MEKETA
INVESTMENT GROUP

Minnesota State Board of Investments (SBI)

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Climate Change Investment Analysis

Phase II: Public Pension Climate Leaders Survey

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Preface

The Minnesota State Board of Investments ("SBI"), in its oversight of the SBI investment portfolio, continues to address potential investment risks and opportunities associated with climate change. Meketa's Climate Change Investment Analysis project for the SBI is designed to provide data, analysis, and options for the SBI to consider in order to further develop its strategy to address long-term climate investment risks and opportunities. During year one of the project, Meketa intends to address these issues in three reports:

→ In this Phase II report, we present results of a survey of public pension plan climate leaders. The report focuses on how public pension plan leaders manage climate-related investment risks and opportunities. The survey results provide the SBI a range of investment strategy perspectives to consider as it determines the best course of action for the SBI.

→ In our Phase I report, we reviewed high level global trends in climate change and related developments in financial markets across asset classes, policy and regulatory frameworks, institutional collaboration, and trends for investment-related climate risk data, metrics, and climate scenario analyses. Those trends appear to be gaining momentum.

→ The Phase III report will analyze the SBI portfolio's current exposure to climate risks and opportunities throughout the total portfolio – public and private market investments - and provide options for the SBI to implement a successful climate transition strategy consistent with the terms of the Paris Agreement.

We thank the pension funds below for their insights, and time and effort in responding to the survey:

California Public Employees Retirement System ("CalPERS")
California State Teachers Retirement System ("CalSTRS")
Connecticut Retirement Plans and Trust Funds ("CRPTF")
District of Columbia Retirement Board ("DCRB")
East Bay Municipal Utility District Employees Retirement System ("EBMUDERS")
Employee's Retirement System of Rhode Island ("ERSRI")
Illinois State University Retirement System ("Illinois SURS")
London Pensions Fund Authority ("LPFA")
Los Angeles County Employees Retirement Association ("LACERA")
Maryland State Retirement and Pension System ("MSRPS")
New York City Retirement Funds ("NYCRF")
New York State Common Retirement Fund ("NYSCRF")
New York State Teachers Retirement System ("NYSTRS")
Oregon State Treasury ("OST")
PensionDanmark ("PD")
San Francisco Employees Retirement System ("SFERS")
Seattle City Employees Retirement System ("SCERS")
University of California Office of Investments of the Regents ("UC Regents")
Vermont Pension Investment Commission ("VPIC")

We thank the SBI for engaging Meketa to work on these critical issues and thank the SBI Staff for their insights and information.

Highlights

The Meketa Phase II report to the SBI concentrates on the responses from climate pension plan leaders to our survey on behalf of the SBI. Meketa reviewed 20 public pension plans, including the SBI. We surveyed the plan's approaches to incorporating climate change risk and opportunities into their investment programs. The analysis covers 18 US public pension plans, and two non-US public pension plans. The plans range in size from $2 billion in assets under management ("AUM") to nearly $500 billion. In addition to the plans covered in this review, there are other US public pension plans, and many non-US public plans, that exhibit climate investment leadership.

Among institutional investors, growing attention is being devoted to identification and management of climate change physical and transition risks. The issues are complex, with no easy answers. In the United States today, **Meketa finds that most public pension plans do not address climate-related risks and opportunities explicitly in their investment strategy**. Among asset owners that actively seek to address these risks and opportunities, there is no well accepted best practice on how best to tackle these issues.

Currently, leading public pension plans adopt a wide range of approaches to managing climate risks of investments. Among the 20 pension plans reviewed, 18 (sixteen US plans and both non-US plans) have investment beliefs or policy explicitly relevant to climate change. **Net Zero/Paris Aligned pledges increased to seven today, up from zero in 2018.** This includes the four largest US public pension plans (CalPERS, CalSTRS, NYSCRF and NYCRF), each with assets over $250 billion AUM, and three plans under $50 billion AUM – SFERS and the two non-US plans surveyed, PensionDanmark, and London Pensions Fund Authority.

Staff dedicated to ESG, including to climate investment issues is prevalent at the 14 plans surveyed over $20 billion AUM, and at three of the six funds under $20 billion AUM. In some cases, smaller funds commit a higher percent of staff to ESG investment and corporate governance/engagement than their larger counterparts. Some funds noted that they intend to further increase their ESG staff, including one plan noting that they intend to add a dedicated climate investment staff member.

All 20 public pension plans devote significant attention to proxy voting and engagement, including engagement with managers, investee companies, and government regulators and policy makers. Over half of the plans have participated in activist ownership campaigns. There is growing attention to voting against Boards of Directors in cases where engagement efforts seem unproductive.

Ten of the 20 plans have an explicit commitment to invest in climate solutions.

Two plans have implemented broad divestment, while five plans divest selectively on a case-by-case basis. Two of the plans surveyed divest some thermal coal, complying with legislation.

Asset owners continue to evolve their analytical climate risk tools and increase their monitoring of climate risks. Approaches include regular monitoring of environmental key performance indicators and climate scenario analyses.

Overview

This overview summarizes the survey results for seven areas regarding the pension plans' approaches to climate investment strategies:

1) Investment policy
2) Staffing
3) Stewardship
4) Investment and divestment
5) Portfolio monitoring
6) Asset allocation and climate scenario analysis, and
7) Participation in institutional investor organizations that address climate investment issues

As shown in Figure 1, there is a wide range of climate investment strategies, as evidenced in the Investment Beliefs, Investment Policies and Net Zero pledges among the 20 plans reviewed here.

→ Eighteen of the 20 plans reviewed have adopted Investment Beliefs and/or Investment Policies that explicitly address climate change.

→ Seven plans have publicly announced a Net Zero or Paris aligned strategy, including the four largest plans (CalPERS, CalSTRS, NYSCRF NYCRF) and three plans under $50 billion AUM: SFERS and the two non-US plans surveyed PD and LPFA.

→ Legislation requires climate risk reporting for five plans: (CalPERS, CalSTRS, MSRPS, PD, LPFA).

→ Legislation requires thermal coal divestment for two plans: (CalPERS, CalSTRS).

Figure 1: Policies[1]

Name of Asset Owner	AUM ($B)	Investment Beliefs/Policy re: Climate Change?	Details	Net Zero and/or Paris Aligned Investment Pledge?	Plans to Implement NZ/Paris Pledge	Gov't/Regulatory Mandates re: Climate Change Required?
MSBI	94	Yes	Utilize engagement initiatives to address ESG issues	No	N/A	SBI Resolution on ESG Initiatives, SBI Resolution Concerning Reduction of Investments Associated with Thermal Coal Production
CalPERS	480	Yes	CalPERS Vision references sustainability; Investment Beliefs reference ESG factors such as governance, human capital, and climate	Pledged 2019 (NZAOA)	Focusing on real world emissions reduction through advocacy, engagement, and integration	Yes, CA SB 964 requires a published report every 3 years on climate related risk within portfolio; Earlier legislation to divest thermal coal
CalSTRS	320	Yes	Investment Belief #9 outlines importance of incorporating climate change opportunities	Pledged 2021	Net Zero by 2050. Develop action plan establishing baseline and milestones for managing emissions-related risks, among others	Yes. CA SB 964 requires a published report every 3 years on climate related risk within portfolio; Earlier legislation to divest thermal coal
NYSCRF	280	Yes	2019 Climate Action Plan	Pledged 2020 (PAII)	Reduce GHG emissions from the Fund's entire portfolio to net-zero by 2040	NA
NYCRF	275	Yes (BERS, NYCERS, TRS)	N/A	Pledged 2021 (PAII)	Achieve net zero GHG emissions from the Fund's entire portfolio by 2040	N/A
UC Regents	168	Yes	-	No	-	No
NYSTRS	146	Yes	Investment Beliefs reference sustainable investing (under Stewardship; Proxy Policy on environment/climate change;	No	N/A	N/A
OST	97	Yes	Integration of ESG may have beneficial impact on outcome of an investment	No	N/A	No

[1] Source: Meketa survey and research.

Name of Asset Owner	AUM ($B)	Investment Beliefs/Policy re: Climate Change?	Details	Net Zero and/or Paris Aligned Investment Pledge?	Plans to Implement NZ/Paris Pledge	Gov't/Regulatory Mandates re: Climate Change Required?
LACERA	75	Yes	Investment beliefs address ESG broadly, Corp Governance and Stewardship principles recognize climate change as risk/opportunity	No	N/A	None other than fiduciary duty
MSRPS	68	No	Incorporate ESG risk factors into investment decision-making process	No	N/A	Maryland Pension Risk Mitigation Act requires the Board to submit a risk (including climate risk) assessment report annually
PD	48	Yes	Investment policy addresses active ownership and screening strategies for all managers	Pledged 2019 (NZAOA)	Reduce GHG emissions from portfolio to net-zero by 2050	Yes, EU – SFDR, Article 8
CRTPF	46	Yes	IPS explicitly acknowledges economic and financial risks associated with climate change	No	Under active consideration	No
SFERS	37	Yes	Specific ESG beliefs	Pledged 2020	Net zero by 2050	No
Illinois SURS	24	Yes	Broad ESG incorporation and beliefs	No	N/A	No
DCRB	11	Yes	Separate account managers exclude CU200	No	N/A	No
ERSRI	11	No	N/A	No	N/A	No
LPFA	10	Yes	RI currently provided by delegated asset manager, LPPI, LPFA recruiting for additional RI Manager resources to help manage LPPI, the processes and policies.	Pledged 2021 (PAII)	LPFA has one year to develop an action plan	Yes, required to prepare an Investment Strategy Statement outlining ESG policies
VPIC	6	Yes	Investment beliefs specific to ESG	No	N/A	No
SCERS	4	Yes	Factors in ESG and has identified climate change as a key area of focus	No	N/A	No
EBMUDERS	2	Yes	Considers ESG, does not directly address climate change	No	N/A	No

Figure 2: Staffing[1]

Name of Asset Owner	AUM ($B)	Total # Investment Staff	Dedicated ESG Investment Staff	Dedicated Non-Investment ESG/Governance Staff	% ESG Staff
MSBI	94	15	**1**	0	6.7
CalPERS	480	305	**22**	0	7.2
CalSTRS	320	200	**20**	0	10.0
NYSCRF	280	98	**10**	3	13.3
NYCRF	275	40-50	**5-10**	5-10	20-30
UC Regents	168	NA	**NA**	NA	NA
NYSTRS	146	77	**ESG team members also have other duties**	0	ESG team members; also have other duties
OST	97	52	**1**	0	1.9
LACERA	75	34	**2**	0	5.9
MSRPS	68	37	**0 (w/ formal committee)**	0	0.0
PD	48	50	**2**	4	12.0
CRTPF	46	18	**1**	1	11.1
SFERS	37	21	**2**	0	9.5
Illinois SURS	24	9	**0**	0.3	3.3
DCRB	11	3	**0**	0	0.0
ERSRI	11	5	**0**	0	0.0
LPFA	10	50	**6**	2	16.0
VPIC	6	3	**1**	0	33.3
SCERS	4	4	**0.5**	0	12.5
EBMUDERS	2	0	**0**	0	0.0

→ Because climate is often part of broad ESG responsibilities, we asked plans to report ESG staff.

→ The four largest plans each employ from 10 to 22 ESG staff (CalPERS, CalSTRS, NYSCRF, NYCRS)

→ Fourteen of the 16 plans under $150 billion AUM report less than five dedicated ESG staff.

→ However, as a percent (ESG investment and non-investment staff to total investment staff), five of the seven funds with the highest percentages are under $50 billion AUM (This in part reflects larger funds dedication of staff to in-house management of passive assets).

[1] Source: Meketa survey and research.

Figure 3: Stewardship Approach[1]

Name of Asset Owner	AUM ($B)	Explicit Proxy Voting Guidelines for Climate Issues?	Participate in Activist Ownership Campaigns?	Dedicated Resources to Engagement Efforts?
MSBI	94	Yes, MSBI guidelines	Yes	Yes, one full time staff member has responsibility for company, manager, and regulatory engagements
CalPERS	480	Yes, CalPERS guidelines	CalPERS lends support but does not participate officially	Yes, 6 dedicated staff
CalSTRS	320	Yes, CalSTRS guidelines	Yes	Yes
NYSCRF	280	Yes, NYSCRF guidelines	No	Yes
NYCRF	275	Yes	Yes, CA 100+	Yes, 6 dedicated staff
UC Regents	168	Yes, UC Investments Guidelines	Yes	NA
NYSTRS	146	Yes, NYSTRS guidelines	Yes	Yes, team members have other duties
OST	97	Yes, Glass Lewis ESG voting guidelines	Yes, on an ad-hoc basis such as letter writing campaigns	Ad hoc
LACERA	75	Yes, LACERA guidelines	Not provided	Yes, collaborate with CA 100+ on company specific engagements
MSRPS	68	Yes, MSRPS guidelines	Yes, such as letter writing campaigns	Yes, team members have other duties
PD	48	Yes, follow CA 100+	Yes, CA 100+	Yes
CRTPF	46	Yes, explicit in IPS	Yes	Yes, corporate governance team
SFERS	37	Yes, Glass Lewis Viewpoint research for SFERS guidelines	Yes	Yes,
Illinois SURS	24	Yes, Glass Lewis Public Pension guidelines	No	No
DCRB	11	Yes, leverage ISS	No	No
ERSRI	11	Yes, leverage ISS	No	Ad hoc
LPFA	10	Yes, LPFA guidelines	Yes	Yes
VPIC	6	Yes, VPIC guidelines	No	Yes
SCERS	4	Yes, ISS US Public Funds guidelines	Yes	Yes, team member has other duties
EBMUDERS	2	Yes, Glass Lewis Public Pension guidelines	No	No; focus of staff and board for future

→ All 20 pension plans maintain explicit proxy voting guidelines on climate issues.

- Fourteen of the 20 plans adopt their own specific proxy voting guidelines, in some cases modifying proxy voting provider baseline guidelines to the plan's specific criteria.

→ Over half of the plans have participated in activist ownership campaigns, with varying definitions, including letter writing campaigns, to investments in activist investment managers.

- Most plans have staff for engagement (dedicated, dedicated with other duties, or ad hoc).

[1] Source: Meketa survey and research.

Figure 4: Investment and Divestment[1]

Name of Asset Owner	AUM ($B)	Use Divestment as Climate Tool?	Explicit Commitment to Invest in Companies Addressing Energy Transition and/or Climate Mitigation Challenges?
MSBI	94	Yes, thermal coal resolution. Prefer engagement	No
CalPERS	480	Yes, thermal coal that complies with legislation	No
CalSTRS	320	Prefer engagement; thermal coal divestment complies with legislation	Yes. Varies across strategies
NYSCRF	280	Yes, case by case. To date divested total 55 thermal coal, oil sands and shale oil/gas firms	Yes
NYCRF	275	Yes (TRS, NYCERS & BERS)	Yes (TRS, NYCERS & BERS)
UC Regents	168	Yes, broad fossil fuel divestment	Yes
NYSTRS	146	Yes, divested thermal coal names; restricted from new purchase certain carbon-intensive fossil fuel holdings	Yes
OST	97	No	No
LACERA	75	No	Broad approach to climate aware portfolio
MSRPS	68	No	No
PD	48	Yes, divested some oil & gas majors; is not invested in thermal coal or oil sands - considered sun-setting businesses	Yes
CRTPF	46	No	Yes
SFERS	37	Yes, excludes thermal coal; certain oil& gas	No
Illinois SURS	24	No	No
DCRB	11	No	No
ERSRI	11	No	No
LPFA	10	Prefers engage & monitor; selectively divest	Yes
VPIC	6	No	Yes
SCERS	4	No	Yes, primarily through infrastructure
EBMUDERS	2	No	No

→ Seven of the 20 plans explicitly invest in climate solutions and use some form of divestment

→ Ten plans have an explicit commitment to invest in climate solutions.

→ Ten plans have made some fossil fuel divestment:

- Two plans implemented broad divestment (NYCRS and UC Regents)
- Three plans divest some thermal coal (CalPERS and CalSTRS-legislation, MSBI)
- Five plans divest selectively/case by case (NYSCRF, NYSTRS, PD, SFERS, LPFA)

→ Five plans do not explicitly invest in climate solutions or use divestment (OST, Illinois SURS, DCRB, ERSRI, EBMUDERS)

1 Source: Meketa survey and research.

Figure 5: Asset Allocation and Climate Scenario Analysis[1]

Name of Asset Owner	AUM ($B)	Address Climate Change Risks/Opportunities in Strategic Asset Allocation?	Employ Climate Scenario Analysis?
MSBI	94	No	No
CalPERS	480	Not explicitly but assumptions are made based on climate risk	Yes
CalSTRS	320	No	No
NYSCRF	280	Yes	Yes
NYCRF	275	No	Ad hoc
UC Regents	168	Yes	Yes
NYSTRS	146	No, address Stewardship	No, reviewing vendors
OST	97	No	Engaged with external parties to provide portfolio impact analysis
LACERA	75	Yes	Yes, both top-down and bottom-up
MSRPS	68	Yes	Yes
PD	48	Yes, dedicated portfolios for sustainable/green investments	Temperature alignment tools used for public equity
CRTPF	46	Yes, generally, no climate related to date	No
SFERS	37	No	Yes, use PACTA scenario analysis
Illinois SURS	24	No	No
DCRB	11	No	No
ERSRI	11	No	No
LPFA	10	Intended	No
VPIC	6	Yes	No
SCERS	4	Yes	Yes
EBMUDERS	2	Not directly	No

→ Explicitly incorporating climate risks and opportunities into capital market assumptions, that are then used to set long-term strategic asset allocation, is a nascent practice.

→ The majority of plans do not currently address climate changes risks and opportunities in their strategic asset allocation. Among the nine funds who indicated that they do, there were widely ranging definitions including specific carve outs dedicated to sustainable/green investments.

→ Ten of the plans do not currently employ climate scenario analysis. Three funds indicate that they are either reviewing options or may use climate scenario analysis in the future.

[1] Source: Meketa survey and research.

Figure 6: Portfolio Monitoring[1]

Name of Asset Owner	AUM ($B)	Actively Monitor Portfolio or Managers for Climate Change Risks and Opportunities?	Monitor Scope 1, 2, and/or 3 GHG Emissions data?	Recommendations on Climate Data, Specific Metrics, Tools, or Resources?
MSBI	94	Yes, use investment consultant	Plan to do so	
CalPERS	480	Yes	Yes, use MSCI for public markets and ask private external managers for GHG data	MSCI, ESG Data Convergence Project, GRESB
CalSTRS	320	No, beginning to develop systems and processes to do so	No, began process to measure and manage CO2 emissions exposure	N/A Still researching
NYSCRF	280	Yes	Yes, scope 1 &2	GRESB
NYCRF	275	Yes, ad-hoc basis	Ad hoc and will systemize under net zero plan	N/A
UC Regents	168	Yes	Yes	N/A
NYSTRS	146	Yes, uses investment consultant	Yes, monitors all using MSCI	N/A
OST	97	Yes, for private markets investments ESG is incorporated in due diligence; retained Four Twenty-Seven for details on real estate assets	No	Four Twenty-Seven (part of Moody's)
LACERA	75	Yes, for public markets	Procure analytics for public markets from two vendors, collaborate with GRESB for real estate data	Carbon footprint for baseline data, scenario analysis for more forward-looking lenses
MRSPF	68	Yes, included in strategic asset allocation review; working on an implementation project with BlackRock Aladdin Risk	Yes, staff expects to utilize BlackRock Aladdin Risk to monitor	N/A
PD	48	Yes	Yes, use MSCI and Bloomberg data	MSCI combined with "Bloomberg Reported"
CRTPF	46	Yes, annual reviews. Heavier scrutiny on real assets.	No	Bloomberg
SFERS	37	**	Yes, Scope 1&2	**
Illinois SURS	24	No	No	N/A
DCRB	11	No	No	N/A
ERSRI	11	No	No	N/A
LPFA	10	Yes	Yes, monitored for the Global Equity Fund as part of TCFD and within Real Assets where available.	N/A
VPIC	6	Yes	No	N/A
SCERS	4	Yes, tracks exposure to CU200	No	Climate Action 100+
EBMUDERS	2	Not regularly	Not regularly	N/A

→ Fifteen of the 20 plans monitor managers for climate risks and opportunities and/or for GHG emissions.

→ The survey did not ask specifically for future intentions. The responses indicate that:

- Plans that have been active on climate risk and opportunities for over a decade continue to evolve their portfolio monitoring and approaches.
- At least five plans expect to increase or begin monitoring for climate risks and opportunities and/or for GHG emissions.

[1] Source: Meketa survey and research.

Figure 7: Signatories/Supporters of Investor Organizations That Address Climate[1]

Name of Pension Plan	AUM ($B)	CII	Climate Action 100+	PRI	Ceres	TCFD	CDP	SASB/ VRF	IIGCC	PAII	ESG Data Convergence Project	Net Zero AOA	TPI
Total Number of Plans	**20**	**18**	**17**	**14**	**12**	**10**	**6**	**5**	**3**	**3**	**3**	**2**	**2**
MSBI	94	✓	✓	✓	✓	-	-	-	-	-	-	-	-
CalPERS	480	✓	✓	✓	✓	✓	✓	✓	✓	-	Co-founder	Co-Founder	✓
CalSTRS	320	✓	✓	✓	✓	✓	✓	-	-	-	-	-	✓
NYSCRF	280	✓	✓	✓	✓	✓	✓	-	-	✓	✓	-	-
NYCRF	275	✓	✓	✓*	✓	✓	-	-	-	✓**	-	-	-
NYSTRS	146	✓	✓	-	✓	-	-	✓	-	-	-	-	-
UC Regents	168	✓	✓	✓	-	✓	-	-	-	-	-	-	-
OST	97	✓	✓	-	✓	-	✓	✓	-	-	-	-	-
LACERA	75	✓	✓	✓	-	✓	-	✓	-	-	-	-	-
MSRPS	68	✓	✓	✓	✓	-	-	✓	-	-	-	-	-
PensionDanmark	48	-	✓	✓	-	✓	-	-	✓	-	-	Co-Founder	-
C RTPF	46	✓	✓	✓	✓	-	✓	-	-	-	-	-	-
SFERS	37	✓	✓	✓	✓	✓	-	-	-	-	✓	-	-
Illinois SURS	24	✓	-	-	-	-	-	-	-	-	-	-	-
DCRB	11	✓	-	-	-	-	-	-	-	-	-	-	-
ERSRI	11	✓	-	-	-	-	-	-	-	-	✓	-	-
LPFA	10	-	✓	✓	-	✓	✓	-	✓	✓	-	-	✓
VPIC	6	✓	✓	✓	✓	-	-	-	-	-	-	-	-
SCERS	4	✓	✓	✓	✓	-	-	-	-	-	-	-	-
EBMUDERS	2	✓	-	-	✓	✓	-	-	-	-	-	-	-

*TRS, NYCERS;
**TRS, NYCERS, BERS

- → The information presented on the participation in institutional investor efforts on climate change is not meant to be inclusive of all participation, or of all organizations that are valued in supporting investor climate strategies. It reflects many of the organizations and efforts that were noted by multiple plans surveyed. Please see individual plan summaries for some additional information.
- → 100% (20 of 20 plans surveyed) participate in at least one coalition that addresses climate issues.
- → 90% (all 18 US public pension plans) surveyed are CII members.
- → 85% (17 plans) are signatories to Climate Action 100+.
- → 50% (10 plans) are signatories to the Task Force on Climate Related Financial Disclosure ("TCFD").
- → Five of the seven plans that have a net zero pledge are members of either NZAOA or PAII.
- → Generally, the US pension plans surveyed under $25B AUM, are active, but join fewer organizations than larger public plans. Coalitions often require time and/or membership fee commitments.

[1] Source: Meketa survey and research.

Summary of Individual Fund Approaches

The summaries below seek to briefly present some of the main features of each pension plan's approach to managing climate risks and opportunities. We identify each fund's overall approach as either 'Climate Aware' or 'Net Zero Pledge'. Climate Aware and Net Zero Pledge plans both make use of similar investment tools to manage climate risks and opportunities.

California Public Employees' Retirement System ("CalPERS") (Approach: Net Zero Pledge)

CalPERS, with $480 billion AUM as of December 2021, is the largest public pension plan in the US and has been a leading active institutional investor on climate issues for decades. CalPERS' Sustainable Investment Strategy utilizes four channels to address climate change: engagement, advocacy, integration, and partnership. Engagement involves working with companies to drive change to a low carbon economy. Advocacy ensures support in the regulatory and policy arenas to limit temperature rise to 1.5 degrees Celsius. Integration ensures CalPERS is actively considering climate risk throughout its investment processes and asset classes. Partnership building plays a foundational role in each channel.

CalPERS is active in many institutional investor efforts that address climate issues. In 2019, CalPERS became a founding member of the NZAOA, and in 2021 co-founded the ESG Data Convergence Project, and is a signatory to other organizations including Climate Action 100+, PRI, Ceres, CII, CDP, SASB/VRF, IIGCC and the TPI. With 305 total investment staff, 7.2% (22) are dedicated to ESG. CalPERS receives ESG data from vendors.

CalPERS summarizes on their website: "As an investor in the global economy, the scale and multi-faceted nature of climate change presents a systemic risk to our portfolio. Climate change affects investors like us in two main ways: through physical impact and energy transition risks. Through our engagement and advocacy efforts, we're working to minimize the absolute risk from climate change to our portfolio. Through our research and integration efforts, we are working to understand the financial risks to our portfolio and prepare for the long-term changes that will accompany climate change. Our Sustainable Investments Program leverages the best available science and tools to inform investment decisions with key insights into the highest-value climate change-related risks and opportunities. We also work to identify and focus on the largest opportunities for financially attractive emission reductions across the fund, and advocate for policies that can drive the transition to a thriving low-carbon global economy in which we can invest."

Regarding divestment of fossil fuels, in 2017, CalPERS divested from publicly traded thermal coal producers with more than 50% in revenues derived from thermal coal, complying with legislation.

California State Teachers' Retirement System ("CalSTRS") (Approach: Net Zero Pledge)

CalSTRS, with approximately $324 billion in assets under management, is the second largest public pension fund in the US. CalSTRS is a member of Ceres, PRI, CDP, Climate Action 100+ and CII. In September of 2021, CalSTRS pledged to achieve net zero GHG emissions by 2050. CalSTRS has dedicated investment staff numbering 200, 10% of which are dedicated to ESG initiatives and research.

CalSTRS' TCFD-aligned Green Initiative Task Force Report highlights the CalSTRS investments climate-related governance framework, strategy, and risk management processes. These include: CalSTRS ESG Policy, transition and physical risk assessments, proxy voting, corporate and public policy engagement, quantitative and qualitative scenario assessments, and manager and security selection due diligence. Consideration and assessments related to stranded asset risk, litigation and regulation are conducted during the various stages of due diligence for CalSTRS active holdings. For CalSTRS passive holdings, staff regularly engages portfolio companies on such risks to understand better the companies' low-carbon transition assumptions and underwriting practices.

Separately, CalSTRS invests in a low carbon equity benchmark. CalSTRS has an extensive history of engaging companies on ESG risks including climate-related risks and participating actively in institutional efforts to support long-term investing and support for climate energy transition and physical climate risk management. CalSTRS identifies their procedures in their published ESG Policy.

Complying with legislation, in May 2016, CalSTRS began divestment of publicly traded companies that generate 50% or more of their revenue from the sale of thermal coal, CalSTRS broadened its divestment from US thermal coal holdings to non-US thermal coal holdings in June 2017.

Connecticut Retirement Plans and Trust Funds ("CRPTF") (Approach: Climate Aware)

Connecticut Retirement Plans and Trust Funds is a $46 billion public pension fund. The CRPTF Investment Policy Statement ("IPS") explicitly acknowledges economic and financial risks associated with climate change and plans to implement a Net Zero or Paris Aligned pledge are under active consideration. The Fund has 18 investment staff. Currently, 11% (two) CRPTF investment staff are dedicated to ESG efforts.

The plan's proxy voting guidelines around climate issues are explicit in the IPS. CRPTF devotes resources to engagement efforts and actively engages with companies that do not have Paris aligned plans. The plan addresses climate change in strategic asset allocation and is working towards a dedicated climate aware portfolio. CRPTF, generally, has used divestment as a tool but has not to date on climate related issues. CRPTF divested from civilian firearms manufactures in 2020 and most recently, from Russian-domiciled securities. Additionally, they are also a signatory to PRI and a member of Ceres, CA 100+, and CDP.

District of Columbia Retirement Board ("DCRB") (Approach: Climate Aware)

The DCRB is the retirement board that manages and controls the retirement funds of the District of Columbia Police Officers, Fire Fighters, and the Teachers. As of December 2021, the system managed approximately $11.4 billion in AUM with three dedicated investment staff.

The DCRB has had in place an ESG policy since 2013 that explicitly includes climate change. DCRB requires all active managers to consider environmental risks/opportunities as part of their investment-decision process. In addition, when presenting investment memos to the Investment Committee, the DCRB investment Team typically includes a section on ESG. This section details the prospective manager's ESG initiatives or policies, so the Committee understands how the manager integrates the evaluation of ESG risks and opportunities into their investment process, as well as how they report outcomes to investors. As it relates to proxy voting, the DCRB proxy voting policy supports disclosure of climate change risks, reduction of greenhouse gases, adoption of greenhouse gas emission limits, and related climate change issues.

East Bay Municipal Utility District Employees' Retirement System ("EBMUDERS") (Approach: Climate Aware)

East Bay Municipal Utilities District Employee Retirement System is a $2.3bn public pension plan in Northern California. The System is 100% passively invested in equities and does not have any dedicated investment staff. EBMUDERS is a member/signatory of the Ceres Investor Network on Climate Risk, and Climate Action 100+, TCFD, and signed the 2021 of Global Investor Statement to Governments on Climate Change. Given the passive nature of the plan, EBMUDERS chooses to implement ESG and climate factors via proxy voting guidelines and ESG considerations in manager due diligence. The System utilizes Glass Lewis' Public Pension Policy for proxy voting and is considering participating in activist ownership campaigns in the future. EBMUDERS is still in the early stages of exploring additional ESG and climate-specific initiatives.

Employees' Retirement System of Rhode Island ("ERSRI") (Approach: Climate Aware)

The Employees' Retirement System of the State of Rhode Island ("ERSRI") is a $10.6bn public pension fund. The ERSRI has total investment staff of five, with none currently dedicated to ESG. While ERSRI does not currently have explicit investment beliefs of investment policy specific to climate change, it is an initiative that they hope to evaluate soon. At a high level, ERSRI incorporates ESG considerations into all manager selection, where broad-based ESG scores are assigned. ERSRI utilizes ISS proxy voting guidelines that include a preference for climate-aware Boards. While ERSRI does not have dedicated resources to engagement efforts, the Fund does engage periodically on a variety of topics, including ESG considerations. ERSRI is at the very beginning of the process for incorporating ESG and climate awareness into the Fund's investment profile.

Illinois State University Retirement System ("Illinois SURS") (Approach: Climate Aware)

Illinois SURS is one of the largest pension funds in the state of Illinois, serving 61 employers including state universities, community colleges, and state agencies. As of December 2021, Illinois SURS had $23.8 billion in AUM. The system has nine dedicated investment staff, with one person dedicated about 30% of their time to ESG, including climate issues. Illinois SURS incorporated ESG language into its investment beliefs and it looks to integrate ESG issues into its investment process.

The real asset commitment reviews for the Board include an ESG section which includes some relevant climate discussions, but they are not used as a screening tool. For proxy voting, Illinois SURS uses the Glass Lewis guidelines with public pension overlay. The plan's proxy voting guidelines include a preference for climate aware boards and proposals. Currently, Illinois SURS does not use divestment as a tool, nor does it monitor GHG emissions at this point. The state of Illinois has mandated divestment statutes for certain "restricted securities", none of which are related to climate change.

London Pensions Fund Authority ("LPFA") (Approach: Net Zero Pledge)

The LPFA is the largest local government pension provider in London with about $9.5 billion AUM (approximately £6.9 billion) as of March 31, 2021. Working with their asset managers, Local Pensions Partnership Investments ("LPPI"), there are 50+ investment staff, 16% of which are dedicated ESG staff.

The LPFA has an explicit Climate Change Policy within their investment policy and committed to a net zero pledge in 2021. Under the pledge, LPFA has one year to develop an implementation plan which will be published in September 2022. In addition, the LPFA is required by UK code to publish an annual study outlining how ESG considerations are considered within investments as well as proxy votes. The LPFA occasionally uses divestment as a tool but prefers to use engagement and monitoring instead of blanket divestment. That said, LPPI excludes extractive fossil fuel companies from their Global Equities Fund, as well as coal across the portfolio. LPFA/LPPI has explicit proxy voting guidelines related to ESG and climate change, participates in activist ownership campaigns, and will be creating a target for dedicated climate change investing in 2022.

LPFA has identified climate change as a long-term material financial risk with the potential to impact *all* asset classes within the portfolio. The LPFA does not currently employ climate scenario analysis but monitors current investments and screens potential investments for climate change risks and/or opportunities. LPFA/LPPI are members and signatories of numerous initiatives including PRI, CDP, UK Stewardship Code, Local Authority Pension Fund Forum, Planet Mark, C40 Cities, and the UK Occupational Pensions Stewardship Council.

Los Angeles County Employees Retirement Association ("LACERA") (Approach: Climate Aware)

LACERA, with approximately $75 billion in assets as of December 2021 actively implements its Corporate Governance Climate Risk principle, which states: "Climate change may present financial, operational, and regulatory risks to a firm's ability to generate sustainable value, as well as to the broader economy. Firms should assess and disclose material climate-related risks and sufficient, non-proprietary information to enable investors to prudently and adequately evaluate the prospective impact of climate risk on firm value." LACERA has not taken divestment/exclusion action regarding climate risks. With 34 total investment staff, 5.9% (two) are dedicated to ESG. LACERA also receives ESG related services from investment consultants and other providers.

LACERA monitors market-wide risks and opportunities related to climate change to inform engagement and investment strategies. The fund conducts carbon footprint analysis and climate scenario analysis of public market investments. LACERA undertook new modeling to inform the Plan's strategic asset allocation. Some asset class structure reviews – such as real assets – have incorporated climate. LACERA actively engages on climate risk issues. The Plan endorsed the Climate Action 100+ initiative, the Taskforce on Climate-related Financial Disclosures, and signed the Global Investor Statement to Governments on Climate Change. LACERA votes proxies consistent with LACERA's proxy voting policy.

Maryland State Retirement and Pension System ("MSRPS") (Approach: Climate Aware)

Maryland State Retirement and Pension System has over 150 local governmental agencies participating with over $68 billion in assets to support the distribution of key benefits and services to its recipients. The System's Investment Policy Manual explicitly addresses climate change as a risk and MSRPS employs climate scenario analysis in its strategic asset allocation review process. MSRPS currently has 37 total investment staff. While no staff are fully dedicated to ESG, a formal ESG Risk Committee was formed in 2017 consisting of the CIO, Senior Compliance Officer, and five investment professionals responsible for managing asset classes across the plan.

MSRPS plans to use Aladdin's ESG Starter Pack to support climate risk analysis. Currently, the Fund does not use fossil fuel divestment as a tool in its investment process. The System's proxy voting policy has a section dedicated to climate change, and its manager due diligence process includes a broad ESG evaluation. The MSRPS ESG Risk Committee publishes a biennial responsible investing report. This report and the annual Risk Assessment and IPM are available at https://sra.maryland.gov/investments-financials.

The system is a member of the UN PRI, Ceres Investor Network on Climate Risk and Sustainability, the SASB Alliance, and the Climate Action 100+.

New York City Retirement Funds ("NYCRF") (Approach: Net Zero Pledge*)

*TRS and NYCERS are PRI signatories. TRS, NYCERS and BERS are PAII signatories.

The New York City Comptroller is by law the custodian of City-held trust funds and the assets of the New York City Public Pension Funds and serves as Trustee on four of the five funds. Further, the Comptroller is delegated to serve as investment advisor by all five pension boards. The Comptroller's Bureau of Asset Management ("BAM") oversees the investment portfolio for each system and related defined contribution funds. The Systems, as of December 2021, had approximately $275 billion in assets under management, constituting the fourth largest public pension plan in the US. These five pension funds comprising the Systems are the New York City Employees' Retirement System ("NYCERS"), the Teachers' Retirement System of the City of New York ("TRS"), the New York City Police Pension Fund ("POLICE"), the New York City Fire Pension Fund ("FIRE"), and the New York City Board of Education Retirement System ("BERS"). BAM has 40-50 dedicated investment staff members, with 5-10 dedicated to ESG investments. In addition, the organization has a six-person team dedicated to overseeing its proxy voting and engagement efforts. Going forward, the Comptroller plans to hire a climate subject matter expert and an ESG integration professional to support its ESG team and investment staff on climate-related investing issues and to strengthen its ESG integration efforts.

The New York City Comptroller is highly climate aware and helped lead adoption of a goal to achieve net zero GHG emissions by 2040 with three of the five New York City Pension Funds: TRS, NYCERS, and BERS. The Systems' efforts include a goal to approximately double investments in climate change solutions, such as renewable energy, energy efficiency and green real estate, to over $8 billion by 2025 and achieve a total of over $37 billion in climate solutions investments by 2035 across the three funds, in line with a total of $50 billion in total pension fund investments in climate change solutions by 2035. The three New York City pension funds have also adopted the Net Zero Asset Owner Commitment of the Paris Aligned Investment Initiative ("PAII"), a former partner of the United Nations Framework Convention on Climate Change's ("UNFCCC's") Race to Zero campaign, joining asset owners and investors globally in developing best practices to achieve net zero emissions. In addition to PAII, the Comptroller is currently a member of institutional investor organizations that address climate investment issues including PRI, Ceres, and Climate Action 100+.

On behalf of TRS, NYCERS and BERS, the Comptroller worked with Meketa and BlackRock to conduct an analysis of climate risks and the potential impact of divestment of fossil fuel reserve owners on the Systems' portfolios. The analysis determined that divestment of fossil fuel reserve owners would be a prudent course of action without a significant impact on risk and return of the portfolio. As a result, the Comptroller decided to pursue divestment and in June 2021 began divesting from passive and active equity and fixed income securities issued by over 200 companies that own fossil fuel reserves.

New York State Common Retirement Fund ("NYSCRF") (Approach: Net Zero Pledge)

NYSCRF is the third largest public pension fund in the US with approximately $279.7 billion in assets as of December 2021. NYSCRF released its Climate Action Plan in 2019. The Plan delineates the Fund's next level of climate-related assessment, investment, engagement, and advocacy work. In 2020, the Fund set a goal to transition its investments to Net Zero greenhouse gas emissions and hired a new Director of Sustainable Investment and Climate Solutions, expanded the Corporate Governance unit's dedicated climate staff, and contracted consultants and data providers who can provide unique research and analysis services. Today, NYSCRF has 98 total investment staff. Staff dedicated to ESG include 10 investment staff and three non-investment/ESG governance staff, or 13% compared to the total investment staff. NYSCRF also receives ESG related services from investment consultants and other providers.

For years, the Fund used a multi-faceted approach to climate change, employing investment, active stewardship, and public policy advocacy strategies. Over the last 10 years, the Fund identified and assessed its risks through scenario analysis and carbon footprint analysis. The Fund committed to investing $20 billion in sustainable strategies, including climate solutions; engaged with the largest emitters to reduce risks and assess transition readiness; and advocated at the international, national, and state levels for policies to reduce climate-related investment risks and create opportunities for the Fund and the economy.

NYSCRF approaches divestment of fossil fuel companies using a phased case-by-case assessment. In their Climate Action Plan released in 2019, NYSCRF states they will use an "enhanced, phased, risk assessment process … to evaluate companies in high impact sectors on climate transition readiness."[1] NYSCRF will place companies at high climate risk on a watch list and prioritize them for engagement. If these companies fail to demonstrate a readiness to transition to the low carbon economy, NYSCRF will consider actions such as underweighting, restricting new investment, and divestment consistent with the NYSCRF's investment policies, processes, and fiduciary duty. NYSCRF began this assessment process in 2020. To date, the Fund has divested from 55 oil sands, thermal coal, and shale oil and gas companies. The plan's reviews of oil sands and coal companies led to the Fund's divestment from 34 firms that the Fund determined failed to demonstrate transition readiness. After reviewing 42 shale oil and gas companies, the Fund determined 21 failed to show viable transition strategies.

NYSCRF is active in PRI, Ceres, CA100+, PAII, CII, the ESG Data Convergence Project, and supports the CDP, TCFD.

[1] https://www.osc.state.ny.us/sites/default/files/reports/documents/pdf/2019-07/climate-action-plan-2019.pdf

New York State Teachers' Retirement System ("NYSTRS") (Approach: Climate Aware)

NYSTRS is one of the 10 largest public pension funds in the nation and had $146.3 billion in assets as of June 2021. The Fund has 77 dedicated investment staff and an ESG team that consists of representatives from the investment and administrative departments. In January 2022, the System revised its proxy voting policy to more clearly articulate the System's use of proxy voting to affect climate-friendly change among its portfolio holdings.

NYSTRS uses divestment as a tool and in December 2021 it began the process of divesting directly held public equity securities in companies that derive more than 10% of their revenue from activities related to thermal coal. This is approximately $66 million in thermal coal assets. In addition, NYSTRS created a Restricted List to "freeze" or prohibit further purchases of certain carbon-intensive fossil fuel holdings, based on thermal coal and CO_2 emissions or revenue from oil sands. Regarding the divestment of companies with more than 10% of total revenue from thermal coal, the impact on portfolio risk and return was considered in making the decision, both from a historical and forward-looking perspective. The divested thermal coal names represent a small portion of the public equities portfolio, and the policy benchmark. The contribution of thermal coal companies to the benchmark return over the past 20 years was estimated to be negligible and the impact to tracking error was estimated to be less than one basis point.

NYSTRS is involved in several institutional investor organizations focused on climate change, including Climate Action 100+, Ceres, Value Reporting Foundation, and the Council of Institutional Investors.

Oregon State Treasury/Oregon Public Employees Retirement System ("OST") (Approach: Climate Aware)

The Oregon State Treasury manages various state assets, but its responses represent that of the Oregon Public Employees Retirement System. Oregon PERS has been serving the public employees of Oregon since 1946 and it had $93 billion in assets as of December 2021. The Oregon Investment Council which guides the Oregon PERS investments includes as Investment Belief #8: "*The Integration of Environmental, Social and Governance (ESG) Factors, Similar to Other Investment Factors, May Have a Beneficial Impact on the Economic Outcome of an Investment and Aid in the Assessment of Risks Associated with that Investment.*" The System has 50 dedicated investment staff, one of which focuses solely on ESG.

Currently, the OST does not employ climate scenario analysis. The OST has engaged Manifest Climate and Ortec Finance to provide a portfolio impact analysis due to transition in response to climate change. The OST has not made an explicit commitment to invest in companies addressing energy transition and/or climate mitigation challenges, and they do not use divestment from fossil fuels as climate risk/opportunity investment tool.

The OST is involved with many institutional investor organizations focused on climate change including the Sustainability Accounting Standards Board, Council of Institutional Investors, Ceres, and Climate Action 100+.

PensionDanmark ("PD") (Approach: Net Zero Pledge)

PensionDanmark, with $48 billion AUM, is one of the 50 largest pension funds in Europe and is a non-profit, labor-market pension fund. PensionDanmark has investment staff totaling 50, with 12% dedicated to ESG and governance issues. PensionDanmark believes in engagement and active ownership, not divestment, and sees investments in the climate solution space as the most effective way for investors to mitigate climate change. As such, they are active members of Climate Action 100+ and, in September 2019, became one of six asset owners to initiate the United Nations-convened NZAOA. PensionDanmark has explicit climate change policy and investment beliefs.

PensionDanmark considers climate change in strategic asset allocation and utilizes climate scenario analysis. Additionally, although PensionDanmark approaches climate change through active ownership rather than divestment, the fund is not invested in coal production or oil sands, since the fund considers these industries to be sun setting businesses with bad return prospects. The fund decided in 2021 to divest some oil and gas majors that achieved a low score in PensionDanmark's internal oil and gas model.

San Francisco Employees' Retirement System ("SFERS") (Approach: Net Zero Pledge)

San Francisco Employees' Retirement System is a $36.7bn public pension plan, providing retirement benefits for the employees of California's fourth-largest city. In 2020, the System voted to implement a Net Zero Carbon Emissions by 2050 Ambition, and in 2021 published its Climate Action Plan, detailing implementation activities for the Net Zero ambition. With 21 investment staff, 10% are dedicated to ESG/Governance. The SFERS has a strong approach to both ESG and climate specific considerations in its portfolio, including incorporating ESG into the investment policy and manager due diligence.

SFERS leverages proxy voting guidelines from Glass Lewis related to climate change issues and participates in activist ownership campaigns related to climate change risks. SFERS began divesting from thermal coal producers in 2017, and oil and gas in 2018. As part of their Net Zero ambition, the System continues to exclude thermal coal investments and certain oil and gas companies from its investments. SFERS uses a Climate Transition Risk Framework to determine those companies that should be fully divested or placed on a restricted or watch list.

SFERS does not address climate change risks and/or opportunities in strategic asset allocation, but the System does employ climate scenario analysis. SFERS utilizes PACTA scenario analysis and MSCI portfolio carbon analytics to examine the plan's investments under different climate scenarios and highlight areas of risk and opportunity. SFERS monitors its total investment portfolio for climate change risks and opportunities by asset class, and monitors scope 1 & 2 GHG emissions data. SFERS publishes a carbon foot printing analysis annually in its Climate Action Plan.

SFERS is a member and/or signatory to a number of organizations that address investment climate risks, including PRI, Ceres, and Climate Action 100+. In addition, the System is part of the Ceres Climate Asset Risk working group and a signatory to the Investor Expectations on Corporate Climate Lobbying.

Seattle City Employees Retirement System ("SCERS") (Approach: Climate Aware)

SCERS, with approximately $3.9 billion AUM, is predominantly a passive investor with four dedicated investment professionals on staff, where one professional dedicates approximately 50% of their time to ESG investments. The SCERS Investment Policy Statement factors in ESG and identifies climate change as a key area of focus.

The Fund endeavors to improve company operations through shareholder advocacy and is active in UNPRI, Ceres, CII, ILPA, and CA100+. It has also participated in activist campaigns like the Exxon Board of Directors challenge. SCERS conducted five studies of fossil fuel divestment (three from its investment consultant, one from staff, and one from the SCERS Investment Advisory Committee) and decided not to exclude or divest. The Board Policy states that it will not divest from or invest in a targeted company, sector, or other set of investments with the primary goal of advancing an ESG priority because doing so would be inconsistent with SCERS' 1) mission to fulfill the promise made to our members by delivering the retirement benefits they have earned, 2) fiduciary duties of prudence and loyalty that are paramount, and 3) investment beliefs that emphasize the benefits of diversification, cost control, and passive management. In its infrastructure allocation, SCERS invests in companies that are addressing energy transition. SCERS tracks its allocation to the CU200. SCERS, with its consultant, has begun to incorporate climate scenario analysis into SCERS Strategic Asset Allocation analysis.

University of California Office of the President of the Regents ("UC Regents") (Approach: Climate Aware)

The UC Regents manages approximately $168 billion including retirement, endowment, and cash assets. UC Regents is highly climate aware. Separate from their Investments, the UC Regents have a carbon neutral goal for all UC campus emissions by 2025. With xx total investment staff, xx% (x of xx) are dedicated ESG investment or non-investment ESG staff. UC Investments also receive ESG and climate-related services from investment consultants and data providers.

UC Regents has a robust climate approach to investments, including specific climate policy within the IPS and ESG, and climate-related investment beliefs. In 2015, the UC Regents committed to investing $1 billion in clean energy over the next five years and published the "Framework for Sustainable Investing". In 2020, the UC Regents achieved their clean energy technologies investment goal. UC Investments does not employ divestment across the board, preferring to engage with companies and Boards and exercise their proxy voting rights. However, in 2015 they divested from major companies with revenues from tar sands or coal and in 2019 divested from fossil fuel reserve owners.

UC Regents has an explicit commitment to invest in companies addressing energy transition/climate mitigation challenges. Additionally, climate change risks and opportunities are considered in strategic asset allocation, and they utilize climate scenario analysis. UC Regents actively monitor the portfolios and existing and potential managers for climate change risk and opportunities. They monitor Scope 1, 2, and 3 GHG emissions data. UC Regents continues to increase their shareholder engagement on climate change. UC Regents is currently a member of PRI, Climate Action 100+, TCFD and the Net Zero AOA. UC Investments was the first major public US university to sign on to PRI.

Vermont Pension Investment Commission ("VPIC") (Approach: Climate Aware)

The Vermont Pension Investment Commission is a $6 billion public pension plan with 3 dedicated investment staff. VPIC is involved with many organizations including PRI, Ceres, Climate Action 100+, and TCFD. The Commission has a robust ESG approach to investing, with ESG specified in the investment policy. The VPIC has divested from investments related to Terror or Genocide Linked Countries and Tobacco but does not currently employ divestment as a tool for climate change impact. VPIC is an active member of other ESG organizations including the Northeast Investors Diversity Initiative, IOPA, Say-On-Pay Working Group, Majority Action, Investor Alliance for Human Rights, HCMC.

The Commission has adopted an ESG policy for manager due diligence and portfolio monitoring and is currently evaluating additional climate specific tools for future integration into the investment process. VPIC has explicit proxy voting guidelines for both domestic and international investments and participates in activist ownership campaigns both individually and within coalitions. The VPIC approves a list of topics annually to engage on during the upcoming proxy season.

Conclusions

As the SBI considers how best to evolve its approach to climate risks and opportunities, the survey indicates there is a wide range of approaches by peer public pension plans to addressing climate risks and opportunities. The attention to the urgent physical and transition climate risks have brought to fore the distinction decarbonizing an investment portfolio and helping move the market beta towards net zero.

A growing number of public pension plans have adopted Net Zero or Paris-aligned investment strategies. The relatively recent growth in net zero pledges is indicative of the rapid increase in attention to climate investment issues. With this attention, plans of all sizes, and widely varying experience in addressing climate risks and opportunities, continue to evolve their approach. The major tools being used by plans include developing their investment policies and investment beliefs to more carefully and directly address climate change; monitoring their investment portfolios, using stewardship approaches both individually and collectively with other institutional investors, including proxy voting and engagement with managers, companies and government regulators and policy makers, investing in climate solutions, and divesting from fossil fuel companies, either broadly, or on a case-by-case basis, often incorporating more forward-looking metrics. The 20 plans surveyed take different approaches to dedicated staff to support their climate investment strategy.

Appendix

Summary Descriptions of Institutional Investor Organizations with a Climate Focus

Year Founded	Organization Name	Abbreviation	About
1985	Council of Institutional Investors	CII	CII is a nonprofit association of US public, corporate and union employee benefit funds, other employee benefit plans, state and local entities charged with investing public assets and foundations and endowments with combined assets under management of approximately $4 trillion.
1989	Ceres	Ceres	Ceres is a nonprofit organization transforming the economy to build a just and sustainable future for people and the planet. Through powerful networks and global collaborations of investors, companies and nonprofits, Ceres drives action and inspires equitable market-based and policy solutions throughout the economy.
2000	Carbon Disclosure Project	CDP	CDP is a not-for-profit charity that runs the global disclosure system for investors, companies, cities, states, and regions to manage their environmental impacts. The world's economy looks to CDP as the gold standard of environmental reporting with the richest and most comprehensive dataset on corporate and city action.
2005	Principles for Responsible Investing	PRI	The PRI is the world's leading proponent of responsible investment. It works to understand the investment implications of environment, social and governance ("ESG") factors and to support its international network of investor signatories in incorporating these factors into their investment and ownership decisions
2009	Global Real Estate Sustainability Benchmark	GRESB	GRESB is the global ESG benchmark for financial markets, composed of an independent foundation and a benefit corporation. Working together as one, the GRESB Foundation focuses on the development, approval, and management of the GRESB Standards while GRESB BV performs ESG assessments and provides related services to GRESB Members.
2011	Sustainability Accounting Standards Board	SASB	SASB Standards guide the disclosure of financially material sustainability information by companies to their investors. Available for 77 industries, the Standards identify the subset of ESG issues most relevant to financial performance in each industry.

Year Founded	Organization Name	Abbreviation	About
2013	Planet Mark	-	Planet Mark's purpose is to unite the very best of people, technology, and nature to radically reduce carbon emissions, transform communities and ultimately halt the climate crisis.
2015	The Task Force on Climate-related Financial Disclosures	TCFD	Created by the Financial Stability Board, the TCFD has set out its series of recommendations to establish a framework for businesses to manage climate risks; both transition and physical, and benefit from the related opportunities
2017	Climate Action 100+	CA100+	Climate Action 100+ is an investor-led initiative to ensure the world's largest corporate greenhouse gas emitters take necessary action on climate change.
2017	Transition Pathway Initiative	TPI	The Transition Pathway Initiative ("TPI") is a global, asset-owner led initiative which assesses companies' preparedness for the transition to a low carbon economy.
2017	The Institutional Investors Group on Climate Change	IIGCC	IIGCC is the European membership body for investor collaboration on climate change.
2019	Net-Zero Asset Owner Alliance	NZAOA	Institutional investors transitioning their portfolio to net zero GHG emissions by 2050.
2019	Paris Aligned Investment Initiative	PAII	The Paris Aligned Investment Initiative is a collaborative investor-led global forum enabling investors to align their portfolios and activities to the goals of the Paris Agreement. The Paris Aligned Investment Initiative ("PAII") was established in May 2019 by the Institutional Investors Group on Climate Change ("IIGCC"). As of March 2021, the initiative has grown into a global collaboration supported by four regional investor networks – AIGCC (Asia), Ceres (North America), IIGCC (Europe) and IGCC (Australasia).
2021	ESG Data Convergence Project	ESG DCP	The Project's objective is to streamline the private investment industry's historically fragmented approach to collecting and reporting ESG data in order to create a critical mass of meaningful, performance-based, comparable ESG data from private companies. This allows GPs and portfolio companies to benchmark their current position and generate progress toward ESG improvements while enabling greater transparency and more comparable portfolio information for LPs.

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