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MEMORANDUM

TO: Members of the Investment Committee, CalPERS
FROM: Meketa Investment Group
DATE: March 15, 2021
RE: Semi-Annual Infrastructure Performance Review as of December 31, 2020

In our role as the Board Infrastructure Consultant, Meketa Investment Group ("Meketa") conducted a semi-annual performance review of the Infrastructure Portfolio ("the Portfolio") based on data provided by Wilshire Associates for the California Public Employees' Retirement System ("CalPERS") Real Assets Program for the period ended December 31, 2020, and selected CalPERS reports.[1] This memorandum provides the Portfolio performance data and information on key policy parameters, with a summarized market commentary provided as an attachment.

Performance[2]

CalPERS' Infrastructure Portfolio continues to outperform its policy benchmark for all reporting periods, except the trailing one year return, as shown below.

Net Returns (%)	1 Year	3 Year	5 Year	10 Year
Infrastructure Portfolio Returns	-0.4	6.0	8.8	13.8
Infrastructure Policy Benchmark[3]	0.4	3.9	4.7	5.4
Over (under) Performance	-0.8	2.0	4.1	8.4

Compared to six months ago, the 10 year performance is unchanged, but shorter period returns are lower on an absolute basis. On a relative basis compared to June 30, 2020, the Portfolio's over-performance is about the same for the 10 year and five year periods, lower (but still over) for the three year period, and improved (albeit under) for the one year period. This is consistent with our ongoing comments that we expect prior-period higher returns to moderate somewhat going forward. We note the slight negative one year mark likely reflects the early impacts of the COVID-19 pandemic, but also the resiliency of infrastructure as an asset class.

[1] CalPERS Real Assets Quarterly Performance Report, including underlying Allocation, Characteristics, and Leverage Reports (pdf and Excel files), for the period ending September 30, 2020.

[2] Per Wilshire for the period ended December 31, 2020, reported with a 1-quarter lag, so as of September 30, 2020 (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).

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Other aspects of performance drivers are consistent with prior reporting periods and recent market conditions, as highlighted below.[1]

- Core, comprising 87.2% of the Portfolio, continues to deliver the strongest returns among the risk categories, but also continues to moderate compared to prior years.
- Value Add has moderated the most and is now the lowest performer among risk categories, but not hugely impactful at only 5.4% of the Portfolio.
- Opportunistic, comprising 7.4% of the Portfolio, has also moderated compared to last year.
- Essential segment assets, which include power generation, are showing solid performance for the last several years, including the trailing one year period, demonstrating resilience in the face of COVID. The International, Commercial, and Specialized segments are all down compared to this time last year.
- The Portfolio's one year net income is up compared to Q3 2019, but at 2.5% is still below Staff's expectations of annual income between 3% and 5% over the long term. Even so, net income was an important component of total return over the trailing 12 months, with net income exceeding appreciation.

Implementation

The Portfolio's Net Asset Value ("NAV") as of December 31, 2020, was $5.77 billion, an increase of $337.8 million, or 6.2%, compared to the June 30, 2020 NAV of $5.43 billion. The current NAV represents 1.3% of the Total Fund.[2] For the prior year period, the Portfolio's contributions outpaced distributions $1.1 billion to $0.4 billion, respectively.[3] We would expect to see contributions outpace distributions going forward, given the number and size of new commitments made over the last two years compared to the remaining smaller size of legacy assets. One new investment was made during the H2 2020 semi-annual period: an essential segment, energy sector, opportunistic renewable power asset with a contracted revenue profile located in the US.

[1] Real Assets QPR Q3 2020 Final (Excel).

[2] The Total Fund market value was $441.85 billion as of December 31, 2020, per Wilshire.

[3] Real Assets QPR Q3 2020 Final (Excel).

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Key Policy Parameters

The Portfolio is compliant with all key parameters related to diversification and other limits applicable at the Portfolio level, as documented in the table below.

Key Portfolio Parameter	Policy Range/Limit	NAV 9/30/20 Exposure
Risk Classification	(%)	(%) [1]
Core	60-100	87.2
Value Add	0-25	5.4
Opportunistic-All Strategies	0-25	7.4
Geographic Region	(%)	(%) [1]
United States	40-100	53.5
International Developed	0-60	46.3
International Developing	0-15	0.3
International Frontier	0-5	0.0
Manager Exposure [2]	(%)	(%)
Largest Partner Relationship	20 max	4.4
Investments with No External Manager	20 max	1.6
Leverage [3]		
Loan to Value	65% max	45.1%
Debt Service Coverage Ratio	1.25x min	1.73x

[1] CalPERS Real Assets Portfolio Characteristics Report (Excel), Quarter Ending September 30, 2020: based on asset-level risk and geography.

[2] CalPERS Real Assets Portfolio Allocation Report (Excel), Quarter Ending September 30, 2020: 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 ($54.9 billion).

[3] CalPERS Real Assets Portfolio Leverage Report (pdf), Quarter Ending September 30, 2020.

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Conclusion

We believe the Portfolio's performance for trailing periods of longer than one year has been impressive relative to the benchmark, although the Portfolio's performance does appear to be moderating, a possibility Meketa commented on in prior reports. Although the one year performance mark is slightly below the benchmark, it is improved over the prior quarter.

The Portfolio's development and its current position remains appropriate and consistent with applicable policies and guidelines:

- *Risk*—Exposures are within the classification policy ranges;
- *Geography*—Exposures are within the categorical ranges;
- *Partner Relationships and Direct Investments*—Exposures are well below the maximums allowed; and
- *Leverage*—Metrics are comfortably compliant.

It appears the Portfolio has held up well so far in the face of a global pandemic. A number of the existing investments are appropriately defensive, and others exhibit resiliency. The Portfolio will benefit from improving conditions, and is also positioned to take advantage of a robust pipeline of deal opportunities in the US and abroad.

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

SPM/EFB/jls

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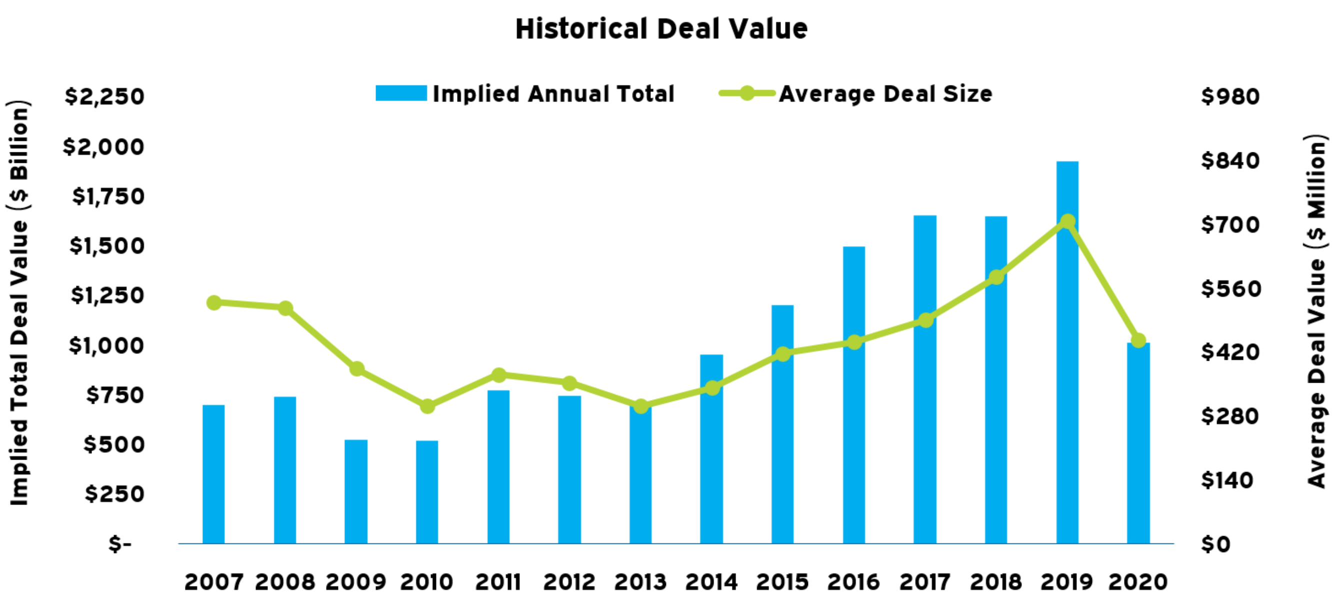
Attachment[1]

Market Activity

Transaction activity dropped off significantly in the first half of 2020 with the slowdown persisting through much of the second half of the year. Preqin reports 1,158 completed deals with a transaction date in the second half of 2020, compared to 1,111 for the first half of the year, for a total of 2,269. The 2020 deal total represents a substantial decrease from the 2,716 recorded in 2019 and from the 2016 peak of 3,375. Average deal value also declined 37% in 2020 relative to the previous year, reversing the trend of steady increases between 2013 and 2019. The chart below illustrates these data and trends.



[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.

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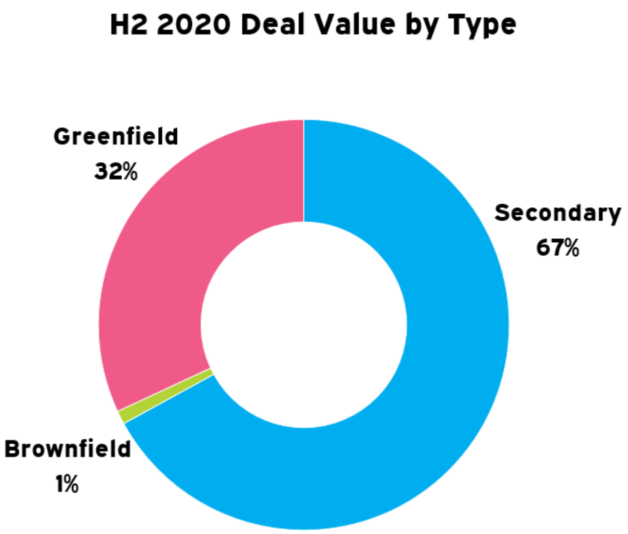
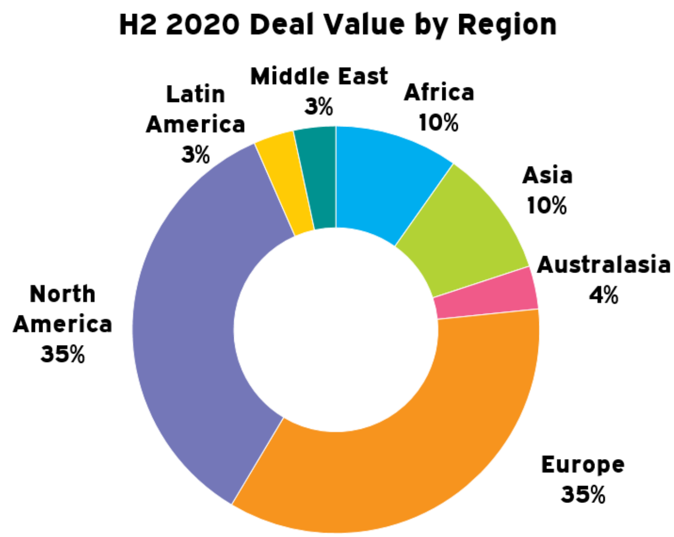
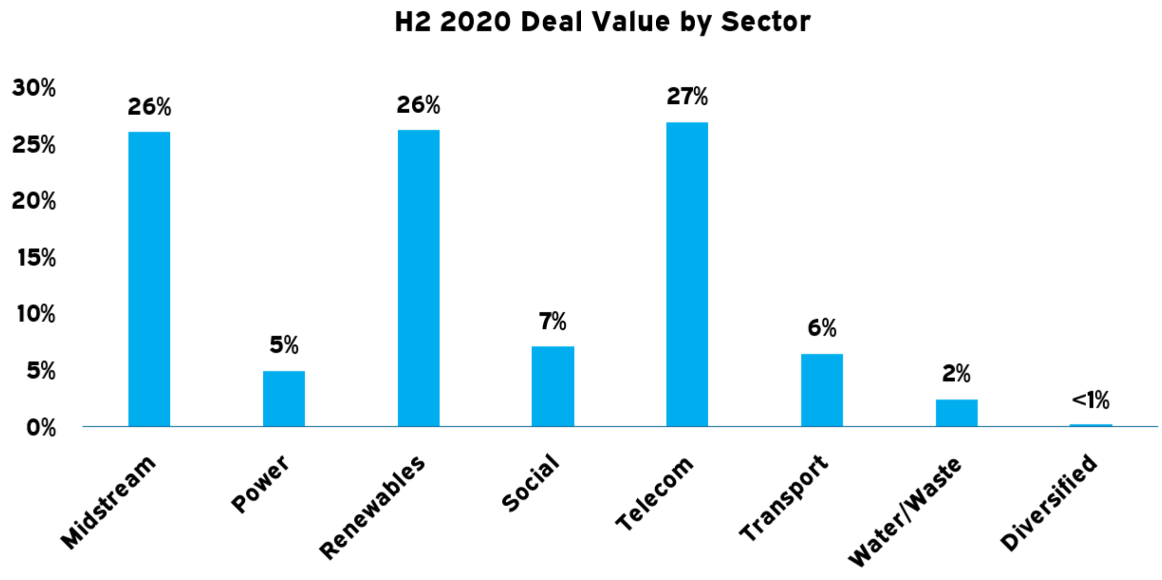
Total deal size in H2 2020 (including equity and debt) is only available for 316 transactions, or about 27% of total number of deals, representing $162 billion in deal value. Distribution by risk category,[1] geography, and sector for the deals for which size is available is shown below.







[1] According to Preqin: Secondary stage is a fully operational asset or structure that requires no investment for development; Brownfield is an existing, typically operating asset needing improvements, repairs, or expansion; and a Greenfield asset does not currently exist. These categories can roughly be mapped to Core, Value Add, and Opportunistic, respectively, ignoring other risk attributes such as geography and sector.

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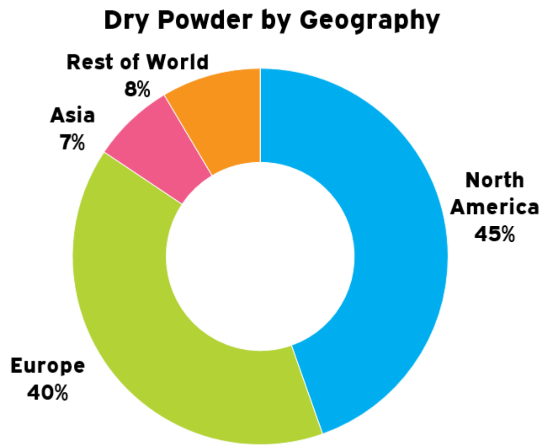
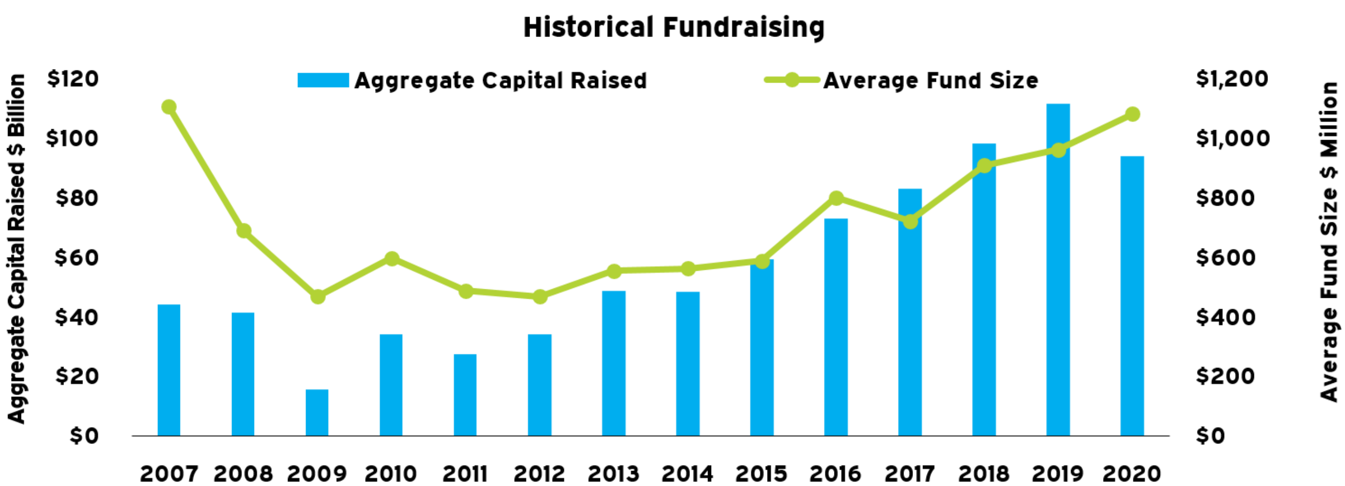
Dry Powder and Fundraising

As of December 2020, unlisted infrastructure funds[1] had $243 billion in dry powder, the highest year-end level on record and an increase of $13 billion from December 2019. Together, funds focused on North America and Europe, CalPERS' target geographies, accounted for approximately 85% of the total dry powder, as seen in the chart below.



Infrastructure managers raised $94 billion in 2020, falling short of the fundraising record of $111 billion set in 2019. In total, there were 101 funds raised during the year at an average fund size of approximately $1.1 billion,[2] exceeding the previous year's average of approximately $1.0 billion. A handful of managers continue to define new boundaries for the mega and large segment of the market, including two well-known names that each closed their fourth funds during 2020 at $20.0 billion and $7.4 billion, respectively. The chart below illustrate these data and trends.



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[1] Preqin, includes funds and fund of funds.

[2] Average excludes funds for which fundraising totals were not provided.