MEKETA

5796 Armada Drive
Suite 110
Carlsbad, CA 92008

760.795.3450
Meketa.com

MEMORANDUM

TO: Members of the Investment Committee, CalPERS
FROM: Meketa Investment Group
DATE: September 16, 2024
RE: Quarterly Infrastructure Performance Review, as of June 30, 2024

In our role as the Board Infrastructure Consultant, Meketa Investment Group ("Meketa") conducted a quarterly performance review, of the Infrastructure Portfolio ("the Portfolio") for the California Public Employees' Retirement System ("CalPERS") Real Assets Program (the "Program") for the period ended June 30, 2024, based on data provided by Wilshire Associates and selected CalPERS reports.[1] This memorandum provides the following: Portfolio performance data; implementation summary; status of key policy parameters; and a summarized market commentary provided as an attachment.

Performance[2]

CalPERS' Infrastructure Portfolio outperformed its policy benchmark for all reporting periods.

Net Returns as of March 31, 2024	1 Year (%)	3 Year (%)	5 Year (%)	10 Year (%)
Infrastructure Portfolio Returns	6.1	8.4	6.5	9.5
Infrastructure Policy Benchmark[3]	(11.9)	2.5	2.5	4.1
Over (under) Performance[4]	18.0	6.0	4.0	5.5
Consumer Price Index (For Reference Only)	3.5	5.6	4.2	2.8

Comparing the above June 2024 returns to those posted a year ago, on an absolute basis three of the trailing period returns are down from 8.8%, 7.5%, and 11.2% for the three-, five-, and ten-year periods, respectively, while the one-year return is up from 4.8%. At the same time, the June 2024 returns posted better—in some periods much better—relative performance over the benchmark compared to a year ago, when over (under) performance was 8.8%, 1.5%, 1.0%, and 5.2%, respectively for the one-, three-, five- and ten-year trailing periods.

All trailing period returns exceed CalPERS' expectations for the asset class of 5.3% and 5.5%, set by the Capital Market Assumptions ("CMA") for Real Assets for the near- and long-term (five and 20 years), respectively. We observe that the three- and ten-year returns continue to fall in a range of approximately

[1] CalPERS Real Assets Quarterly Performance Report, including underlying Allocation, Characteristics, and Leverage Reports (Excel files), for the period ending March 31, 2024.
[2] Per Wilshire for the period ended June 30, 2024, reported with a 1-quarter lag, so as of March 31, 2024 (State Street Bank data).
[3] CalPERS Custom Infrastructure Benchmark, with historical composition as follows: MSCI/PREA U.S. ACOE Quarterly Property Fund Index Net of Fees (April 1, 2018 forward); Consumer Price Index ("CPI") + 400 basis points (July 1, 2011 through March 31, 2018); and CPI + 500 basis points (October 1, 2007 through June 30, 2011).
[4] Calculated using more decimal places than shown, so result may not calculate exactly from the table data due to rounding.

September 16, 2024

7% to 10% over the last year, with the five-year return at 6.5% coming close to that range. The five-year return likely still reflects the several down COVID-impacted quarters and should improve as those move through.

For consistency with prior reporting, we note that the Infrastructure Portfolio's comparison to its benchmark should be viewed in the context that, since April 2018, the benchmark has had underlying assets that are 100% real estate, which is now completely reflected in all trailing periods except the ten-year, with the ten-year benchmark being more than half real estate, with the balance CPI+ 400 or +500 basis points.

Relative to CPI, as seen above, returns for all trailing periods are coming in above CPI, which we provide for reference only, as it used to be part of the Portfolio's benchmark, and continues to be used by other institutional investors, usually with a premium of anywhere from +300 to +500 basis points, depending on the risk-orientation of the portfolio. Also visible in the table above is the relatively higher CPI for the three- and five-year periods, reflecting prior elevated levels compared to more recent, and longer historical, periods. We note that the Portfolio's returns exceeded CPI by 230 to 670 basis points over the reported periods.

As we have previously reported, we continue to believe the relatively lower trailing one-year return compared to other periods, excepting the five-year COVID-influenced period, may be due to a combination of the following factors: J-curve- effects for newer commitments, including vehicles with low, negative, or no (i.e., not yet meaningful) returns for one or more of the prior four quarters; lingering impacts from decreased economic activity and valuations associated with COVID impacts, particularly in the transportation sector; and continuing low net income levels (see below). We note that 62% of the Portfolio's Net Asset Value ("NAV") was acquired in the last three years, with 2021 at 26%, 2022 at 19%, and 2023 at 16% of the NAV. As CalPERS continues to build out the Infrastructure Portfolio and increase its commitments to Value Add strategies, future one-year period returns may also be dampened by J-curve effects.

Other aspects of performance drivers are consistent with prior reporting periods and recent market conditions, as highlighted below.[1] Please see the Market Activity Attachment for additional information on selected infrastructure sectors and related economic data.

All returns cited are for the trailing one-year period.

Risk Classification

→ **Core,** comprising 69.4% of the Portfolio, delivered mid single-digit returns. Global Diversified Infrastructure comprised more than half of the Core portfolio at 57.8%, with 15.7% in US Power & Energy, 14.2% in Transportation (all geographies), and 12.4% in Communications (all geographies).

→ **Value Add,** comprising 28.7% of the Portfolio, posted mid single-digit returns. These investments are predominantly diversified commingled funds, at approximately 84.8% of the Value Add portfolio, with a new communications fund investment representing about a fifth of the category and some co-investments making up the balance.

[1] Real Assets QPR Q1 2024 Final.

September 16, 2024

→ **Opportunistic,** comprising 1.9% of the Portfolio, posted negative double-digit returns. This category comprises one diversified commingled fund investment that is in wind-down mode.

Sectors

→ **Global Diversified Infrastructure** comprises 59.1% of the NAV and delivered mid single-digit returns.

→ **US Power/Energy** represents 14.3% of the Portfolio and delivered mid single-digit returns.

→ **Global Communications** comprises 11.2% of the Portfolio and delivered high single-digit returns.

→ **US Transportation** accounts for 6.7% of the portfolio and posted low single-digit returns.

→ **Global Transportation** is 5.5% of the portfolio and posted mid single-digit returns.

→ **International Communications** is 2.5% of the portfolio and posted high single-digit returns.

→ **Global Power/Energy** is 0.8% of the portfolio and performance is not yet meaningful.

Net Income

→ The Portfolio's **one-year net income** was 1.3%, slightly up from 1.4% a year ago. Since before COVID, it has remained below Staff's long-term expectations of annual income between 3% and 5% over the long term. The low net income levels continue to be primarily due to lower levels of distributed income at certain transportation assets, including, in particular, airports, which experienced significant decreases in passenger traffic for a protracted period (distributed income is expected to increase in 2024). Other continuing asset- and fund-specific factors holding the Portfolio's net income down include those related to new funds' J-curves, foreign exchange effects, and variability of income production from selected businesses. In a newer development, Staff is intentionally increasing the Portfolio's Non-Core exposure relative to Core, which will also tend to suppress net income. We note the Core Portfolio NAV has decreased to 69.4% compared to 83.4% a year ago.

Implementation

The Portfolio's NAV as of June 30, 2024, was $16.5 billion, an increase of $1.8 billion, or 12.5%, compared to the June 30, 2023, NAV of $14.6 billion. The current NAV represents 3.3% of the Total Fund, and 24.8% of the Real Assets Program,[1] an increase compared to 3.2% and 20.8% a year ago.

The increase in NAV is the result of a combination of contributions to existing and new investments, distributions, and net realized and unrealized gains and losses. For the prior-year period, the Portfolio's annual contributions outpaced distributions $1.2 billion to $0.4 billion.[2] We continue to expect to see contributions outpace distributions going forward, given the number and size of new commitments made over the last several years compared to the remaining smaller size of legacy assets.

Through CalPERS' various investment vehicles, a significant number of new investments were made during the prior year period in North America, Latin America, Europe, Asia Pacific, and other

[1] The Total Fund market value was $502.9 billion, and the Real Asset Program NAV was $66.4 billion, as of June 30, 2024, per Wilshire.

[2] Real Assets QPR Q1 2024 Final.

September 16, 2024

international geographies in sectors including Conventional Power, Data Infrastructure, Energy, Renewable Power, Social Infrastructure, Transport, Utilities, and other sectors.

As of June 30, 2024, Portfolio NAV distribution is as follows relative to investment type: Transportation was 34.4%; Data Infrastructure 21.7%; Utilities 17.7%; Renewable Power 16.6%; Conventional Power 5.0%; Energy 3.0%; Environmental Services 0.7%; Social Infrastructure 0.5%; and Other 0.4%.

Key Policy Parameters

The Portfolio is compliant with key parameters related to diversification and other limits applicable at the Portfolio level, as documented in the table below, with one exception (shown in a box below): the NAV for Value Add at 28.7% is slightly above its 25.0% limit in effect as of March 31, 2024. This is not unexpected considering Staff's recent additional commitments to Value Add managers, consistent with the 2021 Real Assets Strategic Plan.

Key Portfolio Parameter	Policy Range/Limit	NAV 3/31/24[1]
Risk Classification[2]	(%)	(%)
Core	60-100	**69.4**
Value Add	0-25	$\boxed{\textbf{28.7}}$
Opportunistic-All Strategies	0-25	**1.9**
Geographic Region[3]	(%)	(%)
United States	30-100	**50.4**
International Developed	0-70	**46.8**
International Developing	0-15	**2.7**
International Frontier	0-5	**0.0**
Manager Exposure[4]	(%)	(%)
Largest Partner Relationship	20 max	**8.4**
Investments with No External Manager	20 max	**1.8**
Leverage[5]		
Loan to Value	65% max	**38.6%**
Debt Service Coverage Ratio	1.25x min	**2.54x**

1 Private investment data are one quarter lagged, so effectively as of March 31, 2024.
2 2024.3.31 RA Characteristics Data Sheet.
3 2024.3.31 RA Characteristics Data Sheet.
4 2024.3.31 RA Allocation Data Sheet: calculated based on manager- and account-level NAV. Percent calculated using relevant NAV plus total unfunded commitments for relationships/investments and same for the Real Assets Program ($77.8 billion).
5 CalPERS Real Assets Vital Statistics and Quarterly Management Report (web-based), Quarter Ending March 31, 2024.

September 16, 2024

As part of updating and harmonizing the Total Fund Policy as relates to Real Assets, Staff proposed changes in a March 2024 First Reading that would collapse the separate Value Add and Opportunistic classifications into a single Non-Core classification (for all Real Assets portfolios) and increase the Infrastructure Non-Core upper limit to 50% (from 40%). Meketa believes the proposed change is consistent with the Strategic Plan and was supportive at the First Reading and subsequent Second Reading.[1] The proposed changes were approved and became effective in June 2024; thus, as of the date of this report (June 30, 2024) the Portfolio's risk classification exposures are within the newly approved Policy limits.

Conclusion

For the current reporting period ending June 30, 2024, the Infrastructure Portfolio outperformed its formal benchmarks and other targets for all four trailing periods considered, beating the Infrastructure Policy Benchmark, CPI, and CalPERS' CMA for Real Assets. We note that three of the four trailing period absolute returns are down somewhat compared to a year ago, the exception being the one-year improved return. Factors in the changes include the increasing level of commitments to, and consequent rise in relative NAV exposure, to Value Add investments, as well as the movement of several down "COVID quarters" through the performance history. In contrast, the Portfolio's relative outperformance of the policy benchmark is up somewhat compared to last year. We once again observe that near-term returns could continue to be suppressed due to the J-curve effect as the Portfolio increases in scale with recently made and future new commitments to Value Add infrastructure.

The Portfolio's development and its current position remains appropriate and consistent with applicable policies and guidelines, with one exception as noted previously and below.

→ *Risk*—NAVs are within the classification policy ranges in effect as of June 30, 2024.

→ *Geography*—NAVs are within the categorical ranges.

→ *Partner Relationships and Direct Investments*—Exposures are well below the maximums allowed.

→ *Leverage*—Metrics are comfortably compliant.

The Portfolio continues to grow consistent with its Strategic Plan, now at 24.8% of the Real Assets Program and 3.3% of the Total Plan, compared to 20.8% and 3.2% a year ago. Over the past year, approximately $2.6 billion in new or follow-on infrastructure investments closed under new or existing managers. Long-time managers provide asset base stability with on-going acquisition capabilities, and newer managers support capital deployment at greater scale and some sector-specific expertise. The Portfolio is well-diversified by sector, asset type, and geography. Overall, it is well-positioned to continue adding scale, diversification, and enhanced return potential for the benefit of the Total Fund.

Please do not hesitate to contact us if you have questions or require additional information.

EFB/SPM/jls

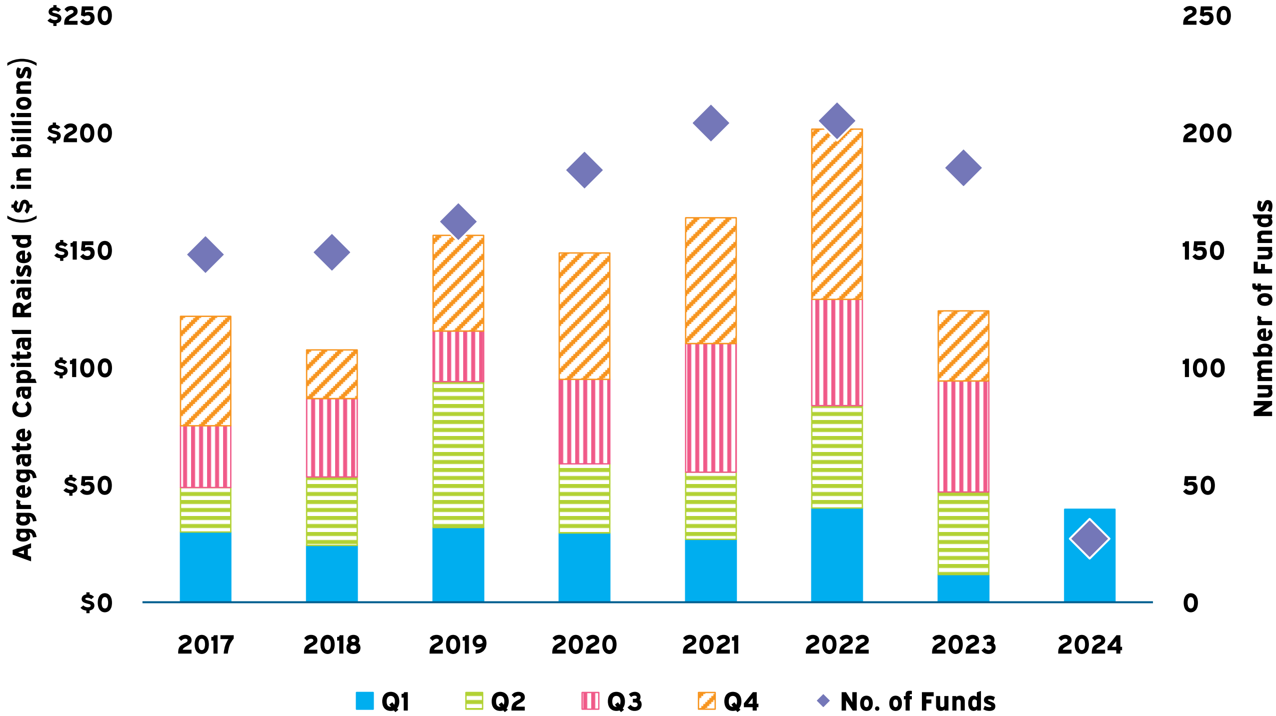
[1] For example, see Item 6b-05 for the June 10, 2024 Investment Committee meeting for more detail: Meketa's opinion memorandum for the Total Fund Policy Revisions Relating to Real Assets—Second Reading.

September 16, 2024

Attachment[1]

Infrastructure Market Commentary – Q1 2024

Global Quarterly Unlisted Infrastructure Fundraising[2]

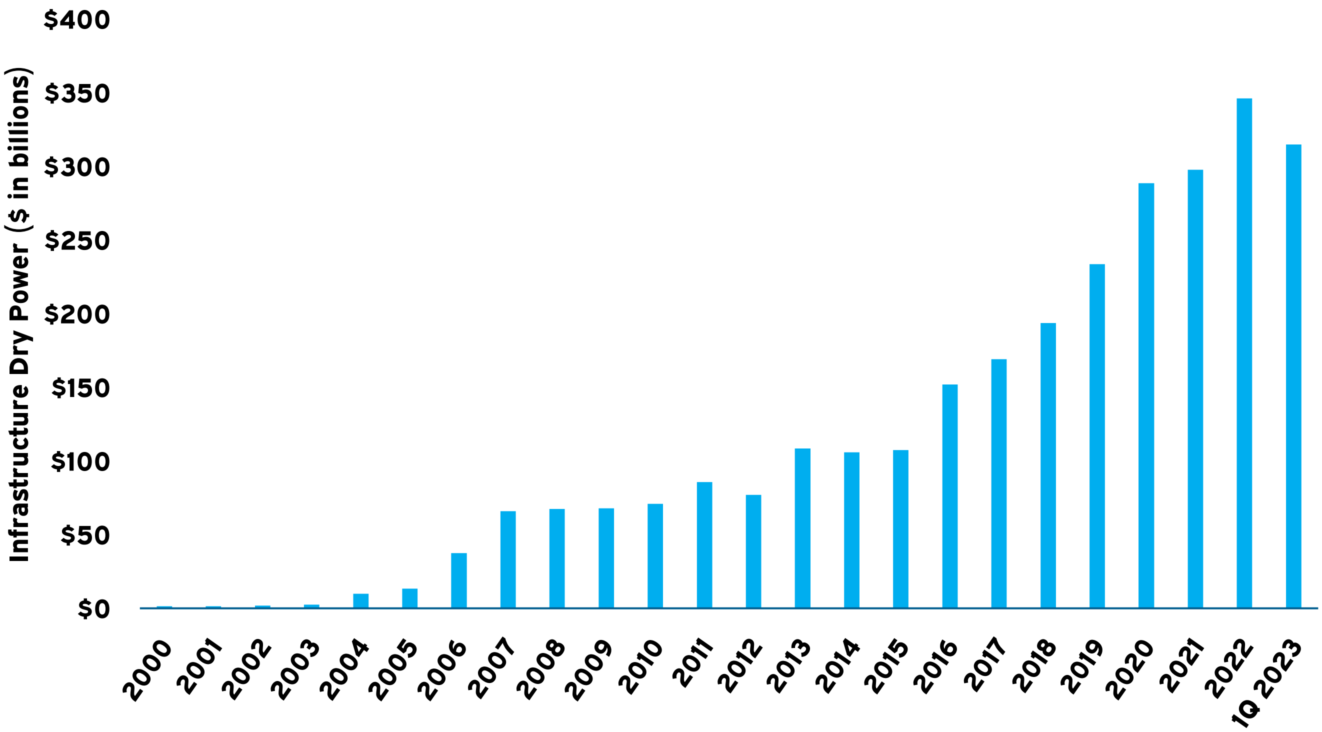


After a weak 2023 for fundraising for infrastructure, 1Q 2024 rebounded to the 2022 levels and nearly matched the first half of 2023. Year-over-year, the first quarter was over three times the amount raised in the first quarter of 2023 with the average amount raised by fund increasing from $0.3 billion to $1.5 billion.

[1] Commentary based on analysis of aggregated and deal-level data from Preqin, and other Preqin data, unless otherwise cited. Prior year data may have changed from figures shown in prior reports.
[2] Source: Preqin 1Q 2023.

September 16, 2024

Global Infrastructure Dry Power[1]

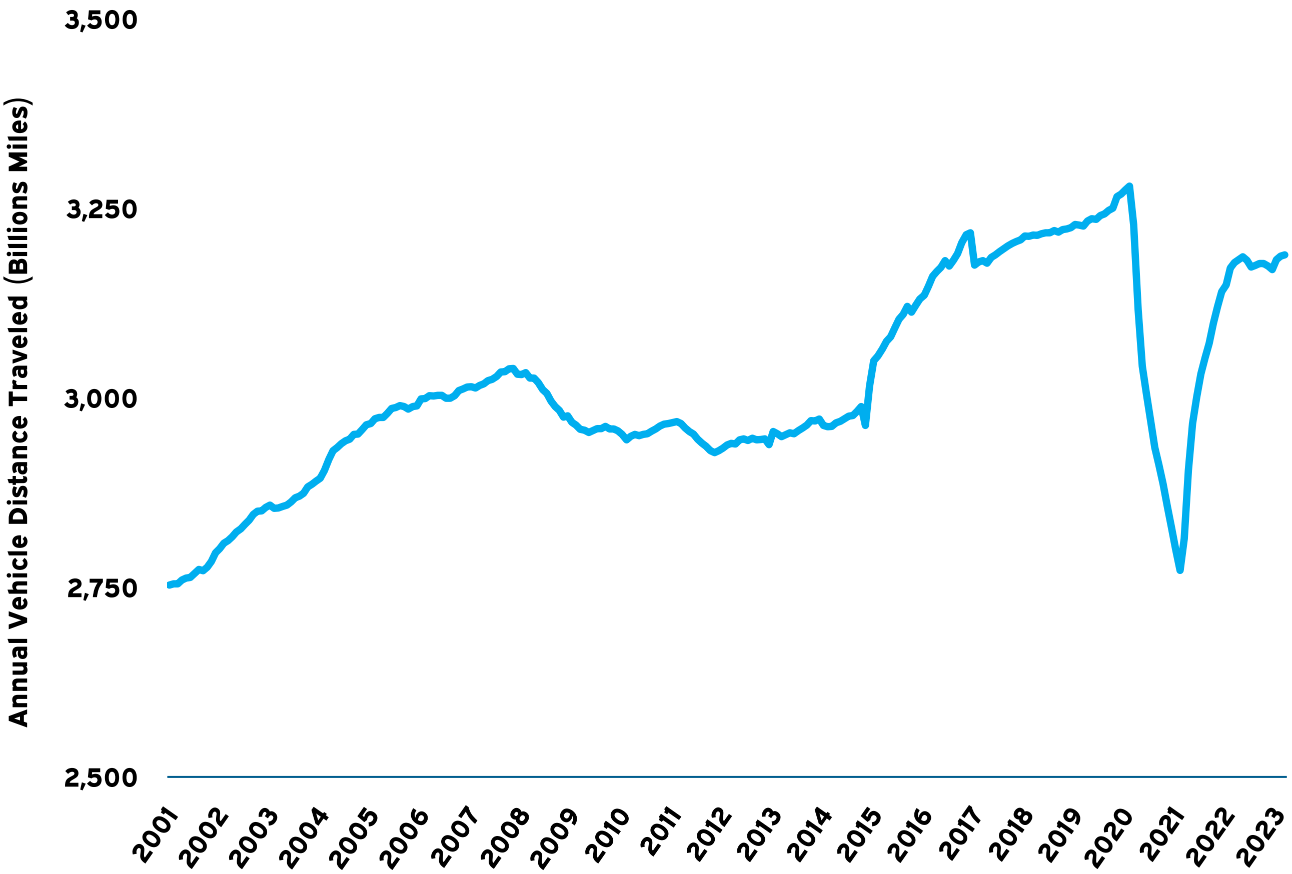


The available infrastructure dry powder continues to increase despite the touch fundraising environment through 2023. The dry power reached record levels in 1Q 2024 with nearly $350 billion available.

[1] Source: Preqin Dry Powder downloaded April 2024.

September 16, 2024

Trailing 12-month Annual Vehicle Miles on All US Roads[1]

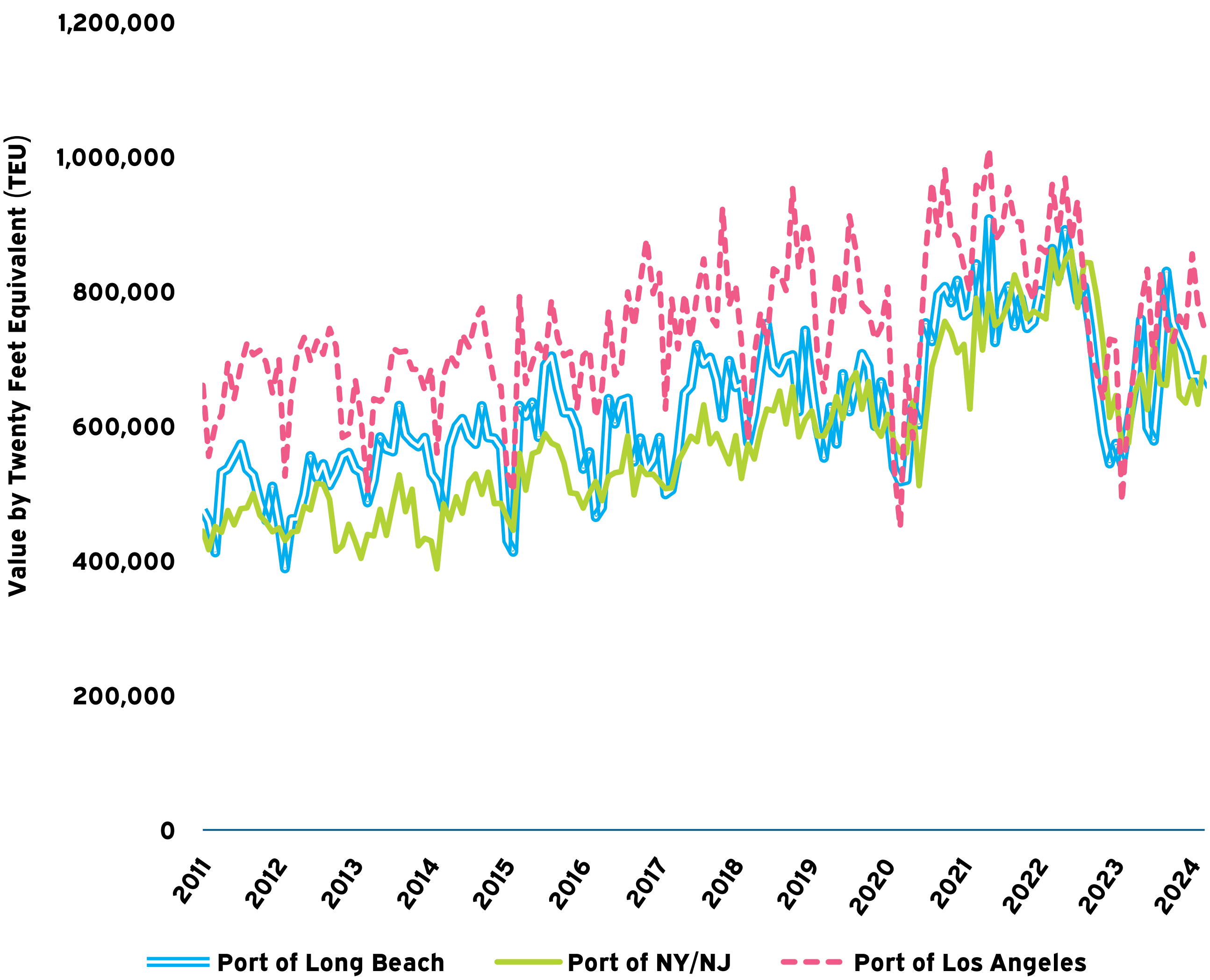


The first quarter continued post-pandemic travel recovery with a total of approximately 762 billion miles. This represented an increase of 1.4% over the same period in 2023. The miles are closing in on the peak from late 2019. The average monthly price of gasoline has decreased to $3.60 per gallon by the end of the first quarter.

[1] Source: US Department of Transportation, Federal Highway Administration: Office of Highway Policy Information.

September 16, 2024

US Port Activity – Container Trade in TEUs[1]



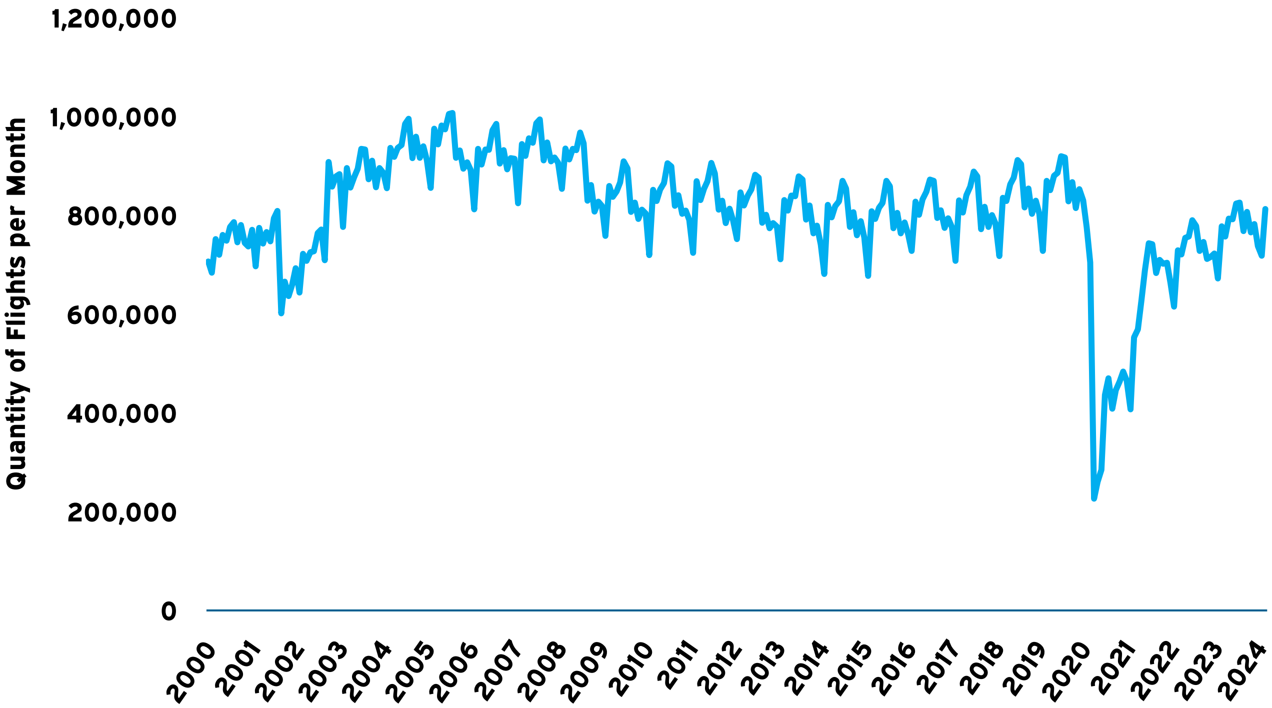
The chart presents the top three US ports by container volume, as measured by twenty-foot equivalent units ("TEU"). Activity at the three ports provides a high level representation of the volume at US ports more broadly.

During the first quarter, volumes at the three ports increased by 1.0 million units relative to the same period in 2023. On a year-over-year basis, the combined port volumes decreased by 0.9 million TEUs, or -3%, over the prior 12-month period. The Port of Long Beach recorded a decrease of 1% (0.1 million TEUs), the Port of NY/NJ reported a decrease of 10% (0.9 million TEU), and the Port of Los Angeles recorded a increase of 1% (0.1 million TEUs) over the prior 12 months.

[1] Source: www.polb.com, www.panynj.gov and www.portoflosangeles.org

September 16, 2024

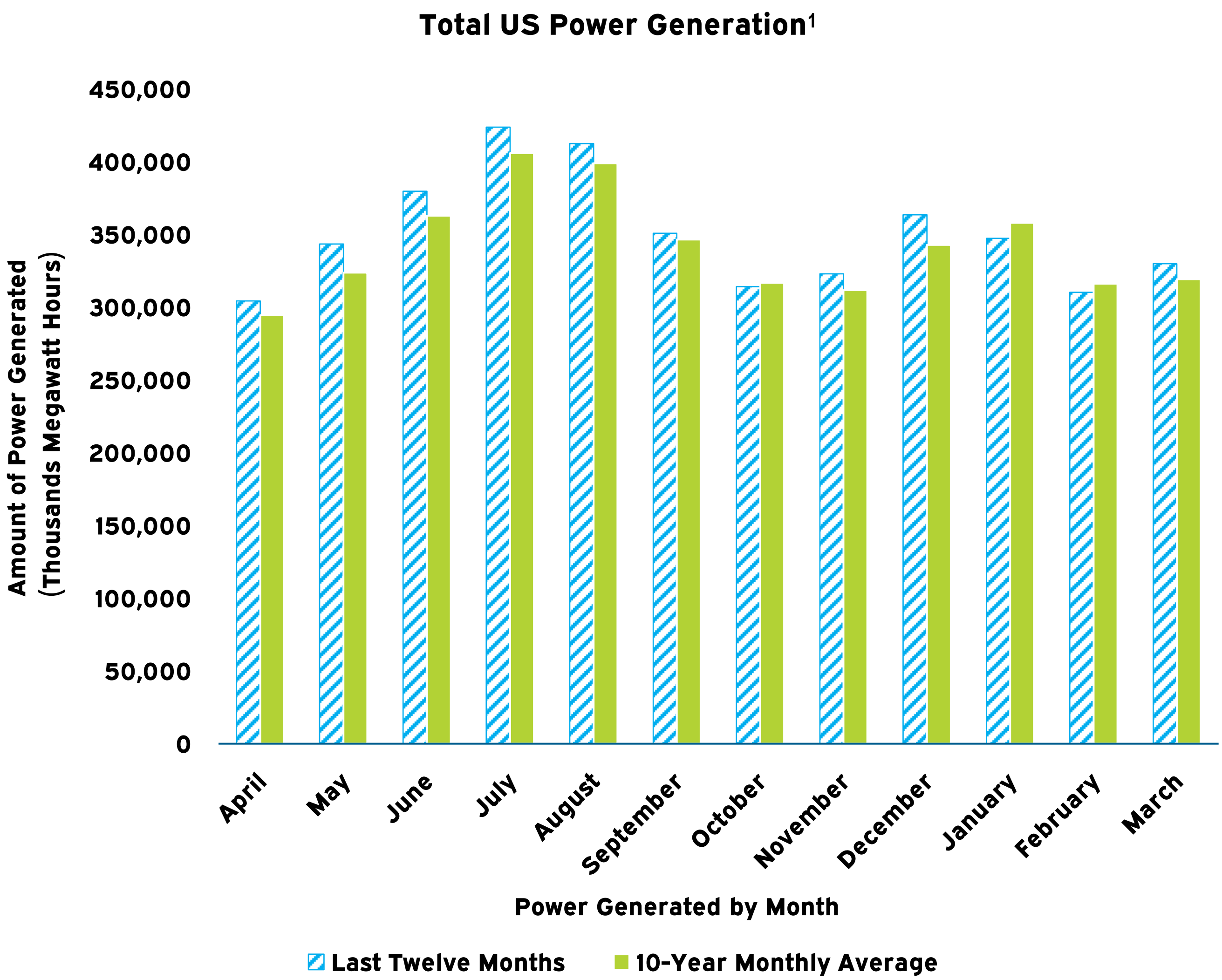
Total US Domestic and International Flights[1]



The chart above presents all US domestic and international flights, excluding foreign point-to-point flights by month. Historically, air traffic is cyclical with peaks in the summer months and troughs in the winter months.

There were 0.1 million more flights during the first quarter of 2024 over same period in 2023, representing an 5.7% increase. In addition to the number of flights, the total number of passengers travelling on US and international airlines increased by 9% for the 12 months ended March 31, 2024.

[1] Source: Bureau of Transportation Statistics: Flights, All US, and Foreign Carriers.

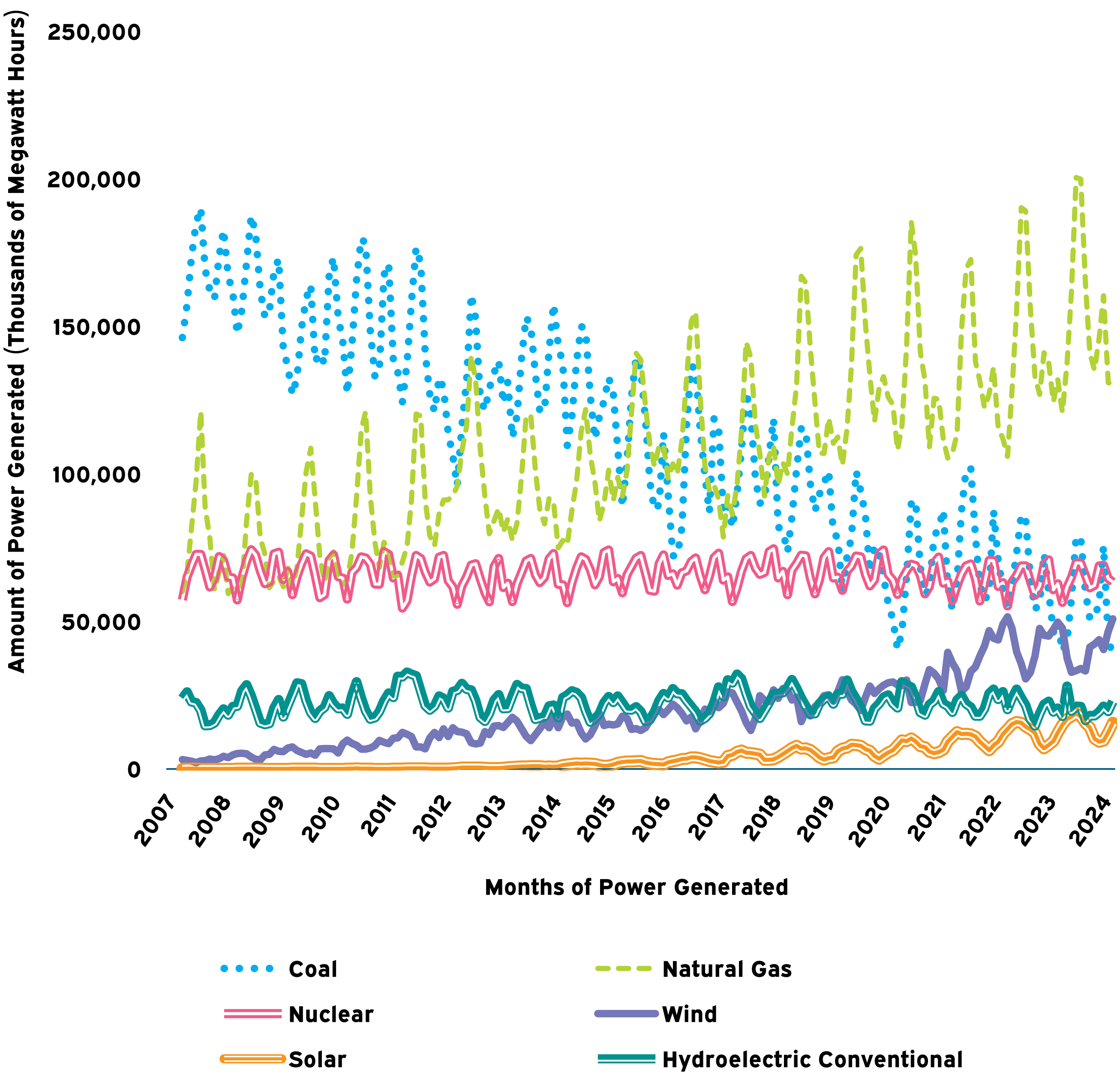


The graph above presents the total net generation for the past 12 months compared to the 10-year average for each month. Net energy generation in the US remained steady with an increase of 1% during the first quarter, compared to the same period in 2022.

[1] Source: US Energy Information Administration: Electric Power Monthly, March 2023.

September 16, 2024

US Power Generation by Source[1]



In the first quarter 2024, total Utility Scale US power generated increased by 27% over the same period in 2023. Wind and utility-scale solar continue to make up a small portion of total net energy generation in the US, accounting for only 11% and 4% of energy generation, respectively. Natural gas, coal, and nuclear accounted for 43%, 16%, and 18%, respectively.

[1] Source: US Energy Information Administration: Electric Power Monthly, March 2024.

September 16, 2024

Disclaimer

THIS REPORT (THE "REPORT") HAS BEEN PREPARED FOR THE SOLE BENEFIT OF THE INTENDED RECIPIENT (THE "RECIPIENT").

SIGNIFICANT EVENTS MAY OCCUR (OR HAVE OCCURRED) AFTER THE DATE OF THIS REPORT, AND IT IS NOT OUR FUNCTION OR RESPONSIBILITY TO UPDATE THIS REPORT. THE INFORMATION CONTAINED HEREIN, INCLUDING ANY OPINIONS OR RECOMMENDATIONS, REPRESENTS OUR GOOD FAITH VIEWS AS OF THE DATE OF THIS REPORT AND IS SUBJECT TO CHANGE AT ANY TIME. ALL INVESTMENTS INVOLVE RISK, AND THERE CAN BE NO GUARANTEE THAT THE STRATEGIES, TACTICS, AND METHODS DISCUSSED HERE WILL BE SUCCESSFUL.

THE INFORMATION USED TO PREPARE THIS REPORT MAY HAVE BEEN OBTAINED FROM INVESTMENT MANAGERS, CUSTODIANS, AND OTHER EXTERNAL SOURCES. SOME OF THIS REPORT MAY HAVE BEEN PRODUCED WITH THE ASSISTANCE OF ARTIFICIAL INTELLIGENCE ("AI") TECHNOLOGY. WHILE WE HAVE EXERCISED REASONABLE CARE IN PREPARING THIS REPORT, WE CANNOT GUARANTEE THE ACCURACY, ADEQUACY, VALIDITY, RELIABILITY, AVAILABILITY, OR COMPLETENESS OF ANY INFORMATION CONTAINED HEREIN, WHETHER OBTAINED EXTERNALLY OR PRODUCED BY THE AI.

THE RECIPIENT SHOULD BE AWARE THAT THIS REPORT MAY INCLUDE AI-GENERATED CONTENT THAT MAY NOT HAVE CONSIDERED ALL RISK FACTORS. THE RECIPIENT IS ADVISED TO CONSULT WITH THEIR MEKETA ADVISOR OR ANOTHER PROFESSIONAL ADVISOR BEFORE MAKING ANY FINANCIAL DECISIONS OR TAKING ANY ACTION BASED ON THE CONTENT OF THIS REPORT. WE BELIEVE THE INFORMATION TO BE FACTUAL AND UP TO DATE BUT DO NOT ASSUME ANY RESPONSIBILITY FOR ERRORS OR OMISSIONS IN THE CONTENT PRODUCED. UNDER NO CIRCUMSTANCES SHALL WE BE LIABLE FOR ANY SPECIAL, DIRECT, INDIRECT, CONSEQUENTIAL, OR INCIDENTAL DAMAGES OR ANY DAMAGES WHATSOEVER, WHETHER IN AN ACTION OF CONTRACT, NEGLIGENCE, OR OTHER TORT, ARISING OUT OF OR IN CONNECTION WITH THE USE OF THIS CONTENT. IT IS IMPORTANT FOR THE RECIPIENT TO CRITICALLY EVALUATE THE INFORMATION PROVIDED.

CERTAIN INFORMATION CONTAINED IN THIS REPORT MAY CONSTITUTE "FORWARD-LOOKING STATEMENTS," WHICH CAN BE IDENTIFIED BY THE USE OF TERMINOLOGY SUCH AS "MAY," "WILL," "SHOULD," "EXPECT," "AIM," "ANTICIPATE," "TARGET," "PROJECT," "ESTIMATE," "INTEND," "CONTINUE," OR "BELIEVE," OR THE NEGATIVES THEREOF OR OTHER VARIATIONS THEREON OR COMPARABLE TERMINOLOGY. ANY FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS REPORT ARE BASED UPON CURRENT ASSUMPTIONS. CHANGES TO ANY ASSUMPTIONS MAY HAVE A MATERIAL IMPACT ON FORWARD-LOOKING STATEMENTS, FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS. ACTUAL RESULTS MAY THEREFORE BE MATERIALLY DIFFERENT FROM ANY FORECASTS, PROJECTIONS, VALUATIONS, OR RESULTS IN THIS REPORT.

PERFORMANCE DATA CONTAINED HEREIN REPRESENT PAST PERFORMANCE. PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.