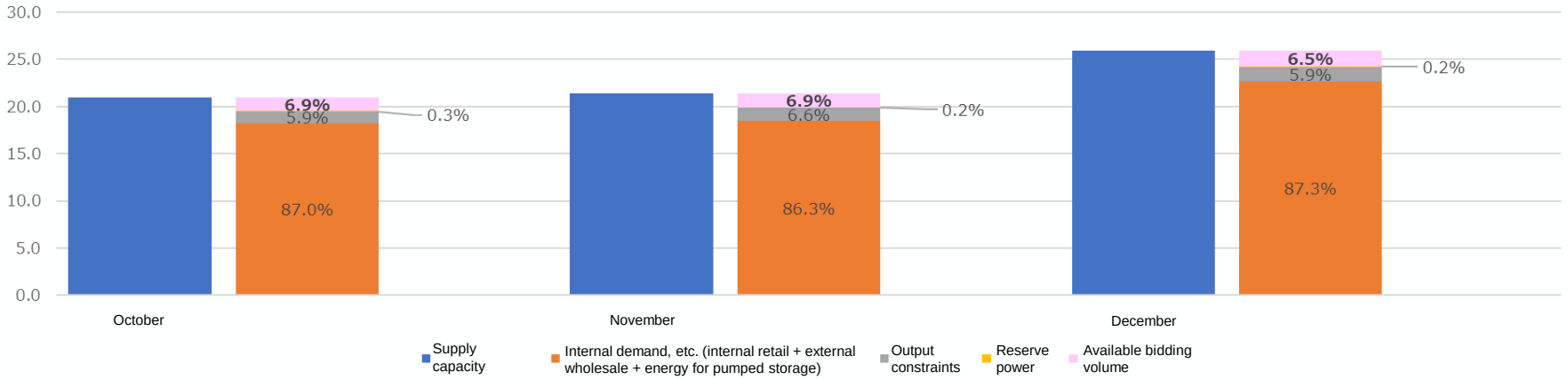
- **Gas market**
  - Status of OTC transactions of general gas utilities
  - Usage status of Start-up wholesale measure

October to December 2024 period

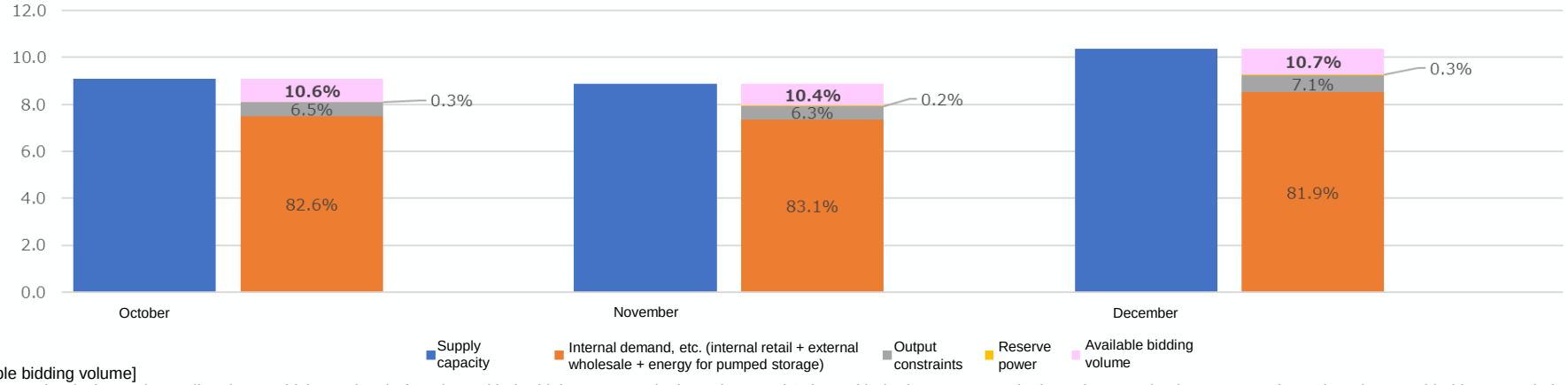
Supply of surplus electricity to JEPX market: Status of available bidding volume for supply capacity

- The total available bidding volume (data aggregated over applicable days each month) was obtained for a total of 21 days with higher spot prices and 9 days with lower spot prices. The former consisted of a total of 7 days with soaring spot and other prices (4 days in October, 1 day in November, 2 days in December) plus 14 days with relatively higher spot prices, while the latter was 3 days each month. As a result, the figures were at the levels of 6% (6.9% in October, 6.9% in November, 6.5% in December) of the internal supply capacity on days with higher prices, and at 10% levels (10.6% in October, 10.4% in November, 10.7% in December) on days with lower prices.

On 21 days with soaring spot and other prices in October to December 2024 (TWh)



On 9 days with lower spot prices in October to December 2024 (TWh)



[Date for aggregation of available bidding volume]

◆ For the three months, the secretariat designated sampling dates, which consisted of 21 days with the highest spot and other prices, and 9 days with the lowest spot and other prices. Evaluations were performed on data provided by general electric utilities and JERA.
Sampling dates for October consist of days with soaring spot and other prices (October 4, 7, 17, and 18), weekdays with the highest daily average SP (October 3, 16, and 23), and 3 weekdays with the lowest daily average SP (October 10, 11, and 31).
Sampling dates for November consist of the day with soaring spot and other prices (November 15), weekdays with the highest frame SP (November 18, 19, 20, 21, 25, and 26), and 3 weekdays with the lowest daily average SP (November 5, 12, and 13).
Sampling dates for December consist of days with soaring spot and other prices (December 13 and 25), weekdays with the highest daily average SP (December 11, 19, 20, 23, and 24), and 3 weekdays with the lowest daily average SP (December 2, 3, and 27).

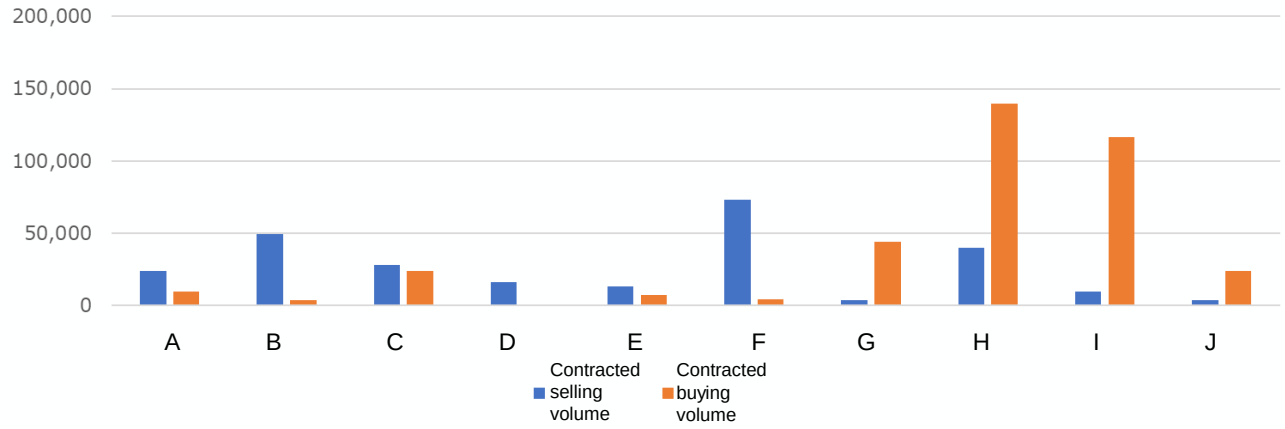
◆ The data was collected in the specified data submission format for days when the price rose to 30 yen/kWh or more in the day-ahead market and the intraday market. * SP: system price

October to December 2024 period

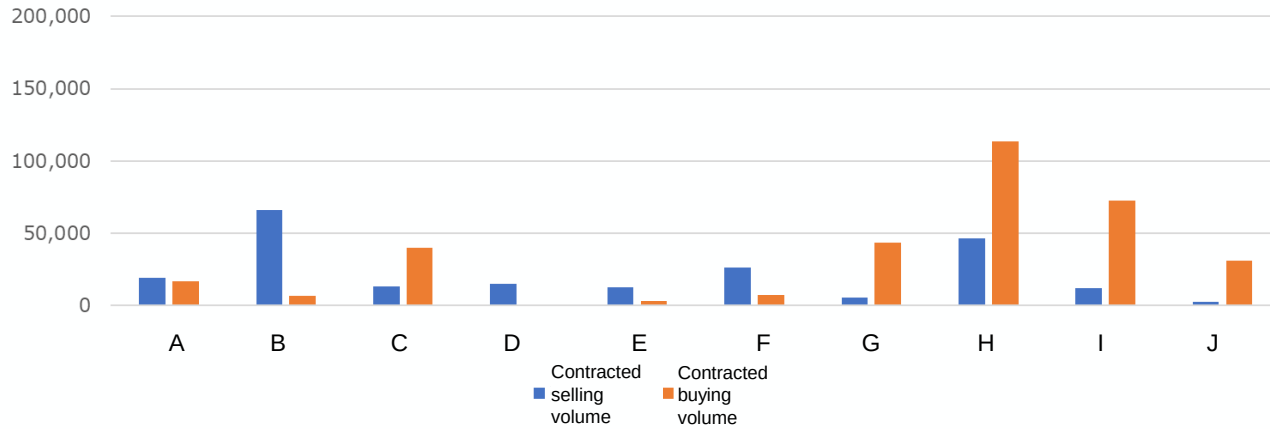
Intraday market for general electric utilities: Contract status by buyer and by seller

- Regarding the contracted selling volume and contracted buying volume in the intraday market for general electric utilities and JERA, electric companies B, D, and F were net sellers, while electric companies G, H, I and J were net buyers.

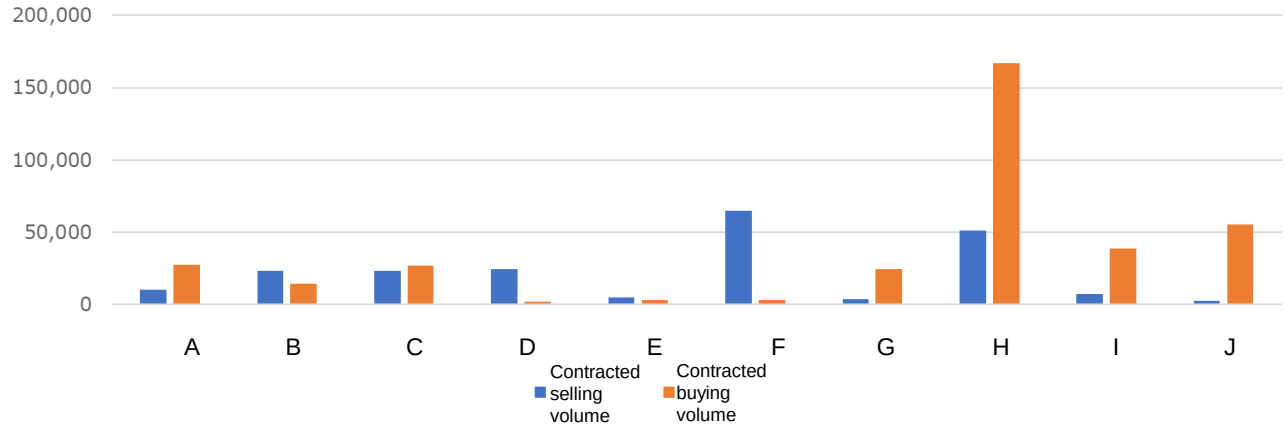
Contracted volume in the intraday market, October 2024 (Unit: MWh)



Contracted volume in the intraday market, November 2024 (Unit: MWh)



Contracted volume in the intraday market, December 2024 (Unit: MWh)

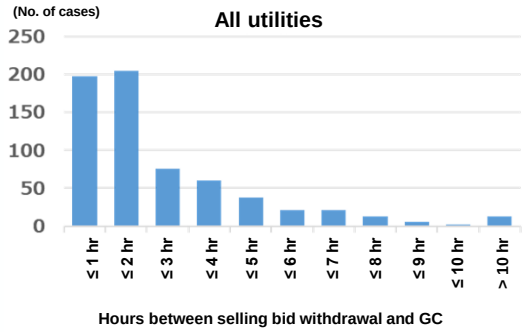


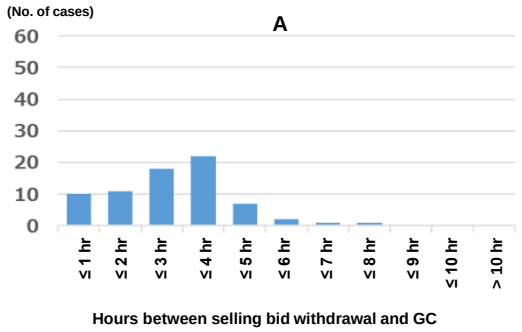
* Aggregated from JEPX data (undisclosed)
* Calculated for general electric utilities (excluding Okinawa Electric Power) and JERA

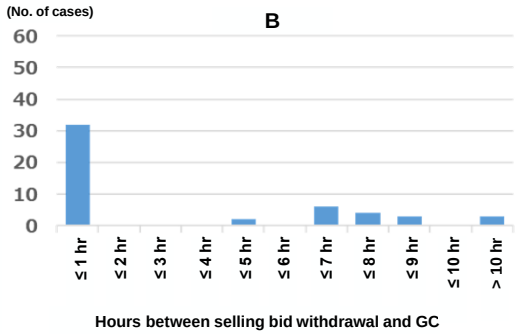
October to December 2024 period

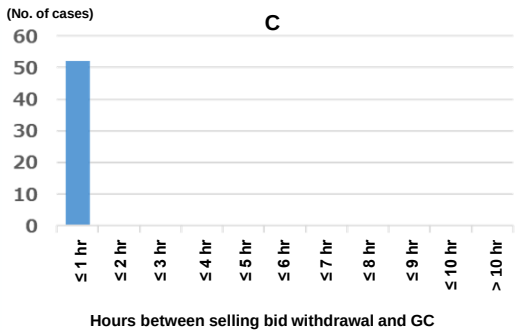
Status of withdrawal of selling bids by general electric utilities (Distribution of number of cases by remaining time until GC)

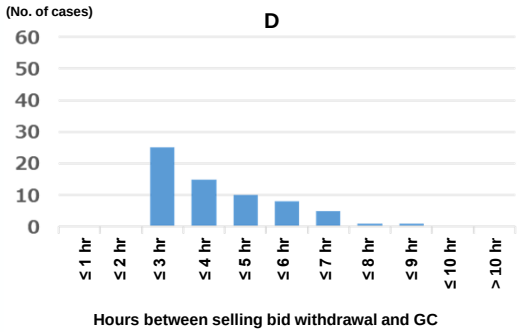
- For the three sampling days (October 18, November 13, and December 13), the distribution of the number of utilities was checked to see how many hours before GC they withdrew their selling bids. It was found that the trend of the distribution concentrating in the period “more than one hour up to two hours before GC” has continued. The number of cases corresponding to “up to one hour” was 205 out of the total of 651, down about 4% from the previous quarter (188/536).

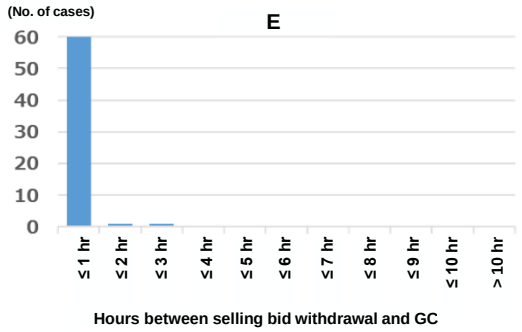


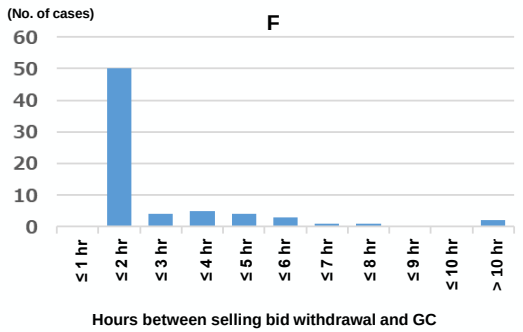


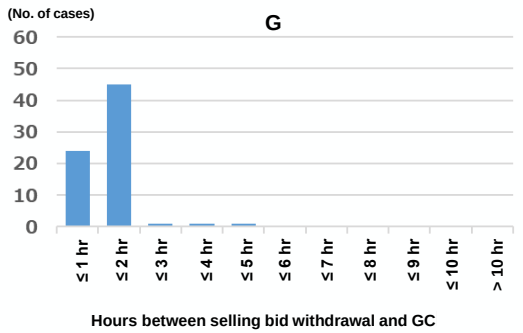


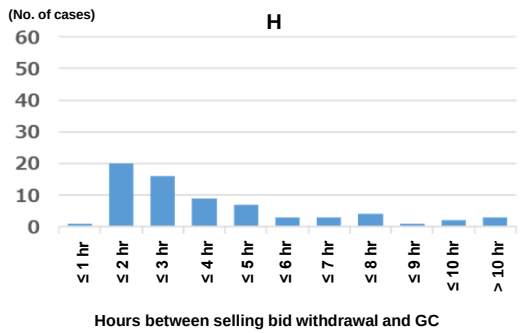


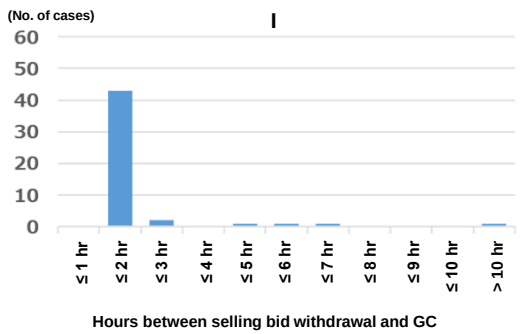


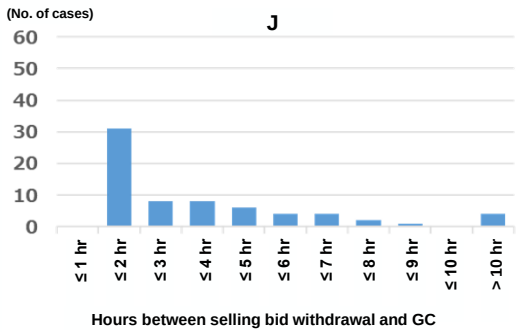










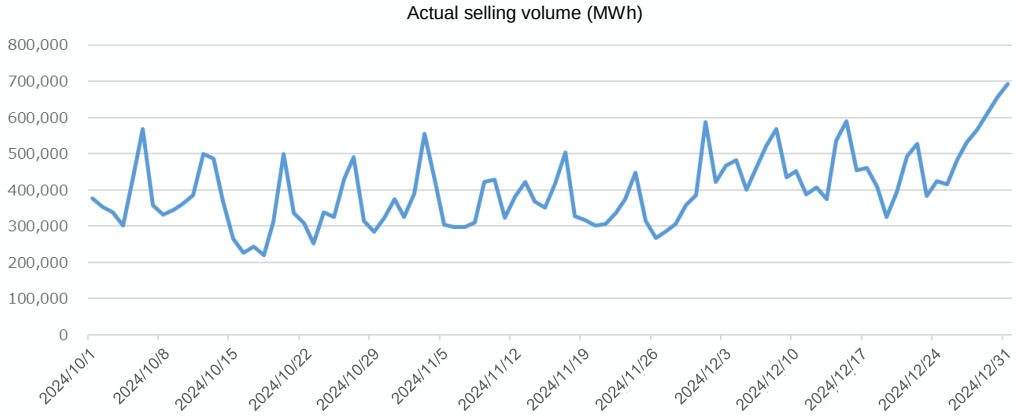


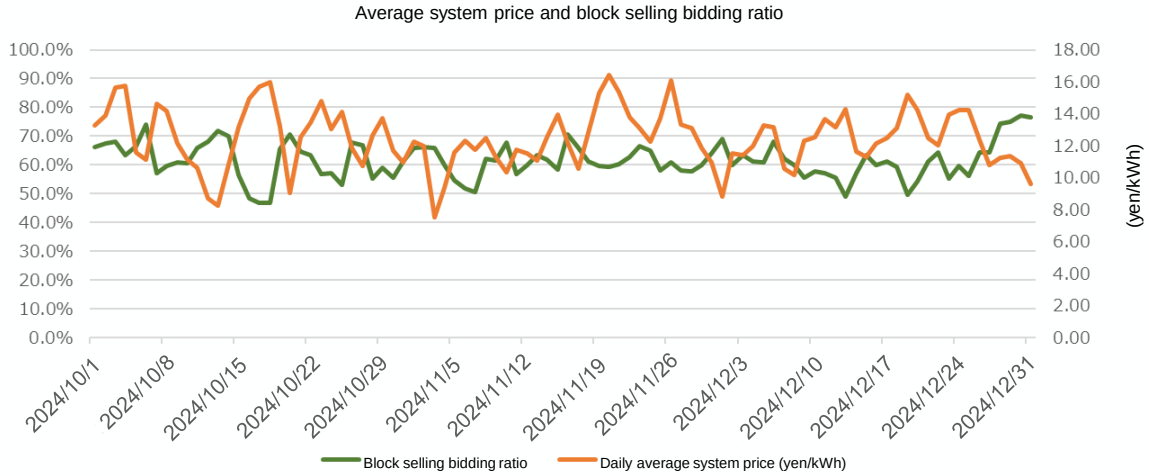
* The number of selling bids on the board was counted at 59 minutes and 59 seconds past every hour. The time until the GC was calculated with the time after which there were no selling bids on the board, was assumed as the withdrawal time.
* Only “00 minute” frames (e.g., 01:00) were counted, and "30 minute" frames (e.g., 01:30) were not counted. Frames with always 0 selling bids were excluded from the calculations.
* The secretariat sampled the characteristic day of each month: for October, the weekday with the highest system price in the three months; for November, the weekday with the lowest daily average system price in November; and for December, the only day the prices soared in the intraday market in the three months.

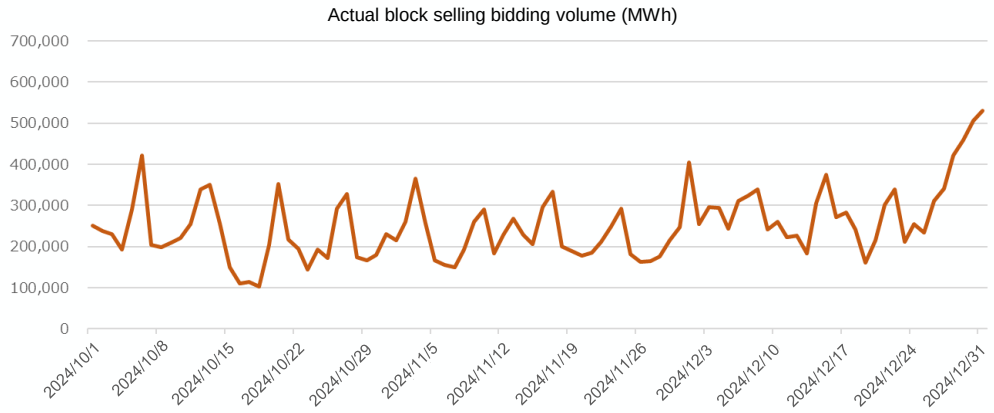
October to December 2024 period

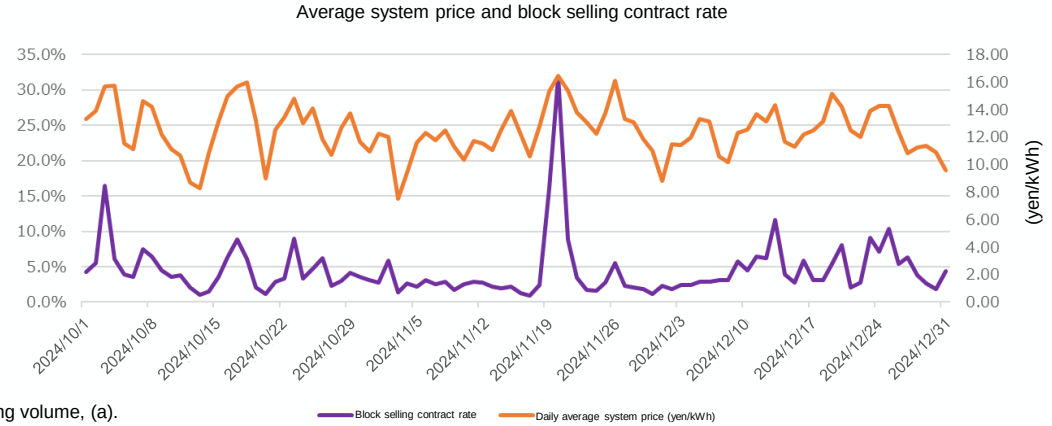
Status of block selling bidding

- The block selling bidding ratio continues to indicate a trend of being lower on days when the spot prices rise, and being higher on days when spot prices fall.
- The block selling contract rate continues to indicate a trend of being higher on days when spot prices rise and being lower on days when spot prices fall.
- A drop in day-ahead market prices reduced the contract rates for block selling bids, and the contract rate exceeded 30% only on November 20.









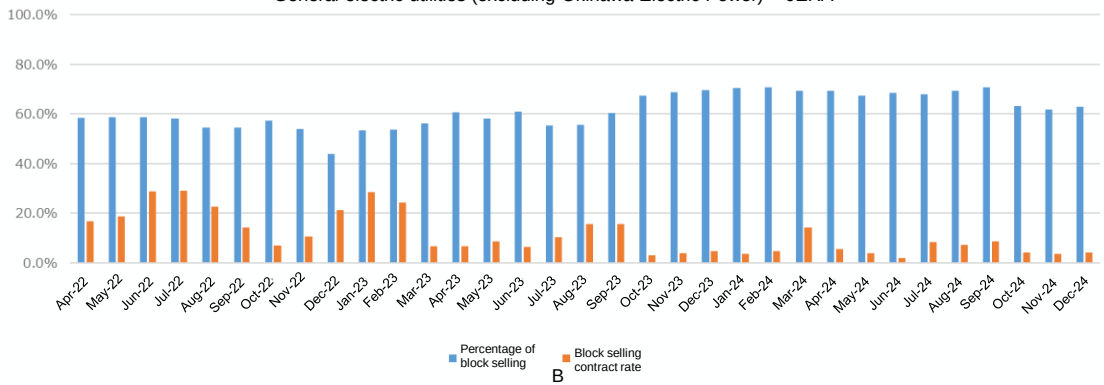
* Calculated based on data provided by general electric utilities (nine companies excluding Okinawa Electric Power) and JERA.
* The block bidding ratio is calculated as the ratio of the actual block bidding volume for which no buyer has been determined, (b), to the actual selling volume, (a).
  (a) Actual selling volume = Total selling volume (for regular bids) − Gross bidding high price buying-back volume − Implicit auction selling volume
  (b) Actual block bidding volume = Normal block bidding volume (excluding implicit auctions and gross bidding) + Gross bidding actual block selling volume*
  (*) Gross bidding actual block selling volume = Gross bidding block selling volume − Gross bidding high price buying-back volume. If a negative value is obtained, it is counted as zero.
* The block selling contract rate is calculated as the ratio of actual contracted block volume, (c), to actual block bidding volume, (b).
  (c) Actual contracted block volume = Normal contracted block volume (excluding implicit auctions and gross bidding) + Gross bidding actual contracted block selling volume**
  (**) Gross bidding actual contracted block selling volume = Gross bidding contracted block selling volume − Gross bidding high price buying-back volume. If a negative value is obtained, it is counted as zero.

October to December 2024 period

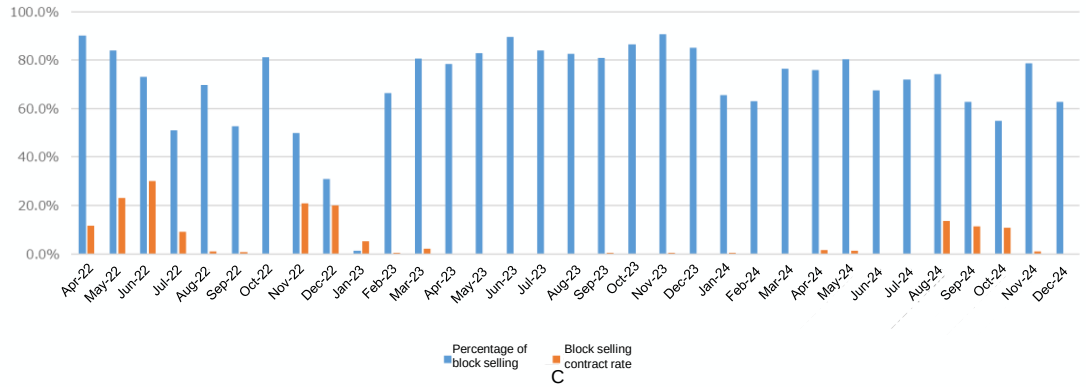
Monthly trends in block selling bidding ratio and contract rate by business operator (1/2)

- Contract rates declined (especially for the electric company D) because, as a result of the suspension of gross bidding, block selling bids for supplying some surplus electricity at 0.01 yen/kWh (for buying at marginal cost) were changed to supply it at marginal cost, as mentioned earlier.
- The rates trended lower compared to the previous period for electric companies A, B, J, and K.

General electric utilities (excluding Okinawa Electric Power) + JERA



A



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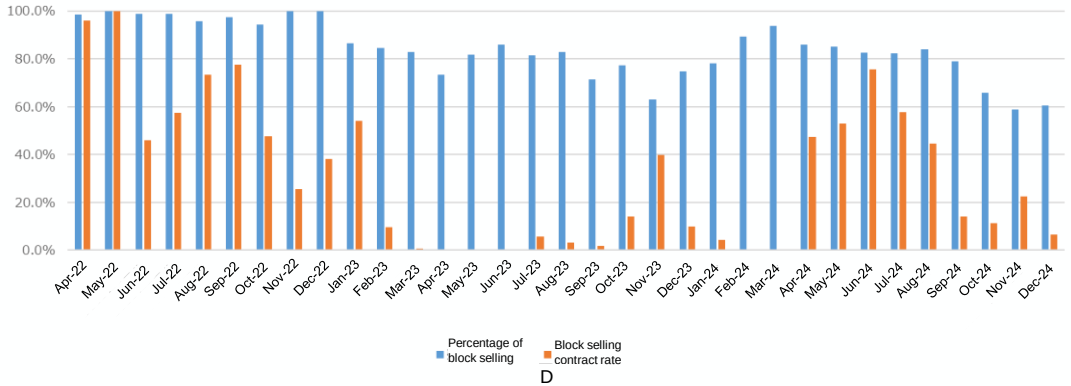

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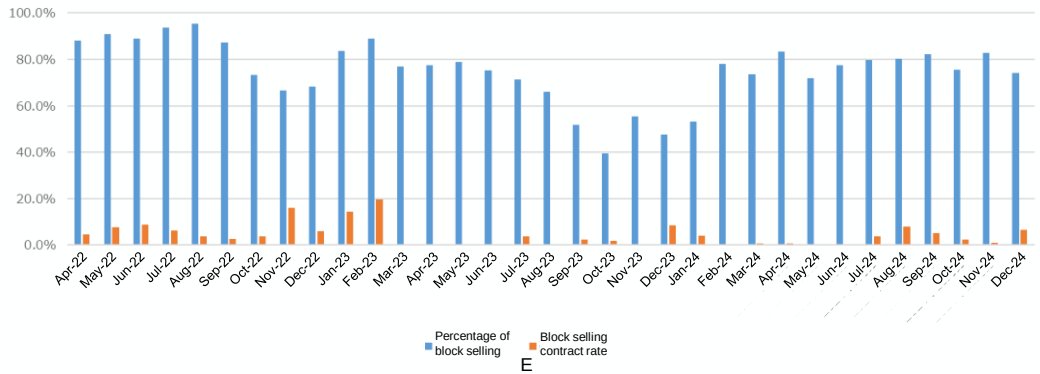
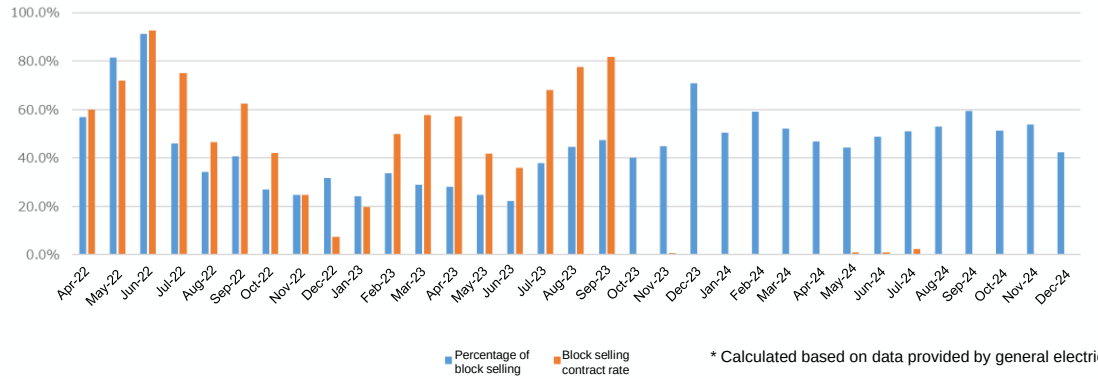
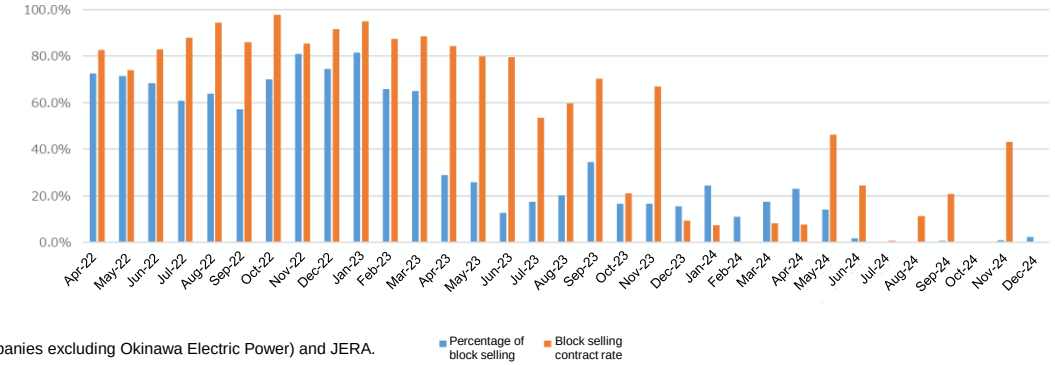


D



E

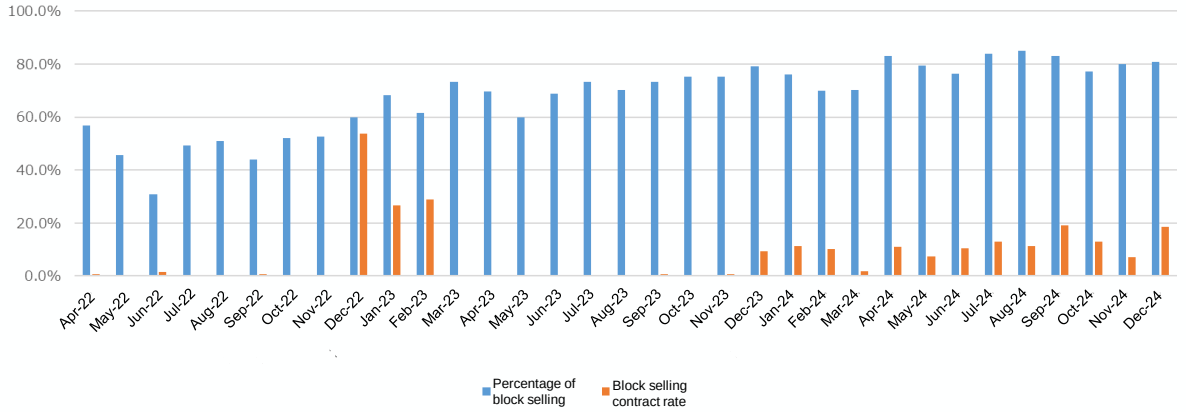


* Calculated based on data provided by general electric utilities (nine companies excluding Okinawa Electric Power) and JERA.

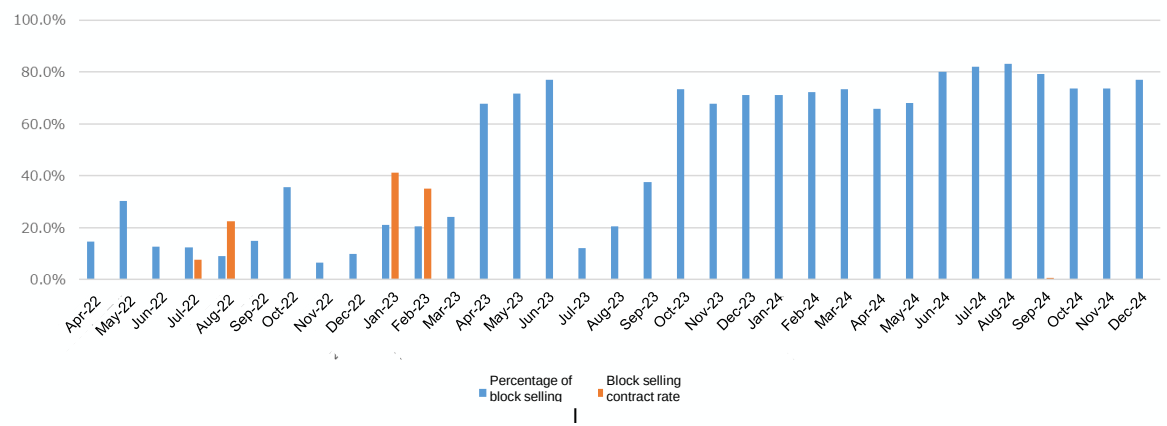
October to December 2024 period

Monthly trends in block selling bidding ratio and contract rate by business operator (2/2)

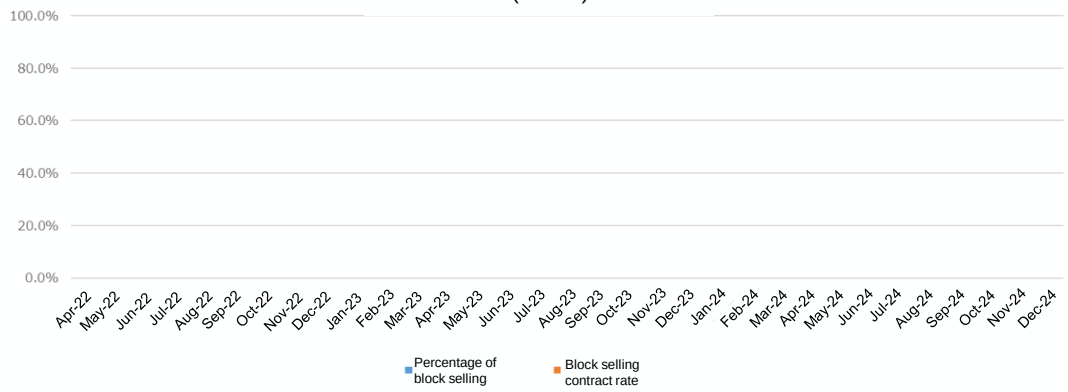
F



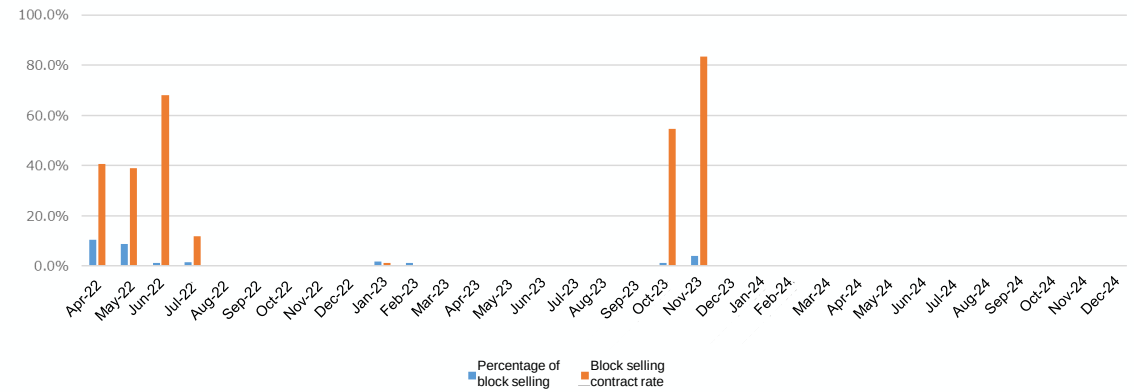
G



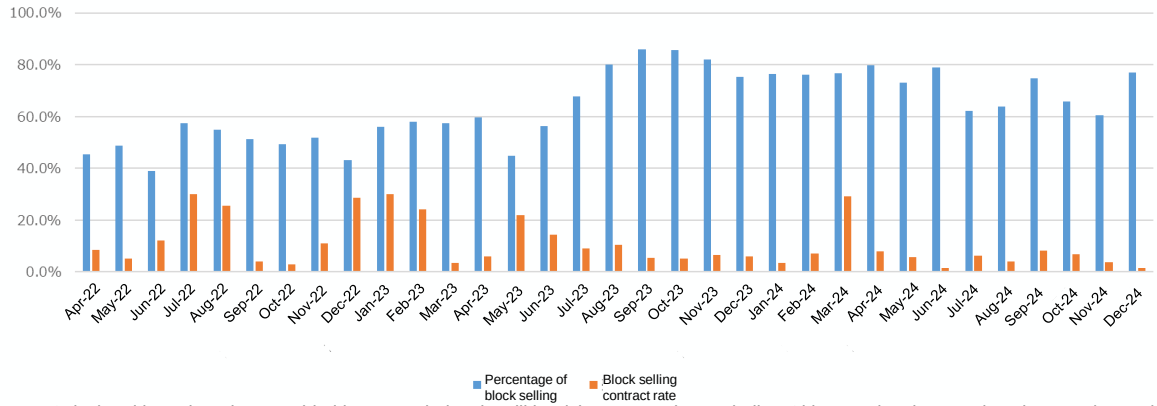
H (Note 1)



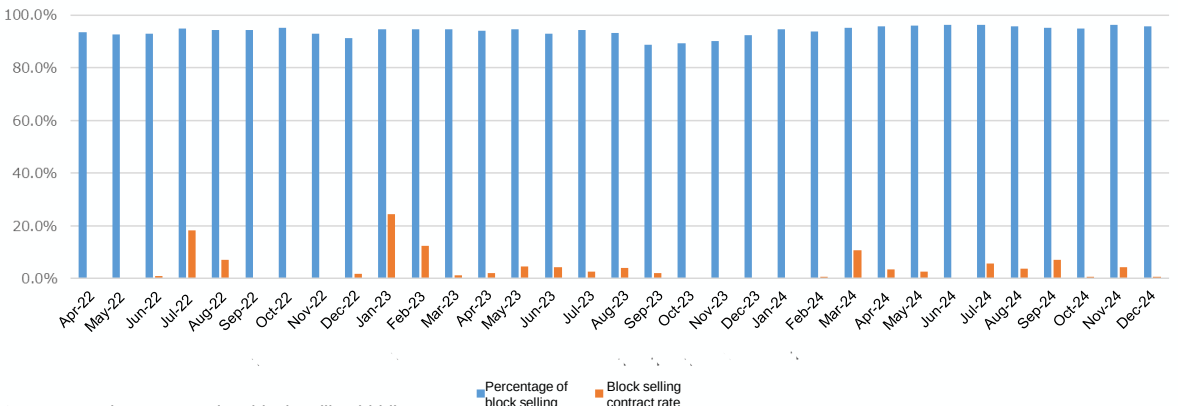
I



J



K



* Calculated based on data provided by general electric utilities (nine companies excluding Okinawa Electric Power) and JERA. (Note 1) Electric Company H does not conduct block selling bidding.

October to December 2024 period

Supply of power source to the market for wholesale electricity utilities (J-Power)

- To date, approximately 619,000 kW[*5] (approximately 5%) of the total of 12 million kW[*4] has been supplied.
  No progress has been seen compared to the same period last year.
- Further supply of power has not yet been decided for each company.

	Volume of supplied power	Discussion status, etc.
Hokkaido Electric Power	Approximately 200 million kWh supplied per year[*3]	Further supply of power is yet to be decided.
Tohoku Electric Power	50,000 kW[*2] already supplied	Further supply of power is yet to be decided.
TEPCO EP	30,000 kW[*1] already supplied	Further supply of power is yet to be decided.
Chubu Electric Power	18,000 kW[*1] already supplied	For the power sources subject to supply to the market, power supply contracts with J-POWER ended at the end of March 2021 (for the entire volume, including the volume already supplied). Further supply of power is yet to be decided.
Hokuriku Electric Power	10,000 kW[*1] already supplied	For the power sources subject to supply to the market, power supply contracts with J-POWER ended at the end of March 2021 (for the entire volume, including the volume already supplied). Further supply of power is yet to be decided.
Kansai Electric Power	350,000 kW[*2] already supplied	Further supply of power is yet to be decided.
Chugoku Electric Power	18,000 kW[*1] already supplied	Further supply of power is yet to be decided.
Shikoku Electric Power	30,000 kW[*1] already supplied	Further supply of power is yet to be decided.
Kyushu Electric Power	80,000 kW[*1] already supplied	Further supply of power is yet to be decided.
Okinawa Electric Power	10,000 kW[*1] already supplied	Further supply of power is yet to be decided.

Source: Information provided by general electric utilities

*1: Sending end output, *2: Starting output, *3: Annual total power generation amount, *4: Total power output excluding approximately 5 million kW of pumped storage power plant output, *5: For Hokkaido Electric Power, an estimation from the volume already supplied is indicated for convenience sake.
The data does not include volumes newly supplied to deliver to the base load market.

October to December 2024 period

Status of competitive bidding, etc., for public hydroelectric business

- Local governments manage hydroelectric power generation projects with a total installed capacity of approximately 2.31 million kW. Among them, 1.41 million kW (61%) have been contracted through general competitive bidding. This represents an increase of 0.75 million kW compared to the January to March 2024 period, which is because municipalities with long-term basic contracts ended in FY2023 shifted to general competitive bidding or other options in the April to June 2024 period.
- Of the remaining 0.89 million kW installations, 50% continue to be under discretionary contracts with general electric utilities, and 50% consist of FIT power sources for sale and installations under modification to become eligible for FIT.

Public hydroelectric power generation facilities (as of April 1, 2024)
- Number of power plants: 309
- Total output: Approx. 2.31 million kW

The table to the right shows examples of hydroelectric power sales contracts among 24 public utilities in which power is being delivered to successful bidders determined through competitive bidding or public proposals (as of December 31, 2024)

Business entity	Number of hydroelectric power plants	Total maximum output (kW)	Contract type	Successful bidder
Hokkaido	5	50,500	General competitive bidding	SB Power
Iwate Prefecture	10	133,170	Public proposal	Tohoku Electric Power, Tohoku Electric Power Frontier
	3*7	4,900	Public proposal	Tohoku Automotive Industry Green Energy Promotion Association
	1	450	Public proposal	Kuji Regional Energy
Akita Prefecture	12	92,900	Public proposal	Tohoku Electric Power, Tohoku Electric Power Frontier
	3*1	9,250		Local Denki
	1*8	8,800		Kazuno Power
Yamagata Prefecture	6	50,700	Public proposal	Tohoku Electric Power, Tohoku Electric Power Frontier
	2	8,700		Yamagata Power Supply
	4*1	26,600		The Earth Club
	1*1	420		Yamagata Power Supply
Tochigi Prefecture	6*4	48,200	Public proposal	TEPCO Energy Partner
Gunma Prefecture	6*5	43,490	Public proposal	Marubeni Power Retail
	10*5	101,300	General competitive bidding	TEPCO Energy Partner
	9*5	42,981	General competitive bidding	Zero Watt Power
Tokyo	3	36,500	Public proposal	Tokyo Gas
Kanagawa Prefecture	11*5	347,589	Public proposal	SB Power
Yamanashi Prefecture	10*5	74,960	Public proposal	TEPCO Energy Partner
	5*5	42,500	General competitive bidding	Palsystem Power, The Earth Club, UPDATER
	1*5	1,100	Public proposal	Visionary Power
	1*2	380	Public proposal	Ennet
Nagano Prefecture	22*1,9	69,311	Public proposal	Diamond Power, Marubeni Power Retail, UPDATER
Niigata Prefecture	7*3	100,200	General competitive bidding	Tohoku Electric Power
Kyoto Prefecture	1	11,000	General competitive bidding	Mitsuuroko Green Energy
Tottori Prefecture	1*6	1,100	General competitive bidding	Tottori Citizen's Electric Power
Okayama Prefecture	10*5	54,680	General competitive bidding	Zero Watt Power
	1*2	180	General competitive bidding	
Yamaguchi Prefecture	8*5	50,550	Public proposal	Mitsuuroko Green Energy
	1*2	260		
Total		**1,412,671**		

Total number: 29

Total maximum output: 1,412,671 kW

[61.3% of total hydropower output]

*1 These numbers were revised because starting from the July to September 2021 report, FIT power sources that had shifted to public proposals or general competitive bidding, have been subjected to adjustment.
(For Nagano Prefecture, four power plants under replacement to become FIT-eligible, have been included in contracts as they were to start supply in FY2024. As a result, the number was changed from 18 to 22 in the April to June 2024 period.)
*2 These power plants shifted to general competitive bidding or public proposals after their termination of FIT.
*3 For Niigata Prefecture, the number of power plants subject to general competitive bidding was changed from nine to seven in the October to December 2023 period, because two of them have been replaced to become FIT-eligible or for other purposes.
*4 For Tochigi Prefecture, the number of power plants subject to public proposals was changed from eight to six in the January to March 2024 period, because two of them are currently being replaced to become FIT-eligible.
*5 The prefectures of Gunma, Kanagawa, Yamanashi, Okayama, and Yamaguchi shifted to general competitive bidding or public proposals in the April to June 2024 period, after the ending of their long-term basic contracts in FY2023.
*6 For Tottori Prefecture, two power plants under prolonged inspection/refurbishment work have been excluded from the targets of contracts, causing the number to change from three to one in the April to June 2024 period.
*7 For Iwate Prefecture, two FIT-eligible power plants shifted from discretionary contracts to public proposals in the October to December 2024 period.
*8 For Akita Prefecture, one power plant was replaced to become FIT-eligible, and shifted to public proposals in the October to December 2024 period.
*9 For Nagano Prefecture, among those subject to public proposals, one power plant was replaced to increase output, and was shifted to FIP in the October to December 2024 period.

Source: Information provided by municipalities

October to December 2024 period

Status of competitive bidding, etc., for public hydroelectric business

- According to questionnaire surveys of general electric utilities regarding the status of long-term contract cancellations, there were no requests to discuss, or consultations about premature termination from municipalities during this period.

Compiled from responses from general electric utilities regarding cancellation and review of electricity sales contracts with local governments from October 2024 onwards

[Status of negotiations for premature cancellation of existing contracts]

— During this period, municipalities did not request or consult to cancel or review the basic power supply contract (multi-year, long-term contract) with general electric utilities.

Reference: Compiled from responses to regular simple questionnaires on efforts related to power sales contracts by local governments since October 2024

■ Moves toward premature cancellation of existing contracts with general electric utilities
- All municipalities with contracts having expired in FY2023 have shifted to power sales contracts based on general competitive bidding or public proposals, and started supplying.
- Municipalities with contracts continuing in FY2024 and beyond generally maintain their basic contracts until the expiration of the period, without prematurely terminating them. They plan to shift to general competitive bidding or public proposals after the ending of the basic contract (municipalities with their basic contracts expiring at the end of FY2024 will conduct general competitive bidding or other public calls, and some of them have concluded contracts).

■ Unique efforts by municipalities regarding power sales contracts
- Establishment of original electricity rate plans in power sales contracts with general electric utilities (e.g., a plan with added environmental value, a plan for investment promotion, a plan for local industry promotion, a discount plan for people relocated from other areas)
- Implementation of the following unique efforts aimed at local production for local consumption in contracts for which the successful bidder is determined through general competitive bidding, etc.
  - ✓ In calls for public proposals, division of electricity sales into a general quota and a quota of new regional entrants within the prefecture
  - ✓ Introduction of a local production for local consumption-type PPA (Gunma model), which matches electricity consumers with retailers
  - ✓ Supply to public facilities and public transportation systems operated by local governments
  - ✓ Conclusion of contracts on condition that the entire volume of electricity is supplied within the prefecture

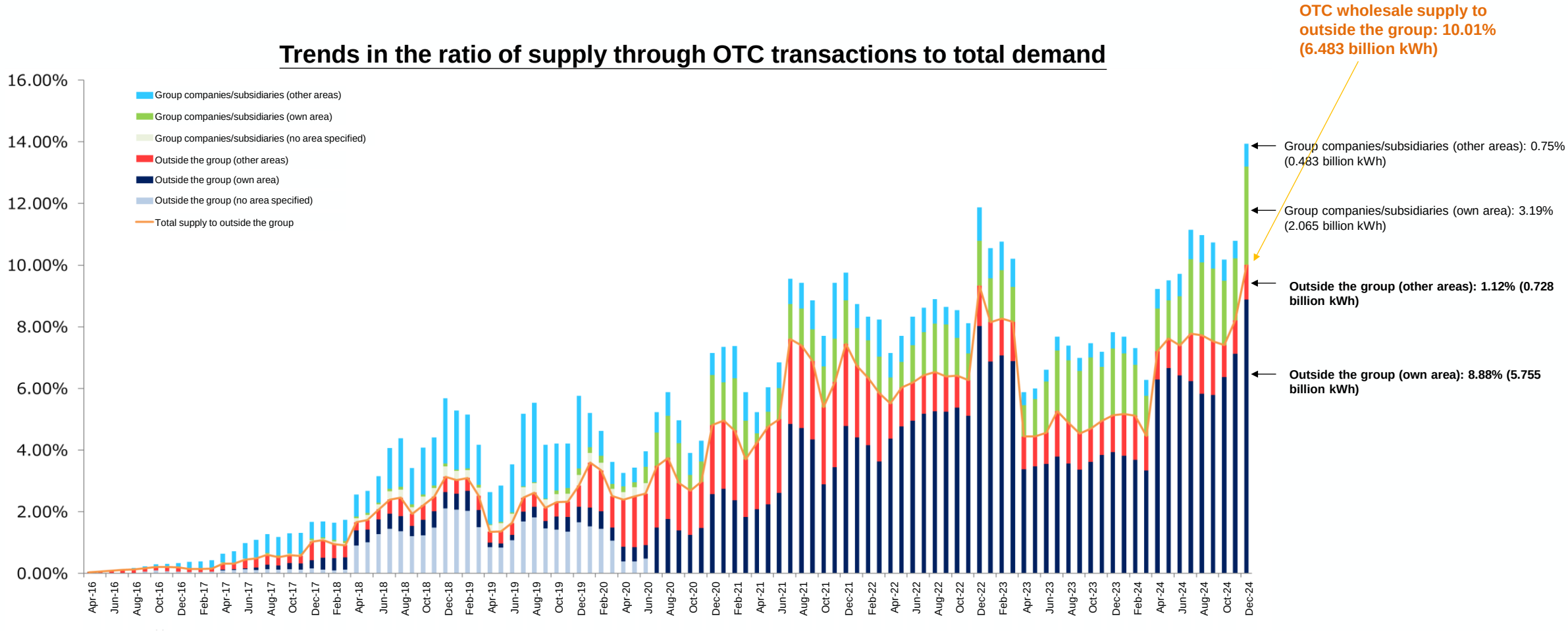
Source: Information provided by general electric utilities and municipalities

October to December 2024 period

Status of OTC transactions by general electric utilities

- As of December 2024, the ratio of supply from general electric utilities through OTC transactions to total demand was 13.9% (9.031 billion kWh, 1.8 times that of the same period last year).
- OTC wholesale supplies to external parties (10.0%, 6.483 billion kWh) accounted for 49.7% of the demand for electricity from new entrants (13.032 billion kWh).

Trends in the ratio of supply through OTC transactions to total demand



Source: Information provided by general electric utilities (including JERA), etc.

* Group companies are defined as companies with a capital relationship of 20% or more.

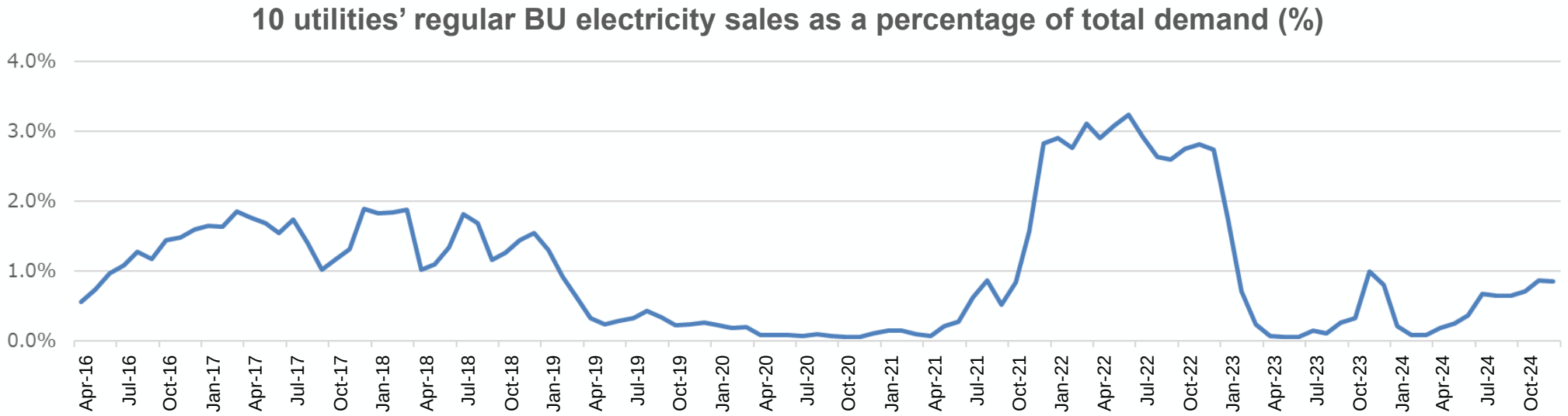
* Notes on the “area”: Until June 2020, the companies’ responses were mixed, with some answering about the “(1) power receiving area” and others about the “(2) usage area”. Most responses answering about “(2) usage area” reported “no area specified”. To understand the situation more accurately, we notified the utilities that their responses should always refer to the “(1) power receiving area”, starting in the July-September 2020 period. The results reflect this change and as a result, the “no area specified” option was eliminated.

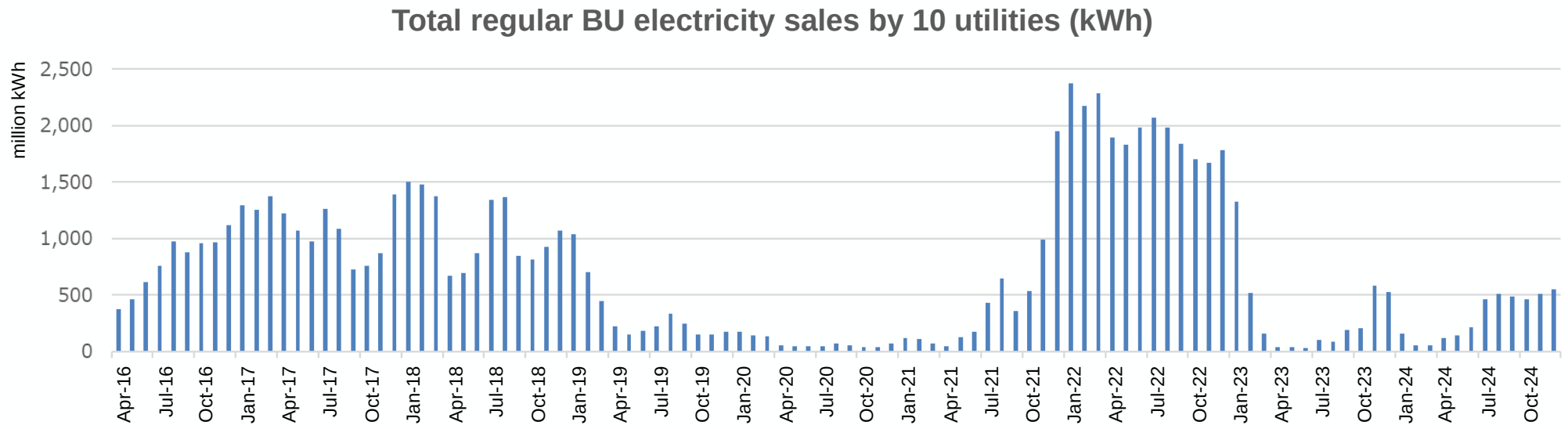
* For JERA, the calculation excluded the wholesale portion of TEPCO Energy Partner and Chubu Electric Power Miraiz.

October to December 2024 period

Trends in regular BU electricity sales

- As of December 2024, the ratio of regular BU electricity sales to total demand was 0.9% (552 million kWh).





Source: Information provided by general electric utilities (including JERA), etc.

Electricity market monitoring report

【 Quarterly report 】

- **Wholesale electricity market**
  - JPEX market
    - Day-Ahead market
    - Intraday market
    - Forward transaction market

- **Voluntary efforts by general electric utilities, etc.**
  - Supply of surplus electricity to JEPX market
  - Trading status and sell bid withdrawal status in the intraday market
  - Status of block selling bidding
  - Supply of power source to the market for wholesale electricity utilities
  - Status of bidding, etc. for public hydroelectricity business
  - Status of OTC transactions

【Medium- to long-term trend report】

- **Wholesale electricity market**
  - JPEX market
    - Trends in contracted volume
    - Trends in contracted price
    - Trends in the market splitting occurrence rate
  - JEPX spot price and fuel cost

- **Retail market**
  - Trends in new entrants share by area
  - Market share by area
  - Trends in electricity unit price
  - Trends in switching
  - Average unit price of low-voltage rates

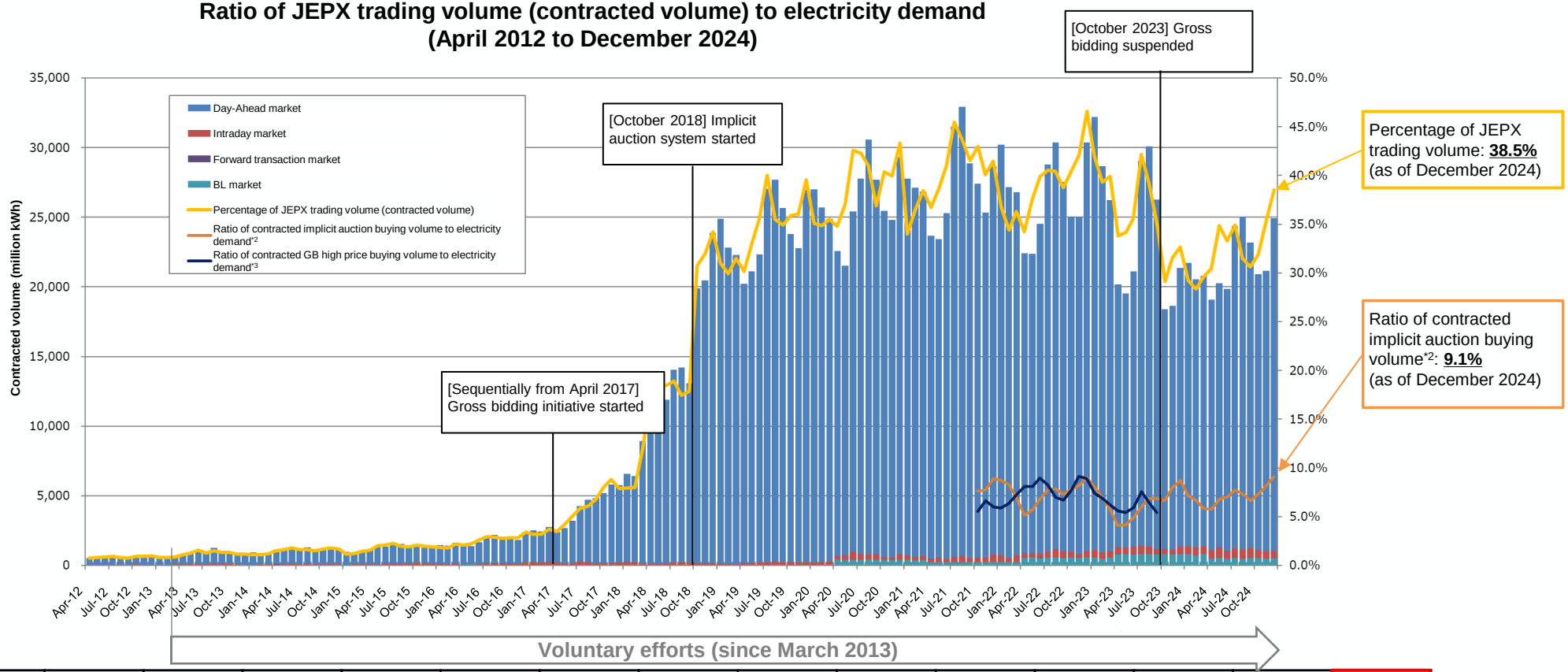
- **Gas market**
  - Status of OTC transactions of general gas utilities
  - Usage status of Start-up wholesale measure

Medium- to long-term trends

Trends in the ratio of JEPX trading volume (contracted volume) to electricity demand

- As of December 2024, the ratio of JEPX trading volume (contracted volume*1) to Japan's electricity demand was 38.5%.
- The ratio of contracted implicit auction buying volume*2 to electricity demand was 9.1%.

Ratio of JEPX trading volume (contracted volume) to electricity demand (April 2012 to December 2024)



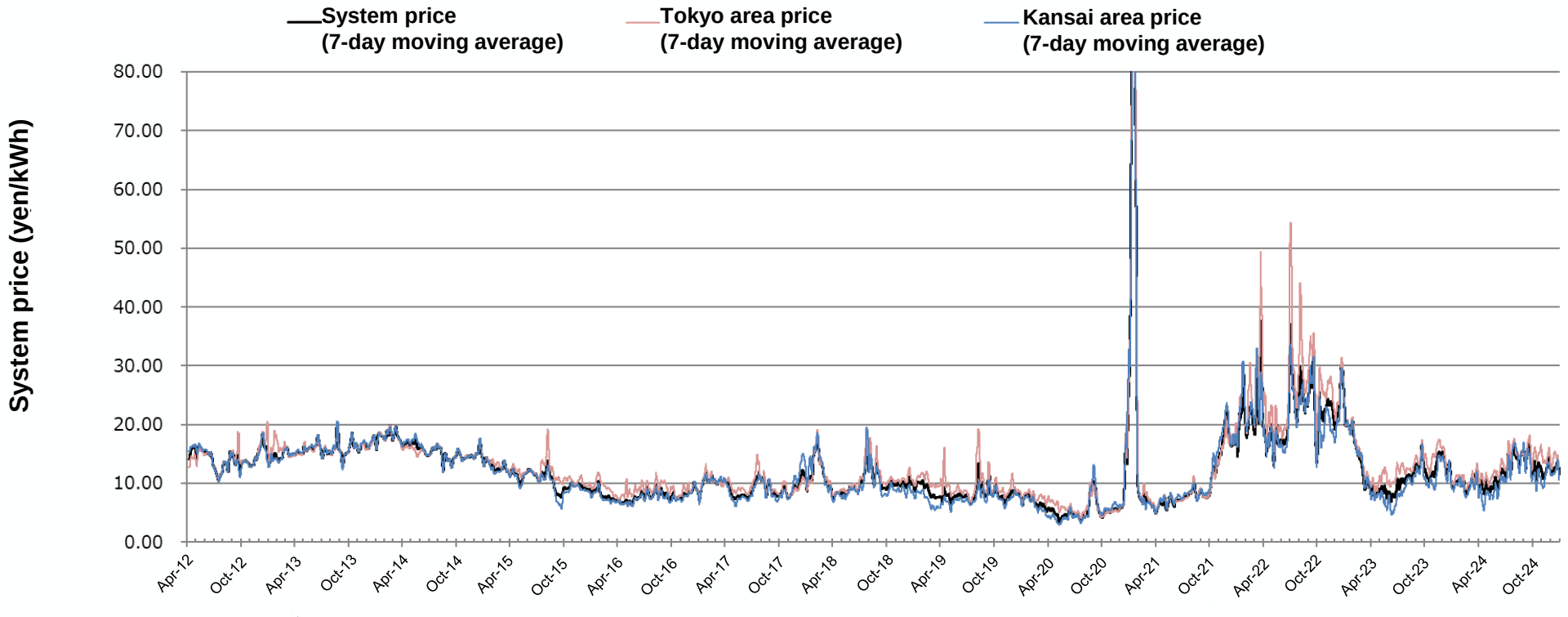
	2012/04	2013/04	2014/04	2015/04	2016/04	2017/04	2018/04	2019/04	2020/04	2021/04	2022/04	2023/04	2024/04	2024/12
Percentage of JEPX trading volume	0.7%	1.1%	1.5%	1.6%	2.1%	3.5%	17.1%	30.1%	34.8%	36.7%	34.2%	33.8%	30.5%	**38.5%**
(Percentage of day-ahead market)	0.7%	1.0%	1.4%	1.5%	2.1%	3.2%	16.9%	29.9%	33.8%	36.0%	32.9%	31.6%	28.7%	**36.9%**
(Percentage of intraday market)	0.001%	0.1%	0.1%	0.1%	0.004%	0.3%	0.2%	0.2%	0.4%	0.4%	0.5%	0.9%	1.0%	**0.8%**
(Percentage of BL market)	—	—	—	—	—	—	—	—	0.6%	0.4%	0.8%	1.3%	0.8%	**0.8%**

*1 Total of contracted buying volume of each business operator and each frame (including contracted buying volume when the same business operator has contracted for both buying and selling in the same frame, such as through its own implicit auctions).
*2 The contracted implicit auction buying volume is the sum of the contracted volumes of accounts that are determined to be implicit auctions, based on their attributes in the JEPX user account data.

Price trends in the day-ahead market

- The system price had increased since the autumn of 2021 and generally hovered above the 20-yen/kWh level until it dropped to around 8 yen/kWh in June 2023. The price stayed around 12 yen/kWh in the recent October to December period, with an average of 12.5 yen/kWh for this period.
- Compared to the same period last year, the price difference between the east and west markets was reduced with around 0.5 yen/kWh, but the average system price was around at the same level.

Day-Ahead Market: Trends in system prices (April 1, 2012 to December 31, 2024)



(yen/kWh)	FY2012 average	FY2013 average	FY2014 average	FY2015 average	FY2016 average	FY2017 average	FY2018 average	FY2019 average	FY2020 average	FY2021 average	FY2022 average	FY2023 average	Current quarter average
System price	14.4	16.5	14.7	9.8	8.5	9.7	9.8	7.9	11.2	13.5	20.4	10.7	12.5
Tokyo area price	14.7	16.4	14.6	11.0	9.3	10.2	10.7	9.1	12.0	14.3	23.5	12.2	14.5
Kansai area price	14.3	16.6	14.7	9.4	8.3	9.8	8.9	7.2	11.1	14.1	19.5	9.7	11.5

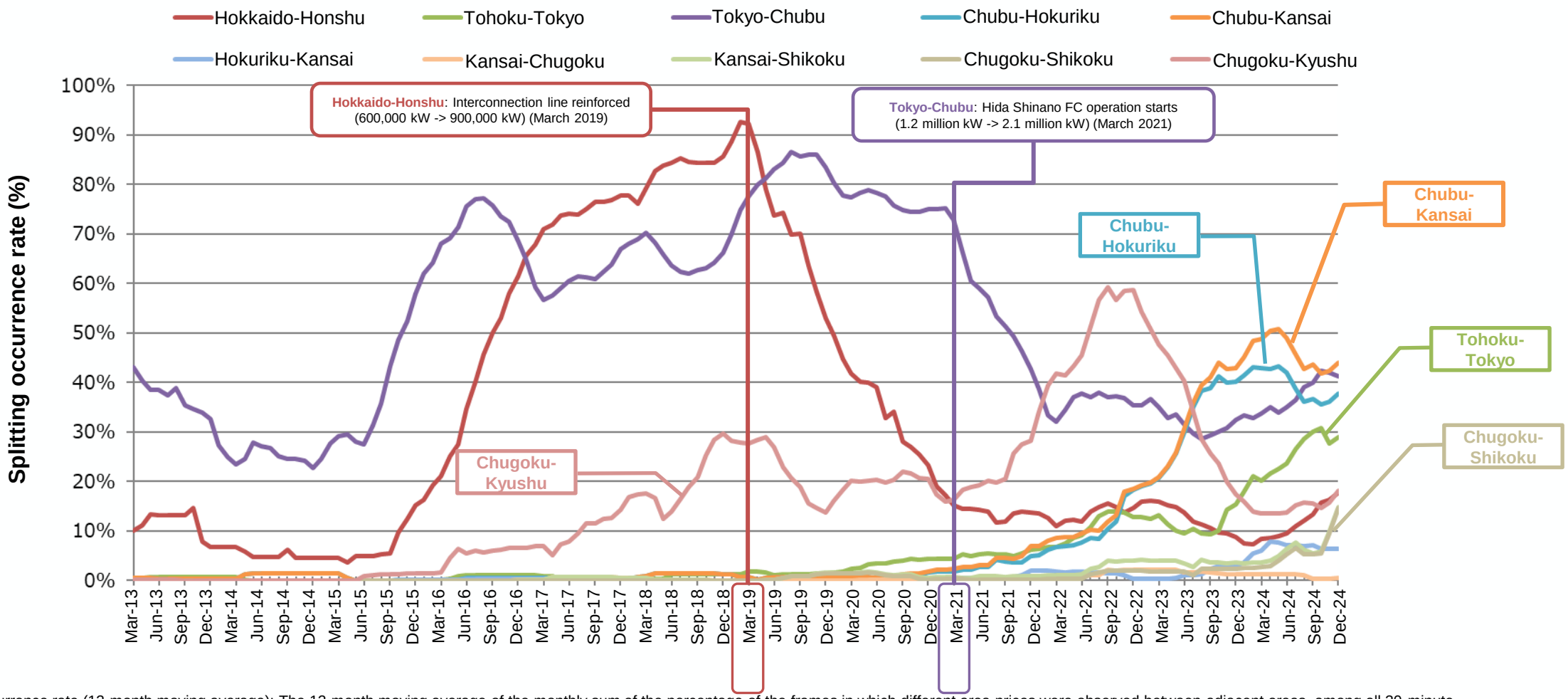
Medium- to long-term trends

Trends in the occurrence rate of market splitting between each area

- The market splitting occurrence rate has recently exceeded 30% for Tokyo-Chubu, Chubu-Kansai, and Chubu-Hokuriku. The market splitting occurrence rate for Chugoku-Shikoku is trending to increase.
- For Hokkaido-Honshu and Chugoku-Kyushu, the market splitting occurrence rate has declined, standing slightly below 20% recently.

Day-Ahead market: Trends in monthly splitting occurrence rate (12-month moving average)

(March 2013 to December 2024)



* Monthly splitting occurrence rate (12-month moving average): The 12-month moving average of the monthly sum of the percentage of the frames in which different area prices were observed between adjacent areas, among all 30-minute frames in the day-ahead market.

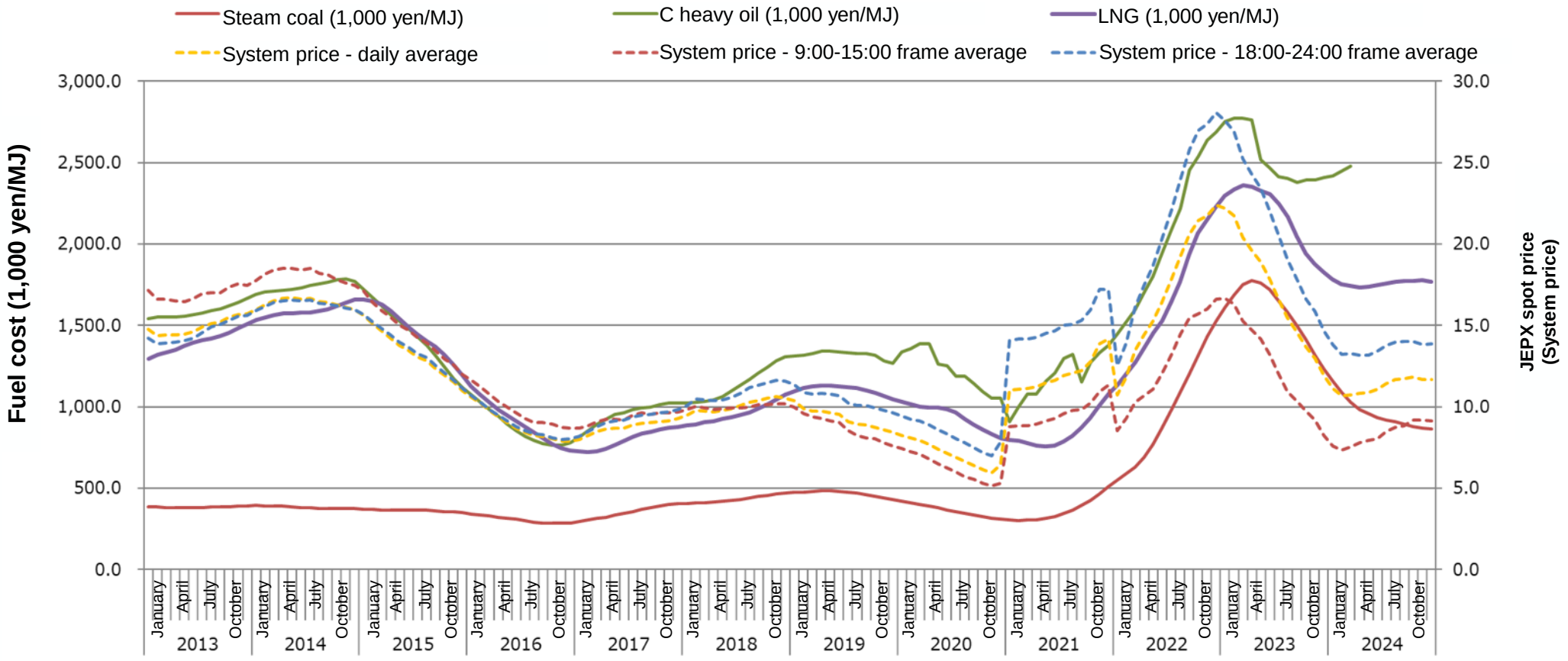
* Spot transaction in the Hokkaido area was suspended from September 7 to 26, 2018, due to the effects of the 2018 Hokkaido Eastern Iburi Earthquake. Calculations excluded the period of suspension.

JEPX spot price and fuel cost

- Over the long term, the trend of JEPX spot prices has been similar to that of LNG and C heavy oil prices.
- Fuel costs maintained a downward trend since the beginning of 2023, but recent LNG prices have leveled and are closest to spot prices in terms of price trends.

Trends in JEPX spot prices and fuel costs (12-month moving average)

(January 2013 to December 2024)



Source: Prepared by the Electricity and Gas Market Surveillance Commission based on the Trade Statistics of Japan, Ministry of Finance (as of October 31, 2024)

* Fuel costs are import CIF prices aggregated based on the calorific values shown in the thermal power generation fuel results in the Electricity Survey Statistics.

* There are no trade statistics available for C heavy oil for April, July, August, October, and December 2019; February, March, April, June, August, September, November, and December 2020; and April, May, and September 2021.

* The system price plummeted in January 2022 because the 12-month moving average from February 2021 to January 2022 was used, and thus a spike in the single monthly price for January 2021 was not included in the calculation.

* Imports of C heavy oil were zero for many months since April 2024, and therefore C heavy oil is not plotted in the graph for such period.

Electricity market monitoring report

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  - Status of OTC transactions

【Medium- to long-term trend report】

- **Wholesale electricity market**
  - JPEX market
    - Trends in contracted volume
    - Trends in contracted price
    - Trends in the market splitting occurrence rate
  - JEPX spot price and fuel cost

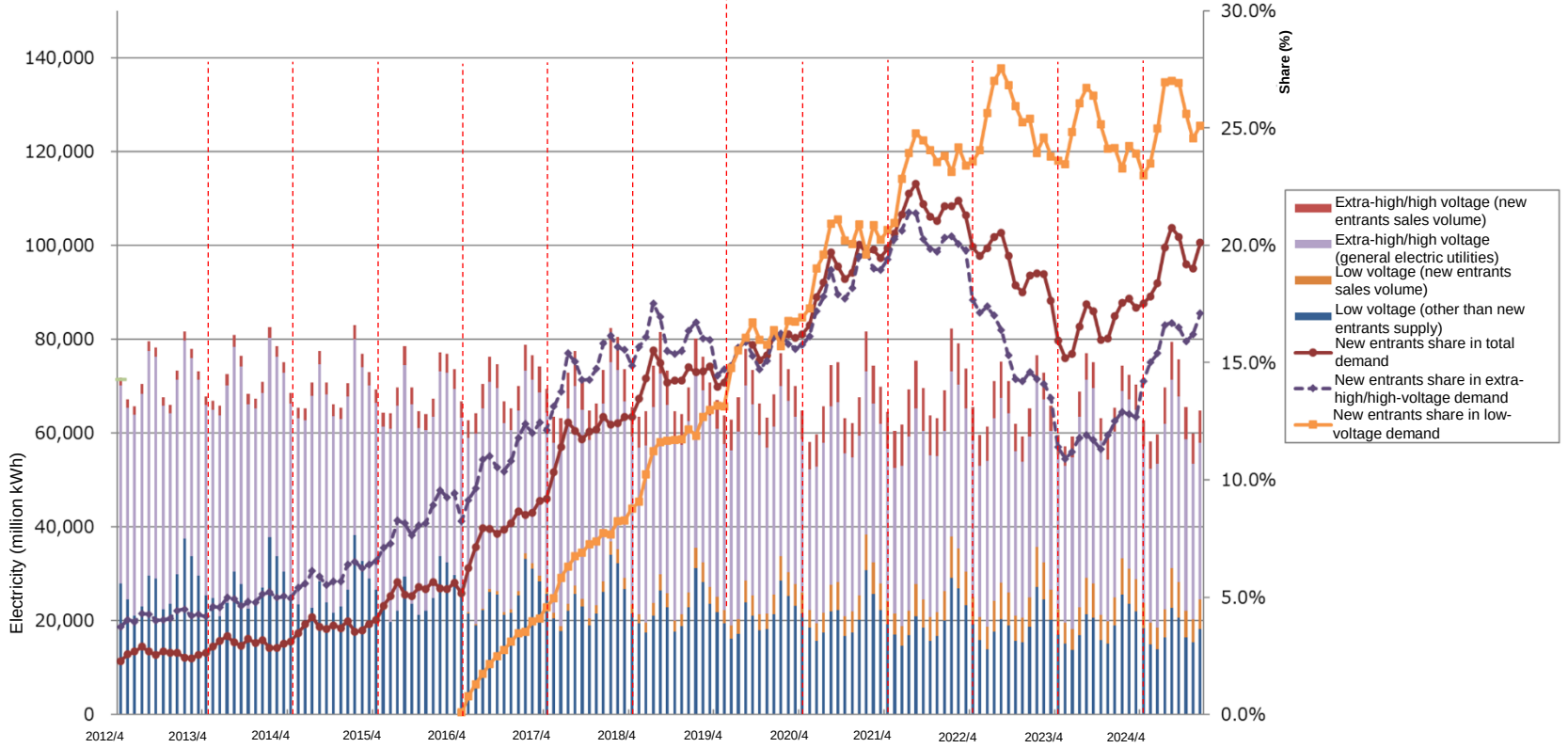
- **Retail market**
  - Trends in new entrants share by area
  - Market share by area
  - Trends in electricity unit price
  - Trends in switching
  - Average unit price of low-voltage rates

- **Gas market**
  - Status of OTC transactions of general gas utilities
  - Usage status of Start-up wholesale measure

Trends in new entrants share

- The share of new entrants in total electricity demand on the electricity sales volume basis has been on the rise compared to last year.
- As of December 2024, the share of new entrants in total demand was approximately 20.1%, their share in extra-high/high-voltage demand was approximately 17.1%, and their share in low-voltage demand was approximately 25.1%.

Market share of new entrants (April 2012 to December 2024)



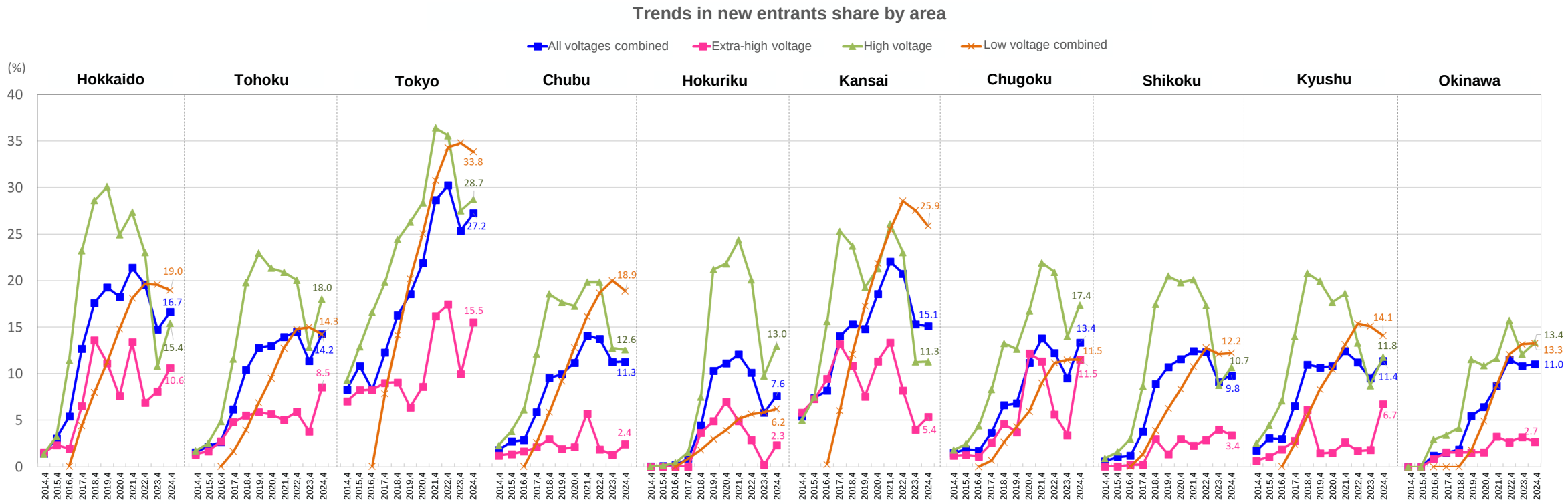
* "New entrants" refers to electricity retailers other than general electric utilities. Subsidiaries of general electric utilities are also included in new entrants.
(Source: Monthly electricity generation/reception report, Electricity Trading Report)

	2012/4	2013/4	2014/4	2015/4	2016/4	2017/4	2018/4	2019/4	2020/4	2021/4	2022/4	2023/4	2024/4	2024/9	**2024/12**
New entrants share in total demand	2.3%	2.6%	3.1%	4.0%	5.2%	9.2%	12.7%	14.0%	16.2%	19.9%	19.9%	16.0%	17.5%	20.4%	**20.1%**
New entrants share in extra-high/high-voltage demand	3.7%	4.2%	5.0%	6.5%	8.2%	12.1%	14.9%	14.5%	15.8%	19.4%	17.7%	11.4%	14.2%	16.5%	**17.1%**
New entrants share in low-voltage demand	-	-	-	-	0.1%	4.6%	8.8%	13.2%	16.9%	20.6%	23.6%	23.6%	23.0%	26.9%	**25.1%**

Medium- to long-term trends

Trends in new entrants share by area (by fiscal year)

- Looking at the share of new entrants in electricity sales by area for all voltages combined, an upward trend has been observed recently in areas other than Chubu and Kansai. The increase is particularly remarkable for high voltage. Tokyo is one of the areas where new entrants hold a high share of electricity sales.

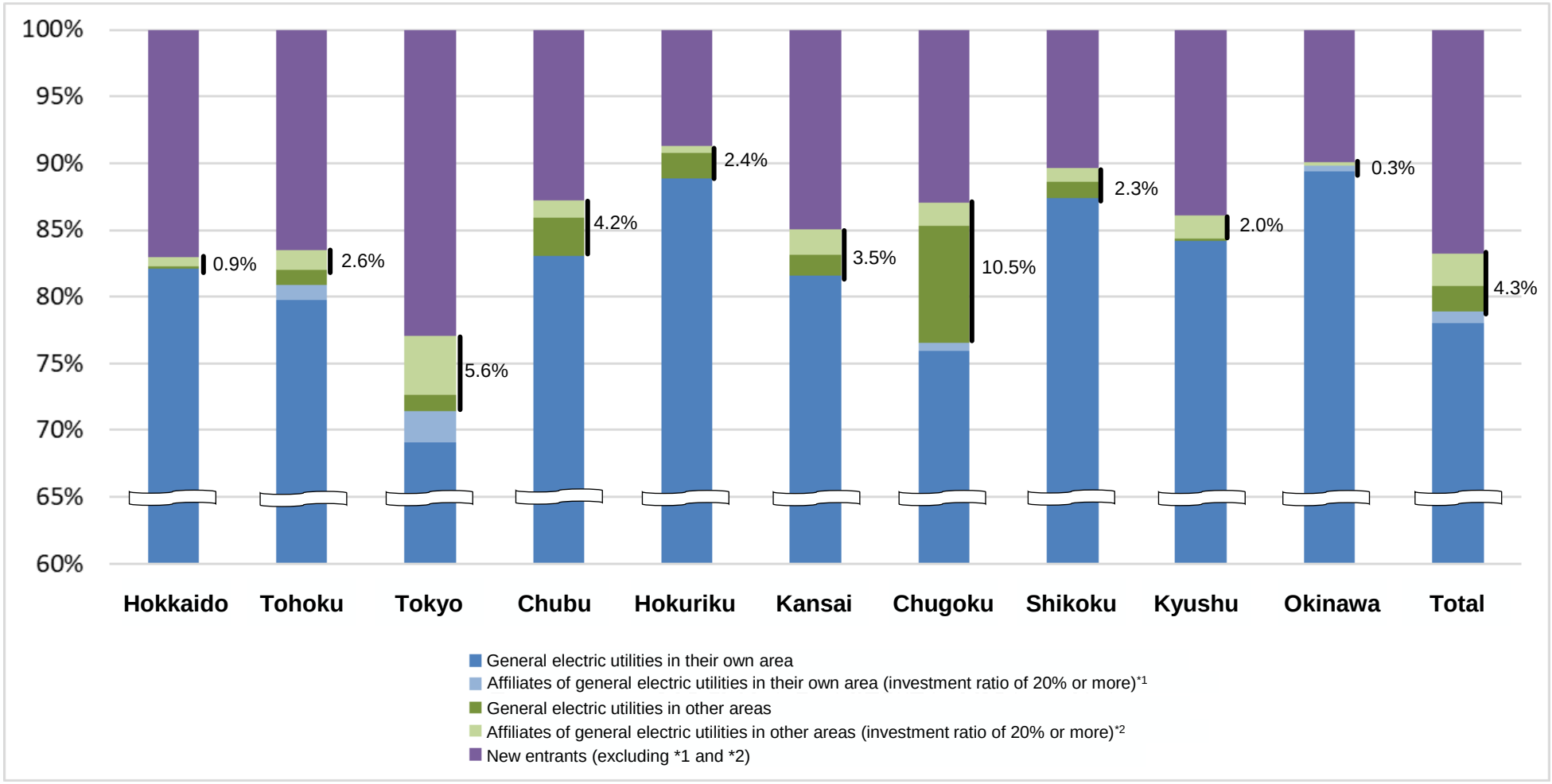


* "New entrants" refers to electricity retailers other than general electric utilities. Subsidiaries of general electric utilities are also included in new entrants.
(Source: Monthly electricity generation/reception report, Electricity Trading Report)

Market share by area

- Supply by general electric utilities and their affiliated companies to areas outside their service areas was approximately 4.3% of the total.
  (December 2023 report value was 3.3%; 1 pt increase)

Market share by area (December 2024)



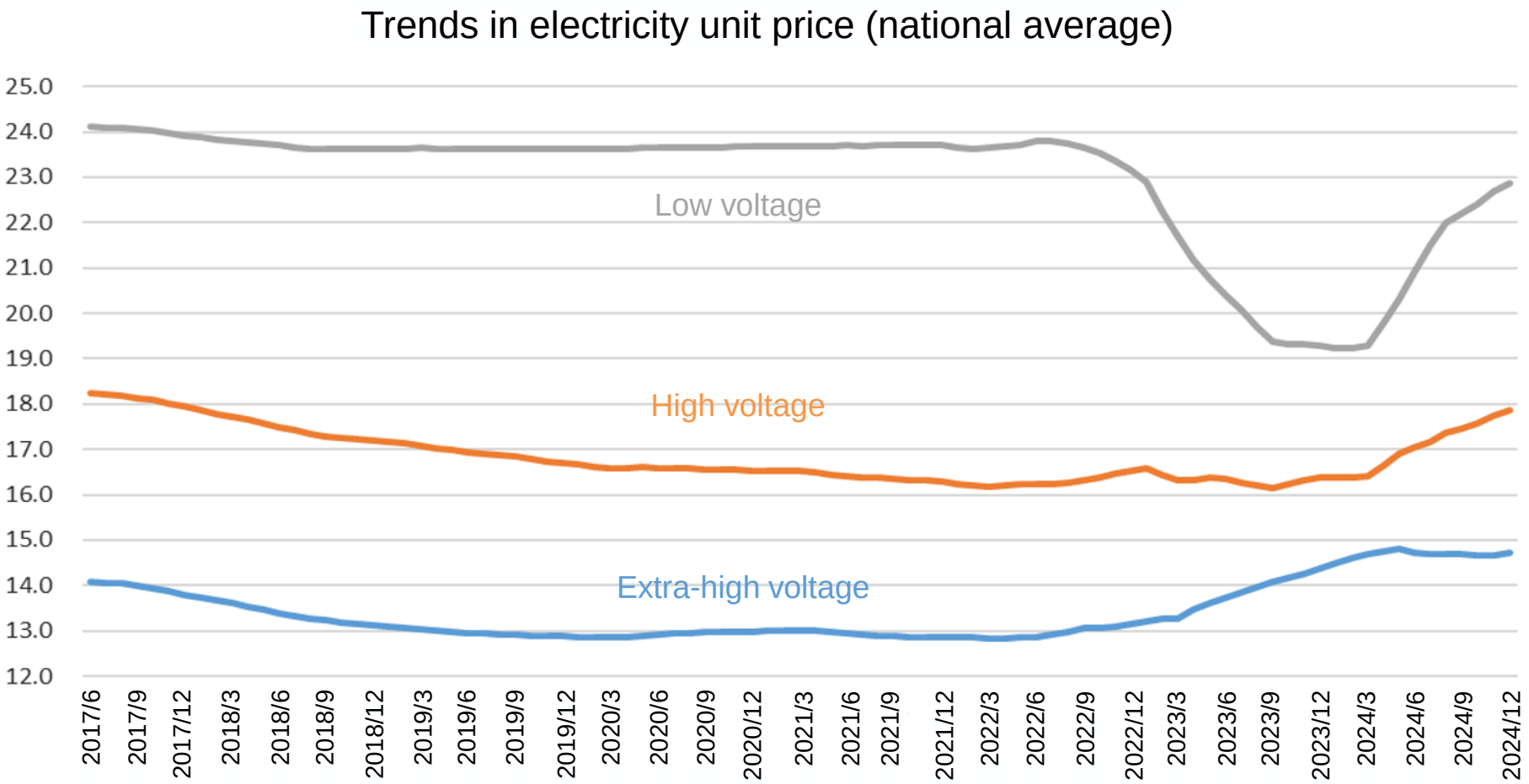
(Source) Electricity Trading Report
(Note) Based on electricity sales volume

Medium- to long-term trends

Trends in electricity unit price (national average)

(excluding fuel cost adjustment unit price, FIT levy and consumption tax, 12-month moving average)

- After electricity liberalization, the unit price of electricity (excluding fuel cost adjustment unit price, FIT levy, and consumption tax) is continuing to increase for low voltage due to the impact of the drastic change mitigation project ending. (The graph below shows moving average and therefore includes time lags)

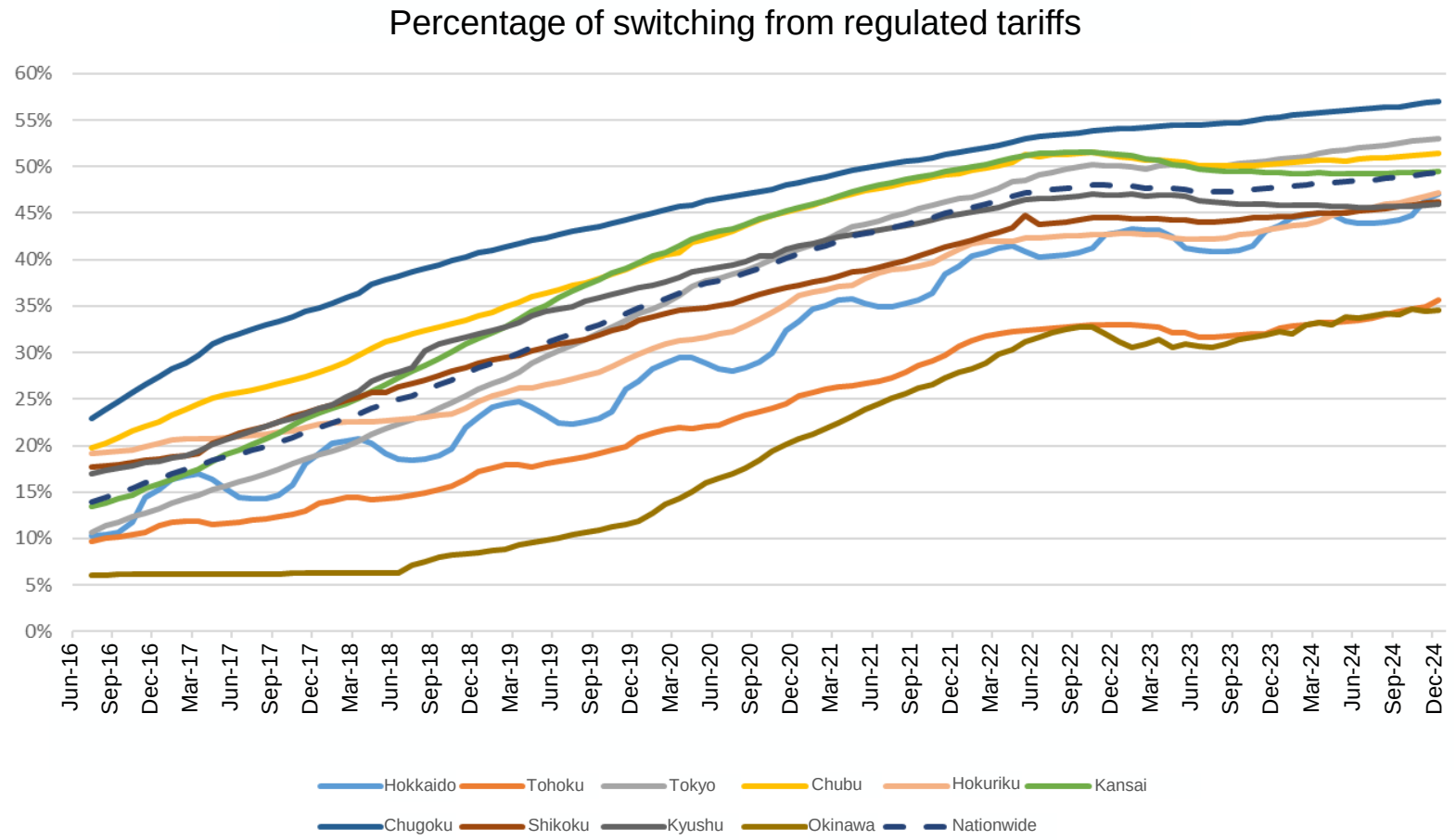


(Notes)
• 12-month moving average
• Excluding fuel cost adjustment unit price, FIT levy, and consumption tax
(For exclusion of the fuel cost adjustment unit price [yen/kWh], the meter-rate figures published by the general electricity utility in each area are used for all electricity retailers.)
(Source)
Prepared by the Electricity and Gas Market Surveillance Commission Secretariat from Electricity Trading Reports

Medium- to long-term trends

Trends in switching (low voltage) (1)

- Switching from the regulated tariff menu of general electric utilities to voluntary rate menus and new entrants has been on an upward trend since 2016, but the upward curves have been tapering off. As of December 2024, the nationwide switching rate was 49.4% (increased by 0.5 pt from September 2024).



	December 2024
Hokkaido	47.1%
Tohoku	35.6%
Tokyo	53.0%
Chubu	51.4%
Hokuriku	47.2%
Kansai	49.4%
Chugoku	57.1%
Shikoku	46.3%
Kyushu	46.0%
Okinawa	34.6%
Nationwide	49.4%

* For Okinawa, calculations are based only on low-voltage electricity (switching in high-voltage electricity is not included).

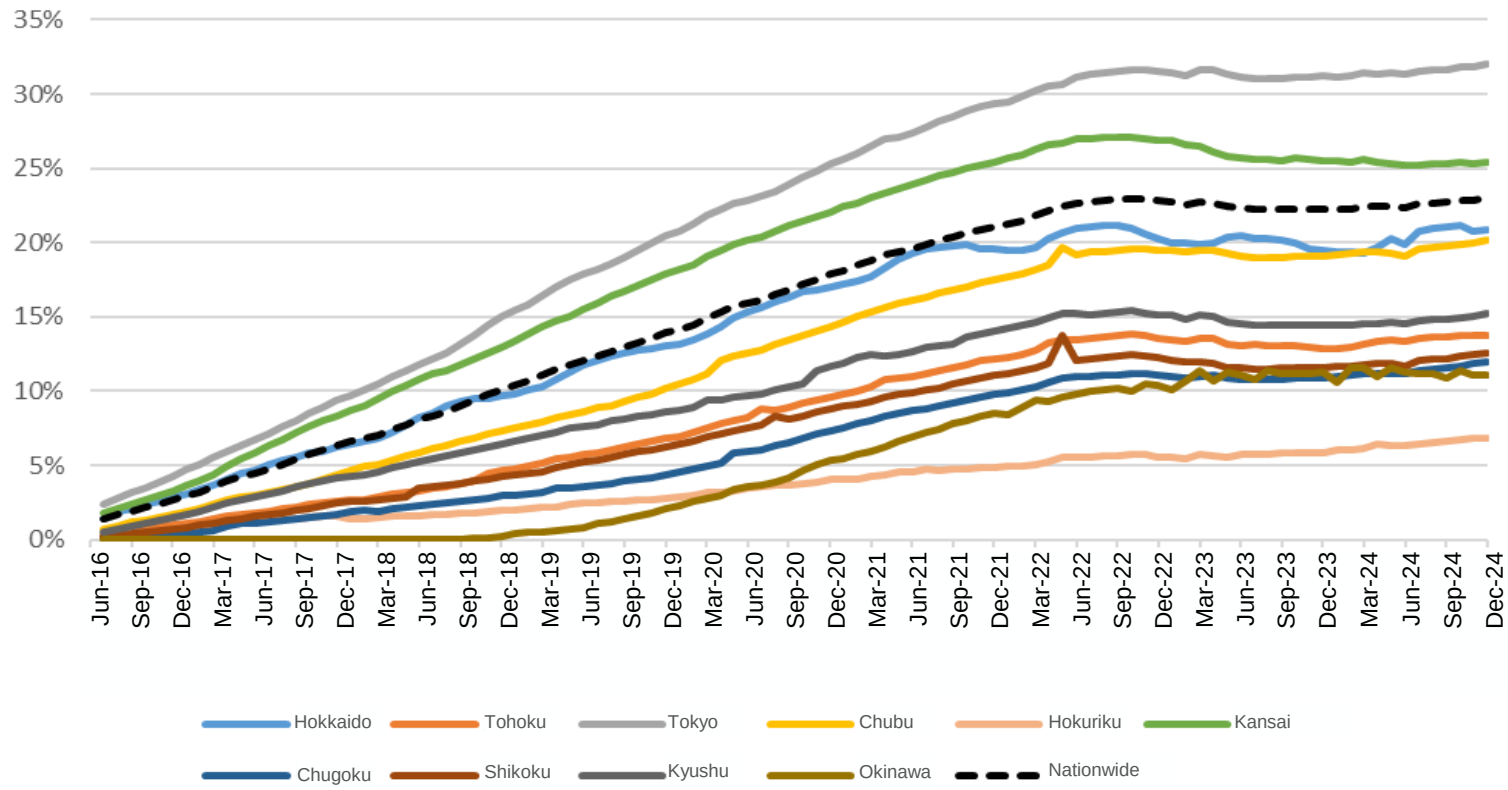
(Source) Monthly electricity generation/reception report, Electricity Trading Report
(Note) Low voltage: Calculations are based on the number of contracts.

Medium- to long-term trends

Trends in switching (low voltage) (2)

- The rate of switching from general electric utilities in each area to new entrants and other business operators (including general electric utilities that supply electricity outside their areas) continues to show no major fluctuations. As of December 2024, the nationwide switching rate was 23.0% (marginally increased by 0.3 pt from September 2024).

Percentage of switching from general electric utilities in each area



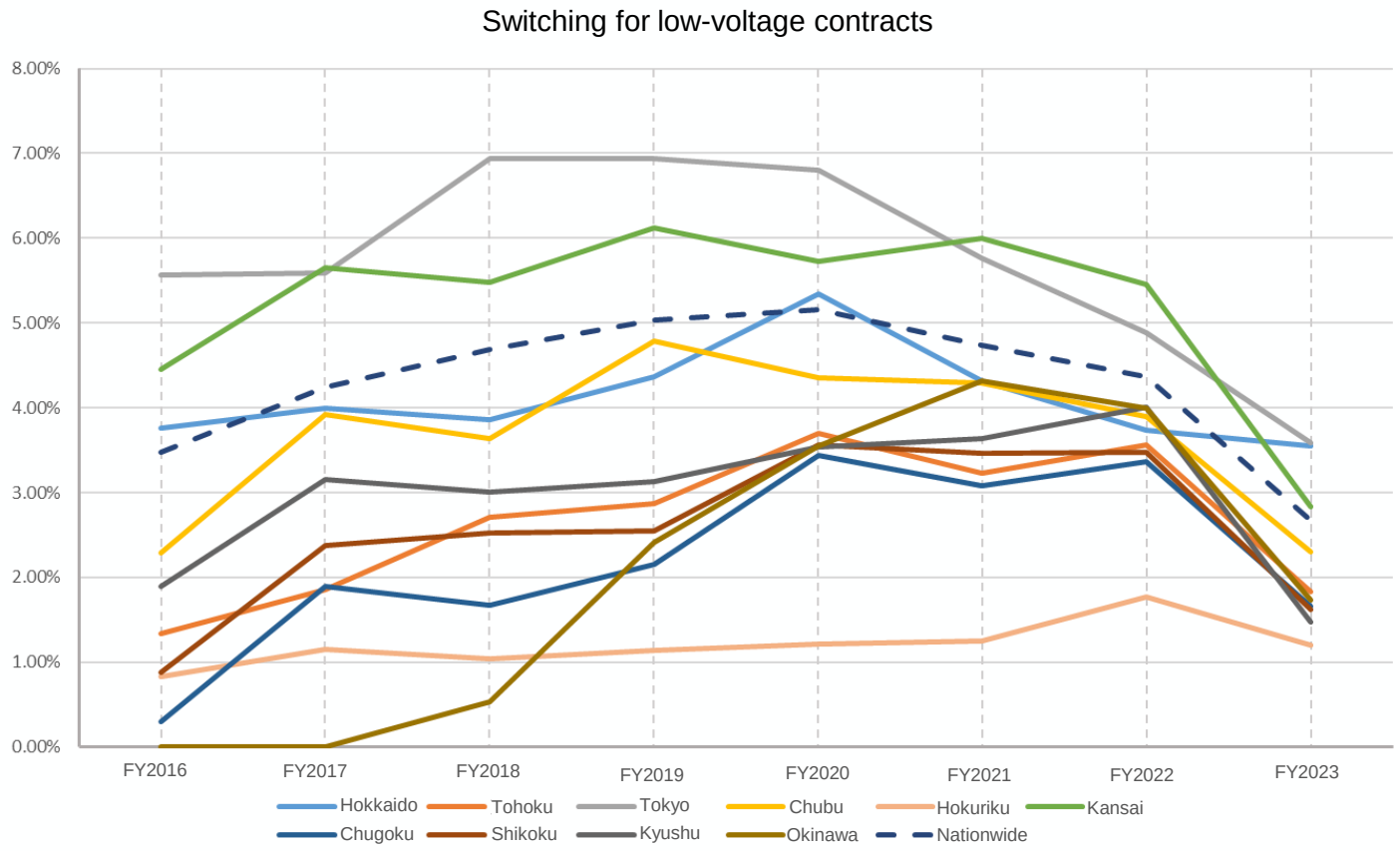
	December 2024
Hokkaido	20.9%
Tohoku	13.8%
Tokyo	32.0%
Chubu	20.2%
Hokuriku	6.9%
Kansai	25.4%
Chugoku	12.0%
Shikoku	12.6%
Kyushu	15.2%
Okinawa	11.1%
Nationwide	23.0%

(Source) Electricity Trading Report
(Note) Low voltage: Calculations are based on the number of contracts.

Medium- to long-term trends

Trends in switching (low voltage) (3): Trends in the switching rate by fiscal year

- Observation of switching rates over years indicates that the rate has been declining after peaking in FY2020. The decline was particularly sharp in FY2023, with the rates in the Kansai, Kyushu, and Okinawa areas at approximately 2 points less than those in the previous fiscal year.



	FY2023
Hokkaido	3.6%
Tohoku	1.8%
Tokyo	3.6%
Chubu	2.3%
Hokuriku	1.2%
Kansai	2.8%
Chugoku	1.7%
Shikoku	1.6%
Kyushu	1.5%
Okinawa	1.7%
Nationwide	2.7%

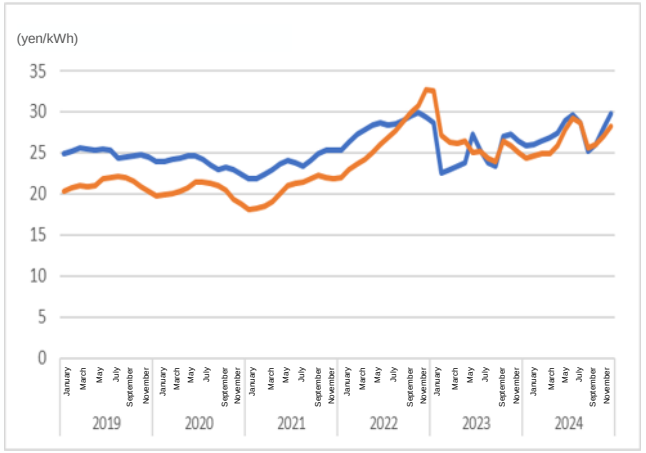
(Source: Electricity Trading Report)
(Note 1) Low voltage: Calculations are based on the number of contracts (sum of the monthly numbers of switched contracts for the fiscal year ÷ monthly average number of low-voltage contracts for the fiscal year × 100).
(Note 2) The data on switching is based on the sum of the number of contracts that have been switched in different combinations, such as from general electric utilities to new entrants, etc., from new entrants, etc. to general electric utilities, and from new entrants, etc. to new entrants, etc.

Medium- to long-term trends

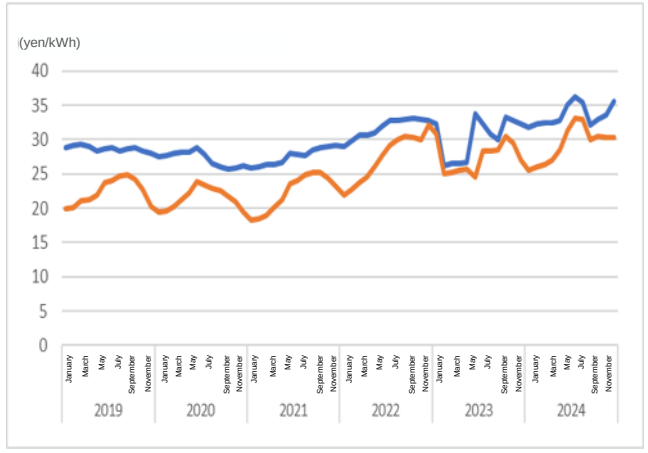
Trends in average unit price of low-voltage rates (by area) (1)

- Trends in regulated tariffs and voluntary rates show that regulated tariffs have recently been at the same level as or higher than voluntary rates in all areas, since the regulated tariffs were revised upward in 2023. (In some areas, fuel cost-adjusted regulated tariffs remain above the upper limit)

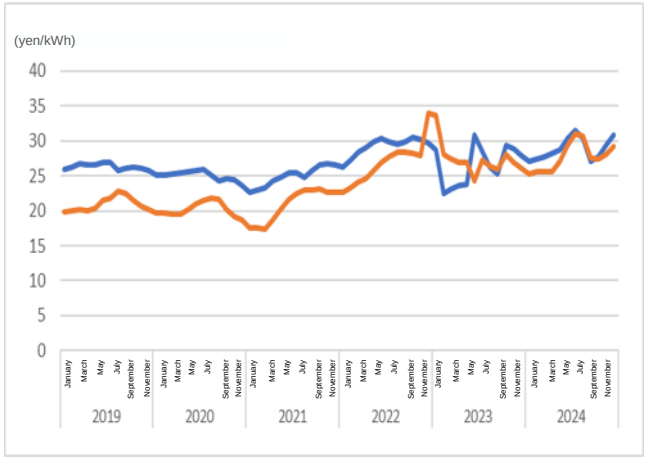
All areas



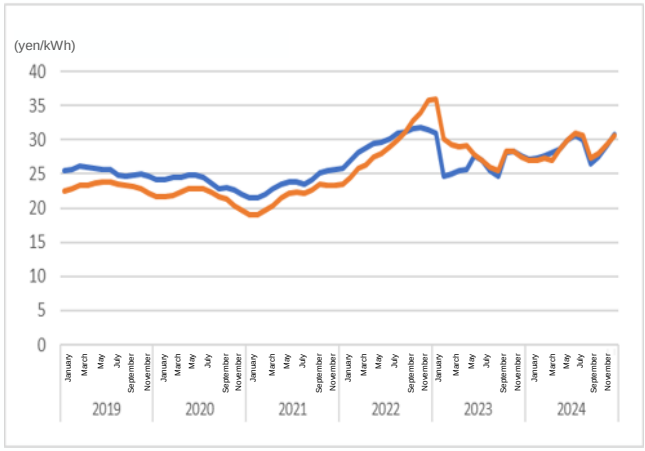
Hokkaido area



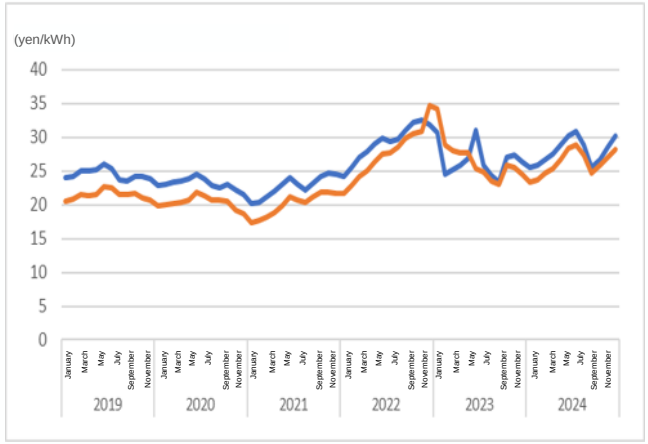
Tohoku area



Tokyo area



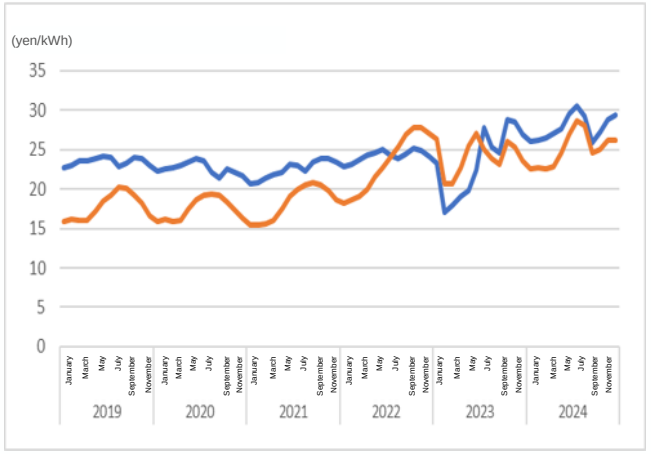
Chubu area



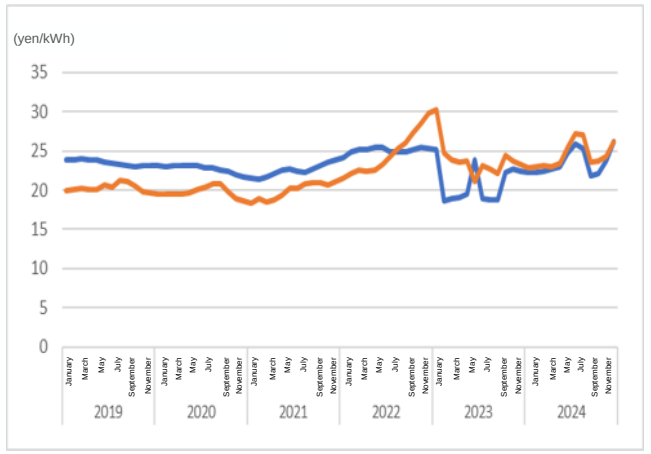
Source: Electricity Trading Report from April 2019 to December 2024 Note: Nationwide data does not include the Okinawa area.

Trends in average unit price of low-voltage rates (by area) (2)

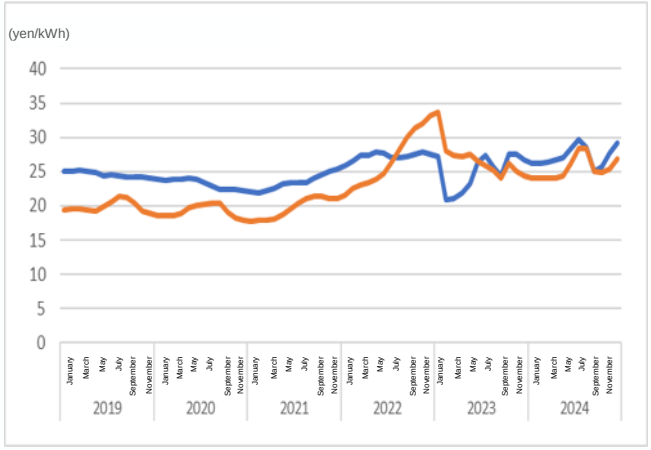
Hokuriku area



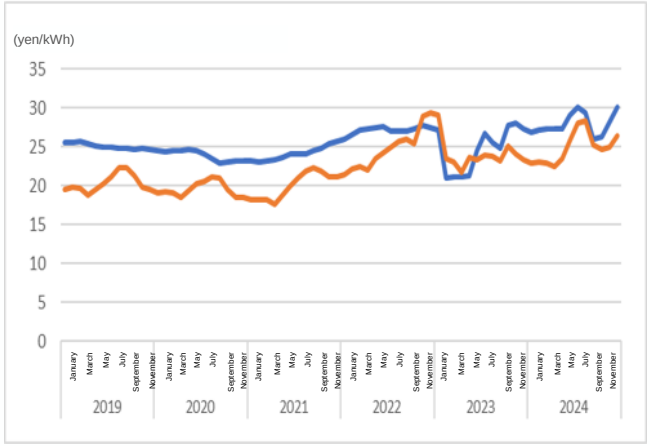
Kansai area



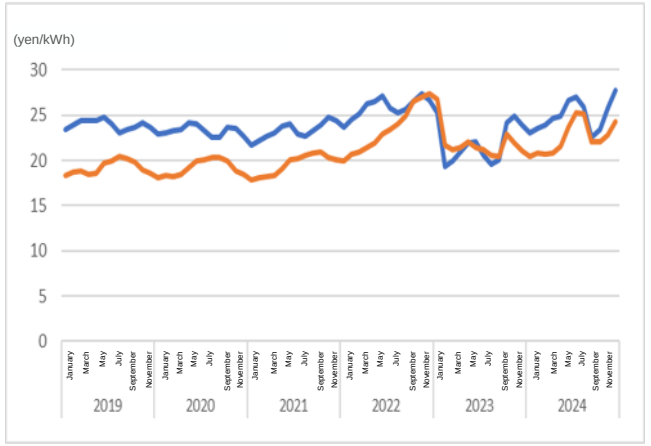
Chugoku area

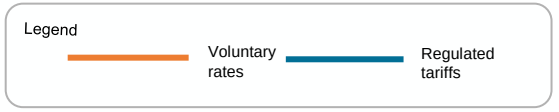


Shikoku area



Kyushu area





Source: Electricity Trading Report from April 2019 to December 2024

Electricity market monitoring report

【 Quarterly report 】

- **Wholesale electricity market**
  - JPEX market
    - Day-Ahead market
    - Intraday market
    - Forward transaction market

- **Voluntary efforts by general electric utilities, etc.**
  - Supply of surplus electricity to JEPX market
  - Trading status and sell bid withdrawal status in the intraday market
  - Status of block selling bidding
  - Supply of power source to the market for wholesale electricity utilities
  - Status of bidding, etc. for public hydroelectricity business
  - Status of OTC transactions

【Medium- to long-term trend report】

- **Wholesale electricity market**
  - JPEX market
    - Trends in contracted volume
    - Trends in contracted price
    - Trends in the market splitting occurrence rate
  - JEPX spot price and fuel cost

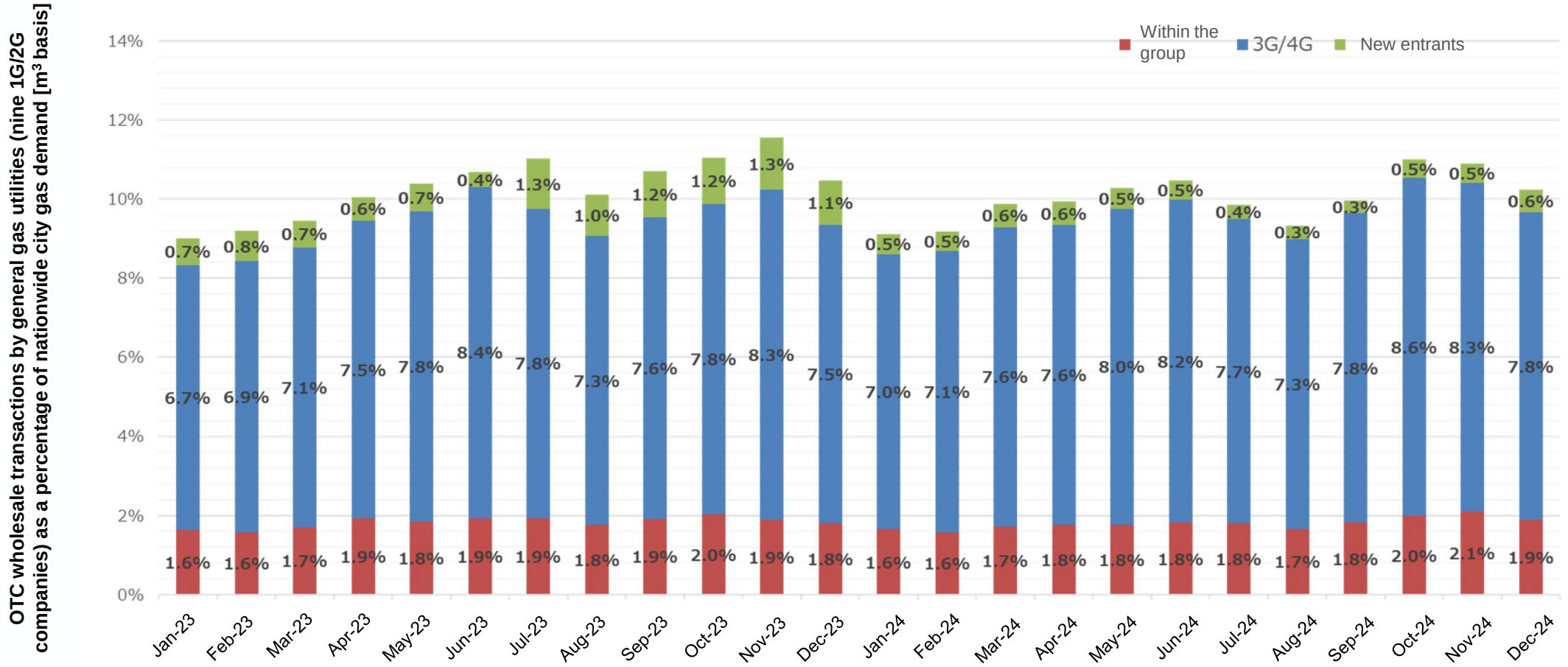
- **Retail market**
  - Trends in new entrants share by area
  - Market share by area
  - Trends in electricity unit price
  - Trends in switching
  - Average unit price of low-voltage rates

- **Gas market**
  - Status of OTC transactions of general gas utilities
  - Usage status of Start-up wholesale measure

Medium- to long-term trends

Status of OTC transactions of general gas utilities (9 companies: 1G/2G)

- In order to understand the actual status of wholesale transactions in the city gas sector, gas wholesale transactions of nine 1G/2G companies*1 were monitored (covering data from January 2020 and showing data for the last two years available, from January 2023).
- As of the end of December 2024, the ratio of OTC wholesale supply of 1G/2G*3 to the retail supply of city gas nationwide*2 was approximately 10%.
- The ratio of OTC wholesale supply to new entrants (companies that are not general gas utilities) was approximately 0.6%. (The share of retail sales volume by new entrants was approximately 20.7% [as of the end of December 2024]).



*1 1G: TOKYO GAS, Osaka Gas, Toho Gas 2G: Hokkaido Gas, Gas Bureau, City of Sendai, SHIZUOKA GAS, HIROSHIMA GAS, Saibu Gas, Nihon Gas (Kagoshima)
*2 Based on 45 MJ.
*3 Includes terminal exit wholesale, pipe connection point wholesale, demand point wholesale (One-touch wholesale/Start-up wholesale), and liquid wholesale (lorry, etc.) Regarding liquid wholesale, conversions were made on the assumption that 1 ton of liquefied natural gas ≈ 1,220 m³, and do not take into account calorific value adjustments, etc.
*4 3G/4G companies refer to general gas utilities that primarily receive wholesale gas supply from other business operators and provide retail supply through their own pipeline network.
*5 Group companies are defined as companies with a capital relationship of 20% or more.

Medium- to long-term trends

Usage status of Start-Up Wholesale measure (as of the end of December 2024)

- To contribute to the goal of the gas system reform, the nine general gas utilities (1G/2G) began a voluntary initiative called “Start-Up Wholesale” in FY2020 to support the entry of new business operators.
- Regarding the Start-Up Wholesale, the number of inquiries made to wholesalers, the number of contracts concluded, the number of contract negotiations underway, and the number of contract negotiations completed are as follows (as of the end of December 2024).

Wholesaler name	No. of inquiries	Contracts concluded	Contracts under negotiation	Contract negotiations completed*
Tokyo Gas	23	4	0	21
Osaka Gas	14	4	3	11
Toho Gas	12	2	1	9
Hokkaido Gas	17	2	3	12
Shizuoka Gas	18	6	3	9
Saibu Gas	16	4	0	12
Hiroshima Gas	6	1	0	5
Gas Bureau, City of Sendai	9	0	3	6
Nippon Gas	5	1	0	4
Total	**120**	**24**	**13**	**89**

* The number of contract negotiations completed includes negotiations that were explicitly discontinued due to failure to reach an agreement, and cases in which an inquiry was received from a business operator considering use, but did not lead to negotiations. The number also includes cases in which there was no further contact, no initiation of contract negotiations, or no progress in negotiations for more than three months from the inquiry date.