Ministry of Economy,
Trade and Industry

Monitoring report of voluntary efforts and competitive status
April to June 2024 period

(Tentative translation)

Monday, September 30, 2024

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

(Reference materials are omitted)

April to June 2024 period

Major indicators

○ The major indicators for this period are as follows.

				Currently reported April to June 2024	Same period last year (April to June 2023)	Reference FY2023 (April 2023-March 2024)	FY2022 (April 2022-March 2023)
JEPX market	Percentage to electricity sales*3			32.9%	34.5%	33.4%	40.1%
	Day-Ahead market	Bidding	Sell volume compared to the same period last year	1.1×（1.2×*5）	1.1×	1.0×（1.1×*5）	1.0×
			Buy volume compared to the same period last year	1.1×（1.2×*5）	0.9×	0.9×（1.0×*5）	0.9×
		Contract	Contracted volume	57.2 billion kWh	59.2 billion kWh	261.5 billion kWh	318.5 billion kWh
			Contracted volume compared to the same period last year	1.0×（1.2×*5）	0.9×	0.8×（0.9×*5）	1.0×
			Average contracted price (system price)	10.0yen/kWh	8.6yen/kWh	10.7yen/kWh	20.4yen/kWh
		Occurrence rate of market splitting between the east and west market		42.8%	38.0%	33.7%	34.9%
	Intraday market	Contract	Contracted volume	1.95billion kWh	1.59billion kWh	6.17 billion kWh	49.4 × kWh
			Average contracted price	10.5yen/kWh	9.4yen/kWh	11.7yen/kWh	22.9yen/kWh
	Forward market	Contract	Contracted volume	0kWh	0.003 billion kWh	0.003 billion kWh	0.017 billion kWh
Futures market*4		Contract	Contracted volume	13.04 billion kWh	4.2 billion kWh	30.47 billion kWh	-
OTC transactions		Supply to outside the group		13.35 billion kWh	7.89 billion kWh	38.62 billion kWh	56.43 billion kWh
Retail market (Reference)*1	Electricity sales			180.4 billion kWh※2	176.1 billion kWh※2	801.6 billion kWh	805.4 billion kWh
		New entrants	Electricity sales	32.1 billion kWh	27.3 billion kWh	133.8 billion kWh	154.6 billion kWh
			Electricity sales compared to the same period last year	1.2×	0.7×	0.9×	0.9×
			Share of new entrants	18.1%(as of June)	15.4%(as of June)	-	-

*1Source: Electricity Trading Report

*2To 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.

*3The 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)

*5The 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.)

Electricity market monitoring report

[Quarterly report]

◆ Wholesale electricity market
- ● JEPX 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 sell 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
- ● JEPX 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

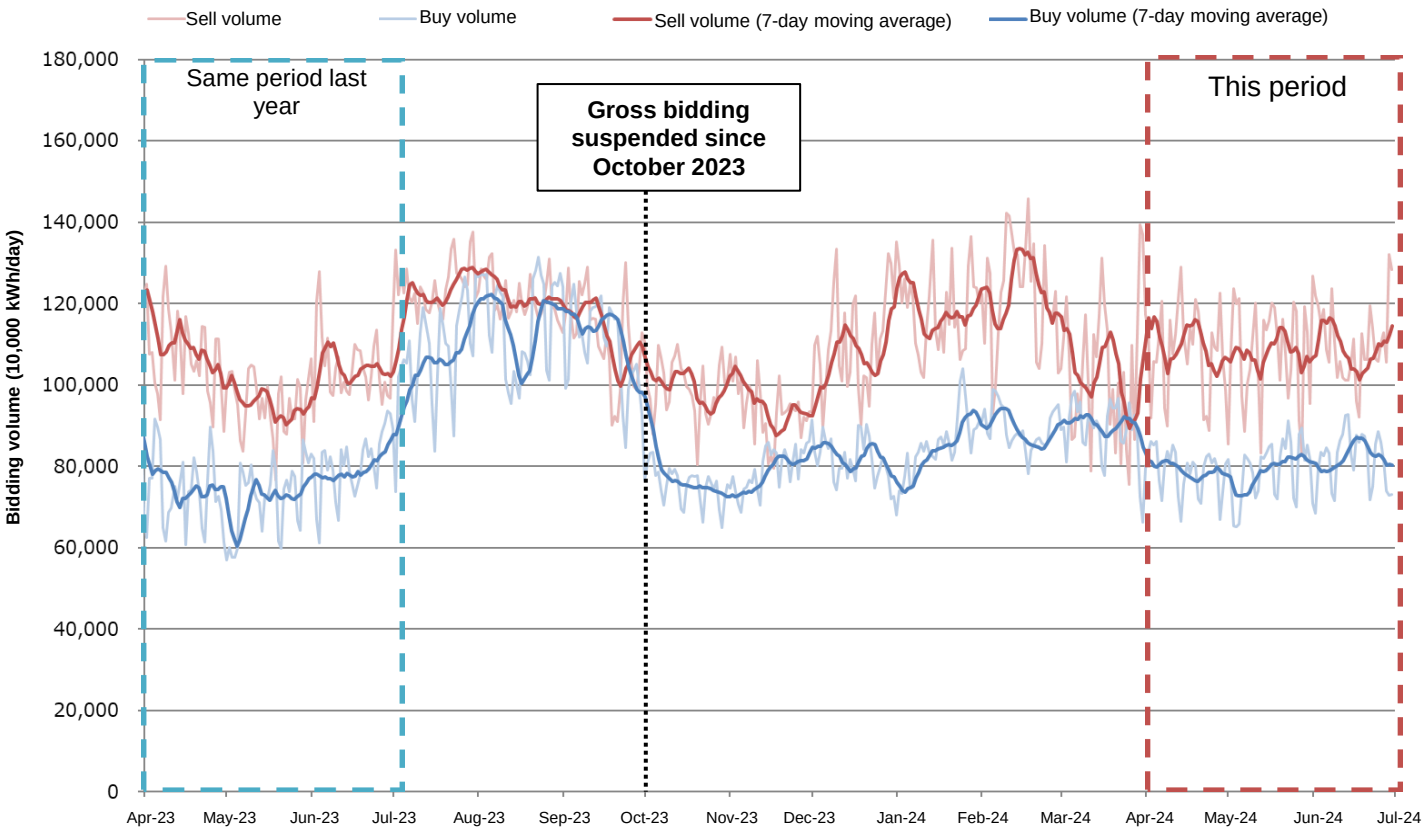
◆ Gas market
- ● Status of OTC transactions of general gas utilities
- ● Usage status of Start-up wholesale measure

April to June 2024 period

Bidding volume in the day-ahead market

- ○ For this period, the bidding volume in the day-ahead market was 99.1 billion kWh for selling and 72.7 billion kWh for buying.
- ○ For year-on-year comparison, the sell volume was 1.1 times (1.2 times*1) that of the same period last year, and the buy volume was 1.1 times (1.2 times*1).

Day-Ahead market: Trends in bidding volume (April 1, 2023 to June 30, 2024)



Main data

Sell volume (April to June 2024)
99.1 billion kWh

Comparison with sell volume for the same period last year (vs. April to June 2023)
1.1 ×

Buy volume (April to June 2024)
72.7 billion kWh

Comparison with buy volume for the same period last year (vs. April to June 2023)
1.1 ×

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

*1 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.)

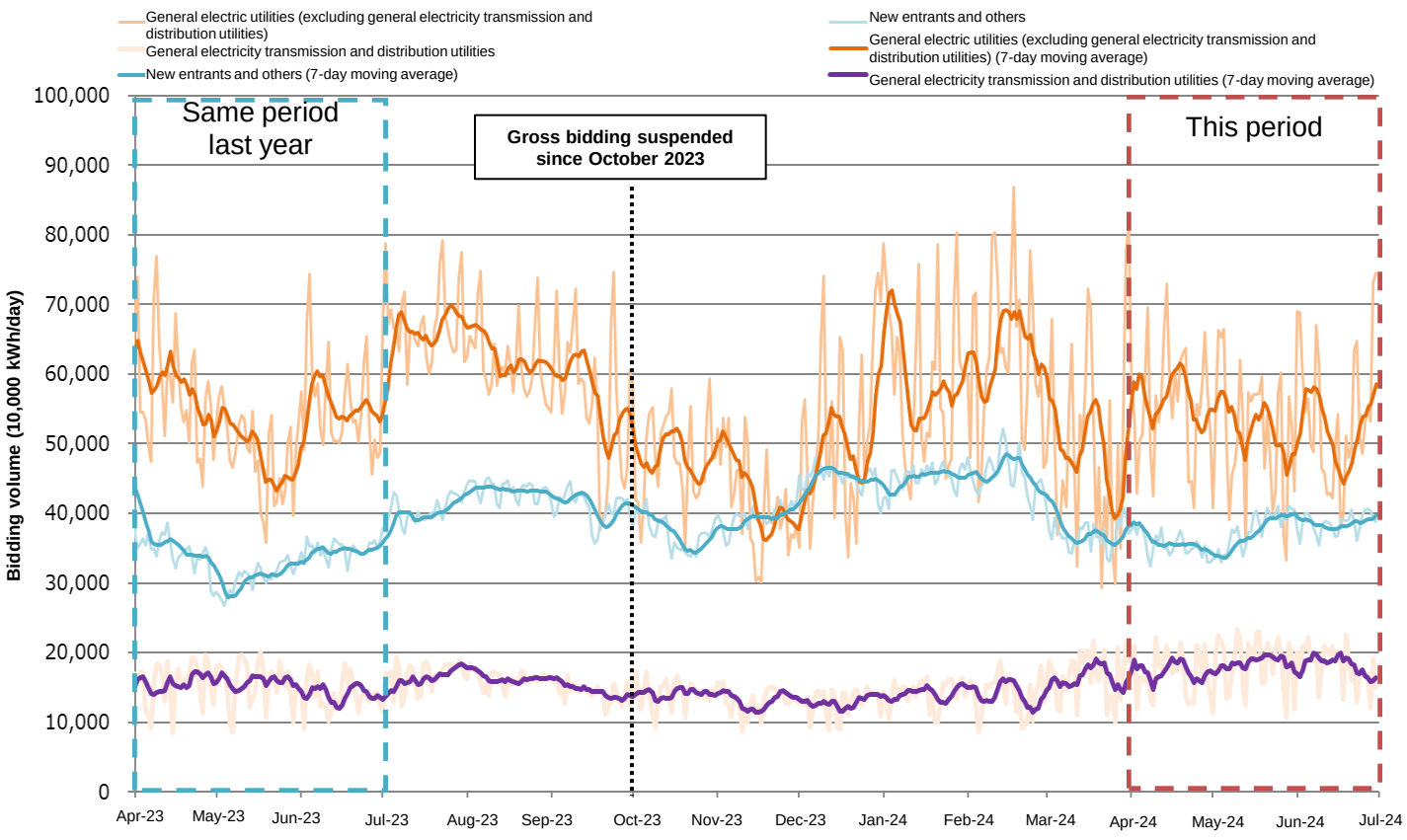
April to June 2024 period

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

○ The sell volume in the day-ahead market for this period was 48.9 billion kWh for general electric utilities (excluding general electricity transmission and distribution utilities), 33.9 billion kWh for new entrants and other business operators, and 16.3 billion kWh for general electricity transmission and distribution utilities.

○ For year-on-year comparison, the volume was 1.0 times (1.3 times[*1]) that of the same period last year for general electric utilities, 1.1 times for new entrants and other business operators, and 1.2 times for general electricity transmission and distribution utilities.

Day-Ahead market: Trends in sell volume (April 1, 2023 to June 30, 2024)



Main data

Sell volume by general electric utilities (excluding general electricity transmission and distribution utilities) (April to June 2024)
48.9 billion kWh

Comparison with sell volume by general electric utilities (excluding general electricity transmission and distribution utilities) for the same period last year (vs. April to June 2023)
1.0 ×

Sell volume by new entrants and other business operators (April to June 2024)
33.9 billion kWh

Comparison with sell volume by new entrants and other business operators for the same period last year (vs. April to June 2023)
1.1 ×

Sell volume by general electricity transmission and distribution utilities (April to June 2024)
16.3 billion kWh

Comparison with sell volume by general electricity transmission and distribution utilities for the same period last year (vs. April to June 2023)
1.2 ×

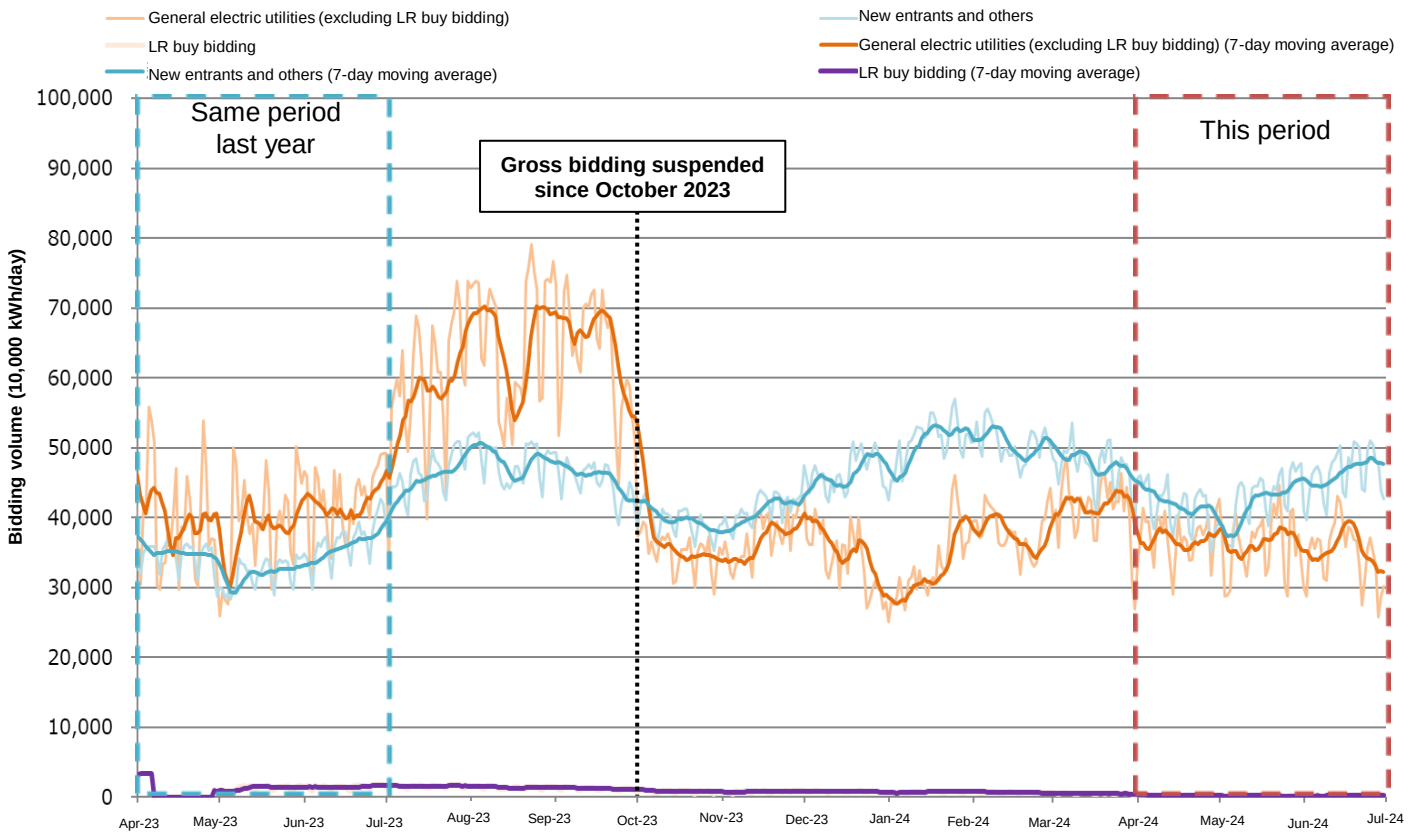
* The FIT sell volume by general electricity transmission and distribution utilities has been excluded from the sell volume by general electric utilities, and a new line plotting the sell volume by general electricity transmission and distribution utilities has been added.
* General electric utilities 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.
*1 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.)

April to June 2024 period

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

- ○ The buy volume in the day-ahead market for this period was 32.8 billion kWh for general electric utilities (excluding LR[*1] buy bidding) and 39.7 billion kWh for new entrants and other business operators, and LR buy volume by general electricity transmission and distribution utilities was 0.2 billion kWh.
- ○ For year-on-year comparison, the volume was 0.9 times (1.2 times[*2]) that of the same period last year for general electric utilities (excluding LR buy bidding) and 1.3 times for new entrants and other business operators.

Day-Ahead market: Trends in buy volume (April 1, 2023 to June 30, 2024)



Main data

Buy volume by general electric utilities (excluding LR buy bidding) (April to June 2024)	32.8 billion kWh
Comparison with buy volume by general electric utilities for the same period last year (excluding LR buy bidding) (vs. April to June 2023)	0.9×
Buy volume by new entrants and other business operators (April to June 2024)	39.7 billion kWh
Comparison with buy volume by new entrants and other business operators for the same period last year (vs. April to June 2023)	1.3×
LR buy volume by general electricity transmission and distribution utilities (April to June 2024)	0.2 billion kWh
Comparison with LR buy volume by general electricity transmission and distribution utilities for the same period last year (vs. April to June 2023)	0.2×

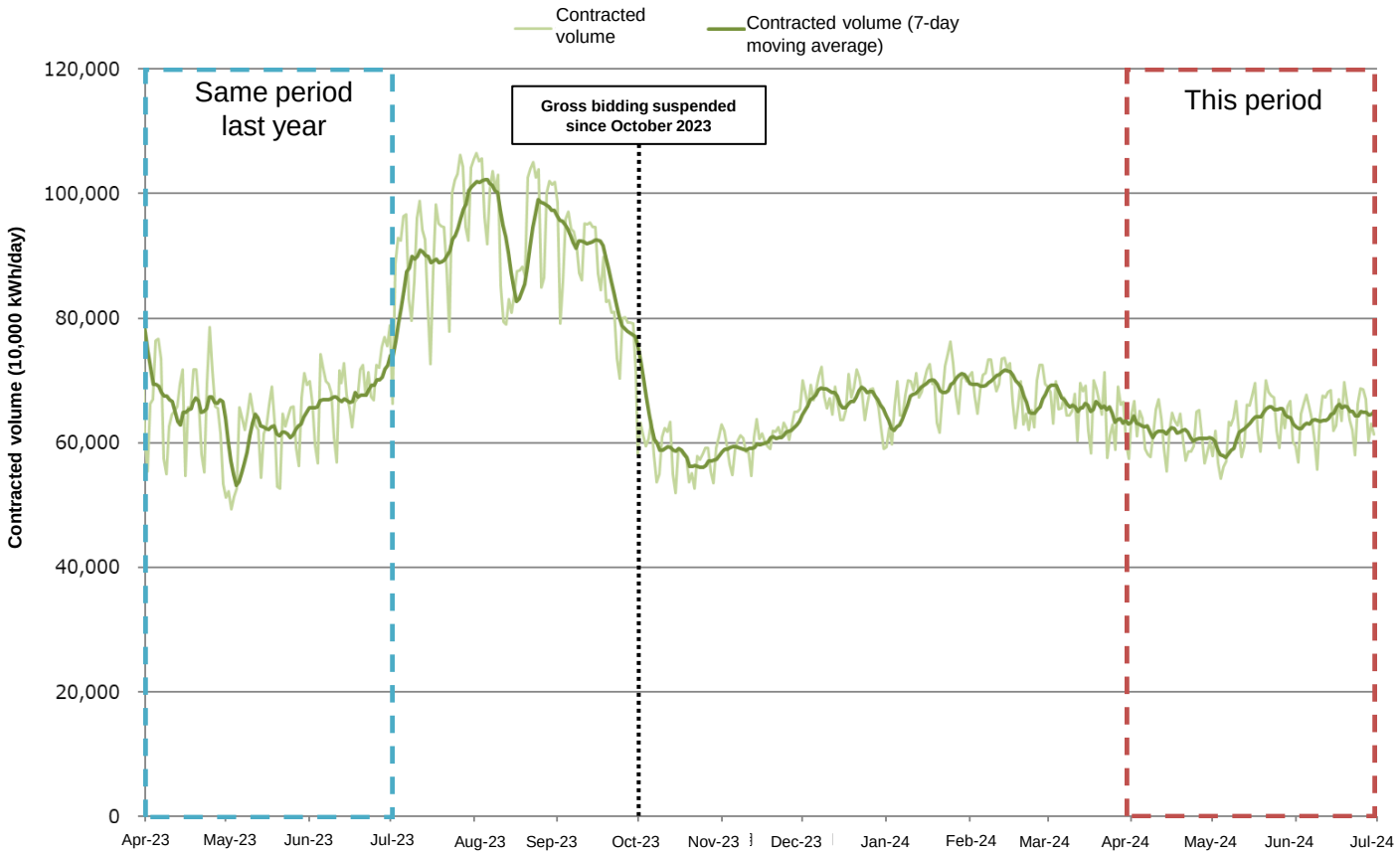
* General electric utilities include Hokkaido Electric Power, Tohoku Electric Power, TEPCO Energy Partner, TEPCO Renewable Power, Chubu Electric Power Miraiz, Hokuriku Electric Power, Kansai Electric Power, Chugoku Electric Power, Shikoku Electric Power, Kyushu Electric Power, JERA, and general electricity 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.
*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.
*2 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.)

April to June 2024 period

Contracted volume in the day-ahead market

○ The contracted volume in the day-ahead market for this period was 57.2 billion kWh.
○ For year-on-year comparison, the volume was 1.0 times (1.2 times*1) that of the same period last year.

Day-Ahead market: Trends in contracted volume (April 1, 2023 to June 30, 2024)



Main data

Contracted volume (April to June 2024)
57.2 billion kWh

Comparison with contracted volume for the same period last year (vs. April to June 2023)
1.0 ×

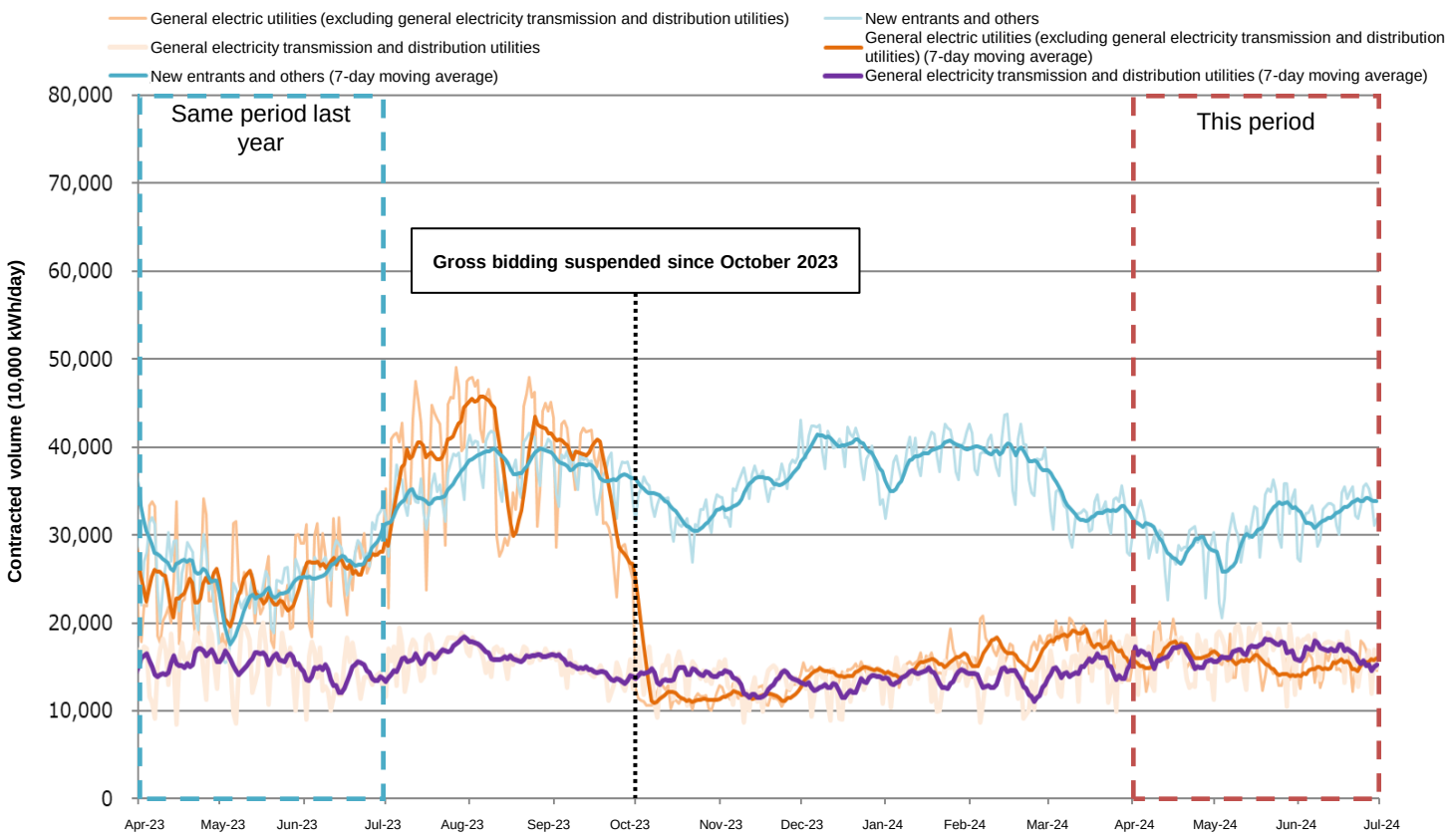
*1 The comparison is based on the volume obtained by deducting the gross bidding volume for internal demand from the bidding volume of general electric utilities in the same period last year. Gross bidding volumes are calculated from the questionnaire results on higher buy-back prices in gross bidding 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.)

April to June 2024 period

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

- ○ The contracted sell volume in the day-ahead market for this period was 14.2 billion kWh for general electric utilities (excluding general electricity transmission and distribution utilities), 28.0 billion kWh for new entrants and other business operators, and 15.0 billion kWh for general electricity transmission and distribution utilities.
- ○ For year-on-year comparison, the volume was 0.6 times (1.1 times[*1]) that of the same period last year for general electric utilities, 1.2 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 sell volume (April 1, 2023 to June 30, 2024)



Main data

Contracted sell volume by general electric utilities (excluding general electricity transmission and distribution utilities) (April to June 2024)	14.2 billion kWh
Comparison with contracted volume by general electric utilities (excluding general electricity transmission and distribution utilities) for the same period last year (vs. April to June 2023)	0.6×
Contracted sell volume by new entrants and other business operators (April to June 2024)	28.0 billion kWh
Comparison with contracted sell volume by new entrants and other business operators for the same period last year (vs. April to June 2023)	1.2×
Contracted sell volume by general electricity transmission and distribution utilities (April to June 2024)	15.0 billion kWh
Comparison with contracted sell volume by general electricity transmission and distribution utilities for the same period last year (vs. April to June 2023)	1.1×

* The contracted FIT sell volume by general electricity transmission and distribution utilities has been excluded from the contracted sell volume by general electric utilities, and a new line plotting the contracted sell 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.
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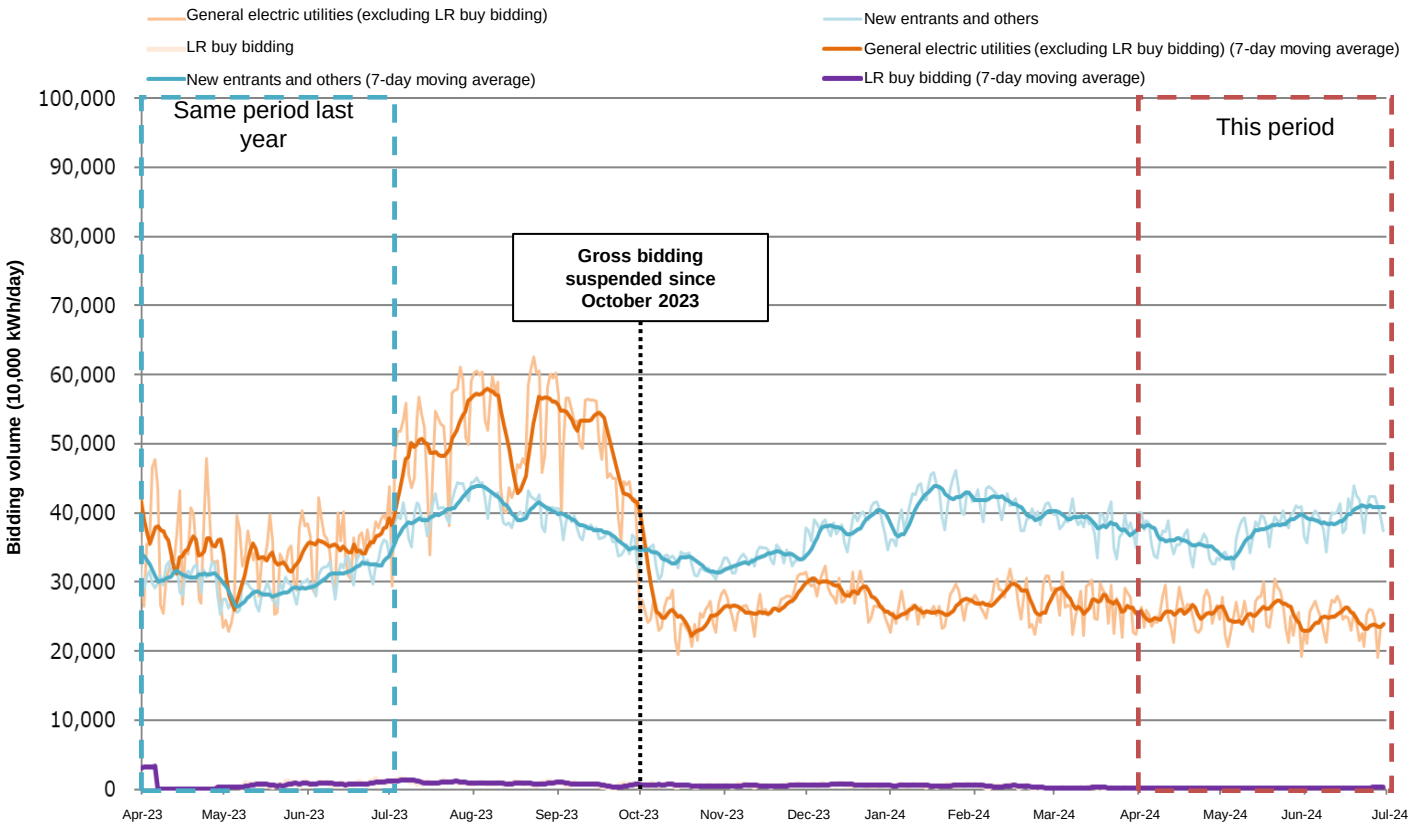
April to June 2024 period

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

- ○ The contracted buy volume in the day-ahead market for this period was 22.8 billion kWh for general electric utilities (excluding LR buy bidding) and 34.3 billion kWh for new entrants and other business operators, and the contracted LR buy volume by general electricity transmission and distribution utilities was 0.2 billion kWh.
- ○ For year-on-year comparison, the volume was 0.7 times (1.1 times[*1]) that of the same period last year for general electric utilities (excluding LR buy bidding) and 1.2 times for new entrants and other business operators.
- ○ The market condition continues where the contracted buy volume by general electric utilities exceeds their contracted sell volume. For new entrants and other business operators, too, their contracted buy volume exceeded their contracted sell volume, as in the previous period.

Day-Ahead Market: Trends in contracted buy volume (April 1, 2023 to June 30, 2024)



Main data

Contracted buy volume by general electric utilities (excluding LR buy bidding) (April to June 2024)	22.8 billion kWh
Comparison with contracted buy volume by general electric utilities for the same period last year (excluding LR buy bidding) (vs. April to June 2023)	0.7×
Contracted buy volume by new entrants and other business operators (April to June 2024)	34.3 billion kWh
Comparison with contracted buy volume by new entrants and other business operators for the same period last year (vs. April to June 2023)	1.2×
Contracted LR buy volume by general electricity transmission and distribution utilities (April to June 2024)	0.2 billion kWh
Comparison with contracted LR buy volume by general electricity transmission and distribution utilities for the same period last year (vs. April to June 2023)	0.3×

* 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.
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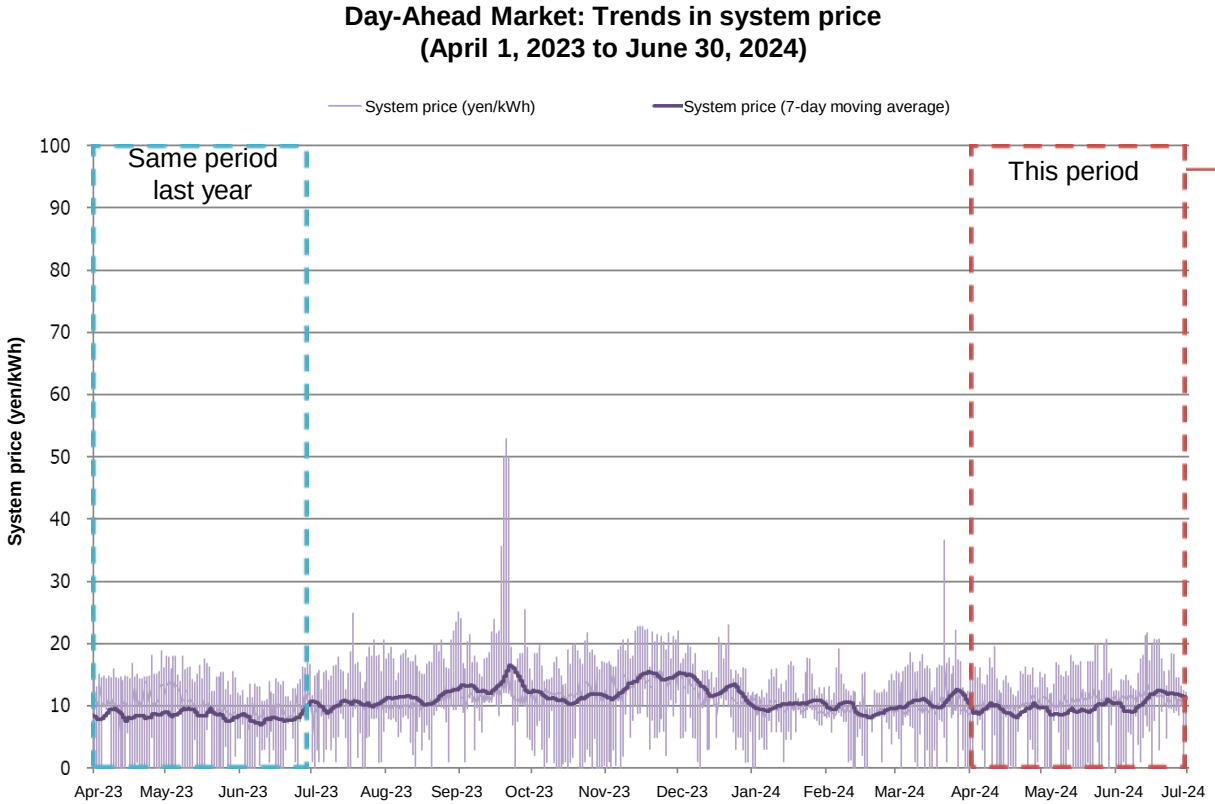
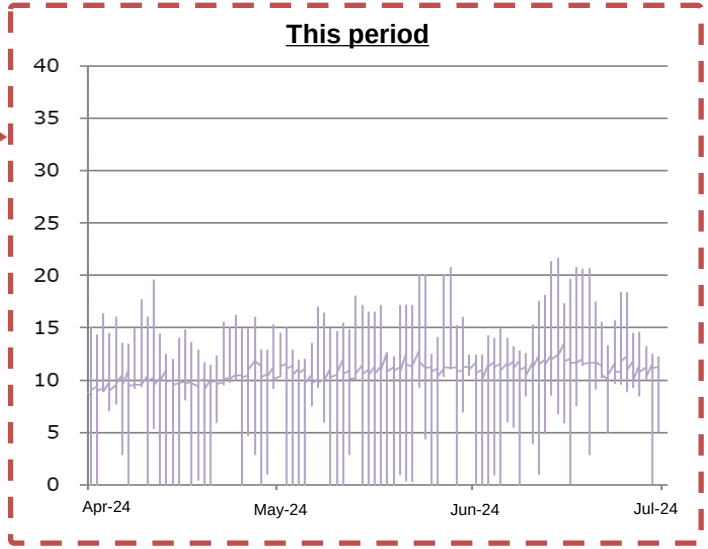
April to June 2024 period

System price in the day-ahead market

- ○ The average system price in the day-ahead market for this period was 10.0 yen/kWh.
- ○ It increased by 1.4 yen/kWh compared to the average of 8.6 yen/kWh for the same period last year.

(LNG spot price increased from an average of $10.9/MMBtu for the same period last year to an average of $11.2/MMBtu for this period. The yen also strengthened, with the exchange rate shifting from an average of 137.5 yen per dollar for the same period last year to an average of 155.8 yen per dollar for this period.)





Main data

Unit: yen/kWh

	This period	Same period last year	Difference
Average system price	10.0	8.6	+1.4
Highest price	21.7	18.8	+2.9
Lowest price	0.01	0.01	+0.0

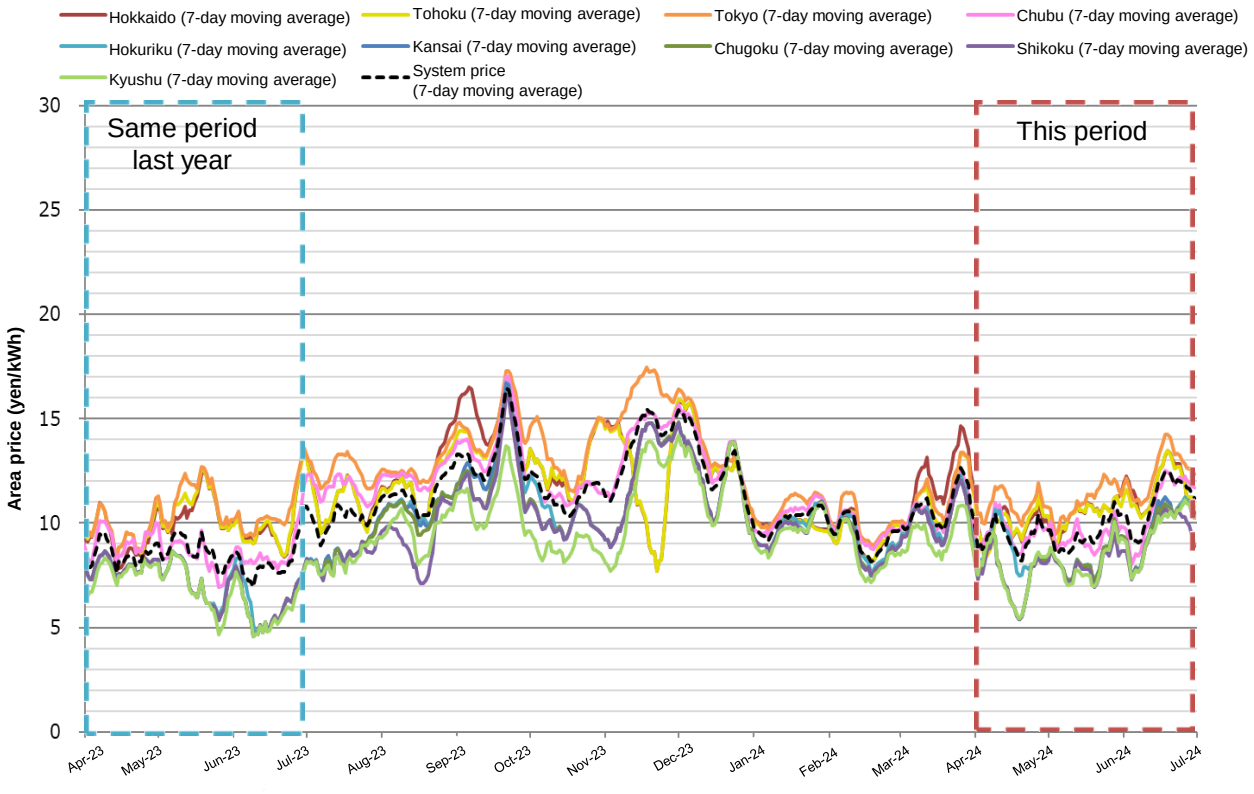
*1 Highest price for this period: 1 day, 1 frame in total
*2 Lowest price for this period: 32 days, 290 frames in total

April to June 2024 period

Area price in the day-ahead market

○ Average area prices in the day-ahead market for this period were higher than those in each area for the same period last year.

Day-Ahead Market: Trends in area price (April 1, 2023 to June 30, 2024)



Average price during the period

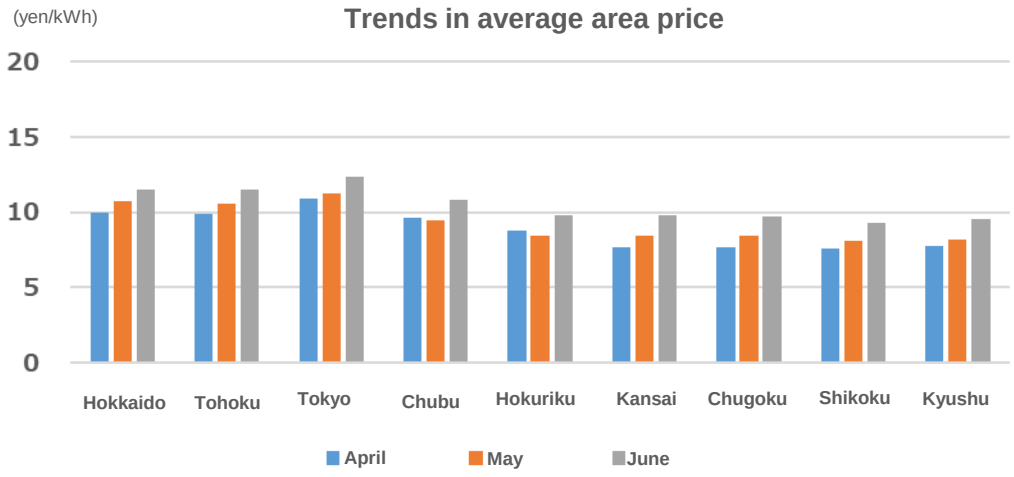
Unit: yen/kWh

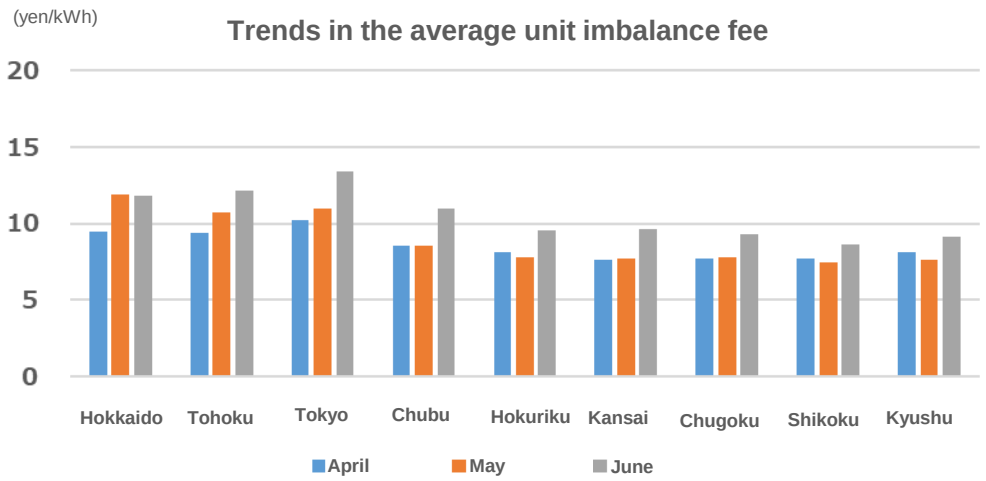
	This period	Same period last year	Difference
System price	10.0	8.6	1.4
Hokkaido	10.7	10.1	0.6
Tohoku	10.7	10.3	0.4
Tokyo	11.5	10.6	0.9
Chubu	10.0	8.9	1.1
Hokuriku	9.0	7.2	1.8
Kansai	8.6	7.1	1.6
Chugoku	8.6	7.1	1.5
Shikoku	8.3	7.1	1.3
Kyushu	8.5	6.9	1.6

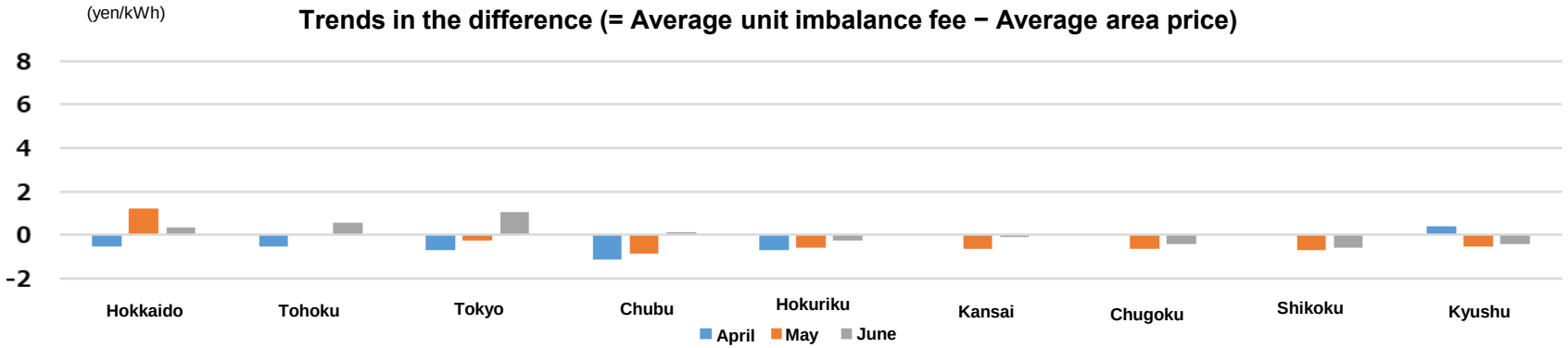
April to June 2024 period

Trends in unit imbalance fee and area price

- ○ A comparison of trends in the unit imbalance fee and area price in each area (monthly averages) indicates that the Hokkaido, Tokyo, and Chubu areas had a discrepancy of 1 yen or more in some months. In general, the area price exceeded the unit imbalance fee in a majority of the months.
- ○ The differences between the two values were 1.21 yen at the maximum, 0.03 yen at the minimum, and 0.50 yen on average.







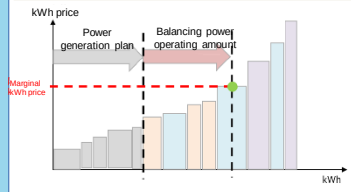
Source: Prepared by the Electricity and Gas Market Surveillance Commission Secretariat based on the final values of the imbalance volume (as of July 29, 2024) published on the Imbalance Prices Calculation Service website.
*The structure of the imbalance fee system was changed on April 1, 2022.

(Reference) Imbalance calculation method (from April 2022)

○ The overall picture of the imbalance fee system and its calculation method is shown in the figure below.

Imbalance fee system from FY2022 onwards

Merit order of power supply operating costs

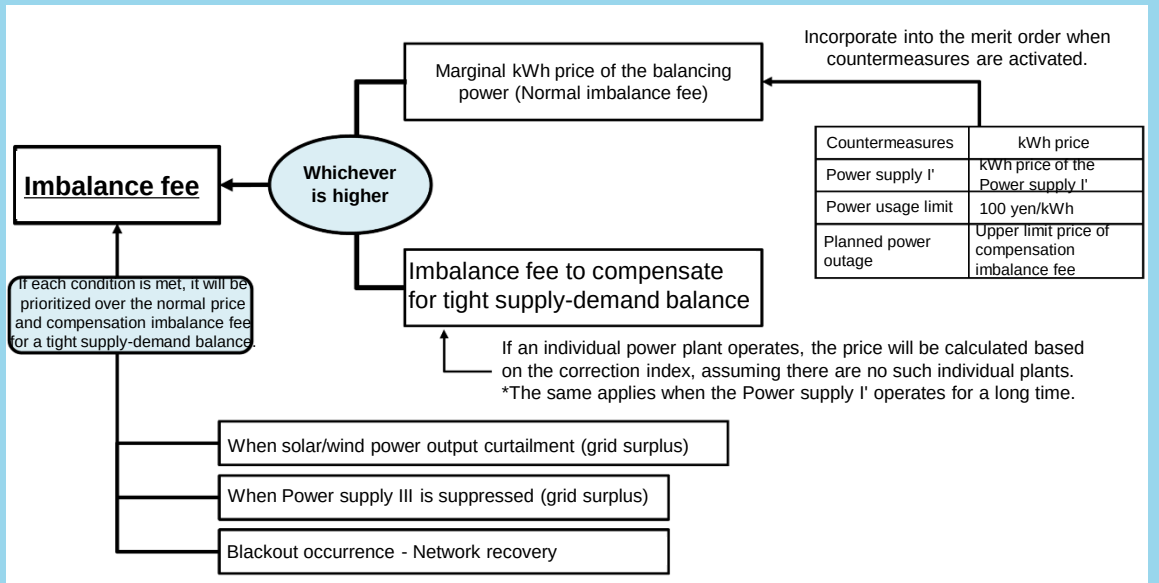


System based on the kWh price of the balancing power

Weighted average value of the marginal kWh price of the balancing power for the first 15 minutes and the second 15 minutes within a 30-minute frame

Introduced a mechanism in which imbalance fees increase when supply and demand is tight (compensation imbalance fees).

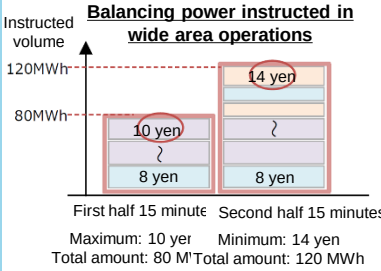
Measures:
(1) Give grid users incentives to help balance supply and demand across the grid.
(2) By reflecting the kWh price of the balancing power in the imbalance fee, general electricity transmission and distribution utilities can recover the supply-demand balancing cost.



Countermeasures	kWh price
Power supply I'	kWh price of the Power supply I'
Power usage limit	100 yen/kWh
Planned power outage	Upper limit price of compensation imbalance fee

○ Calculation method of marginal kWh price of the balancing power

Balancing power instructed in wide area operations



Imbalance fee (marginal kWh price of the balancing power)

The imbalance fee for that period is the weighted average of the marginal kWh prices for the first 15 minutes and the second 15 minutes by the balancing power instructed volume.

$$\frac{10\times80+14\times120}{80+120} = 12.4 \text{ yen}$$

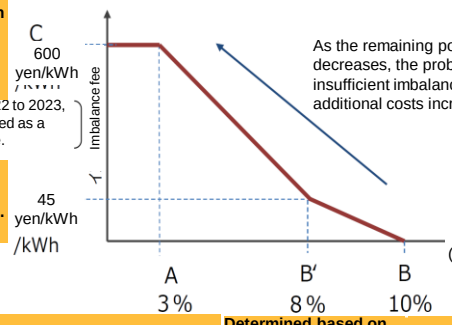
* From FY2023, wide-area operations will be in 5-minute increments, and the price will be calculated as a weighted average of 5 minutes x 6 frames.

○ Concept of imbalance fee to compensate for tight supply-demand balance

As a cost to secure an additional 1 kWh of supply capacity in an emergency, as a price sufficient to secure 1 kWh of new supply capacity unavailable on the market, the price required to secure additional DR.

For two years from fiscal 2022 to 2023, 200 yen/kWh will be applied as a temporary measure.

Determined based on the kWh price of the secured Generator I'.



As the remaining power supply capacity decreases, the probability that insufficient imbalance will generate additional costs increases.

Correction price calculation index (Remaining power supply capacity that can be utilized by power transmission and distribution utilities)

Determined based on the level at which the government issues a tight supply-demand warning.

Determined based on the level at which Power supply I' can be operated with certainty.

Determined based on the timing to start activating Power supply I'.

22

April to June 2024 period

Day-Ahead market splitting status between areas

- ○ The market splitting occurrence rate was higher than that in the previous quarter for the Tokyo-Chubu interconnection line (FC), Chubu-Hokuriku interconnection line, and Chubu-Kansai interconnection line, exceeding 40% for all of them. The higher market splitting occurrence rates are presumably attributable partly to three-month work constraints for the Tokyo-Chubu interconnection line (FC) and a period of work-related suspension for the Chubu-Kansai interconnection line (April) and the Chubu-Hokuriku interconnection line (June).
- ○ Compared to the same period last year, the market splitting occurrence rate was higher for the Tohoku-Tokyo interconnection line, Kansai-Shikoku interconnection line, and Chugoku-Shikoku interconnection line.

Monthly splitting occurrence rate for interconnection lines between each area

Chubu-Hokuriku interconnection line

January	February	March	April	May	Jun	Average for this period
29.3%	38.9%	19.2%	32.2%	40.1%	49.0%	40.4%
(Same period last year)	34.4%	33.6%	65.6%	44.4%		

Hokuriku-Kansai interconnection line

January	February	March	April	May	Jun	Average for this period
9.9%	20.5%	6.7%	22.2%	0.1%	1.3%	7.8%
(Same period last year)	0.1%	2.6%	7.1%	3.2%		

Hokkaido-Honshu interconnection line

January	February	March	April	May	Jun	Average for this period
4.1%	5.3%	22.2%	9.5%	8.8%	10.9%	9.7%
(Same period last year)	7.1%	4.7%	3.9%	5.2%		

Kansai-Chugoku interconnection line

January	February	March	April	May	Jun	Average for this period
0.0%	0.0%	0.3%	0.0%	0.0%	2.3%	0.8%
(Same period last year)	0.0%	0.0%	0.6%	0.2%		

Tohoku-Tokyo interconnection line

January	February	March	April	May	Jun	Average for this period
34.3%	39.8%	8.7%	20.9%	16.0%	24.2%	20.3%
(Same period last year)	2.3%	5.6%	10.6%	6.2%		

Chugoku-Shikoku interconnection line

January	February	March	April	May	Jun	Average for this period
0.7%	1.1%	1.3%	3.6%	11.9%	15.1%	10.2%
(Same period last year)	0.0%	0.0%	0.0%	0.0%		

Tokyo-Chubu interconnection line (FC)

January	February	March	April	May	Jun	Average for this period
22.2%	15.4%	39.8%	37.5%	42.8%	48.2%	42.8%
(Same period last year)	20.3%	57.5%	35.6%	38.0%		

Chugoku-Kyushu interconnection line

January	February	March	April	May	Jun	Average for this period
4.0%	10.3%	16.3%	4.4%	7.0%	6.0%	5.8%
(Same period last year)	4.4%	5.2%	3.8%	4.5%		

Kansai-Shikoku interconnection line

January	February	March	April	May	Jun	Average for this period
0.7%	1.1%	1.5%	3.6%	11.9%	16.9%	10.8%
(Same period last year)	0.0%	0.0%	0.6%	0.2%		

Chubu-Kansai interconnection line

January	February	March	April	May	Jun	Average for this period
39.0%	59.0%	25.3%	53.9%	40.1%	50.2%	48.0%
(Same period last year)	34.5%	36.2%	72.6%	47.6%		

* 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 30-minute frames per day x number of days).
* Occurrences of market splitting include those caused by interconnection line work.

April to June 2024 period

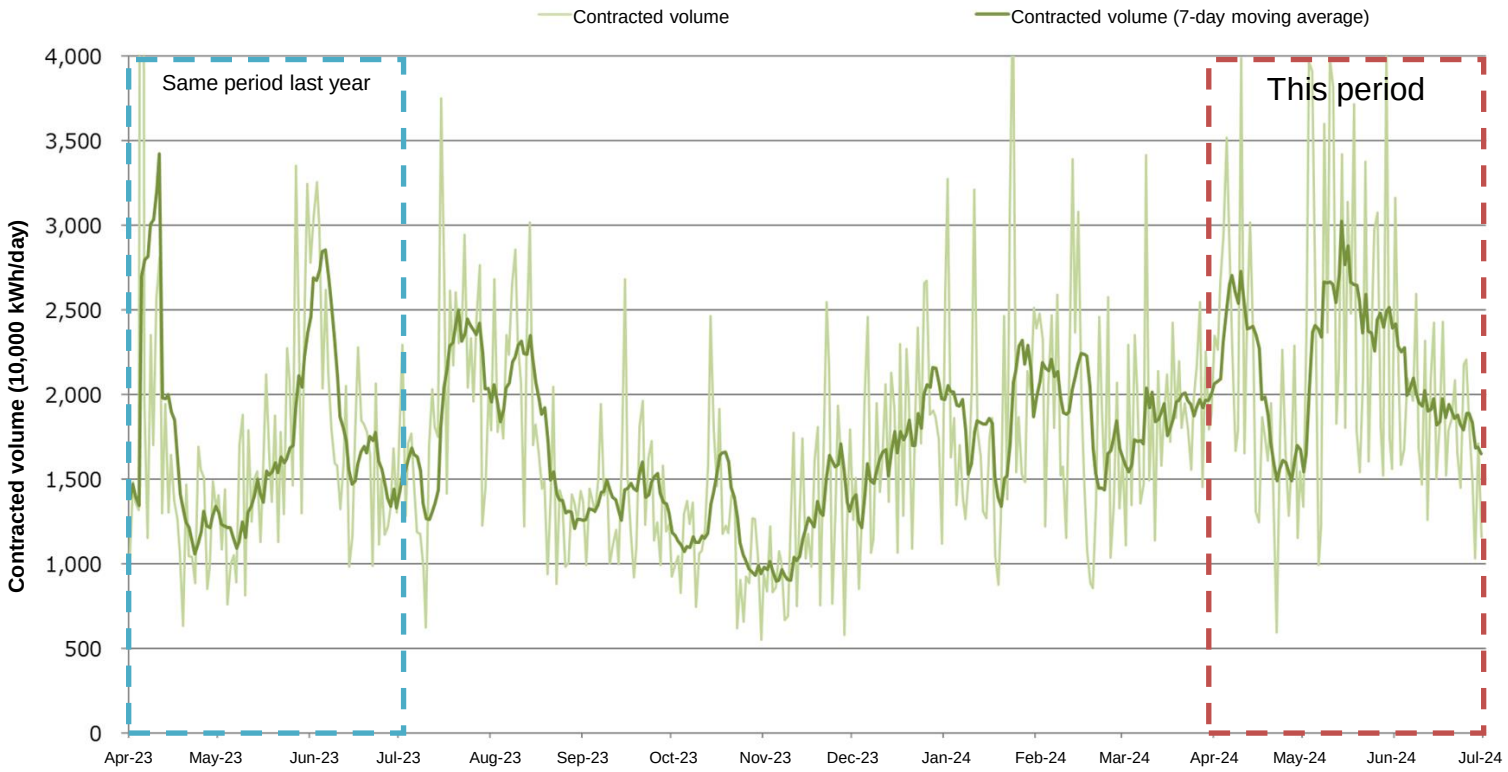
Contracted volume in the intraday market

○ The contracted volume in the intraday market for this period was 1.95 billion kWh.

○ For year-on-year comparison, the volume was 1.2 times that of the same period last year.

Intraday market: Trends in contracted volume

(April 1, 2023 to June 30, 2024)



Main data

Contracted volume (April to June 2024)
1.95 billion kWh

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

April to June 2024 period

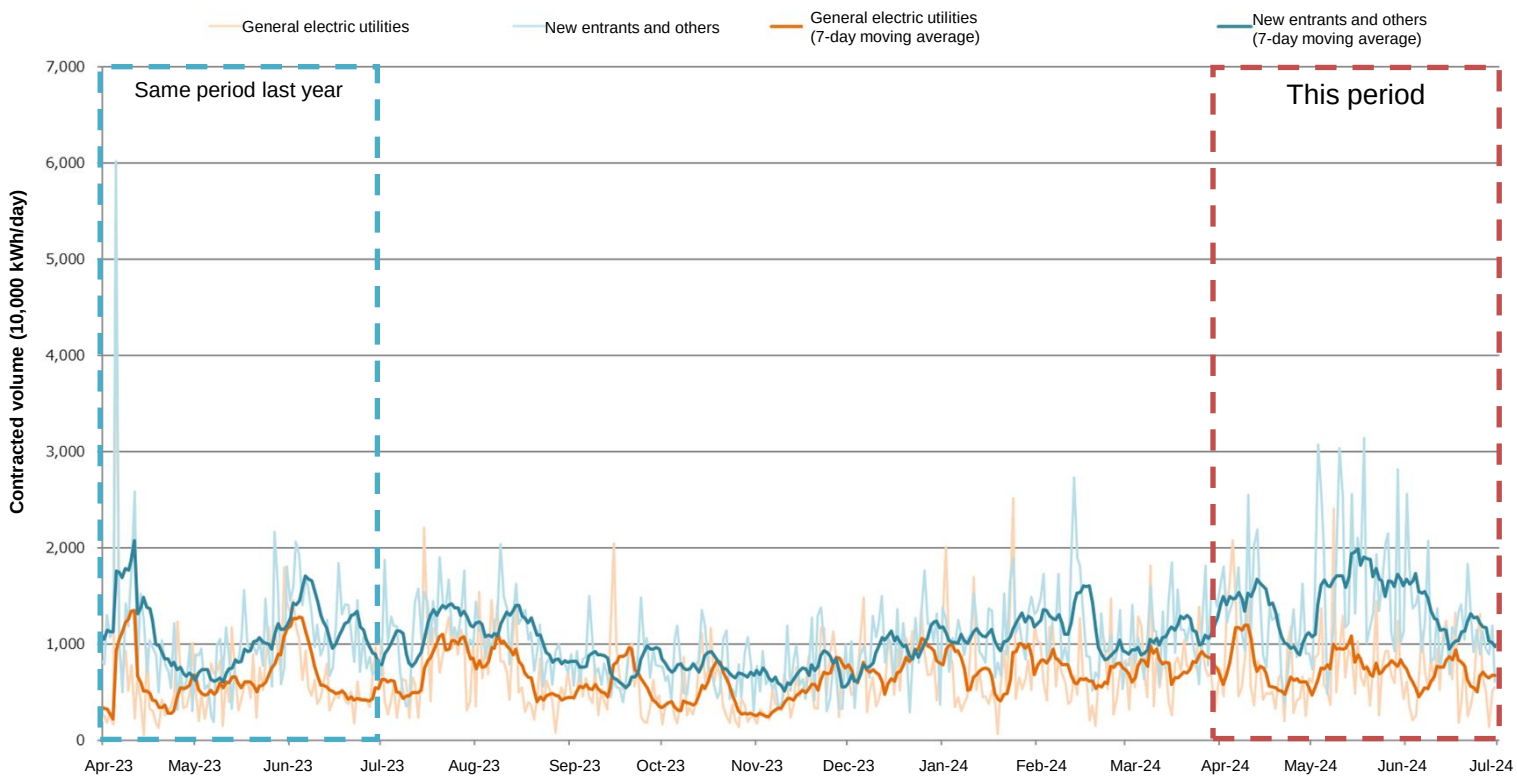
Contracted sell volume in the intraday market by business operator category

○ The contracted sell volume in the intraday market for this period was 0.67 billion kWh for general electric utilities and 1.28 billion kWh for new entrants and other business operators.

○ For year-on-year comparison, the volume was 1.1 times that of the same period last year for general electric utilities and 1.3 times for new entrants and other business operators.

Intraday market: Trends in contracted sell volume

(April 1, 2023 to June 30, 2024)



Main data

Contracted sell volume by general electric utilities (April to June 2024)
0.67 billion kWh
Comparison with contracted sell volume by general electric utilities for the same period last year (vs. April to June 2023)
1.1 ×
Contracted sell volume by new entrants and other business operators (April to June 2024)
1.28 billion kWh
Comparison with contracted sell volume by new entrants and other business operators for the same period last year (vs. April to June 2023)
1.3 ×

* 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.

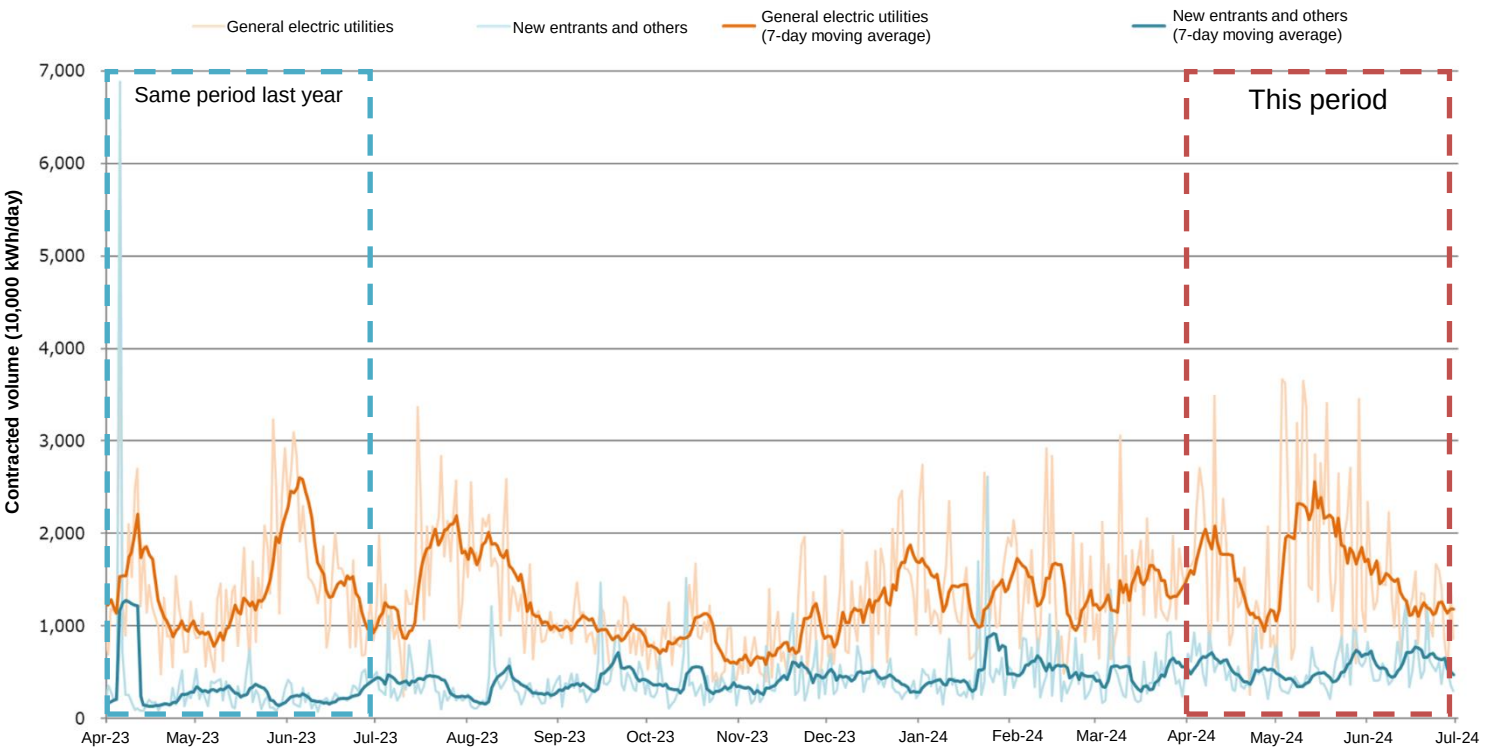
April to June 2024 period

Contracted buy volume in the intraday market by business operator category

- ○ The contracted buy volume in the intraday market for this period was 1.45 billion kWh for general electric utilities and 0.50 billion kWh for new entrants and other business operators.
- ○ For year-on-year comparison, the volume was 1.1 times that of the same period last year for general electric utilities and 1.7 times for new entrants and other business operators.
- ○ The contracted buy volume by general electric utilities exceeded their contracted sell volume, and the contracted sell volume by the new entrants and other business operators exceeded their contracted buy volume.

Intraday market: Trends in contracted buy volume

(April 1, 2023 to June 30, 2024)



Main data

Contracted buy volume by general electric utilities (April to June 2024)
1.45 billion kWh

Comparison with contracted buy volume by general electric utilities for the same period last year (vs. April to June 2023)
1.1 ×

Contracted buy volume by new entrants and other business operators (April to June 2024)
0.5 billion kWh

Comparison with contracted buy volume by new entrants and other business operators for the same period last year (vs. April to June 2023)
1.7 ×

* 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.

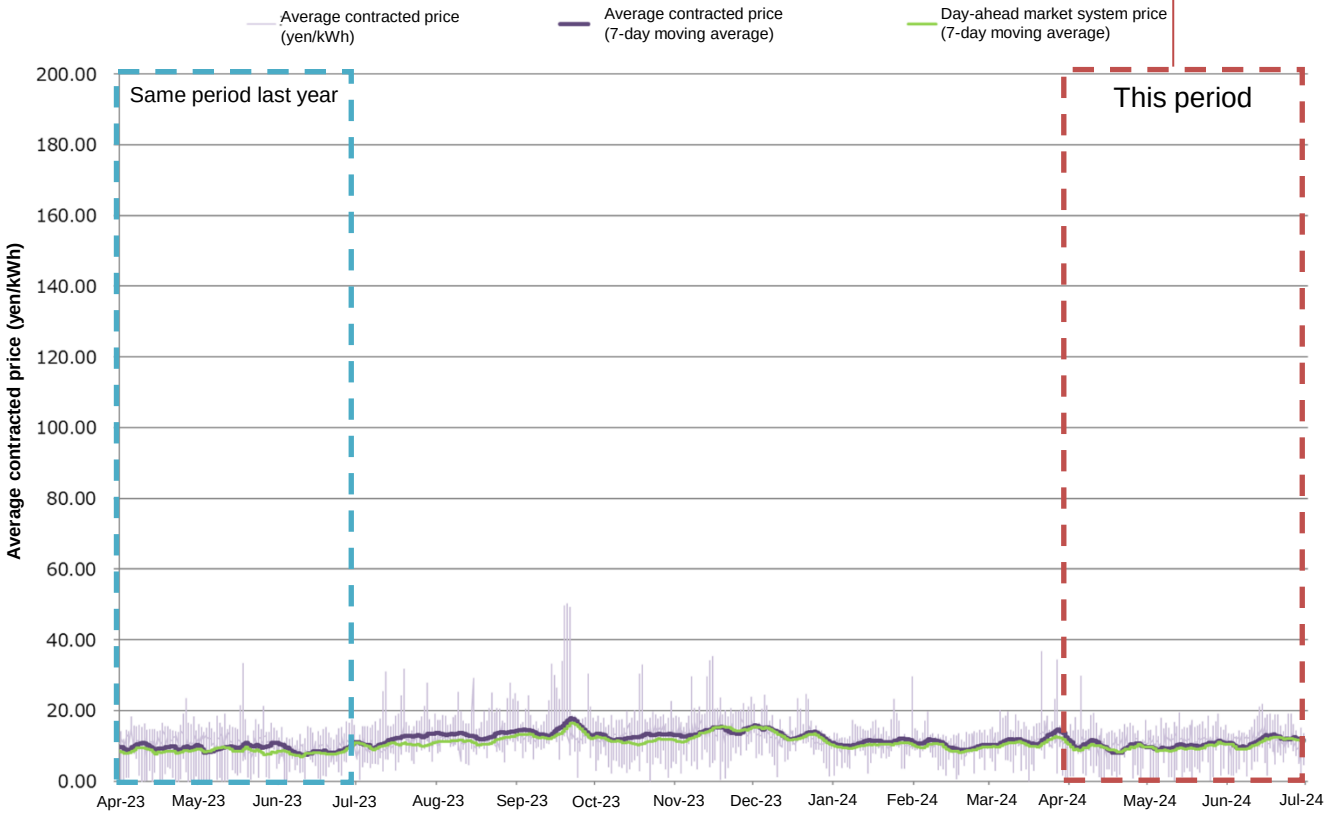
April to June 2024 period

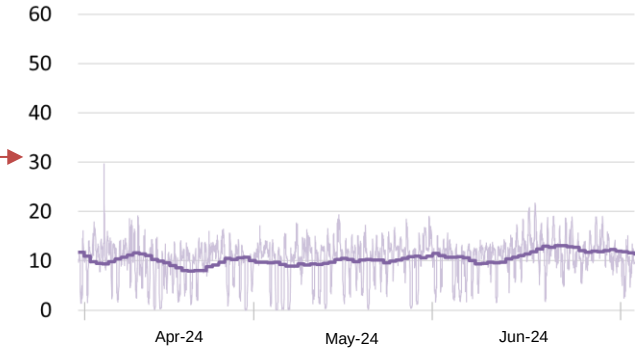
Average contracted price in the intraday market

- The average contracted price in the intraday market for this period was 10.5 yen/kWh. This was a 11.7% increase compared to the average of 9.4 yen/kWh for the same period last year.
- The average contracted price in the intraday market for this period exceeded the average system price (10.0 yen/kWh).

Intraday market: Trends in the average contracted price

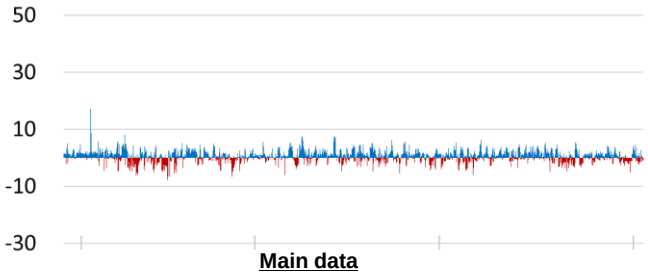
(April 1, 2023 to June 30, 2024)





Price difference (Average intraday market price − System price)

Maximum difference (positive): +17.09 yen/kWh (05:00, April 5)
Maximum difference (negative): −7.90 yen/kWh (07:00, April 17)



Main data

Unit: yen/kWh

	This period	Same period last year	Difference
Intraday market average contracted price	10.5	9.4	+1.1
(Reference) Day-ahead market average system price	10.0	8.6	+1.4
Highest price	29.6	33.2	-3.6
Lowest price	0.01	0.01	0.00

Highest price: April 5, 1 frame in total
Lowest price: April 28, 1 frame in total

April to June 2024 period

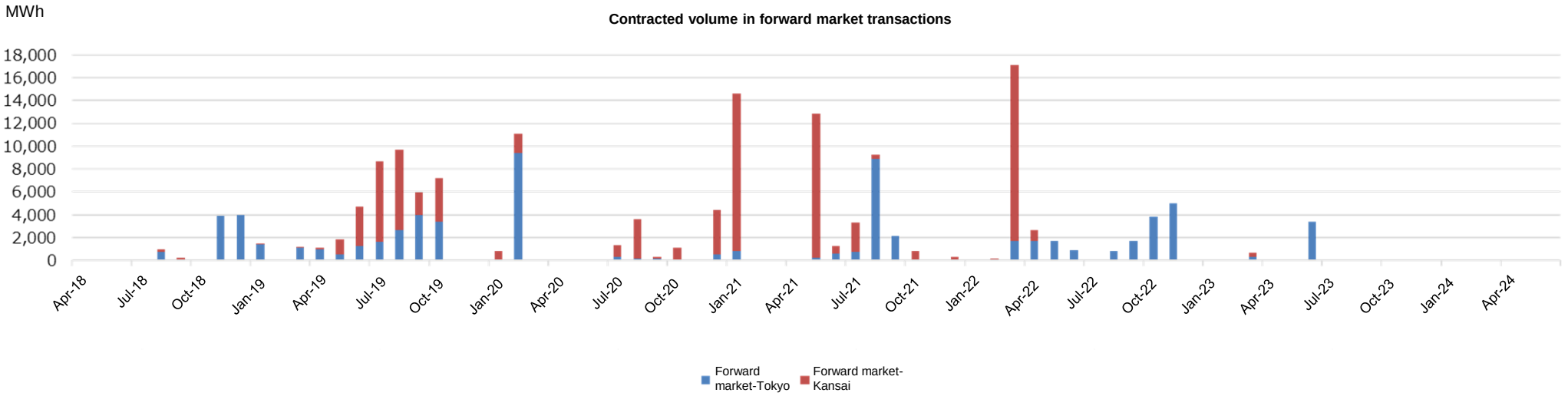
Overview of contracted volume and bidding volume in the forward market transactions

○ There were no trading volumes contracted in the forward market for this period.

Contracted volume/bidding volume during the period*1

(Unit: MWh)

Item	Area	Total (This quarter)	Daytime: Weekly	Daytime: Monthly	24-hour: Weekly	24-hour: Monthly	24-hour: Yearly	(Reference) Total (Year-ago quarter)
Contracted volume	**Total**	0	**0**	**0**	**0**	**0**	**0**	**3,360**
	Tokyo	0	0	0	0	0	0	3,360
	Kansai	0	0	0	0	0	0	0
Sell volume	**Total**	**4,746,098**	**547,008**	**3,262,440**	**151,850**	**784,800**	**0**	**763,168**
	Tokyo	447,058	40,488	399,120	7,450	0	0	637,188
	Kansai	4,299,040	506,520	2,863,320	144,400	784,800	0	125,980
Buy volume	**Total**	**5,311,002**	**670,992**	**3,525,840**	**147,420**	**966,750**	**0**	**5,947,560**
	Tokyo	190,892	181,272	0	9,620	0	0	683,030
	Kansai	5,120,110	489,720	3,525,840	137,800	966,750	0	5,264,530



*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.

April to June 2024 period

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

○ Electricity futures trading contracted for this period was approximately 0.40 billion kWh for TOCOM and approximately 12.64 billion kWh for EEX.

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

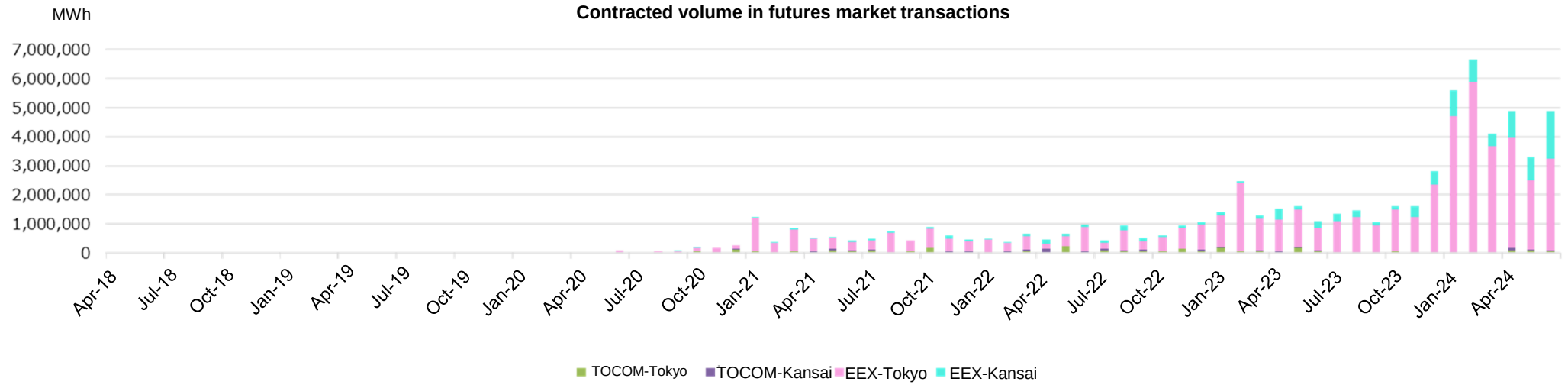
(TOCOM *2)

(Unit: MWh)

Item	Area	Total (This quarter)	Base load	Daytime load	(Reference) Total (Year-ago quarter)
Contracted volume	Total	**396,965**	**345,391**	**51,574**	**383,850**
	Tokyo	268,829	222,089	46,740	301,566
	Kansai	128,136	123,302	4,834	82,284

(EEX)

Item	Area	Total (This quarter)	Base load	Peak load	(Reference) Total (Year-ago quarter)
Contracted volume	Total	**12,642,240**	**11,595,792**	**1,046,448**	**3,818,736**
	Tokyo	9,331,968	8,528,736	803,232	3,147,624
	Kansai	3,310,272	3,067,056	243,216	671,112



*1 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.

Electricity market monitoring report

[Quarterly report]

◆ Wholesale electricity market
- ● JEPX 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 sell 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
- ● JEPX 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

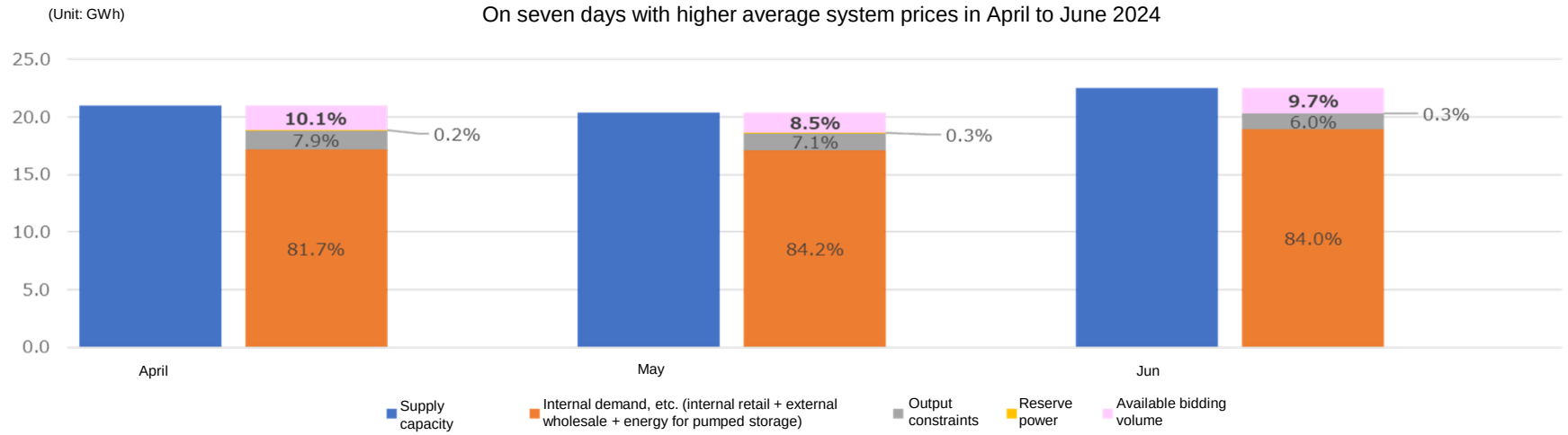
◆ Gas market
- ● Status of OTC transactions of general gas utilities
- ● Usage status of Start-up wholesale measure

April to June 2024 period

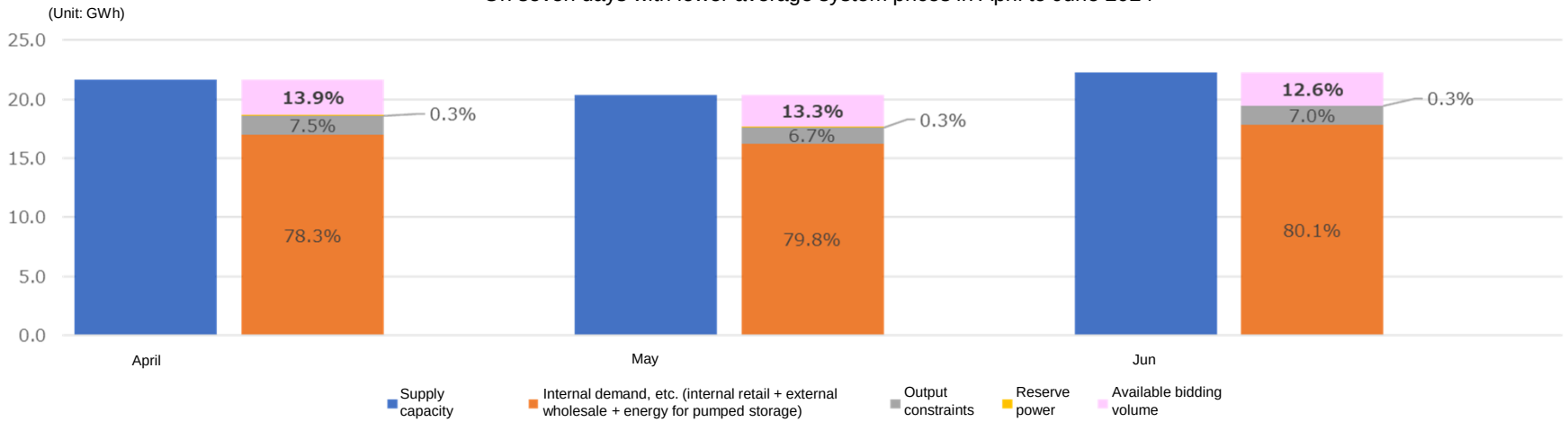
Supply of surplus electricity to JEPX market: Status of available bidding volume for supply capacity

○ The total available bidding volume on the sample dates of each month (data aggregated over seven days each month) was approximately 8% to 10% of the internal supply capacity (10.1% in April, 8.5% in May, and 9.7% in June) on days with higher prices.
On days with lower prices, the figure was approximately 12% to 14% (13.9% in April, 13.3% in May, and 12.6% in June).

On seven days with higher average system prices in April to June 2024



On seven days with lower average system prices in April to June 2024



[Date for aggregation of available bidding volume]

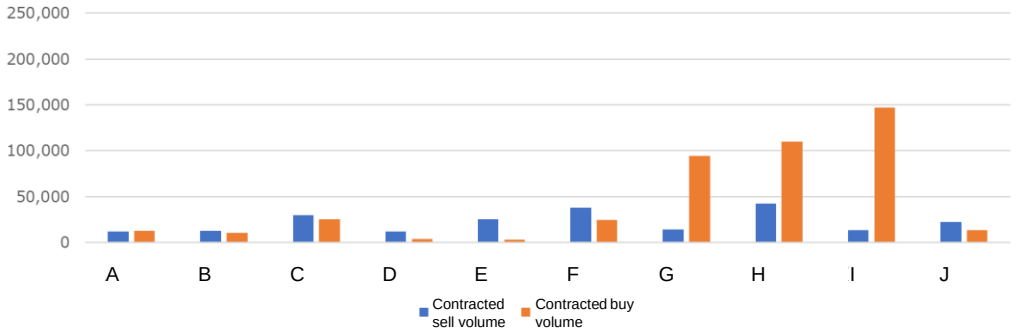
◆ The secretariat designated sampling dates based on weekday system prices for each month, which were seven days when the daily average price or maximum price was among the highest in the month and seven days when the daily average price or maximum price was among the lowest in the month. Evaluations were performed on data provided by general electric utilities and JERA.
• Sampling dates for April consist of days when the daily average system price was among the highest (April 3, 8, 9, 22, 23, 24, and 30) and days when the daily average system price was among the lowest (April 1, 2, 10, 15, 17, 19, and 25).
• Sampling dates for May consist of days when the daily average system price was among the highest (May 1, 7, 13, 23, 27, 28, and 31) and days when the daily average system price was among the lowest (May 2, 9, 10, 14, 16, 17, and 29).
• Sampling dates for June consist of days when the daily average system price was among the highest (June 13, 14, 17, 18, 19, 24, and 25) and days when the daily average system price was among the lowest (June 3, 4, 6, 7, 26, 27, and 28).
◆ 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.

April to June 2024 period

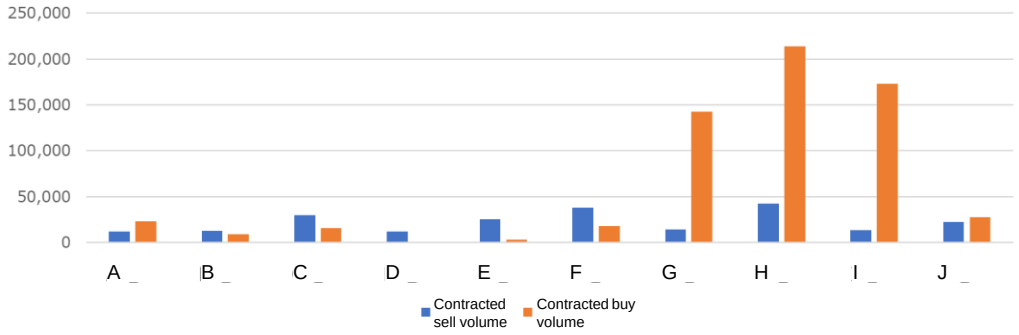
Intraday market for general electric utilities: Contract status by buyer and by seller

○ Contracted sell volume and contracted buy volume in the intraday market for general electric utilities and JERA are shown below.

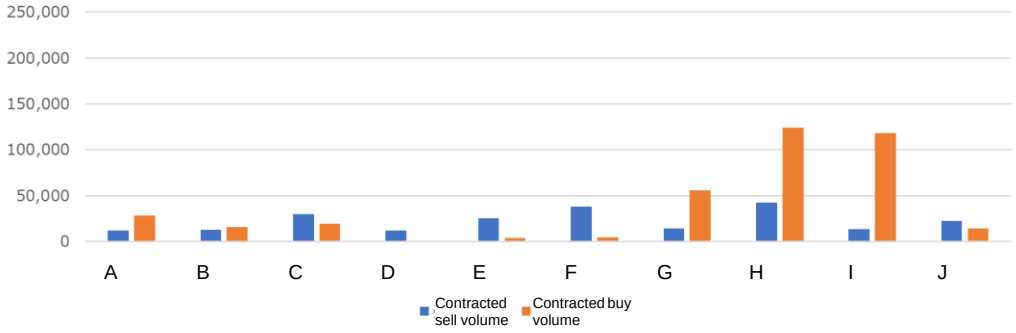
Contracted volume in the intraday market, April 2024 (Unit: MWh)



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



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

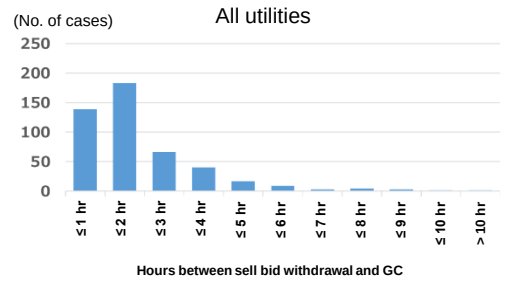


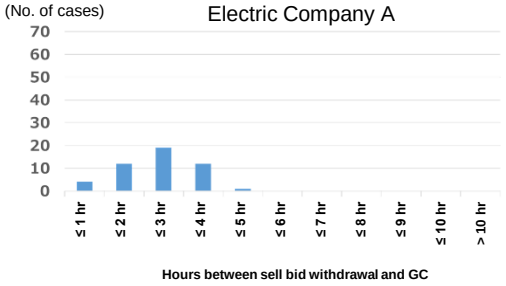
*Aggregated from JEPX data (undisclosed)
*Calculated for general electric utilities (excluding Okinawa Electric Power) and JERA

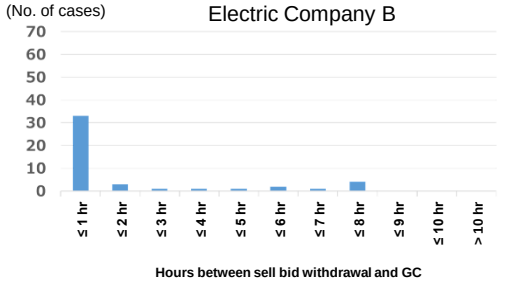
April to June 2024 period

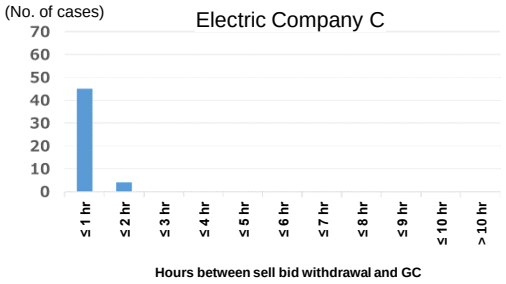
Status of withdrawal of sell bids by general electric utilities (Distribution of number of cases by remaining time until GC)

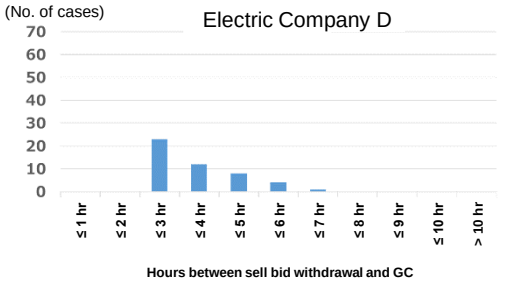
○ For the three sampling days (April 19, May 28, and June 14), the distribution of the number of utilities was checked to see how many hours before GC they withdrew their sell bids. It was found that the trend that the distribution concentrates in the period between “one hour before GC” and “two hours before GC” has continued. The number of cases corresponding to “one hour before” was 139 out of the total of 469, indicating a level similar to that in the previous quarter (191/660).

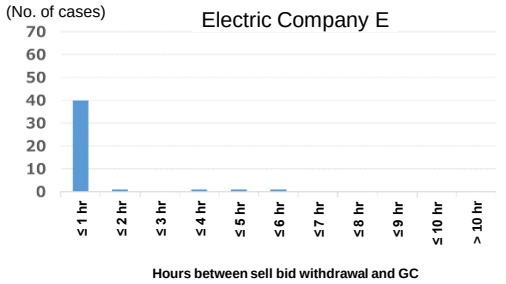


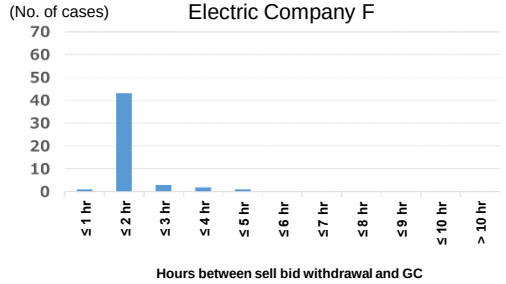


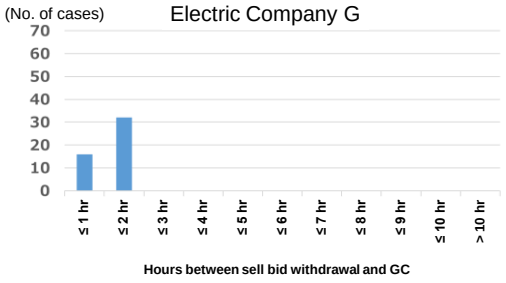


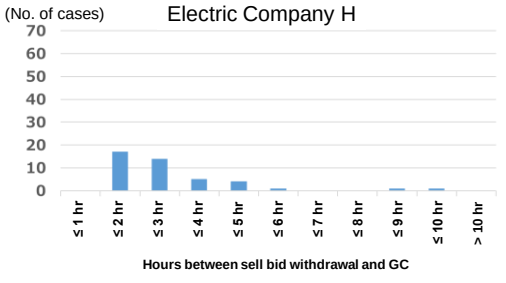


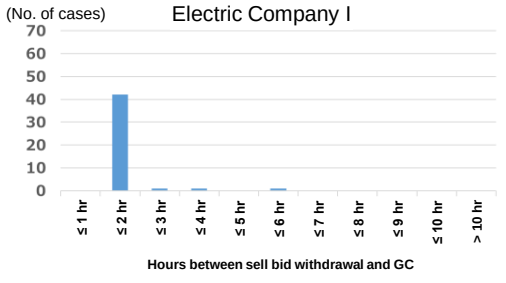


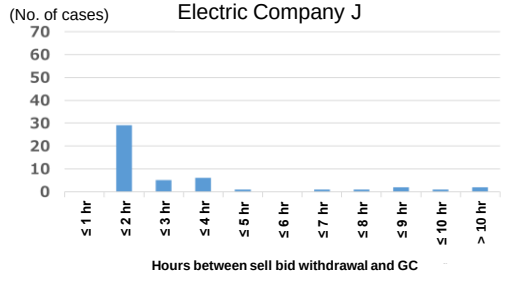












* The number of sell bids on the board was counted at 59 minutes and 59 seconds past every hour. The time until the GC was calculated with the time after which there were no sell bids on the board assumed as the withdrawal time.

* 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 sell bids were excluded from the calculations.

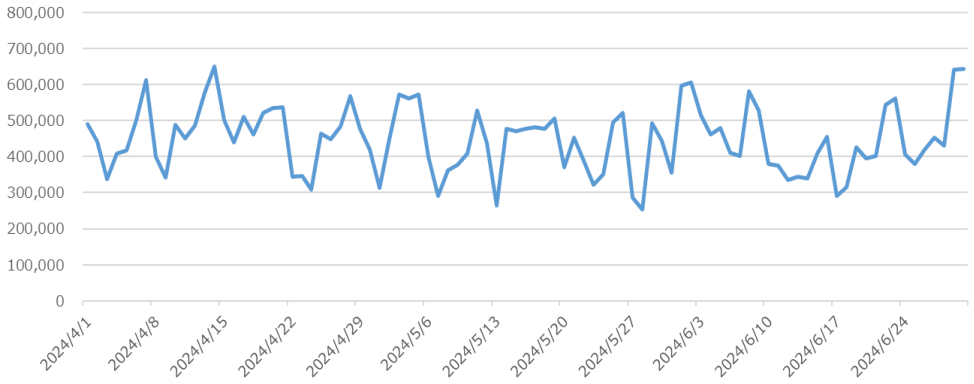
* The secretariat sampled the characteristic day of each month: for April, a weekday when the daily average system price was the lowest in the three months; for May, a weekday when the daily average system price was the highest in the three months; for June, a weekday when the maximum system price was the highest in the three months.

April to June 2024 period

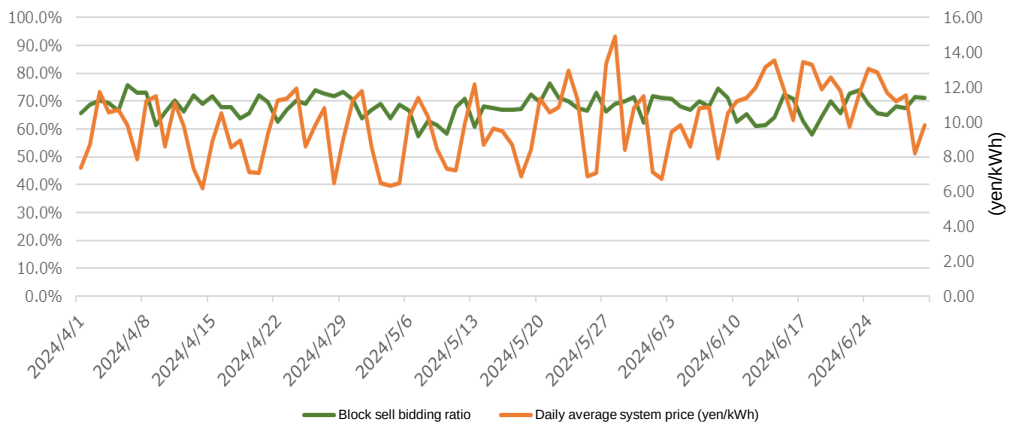
Status of block sell bidding

- ○ The block sell 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 sell 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.
- ○ Contract rates have been lower in general, although they hit 10% or higher on some days.

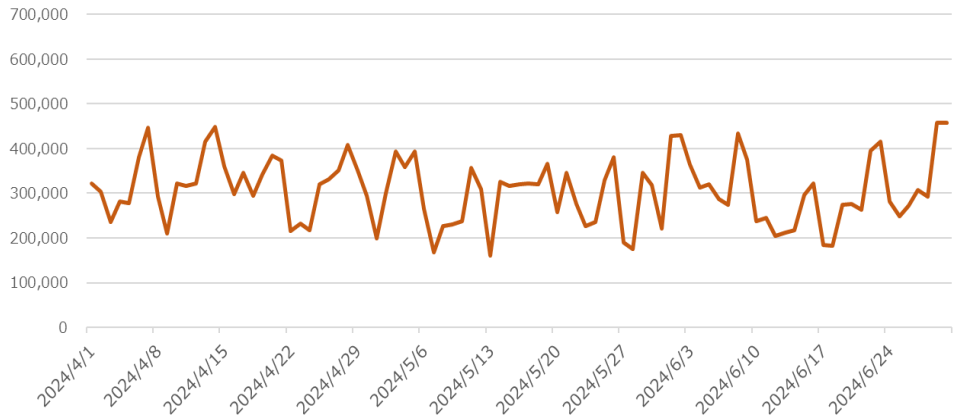
Actual sell volume (MWh)



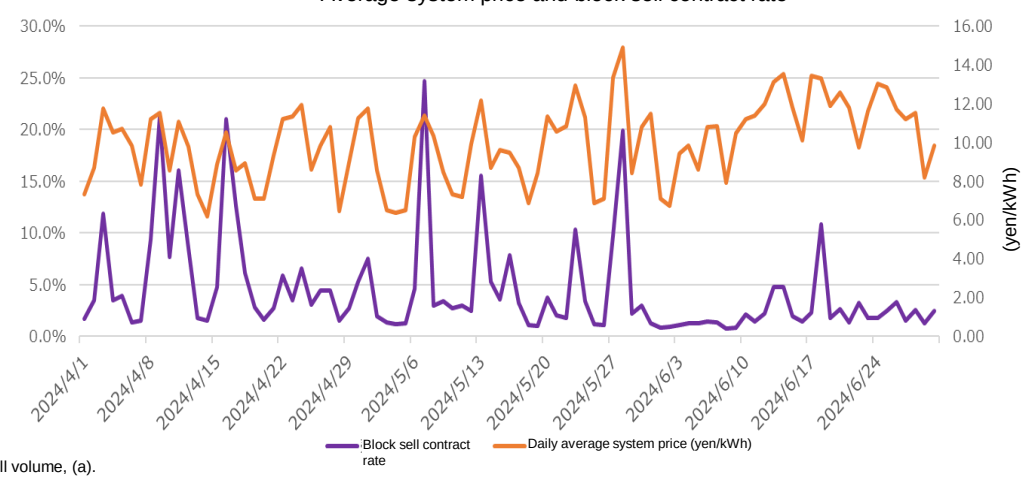
Average system price and block sell bidding ratio



Actual block sell bidding volume (MWh)



Average system price and block sell contract rate



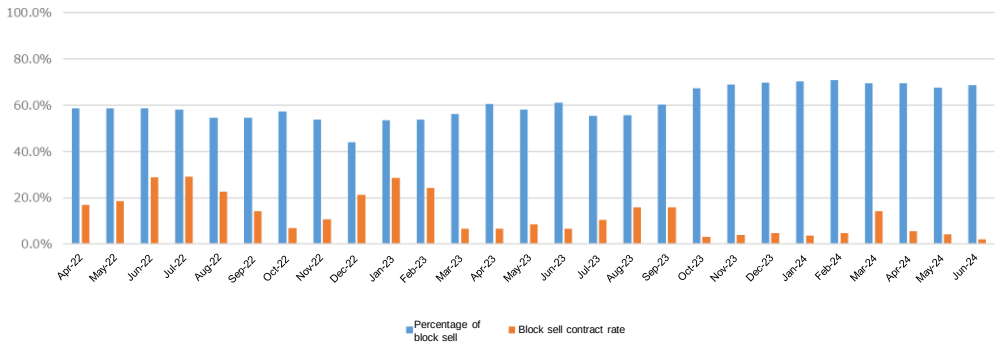
*Calculated based on data provided by general electric utilities (nine companies excluding Okinawa Electric Power) and JERA.
*The block bid ratio is calculated as the ratio of the actual block bidding volume for which no buyer has been determined, (b), to the actual sell volume, (a).
(a) Actual sell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

April to June 2024 period

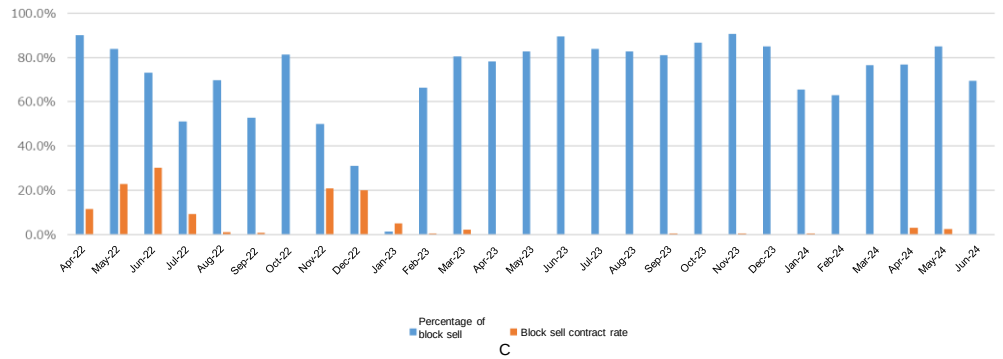
Monthly trends in block sell percentage and contract rate by business operator (1/2)

○ Contract rates declined (especially for electric company D) because as a result of the suspension of gross bidding, block sell bids for supplying some surplus electricity at 0.01 yen (for buying at marginal cost) were changed to supply it at marginal cost, as mentioned earlier.

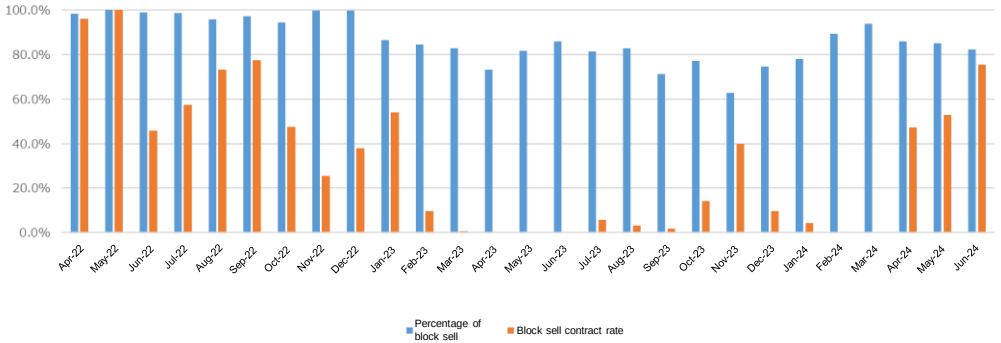
General electric utilities (excluding Okinawa Electric Power) + JERA



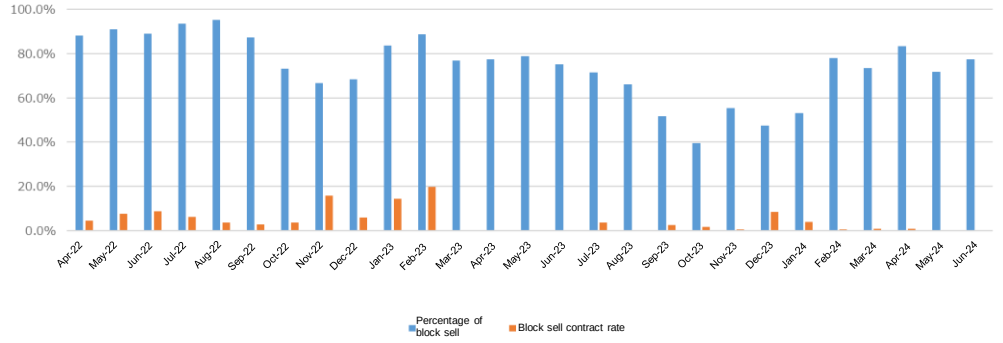
A



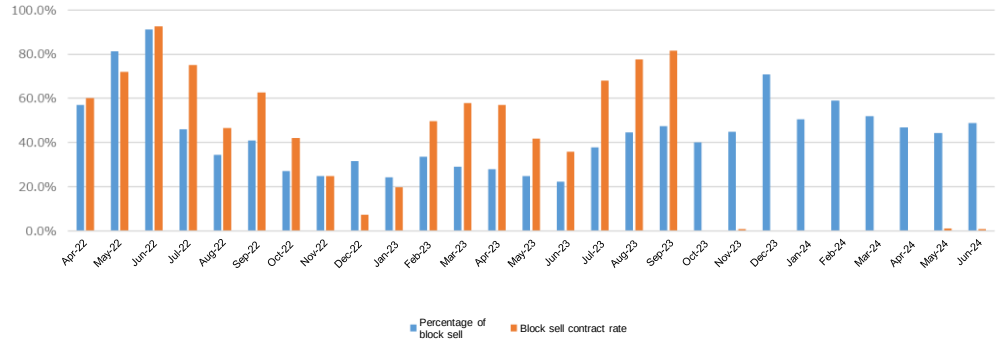
B



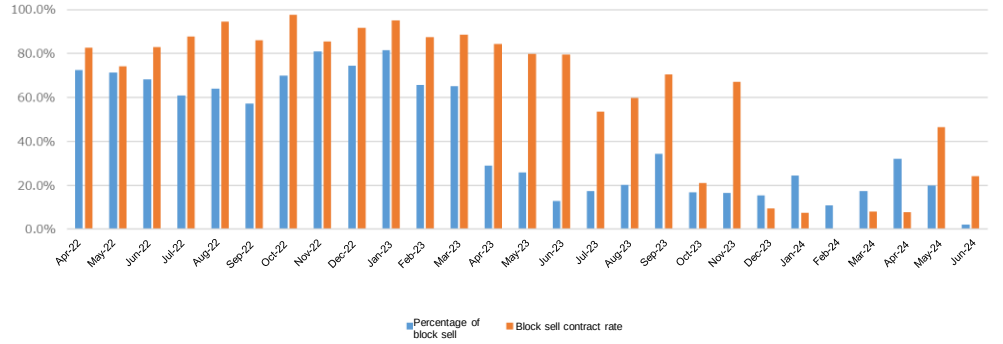
C



D



E

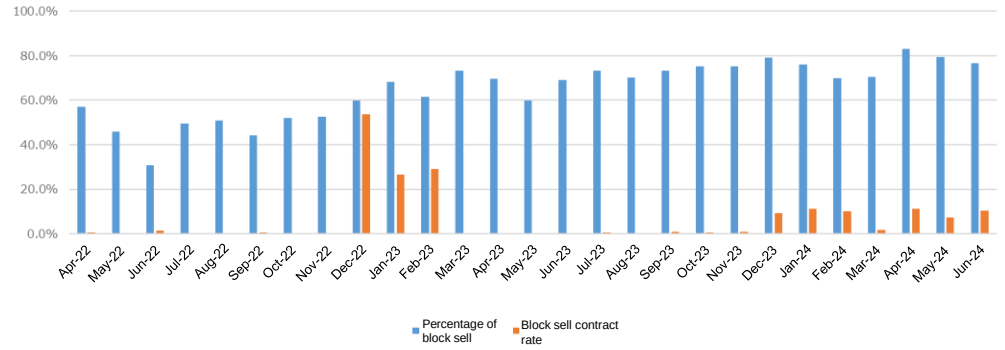


*Calculated based on data provided by general electric utilities (nine companies excluding Okinawa Electric Power) and JERA.

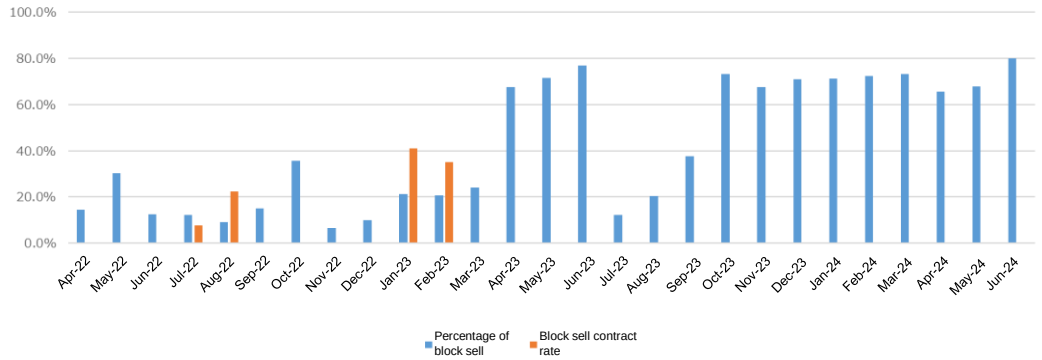
April to June 2024 period

Monthly trends in block sell percentage and contract rate by business operator (2/2)

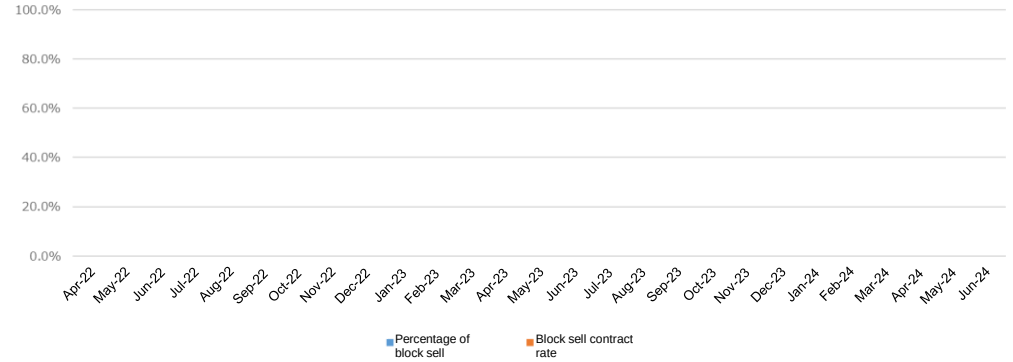
F



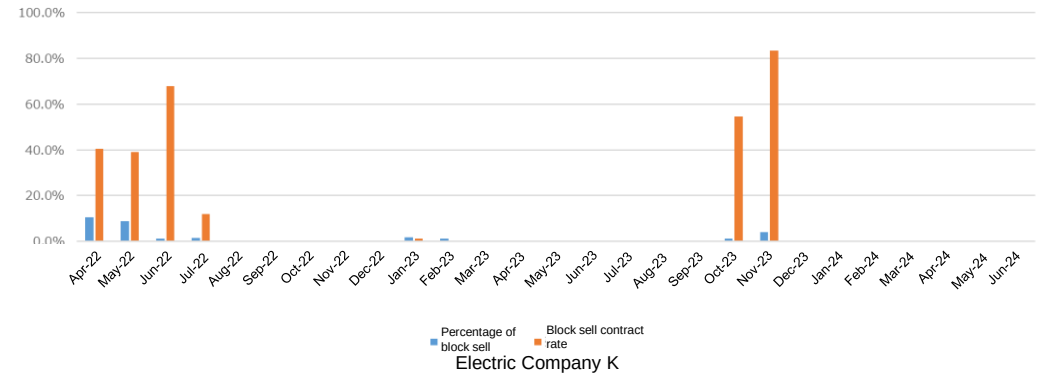
G



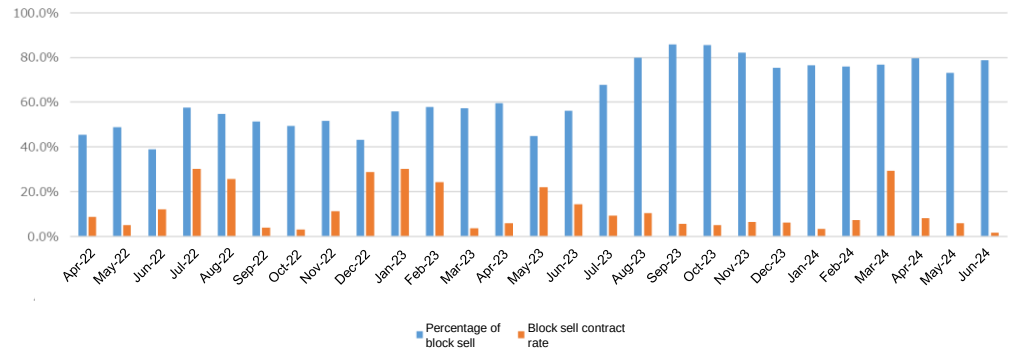
Electric Company H (Note 1)



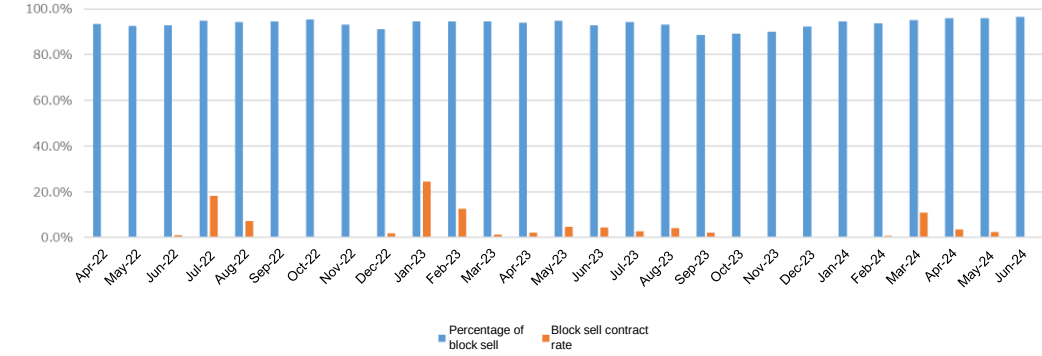
I



J



Electric Company 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 sell bidding.

April to June 2024 period

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

○ To date, approximately 619,000 kW[*4] (approximately 5%) of the 12 million kW[*5] 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 undecided.
Tohoku Electric Power	50,000 kW[*2] already supplied	Further supply of power is undecided.
TEPCO EP	30,000 kW[*1] already supplied	Further supply of power is undecided.
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 undecided.
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 undecided.
Kansai Electric Power	350,000 kW[*2] already supplied	Further supply of power is undecided.
Chugoku Electric Power	18,000 kW[*1] already supplied	Further supply of power is undecided.
Shikoku Electric Power	30,000 kW[*1] already supplied	Further supply of power is undecided.
Kyushu Electric Power	80,000 kW[*1] already supplied	Further supply of power is undecided.
Okinawa Electric Power	10,000 kW[*1] already supplied	Further supply of power is undecided.

Source: Information provided by general electric utilities

*1: Sending end output, *2: Starting output, *3: Annual total power generation amount, *4:For Hokkaido Electric Power, an estimation from the volume already supplied is indicated for convenience sake, *5: Total power output excluding approximately 5 million kW of pumped storage power plant output.

* The data does not include volumes newly supplied to deliver to the base load market.

April to June 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, 1.40 million kW (61%) have been contracted through general competitive bidding. This represents an increase of 0.74 million kW compared to the previous period, which is because municipalities with long-term basic contracts terminated in FY2023 have shifted to general competitive bidding or other options.
- Of the remaining 0.91 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

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 June 30, 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
	1	1,400	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
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	69,111	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		**1,400,171**		

Total number: 28

Total maximum output: 1,400,171 kW

[60.7% of total hydropower output]

Source: Information provided by relevant municipalities

*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.)

*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 to seven from nine 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 to six from eight 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 after the termination 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.

April to June 2024 period

Moves toward canceling long-term contracts for power sources owned by local governments

○ 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 April 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 April 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 supply.
- 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 termination of the basic contract.

■ 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

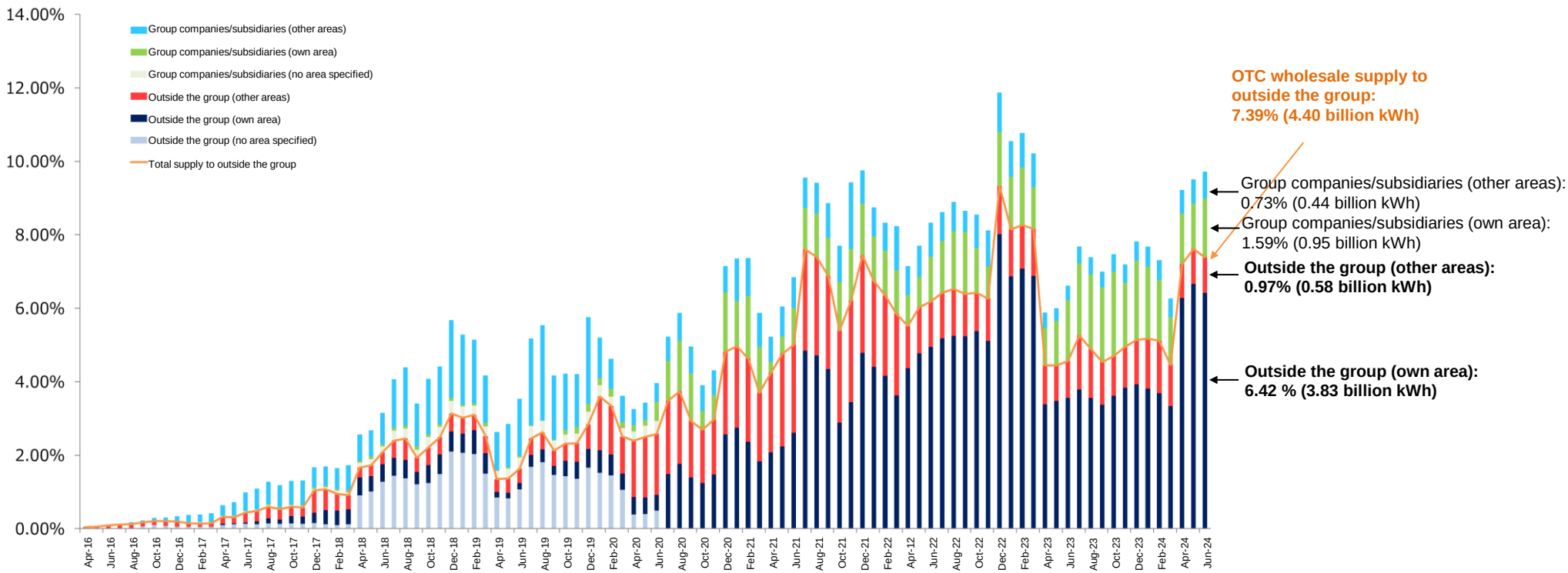
Source: Information provided by general electric utilities and municipalities

April to June 2024 period

Status of OTC transactions by general electric utilities

- ○ As of June 2024, the ratio of supply from general electric utilities through OTC transactions to total demand was 9.72% (5.789 billion kWh, 1.5 times that of the same period last year).
- ○ OTC wholesale supplies to external parties (7.39%, 4.40 billion kWh) accounted for 40.7% of the demand for electricity from new entrants (10.81 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.

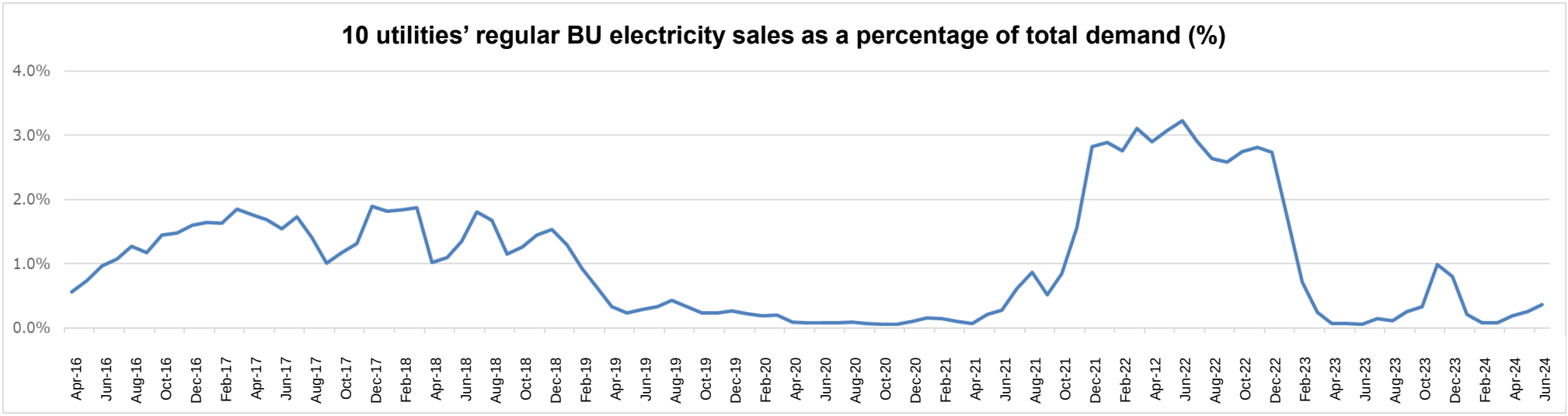
* Notes on the "area": Until June 2020, the companies' responses were mixed, with some answering about the "(1) power receiving area" and others about the "(2) usage area." Most responses answering about "(2) usage area" reported "no area specified."
To understand the situation more accurately, we notified 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.

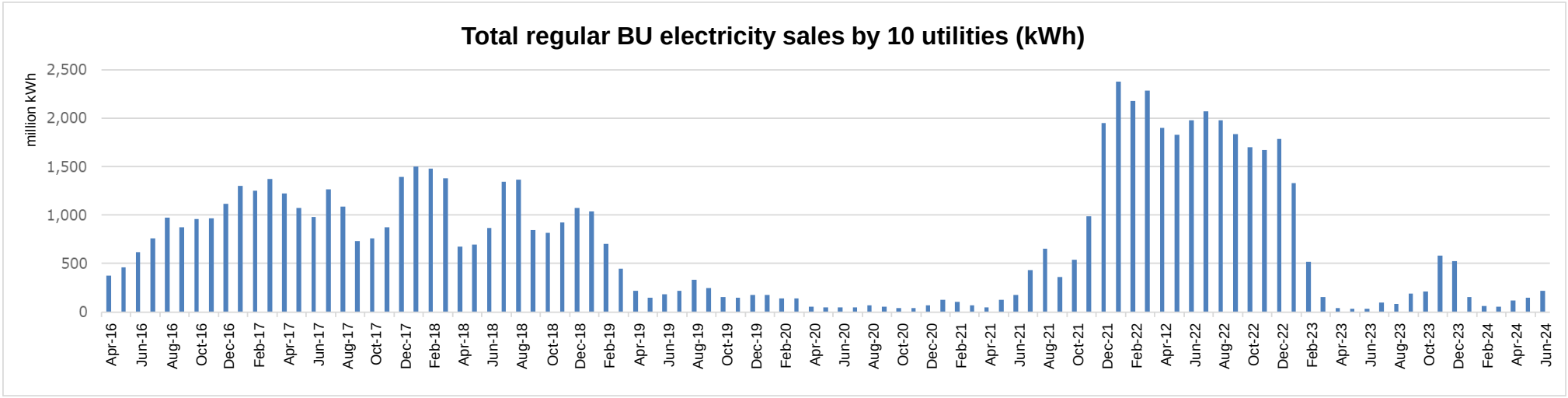
* For JERA, the calculation excluded the wholesale portion of TEPCO Energy Partner and Chubu Electric Power Miraiz.

April to June 2024 period

Trends in regular BU electricity sales

○ As of June 2024, the ratio of regular BU electricity sales to total demand was 0.4% (218 million kWh).





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

Electricity market monitoring report

[Quarterly report]

- ◆ Wholesale electricity market
  - ● JEPX 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 sell 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
  - ● JEPX 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

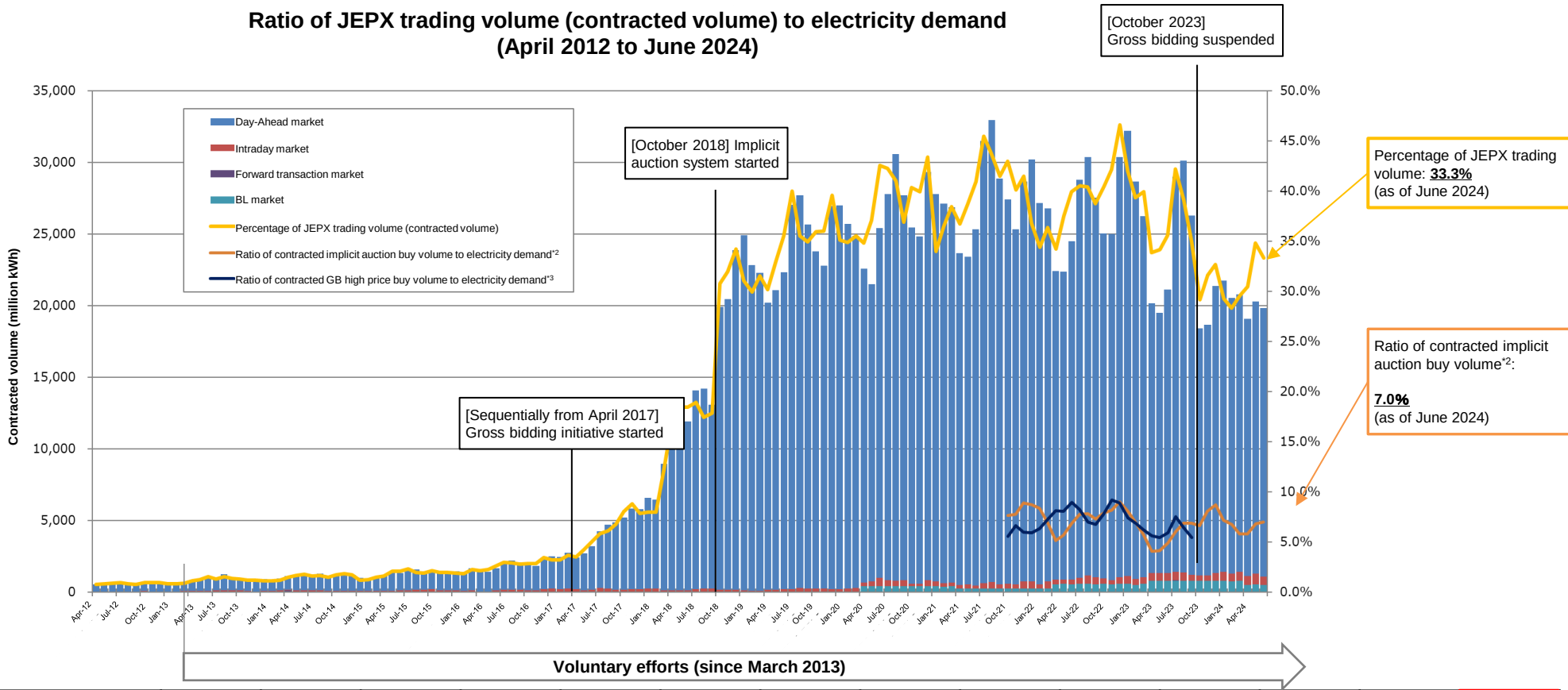
- ◆ Gas market
  - ● Status of OTC transactions of general gas utilities
  - ● Usage status of Start-up wholesale measure

Medium- to long-term trends

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

- ○ As of June 2024, the ratio of JEPX trading volume (contracted volume[*1]) to Japan's electricity demand was 33.3%.
- ○ The ratio of contracted implicit auction buy volume[*2] to electricity demand was 7.0%.

Ratio of JEPX trading volume (contracted volume) to electricity demand (April 2012 to June 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	2024/06
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%	**33.3%**
(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%	**31.5%**
(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%	**0.9%**
(Percentage of BL market)	-	-	-	-	-	-	-	-	0.6%	0.4%	0.8%	1.3%	0.8%	**0.8%**

*1 Total of contracted buy volume of each business operator and each frame (including contracted buy volume when the same business operator has contracted for both buying and selling in the same frame, such as through its own implicit auctions).

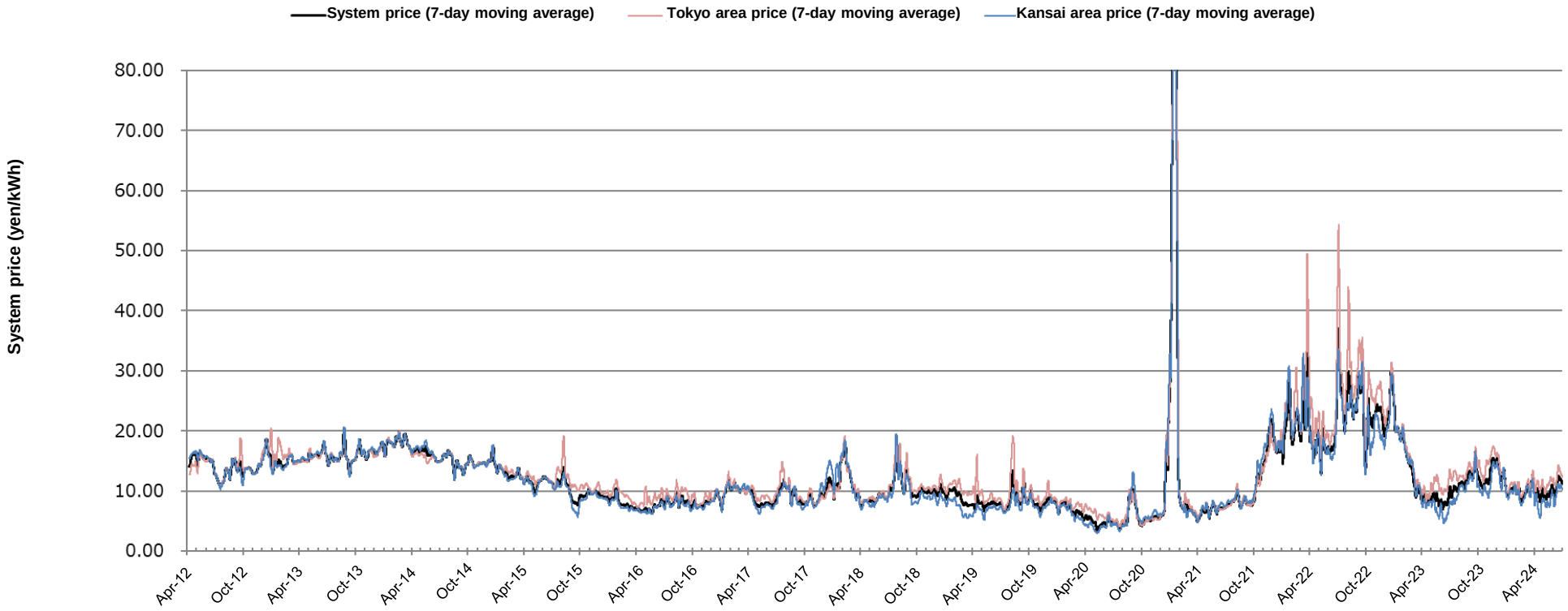
*2 The contracted implicit auction buy volume is the sum of the contracted volumes of accounts that are determined to be implicit auctions, based on their attributes in the JEPX user account data.

Price trends in the day-ahead market

○ The system price had increased since the autumn of 2021 and generally hovered above the 20-yen level until it dropped to around 8 yen in June 2023. The price stayed around 10 yen in the recent April to June period, with a quarterly average at 10.0 yen/kWh.

○ The price difference between the east and west markets, which averaged around 2.5 yen in FY2023, was around 2.9 yen in the recent April to June period.

Day-Ahead market: Trends in system price (April 1, 2012 to June 30, 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	10.0
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	11.5
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	8.6

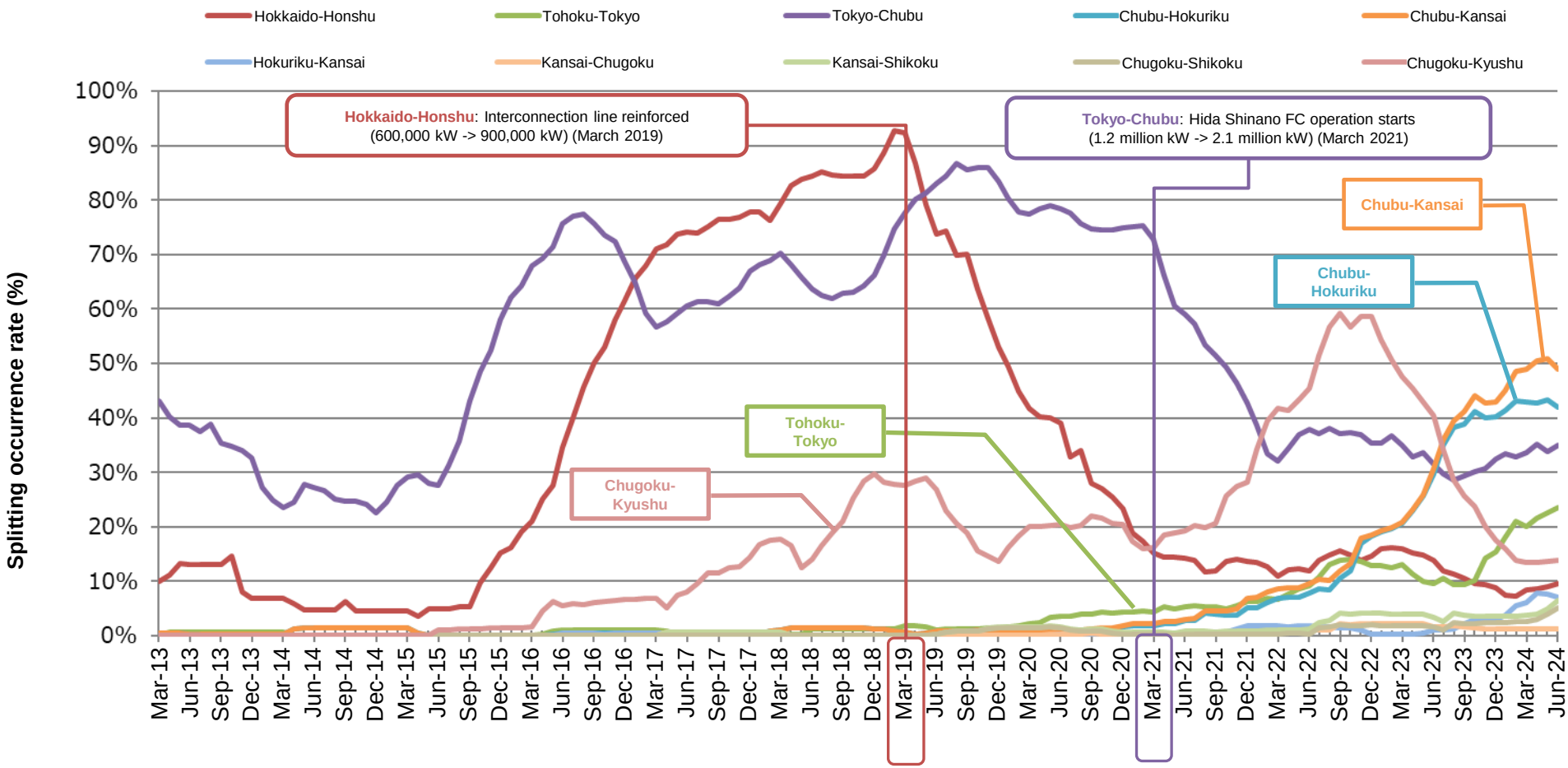
Medium- to long-term trends

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. Tohoku-Tokyo also indicated an upward trend.
- ○ For Hokkaido-Honshu and Chugoku-Kyushu, the market splitting occurrence rate has declined, standing around 10% recently.

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

(March 2013 to June 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.

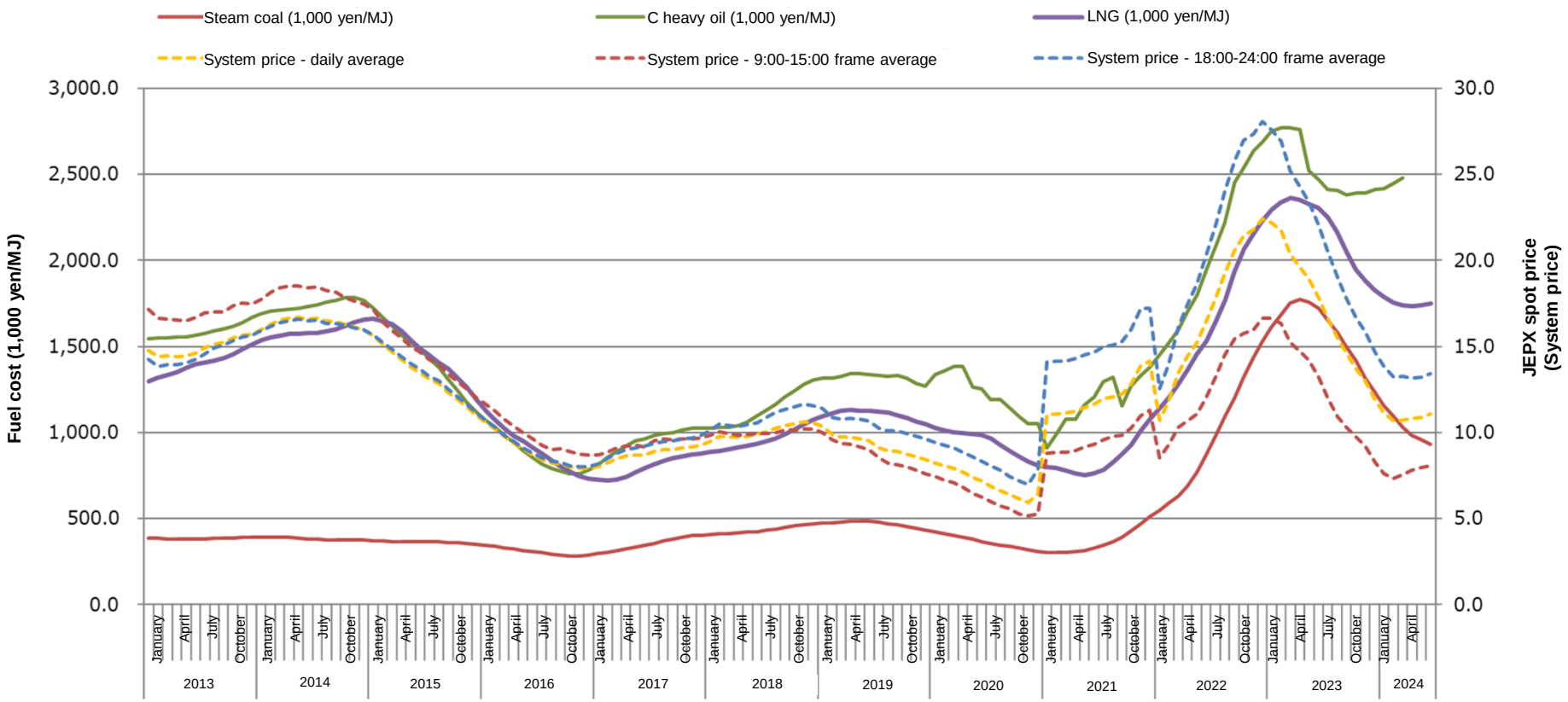
* Spot transaction in the Hokkaido area was suspended from September 7 to 26, 2018, due to the effects of the 2018 Hokkaido Eastern Iburi Earthquake. Calculations excluded the period of suspension.

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 C heavy oil prices have become less aligned with spot prices since September 2023.

Trends in JEPX spot price and fuel cost (12-month moving average)

(January 2013 to June 2024)



Source: Prepared by the Electricity and Gas Market Surveillance Commission based on the Trade Statistics of Japan, Ministry of Finance (as of May 20, 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.

* C heavy oil, whose imports were zero in April to June 2024, is not plotted in the graph for this period.

Electricity market monitoring report

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  - Trends in contracted volume
  - Trends in contracted price
  - Trends in the market splitting occurrence rate
- ● JEPX spot price and fuel cost

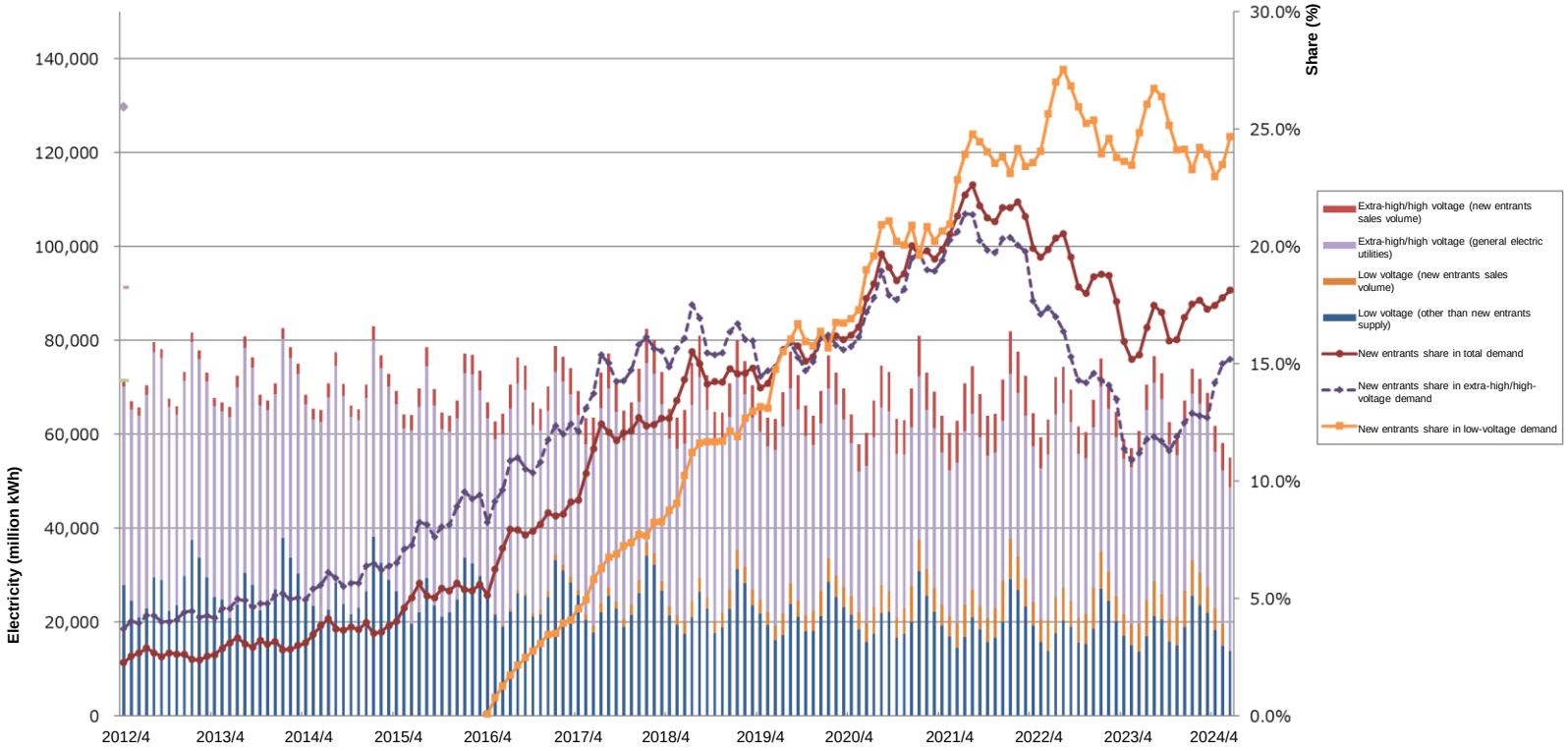
◆ Retail market
- ● Trends in new entrants share by area
- ● Market share by area
- ● Trends in electricity unit price
- ● Trends in switching
- ● Average unit price of low-voltage rates

◆ 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 based on the electricity sales volume has been on the rise recently.
- As of June 2024, the share of new entrants in total demand was **approximately 18.1%**, that in extra-high/high-voltage demand was approximately 15.2%, and that in low-voltage demand was approximately 24.7%.

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



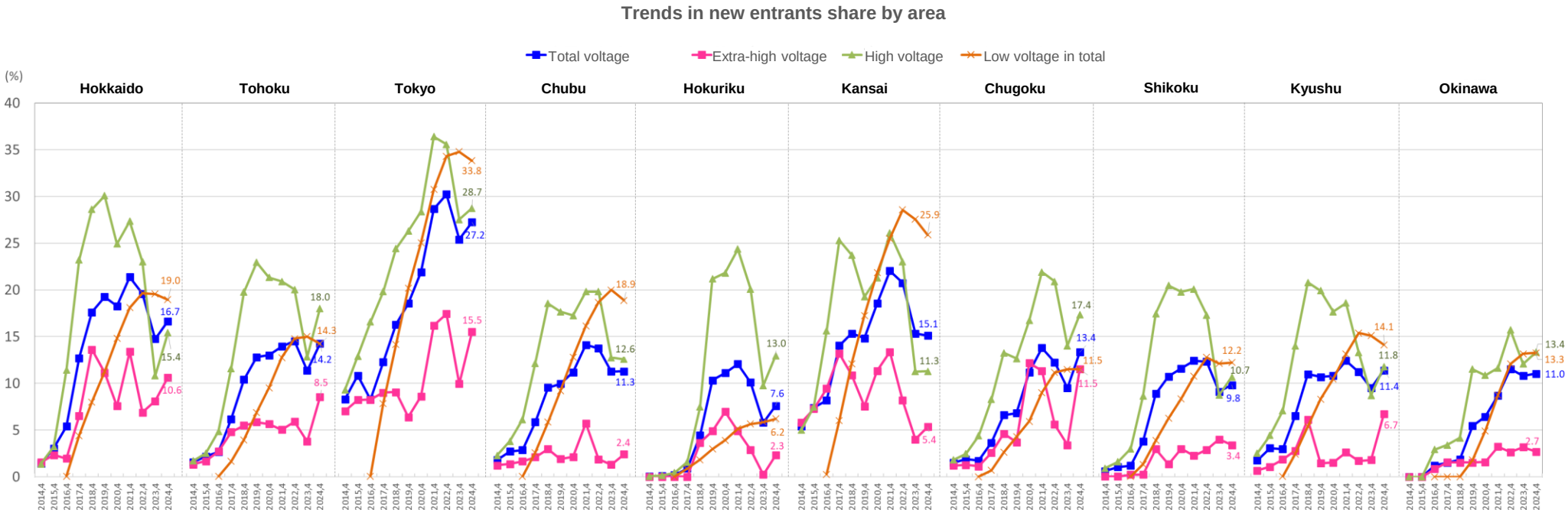
*"New entrants" refer to electricity retailers other than general electric utilities. Subsidiaries of general electric utilities are also included in new entrants.
(Source: Monthly electricity generation/reception report, Electricity Trading Report)

	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	**2024/6**
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%	**18.1%**
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%	**15.2%**
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%	**24.7%**

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, an upward trend has been observed recently in areas other than Chubu and Kansai. The increase is particularly remarkable in high voltage. Tokyo is one of the areas where new entrants hold a high share of electricity sales.



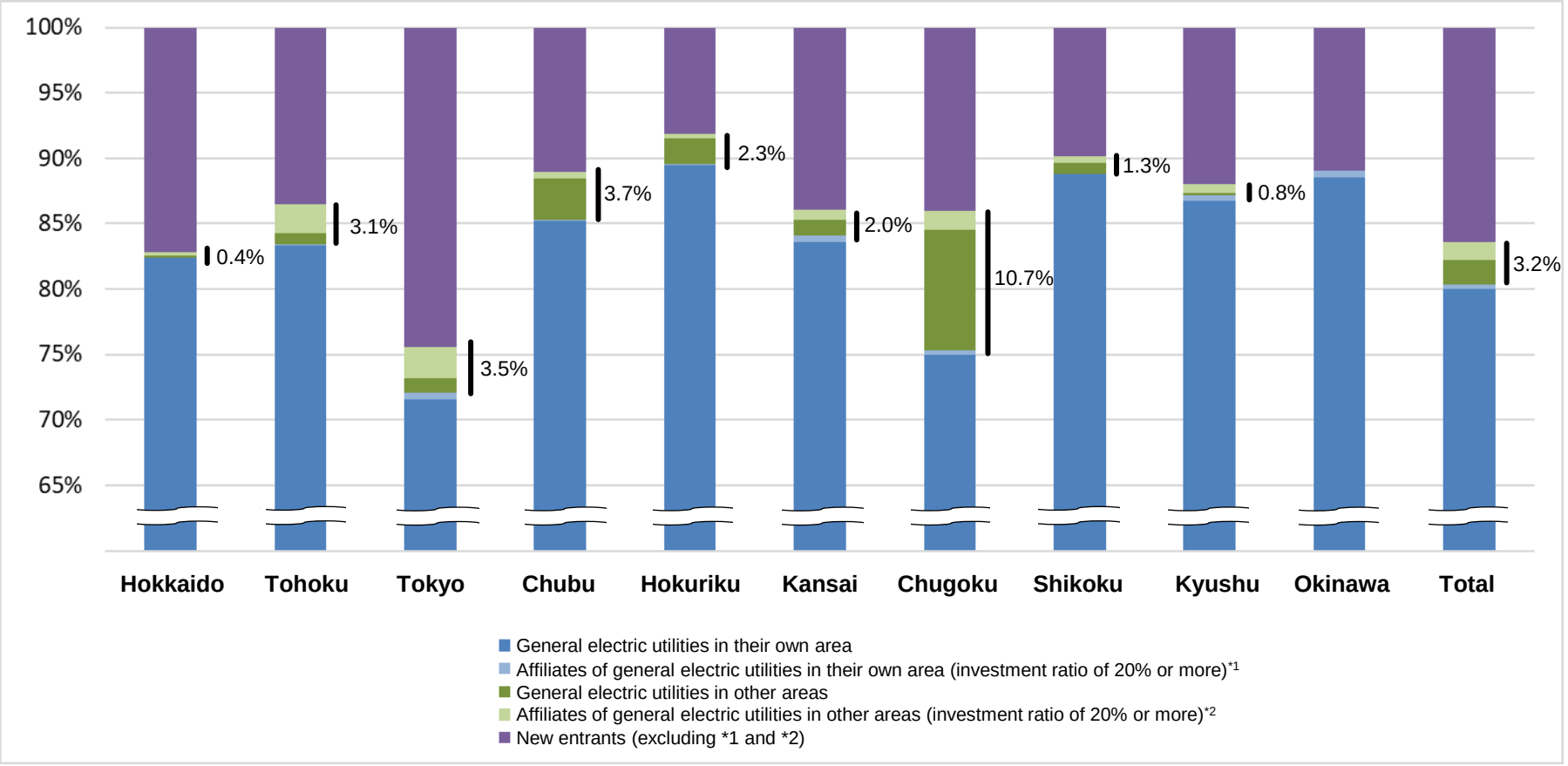
*"New entrants" refer to electricity retailers other than general electric utilities. Subsidiaries of general electric utilities are also included in new entrants.

(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 3.2% of the total (3.5% as of June 2023). Their share of supply decreased in all areas compared to that in June 2023. An analysis by area indicates that supplies to other areas are carried out in all areas except Okinawa.

Market share by area (June 2024)



(Source) Electricity Trading Report

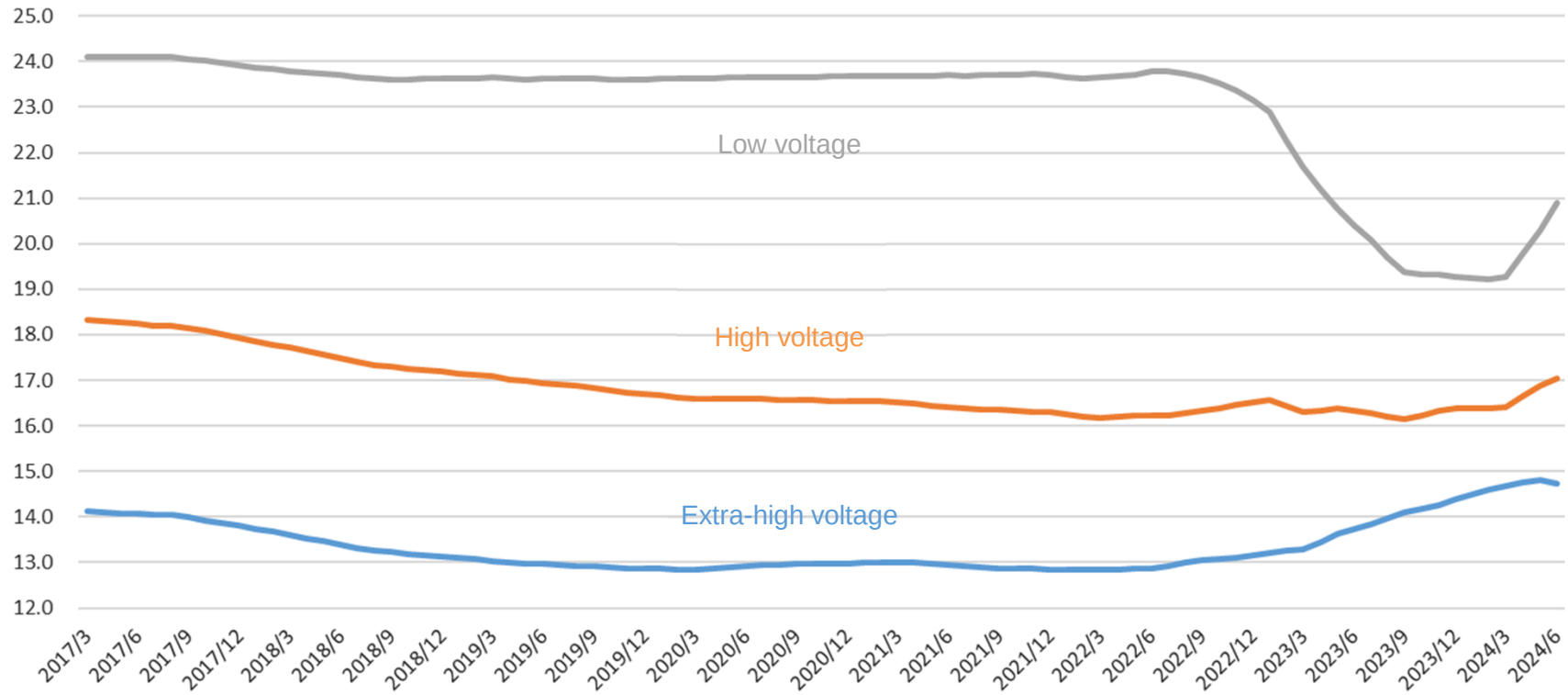
(Note) Based on electricity sales volume

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) has recently seen a significant increase for low voltage due to the impact of the drastic change mitigation project and other subsidy measures.

Trends in electricity unit price (national average)

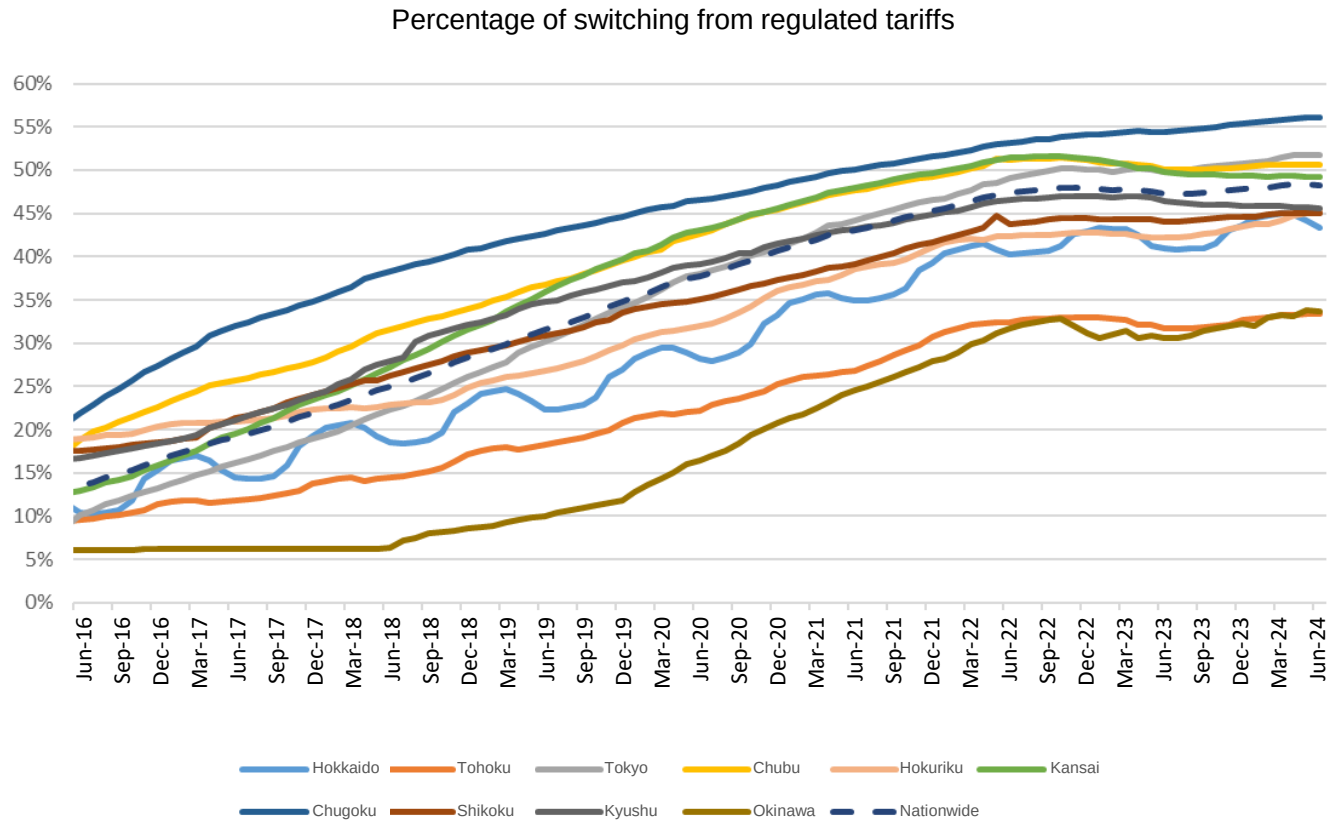


(Notes)
• 12-month moving average
• Excluding fuel cost adjustment unit price, FIT levy, and consumption tax
(For exclusion of the fuel cost adjustment unit price [yen/kWh], the meter-rate figures published by the general electricity utility in each area are used for all electricity retailers.)
(Source)
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. However, no major fluctuations have been seen recently. As of June 2024, the nationwide switching rate was 48.3%.



	June 2024
Hokkaido	43.3%
Tohoku	33.3%
Tokyo	51.8%
Chubu	50.5%
Hokuriku	45.4%
Kansai	49.2%
Chugoku	56.1%
Shikoku	45.0%
Kyushu	45.6%
Okinawa	33.7%
Nationwide	48.3%

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

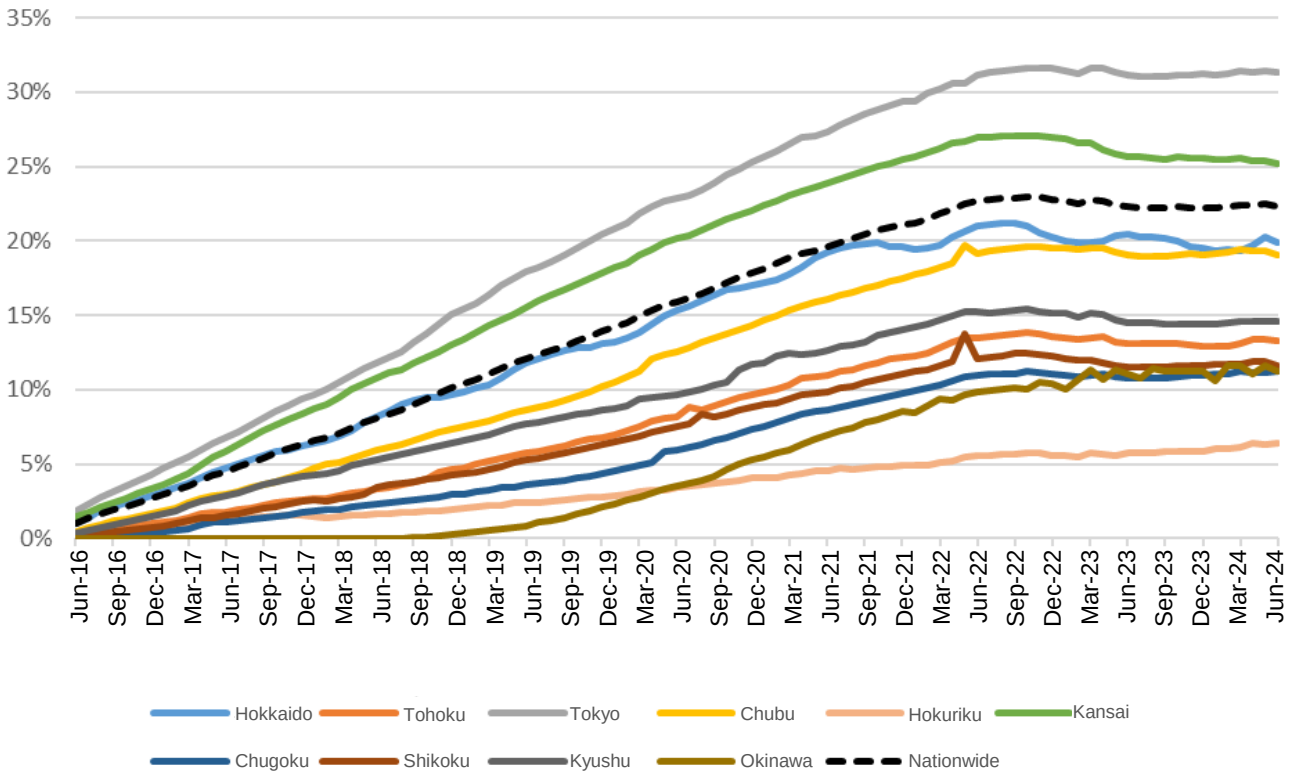
(Source) Monthly electricity generation/reception report, Electricity Trading Report
(Note) Low voltage: Calculations are based on the number of contracts.

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) has indicated no major fluctuations recently. As of June 2024, the nationwide switching rate was 22.4%.

Percentage of switching from general electric utilities in each area



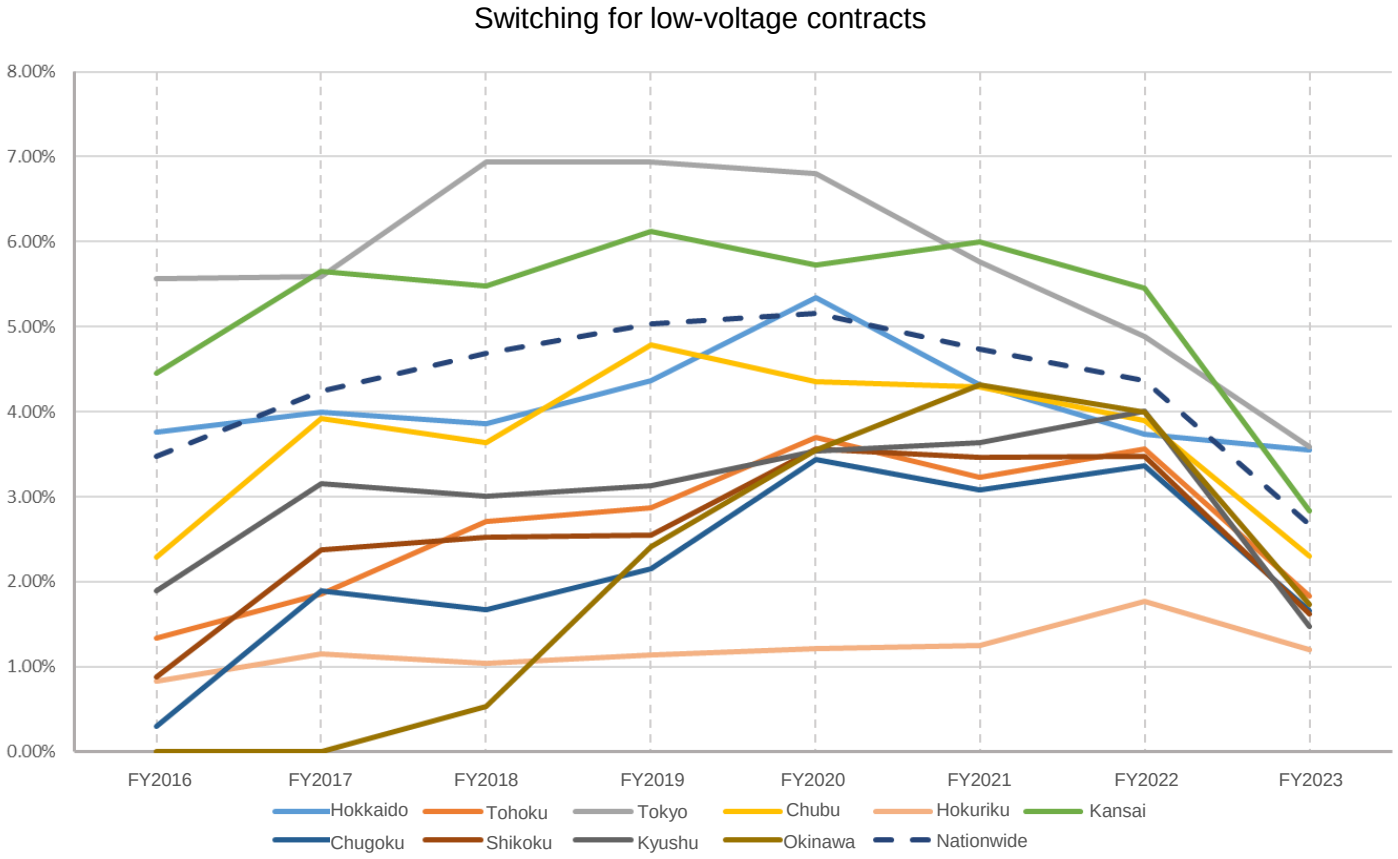
	June 2024
Hokkaido	19.9%
Tohoku	13.3%
Tokyo	31.3%
Chubu	19.1%
Hokuriku	6.4%
Kansai	25.2%
Chugoku	11.2%
Shikoku	11.7%
Kyushu	14.6%
Okinawa	11.3%
Nationwide	22.4%

(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).

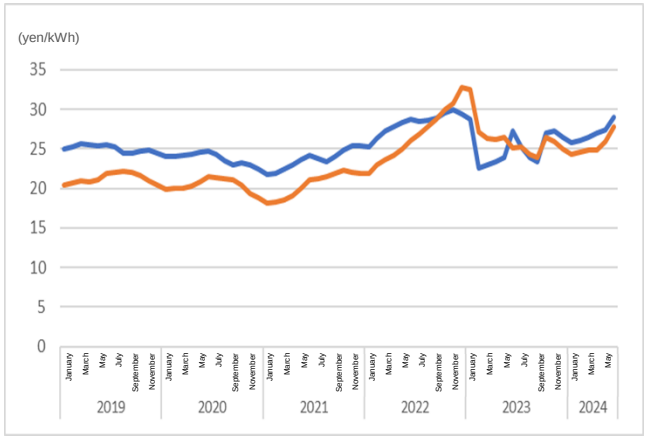
(Note 2) The data on switching is based on the sum of the number of contracts that have been switched in different combinations, such as from general electric utilities to new entrants, etc., from new entrants, etc. to general electric utilities, and from new entrants, etc. to new entrants, etc.

Medium- to long-term trends

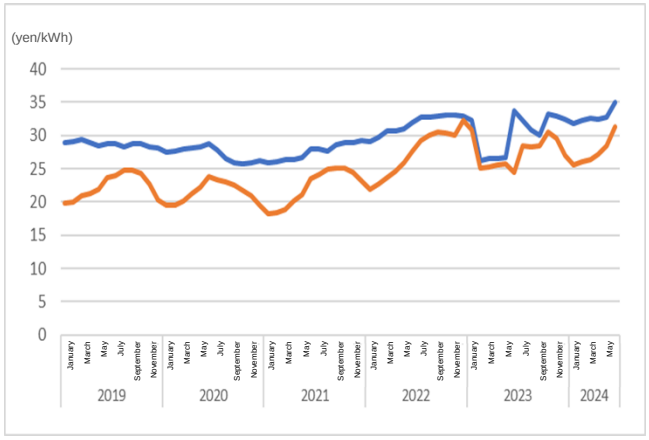
Trends in average unit price of low-voltage rates (by area) (1)

○ Trends in regulated tariffs and voluntary rates indicate that the overall situation continues where regulated tariff levels exceed voluntary rates, since the regulated tariffs were revised upward in 2023.

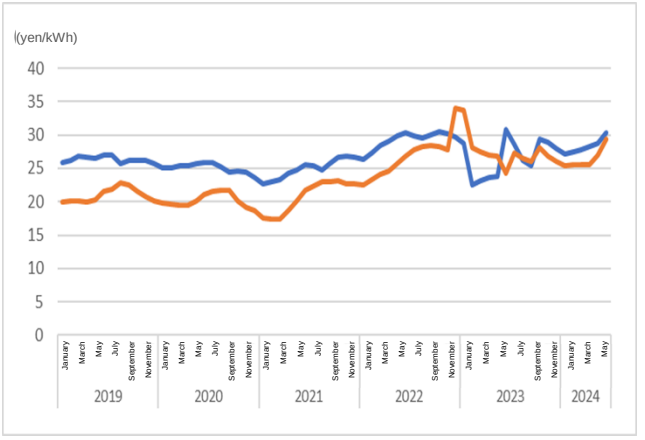
All areas



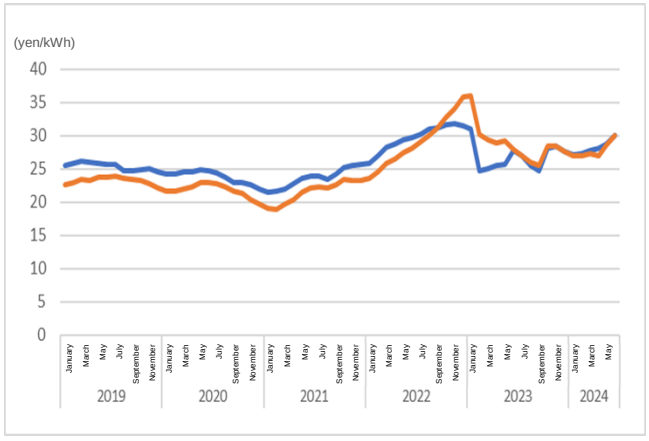
Hokkaido area



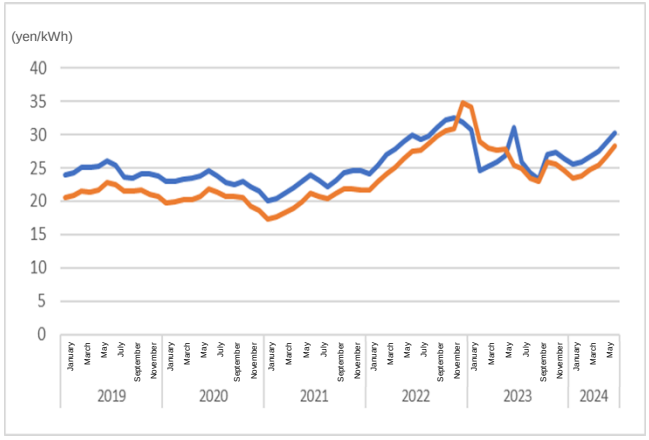
Tohoku area



Tokyo area



Chubu area

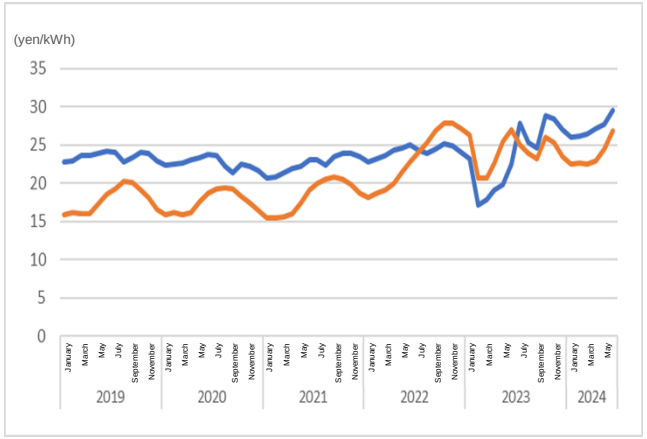


Source: Electricity Trading Report from April 2019 to June 2024 Note: Nationwide data does not include the Okinawa area.

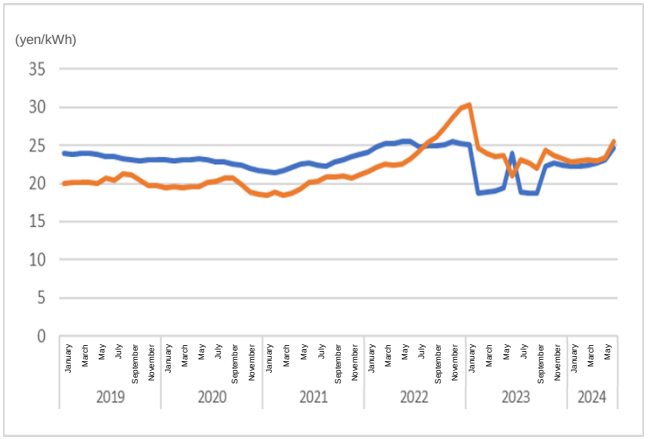
Medium- to long-term trends

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

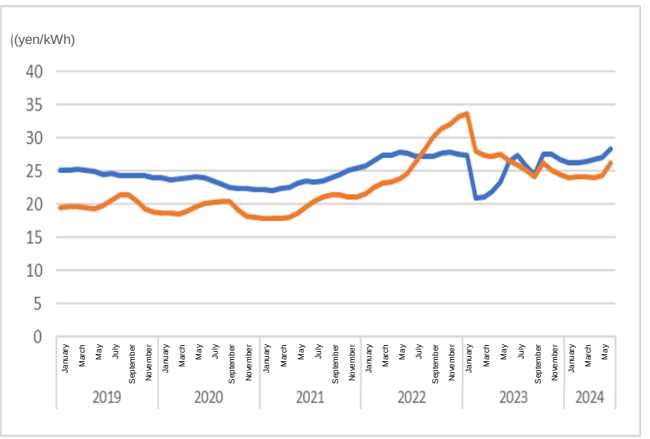
Hokuriku area



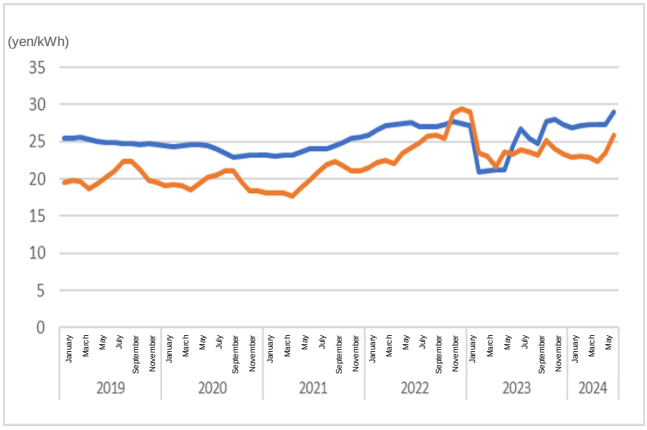
Kansai area



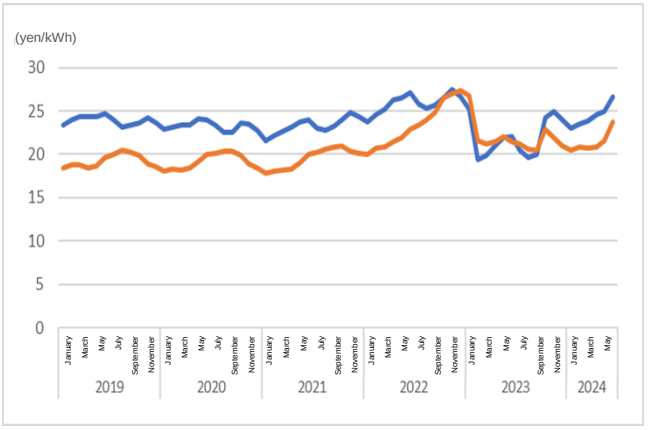
Chugoku area



Shikoku area



Kyushu area

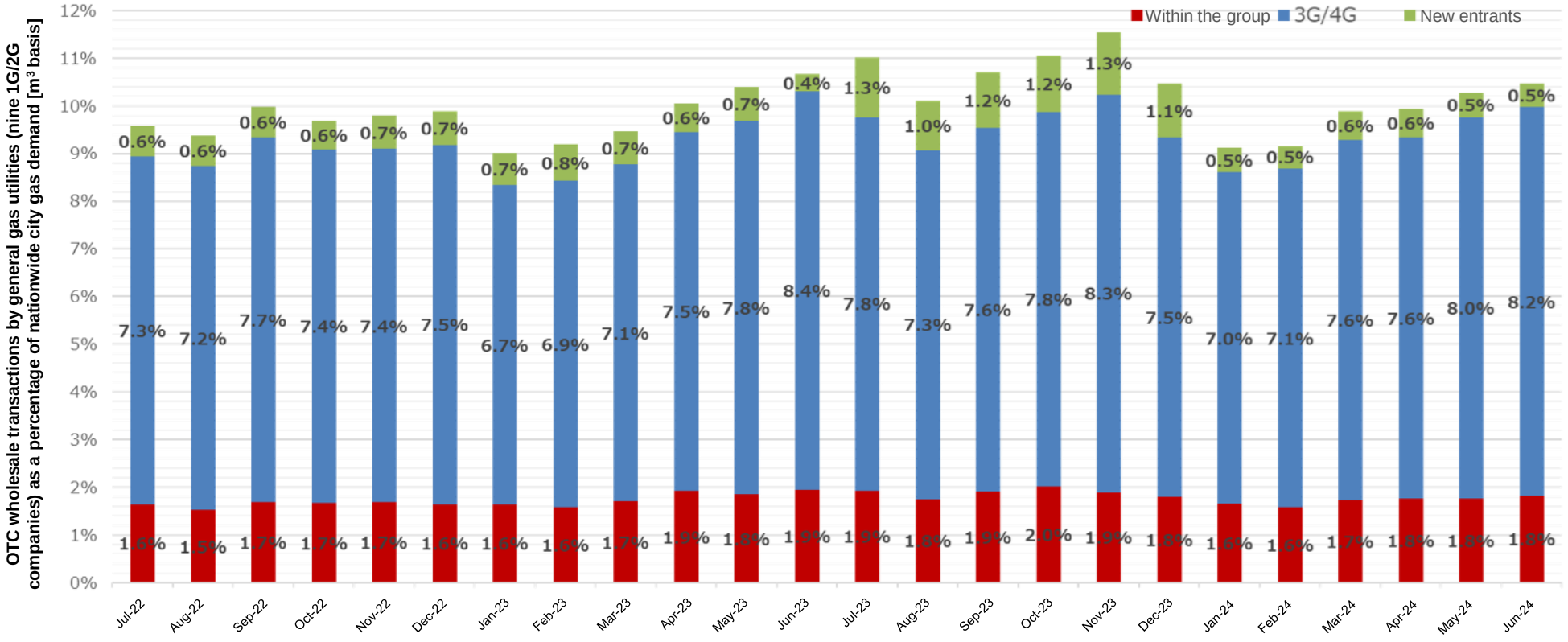


Source: Electricity Trading Report from April 2019 to June 2024

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 July 2022).
- ○ As of the end of June 2024, the ratio of OTC wholesale supply of 1G/2G[*2] to the retail supply of city gas nationwide[*3] was approximately 10%.
- ○ The ratio of OTC wholesale supply to new entrants (companies that are not general gas utilities) was approximately 0.5%. (The share of retail sales volume by new entrants was approximately 18.3% [as of the end of June 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 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 m^3 and do not take into account calorific value adjustments, etc.
*3 Based on 45 MJ.
*4 3G/4G companies refer to general gas utilities that primarily receive wholesale gas supply from other business operators and provide retail supply through its 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 June 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 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 June 2024).

Wholesaler name	No. of inquiries	Contracts concluded	Contracts under negotiation	Contract negotiations completed*
Tokyo Gas	23	4	1	18
Osaka Gas	13	4	3	6
Toho Gas	12	2	2	8
Hokkaido Gas	17	2	2	13
Shizuoka Gas	18	6	4	8
Saibu Gas	16	4	3	9
Hiroshima Gas	6	1	0	5
Gas Bureau, City of Sendai	9	0	2	7
Nippon Gas	5	1	0	4
Total	**119**	**24**	**17**	**78**

* 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.

Electricity market monitoring

○ So far, the Working Group Meeting and Specialized Meeting for Fee Examination have conducted monitoring reports as shown below.

- 1st monitoring: August 2, 2013, 1st Working Group Meeting for Fee Examination (January-mid-July 2013 report)
- 2nd monitoring: December 9, 2013 4th Working Group Meeting for Fee Examination (Mid-July-mid-November 2013 report)
- 3rd monitoring: June 23, 2014 6th Working Group Meeting for Fee Examination (Mid-November 2013-March 2014 report)
- 4th monitoring: October 30, 2014 9th Working Group Meeting for Fee Examination (April-August 2014 report)
- 5th monitoring: June 25, 2015 13th Working Group Meeting for Fee Examination (September 2014-March 2015 report)
- 6th Monitoring: January 22, 2016 4th Specialized Meeting for Fee Examination (April-September 2015 report)
- 7th Monitoring: June 17, 2016 8th Specialized Meeting for Fee Examination (October 2015-March 2016 report)
- 8th Monitoring: September 27, 2016 11th Specialized Meeting for Fee Examination (April-June 2016 report)
- 9th Monitoring: December 19, 2016, 14th Specialized Meeting for Fee Examination (July-September 2016 report)
- 10th Monitoring: March 31, 2017 16th Specialized Meeting for Fee Examination (October-December 2016 report)
- 11th Monitoring: June 27, 2017 19th Specialized Meeting for Fee Examination (January-March 2017 report)
- 12th Monitoring: September 29, 2017 22nd Specialized Meeting for Fee Examination (April-June 2017 report)
- 13th Monitoring: December 26, 2017, 25th Specialized Meeting for Fee Examination (July-September 2017 report)
- 14th Monitoring: March 29, 2018 28th Specialized Meeting for Fee Examination (October-December 2017 report)
- 15th Monitoring: June 19, 2018 31st Specialized Meeting for Fee Examination (January-March 2018 report)
- 16th Monitoring: September 20, 2018 33rd Specialized Meeting for Fee Examination (April-June 2018 report)
- 17th Monitoring: December 17, 2018, 35th Specialized Meeting for Fee Examination (July-September 2018 report)
- 18th Monitoring: April 25, 2019 37th Specialized Meeting for Fee Examination (October-December 2018 report)
- 19th Monitoring: June 25, 2019 39th Specialized Meeting for Fee Examination (January-March 2019 report)
- 20th Monitoring: September 13, 2019 41st Specialized Meeting for Fee Examination (April-June 2019 report)
- 21st Monitoring: December 17, 2019, 44th Specialized Meeting for Fee Examination (July-September 2019 report)
- 22nd Monitoring: March 31, 2020 46th Specialized Meeting for Fee Examination (October-December 2019 report)
- 23rd Monitoring: June 30, 2020 48th Specialized Meeting for Fee Examination (January-March 2020 report)
- 24th Monitoring: September 8, 2020 50th Specialized Meeting for Fee Examination (April-June 2020 report)
- 25th Monitoring: December 15, 2020, 53rd Specialized Meeting for Fee Examination (July-September 2020 report)
- 26th Monitoring: April 16, 2021 59th Specialized Meeting for Fee Examination (October-December 2020 report)
- 27th Monitoring: June 29, 2021 62nd Specialized Meeting for Fee Examination (January-March 2021 report)
- 28th Monitoring: October 1, 2021 65th Specialized Meeting for Fee Examination (April-June 2021 report)
- 29th Monitoring: December 21, 2021, 68th Specialized Meeting for Fee Examination (July-September 2021 report)
- 30th Monitoring: March 24, 2022 71st Specialized Meeting for Fee Examination (October-December 2021 report)
- 31st Monitoring: June 23, 2022 74th Specialized Meeting for Fee Examination (January-March 2022 report)
- 32nd Monitoring: September 26, 2022 77th Specialized Meeting for Fee Examination (April-June 2022 report)
- 33rd Monitoring: December 22, 2022, 80th Specialized Meeting for Fee Examination (July-September 2022 report)
- 34th Monitoring: March 27, 2023 83rd Specialized Meeting for Fee Examination (October-December 2022 report)
- 35th Monitoring: June 27, 2023 86th Specialized Meeting for Fee Examination (January-March 2023 report)
- 36th Monitoring: September 29, 2023 89th Specialized Meeting for Fee Examination (April-June 2023 report)
- 37th Monitoring: December 26, 2023 92th Specialized Meeting for Fee Examination (July-September 2023 report)
- 38th Monitoring: March 28, 2024 95th Specialized Meeting for Fee Examination (October-December 2023 report)
- 39th Monitoring: June 25, 2024 95th Specialized Meeting for Fee Examination (January-March 2024 report)

○ This time, we conducted a monitoring report for the April to June period of 2024. We will continue to monitor the electricity market.