RIVERSIDE PUBLIC UTILITIES

Board Memorandum

BOARD OF PUBLIC UTILITIES **DATE: APRIL 8, 2024**

GENERAL MANAGER'S REPORT

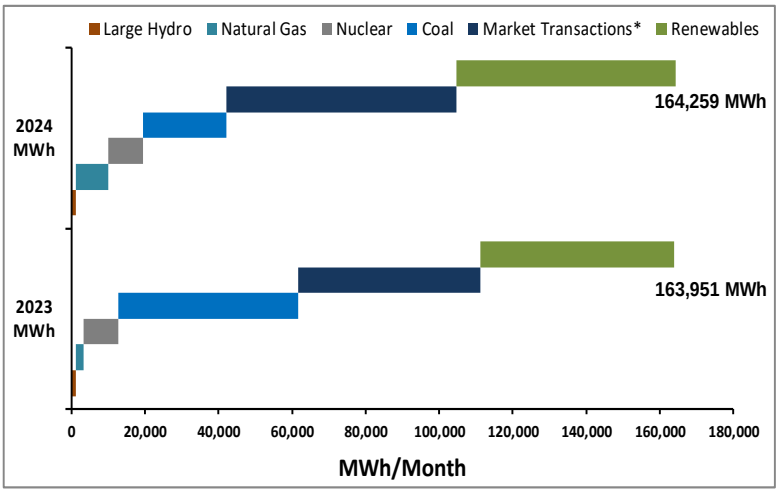
SUBJECT: MONTHLY POWER SUPPLY REPORT – JANUARY 31, 2024

Monthly Power Usage

The wholesale load (Vista Substation) for January was 164,259 MWh, an increase of 308 MWh compared to the same month in the previous year. Renewable generation served 36.20% or 59,469 MWh of Riverside's wholesale load. Coal generation served 13.80% or 22,673 MWh of the wholesale load. Nuclear energy covered 5.79% or 9,504 MWh. In January, internal natural gas generation served 5.36% or 8,812 MWh of wholesale load. Hydro generation represents 0.70% or 1,144 MWh of Riverside's wholesale load. Riverside's emissions free and renewable resources utilization increased slightly in January 2024 compared to January 2023. Finally, the balance for January was covered by Market Transactions, which represented 38.15% or 62,658 MWh of the load.

Wholesale Resource Mix - January 2023 vs 2024

Energy	2023 MWh	2024 MWh	% Δ
Large Hydro	1,176	1,144	-2.72%
Natural Gas	2,057	8,812	328.45%
Nuclear	9,440	9,504	0.68%
Coal	49,053	22,673	-53.78%
Market Transactions*	49,582	62,658	26.37%
Renewables	52,643	59,469	12.97%
Wholesale Load (Vista)	**163,951**	**164,259**	**0.19%**

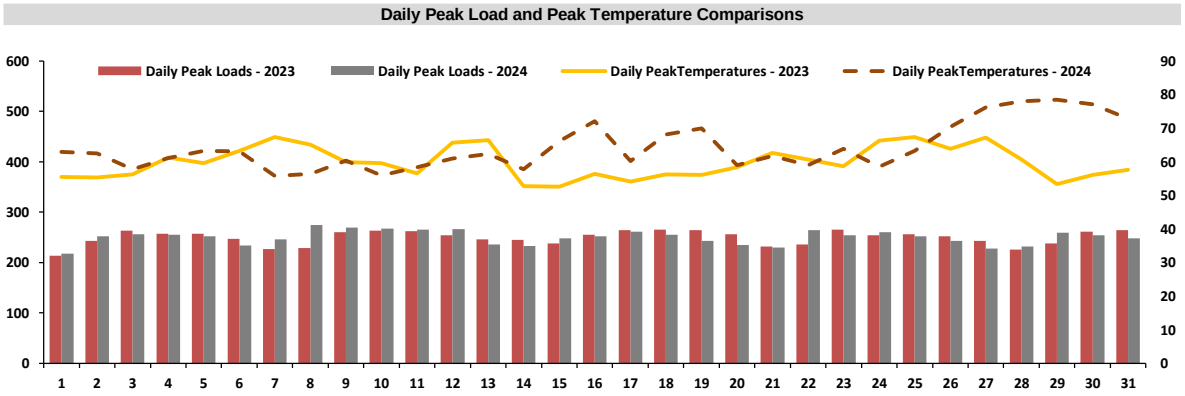


* The Market Transaction category comprises bilateral power contracts and purchases(sales) from(to) the CAISO.

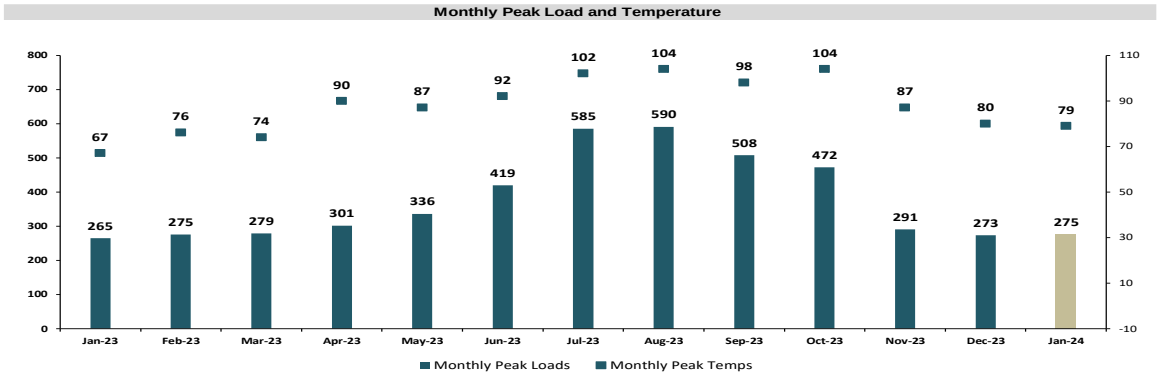
Daily & Monthly Load & Temperature Trends

Weather has a significant impact on electricity demand, especially the variable temperature. Typically, as temperatures increase, electricity demand will also increase, and vice versa. The charts below graphically extrapolate the correlation between weather and electricity demand. January 2024 was warmer than the same month in the previous year. The January 2024 average daily peak temperatures oscillated around 64 degrees. While in January 2023, average daily peak temperatures were in the range of 60 degrees. The monthly peak temperature in January

2024 was 79 degrees. For comparison, the monthly peak temperature in January 2023 was 67 degrees.



January 2024 experienced relatively warmer temperatures, with a slight upward trend toward the end of the month. During the first half of January 2024, Riverside experienced similar temperatures to those seen in the same month in 2023. However, past the first half of the month, the temperature in 2024 steadily increased above those seen in 2023, with a pronounced difference in the last five days of the month. The average daily peak load in January 2023 was 250 MW, with daily peak loads of 260 MW or greater on 8 out of the 31 days. In January 2024, Riverside observed a higher average peak temperature of 64 degrees, slightly higher than the 60-degree average of 2023. In January 2024, the average daily peak load was 250 MW, with daily peak loads of 260 MW or greater on 8 out of the 31 days. For the most part, the effect of warmer temperatures was isolated to a handful of days and had very little impact on the average load – pointing to relatively similar conditions year over year for January.

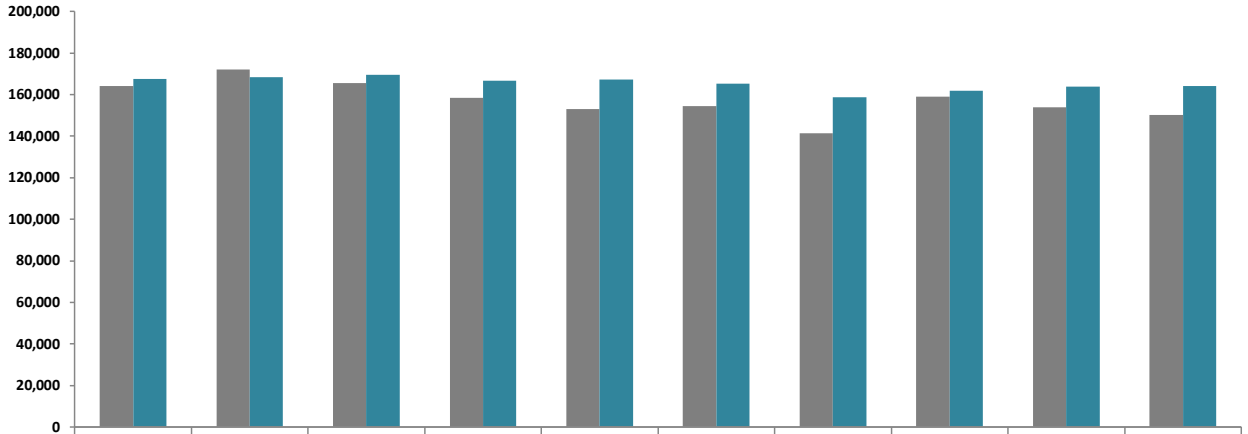


Riverside experienced a higher monthly peak temperature in January 2024, thus putting slight upward pressure on the monthly peak load. Hourly demand peaked at 275 MW on 01/08/24 HE 19, an increase of 10 MW compared to a peak of 265 MW the same month last year. Riverside's resources covered 100% of the hourly peak demand on 01/08/24.

10-Year Retail Load Trends

The retail load for January 2024 was 150,228 MWh, a decrease of 3,641 MWh from the previous year's reading of 153,869 MWh. The System load for January 2024 was 164,259 MWh, an increase of 308 MWh from the prior year's reading of 163,951 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.

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

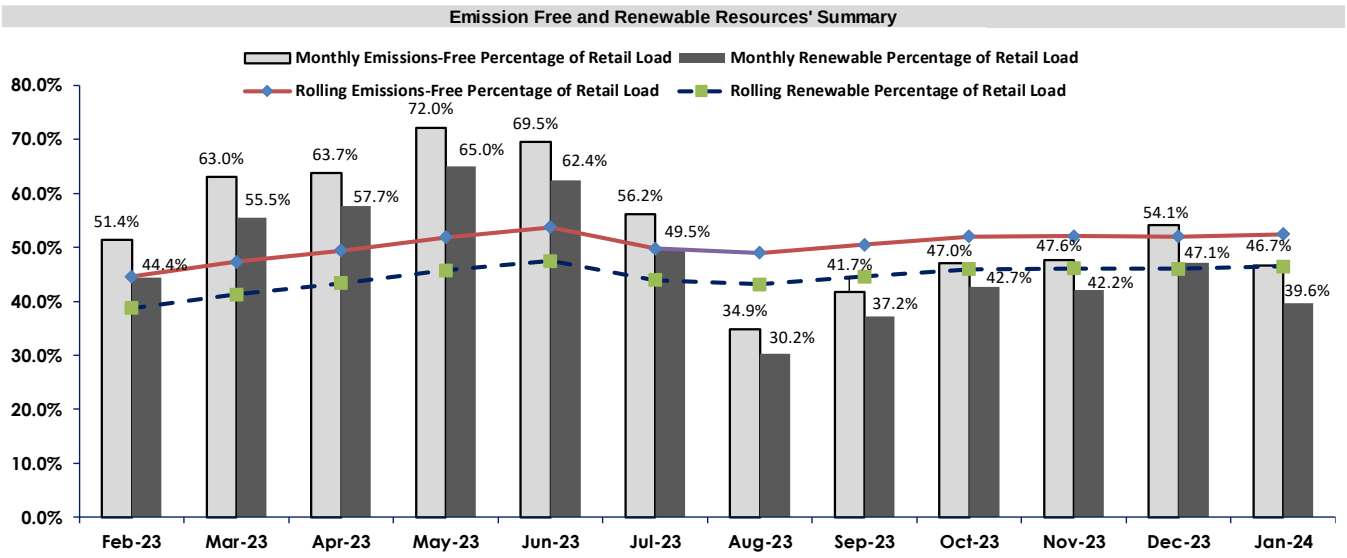


	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Retail Load	164,025	172,080	165,701	158,517	153,130	154,527	141,409	158,896	153,869	150,228
System Load	167,532	168,380	169,662	166,771	167,409	165,316	158,889	161,989	163,951	164,259

Renewable Generation Trends

In January 2024, nuclear generation experienced a 0.6% decrease in production compared to December 2023 and an increase of 0.03% compared to January 2023. Hydroelectric generation experienced a 0.02% increase compared to December 2023 and a reduction of 0.02% compared to January 2023. January 2024 wind generation experienced a 10% increase in output compared to December 2023 and about a 39% reduction compared to January 2023. January 2024 solar generation experienced an increase of 17% in output compared to December 2023 and a 32% increase in output compared to January 2023. Lastly, in January 2024, geothermal generation experienced a reduction of 21.3% in output compared to December 2023 and an 11% increase in output compared to January 2023.

In January 2024, renewable generation, as a percentage of retail load, decreased about seven percentage points from December 2023 and increased by five percentage points compared to January 2023. Lastly, in January 2024, Emissions-Free generation, as a percentage of retail load, decreased by about seven percentage points from December 2023 and increased by about six percentage points compared to January 2023. The driving factors for the increased percentages in January 2024, compared to January 2023, are steady geothermal and solar generation. The Emissions Free and Renewable Resources summary graph reflects a rolling 12-month trend line.



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

January 2023 Resource Availability - Internal Generation

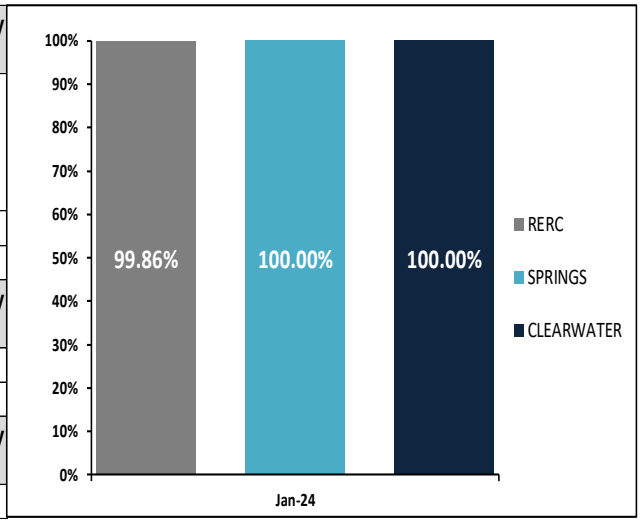
- RERC's availability for the month was 99.86%.
- Spring's availability for the month was 100.00%.
- Clearwater's availability for the month was 100.00%.

Resource Availibility

Jan-24	Total Outage Hours	Total Monthly Hrs.	Actual Available Hrs.	Availability %
RERC1	0.00	744.00	744.00	100.00%
RERC2	0.00	744.00	744.00	100.00%
RERC3	1.75	744.00	742.25	99.76%
RERC4	2.50	744.00	741.50	99.66%
RERC	**4.25**	**2976.00**	**2971.75**	**99.86%**

Jan-24	Total Outage Hours	Total Monthly Hrs.	Actual Available Hrs.	Availability %
SPRINGS	**0**	**2976**	**2976**	**100.00%**

Jan-24	Total Outage Hrs.	Total Monthly Hrs.	Actual Available Hrs.	Availability %
CLEARWATER	**0**	**744**	**744**	**100.00%**



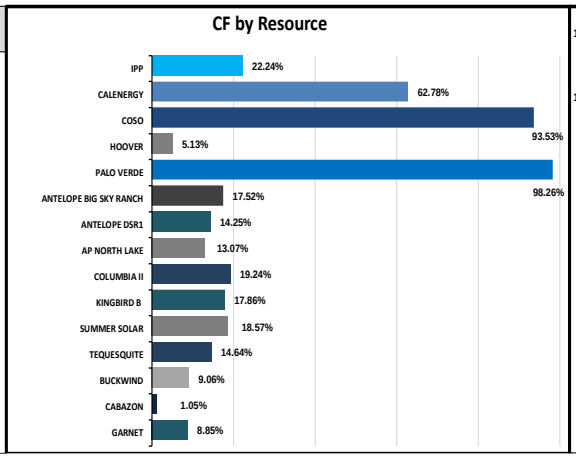
January 2023 Resource Availability – External Resources

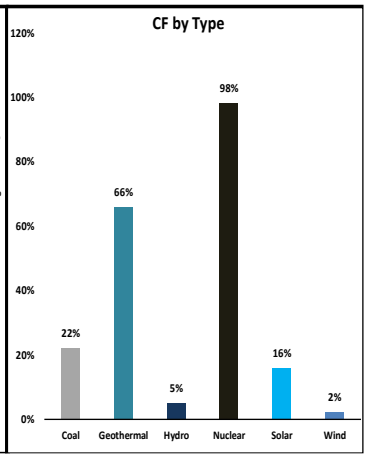
Solar resources had capacity factors ranging from 13.07% to 19.24%. Wind resources had capacity factors ranging from 1.05% to 9.06%. Riverside's Palo-Verde nuclear share had steady production with a capacity factor of 98.26%. Hoover is an energy-limited resource and continues to be affected by lake-level restrictions. The resource maintained a 5.13% capacity factor for the month. An undersupply of coal is currently impacting IPP, restricting generation output; thus, its capacity factor was 22.24%. Riverside's geothermal resources had capacity factors ranging from 62.78% to 93.53%, 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

Jan-24	Resource Type	Capacity Factors
IPP	Coal	22.24%
CALENERGY	Geothermal	62.78%
COSO	Geothermal	93.53%
HOOVER	Hydro	5.13%
PALO VERDE	Nuclear	98.26%
ANTELOPE BIG SKY RANCH	Solar	17.52%
ANTELOPE DSR1	Solar	14.25%
AP NORTH LAKE	Solar	13.07%
COLUMBIA II	Solar	19.24%
KINGBIRD B	Solar	17.86%
SUMMER SOLAR	Solar	18.57%
TEQUESQUITE	Solar	14.64%
BUCKWIND	Wind	9.06%
CABAZON	Wind	1.05%
GARNET	Wind	8.85%





Resource Outages and Transmission Constraints

- RERC
  - RERC Unit 4 CEMS issues.
  - RERC Unit 3 Emission Communication issues.
- SPRINGS
  - None
- CLEARWATER
  - None