RIVERSIDE PUBLIC UTILITIES

Board Memorandum

BOARD OF PUBLIC UTILITIES   **DATE: FEBRUARY 10, 2025**

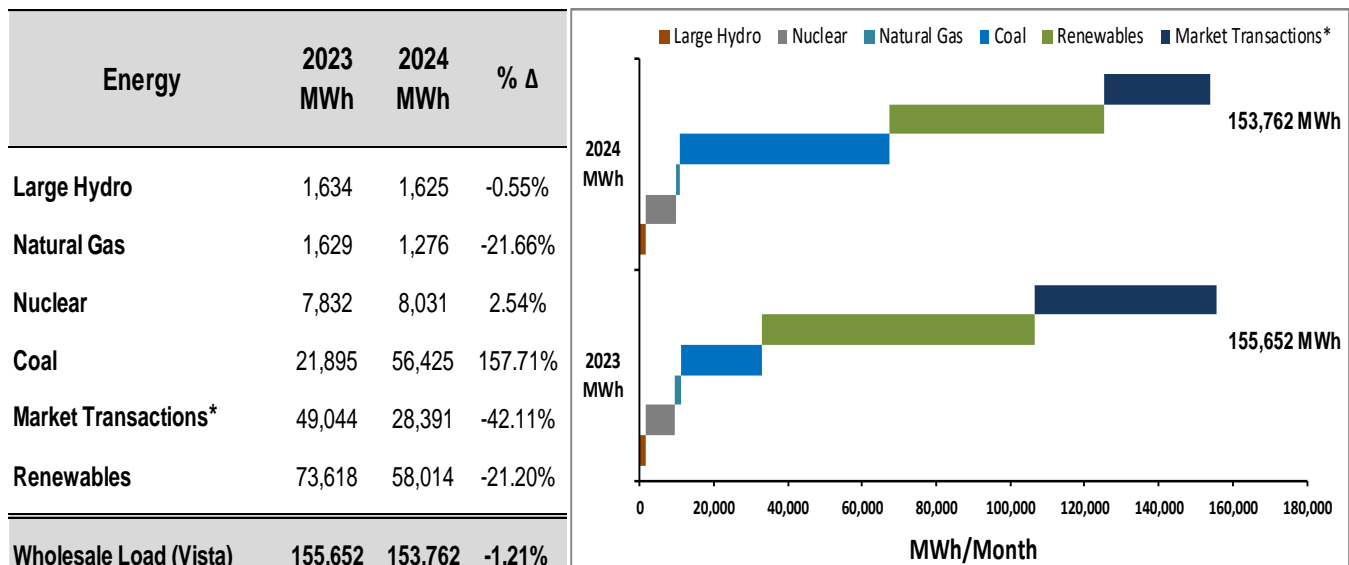**GENERAL MANAGER'S REPORT**

SUBJECT: **MONTHLY POWER SUPPLY REPORT – NOVEMBER 30, 2024**

Monthly Power Usage:

The wholesale load (Vista Substation) for November was 153,762 MWh, a decrease of 1,890 MWh compared to the same month in the previous year. Renewable generation served 37.73% or 58,014 MWh of wholesale load. Coal generation served 36.70% or 56,425 MWh of wholesale load. Nuclear energy served 5.22% or 8,031 MWh. Internal natural gas generation served 0.83% or 1,276 MWh of wholesale load. Hydro generation served 1.06% or 1,625 MWh of wholesale load. Finally, the balance for November was covered by Market Transactions, which served 18.46% or 28,391 MWh of the load.

The high amount of coal generation in November was due to the need for Riverside to use up its remaining amount of allocated coal inventory before March 2025. Elevated coal generation levels are expected to continue through February 2025.

Wholesale Resource Mix - November 2023 vs 2024

Energy	2023 MWh	2024 MWh	% Δ
Large Hydro	1,634	1,625	-0.55%
Natural Gas	1,629	1,276	-21.66%
Nuclear	7,832	8,031	2.54%
Coal	21,895	56,425	157.71%
Market Transactions*	49,044	28,391	-42.11%
Renewables	73,618	58,014	-21.20%
Wholesale Load (Vista)	**155,652**	**153,762**	**-1.21%**

* The Market Transaction category comprises bilateral power contracts and purchases (sales) from (to) the CAISO.

Daily & Monthly Load & Temperature Trends

Weather, especially the variable temperature, significantly impacts electricity demand. Typically, as temperatures increase, electricity demand will also increase, and vice versa. The charts below graphically extrapolate the correlation between weather and electricity demand. In November 2024, average daily peak temperatures oscillated around 71 degrees. In November 2023, average daily peak temperatures oscillated around 74 degrees. The monthly peak temperature in November 2024 was 79 degrees, while the monthly peak temperature in November 2023 was 87 degrees. Differences in the graphical representation of average temperatures may be due to differences in the day of the week and/or weather trends presenting themselves in earlier or later parts of the month.

Daily Peak Load and Peak Temperature Comparisons
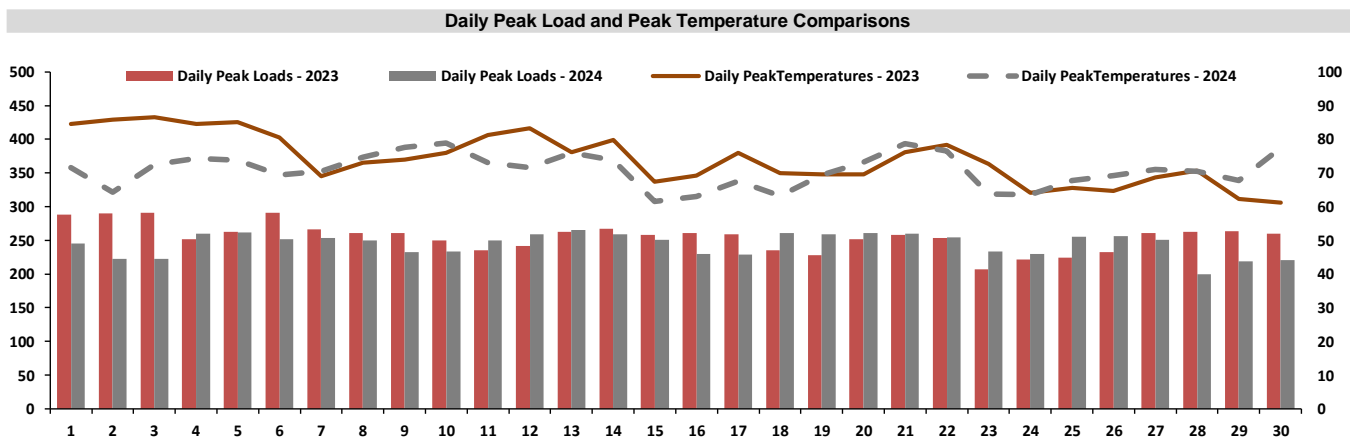
Average weather patterns were warmer in November 2023 than in November 2024. In November 2024, the average daily peak load was 252 MW, with the monthly peak load reaching 265 MW. The average daily peak load in November 2023 was 258 MW, with the monthly peak load reaching 291 MW.
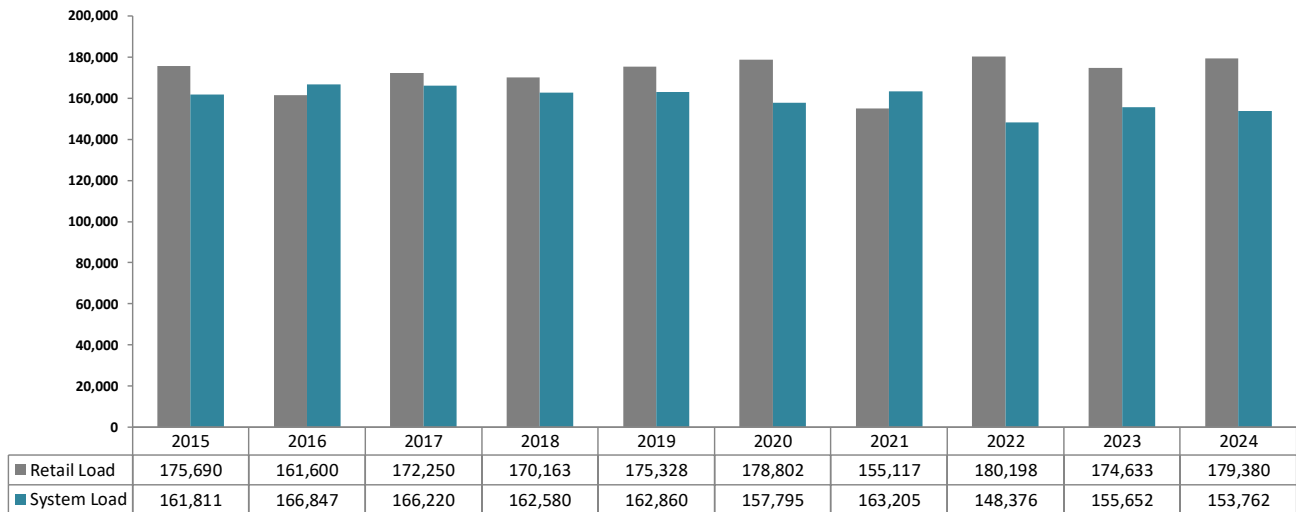
Monthly Peak Load and Temperature
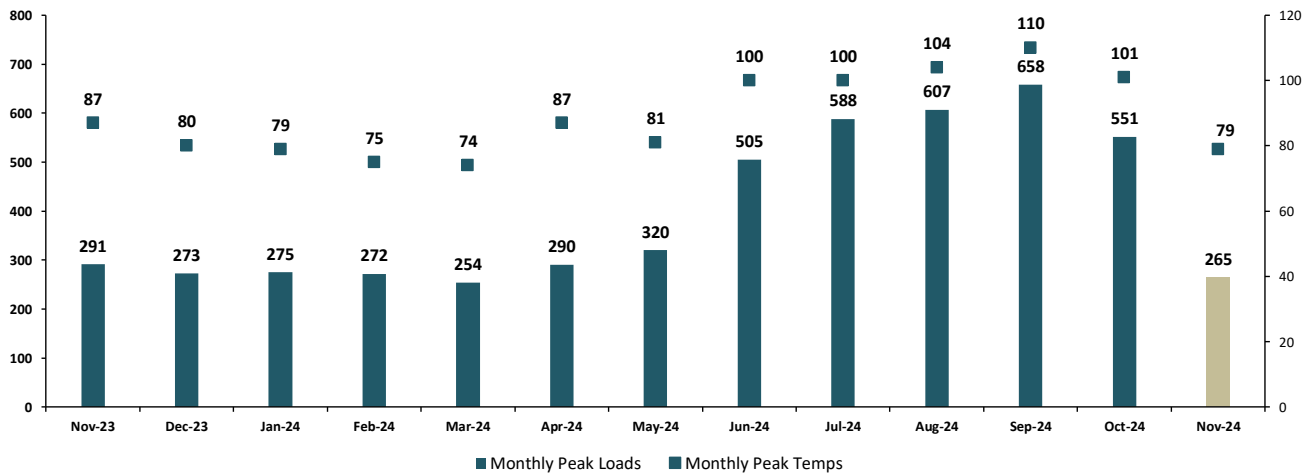
Hourly demand peaked at 265 MW on 11/13/24 HE 18, a decrease of 26 MW compared to a peak of 291 MW the same month last year. Riverside's resources covered 100% of the hourly peak demand on 11/13/24.

10-Year Retail Load Trends

The retail load for November 2024 was 179,380 MWh, an increase of 4,747 MWh from the previous year's reading of 174,633 MWh. The System load for November 2024 was 153,762 MWh, a decrease of 1,890 MWh from the prior year's reading of 155,652 MWh. Retail load values can be impacted by the significant adoption of residential PV solar, efficiency programs, adoption of energy-efficient appliances, available meter data, etc.

November Retail & System Loads (MWh/Month): 10-Year Trends

	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Retail Load	175,690	161,600	172,250	170,163	175,328	178,802	155,117	180,198	174,633	179,380
System Load	161,811	166,847	166,220	162,580	162,860	157,795	163,205	148,376	155,652	153,762

Renewable Generation Trends

In November 2024, nuclear generation experienced an increase of 20.8% in production compared to October 2024 and an increase of 2.5% compared to November 2023. Total hydroelectric generation experienced a decrease of 27.0% compared to October 2024 and a decrease of 0.6% compared to November 2023. In November 2024, wind generation experienced an increase of 18.3% in production compared to October 2024 and an increase of 71% compared to November 2023. In November 2024, solar generation experienced a decrease of 19.0% in production compared to October 2024 and an increase of 18% in production compared to November 2023. In November 2024, geothermal generation experienced a decrease of 2.3% in production compared to October 2024 and a 28.0% decrease in production compared to November 2023. In November 2024, renewable generation, as a percentage of retail load, increased by 3.3 percentage points from October 2024 and decreased by about 9 percentage points compared to November 2023. Lastly, in November 2024, Emissions-Free generation, as a percentage of retail load, increased by about 5 percentage points from October 2024 and decreased by 9 percentage points compared to November 2023. The driving factors for the decreased percentages in November 2024, compared to November 2023, are attributed to the decrease in geothermal combined with slight increases in total retail load over the month. The Emissions Free and Renewable Resources summary graph reflects a rolling 12-month trend line.

Emission Free and Renewable Resources' Summary
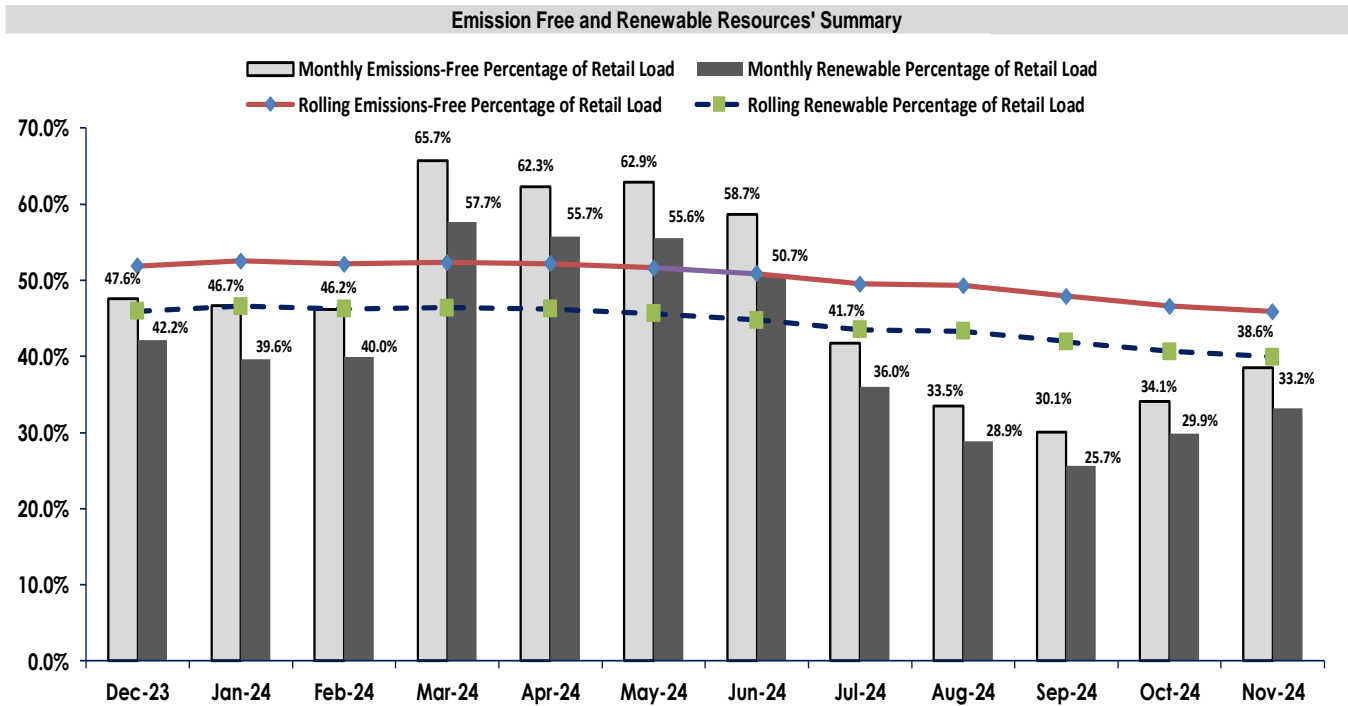
*Riverside's emmisions free resources are composed of renewables plus hydro and nuclear
*Riverside's renewable resources are composed of solar, wind and geothermal.

November 2024 Resource Availability - Internal Generation

- RERC's availability for the month was 32.06%.
- Spring's availability for the month was 97.53%.
- Clearwater's availability for the month was 100.00%.

Resource Availibility

Nov-24	Total Outage Hours	Total Monthly Hrs.	Actual Available Hrs.	Availability %
RERC1	337.25	720.00	382.75	53.16%
RERC2	720.00	720.00	0.00	0.00%
RERC3	449.75	720.00	270.25	37.53%
RERC4	449.75	720.00	270.25	37.53%
RERC	**1956.75**	**2880.00**	**923.25**	**32.06%**

Nov-24	Total Outage Hours	Total Monthly Hrs.	Actual Available Hrs.	Availability %
SPRINGS	**71**	**2880**	**2809**	**97.53%**

Nov-24	Total Outage Hrs.	Total Monthly Hrs.	Actual Available Hrs.	Availability %
CLEARWATER	**0**	**720**	**720**	**100.00%**
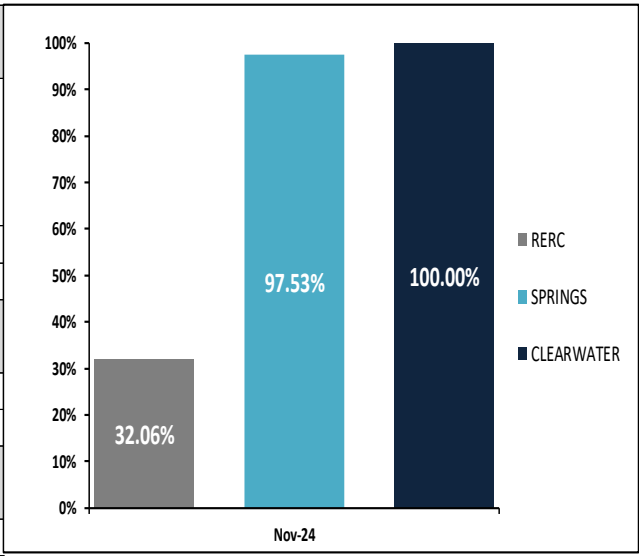
November 2024 Resource Availability – External Resources

Solar resources had capacity factors ranging from 13.91% to 20.95%. Wind resources had capacity factors ranging from 2.90% to 17.23%. Riverside's Palo-Verde nuclear share had steady production with a capacity factor of 85.80%. Hoover is an energy-limited resource and continues to be affected by lake-level restrictions. The resource maintained a 7.52% capacity factor for the month. Riverside's monthly IPP coal resource maintained a capacity factor of 57.20%. Riverside's geothermal resources had capacity factors ranging from 60.27% to 87.08%, affected slightly by under generation. It is worth noting that intermittent renewable resources, including wind and solar, have capacity factors that are affected by natural factors such as cloud cover, blowing wind, etc.

Resource Capacity Factor

Nov-24	Resource Type	Max. Monthly MWH	Actual Energy MWH	Capacity Factors
IPP	Coal	98,640	56,425	57.20%
CALENERGY	Geothermal	61,920	37,320	60.27%
COSO	Geothermal	7,200	6,269	87.08%
HOOVER	Hydro	21,600	1,625	7.52%
PALO VERDE	Nuclear	9,360	8,031	85.80%
ANTELOPE BIG SKY RANCH	Solar	7,200	1,508	20.95%
ANTELOPE DSR1	Solar	18,000	3,090	17.17%
AP NORTH LAKE	Solar	14,400	2,533	17.59%
COLUMBIA II	Solar	8,021	1,461	18.22%
KINGBIRD B	Solar	10,080	2,088	20.72%
SUMMER SOLAR	Solar	7,200	1,435	19.92%
TEQUESQUITE	Solar	5,400	751	13.91%
CABAZON	Wind	28,080	813	2.90%
GARNET	Wind	4,320	744	17.23%

Resource Outages and Transmission Constraints

- RERC
    - Unit 1 fall maintenance outage
    - Unit 2 fall maintenance outage
    - Unit 3 fall maintenance outage
    - Unit 4 fall maintenance outage
    - Unit 3 SoCalGas Emergency Repair gas line 2001
    - Unit 4 SoCalGas Emergency Repair gas line 2001
    - Unit 3 Control System Updates
    - Unit 4 Control System Updates
    - Unit 1 Fire protection system repairs

- SPRINGS
    - SoCalGas Emergency Repair gas line 2001– Plant Outage

- CLEARWATER
    - None