

Korean Monthly Market Summary April 2025

Published May 2025



I. Summary

II. Wholesale market

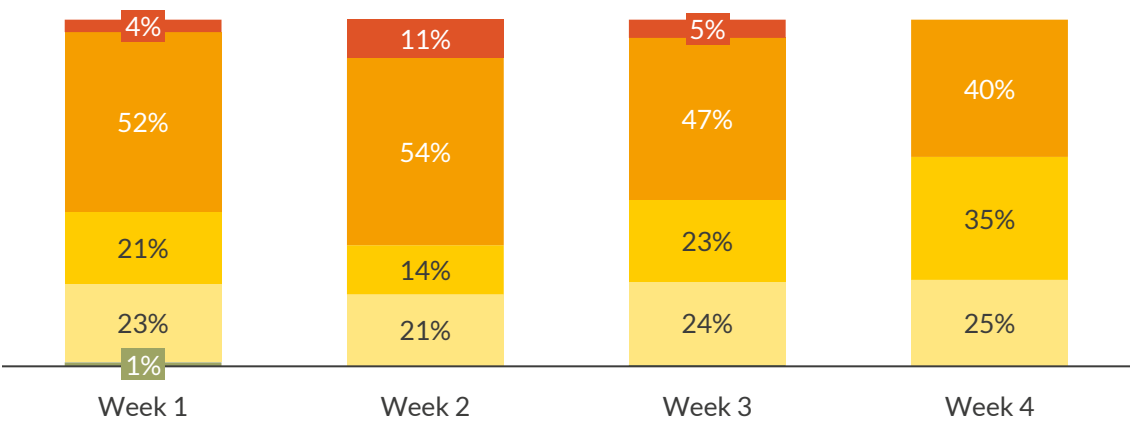
1. Wholesale prices
2. Generation mix

III. REC market

IV. Curtailment

April 2025 Korean wholesale market monthly snapshot

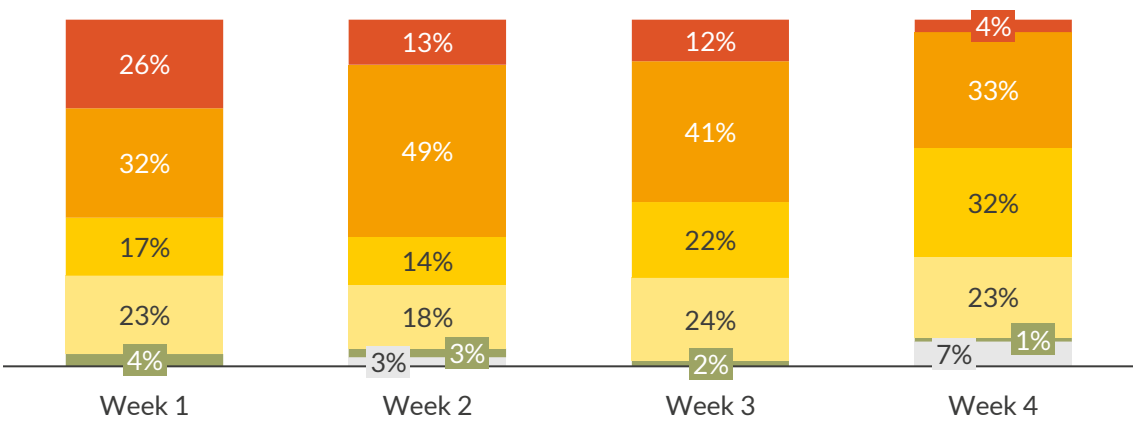
SMP(System Marginal Price) distribution - Mainland



Monthly average SMP = ~ ₩123k/MWh

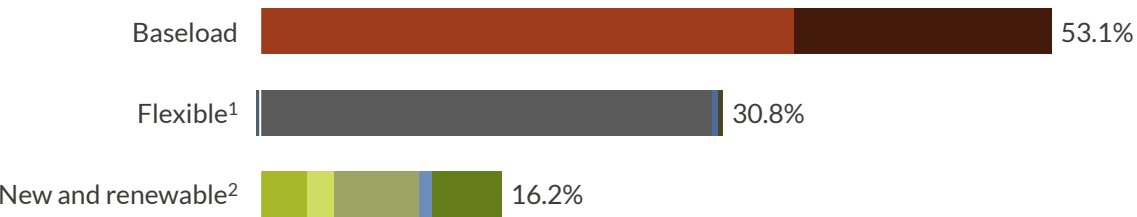
<0 0-50 50-100 100-125 125-150 >150

SMP(System Marginal Price) distribution - Jeju



Monthly average SMP = ~ ₩118k/MWh

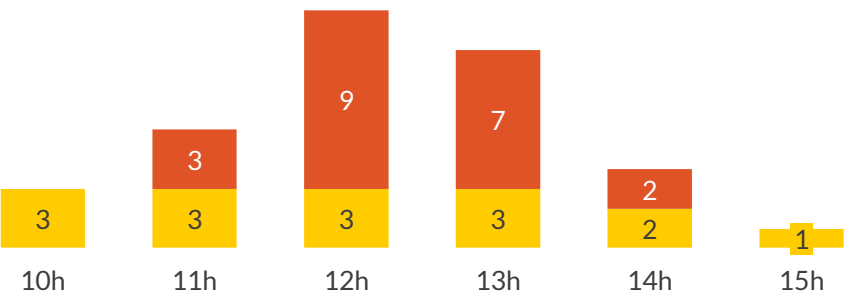
Generation mix - Nationwide



Total scheduled dispatch = ~44.4 TWh

Nuclear Coal Gas Solar (Market traded) Solar BTM (Estimated) Solar PPA (Estimated) Wind Hydro Pumped storage Other³ Oil

Time-of-day frequency of curtailment – Mainland⁴



36 trading intervals with curtailment

Both Grid curtailment only Economic curtailment only

1) Flexible technologies include gas, oil, hydro, and pumped storage; 2) In Korea, "new" and "renewable" energy are grouped into a single category, with "new energy" encompassing technologies such as hydrogen, fuel cells, and IGCC (Integrated Gasification Combined Cycle); 3) Other includes biomass, IGCC, fuel-cell, tidal etc; 4) Curtailment instances for non-centralized assets in Mainland only. Non-centralized assets include those with a capacity of 20 MW or less, or renewable assets excluding hydro. The total capacity of non-centralized assets in April 2025 is 34 GW.

Agenda

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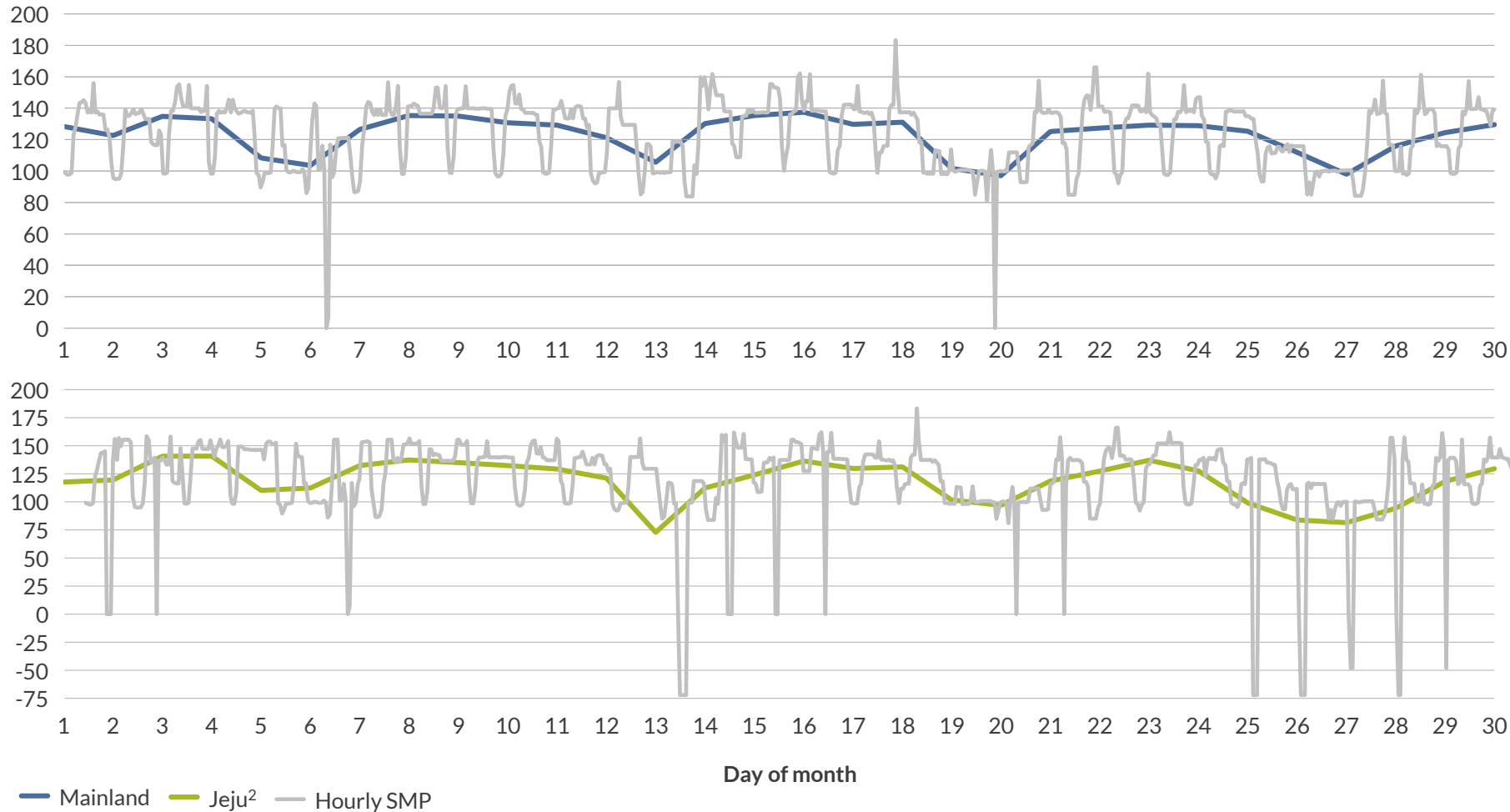
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Daily wholesale market prices for April 2025

Daily average SMP¹

Thousand ₩/MWh



Average regional wholesale prices:

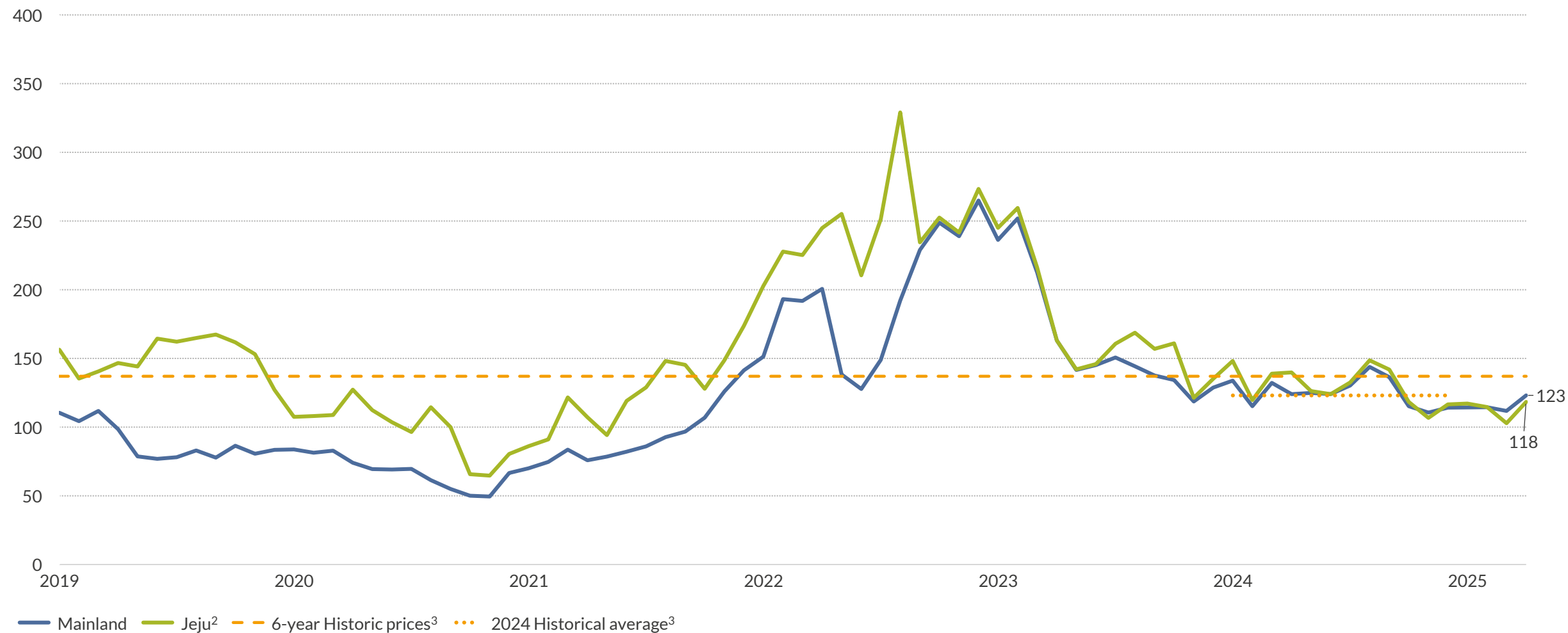
- Mainland: ₩123k/MWh
- Jeju: ₩118k/MWh

1) Daily SMP averages are calculated using original hourly SMP published in EPSIS, taking a simple average of the hourly SMP data for each day (i.e., a time-weighted average of SMP); 2) Day-ahead SMP in Jeju.

Monthly wholesale market prices

Monthly average SMP¹

Thousand ₩/MWh

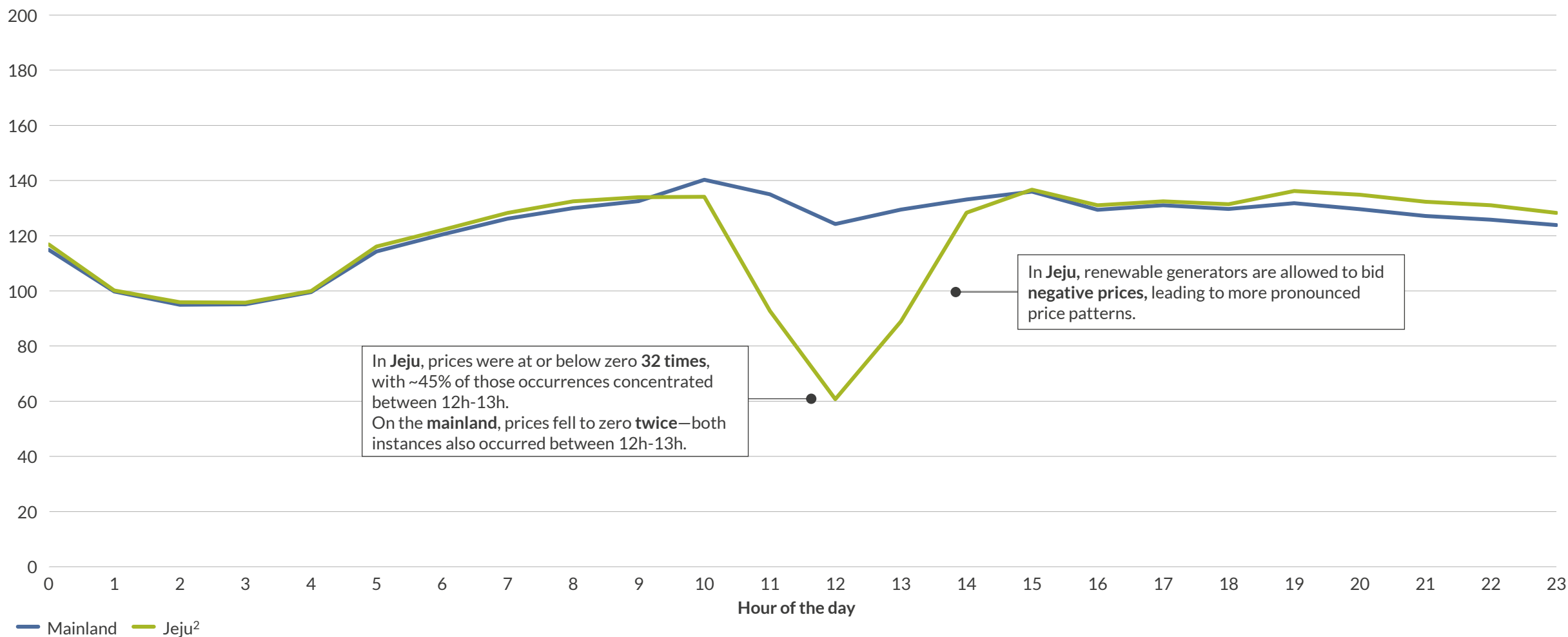


1.) Monthly SMP averages are calculated using original hourly SMP published in EPSIS, taking a simple average of the hourly SMP data for each month (i.e., a time-weighted average of SMP); 2) Day-ahead SMP in Jeju; 3) Average of mainland and Jeju hourly SMP.

Time-of-day (intraday) wholesale market price for April 2025

Average time-of-day SMP¹

Thousand ₩/MWh

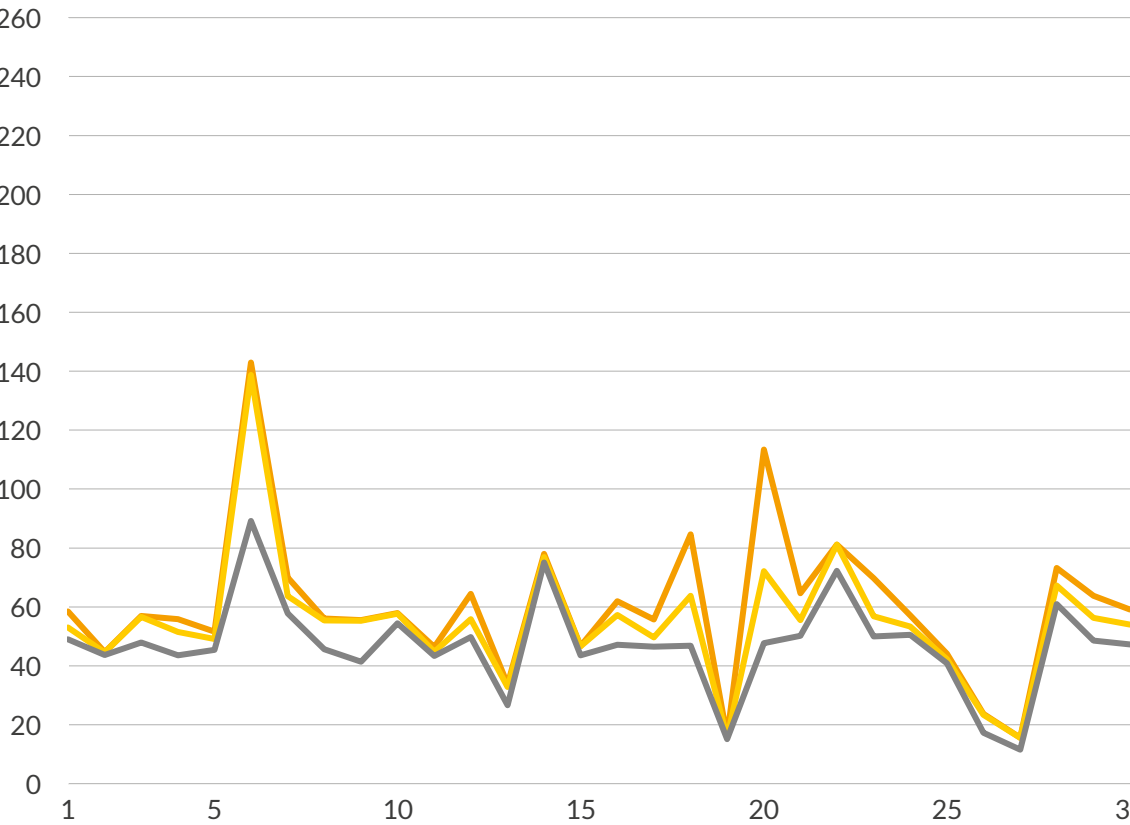


1) Average prices at each hour of the day for the month, calculated using a simple average of the original hourly SMP published in EPSIS; 2) Day-ahead SMP in Jeju.

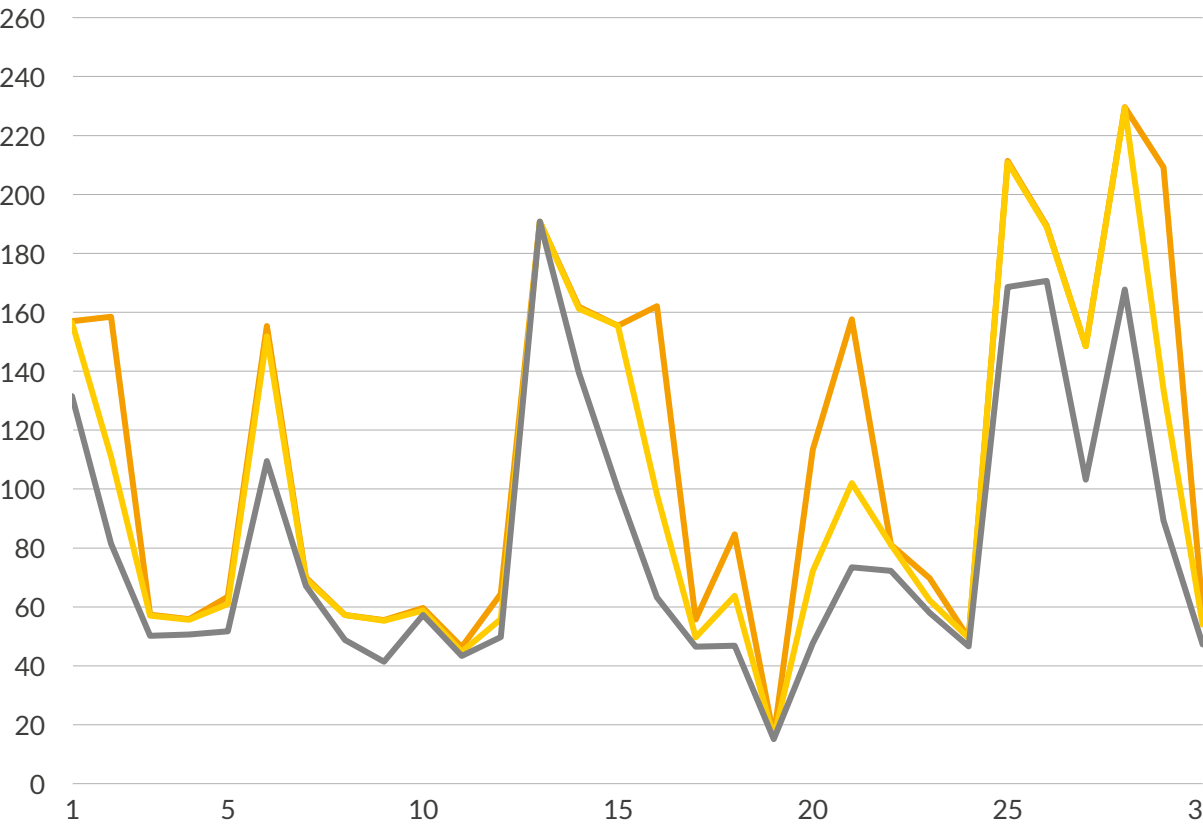
Wholesale price spreads for April 2025

Daily SMP spread¹
Thousand ₩/MWh

Mainland



Jeju



— 1 Hour — 2 Hour — 4 Hour

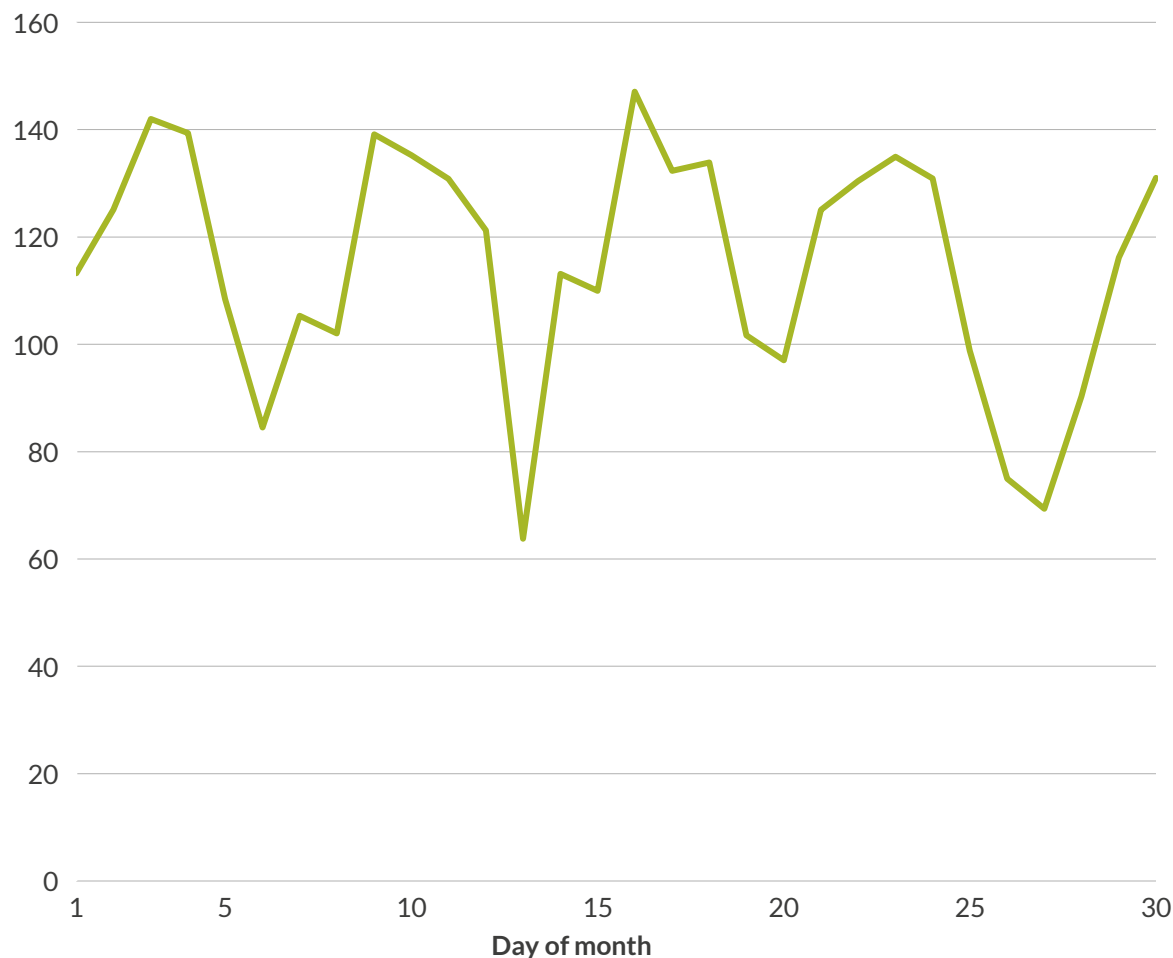
1) Calculated by subtracting the averages of the lowest 1,2 and 4 hours of prices from the highest. For example, a 4-hour spread would represent average of the highest 4 hourly price intervals minus the average of the lowest 4 for a given day. Prices used are original hourly SMP published in EPSIS.
Sources: Aurora Energy Research, EPSIS, KPX

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Wholesale price in Jeju real-time market for April 2025

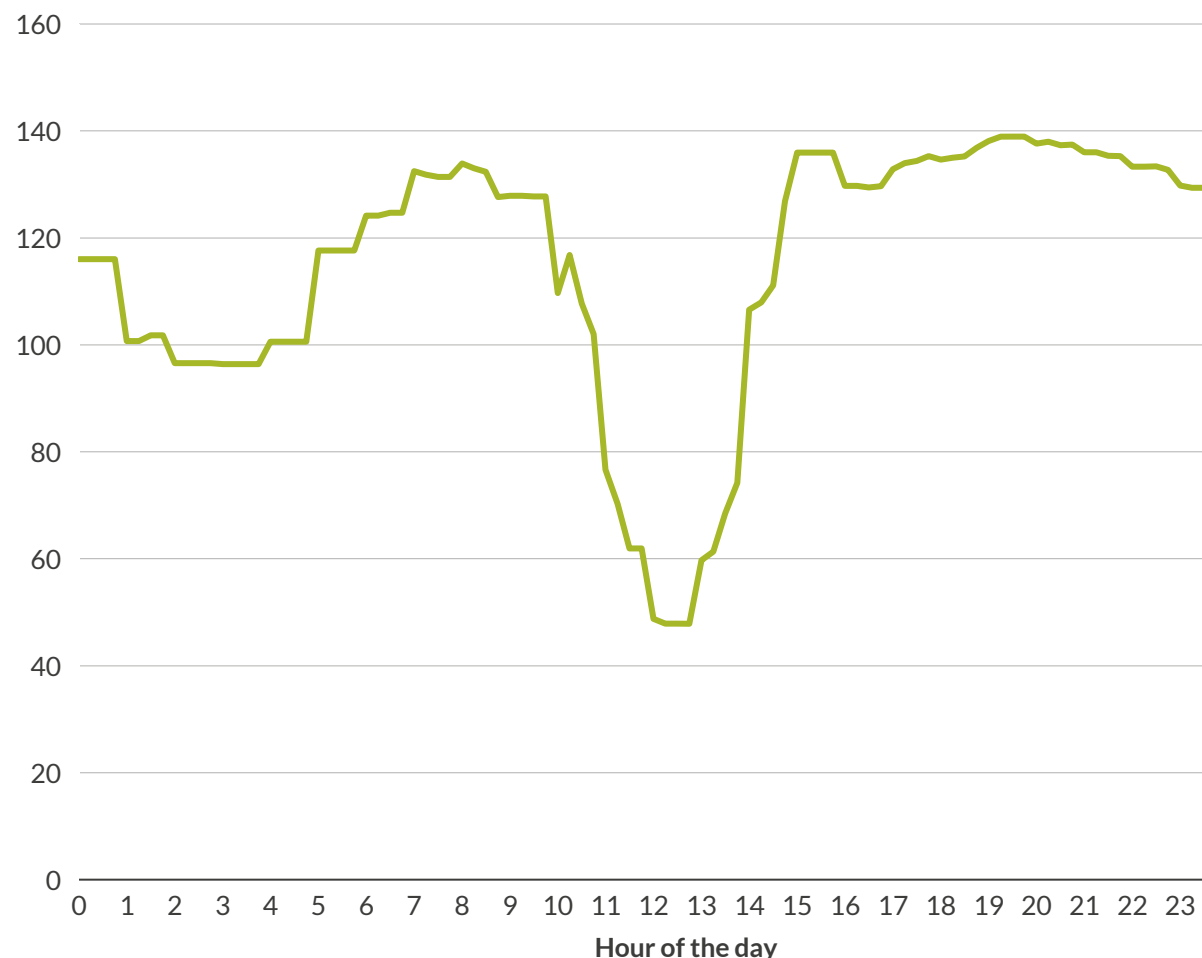
Daily average SMP – Jeju 15-min real time market¹

Thousand ₩/MWh



Average time-of-day SMP – Jeju 15-min real time market²

Thousand ₩/MWh

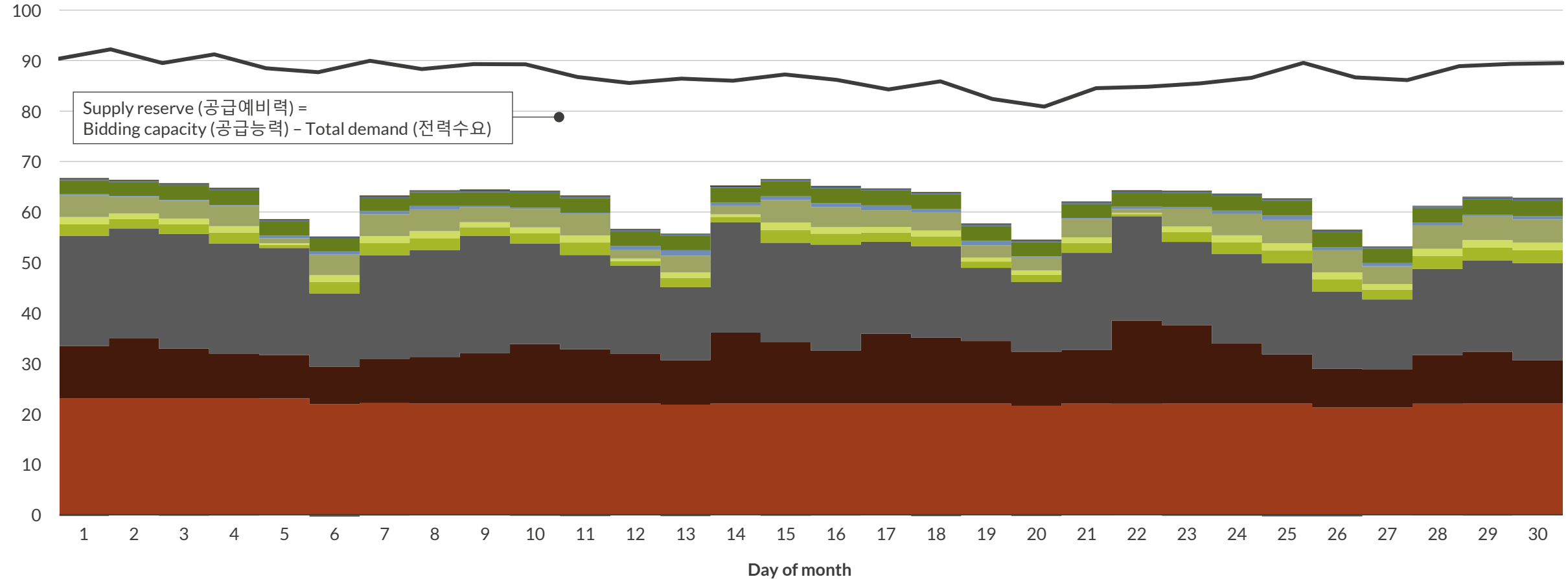


1) Original 15-minutely SMP data is published in KPX. This graph takes the 15-minutely SMP and calculates a simple average across each day (i.e., a time-weighted average of 15-minutely SMP); 2) Average prices at each hour of the day for the month, calculated using a simple average of the original 15-minutely SMP published in KPX.

Average generation by technology in April 2025

Daily average scheduled generation – Nationwide^{1,2}

Scheduled generation (GW)



— Bidding capacity (available capacity)

■ Nuclear
 ■ Coal
 ■ Gas
 ■ Solar (Market traded)
 ■ Solar BTM (Estimated)³
■ Solar PPA (Estimated)³
■ Wind
 ■ Other renewable⁴
■ Hydro
 ■ Pumped storage⁵
■ Oil

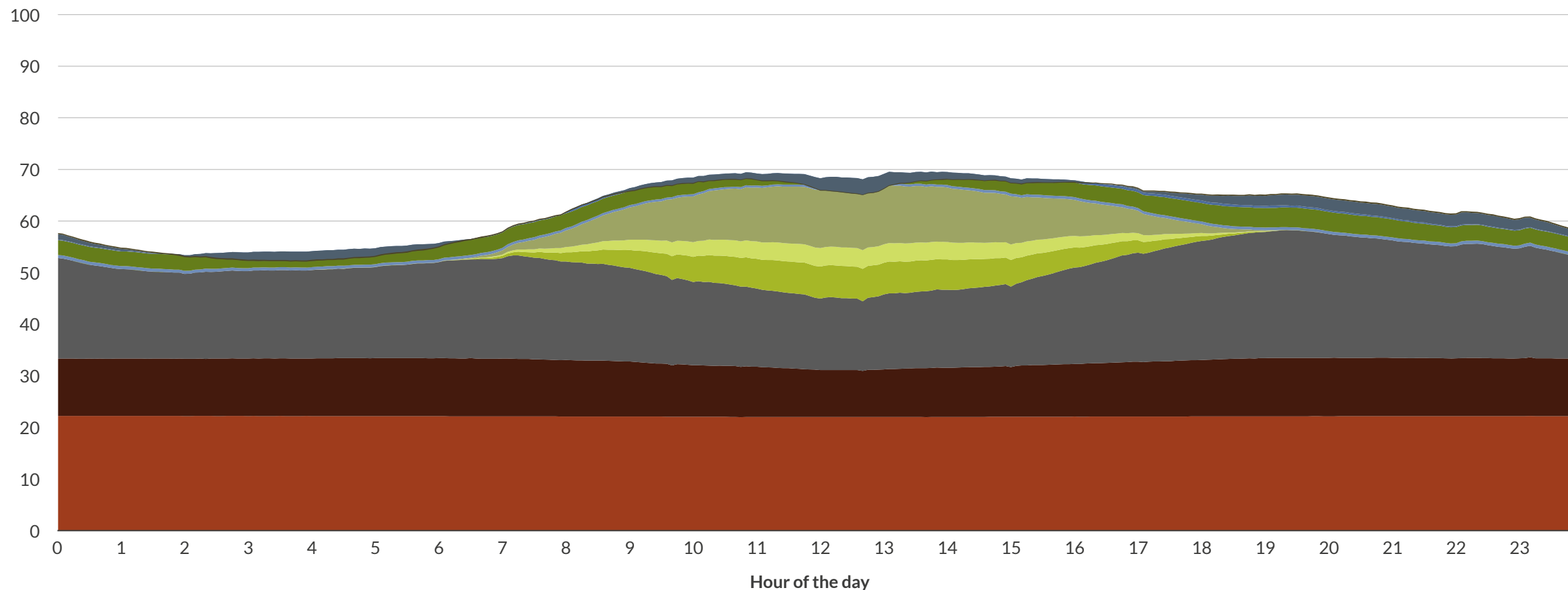
1) Daily average scheduled generation is using 5-min real-time data published by KPX; 2) Average scheduled generation is calculated by taking the average of scheduled generation across all 5-min intervals in a day for each technology and each day; 3) It's not official metered values. Instead, KPX provides estimates using real-time generation data collected from metering facilities at market traded plants. For BTM, nationwide LF from market traded solar x 1.01 x BTM capacity. For PPA, sum of (each sub-region's LF from market traded solar x 1.01 x each sub-region's KEPCO PPA capacity); 4) Other renewable include biomass, IGCC, fuel-cell, tidal etc; 5) Average storage generation is calculated by using net generation (discharge minus charge).

Sources: Aurora Energy Research, KPX

Average generation by time-of-day in April 2025

Average time-of-day scheduled generation – Nationwide ^{1,2}

Scheduled generation (GW)



■ Nuclear ■ Coal ■ Gas ■ Solar (Market traded) ■ Solar BTM (Estimated)³ ■ Solar PPA (Estimated)³ ■ Wind ■ Other renewable⁴ ■ Hydro ■ Pumped storage⁵ ■ Oil

1) Average time-of-day scheduled generation is calculated using 5-min real-time data published by KPX; 2) Average time-of-day scheduled generation is calculated for each 5-min interval in a day, (i.e the generation for each 5-min interval in a day is averaged across all days in a month); 3) It's not official metered values. Instead, KPX provides estimates using real-time generation data collected from metering facilities at market traded plants. For BTM, nationwide LF from market traded solar x 1.01 x BTM capacity. For PPA, sum of (each sub-region's LF from market traded solar x 1.01 x each sub-region's KEPCO PPA capacity); 4) Other renewable include biomass, IGCC, fuel-cell, tidal etc; 5) Average storage generation is calculated by using net generation (discharge minus charge).

Sources: Aurora Energy Research, KPX

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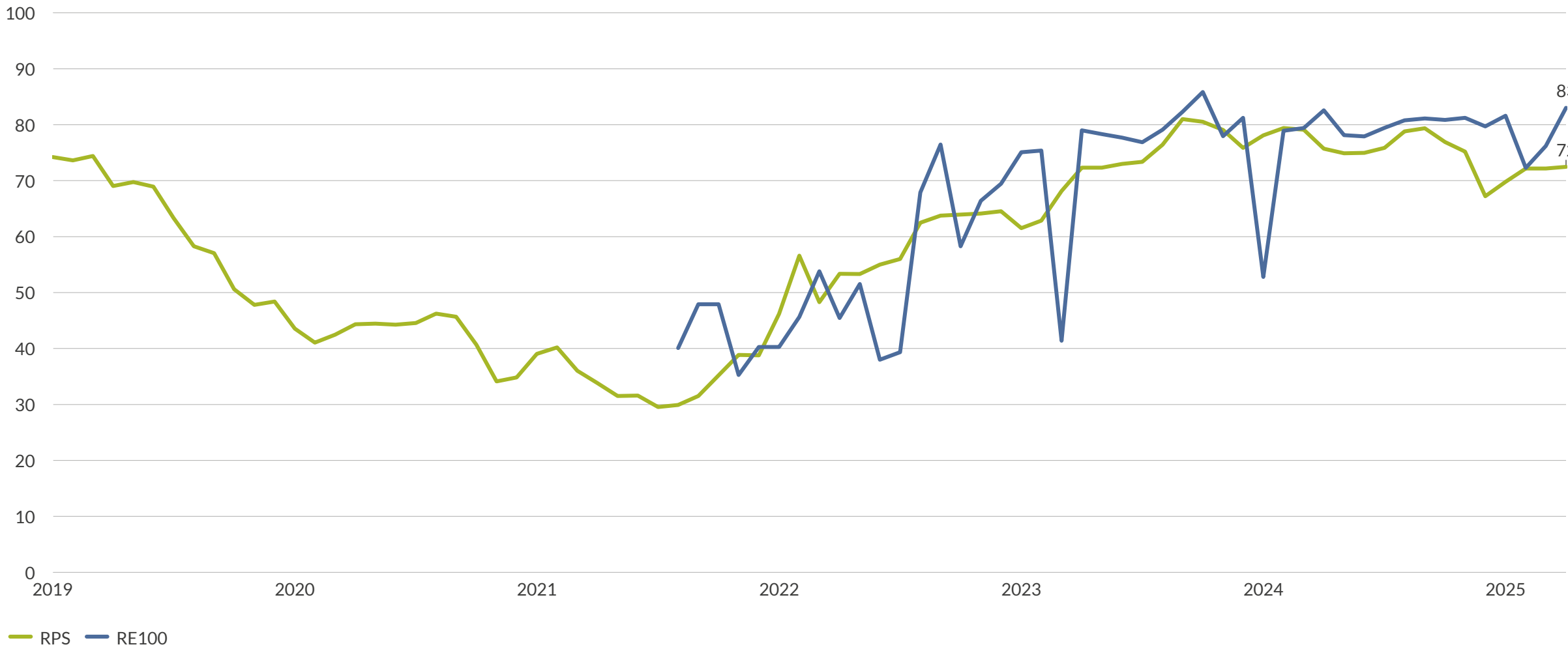
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Monthly REC spot prices

Monthly average REC spot price¹

Thousand \$/REC, Thousand \$/MWh, nominal



1) Volume weighted average.

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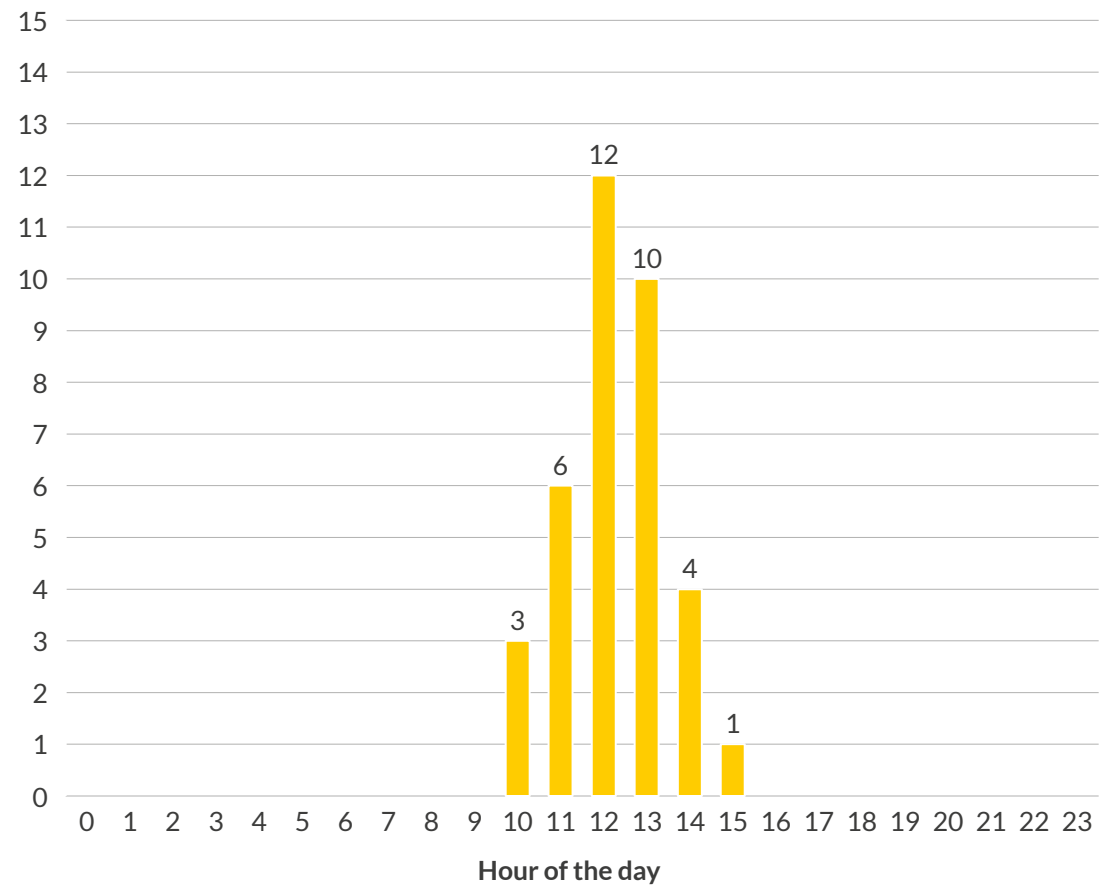
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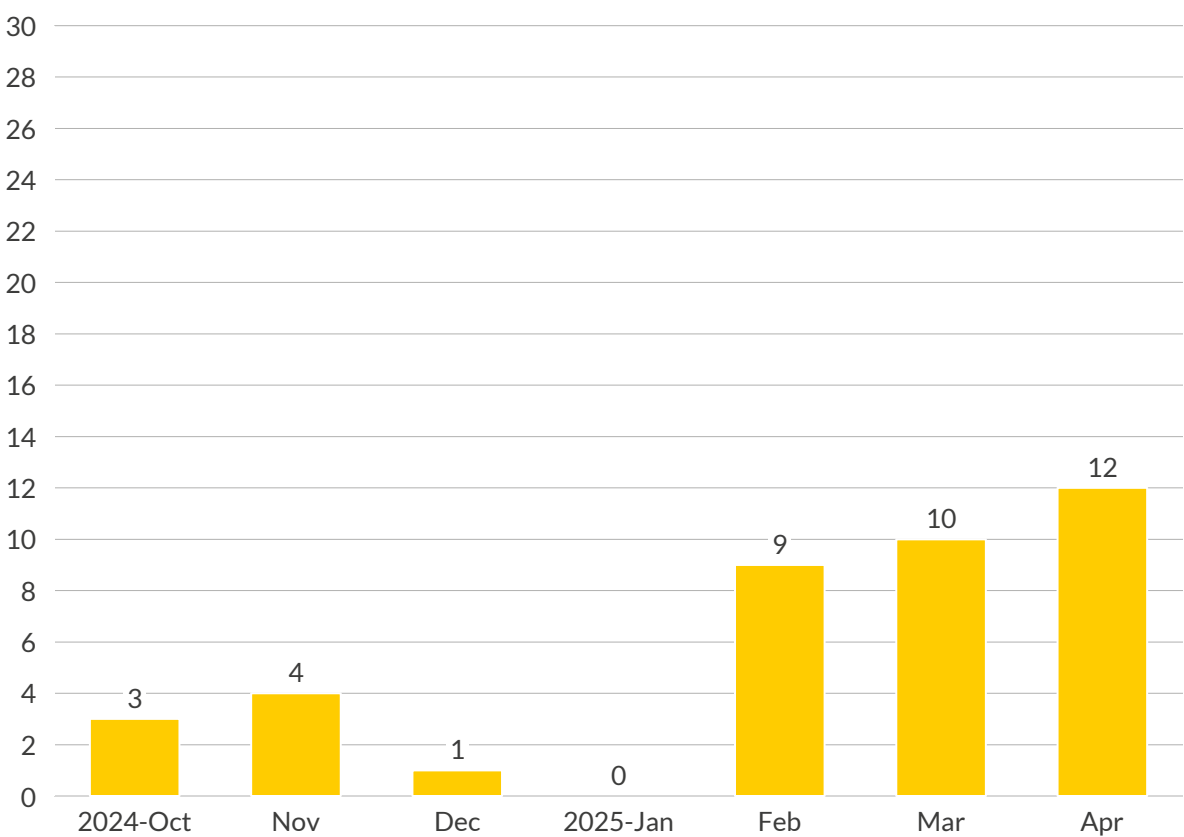
IV. Curtailment

Curtailment frequency in Mainland for April 2025


Time-of-day frequency of curtailment – Mainland¹



Monthly frequency of curtailment days – Mainland¹



 Total trading intervals with curtailment

 Number of days

¹ Curtailment instances for non-centralized assets in Mainland only. Non-centralized assets include those with a capacity of 20 MW or less, or renewable assets excluding hydro. The total capacity of non-centralized assets in April 2025 is 34 GW.

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