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June 24, 2019

To: Board of Administration, California Public Employees' Retirement System
cc: Ben Meng, Chief Investment Officer; Beth Richtman, Managing Investment Director for Sustainable Investments

Teachers' Retirement Board, California State Teachers' Retirement System
cc: Christopher Ailman, Chief Investment Officer; Kirsty Jenkinson, Director of Corporate Governance; Grant Boyken, Public Affairs Executive Officer

From: Tom Sanzillo, Director of Finance, Institute for Energy Economics and Financial Analysis
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**Subject: Reporting on climate-related financial risk**

I have reviewed the implementation memo from Fossil Free California and Environment California related to SB 964,[1] which addresses pension fund management of climate risk.

The California legislature, to its credit, has stepped up to address climate risk issues in our country's two largest pension fund portfolios, and the rest of the nation is paying close attention to California's emerging policies and actions. The broad purpose of climate legislation in California and elsewhere is necessitated by a failure in the United States to produce a coherent climate policy at the federal level.

Across the nation, however, states, cities and towns are all finding ways to contribute to solutions to our most urgent problem. California and its pension funds have been leaders in many areas of climate change policy and programs. SB 964 further advances California's commitment, as it requires that CalPERS and CalSTRS report on climate-related financial risks inherent in your investments in the oil, gas and coal sectors.

The legislation and the reports you will prepare in response acknowledge the significant contributions that fossil fuels have made, not only to the California pension funds, but also to the state and world economy. These contributions have been long-term and significant. Now, however, changes in technology, science, public opinion, politics, business, markets and finance are precipitating shifts in the energy sector, and the oil and gas industry in specific, which require enhanced diligence on the part of investors. SB 964 codifies the rationale for the additional climate-

[1] https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201720180SB964

related diligence that is essential to ensuring funds are meeting fiduciary standards and fund guidelines.

The fossil fuel sector is in financial decline. As a result, these holdings are far less relevant to California's funds and to most other major institutional investors than has been true historically. For example, at the end of 1980, the energy sector constituted 29% of the S&P 500 index. By the end of 2018, the sector accounted for only 5.3% of the index. Energy stocks led the markets for decades; they are now laggards.

Financial risk factors facing the industry loom very large as institutional investors grapple with a myriad of issues including climate risk. The Norwegian Sovereign Wealth Fund recently announced it would divest a subsector of its oil and gas holdings on financial grounds – weak returns, low prices and a volatile market. Financial challenges facing the Exploration and Production subsector were a drag on the fund's investment index. The fund will also carefully track the major oil companies that it did not divest.

California's pension funds have historically opted for a policy of responsible ownership and engagement toward its portfolio of fossil fuel companies. The need for enhanced diligence in this sector has been acknowledged implicitly by the funds' involvement in governance and public policy shareholder outreach to the companies.

The legislature's codification of the need for enhanced diligence, however, now requires a more formal, systematic treatment of climate risk.

California's pension funds are now asked to take on a complex diligence regime because the issue of climate change is complex. The new legal requirement comes during a time of broad financial changes in the fossil fuel sector. While the diligence required to comply with this statute may be seen as burdensome, this enhanced diligence, in fact, reflects the actual burden of the financial risks facing the industry. As the letter from Fossil Free California and Environment California makes clear, this is not merely a legal exercise in compliance, but a more fundamental call for an increased level of prudence and care.

Compliance may pose challenges to the staff and boards of the funds as they are currently organized. While staff and board typically handle broad financial and social policy issues across a wide expanse of issues in the global economy, the depth of diligence required to retain holdings in the fossil fuel sector, as reflected in the legislation, will most likely strain the existing professional competencies of governance and public policy staff who conduct shareholder outreach and manage shareholder relations with fossil fuel companies. The climate risk analysis will require a more specialized knowledge of industry practices and climate modeling and a deep understanding of climate risk and its impact on portfolio companies and, finally, on the Fund's specific allocations. In particular, this analysis will require a specialized knowledge of the energy sector companies in the fund's portfolio, which is typically the domain of investment staff. At a minimum, it will require knowledge of the sub-sectors within the industry and the leading companies within those sub-sectors, including their financial performance and current policy direction.

Most importantly, it will require trust and close collaboration between governance/shareholder relations staff and decision makers on the investment side. The typical cordoning off of investment policy from governance policy does not work when addressing these issues. This is resolved practically by developing working relations between investment and governance staff.

Industry experts that have conducted this kind of research for U.S. pension plans have created many tools and guides. These primers may prove useful to the staff and boards of the funds, but, of course, are not substitutes for the fund's own research. CalPERS and CalSTRS must have information tailored to their governing philosophies, current allocations and trading strategies.

Some pension funds, like those in New York City, have retained independent consultants to help them analyze their portfolio through a climate risk lens. Through their work with consultants, various stakeholders -- the New York City Comptroller as administrator of the funds, the Mayor as the Chairman of the City pension fund, board members and interested trustees – designed research that met their particular needs. Much of the work performed by consultants, though not made available to the public, proved very useful for the deliberations of New York City's pension trustees and administrative staff.

Each legislature, board and staff must develop its analysis and new allocation strategies consistent with its own history. CalPERS' and CalSTRS' respective histories however, are not insular. California's largest public pension funds have been, and I suspect in this instance will again be, highly authoritative voices in the investment community. The legislation calls for a serious and deliberate approach to climate change and investment. Your funds have the resources and your institutional position burdens you with the responsibility to get this one right.

If we can be of assistance please do not hesitate to call.

June 25, 2019

Henry T. Jones, President, CalPERS Board of Administration; and board members
California Public Employees' Retirement System

Sharon Hendricks, Board Chair, CalSTRS Teachers' Retirement Board; and board members
California State Teachers' Retirement System

RE: LETTER OF SUPPORT, FOSSIL FREE CALIFORNIA AND ENVIRONMENT CALIFORNIA, SB 964

Dear Members of the Board,

On behalf of the Center for International Environmental Law (CIEL), a nonprofit legal advocacy group, we offer our support for the recommendations provided by Fossil Free California and Environment California to encourage climate risk disclosure that satisfies the spirit and intent of SB 964.

Since 1989, CIEL has used the power of law to protect the environment, promote human rights, and ensure a just and sustainable society. As advocates for more ambitious climate action by state and non-state actors, we believe that investor fiduciaries bear a responsibility to both current and future beneficiaries to respond to material climate-related financial risk.

In 2016, CIEL published a report analyzing how and why monitoring for climate-related financial risk is consistent with the prudent exercise of fiduciary duty by the trustees of public sector pension funds. Since then, CIEL has convened roundtable discussions among investment professionals to address the potential liabilities a fiduciary may face for failing to monitor fund assets for exposure to material climate-related financial risk. Additionally, CIEL actively supports the recommendations of the Task Force for Climate-related Financial Disclosure (TCFD) and advocates for implementing standards for disclosure for corporations that are seeking guidance about how to enhance climate risk disclosure without running afoul of securities regulations. TCFD recommendations also provide investors guidance for how and what kind of climate disclosure investors should demand from corporations.

Here CIEL's role in supporting FFCA and Environment California is to encourage the most robust financial disclosure possible under SB 964. Members of both Boards are in a position to act as leaders among global financial actors by setting a high bar for best practices for disclosure. Detailed and specific disclosure that describes the funds' exposure to climate-related risk (1) will satisfy the letter and the intent of SB 964; (2) serve the interests of the beneficiaries concerned about whether their retirement funds are vulnerable to material climate-related financial risk and (3) serve as a model process and format for what is needed from other investor fiduciaries who must, or will likely be required to, disclose climate-related risk according to their own respective statute.[1]

Disclosure that captures both the spirit and intent of SB 964 provides evidence of due diligence and demonstrates that Trustees have engaged in a prudent exercise of fiduciary duty. The Trustees as fiduciary investors owe a duty of care and a duty of loyalty to the current and future beneficiaries of the fund. [2] Disclosure is an opportunity for fiduciaries to demonstrate how investment decision making is aligned with the sole and best interests of the beneficiaries.[3]

When beneficiaries review these disclosures, the reasons why climate or transition vulnerable assets have been retained or released by the fund, should be clearly and plainly evident. Disclosures that include references to any scenario analysis testing, or any other supporting data and analysis demonstrates the rigor of the investment decision making process and provides evidence that the sole interests of the beneficiaries guided the actions of the Trustees.

1. <u>Disclosures must reflect both the letter and the intent of SB 964.</u>

We support the conclusions of FFCA and Environment California that SB 964 mandated disclosures must capture the material climate risk exposure of the portfolio and describe how continued retention of those assets serves the best interests of current and future beneficiaries. Disclosing the funds' holdings and their exposure to climate risk with specificity ensures that the climate vulnerable assets have been identified.

The Disclosures must also reflect that the trustees have acted consistently with principles and guidelines established in plan documents. CalPERS[4] Investment Beliefs and CalSTRS' Governance and Sustainability Principles[5] include several clear references to climate change

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[1] *See*, *e.g.*, Maryland State Retirement and Pension System, Maryland Pension Risk Mitigation Act Risk Assessment (2019) https://sra.maryland.gov/sites/main/files/file-attachments/maryland_pension_risk_mitigation_act_risk_assessment___january_2019_0.pdf (In 2017, the Board of Trustees of the Maryland State Retirement and Pension System submitted an assessment of risk for the several systems under their supervision.).

[2] Trustees are also required to act with "care, skill, prudence, and diligence" in discharging these duties. Cal. Const. Art. XVI Sec. 17(c).

[3] The California Constitution requires trustees of CalPERS and CalSTRS to act "solely in the interest of, and for the exclusive purposes of providing benefits to, participants and their beneficiaries." Cal. Const. Art. XVI Sec. 17(b).

[4] *See* CalPERS, CalPERS Beliefs: Our Views Guiding Us Into The Future 10 (2015), https://www.calpers.ca.gov/docs/board-agendas/201702/pension/item7-01.pdf ("Investment Belief 9 … As a long-term investor, CalPERS must consider risk factors, for example climate change and natural resource availability, that emerge slowly over long time periods, but could have a material impact on company or portfolio returns"); CalPERS, Governance & Sustainability Principles (2018), https://www.calpers.ca.gov/docs/forms-publications/governance-and-sustainability-principles.pdf.

[5] *See* CalSTRS, Investment Policy for Mitigating Environmental, Social, and Governance Risks (ESG) A-23 (2018), https://www.calstrs.com/general-information/investment-policy-mitigating-environmental-social-and-governance-risks ("Climate Change[:] The investment's long-term profitability from inadequate attention to the impacts of climate change, including attention to relevant climate policy considerations and emerging climate risk

specifically and sustainability generally. Disclosure should provide a record of review by Trustees to demonstrate the periodic monitoring consistent with the standards for the prudent exercise of the fiduciary duty to monitor fund assets. The disclosure should also be of sufficient detail to address, in certain instances, why, despite the recognition that there are climate risks related to an asset, keeping the asset in the portfolio serves the best interests of the beneficiary.

2. <u>The quality of disclosure is an indicator of the prudent exercise of fiduciary duty.</u>

The process for providing the disclosure mandated by SB 964 is as important as the final disclosure report released to the public. The process requires that the Board and staff engage in a review of fund holdings, measure and monitor climate-related risk exposure and address any negative impacts on asset performance and valuation. SB 964 makes clear that the Board has an obligation to consider both the short term and long term effects of material climate risks on their beneficiaries. A robust review process ensures that there is sufficient information available about the holdings of the fund and includes a level of detail that will satisfy the intent, letter, and spirit of SB 964.

The detail and specificity of the disclosure mandated under SB 964 ensures that the public is informed about how the long and short term climate-related considerations have been appropriately monitored and measured by fund Trustees as a factor impacting fund performance. Additionally, disclosure must reflect the investment decision making to explain how fund assets align with the goals of the Paris Agreement and California climate policy goals.

3. <u>Disclosures should demonstrate the motivations for investment decision making.</u>

Robust disclosure provides an opportunity for the fund to demonstrate the reasons why certain investment decisions have been made. The disclosure report can build an evidentiary record for how trustee actions were aligned with the exercise of fiduciary duty. The document can also serve as a valuable record for the trustees of the fund to memorialize investment reasoning and to eliminate doubt about whether or not the decision to retain fossil fuel assets was in the best interests of beneficiaries.

As a preemptive measure, disclosure under SB 964 should be robust enough to answer the following questions:

A. How does retention of assets exposed to material climate-related financial risk serve the best interests of both current and future beneficiaries in a manner consistent with the prudent exercise of fiduciary duty?
B. How does the retention of assets exposed to material climate-related financial risk align with fund investment policies?

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mitigating technologies.”); Sustainability Risk Management, CalSTRS, https://www.calstrs.com/sustainability-risk-management-0 (last visited June 20, 2019).

Here, the disclosure mandated by SB 964 provides a process and a platform to explain why the Trustees choose to retain or release climate vulnerable assets despite the foreseeability of declining rates of return and projected declines in asset valuation and how that decision furthers the interests of current and future beneficiaries.

For funds that retain fossil fuel assets and continue to engage corporations, disclosure must demonstrate how the retention of these assets is consistent with provision of the investment policy and serves the interests of beneficiaries. Currently, it is unclear to many beneficiaries how retaining assets that are significant contributors to climate change serve the interests of beneficiaries. Of particular concern are continued investment in assets that appear uniquely and significantly exposed to climate-related financial risk, including direct investment in sectors and industries with exposure to coal, oil, gas, and climate vulnerable real estate or infrastructure holdings in coastal areas or wildfire zones.

Lastly, disclosure should provide a record of how evolving climate policies were factored into investment selection over time to provide a critical historical record of how fiduciaries responded to known and foreseeable risks.[6]

For the reasons outlined above, the Center for International Environmental Law (CIEL) endorses the recommendations of Fossil Free California and Environment California, and encourages the boards of CalPERS and CalSTRS to engage in a thorough and robust disclosure process to communicate the depth and breadth of the funds' treatment of climate-related financial risk.

Respectfully,

Lisa Anne Hamilton

Director, Climate & Energy Program

Center for International Environmental Law (CIEL)

[6] While inadequate consideration of material financial risks may be a breach of fiduciary duty, a *failure to communicate* such consideration may also be interpreted as such a breach. The disclosure required by SB 964 is thus an opportunity for fund trustees to demonstrate to beneficiaries that they and other fiduciaries are taking climate-related financial risk seriously. A failure to do so would not only be inconsistent with the statutory requirements of SB 964, but a warning sign for concerned beneficiaries.

Steven E. Feit

Staff Attorney, Climate & Energy Program

Center for International Environmental Law (CIEL)

Cc: Ben Meng, Chief Investment Officer
Beth Richtman, Managing Investment
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Grant Boyken, Public Affairs Executive Officer

**Re: Reporting on climate-related financial risk, in compliance with SB 964**

Environment California and Fossil Free California, sponsors of Senate Bill 964, have considered the reporting requirements in the bill, which was signed by Governor Jerry Brown on September 23, 2018. We respectfully present our recommended reporting parameters for your initial report, due by January 1, 2020. We believe the approach we propose responds to the intent of the Legislature, meets the letter of the law, and as fully as possible, describes climate-related financial risk to the fund and to the future security of fund beneficiaries. The triennial reporting schedule proposed by CalSTRS makes the first report especially important, as it will inevitably be a benchmark for future reports.

SB 964 requires CalPERS and CalSTRS to report on climate-related financial risk in general and in specific, both by describing the "alignment of the fund with the Paris climate agreement and California climate policy goals[1] and the exposure of the fund to long-term risks," and by identifying and analyzing the funds' portfolio holdings subject to climate-related financial risk. The law also requires reporting on shareholder engagement activities (proxy voting and other initiatives) the funds undertake with identified companies, and results of those actions.

The definition of climate-related financial risk in SB 964 is fully consonant with the Task Force on Climate-related Financial Disclosures' (TCFD's) report and recommendations for risk disclosure.

We understand that CalPERS intends to report "as a financial institution," according to the guidance provided in *Implementing the Recommendations of the Task Force on Climate-related*

[1] California's climate policy goals are codified in our state's Renewable Portfolio Standards Program (Senate Bill 1078, 2002 and SB 100, 2018); the Global Warming Solutions Act of 2006 (Assembly Bill 32, 2006 and SB 32, 2016); the Clean Energy and Pollution Reduction Act of 2015 (SB 350, 2015); and others.

*Financial Disclosures*.[2] We support this intention, and use of the "Metrics and Targets" described in the document.[3] In drafting SB 964, however, the legislature intended that CalPERS and CalSTRS report on "the climate-related financial risk of its public market portfolio," which the authors of the bill understood to include discussion of specific holdings, by name. There is precedent for this in both CalSTRS' and CalPERS' reports on compliance with SB 185 (chaptered in 2015), which requires the funds to divest from certain thermal coal companies.[4]

In the interest of consistency and maximum utility, we recommend that you base your analysis of holdings at risk on the risk categories, sectors, and industries identified by the TCFD as having "the highest likelihood of climate-related financial impacts,"[5] and follow the TCFD's "Supplemental Guidance for Non-Financial Groups"[6] for these entities, noting the Evidence of Financial Impact table (Figure 5, page 6).

As you know, the TCFD divided climate-related financial risk into transition risk and physical risk. **Transition risk** threatens companies with precipitous loss in value as we move as quickly as we can to a low-carbon economy. Transition risk includes **regulatory risk** as governments act to restrict greenhouse gas emissions; **litigation risk** as states, municipalities, and people sue polluters for their role in warming the planet and, in some cases, their deception about the threat of global climate change; **technology and market risk** as emerging technologies transform lives and commerce; and **reputational risk** as people turn away from companies, industries, and utilities that they blame for the consequences of warming. We add to these categories **stranded asset risk** of significant and precipitous loss of company value—either when governments act to keep carbon reserves in the ground to protect the planet from warming, or when physical infrastructure assets are abandoned or de-commissioned and site remediation becomes the responsibility of either the company or taxpayers.

**Physical risks** to investments are associated with changing weather patterns, sea level rise, higher temperatures, drought, and the profound environmental changes we are already witnessing, as well as acute events such as fires, hurricanes, and floods.

We support the Science-based Targets Initiative's guidance for financial institutions' setting targets, defining actions in support of those targets, and reporting on both progress and

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[2] *Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures*, available at https://www.fsb-tcfd.org/wp-content/uploads/2017/06/FINAL-TCFD-Annex-062817.pdf

[3] Ibid., pp.16-17

[4] CalSTRS' reports on domestic and international coal holdings and divestment are available at https://resources.calstrs.com/publicdocs/Page/CommonPage.aspx?PageName=DocumentDownload&Id=04b1288b-2312-412c-8c0d-28c32c82293e and http://resources.calstrs.com/publicdocs/Page/CommonPage.aspx?PageName=DocumentDownload&Id=56536822-6598-41f8-a6d4-7f1100e3b32f. CalPERS' report is available at https://www.calpers.ca.gov/docs/board-agendas/201708/invest/item04f-01.pdf.

[5] *Final Report Recommendations of the Task Force on Climate-related Financial Disclosures*, 2017, p. 16. Available at https://www.fsb-tcfd.org/wp-content/uploads/2017/06/FINAL-2017-TCFD-Report-11052018.pdf

[6] *Implementing the Recommendations* (see link in footnote no. 2), p. 46ff.

evidence of impact on the real economy. This initiative is now under development, but guidance may be published before the reporting deadline.

The table below shows the TCFD's categorization of sectors and industries and the reporting approaches we suggest. We have added a sector, "Banks and Financial Services," because we believe financial institutions' association with companies that contribute significantly to greenhouse gas emissions is material to the stability of those institutions.

| Sector/Industry | Reporting approach |
|---|---|
| **Energy** | **For each company in the sector:**<br>• Holdings as of reporting date, showing book value, market value, and the fund's holdings as a percentage of company ownership<br>• Nature of identified risk<br>• Estimated emissions (specifically including Scope 3 emissions) as shown in the *Carbon Majors Database* (2017)[7] or other cited source<br>• Status of disclosures per TCFD guidance<br>• The fund's shareholder engagement activities in 2019 including descriptions of resolutions sponsored, resolutions supported, acceptance or rejection of resolutions, and proxy votes; and non-proxy engagements |
| Oil and gas | |
| Coal | |
| Electric Utilities | |
| **Transportation** | **For the sector as a whole:**<br>The fund's identification and assessment of risks and opportunities arising from climate change, and the sector's role in California's transition to a low-carbon economy<br>**For companies in each industry:**<br>• Holdings as of reporting date, showing book value, market value, and the fund's holdings as a percentage of company ownership<br>• Emissions (Scopes 1 and 2; Scope 3 if available)<br>• Status of disclosures per TCFD guidance<br>• Shareholder engagement activities and results |
| Air freight | |
| Passenger air transportation | |
| Maritime transportation | |
| Rail transportation | |
| Trucking services | |
| Automobiles and components | |
| **Materials and buildings** | **For the sector as a whole:**<br>The fund's identification and assessment of risks and opportunities arising from climate change, including regulatory risk, asset retirement obligation risk, and risk of stranded assets in REIT investments |
| Metals and mining | |
| Chemicals | |

[7] Carbon Disclosure Project and Climate Accountability Institute, *The Carbon Majors Database, CDP Carbon Majors Report 2017*, available at https://b8f65cb373b1b7b15feb-c70d8ead6ced550b4d987d7c03fcdd1d.ssl.cf3.rackcdn.com/cms/reports/documents/000/002/327/original/Carbon-Majors-Report-2017.pdf

<table>
<tr><th>Sector/Industry</th><th>Reporting approach</th></tr>
<tr><td>Construction materials</td><td rowspan="3">For companies in each industry:<ul><li>Holdings as of reporting date, showing book value, market value, and the fund’s holdings as a percentage of company ownership</li><li>Emissions (including Scope 3 emissions)</li><li>Status of disclosures per TCFD guidance</li><li>Shareholder engagement activities and results</li></ul></td></tr>
<tr><td>Capital goods</td></tr>
<tr><td>Real estate management and development</td></tr>
<tr><td>Agriculture, food, and forest products</td><td rowspan="5">For the sector as a whole:<br>The fund’s assessment of risks and opportunities arising from climate change, including regulatory risk and risks associated with drought and higher temperature<br>For companies in each industry:<ul><li>Holdings as of reporting date, showing book value, market value, and the fund’s holdings as a percentage of company ownership</li><li>Emissions (including Scope 3 emissions)</li><li>Status of disclosures per TCFD guidance</li><li>Shareholder engagement activities and results</li></ul></td></tr>
<tr><td>Beverages</td></tr>
<tr><td>Agriculture</td></tr>
<tr><td>Packaged foods and meats</td></tr>
<tr><td>Paper and forest products</td></tr>
<tr><td>Banks and Financial Services</td><td>For each entity in this sector:<ul><li>Holdings as of reporting date, showing book value, market value, and the fund’s holdings as a percentage of ownership</li><li>The institution’s loans and investments in fossil fuel industry companies and infrastructure projects</li><li>The institution’s participation in ongoing efforts to quantify banks’ climate-related financial risk[8]</li><li>Shareholder engagement activities and results</li></ul></td></tr>
</table>

We offer this approach and outline in the expectation that CalPERS’ and CalSTRS’ reporting in response to SB 964 will provide essential tools as well as a model for other funds and institutional investors confronting the reality of finance-related climate risk. Further, adoption of a robust reporting protocol by the two most influential public pension funds in the nation will provide companies with clear incentives to report adequately in this space.

At this writing, legislators in several other states are considering introducing legislation similar to California’s new statute. As ever, California must lead the way in climate action, and in climate-related financial strategies. We look forward to working with you to ensure a report that advances investors’ and financial institutions’ strategic planning for the future we will face together.

[8] See https://www.oliverwyman.com/our-expertise/insights/2018/apr/extending-our-horizons.html and https://www.ft.com/content/ce1d8ece-c19c-11e8-95b1-d36dfef1b89a

Thank you very much for your attention. If you have questions or would like to discuss the contents of this letter, please reach out to Janet Cox, janet@jwcox.com, or Lisa Anne Hamilton, lhamilton@ciel.org.

Dan Jacobson, State Director
Environment California

Deborah Silvey, Board President
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Re: Reporting on climate-related financial risk, in compliance with SB 964

The Union of Concerned Scientists (UCS) is writing on behalf of our 75,000 supporters across California in support of robust climate-related financial risk disclosure by CalPERS and CalSTRS. UCS is a national science advocacy organization with an office in Oakland, California, working to advance solutions for climate change, renewable energy, clean transportation, and climate resilience in California, among other pressing issues. Our fossil energy accountability campaign strives to hold the fossil fuel industry accountable to emerging societal expectations for responsible action on climate change.

We have considered the language in California Senate Bill 964 and respectfully submit for your consideration the following recommended guidelines for the disclosure of climate risks related to the oil and gas industry. UCS's recommendations complement those offered by Fossil Free California and Environment California. We believe these proposals will strengthen the CalPERS and CalSTRS investment portfolios, respond to the intent of the legislature, and facilitate full disclosure of climate-related risks to the fund beneficiaries. As the initial report is due by January 1, 2020, and to be repeated on a tri-annual schedule, the first report will set an important benchmark in climate-related risks reporting for both CalPERS and CalSTRS, as well as for other pension funds across the country considering similar reports.

SB 964 requires CalPERS and CalSTRS to report on climate-related financial risks in general and in specific, both by describing the "alignment of the fund with the Paris climate agreement and California climate policy goals[1] and exposure of the fund to long-term risks". In order to be in alignment with the Paris climate agreement's goal of keeping global temperature increase well below 2 degrees Celsius (2°C) and striving to limit it to 1.5°C

[1] California's climate policy goals are codified in our state's Renewable Portfolio Standards Program (Senate Bill 1078, 2002 and SB 100, 2018); the Global Warming Solutions Act of 2006 (Assembly Bill 32, 2006 and SB 32, 2016); the Clean Energy and Pollution Reduction Act of 2015 (SB 350, 2015); and others.

above pre-industrial levels, the fund should focus its identification and analysis of climate-related risks on portfolio holdings in the energy sector. The findings of the Intergovernmental Panel on Climate Change (IPCC) Special Report on Global Warming of 1.5°C[2] and the 4th National Climate Assessment[3] underscore the urgent need to reduce emissions to net-zero by mid-century—and burning fossil fuels for electricity, heat, and transportation is the largest source of global warming emissions from human activities.

The energy sector, as defined by the Task Force on Climate-related Financial Disclosures (TCFD) and encompassing the oil and gas, coal, and electric utility industries, is inextricably linked to climate change and holdings in this sector deserve an in-depth examination to accurately assess their climate-related risks. Scientists can now quantify[4] the global warming emissions, global average temperature increase, and sea level rise attributable to the product-related emissions of particular fossil fuel companies.

These industries face a unique mix of transition risks, such as regulatory risks, market risks, and reputational risks, as well as physical risks to infrastructure due to sea level rise, higher temperatures, and acute weather events. Climate change represents a greater risk than the financial industry has seen before. The cost of climate disasters is rising exponentially as we see more frequent and severe weather events, and potential changes in public perception hold a reputational risk for companies involved in the energy sector. The rapid bankruptcy of PG&E after two years of wildfires is a sobering example of this climate-related risk in California.

Of the transition risks faced by this sector, the clearest financial risk to the funds will be from the potential carbon bubble, similar to the housing bubble of 2008. CalPERS and CalSTRS investments in the energy sector could have an outsized impact on the funds' bottom line in the event of a rapid transition to a low-carbon economy. Legislative and regulatory action to decarbonize the economy along with market gains by cheaper and cleaner sources of energy could make investments in companies with high greenhouse gas emissions a high-risk endeavor.

The fossil fuel industry is also deserving of scrutiny given its history of obscuring climate-related risks from investors. The New York Attorney General sued ExxonMobil in 2018, alleging that the company misled investors about the risks that climate change regulations posed to its business. Major fossil fuel companies that UCS has examined[5] lack robust disclosure of climate-related risks and an increasing number of other large asset owners and money managers have shown concern about this issue.

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[2] IPCC, 2018: Global warming of 1.5°C. An IPCC Special Report on the impacts of global warming of 1.5°C above pre-industrial levels and related global greenhouse gas emission pathways, in the context of strengthening the global response to the threat of climate change, sustainable development, and efforts to eradicate poverty [V. Masson-Delmotte, P. Zhai, H. O. Pörtner, D. Roberts, J. Skea, P.R. Shukla, A. Pirani, W. Moufouma-Okia, C. Péan, R. Pidcock, S. Connors, J. B. R. Matthews, Y. Chen, X. Zhou, M. I. Gomis, E. Lonnoy, T. Maycock, M. Tignor, T. Waterfield (eds.)]. In Press. Online at https://www.ipcc.ch/sr15/, accessed June 19, 2019.

[3] USGCRP, 2017: Climate Science Special Report: Fourth National Climate Assessment, Volume I [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 470 pp., doi: 10.7930/J0J964J6. Online at https://science2017.globalchange.gov/downloads/CSSR2017_FullReport.pdf, accessed June 19, 2019.

[4] Ekwurzel, B., Boneham, J., Dalton, M.W. et al. Climatic Change (2017) 144: 579. Online at doi.org/10.1007/s10584-017-1978-0, accessed June 19, 2019.

[5] Pinko, N., K. Mulvey, B. Ekwurzel, P. Frumhoff. 2018. The 2018 climate accountability scorecard: Insufficient progress by major fossil fuel companies. Cambridge, MA: Union of Concerned Scientists. Online at www. ucsusa.org/climate-accountability-scorecard-2018, accessed June 5, 2019.

Additionally, the fossil fuel industry is facing numerous lawsuits from California cities and counties seeking to recover the costs of climate damages and preparedness. Sea level rise is a critical issue for beachfront housing and infrastructure.[6] The risks to California property and tax base throughout the coastal regions due to sea level rise[7] is a significant and urgent issue that will have financial ramifications throughout the state. Major fossil fuel companies have also been named as defendants in a lawsuit filed by the Pacific Coast Federation of Fishermen's Associations seeking to hold them accountable for damage to the Dungeness crab fishery due to rising ocean temperatures.

The prospect that major fossil fuel companies will be held responsible for climate damages is a financial risk, and these companies also face serious reputational risks for knowingly misleading[8] the public about the climate risks of their products for decades. A newly released nationally representative survey[9] conducted by Yale University's Program on Climate Change Communications (YPCCC) and supported by UCS found that a majority of US residents—and nearly two-thirds of Californians—think fossil fuel companies should pay for some portion of global warming damages. The poll also found that more than seven in ten Californians distrust fossil fuel companies.

With these numerous and varied climate-related risks in mind, UCS puts forward the following disclosure recommendations.

For each company in the energy sector, please disclose the following risks in line with TCFD recommendations.[10]

*Transition Risks – Policy & Legal*

Estimated annual emissions, including from the end use of its products (Scope 3), following the methodology in the Carbon Majors Database[11] or other cited source

Anticipated reserves and resources at risk of not being profitably produced from the existing company portfolio and from future exploration in the event of global, federal, or state climate regulation in line with the Paris climate agreement's global temperature goal

Exposure to climate-related litigation, including liability lawsuits



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[6] Pacific Coast Federation of Fishermen's Associations, Inc. v Chevron Corporation, et al. 2018. Plaintiff Complaint. Online at: https://www.sheredling.com/wp-content/uploads/2018/11/2018-11-14-Crab-Complaint-1.pdf

[7] Dahl, K., et al. 2018. Underwater: Rising seas, chronic foods, and implications for US coastal real estate. Cambridge, MA: Union of Concerned Scientists. Online at https://www.ucsusa.org/sites/default/files/attach/2018/06/underwater-analysis-full-report.pdf, accessed June 5, 2019.

[8] City of Oakland and City and County of San Francisco v. B.P. P.L.C, Chevron Corporation, ConocoPhillips Company, ExxonMobil Corporation, and Royal Dutch Shell. 2018. Amicus Brief in Support of Plaintiffs. Online at http://blogs2.law.columbia.edu/climate-change-litigation/wp-content/uploads/sites/16/case-documents/2019/20190320_docket-18-16663_amicus-brief-2.pdf, accessed June 19, 2019.

[9] Marlon, J., et al. 2019. A majority of Americans think fossil fuel companies are responsible for the damages caused by global warming. Yale Program on Climate Change Communications, June 19. Online at https://climatecommunication.yale.edu/publications/majority-of-americans-think-fossil-fuel-companies-are-responsible-for-the-damages-caused-by-global-warming/, accessed June 19, 2019.

[10] Task Force on Climate-Related Financial Disclosures (TCFD). 2017. Implementing the Recommendations of the Task Force on Climate-related Financial Disclosures. Online at https://www.fsb-tcfd.org/wp-content/uploads/2017/06/FINAL-TCFD-Annex-062817.pdf, accessed June 5, 2019.

[11] Heede, R. 2014. Climatic Change 122: 229. Online at doi.org/10.1007/s10584-013-0986-y

Status of company disclosure in line with the TCFD recommendations, particularly the inclusion of climate-related financial risks in financial filings.

*Transition Risks – Technology*

Anticipated reliance on carbon dioxide removal technologies, also known as negative emissions technologies, and company financial investment in research and development for said technologies

Investments in low-carbon technology research and development as a proportion of overall research and development spending and future budget allocations

*Transition Risks – Market*

Holdings as of reporting date, showing book value, market value, and the funds' holdings as a percentage of company ownership

The funds' shareholder engagement activities in 2019, including descriptions of resolutions, sponsored, resolutions supported, acceptance or rejection of resolutions, and non-proxy engagements

*Transition Risks – Reputation*

Annual company expenditures on climate-related lobbying at the federal and California state levels

Company affiliation with, leadership positions in, and climate policy alignment with trade associations and other industry groups, such as American Legislative Exchange Council, American Petroleum Institute, National Association of Manufacturers, US Chamber of Commerce, and Western States Petroleum Association

*Physical Risks*

Acute and chronic physical risks posed by climate change to company operations and physical infrastructure, including the ability of projects to deliver services in the face of climate change[12]

Climate resilience assessments of new and existing company infrastructure, including social equity metrics and life-cycle cost assessments for surrounding communities.

We offer this approach and outline in the expectation that CalPERS's and CalSTRS's reporting in response to SB 964 will provide a model for other funds and institutional investors confronting the reality of climate-related financial risks. The adoption of a robust reporting protocol, particularly in regards to the energy sector, will strengthen the funds' portfolio and provide companies with clear incentives to report adequately in this space.

12 Gibson, J.R. 2017. Built to Last: challenges and opportunities for climate-smart infrastructure in California. Cambridge, MA: Union of Concerned Scientists. Online at www.ucsusa.org/climate-smart-infrastructure, accessed June 17, 2019.

Sincerely,

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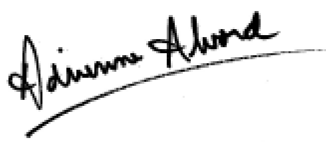

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