# RIVERSIDE PUBLIC UTILITIES

## Board Memorandum

**BOARD OF PUBLIC UTILITIES** **DATE: JUNE 24, 2024**

**GENERAL MANAGER'S REPORT**

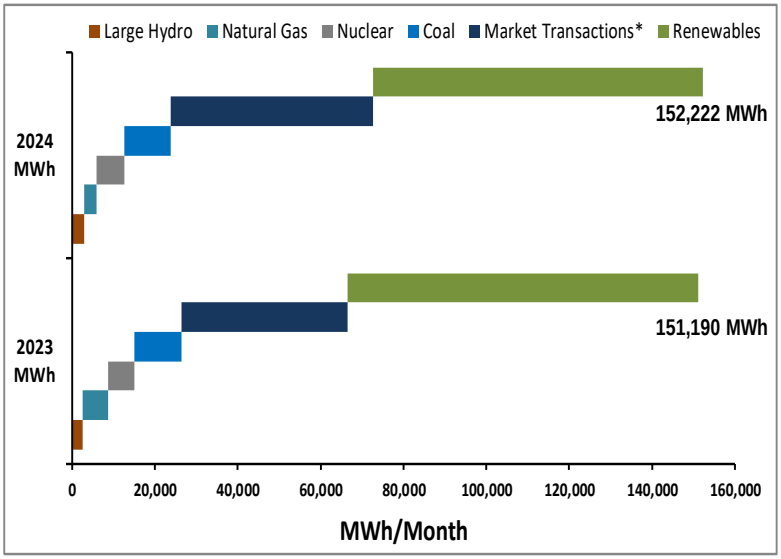
**SUBJECT: MONTHLY POWER SUPPLY REPORT – APRIL 30, 2024**

### Monthly Power Usage:

The wholesale load (Vista Substation) for April was 152,222 MWh, an increase of 1,032 MWh compared to the same month in the previous year. Renewable generation served 52.21% or 79,482 MWh of Riverside's wholesale load. Coal generation served 7.40% or 11,257 MWh of the wholesale load. Nuclear energy covered 4.38% or 6,672 MWh. In April, internal natural gas generation served 1.95% or 2,962 MWh of wholesale load. Hydro generation represents 1.94% or 2,946 MWh of Riverside's wholesale load. Finally, the balance for April was covered by Market Transactions, which represented 32.13% or 48,903 MWh of the load.

**Wholesale Resource Mix - April 2023 vs 2024**

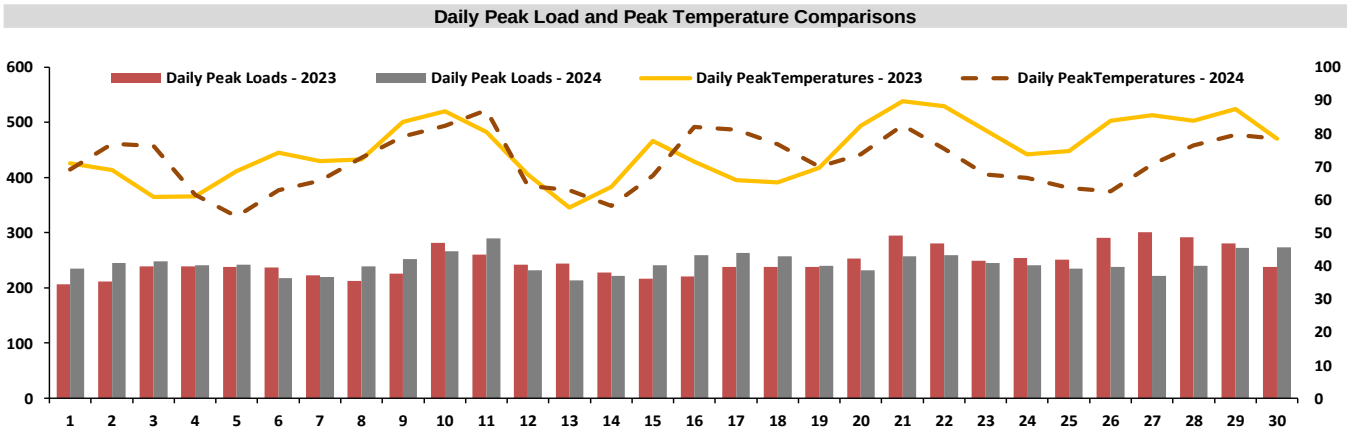
| Energy | 2023 MWh | 2024 MWh | % Δ |
|---|---|---|---|
| Large Hydro | 2,485 | 2,946 | 18.55% |
| Natural Gas | 6,222 | 2,962 | -52.39% |
| Nuclear | 6,312 | 6,672 | 5.70% |
| Coal | 11,441 | 11,257 | -1.61% |
| Market Transactions* | 39,977 | 48,903 | 22.33% |
| Renewables | 84,753 | 79,482 | -6.22% |
| **Wholesale Load (Vista)** | **151,190** | **152,222** | **0.68%** |



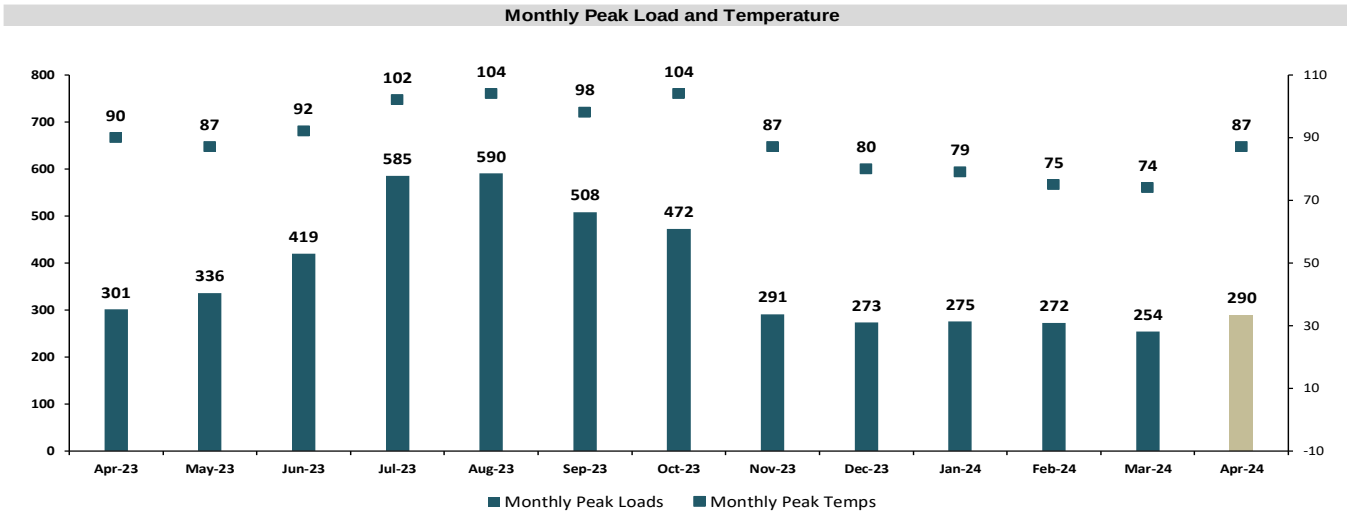

* The Market Transaction category comprises bilateral power contracts and purchases(sales) from(to) the CAISO.

## 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 April 2024, average daily peak temperatures oscillated around 72 degrees, while in April 2023, they oscillated around 75 degrees. The monthly peak temperature in April 2024 was 87 degrees, while for comparison, the monthly peak temperature in April 2023 was 90 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.




Weather patterns were very similar between April 2024 and April 2023, with slight differences throughout the month. In April 2024, the average daily peak load was 245 MW, with the monthly peak load reaching 290 MW. The average daily peak load in April 2023 was 247 MW, with the monthly peak load reaching 301 MW. 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 April.

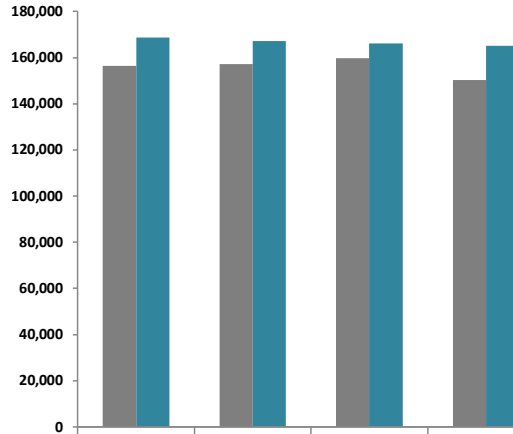



Hourly demand peaked at 290 MW on 04/11/24 HE 18, a decrease of 11 MW compared to a peak of 301 MW the same month last year. Riverside's resources covered 100% of the hourly peak demand on 04/11/24.

## 10-Year Retail Load Trends

The retail load for April 2024 was 145,018 MWh, a decrease of 1,829 MWh from the previous year's reading of 146,847 MWh. The System load for April 2024 was 152,222 MWh, an increase of 1,032 MWh from the prior year's reading of 151,190 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.

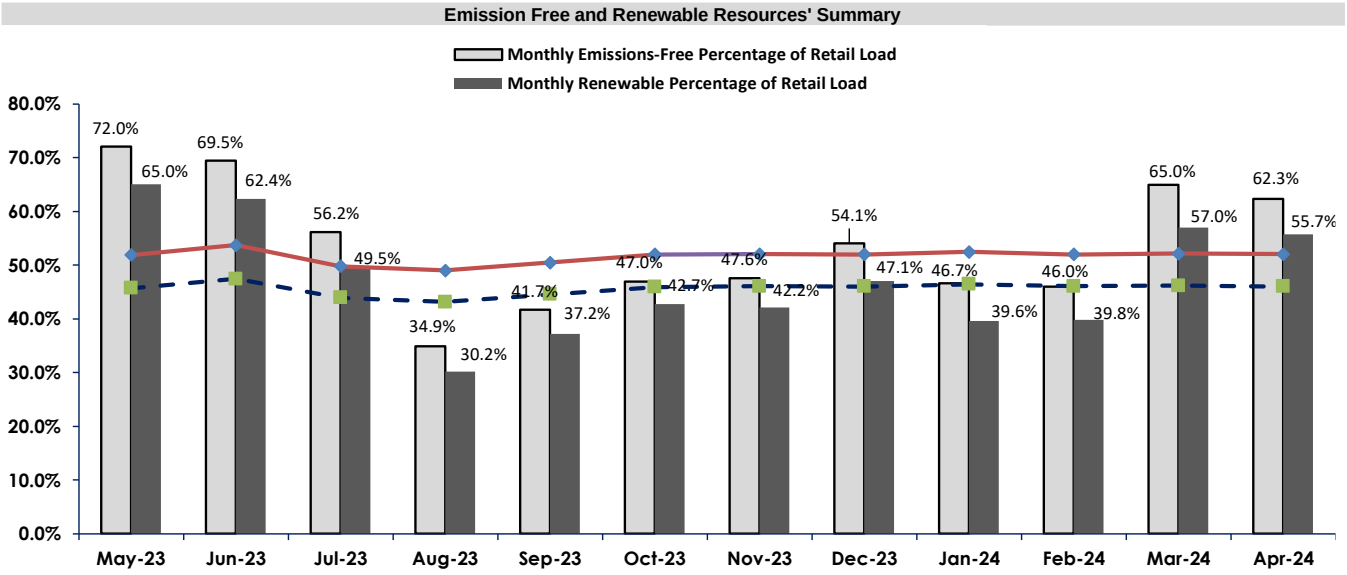
**April Retail & System Loads (MWh/Month): 10-Year Trends**




| | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | 2024 |
|---|---|---|---|---|---|---|---|---|---|---|
| Retail Load | 156,439 | 157,318 | 159,764 | 150,369 | 138,964 | 141,424 | 149,579 | 153,693 | 146,847 | 145,018 |
| System Load | 168,838 | 167,077 | 166,098 | 165,238 | 161,532 | 155,845 | 158,400 | 163,420 | 151,190 | 152,222 |

## Renewable Generation Trends

In April 2024, nuclear generation experienced a 30.1% decrease in production compared to March 2024 and an increase of 5.7% compared to April 2023. Total hydroelectric generation experienced a 13.0% increase compared to March 2024 and an increase of 18.6% compared to April 2023. April 2024 wind generation experienced a 1.7% decrease in production compared to March 2024 and about an increase of 1% compared to April 2023. April 2024 solar generation experienced an increase of 28.0% in production compared to March 2024 and an increase of 5% in production compared to April 2023. Lastly, in April 2024, geothermal generation experienced a decrease in production of 15.6% compared to March 2024 and a reduction of 8% of output compared to April 2023. In April 2024, renewable generation, as a percentage of retail load, decreased by about 3% percentage points from March 2024 and decreased by about 1% percentage points compared to April 2023. Lastly, in April 2024, Emissions-Free generation, as a percentage of retail load, decreased by about 1.3% percentage points from March 2024 and no change in percentage points compared to April 2023. The driving factor for the decreased percentages in April 2024, compared to April 2023, are decreased geothermal, wind, solar, and hydro output. 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.

## April 2024 Resource Availability - Internal Generation

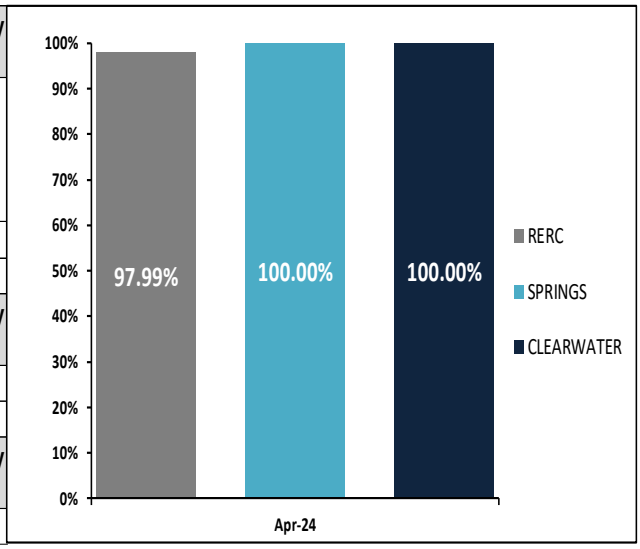
- RERC's availability for the month was 97.99%.
- Spring's availability for the month was 100.00%.
- Clearwater's availability for the month was 100.00%.

**Resource Availibility**

| Apr-24 | Total Outage Hours | Total Monthly Hrs. | Actual Available Hrs. | Availability % |
|---|---|---|---|---|
| RERC1 | 16.00 | 720.00 | 704.00 | 97.78% |
| RERC2 | 12.00 | 720.00 | 708.00 | 98.33% |
| RERC3 | 18.00 | 720.00 | 702.00 | 97.50% |
| RERC4 | 12.00 | 720.00 | 708.00 | 98.33% |
| **RERC** | **58.00** | **2880.00** | **2822.00** | **97.99%** |

| Apr-24 | Total Outage Hours | Total Monthly Hrs. | Actual Available Hrs. | Availability % |
|---|---|---|---|---|
| **SPRINGS** | **0** | **2880** | **2880** | **100.00%** |

| Apr-24 | Total Outage Hrs. | Total Monthly Hrs. | Actual Available Hrs. | Availability % |
|---|---|---|---|---|
| **CLEARWATER** | **0** | **720** | **720** | **100.00%** |

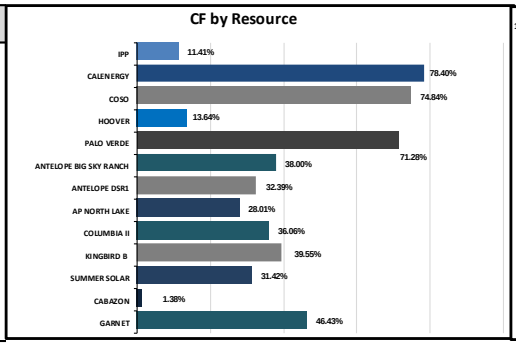


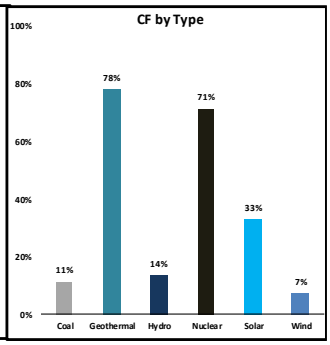
## April 2024 Resource Availability – External Resources

Solar resources had capacity factors ranging from 26.16% to 39.55%. Wind resources had capacity factors ranging from 1.38% to 46.53%. Riverside's Palo-Verde nuclear share had steady production with a capacity factor of 71.28%. Hoover is an energy-limited resource and continues to be affected by lake-level restrictions. The resource maintained a 14.00% capacity factor for the month. An undersupply of coal currently impacts IPP, restricting generation output; thus, its capacity factor was 11.41%. Riverside's geothermal resources had capacity factors ranging from 74.84% to 78.40%, 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**

| Apr-24 | Resource Type | Max. Monthl. MWH | Actual Energ MWH | Capacity Factors |
|---|---|---|---|---|
| IPP | Coal | 98,640 | 11,257 | 11.41% |
| CALENERGY | Geothermal | 61,920 | 48,545 | 78.40% |
| COSO | Geothermal | 7,200 | 5,388 | 74.84% |
| HOOVER | Hydro | 21,600 | 2,946 | 13.64% |
| PALO VERDE | Nuclear | 9,360 | 6,672 | 71.28% |
| ANTELOPE BIG SKY RANCH | Solar | 7,200 | 2,736 | 38.00% |
| ANTELOPE DSR1 | Solar | 18,000 | 5,831 | 32.39% |
| AP NORTH LAKE | Solar | 14,400 | 4,033 | 28.01% |
| COLUMBIA II | Solar | 8,021 | 2,892 | 36.06% |
| KINGBIRD B | Solar | 10,080 | 3,987 | 39.55% |
| SUMMER SOLAR | Solar | 7,200 | 2,262 | 31.42% |
| TEQUESQUITE | Solar | 5,400 | 1,413 | 26.16% |
| CABAZON | Wind | 28,080 | 389 | 1.38% |
| GARNET | Wind | 4,320 | 2,006 | 46.43% |




## Resource Outages and Transmission Constraints

- RERC
  - RERC Unit 1 switchgear maintenance
  - RERC Unit 2 switchgear maintenance
  - RERC Unit 3 switchgear maintenance
  - RERC Unit 4 switchgear maintenance

- SPRINGS
  - None

- CLEARWATER
  - None