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# MEMORANDUM

**TO:** Members of the Investment Committee, CalPERS

**FROM:** Meketa Investment Group

**DATE:** June 10, 2024

**RE:** Annual Program Review, inclusive of Quarterly Infrastructure Performance Review, as of March 31, 2024

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In our role as the Board Infrastructure Consultant, Meketa Investment Group ("Meketa") conducted an annual program review, inclusive of the 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 March 31, 2024, based on data provided by Wilshire Associates and selected CalPERS reports.[1] This memorandum provides the following: Portfolio performance data and information on key policy parameters; information about the structure of the Portfolio; a Program update; 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 | 6.0 | 8.1 | 6.7 | 10.5 |
| Infrastructure Policy Benchmark[3] | (12.6) | 4.0 | 3.3 | 4.6 |
| Over (under) Performance[4] | 18.7 | 4.1 | 3.4 | 5.9 |
| Consumer Price Index (For Reference Only) | 3.4 | 5.6 | 4.1 | 2.8 |

Comparing the above March 2024 returns to those posted a year ago, on an absolute basis three of the trailing period returns are down from 7.8%, 7.8%, and 11.0% for the one-, five-, and ten-year periods, respectively, while the three-year return is up from 5.7%. At the same time, the March 2024 returns posted better—in some periods much better—relative performance over the benchmark compared to a year ago, when over (under) performance was 1.3%, (3.1%), 0.1%, and 4.4%, respectively for the one-, three-, five- and ten-year trailing periods.

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[1] CalPERS Real Assets Quarterly Performance Report, including underlying Allocation, Characteristics, and Leverage Reports (Excel files), for the period ending December 31, 2023.

[2] Per Wilshire for the period ended March 31, 2024, reported with a 1-quarter lag, so as of December 31, 2023 (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.

As we have noted in recent quarters, the trailing one-year return, while beating its benchmark—this quarter by a substantial margin—is meaningfully below prior periods, in part due to factors described below. Even so, 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 7% to 10% over the last year, with the five-year return at 6.7% 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 the recent elevated levels compared to more recent, and longer historical, periods. We note that the Portfolio's returns exceeded CPI by 280 to 560 basis points over the reported periods.

As we have previously reported, we continue to believe the lower trailing one-year return 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 61% of the Portfolio's 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.

[1] Real Assets QPR Q4 2023 Final.

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

## Risk Classification

→ **Core,** comprising 70.2% of the Portfolio, delivered mid single-digit returns. Global Diversified Infrastructure comprised more than half of the Core portfolio, with 16.0% in US Power & Energy, 14.3% in Transportation (all geographies), and 11.2% in Communications (all geographies).

→ **Value Add,** comprising 27.9% of the Portfolio, posted mid single-digit returns. These investments are predominantly diversified commingled funds, at approximately two-thirds of the Value Add portfolio, with a new communications fund investment representing about a quarter of the category and some co-investments making up the balance.

→ **Opportunistic,** comprising 2.0% of the Portfolio, posted negative double-digit returns. This category comprises one diversified commingled fund investment.

## Sectors

→ **Global Diversified Infrastructure** comprises 59.5% of the NAV and delivered mid single-digit returns.

→ **US Power/Energy** represents 14.6% 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 6.8% of the portfolio and posted low single-digit returns.

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

→ **International Communications** is 1.7% of the portfolio and performance is not yet meaningful.

→ **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%, essentially unchanged from 1.2% 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 70.2% compared to 82.7% as of a year ago.

## Implementation

The Portfolio's Net Asset Value ("NAV") as of March 31, 2024 was $15.7 billion, an increase of $1.6 billion, or 11.5%, compared to the March 31, 2023 NAV of $14.1 billion. The current NAV represents 3.2% of the Total Fund, and 23.7% of the Real Assets Program, [1] an increase compared to 3.1% and 19.8% 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 contributions outpaced distributions $2.6 billion to $0.3 billion, respectively.[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 and the UK, and Asia Pacific in sectors including data infrastructure, conventional and renewable power, energy, social infrastructure, transportation, and utilities.

As of March 31, 2024, Portfolio NAV distribution is as follows relative to investment type: Transportation was 34.7%; Data Infrastructure was 21.1%; Utilities were 18.1%; Renewable Power was 17.0%; Conventional Power was 5.0%; Energy was 2.9%; Environmental Services was 0.7%; and Social Infrastructure was 0.5%.

## Infrastructure Portfolio Structure

The Portfolio invests via a number of different managers and investment vehicles, currently relying primarily on separate accounts and commingled funds, noting that five of the latter are winding down as they come to the end of their terms. Compared to a year ago, the number of active partners is unchanged, but there are five net new active vehicles, 40 more individual investments, and at least 12 more countries represented. The distribution of NAV is about the same as a year ago, while the total exposure (NAV + Unfunded) for commingled funds and fund co-investments has increased slightly, with the relative exposure in separate accounts coming down a bit, and with direct investments unchanged.

| Active Partners | Active Vehicles | Investments | Countries |
|---|---|---|---|
| 11 | 28 | 141 | 22+ |

| Investment Vehicle Type | Count | % of NAV | % of NAV + Unfunded |
|---|---|---|---|
| Commingled Funds | 18 | 28% | 31% |
| Direct Investments | 2 | 9% | 7% |
| Fund Co-Investments | 7 | 11% | 13% |
| Separate Accounts | 4 | 52% | 49% |
| **Total** | **31**[3] | **100%** | **100%** |

[1] The Total Fund market value was $495.3 billion, and the Real Asset Program NAV was $66.4 billion, as of March 31, 2024, per Wilshire.
[2] Real Assets QPR Q4 2023 Final.
[3] The total count differs from the number of active vehicles depending on their wind-down or activation status. Source 2023.12.31 RA Allocation Data Sheet.

## 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 is slightly above its 25.0% limit at 27.9%. This is not unexpected considering Staff's recent additional commitments to Value Add managers, consistent with the 2021 Real Assets Strategic Plan. As part of updating and harmonizing the Total Fund Policy as relates to Real Assets, Staff proposed changes in a March 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 is supportive. Please see Item 6b-05 for the June meeting, Meketa's opinion memorandum for the Total Fund Policy Revisions Relating to Real Assets—Second Reading, for more detail.

For this annual review, we included the data from a year ago, as of March 31, 2023, as shown in the table below. We observe that most of the parameters are about the same in the geographic, manager exposure, and leverage parameter categories. As noted above, and addressed in recent reporting, Staff is intentionally decreasing Core NAV and increasing Value Add NAV, consistent with the Strategic Plan, and those changes are evident in the March 2024 and year ago data.

| Key Portfolio Parameter | Policy Range/Limit | NAV 3/31/24[1] | *NAV 3/31/23* |
|---|---|---|---|
| **Risk Classification**[2] | (%) | (%) | (%) |
| Core | 60-100 | **70.2** | 82.7 |
| Value Add | 0-25 | **27.9** | 15.5 |
| Opportunistic-All Strategies | 0-25 | **2.0** | 1.8 |
| **Geographic Region**[3] | (%) | (%) | (%) |
| United States | 30-100 | **50.5** | 56.0 |
| International Developed | 0-70 | **46.8** | 42.9 |
| International Developing | 0-15 | **2.7** | 1.1 |
| International Frontier | 0-5 | **0.0** | 0.0 |
| **Manager Exposure**[4] | (%) | (%) | (%) |
| Largest Partner Relationship | 20 max | **8.2** | 6.0 |
| Investments with No External Manager | 20 max | **1.7** | 1.6 |
| **Leverage**[5] | | | |
| Loan to Value | 65% max | **36.4%** | 39.5% |
| Debt Service Coverage Ratio | 1.25x min | **2.52x** | 2.33x |

1 Private investment data are one quarter lagged, so effectively as of December 31, 2023.
2 2023.12.31 RA Characteristics Data Sheet.
3 2023.12.31 RA Characteristics Data Sheet.
4 2023.12.31 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 ($79.0 billion).
5 CalPERS Real Assets Vital Statistics and Quarterly Management Report (web-based), Quarter Ending December 31, 2023.

## Real Assets Staffing Program Update

The Real Assets Program is led by its Managing Investment Director ("MID"), along with three Investment Directors, who together oversee 38 other Staff positions, as of April 1, 2024. The Investment Director ("ID") position that was being recruited for this time last year was filled by promoting one of the Program's Investment Managers ("IM"). Of the Program's 10 IM positions, three are effectively dedicated to infrastructure, with eight additional positions supporting them, also on a dedicated basis. Additionally, most team members currently work across all phases of the investment program, including sourcing and diligencing new investments, as well as managing existing investments and manager relationships.

Staffing movements among professionals supporting the Infrastructure Portfolio over the prior fiscal year were as follows: the promotion of one IM to ID as noted above; the promotion of one Investment Officer ("IO") III to Associate Investment Manager ("AIM"); and the promotion of another IO III to AIM who had previously focused on real estate. The Program is recruiting for the IM and IO III positions vacated by the new ID and new AIM, respectively, with the plan for those individuals to focus exclusively on infrastructure.

Overall, we continue to observe the Real Assets team as stable, engaged, and collaboratively working together in a rigorous investment sourcing, diligencing, decision-making, and post-commitment and post-acquisition management process. Their rigor and focus have continued to be important to increasing the infrastructure portfolio's scale and diversification in a thoughtful, strategic, and prudent manner.

## Conclusion

For the current reporting period ending March 31, 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 three-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 over performance of the policy benchmark is up somewhat compared to last year as the benchmark's underlying real estate assets continue to be challenged. We 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 for Core and Opportunistic classifications are within the policy ranges, but the Value Add NAV is slightly above the policy limit at 27.5% compared to a limit of 25%. As noted above, Meketa supports proposed policy changes that would expand the total Non-Core NAV limit to 50%.

→ *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 comprising 23.7% of the Real Assets Program and 3.2% of the Total Plan, compared to 19.8% and 3.1% a year ago. In 2023, the Real Assets Program began investing through five new vehicles comprising a combination of commingled funds, co-investments, and one new separate account, while approximately $2.4 billion in new or follow-on infrastructure investments closed under new or existing managers through a variety of investment vehicles. Staff continues to build out the Portfolio through a combination of investing more with proven existing managers and adding new managers to increase capacity, target attractive sectors and geographies, and further diversify and strengthen the infrastructure manager roster. We continue to believe this activity will enhance the Portfolio's diversification, resiliency, and return potential.

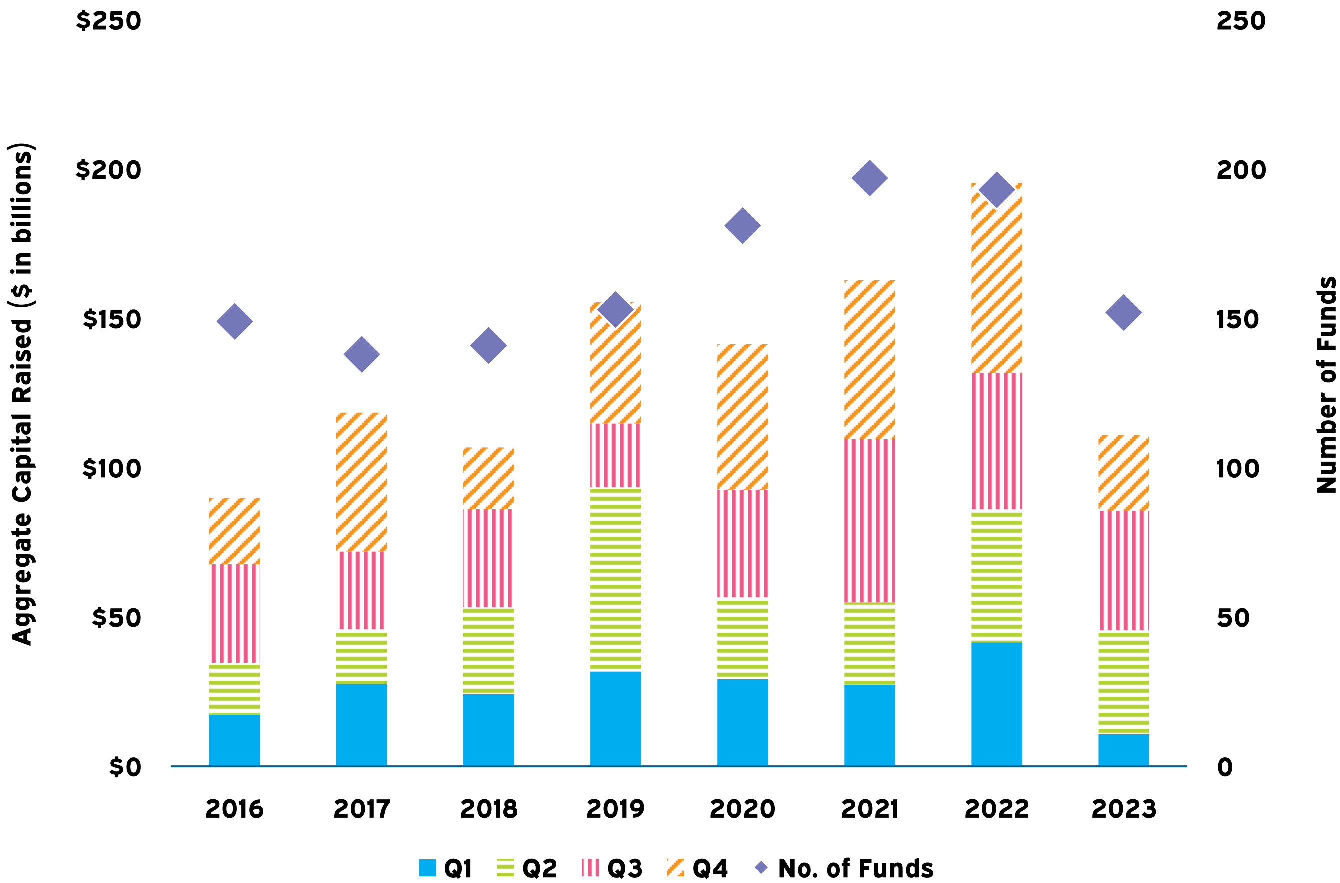
Please do not hesitate to contact us if you have questions or require additional information.

EFB/SPM/jls

## Attachment[1]

### Infrastructure Market Commentary – Q4 2023

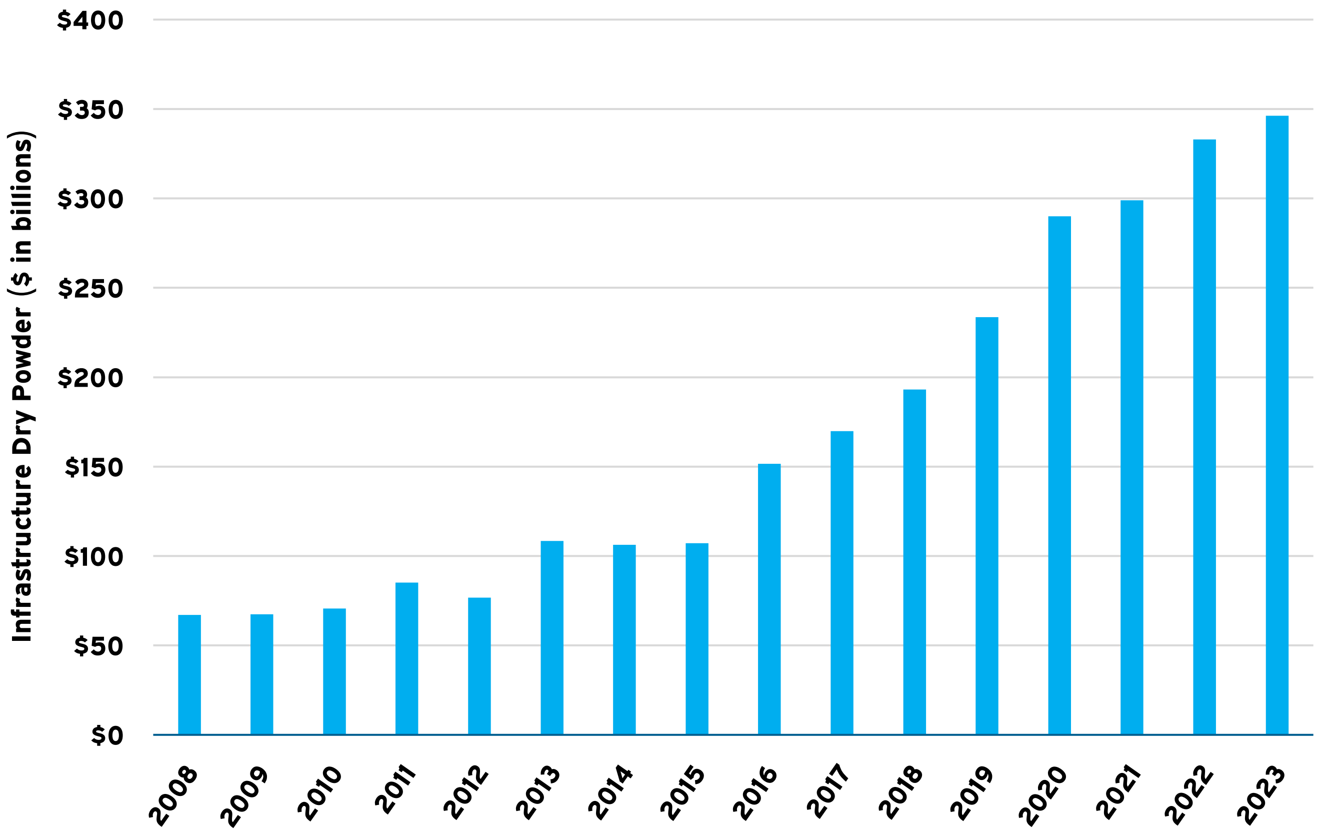
**Global Quarterly Unlisted Infrastructure Fundraising[2]**




After a strong 2022 that experienced record infrastructure fundraising of nearly $200 billion, 2023 raised just over $100 billion. The graph represents funds reaching their final close, so the 2023 data is partially the prolonged fundraising periods as infrastructure funds seek fundraising extensions to reach their targets.

[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 4Q 2023.

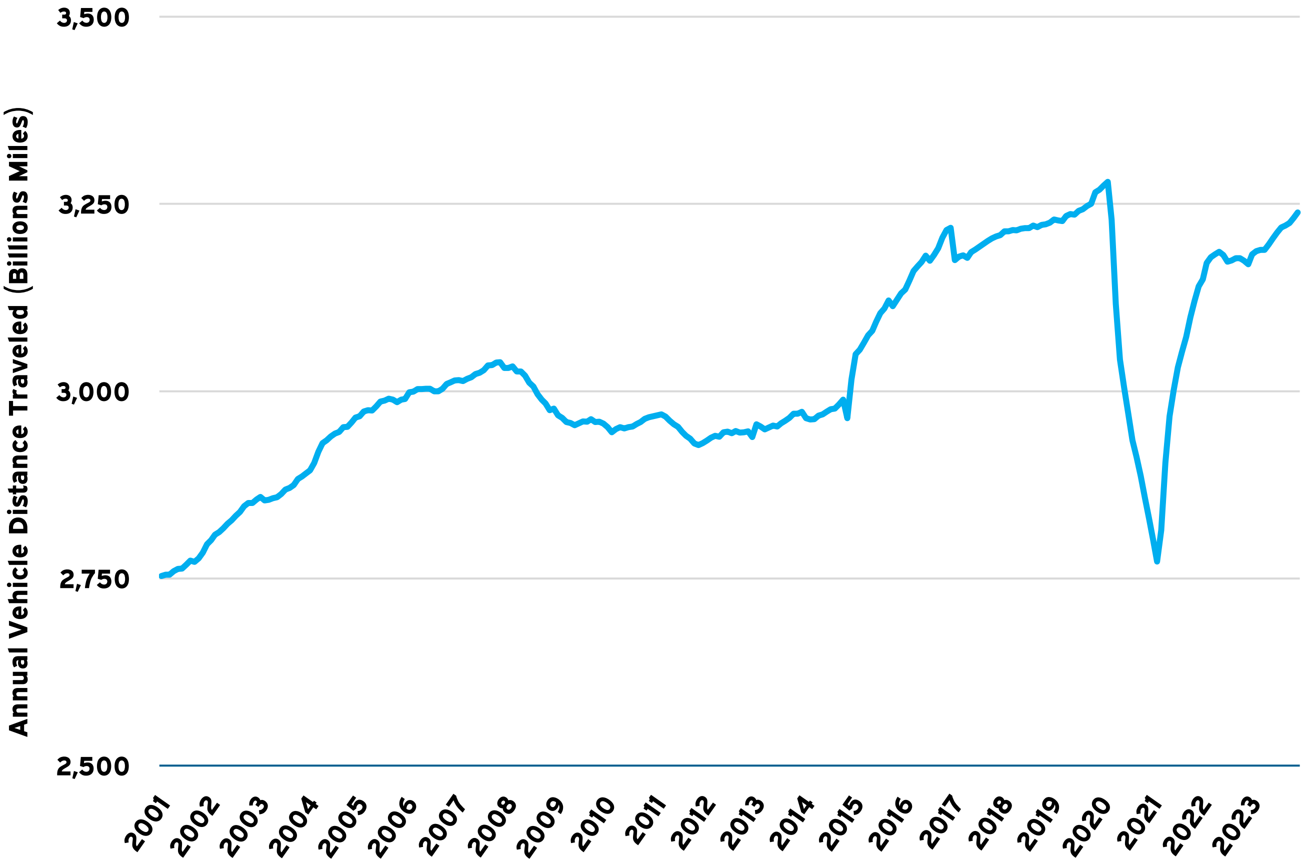
**Global Infrastructure Dry Powder**[1]




The available infrastructure dry powder has steadily increased year-over-year increases since 2015. Dry powder is at a record high of nearly $350 billion.

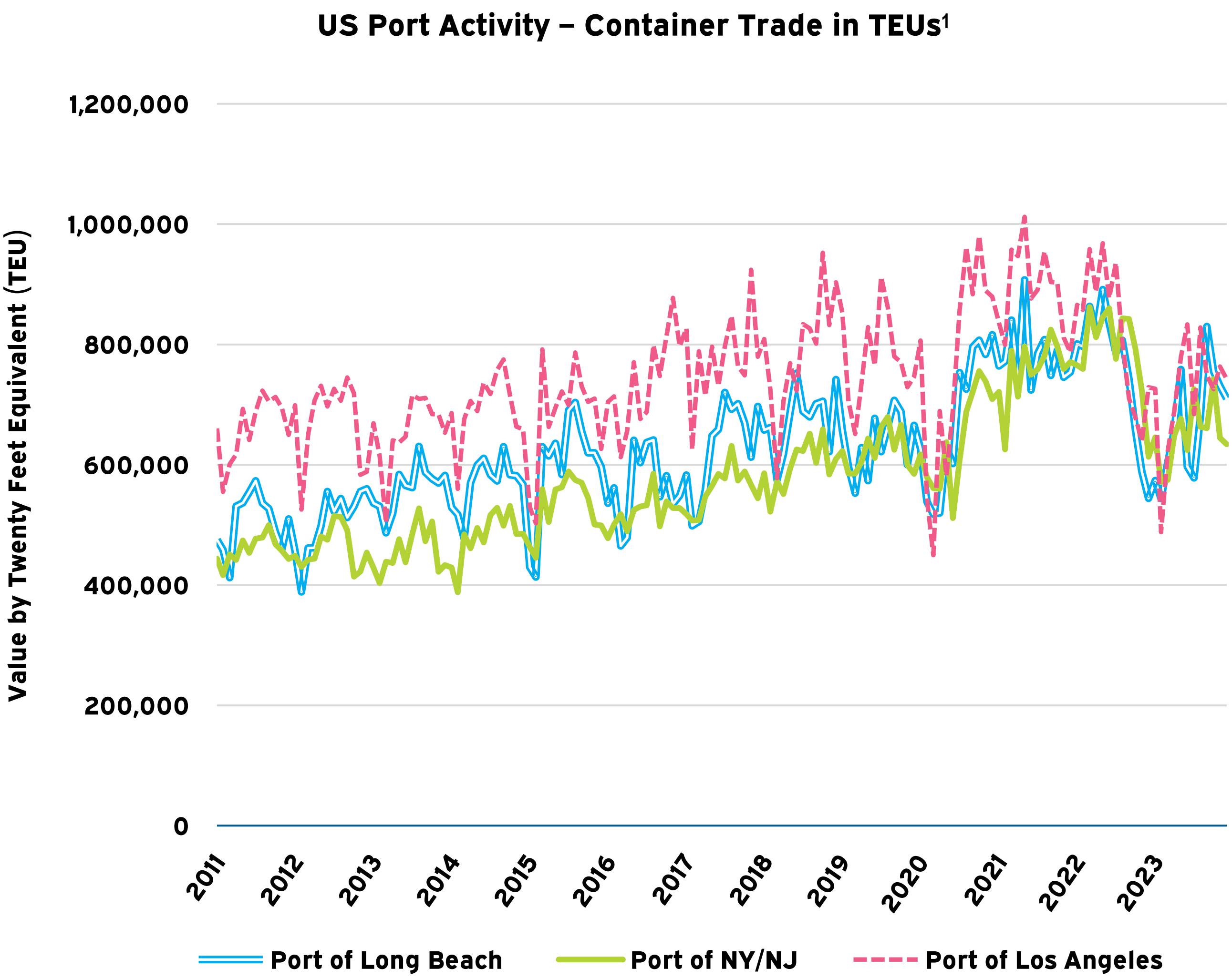
[1] Source: Preqin Dry Powder downloaded January 2024.

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




The fourth quarter continued post-pandemic travel recovery with a total of approximately 809 billion miles. This represented an increase of 2% over the same period in 2022. The trailing 12-month travel mileage has reached the 2019 peak. The average monthly price of gasoline has decreased to $3.63 per gallon by the end of the fourth quarter.

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

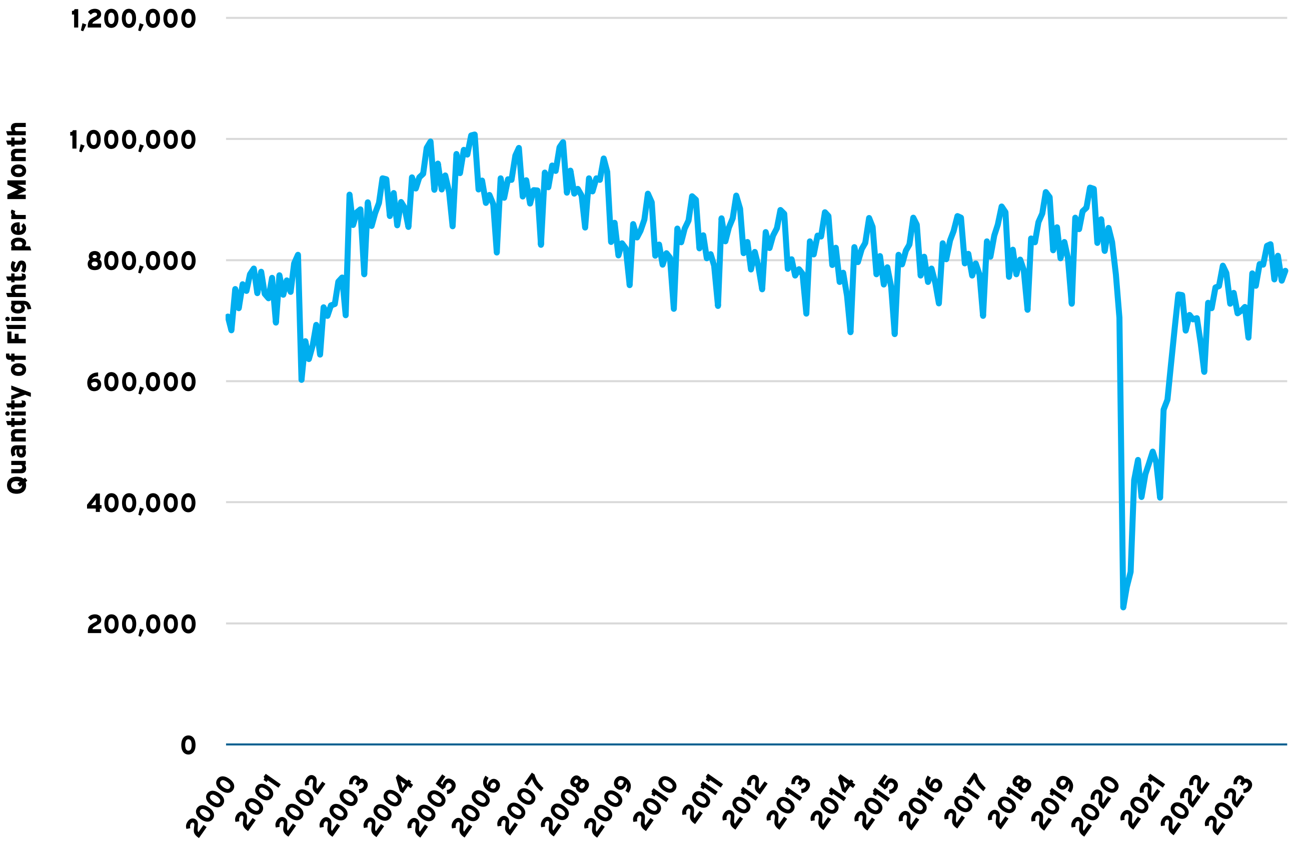



The chart presents the top three US ports by container volume, as measured by twenty-foot equivalent units ("TEU"). Activity at the three ports provides a high level representation of the volume at US ports more broadly.

During the fourth quarter, volumes at the three ports increased by 0.5 million units relative to the same period in 2022. On a year-over-year basis, the combined port volumes decreased by 4.1 million TEUs, or -14%, over the prior 12-month period. The Port of Long Beach recorded a decrease of 12% (1.1 million TEUs), the Port of NY/NJ reported a decrease of 18% (1.7 million TEU), and the Port of Los Angeles recorded a decrease of 13% (1.3 million TEUs) over the prior 12 months.

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

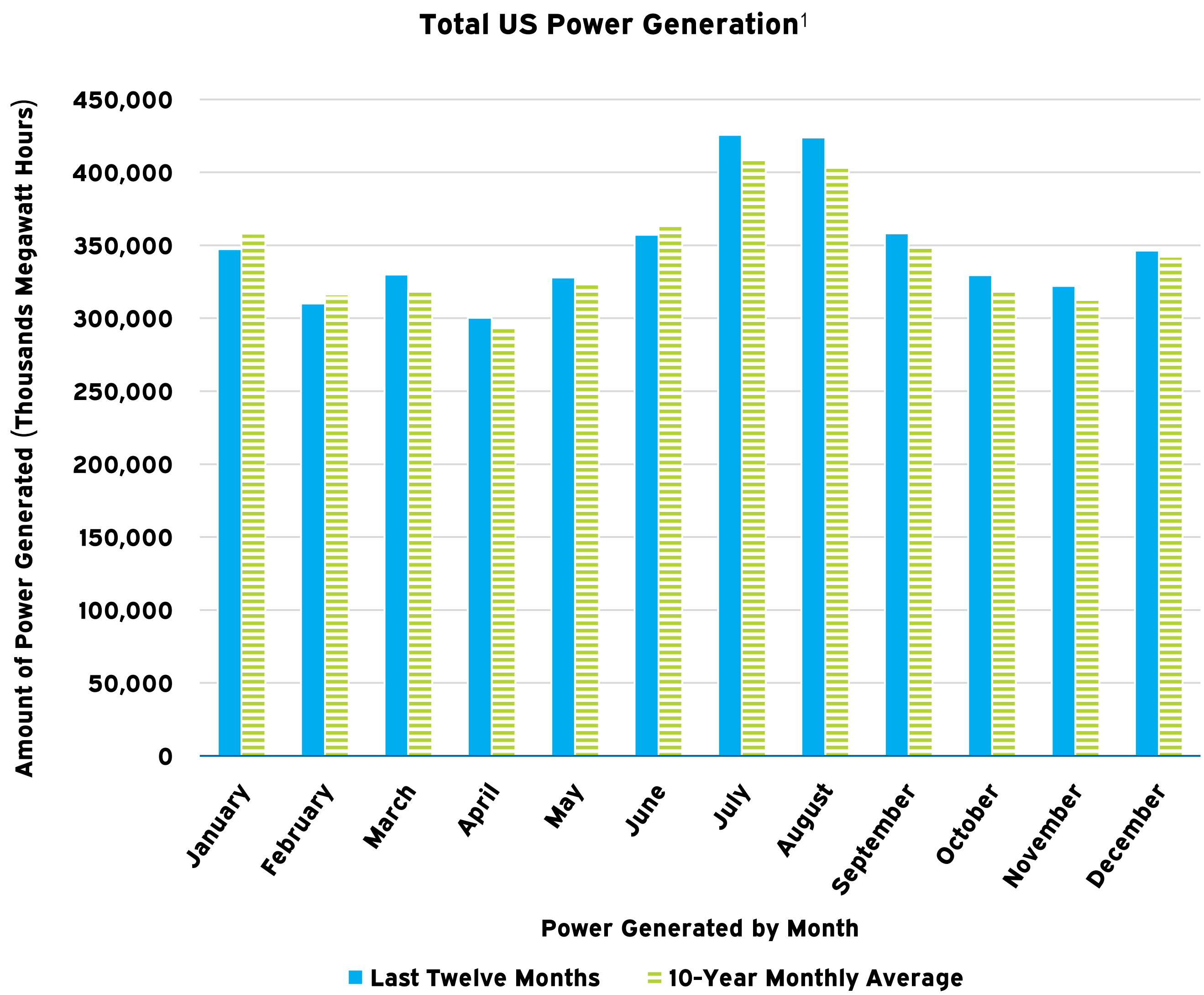
**Total US Domestic and International Flights**[1]




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 0.2 million more flights during the fourth quarter of 2023 over same period in 2022, representing a 6.6% increase. In addition to the number of flights, the total number of passengers travelling on US and international airlines increased by 12.2% for the 12 months ended December 31, 2023 over the prior 12 months.

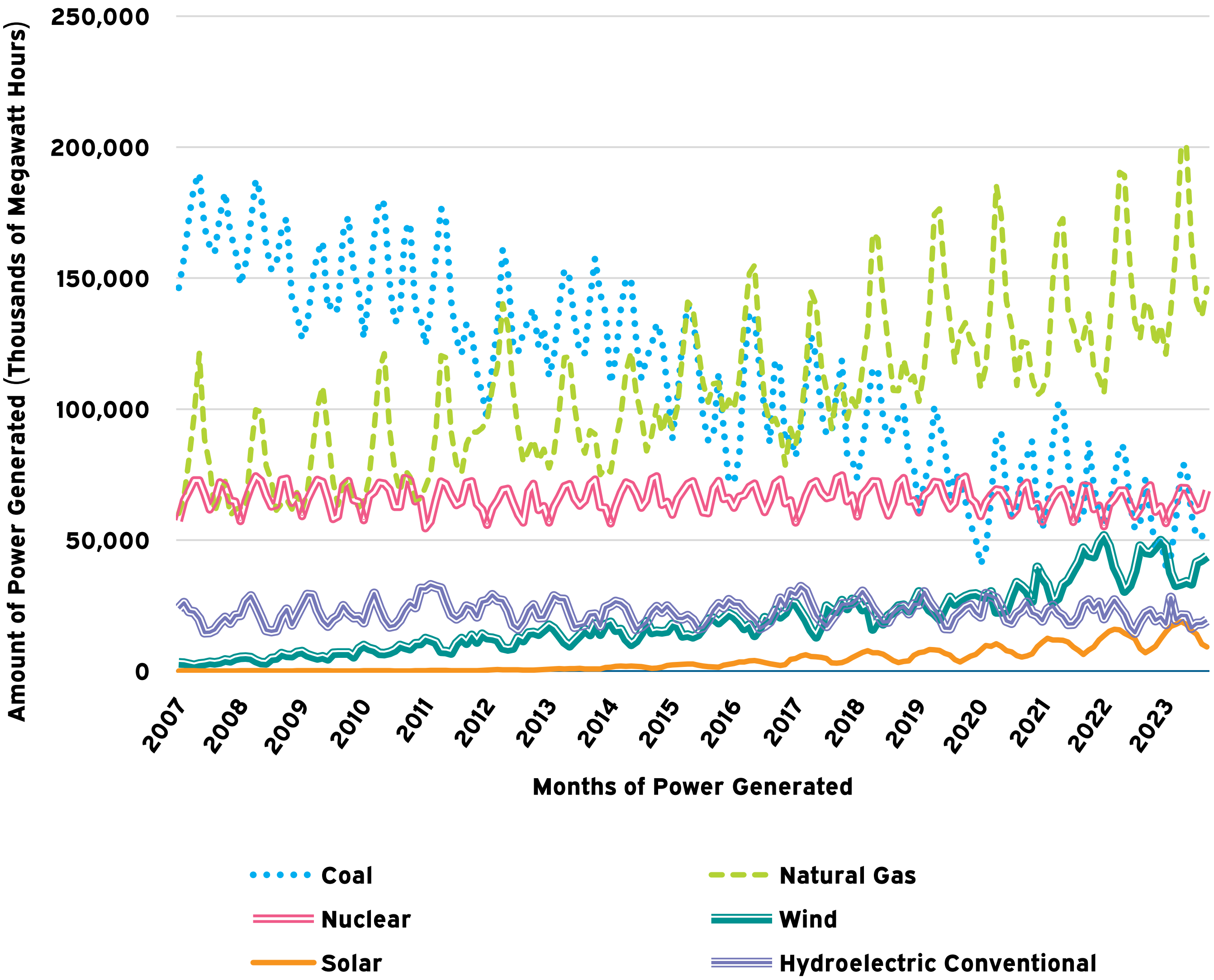
[1] Source: Bureau of Transportation Statistics: Flights, All US, and Foreign Carriers.




The graph above presents the total net generation for the past 12 months compared to the 10-year average for each month. Net utility scale energy generation decreased slightly in the fourth quarter down 0.3% compared to the same period in 2022 and overall 2023 was down 1.6% over 2022.

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

## US Power Generation by Source[1]




In the fourth quarter 2023, total Utility Scale US power generated decreased by 0.3% over the same period in 2022 with coal decreasing by 14%. Wind and utility-scale solar continue to make up a small portion of total net energy generation in the US, accounting for only 12% and 4% of energy generation, respectively. Natural gas, coal, and nuclear accounted for 43%, 16%, and 19%, respectively.

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