

California Public Employees' Retirement System

CalPERS Approach to Addressing Climate Change Risk

Table of Contents

Introduction - CalPERS’ 2019 Public Report – Senate Bill 964	2
Analysis of Exposure to Climate-Related Risk	4
Transition Risk Drivers	4
Physical Risk Drivers	5
Analysis of Climate-Related Financial Risk to CalPERS’ Public Market Portfolio.....	6
Risk Analysis Summary Findings	6
Carbon Footprint Findings	8
Analysis of Alignment with the Paris Agreement and California Policy Goals	9
CalPERS Climate Risk Framework	10
Engagement.....	10
Proxy Voting.....	12
Advocacy	13
Research and Integration.....	14
Additional Actions.....	15

Introduction - CalPERS’ 2019 Public Report – Senate Bill 964

This report on climate-related financial risk is provided by the California Public Employees’ Retirement System (CalPERS) pursuant to the requirements of Government Code section 7510.5, as enacted by Senate Bill (SB) 964 (Chapter 731, Statutes of 2018).

SB 964 requires the CalPERS Board of Administration (Board) to publicly report by January 1, 2020, and every three years thereafter until January 31, 2035, on the “climate-related financial risk of its public market portfolio, including the alignment of the fund with the Paris Agreement and California climate policy goals, and the exposure of the fund to long-term risks.” Furthermore, SB 964 states that it does not require action unless the Board determines in good faith that this is consistent with its fiduciary responsibilities.

SB 964 states climate-related financial risks may include “material financial risk posed to the fund by the effects of the changing climate, such as intense storms, rising sea levels, higher global temperatures, economic damage from carbon emissions, and other financial and transition risks due to public policies to address climate change, shifting consumer attitudes, changing economics of traditional carbon-intense industries.”

Acknowledging this is the first report under SB 964, CalPERS welcomes the legislature’s feedback. Additionally, CalPERS expects the finance industry to make advances in methodology and data quality surrounding the various climate-related financial risks, providing for future enhancements to reporting.

As a long-term investor in the global economy, CalPERS has long understood the scale and multi-faceted nature of climate change posing both risk and opportunity to the portfolio. Climate

change is a priority in the CalPERS' Total Fund Governance and Sustainability Five-Year Strategic Plan (Plan), on sustainable investment approved by the Board in 2016.¹

The Plan reflects CalPERS' Investment Beliefs adopted in 2013 as relevant to long term value creation through the management of three forms of capital: financial, human and physical (Investment Belief 4). Climate change is also referenced as an example of multifaceted risk which cannot be addressed through traditional risk mitigation methods (Investment Belief 9, which is referenced in SB 964).

Furthermore, climate change is included in CalPERS' Governance and Sustainability Principles (Principles), which guide our advocacy, engagement and integration work across the portfolio.²

This work has been supported by an extensive review of academic literature, first conducted by CalPERS through an academic team drawn from UC Davis and Columbia University, through the Sustainable Investment Research Initiative presented to the Board in 2012. This review covered close to one thousand peer-reviewed papers and was refreshed with a further 800 papers in 2016.

CalPERS has addressed climate change in its advocacy work, through supporting the Paris Agreement, with senior staff attending the financial sector side negotiations to represent the investor voice when the Paris Agreement was adopted in 2015.

CalPERS continues to advocate for policy measures to support the energy transition, through carbon pricing and removal of fossil fuel subsidies. We work closely through our partnerships with industry leaders such as Ceres, the United Nations Global Investors for Sustainable Development, the Vatican Dialogue on the Energy Transition and Care for Our Common Home, and asset class specific initiatives such as the Global Real Estate Sustainability Benchmark, and its parallel body for infrastructure.

We also have engaged extensively to both bring down the emissions which contribute to the global warming which is causing climate change, and to protect the natural carbon sinks which help to absorb those emissions, through our work on deforestation. Finally, we have committed to integrating relevant sustainability factors across our investment decision making, which includes assessing the carbon footprint of each asset class.

We are mindful in this work that much of this work is hampered by the lack of data and corporate reporting. Despite the importance and urgency of mitigating climate change risk, and the opportunity for value creation in the transition to a low carbon economy there is no consistent, comparable, and verified reporting required by the US and international standard setters. CalPERS has consistently advocated for this to be introduced whilst supporting voluntary measures such as the reporting framework developed by the Taskforce on Climate-Related Financial Disclosure (TCFD). CalPERS was an early supporter of the TCFD framework and requests that companies report in line with its four pillars: governance; strategy; risk management; and, metrics and targets. As part of its commitment to the TCFD CalPERS will be publishing its first Asset Owner report in 2020.

With a lack of high-quality data, much of the measurement on current emissions and projections on their future trajectory involves modelling and estimation. This is not satisfactory but underlines the important role of regulators in ensuring that investors have timely, high quality reporting. Currently, less than half of the companies in CalPERS' public markets portfolios report under voluntary platforms such as the CDP a longstanding best practice measure, or

¹ [Total Fund Governance & Sustainability Strategic Plan Update](#)

² [Governance and Sustainability Principles](#)

more recent frameworks such as TCFD. Hence, in this report we have taken two lines of sight into the portfolio but caution that the assessments are based upon imperfect data.

CalPERS will continue to pursue the sustainable investment goals of its Plan on sustainable investment, which focus on climate change and also call for improved data and corporate reporting. The work we do in our partnerships enables us to share insights, pool resources and bring broader influence to bear in the financial markets. CalPERS work as the originator of the Climate Action 100+ initiative, which is now the world's largest shareowner engagement alliance, demonstrates the potential of that partnership.

CalPERS approach to climate change risk and opportunity reflects the three pillars of our Plan and approach to sustainable investment: advocacy, to ensure we have the policy framework needed; engagement, to bring company and manager strategy in line with the Paris Agreement goals; and integration, so that we have ensured relevant factors are considered across the investment decision-making for the total fund. Finally, all three of these pillars are supported through our partnerships, with international bodies such as the United Nations, and expert bodies such as Ceres and GRESB.

Analysis of Exposure to Climate-Related Risk

CalPERS' analysis considers exposure to both short and long-term risks of climate change. The TCFD provides a useful framework to categorize climate change related risks as Transition and Physical impacts³ These are highlighted in SB 964 in addition to litigation risk, which is becoming evident in certain sectors as companies face lawsuits seeking to hold companies responsible for their impact on climate change, or to seek damages for alleged prior lack of reporting on risks. Due to the episodic nature of litigation, and the current lack of a comprehensive source to allow assessment, we have not in this first report attempted to quantify exposure, although we recognize that both TCFD and SB 964 highlight the existence of this risk, which we acknowledge.

- **Transition risks** are shifts in the market, policies, and technologies (due to movement toward a lower-carbon economy) that can affect the financial success of existing business models and industries. CalPERS' portfolio companies' success depends on the degree to which they can successfully navigate the transition.
- **Physical risks** such as wildfires, extreme weather, sea-level rise, and drought can affect fixed assets, like real estate, and disrupt portfolio companies' supply chains and operations. Climate change's acute and chronic physical impacts can affect people's health, food security, migration, water supply, and other ecosystem services in ways that could bring heightened volatility to financial markets and harm economic growth.

The two forms of risk are related. The faster the global economy transitions to a low carbon economy, the lower the likelihood that climate-linked physical damage to the global economy will be catastrophic. Given connection between transition and physical risks, CalPERS is monitoring the following key drivers of the transition.

Transition Risk Drivers⁴

1. **Policy and Legal:** Policy is a crucial driver of the pace at which the economy decarbonizes and thus the depth of physical risk to CalPERS' portfolio. The United Nations Framework

³ Financial Stability Board. "[Final Report: Recommendations of the Task Force on Climate-related Financial Disclosures \(TCFD\) \(June 2017\)](#)"

⁴ To inform our view of transition risks, we considered a range of expert sources including the US Energy Information Agency, the International Energy Agency, Bloomberg New Energy Finance, Carbon Tracker Initiative, Grantham Institute for Climate Change, Transition Pathway Initiative and Wood Mackenzie.

Convention on Climate Change (UNFCCC) estimates the collective impact of national climate policies currently track to a 3.2°C rise in the global average temperature. This is substantially higher than the Paris Agreement goal of keeping global warming to well below 2 degrees Celsius.

2. **Market:** Supply, demand and cost-competitiveness of products and services linked to the low carbon economy relative to more carbon intensive business models will affect the pace of transition. Analysis indicates that corporate planning may currently be tracking to a 3.6°C rise in global average temperature,⁵ reflecting even more significant gap in business and consumer demand for low carbon products and services. Again, this is a measure which is in excess of the well-below 2°C Paris Agreement target.
3. **Technology:** Technological improvements and innovations will play a critical role in supporting the transition to a lower-carbon, energy efficient economic system, as current installations track to a wide range of possible outcomes in temperature rise from 2.9°C to 5°C when looking at transportation, energy, and carbon capture.

Monitoring the above key drivers of the Transition helps to understand what temperature rise, and thus what level of physical risk the economy is on track for. As noted in the analysis above, these key drivers currently indicate a trajectory to a well above 2° temperature rise and not to the well-below 2°C Paris Agreement target.

Physical Risk Drivers

Scientists have developed climate models to forecast the frequency, intensity, and location of expected physical impacts from climate change over time. There is a range of severity for physical outcomes that economies may experience, linked to and driven by, the pace of transition, as noted above. CalPERS considered two types of physical risks from climate change: acute and chronic climate impacts.

1. **Acute:** Acute physical impacts involve discrete events where frequency or severity may increase due to changing climate conditions. These include wildfires, hurricanes, heatwaves, and flooding. The amount of global temperature rise will affect the severity of future events and related financial impacts. Even a 0.5° difference in temperature increase, for example from 1.5° to 2°, could entail potentially catastrophic changes, as evidenced in the UN IPCC's research⁶. Occurrences of acute events are already generating financial impacts, as described below, and are expected to continue and increase in magnitude:
 - **In the United States:** In 2018, the U.S. experienced 14 separate disaster events with an estimated cost of more than \$1 billion.⁷ According to the National Centers for Environmental Information, 2016-2018 were historic periods because the U.S. experienced double the long-term annual average number of disasters with an estimated cost of more than \$1 billion.⁸
 - **Globally:** Between 1998 and 2017, the direct economic losses from climate-related disasters rose by 151 percent. Floods were the most prevalent natural disaster accounting for 43.4 percent of occurrences and storms were the second more frequent at 28.2 percent. The direct economic losses associated with these disasters was \$2.25 trillion.⁹

⁵ ["Institutional Investors - Schroders."](#) Climate Progress Dashboard.

⁶ [Intergovernmental Panel on Climate Change. "Special Report Summary for Policymakers. Global Warming of 1.5°C"](#)

⁷ [Climate.gov](#)

⁸ [Fourth National Climate Assessment. \(2018\)](#)

⁹ [UN Office for Disaster Risk Reduction](#)

2. **Chronic:** Chronic physical impacts involve long-term shifts in climate patterns. These unfold over a long-term time frame and include recurring events. Such chronic risks include extreme heat, drought, and sea-level rise.
- Nearly 400 all-time high temperatures were recorded in the northern hemisphere from May through August 2019. High temperatures pose challenges for human health, worker productivity, and infrastructure designed for less extreme heat. In South East Asia, research conducted on India indicates that extreme heat impacts worker productivity and absenteeism, which can decrease economic output by approximately 3 percent for every degree Celsius increase above the average temperature.¹⁰
 - The IPCC comments in relation to the United States “[C]ontinued warming that is projected to occur without substantial and sustained reductions in global greenhouse gas emissions (GHG) is expected to cause substantial net damage to the U.S. economy throughout this century, especially in the absence of increased adaptation efforts. With the increase of emissions at historic rates, annual losses in some economic sectors are projected to reach hundreds of billions of dollars by the end of the century—more than the current gross domestic product (GDP) of many U.S. states.”¹¹
 - The impact of different degrees of warming on sea level rise has also been estimated by the IPCC as follows: “By 2100, global mean sea level rise is projected to be around 0.1 meter lower with global warming of 1.5°C compared to 2°C (*medium confidence*). Sea level will continue to rise well beyond 2100 (*high confidence*), and the magnitude and rate of this rise depend on future emission pathways. A slower rate of sea level rise enables greater opportunities for adaptation in the human and ecological systems of small islands, low-lying coastal areas and deltas (*medium confidence*).”

Analysis of Climate-Related Financial Risk to CalPERS’ Public Market Portfolio

At the sector level, CalPERS staff analyzed climate-related financial risk to its public market portfolio from both physical risks from climate change and risks stemming from the transition to the low carbon economy. As noted above, CalPERS first carried out a carbon footprint for its Global Equity portfolio in 2015 as part of its commitment to the PRI’s Montreal Pledge. Since then CalPERS has completed and refreshed a carbon footprint for its Global Fixed Income portfolio corporate holdings. In the Plan, carbon footprints are being carried out for private market asset classes as well.

It is important to note that the companies within the CalPERS portfolio are dynamic. Risks assessed today may be mitigated by sound strategy and concerted attention over time. The belief that companies can adapt and mitigate their risk exposures to the various facets of climate change is the reason for CalPERS’ engagement work.

Risk Analysis Summary Findings

CalPERS identified the percentages of aggregate public market investments in the sectors noted by the TCFD as most exposed to climate risks and opportunities. Set forth below is a summary of public market exposures and anticipated climate-related financial risks in these

¹⁰ [Energy Policy Institute and the University of Chicago](#)

¹¹ [Intergovernmental Panel on Climate Change. “Special Report Summary for Policymakers. Global Warming of 1.5°C”](#)

sectors. Unless otherwise noted, all public market holdings information is as of December 31, 2018.

TCFD Sector	Combined Weight in portfolios ¹²	Transition Risks	Physical Risks
Energy ¹³ (Includes Energy and Utilities holdings)	8%	Policy, market, and technology changes may result in the loss of value and/or “stranding” of long-lived and carbon intense energy assets in our portfolio	Energy equipment and infrastructure may be vulnerable to increased instances of drought, hurricanes, wildfires, and extreme temperatures. For assets located in regions that experience such physical climate impacts, there may be increased costs and disruption of business operations
Transportation	3%	Consumer preference and policy requirements for electrification, decarbonization, and shared mobility may result in the loss of value for fossil fuel-dependent transportation	Fixed infrastructure and equipment for rail and air transportation are vulnerable to temperature extremes, flooding, and hurricanes. For assets located in regions that experience such physical climate impacts, there may be disruption to critical processes and services resulting in increased costs and lost revenue
Materials and Building	6%	Buildings and materials with higher operating or embedded emissions should fare worse in a market environment where carbon emissions are priced or regulated for the built environment	Buildings, with their fixed locations, can be vulnerable to drought, hurricanes, wildfires, extreme temperatures, and chronic sea level rise. For assets, located in regions experiencing such physical climate impacts, they may have increased costs for adaptation and operations, and may lose desirability by tenants, decreasing their value
Agriculture, Food and Forestry	3%	Policy, market and technology developments may increase consumer demand for more sustainable food products	Agriculture faces vulnerability to an overall rise in temperature alongside more frequent and severe weather events and related declines in ecosystem

¹² Considers CalPERS’ Global Equity and Investment-grade Corporate Fixed Income portfolios

¹³ The Global Industry Classification Scheme includes the following Industries in each Sector below:

- Energy: Energy Equipment & Services, Oil, Gas & Consumable Fuels
- Utilities: Electric Utilities, Gas Utilities, Multi-Utilities, Water Utilities, Independent Power and Renewable Electricity Producers.

		and disrupt incumbent farming practices and food production methods	services from pollinators. For companies and assets, located in regions experiencing such physical climate impacts, crop and animal product yields may decline, operating costs may be more volatile, and ability to grow incumbent crops may be compromised with the changing physical conditions
Total	20%		

Carbon Footprint Findings

To better understand the carbon emissions of public market portfolios, CalPERS has utilized two research providers, Institutional Shareholder Services (ISS) Climate Impact Assessment and MSCI’s Carbon Portfolio Analytics Report, with slightly different methodologies. The carbon emissions findings for both our Global Equity and Global Fixed Income portfolios are summarized in the tables below. It is important to note that while CalPERS does value analysis of Scope 3 emissions,¹⁴ data availability prohibited staff from analyzing Scope 3 emissions for this report.

TABLE A: GLOBAL EQUITY CARBON FOOTPRINT AS OF DECEMBER 31, 2018

Provider	Scope 1 & 2 Carbon Emissions ¹⁵ (tons CO ₂ -equivalent)	Carbon Emissions (tons CO ₂ -e/ \$MM invested)	Carbon Intensity (tons CO ₂ -e/ \$MM sales)	Weighted Average Carbon Intensity (position weighted carbon intensity)	Equity Market Value (\$BN)
ISS	23,452,073	165	223	267	142
MSCI	23,962,817	174	240	212	138

For CalPERS’ Global Fixed Income (investment grade corporate) portfolio, staff exclusively utilized the Weighted Average Carbon Intensity (WACI) as other carbon metrics rely on the equity ownership share. Staff also measured the footprint of CalPERS’ investment grade corporate portfolio.

TABLE B: GLOBAL FIXED INCOME CARBON FOOTPRINT AS OF DECEMBER 31, 2018

Provider	Weighted Average Carbon Intensity (position weighted tons CO ₂ -e/ \$MM sales)
ISS	367
MSCI	379

¹⁴ Scope 3 are indirect emissions resulting from the organization’s operations, such as upstream and downstream activities, and supply chain activities

¹⁵ Scope 1 are direct greenhouse gas emissions from sources owned by a company. Scope 2 are emissions from purchased electricity consumed by the company.

According to both ISS and MSCI analysis, the utilities sector was the most significant contributor for Scope 1 and Scope 2 carbon emissions within each portfolio. The utilities industry basically sells electrons and has flexibility as to whether those electrons are produced from renewable energy or more carbon intense sources (such as coal). Therefore, it is encouraging to note the largest sector contributor to the public markets portfolio's Scope 1 and Scope 2 emissions is an industry in the midst of transition to lower carbon sources, in part due to investor engagement.

Analysis of Alignment with the Paris Agreement and California Policy Goals

To promote alignment with the Paris Agreement's goal of limiting the global average temperature increase to well-below 2°C above pre-industrial levels, CalPERS plays a key role in multiple asset-owner groups designed to encourage companies to improve climate change governance and reporting and to commit to reducing their GHG emissions, as described below:

- CalPERS is a founding member of [Climate Action 100+](#), a five-year global engagement initiative supported by 370 signatories with over \$35 trillion in assets under management. The initiative focuses on the world's top 161 publicly traded and systemically important carbon emitting companies and those with significant opportunity to drive the transition to a low-carbon economy. CalPERS leads engagement on 22 global portfolio companies. The progress and successes of this initiative, as well as CalPERS role in founding the initiative are described below in the engagement section of the report.

In September 2019, CalPERS became the first U.S. investor to join the [Net-Zero Asset Owner Alliance](#), launched by the United Nations and the Principles for Responsible Investment, committing to transition its investment portfolio to net-zero GHG emissions by 2050 through advocacy and engagement efforts. This initiative aims to limit the global temperature rise to 1.5°C taking into account the best available scientific knowledge including the findings of the IPCC, and regularly reporting on progress, including establishing intermediate targets every five years in line with Paris Agreement Article 4.9.

In addition, CalPERS work on climate change is aligned with California policy. Specifically, in 2015, CalPERS identified approximately two dozen companies in the CalPERS public asset investment universe as potentially meeting the definition of a "thermal coal company" as specified in the Public Divestiture of Thermal Coal Companies Act (Act). Following the October 19, 2015, Investment Committee meeting, CalPERS prohibited new or additional investments in the identified companies and began engagement activities. In May 2017, the Investment Committee of the CalPERS Board evaluated the outcome of engagement activities undertaken per the requirements of the Act, as well as the investment performance and risk considerations of the identified companies, and implications for the portfolio.

The Committee considered the following:

- Three companies had indicated plans to adapt their business models in consideration of clean energy generation (such as through a reduction of thermal coal mining revenues), and were exempt from the divestment requirement of the Act
- Fourteen companies failed to indicate applicable business plan adaptations, or failed to respond to CalPERS engagement efforts and were subject to divestment per the requirements of the Act

- Although CalPERS had no holdings to divest, an additional eight companies were identified as subject to the Act

All applicable holdings were divested in advance of the July 1, 2017 deadline specified by the Act.¹⁶

Other California climate policy goals were not directed at asset owners such as CalPERS. However, the underlying principles of Greenhouse Gas Emission Reduction (California Global Warming Solutions Act) and Renewable Energy Procurement (California Renewables Portfolio Standard Program and the Clean Energy and Pollution Reduction Act) are aligned with CalPERS investment strategy as follows:

- CalPERS' has invested significantly in Climate Solutions in its private asset portfolios.
 - Of CalPERS Real Assets portfolio's power and energy infrastructure investments¹⁷:
 - 50 percent is invested in renewable energy power plants and carbon-agnostic¹⁸ transmission assets
 - 39 percent is specifically invested in renewable energy power plants, including an investment in the 550 MW Desert Sunlight solar power asset in California
 - \$12.1 Billion dollars or approximately 18 percent of CalPERS' combined private assets (real assets and private equity) is invested in Climate Solutions, Renewable Energy and Sustainably Certified Buildings¹⁹.
- Additionally, CalPERS' real estate portfolio has an innovative Energy Optimization Program. This program helps CalPERS systematically identify economically attractive opportunities that reduce our real estate assets' carbon footprint and in order to mitigate risk and meet our target returns. For more details visit:
<https://www.calpers.ca.gov/docs/energy-optimization-initiative.pdf>

CalPERS Climate Risk Framework

Engagement

Climate Action 100+: In 2015 CalPERS committed to the UN PRI Montreal Pledge, as the first U.S. signatory to measure and publicly disclose the carbon footprint of its global equity investment portfolio. After analyzing the 10,000+ companies within the portfolio, approximately 80 companies were found to be responsible for 50 percent of the portfolio's GHG emissions. The emission trajectory of these systemically important carbon emitters is critical to whether the global economy will meet the goals of the Paris Agreement to keep global warming to well-below 2°C.

CalPERS recognized other global investors were likely to have similar holdings in their portfolios and convened a series of meetings hosted by the French mission to the United Nations. The result was a new partnership between regional and global investor networks (PRI, Ceres, and their counterparts in Europe, Australasia and Asia) to found and launch Climate Action 100+.

¹⁶ [Public Divestiture of Thermal Coal Companies Act Report to Legislature](#)

¹⁷ As of December 31, 2018

¹⁸ Transmission assets carry electrons, regardless of whether they originate from fossil fuel or renewable energy power sources. Therefore, we consider them carbon "agnostic".

¹⁹ As of December 31, 2018. The majority of this value is invested in sustainably-certified buildings.

Companies in the Oil & Gas and Utilities sector represent 44 percent of the companies engaged by Climate Action 100+. Other sectors engaged by the initiative include transportation, metals & mining, construction materials, industrials, chemicals, and food, beverages & forestry.

CalPERS plays a key role on the Climate Action 100+ Steering Committee which sets the strategy for the initiative and served as the inaugural chair. CalPERS also serves as the Chair of the Climate Action 100+ Asia Advisory Group which draws together expertise for that region. CalPERS' Corporate Governance program assumed the lead for 22 of the companies identified for engagement which is the largest group engaged by a single asset owner in the initiative. The responsibilities of the lead investor include meeting in person with the company's leadership, including senior management and board members in order to communicate and engage on the Climate Action 100+ goals:

- Governance: Implement a strong governance framework that clearly articulates the board's accountability and oversight of climate change risk and opportunities. This includes ensuring that corporate lobbying and executive compensation are aligned with the Paris Agreement to ensure a just transition.
- Targets: Act to reduce GHG emissions across their value chain, consistent with the Paris Agreement's goal of limiting global average temperature increase to well-below 2°C above pre-industrial levels. This includes scope 1, 2 and 3 emissions to ensure complete tracking of climate impact through emissions.
- Transparency: Provide enhanced corporate disclosure in line with the TCFD and, when applicable, sector-specific Global Investor Coalition on Climate Change Investor Expectations on Climate Change to enable investors to assess the robustness of companies' business plans against a range of climate scenarios, including well-below 2°C and improve investment decision-making.²⁰

As a lead investor, CalPERS has completed multiple engagement discussions with management, and in some cases directly with board members, in addition to delivering presentations at selective company annual meetings. Prior years' activities also include:

- 2017: Co-filed climate risk proposals at three Climate Action 100+ engagement companies, and publicly supported and ran proxy solicitations urging other investors to support shareholder proposals at 15 U.S. companies seeking implementation of improved climate-risk reporting.
- 2018: Publicly supported and ran proxy solicitations urging other investors to support shareholder proposals at five U.S. companies seeking implementation of improved climate-risk reporting.

Further results of these engagements and the initiative's progress are detailed in the Climate Action 100+ 2019 Progress Report.²¹ This inaugural report, outlining the initiative's progress, was launched in September 2019. Key highlights of the outcomes of the initiative's collective engagements include items listed below. Oil & gas companies, energy companies, and utilities, as referenced in SB 964, are denoted with asterisk. The early results show the impact of engagement by the Climate Action 100+ signatories.

- Royal Dutch Shell PLC*, commonly known as Shell, issued a joint statement with Climate Action 100+ committing to set carbon reduction targets. Shell set specific targets for reducing carbon emissions every three to five years, with the goal of shrinking its net carbon footprint by about half by 2050. Shell also agreed to introduce a new compensation plan for its 1,500 most senior executives to ensure

²⁰ [Global Investor Coalition](#)

²¹ [Climate Action 100+](#)

bonus targets included emissions reductions, plus a review of their membership of trade associations to ensure lobbying was aligned with Paris. In a first for the oil industry, Shell agreed to include its emissions across its supply and demand chains (scopes 1, 2 and 3).

- BP* supported a shareholder resolution requiring company disclosure on how its business strategy is consistent with the Paris Agreement. BP also agreed to include its top 14,000 executives in a compensation plan aligned to the goals of emissions reductions.
- AES Corporation*, an electric utilities company, performed climate scenario analysis and announced a commitment to reduce carbon intensity of its power generation by 70 percent by 2030.
- Occidental Petroleum Corporation*, HeidelbergCement, Duke Energy*, Nestle, Daimler, Volkswagen, Thyssenkrupp, ArcelorMittal, BHP Billiton*, and Centrica*, Moeller Maersk, have made “net-zero” emissions commitments for 2050
- Glencore the world’s largest private mining exporter has set a cap on coal production and Rio Tinto Zinc the world’s largest mining company has plans to exit coal completely.
- 70 percent of Climate Action 100+ companies have set long-term emissions reduction targets, although only 9 percent of the companies have targets that are in line with the goals of the Paris Agreement showing the need for greater ambition if the Paris Agreement goals are to be met.
- 40 percent of companies undertake and disclose climate scenario analysis and 30 percent of companies have formally supported the recommendations of the TCFD.
- 8 percent of companies have policies in place to ensure their lobbying activities are aligned with necessary action on climate change, again highlighting the need for further progress.

Proxy Voting

By voting proxies at over 10,000+ companies’ annual general meetings, CalPERS uses its influence as a shareowner to foster transparency and accountability in corporate govern CalPERS’ proxy votes are published in advance on its website, with additional information for high profile votes and company-specific shareowner campaigns provided.²² During the 2019 proxy season, CalPERS voted on 81 shareholder proposals related to environmental topics. CalPERS reviewed each of the proposals in consideration of the Board’s Principles and assessed whether the proposal could add value to the investment if implemented.

Typically, CalPERS supports proposals that ask for improved environmental risk reporting, unless it is believed the company already adequately discloses these risks. In general, CalPERS does not support environmental proposals intended to substitute for management’s operational judgments. CalPERS believes companies should manage environmental risk, but also that the board should oversee the design and implementation of risk management systems. In 2019, in aggregate, CalPERS supported 44 of the 81 proposals (54%) and 33 of the 36 proposals (92%) that asked companies to report on risks linked to sustainability, the environment, or climate change.

²² [CalPERS Global Proxy Voting Decisions](#)

Environmental Proposals - January 1, 2019 to September 24, 2019

	Votes FOR	Votes AGAINST	Total
Adoption of Comprehensive Recycling Strategies	4	0	4
Bioengineering / Nanotechnology Safety	2	0	2
Environmental or Sustainability Reports	34	3	37
Formation of Environmental/Social Committee of the Board	0	7	7
Miscellaneous Energy/Environmental Issues	4	17	21
Phase out of Nuclear Power	0	10	10
TOTAL	44	37	81
PERCENTAGE	54%	46%	

Advocacy

CalPERS advocates for policies that can drive the transition to a thriving low-carbon global economy in which it can invest. For more than a decade, CalPERS has advocated for domestic and international policy in support of greater disclosure from companies on climate-related financial risks, reduced fossil fuel subsidies, and regulation that prices carbon emissions.

- CalPERS believes pricing carbon emissions can facilitate the transition to a low-carbon economy through market mechanisms, which is an investor-aligned approach. CalPERS supports pricing carbon emissions at a meaningful level to effectively drive the transition to a low-carbon economy.
- CalPERS supports the 2018 Global Investor Statement to Governments on Climate Change.²³
- "We Are Still In": CalPERS joined as an advocate to the G7 and G20 for implementation of the Paris Agreement and for strengthening country commitments with the goal of limiting the global temperature rise to 1.5° above preindustrial levels.
- CalPERS participated in the Vatican's Dialogue on the Energy Transition and Care for Our Common home in both 2018 and 2019 which resulted in a statement supporting carbon pricing by oil and gas Chief Executives and leading global investors. This will be followed by a roundtable at Notre Dame University in 2020 to develop implementation strategy.

In September 2019, CalPERS' Board adopted the following language in its Principles, which guide advocacy efforts regarding Carbon Pricing Policy:

"Policymakers should establish stable and clear carbon pricing policy that appropriately prices the externalized cost to the economy and society from greenhouse gas emissions. Specifically, carbon pricing should be set at a level, and with the regulatory certainty, that incentivizes the business practices, consumer behavior, and related investment decisions needed to drive the transition to a thriving, low-carbon global economy. Effective carbon pricing policies should decrease emissions and therefore the physical risk to investors' portfolios from climate change. Additionally, policies should be designed to avoid exacerbating economic inequality and its associated geopolitical risks, and policies should be designed to provide incentives for carbon

²³ [2018 Global Investor Statement to Governments on Climate Change](#)

sequestration, including through natural methods, such as ecosystem protection and restoration.”

CalPERS has also done advocacy work on the topic of deforestation. GHG emissions largely come from burning fossil fuels but also from land use change, such as deforestation. Forests provide numerous benefits, playing a key role in promoting well-functioning watersheds and protecting bio-diversity that communities, companies and economies rely on. Importantly, forests are currently one of the best available ways to absorb and store carbon emissions, helping protect assets from the physical risks of climate change by reducing CO₂ levels in the atmosphere.

Companies not aware of risks associated with deforestation in their supply chains are vulnerable to reputational, regulatory, and other business risks. These include concern with human rights. CalPERS considers the drivers of deforestation across its various industries and commodities.

In February 2019, in CalPERS’ response to an inquiry from eight U.S. senators on its approach to deforestation, staff noted “CalPERS views forests as providing numerous benefits, including their key role as carbon sinks helping to mitigate climate change and in turn, protect the CalPERS global investment portfolio.”²⁴ Since then, CalPERS has undertaken the following:

- Revised CalPERS’ Principles to strengthen approach to Environmental Management Practices and specifically reference deforestation
- Partnered with a large group of investors to make specific requests for improvements to the Principles and Criteria for the Production of Sustainable Palm Oil, pushing for stronger sustainability standards for the palm oil sector from the key sustainability certification body, the Roundtable on Responsible Palm Oil (RSPO).
- Joined investor working groups focused on deforestation in the soy, cattle and palm oil sectors. As members of these coalitions, CalPERS supports efforts to reduce deforestation caused by portfolio companies.
 - Ceres and United Nations Principles for Responsible Investing (UNPRI) initiative on Cattle²⁵ and Soy²⁶ Supply Chains²⁷
- Sent letters to over 60 companies regarding risks to their business models from climate change. In these letters, CalPERS highlighted expectations regarding the companies’ policies and practices to address deforestation, natural resource degradation (soil, water, for example), GHG emissions, and respect for universal human rights.
- Signed onto a statement,²⁸ along with 244 other investors, representing \$17.2 trillion in assets under management, in response to wildfires in the Amazon, Indonesia and other regions, urgently requesting companies to redouble their efforts and demonstrate a clear commitment to eliminating deforestation risks within their operations and supply chains.

Research and Integration

To understand how the world is physically changing and may continue to change involves complex analyses. Many forecasts are influenced by assumptions of how quickly or slowly the world shifts to a low carbon economy. Industry tools for applying science-based models to understanding of investment portfolios, and individual investments, are still in early stages.

²⁴ [Approach to Managing Environmental, Social, and Governance Risks Related to Investments, February 21, 2019](#)

²⁵ [Investor Expectations on Deforestation in Cattle Supply Chains](#)

²⁶ [Investor Expectations on Deforestation in Soybean Supply Chains](#)

²⁷ [UNPRI Sustainable Land Use](#)

²⁸ [Investor statement on deforestation and forest fires in the Amazon](#)

Since September 2018, CalPERS has worked in collaboration with Woods Hole Research Center and Wellington Management to develop a framework to enable the review of physical risk scenarios based on sound climate science. Through the analysis of different emissions scenarios, CalPERS seeks to understand how acute and chronic risks can have different implications for our portfolio. Potential impact across regions, industries, and subsequently within asset classes will be reviewed to develop investment insight.

It is also understood that integration is important because sustainability issues can impact all areas of the CalPERS' portfolio. Therefore, we develop, use, and continually refine tools and practices to help our internal and external managers utilize sustainable investment considerations throughout the life cycle of the investments.

In 2016, each CalPERS' asset class developed a set of sustainable investment practice guidelines that reflects their needs and strategies. The guidelines integrate existing beliefs, principles, and policies related to ESG considerations, including our Investment Beliefs, Global Governance Principles, and United Nations-supported Six Principles for Responsible Investment.

These guidelines are intended to evolve and adapt with industry best practices and as data and tools emerge and improve.

Partnerships

Partnerships are critical to our strategy as they allow us to share experience, pool resources, and magnify our influence. As a member of global investment networks, we've engaged companies on emissions reductions and disclosure of key metrics and transitioned from regionally focused activities to global initiatives.

A few notable partnerships include:

- CERES
- Climate Action 100+
- Principles for Responsible Investment (PRI)
- Task-force on Climate-Related Financial Disclosure
- UN Global Investors for Sustainable Development
- UN Net-Zero Asset Owner Alliance
- Vatican Dialogue on Climate Change

Additional Actions

In addition to the examples of CalPERS global leadership on climate change already mentioned in this report, CalPERS also plans to do the following:

- Continue integrating climate-related research on risks and opportunities, along with other investment factors, when making investment decisions to complete an Enterprise Strategic Plan goal of ensuring 100% of investment policies and practices include relevant sustainability considerations.
- Continue to advocate for acceleration of low-carbon transition through market-aligned policy solutions through the US Commodity Futures Trading Commission Climate-related Market Risk Subcommittee.
- Continue to advocate and engage for improved climate-related financial disclosures, including mandatory climate risk reporting in line with the TCFD through CalPERS role at the SEC's Investor Advisory Committee, the International Financial Reporting Standards Advisory Council, and Financial Accounting Standards Advisory Committee.

- For developing an improved framework for reporting of physical risks, CalPERS will utilize the P-ROCC framework developed and launched with Wellington Asset Management in 2019 to improve corporate disclosure.²⁹
- Continue to engage systemically important carbon emitters through Climate Action 100+.
- Continue to collaborate with the United Nations through the Secretary General's Global Investors for Sustainable Development and with global peers through the Net-Zero Asset Owners Alliance, plus asset class specific platforms such as GRESB.
- Continue to participate in the Vatican Dialogue on the Energy Transition and Care for Our Common Home to focus on carbon pricing.
- Continue to exercise proxy votes to support shareowner proposals where engagement activities are insufficient and file or carry out proxy solicitations in order to support voting outcomes.
- Publish CalPERS' first TCFD aligned Asset Owner climate risk report in 2020.

²⁹ [P-ROCC Framework](#)