

# GREEN INITIATIVE TASK FORCE

*2014 Annual Report  
period ending June 30, 2014*

## HIGHLIGHTING

CalSTRS environmental-themed  
investments and environmental  
risk-management efforts



## **MISSION**

*To manage the risks and capture the opportunities associated with global sustainability issues by identifying environmentally focused strategies intended to enhance the risk-adjusted returns of the CalSTRS Investment Portfolio.*

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—CALSTRS INVESTMENTS

November 7, 2014

Dear Reader:

I am pleased to present the eighth annual report from the CalSTRS Green Initiative Task Force, or “The Green Team,” detailing the Investments Branch activities surrounding environmental risk management and opportunity capture. This report reflects CalSTRS’ recognition that environmental issues affect the performance of the CalSTRS Investment Portfolio across companies, sectors, regions and asset classes. The increasing importance of environmental considerations in investing has rarely been more evident than it is today. We routinely are being made aware of environmental-related events that impact society and the economy.

Here in California, we are keenly aware of how water scarcity can impact lives and businesses, as our state struggles to manage a depleting water supply. According to the U. S. Department of Agriculture, as of June 2014, about 94 percent of California’s agricultural sector was experiencing severe, extreme or exceptional drought. Reduced hydroelectricity production is raising energy costs to consumers. Fire danger has risen significantly and 2014 threatens to be one of the worst fire years ever for California. While the full impacts of drought on the California economy remain to be seen, damages are being estimated to be in the billions of dollars.

But it’s not just California. In January 2014, the USDA reported that the majority of the U.S. mainland was being impacted by drought conditions. That same month, the USDA declared both Hawaii and Maui counties as disaster areas due to ongoing drought, making these two counties among the more than one thousand counties nationwide to receive disaster declarations. Globally, drought conditions are being seen in many countries, including China, India, Brazil, Chile, Iran and Australia, as well as in many parts of North Africa.

Investors can play a role in helping society manage water scarcity. We can encourage our portfolio companies to be mindful of their water consumption and make efforts to conserve and recycle water when possible. From an opportunity perspective, we can consider investments that work to monitor and manage water usage, and increase water purification and recycling capacities.

Since our last Green Team report, released in fall 2013, we have increased our portfolio of green investments through additional commitments in our Inflation Sensitive asset group and through increased purchases of green bonds in our Fixed Income portfolio. I expect that, going forward, these asset groups will continue to grow their green investment assets.

From a risk management perspective, CalSTRS has continued to actively engage market participants on improving environmental risk management and disclosure. My staff has focused on a variety of issues, including increasing energy efficiency capacity, managing water use in hydraulic fracturing, and understanding carbon asset risk exposure.

I thank you for taking the time to consider this report, and I encourage you to join us and our collaborative partners as we promote environmental risk management and investment awareness throughout the global financial markets.

Sincerely,



Christopher J. Ailman  
Chief Investment Officer  
California State Teachers’ Retirement System

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## CALSTRS INVESTMENTS COLOR GUIDE

 CalSTRS	 Real Estate
 Global Equity	 Private Equity
 Fixed Income	 Inflation Sensitive

# ENVIRONMENTAL INTEGRATION

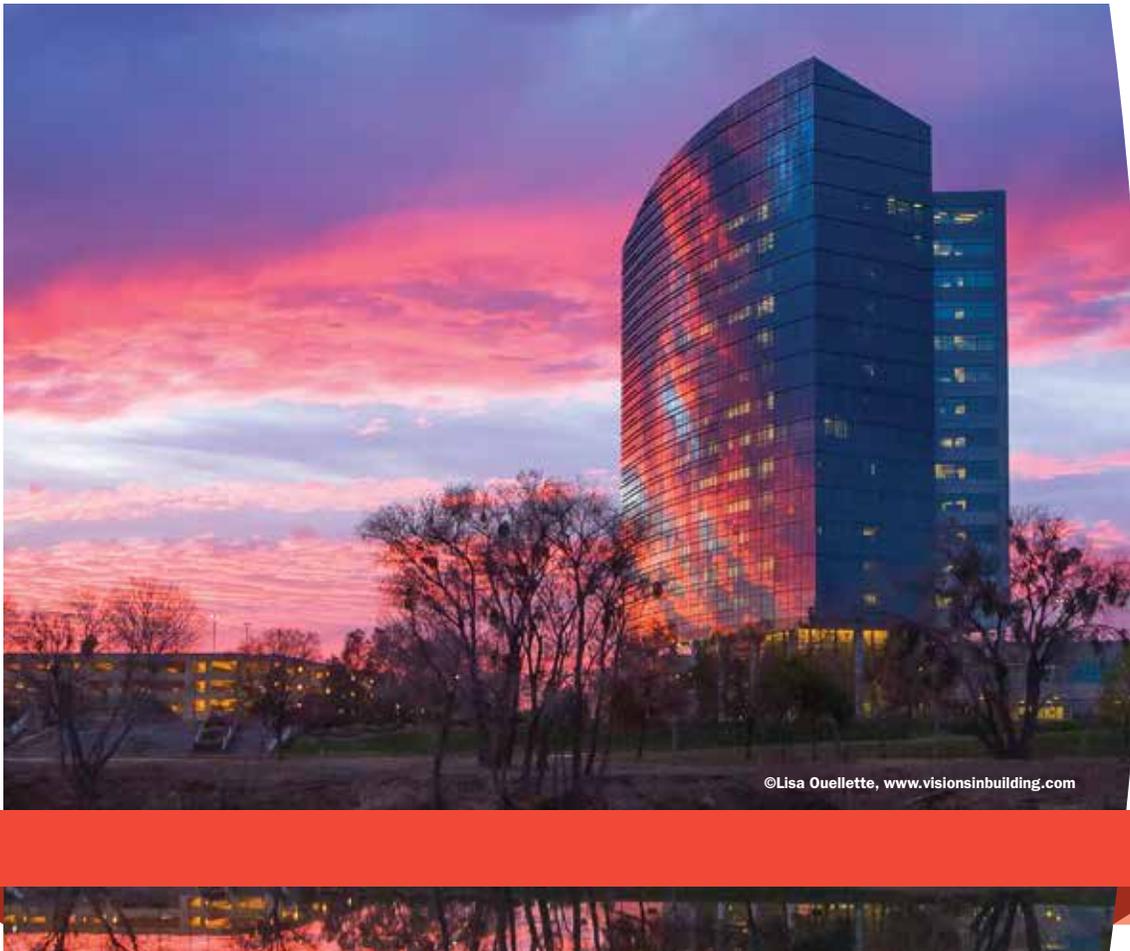
## HISTORY

*Ten years ago, at the direction of the CalSTRS Teachers' Retirement Board, the CalSTRS Environmental Program was formalized through the development of a four-pronged plan that included structuring an environmentally focused equity program, targeting private investment in clean technologies, auditing the real estate portfolio efficiency to increase long-term value, and demanding environmental accountability and disclosure from portfolio investments. One of the 2004 program's early creations was a Clean Technology Advisory Board, which led to an initial \$250 million commitment to clean technology.*

In 2005, the board voted to explore establishing a program that would consider sustainable investments in public equity securities. The board determined that external public equity managers who incorporated environmental, social and governance considerations in their investment selection process could achieve public equity market outperformance.

The subsequent manager selection process yielded commitments to four sustainable managers totaling \$225 million.

Soon after authorizing a Sustainable Equity Manager portfolio, the board determined that staff should actively engage equity market participants on environmental awareness. In 2006, the Corporate



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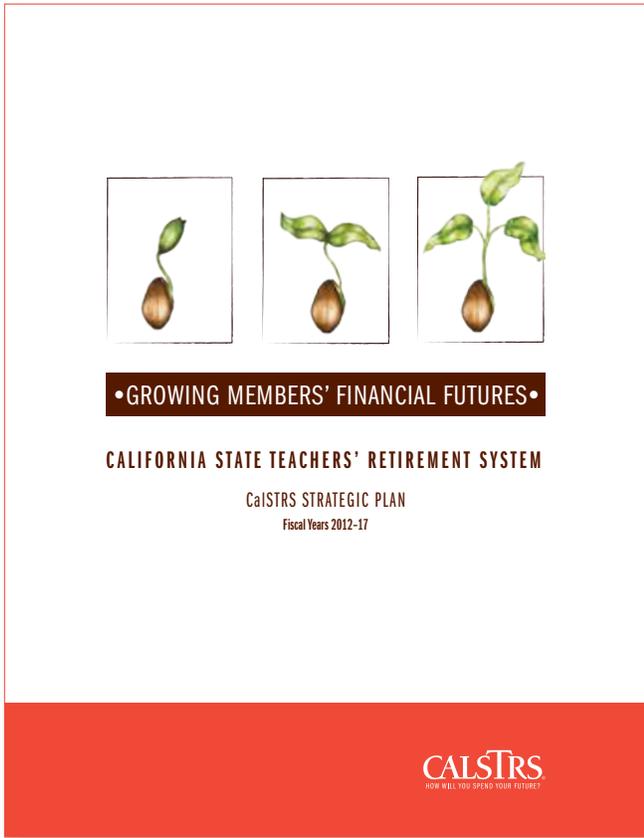
Governance Unit was tasked with making climate risk management one of its principal focuses. Staff recognized that many other environmental issues presented risks to the portfolio and that engagements with financial market participants on these issues were warranted.

In 2008, CalSTRS became one of the first North American pension funds to formally integrate environmental, social and governance considerations into its investment policies when it adopted the [Investment Policy for Mitigating ESG Risks](#). Included in CalSTRS ESG policy are the 21 Risk Factors, which identify ESG risks considered by staff and external managers as part of the due diligence process associated with investment

decisions, and the Statement of Shareowner ESG Responsibility, which supplements CalSTRS' proxy voting guidelines and provides direction on how to evaluate ESG-related shareholder proposals.

Ten years removed from the inception of its environmental integration efforts, CalSTRS continues to expand its efforts begun in 2004 and is widely considered to be a leader among institutional investors that are integrating environmental considerations.

**Ten years ago, at the direction of the CalSTRS Teachers' Retirement Board, the CalSTRS Environmental Program was formalized.**



## Continued Commitment

CalSTRS continuing commitment to environmental integration is evident in the [CalSTRS Strategic Plan](#), which the Teachers' Retirement Board adopted in 2012. This five-year plan contains long-range goals (what CalSTRS wants to achieve), objectives (measurable ways to achieve the defined long-range goals) and initiatives (specific projects, programs, activities or actions to help CalSTRS achieve its objectives).

Goal 2 of the CalSTRS Strategic Plan is to responsibly manage risk to the organization. This risk-management goal reflects CalSTRS' dedication to creating a fully sustainable organization, one that recognizes the components of sustainability, including environmental consideration. CalSTRS is committed to addressing risks and opportunities, including environmental risks and opportunities, in its approach to corporate sustainability by transforming its business culture and practices.

CalSTRS Investments Branch is working to integrate environmental, social and governance factors into and across the CalSTRS Investment Portfolio.

## Integrating ESG Into Investment Processes

As outlined in Goal 2, Objective D, Initiative 4 of the CalSTRS Strategic Plan, the Investments Branch is working to integrate environmental, social and governance factors into and across the CalSTRS Investment Portfolio. One key activity for fiscal year 2013–14 was the integration of language into each asset class investment policy that references CalSTRS ESG risk policy:

CalSTRS believes that environmental, social and geopolitical issues can affect the performance of our investments. As a result, the CalSTRS 21 Risk Factors have been developed as a tool that both internal

and external investment managers are expected to use to assess the impact of ESG risk when making an investment on behalf of CalSTRS.

Prior to this language update, ESG risks were identified only in the [CalSTRS Investment Policy and Management Plan](#), which is the controlling policy document for the Investments Branch. To help achieve the desired level of ESG integration, staff determined that the CalSTRS ESG risk policy should be referenced in the asset class risk policy.



## RISK MANAGEMENT

*As directed by the Teachers' Retirement Board, staff developed a variety of techniques and tools designed to mitigate the level of environmental risk facing the CalSTRS Investment Portfolio. As a large, diversified global investor, CalSTRS needs to be mindful that it is exposed to a variety of environmental risks and therefore must engage with those who manage money on behalf of CalSTRS and engage entities that might influence risk within financial markets.*

CalSTRS works with its external managers on recognizing and managing environmental risks. Direct engagement with portfolio companies is also an important and effective means of managing risk, and CalSTRS is very active in this regard. CalSTRS also understands that working collaboratively with other investors is an excellent way to broaden engagement reach and strives to partner with others whenever possible.

Being active owners and voting proxies also helps reduce risk. CalSTRS routinely submits environmental-related shareholder proposals to companies held in its Public Equity portfolio in an effort to raise their level of environmental risk awareness. Staff also considers and votes all environmental-related proposals in a manner that aligns with CalSTRS' objectives of improving disclosure and mitigating risk.

## 21 Risk Factors Committee

CalSTRS 21 Risk Factors are to be considered when any manager, internal or external, is undergoing due diligence on a new investment. They are also part

of the continuous diligence process staff undertakes with existing investments and investment managers. CalSTRS external fund managers are regularly queried on how they are factoring these risk factors into investment decisions made on behalf

of CalSTRS. Often, these risk factors are embedded or referenced in contracts with external investment partners.

## CALSTRS ESG RISK MANAGEMENT PROCEDURES

When faced with a corporate decision that violated CalSTRS 21 Risk Factors, at the direction of the Investment Committee or at the discretion of the CIO, the Investments staff will directly engage management to seek a change in the corporate behavior that violates the risk factors in the following manner.

1

CalSTRS will actively engage, in a constructive manner, corporate management whose actions are inconsistent with this policy. All forms of engagement will be used, including letter writing, meetings, participation in advocacy groups, media campaigns and proxy voting.

2

After all reasonable efforts have been made to constructively engage corporate management, and there is a clear nexus between the corporate behavior and the CalSTRS policy violation, and, in the CIO's opinion, the corporate remedies are insufficient or nonresponsive, CalSTRS will inform its active investment managers that, to the extent that suitable alternate investments are available and that their inclusion in the portfolio would result in no diminution in portfolio return or increase in risk, the managers will invest in said alternative(s) until the CalSTRS policy violations cease.

3

Upon remedy of the policy violation, CalSTRS will inform the active investment managers and passive managers that the securities can be purchased and report such action in writing to the Investment Committee.

CalSTRS staff recognized that developing a set of ESG risks to consider and risk management procedures to follow was not enough to ensure an appropriate level of risk management. A process needed to be developed that would allow CalSTRS ESG risk management procedures to be implemented.

To that end, Investments staff developed the 21 Risk Factor Committee. This committee is led by the CalSTRS CIO and is composed of senior staff representatives from each asset class who help the CIO evaluate exposure to ESG-related risks and take appropriate actions to ensure that CalSTRS policy surrounding managing ESG risk exposure is adhered to.

## CALSTRS ENVIRONMENTAL RISK CONSIDERATIONS

### Environmental

The risk associated with an investment's long-term profitability from activities and exposure to environmental matters such as depleting or reducing air quality, water quality, land protection and usage, without regard for remediation. Consideration should be given to how a company is dealing with the impact of climate change, including whether the government is taking steps to reduce its impact or exacerbate the problem, or is oblivious to the risk.

The principal environmental issue staff considered was CalSTRS' risk exposure to fossil fuel companies and if the activities of these companies presented a material risk to the CalSTRS Investment Portfolio.

Environmental risk consideration is part of the CalSTRS 21 Risk Factors and during fiscal year 2013–14, the committee considered environmental-related issues that potentially violated the 21 Risk Factors. The principal environmental issue staff considered was CalSTRS' exposure to fossil fuel companies and if, or to what degree, the activities of these companies presented a material risk to the CalSTRS Investment Portfolio. Presently staff is still evaluating the portfolio exposure to fossil fuels and continues to engage companies involved in fossil fuel exploration and production.



## Fixed Income Benchmark Review

Like last year, the Fixed Income Unit compared the Fixed Income holdings to the MSCI US AGG Sustainability Index. This sustainability index positively screens fixed rate, investment grade corporate bond issuers for a “best in class” ranking relative to their peer group and determines how effective these issuers are in managing ESG risks.

Of the \$49.2 billion in assets that CalSTRS Fixed Income Unit controls, including those held by internal managers, external managers and internally controlled securities lending, approximately \$17.7 billion, or 36 percent of the debt securities that CalSTRS holds, are included in the Barclays MSCI US AGG Sustainability Index. This percentage is 130 basis points higher than the \$16 billion, or 34.7 percent, staff reported in the 2013 Green Initiative Task

Force Report. For more information on MSCI ESG Research, visit its website at [msci.com/products/indexes/esg/](http://msci.com/products/indexes/esg/).

Barclays and MSCI are planning to launch a new Green Bond Index, which will expand the ESG fixed income benchmark index family they introduced in June 2013. The Green Bond Index is in the early stages of development, and the Fixed Income Unit volunteered to participate and provide feedback in the index’s formal consultation period. Based on a preliminary review, the Fixed Income Unit’s \$98 million in green bond holdings would be included in this index.

## Global Equity External Manager Engagement Background and Responses

Since 2010, all Global Equity external investment managers have been polled annually to assess the level of climate considerations in their respective processes.

From 2010 through 2012, questions asked included:

1. Do you explicitly incorporate climate risk into your process?
2. Is climate change a primary factor?

Beginning in 2012, the Global Equity external managers were also asked:

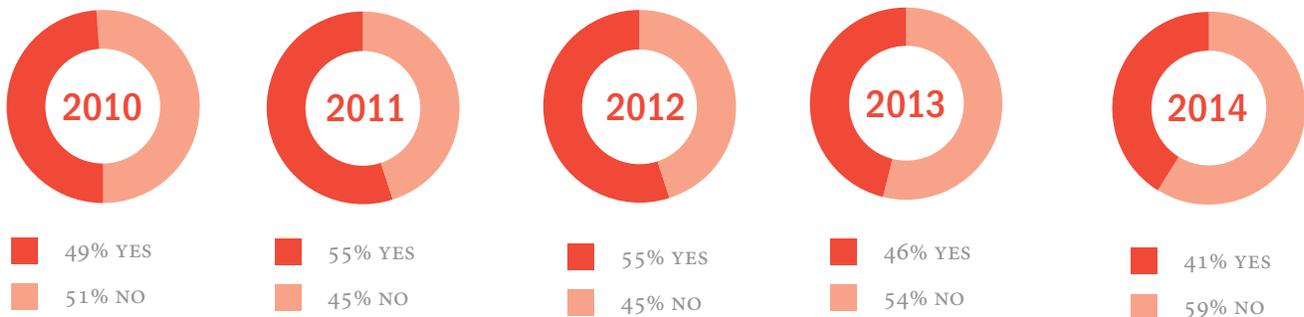
3. Have you taken steps to better incorporate climate risk into your investment process since last year?

Starting in 2014, the Global Equity external managers were also asked:

4. Is your organization a UNPRI Signatory?

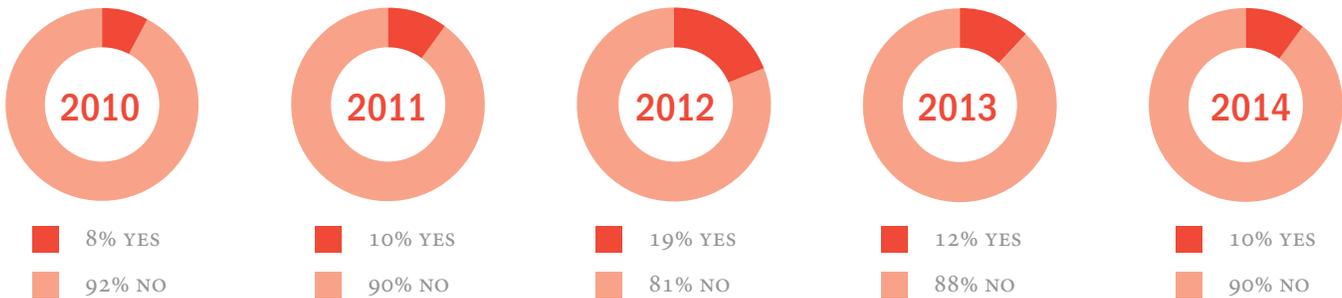
## 1. DO YOU EXPLICITLY INCORPORATE CLIMATE RISK INTO YOUR PROCESS?

In response to the question of incorporating climate change into investment consideration, **for 2014, 41 percent of the Global Equity external managers indicated that they incorporated climate change into their processes.** The following charts provide a historical perspective of external manager responses to this question.



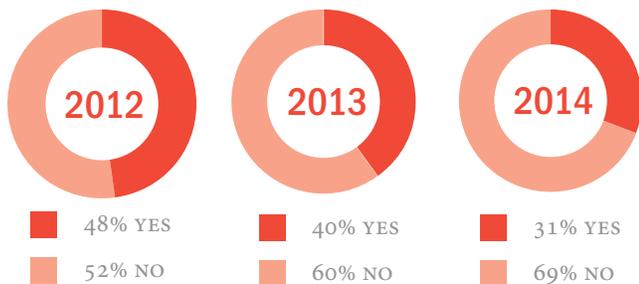
## 2. IS CLIMATE CHANGE A PRIMARY FACTOR?

In response to the question of whether climate change was a primary factor in investment considerations, **for 2014, 10 percent of the Global Equity external managers indicated that they made climate change a primary factor in their investment considerations.** The following charts provide a historical perspective of external manager responses to this question.



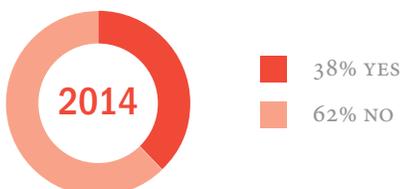
## 3. HAVE YOU TAKEN STEPS TO BETTER INCORPORATE CLIMATE RISK INTO YOUR INVESTMENT PROCESS SINCE LAST YEAR?

In response to the question of whether managers had taken steps to better incorporate climate risk over the past year, **for 2014, 31 percent of the Global Equity external managers reported that they had.** The following charts provide a historical perspective of external manager responses to this question.



## 4. IS YOUR ORGANIZATION A UNPRI SIGNATORY?

In response to the question of whether external managers were signatories to the UN's Principles for Responsible Investment, **in 2014, 38 percent of external managers indicated that they were signatories.** Since this is the first year staff posed this question, no historical comparisons are available.



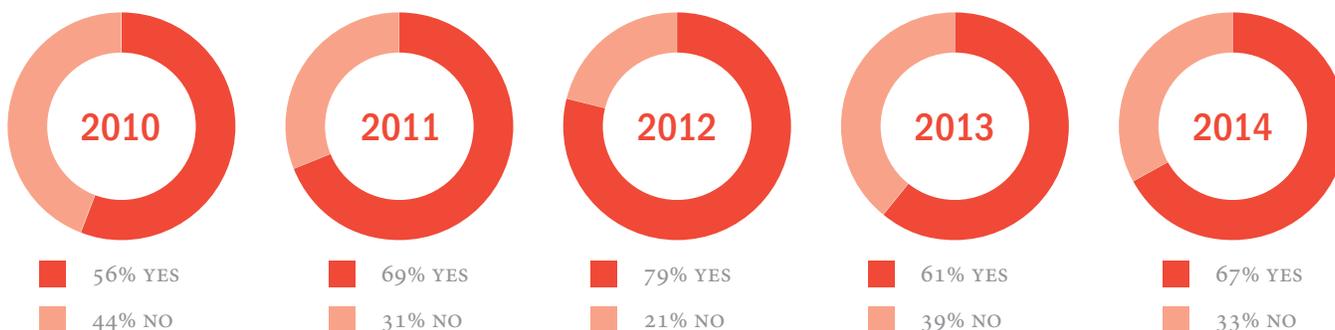
## Analyzing the Results

Between 2010 and 2012, there was a slight rise in the number of managers who incorporated climate change risk into their investment processes, with 55 percent of managers incorporating climate change in 2012, up from 49 percent in 2010. However, over the

past two years, the percentage of managers who incorporate climate change considerations has dropped sharply, down to 41 percent in 2014.

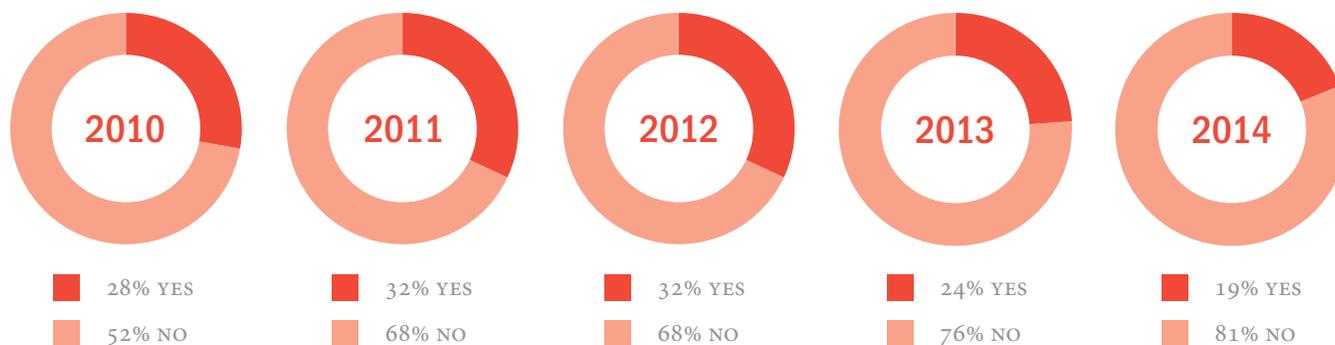
Further analysis of these numbers shows that most of the recent decline in manager incorporation of climate change risk consideration is coming from U.S.-based external managers.

### Non-U.S. Based Managers Incorporating Climate Change Risk 2010–2014



The charts above show the percentage of non-U.S. based managers who incorporated climate change risk between 2010 and 2014. As the charts show, **the number of non-U.S. managers who incorporated climate change risk rose substantially from 2010 to 2012 before falling in 2013 and rising again in 2014.**

### U.S. Based Managers Incorporating Climate Change Risk 2010–2014



The charts above show U.S. manager response to the same question over the same time period. As the charts show, **the number of U.S.-based managers incorporating climate change considerations has fallen from a high of 32 percent in 2012 to a low of 19 percent in 2014.** When viewed from a policy perspective, this downward trend is not surprising. The United States has been reluctant to adopt climate change-related policies and regulations, which likely lessens the perceived investment risks associated with climate change. Conversely, regions outside the United States, particularly Europe, have adopted policies and regulations surrounding carbon emissions and clean energy generation, likely influencing the perceived risk levels associated with high carbon and clean energy investment.

The responses to questions two and three would appear to support a lessening belief among external managers that incorporating climate change risk considerations into their investment processes is important, **as the percentage of managers who consider climate change to be a primary factor fell by nearly 50 percent from 2012 to 2014, and the percentage of managers who have taken steps to better incorporate climate risk dropped approximately 35 percent between 2012 and 2014.** This would indicate that asset owners who believe that climate change presents material risks need to increase external manager engagement on this issue.

## Sample Responses to Questionnaire

Three anonymous responses to the 2014 CalSTRS Global Equity Climate Risk Survey are provided below. These examples do not include responses from the global equity sustainable managers, as ESG factors are an integral part of their investment process. Rather, these sample responses come from CalSTRS mainstream public equity managers. Manager's names and other confidential information, such as holdings, have been removed from the responses.

### SAMPLE RESPONSES TO QUESTIONNAIRE

Question	Manager A
<p><b>Do you explicitly incorporate climate risk in your investment process?</b></p>	<p>Our organization's investment professionals invest with the primary goal of producing superior risk-adjusted returns for our clients. We recognize that certain environmental, social and corporate governance factors, such as climate change, may impact a company's valuation and financial performance. As a result, we take ESG factors into consideration when making investment decisions. We utilize internal and external resources to assist us in analyzing ESG issues, engage with companies in which we invest, and when authorized, normally vote proxies on all resolutions.</p>
<p><b>Is climate change a primary factor and are you aware of climate change issues when making stock selection?</b></p>	<p>Climate change is one of many factors we may consider as part of our investment process. As mentioned, we recognize that certain environmental factors, such as climate change, can impact a company's valuation over the near- and long-term. As a result, the potential impact of environmental factors is integrated into our investment analysis and decision-making process, where relevant. For example, an investment team may avoid investing in a situation where the environmental risks could materially negatively impact a company's valuation. Other times, an investment team may choose to engage management on environmental issues where we feel we have the ability to improve our clients' financial interests by doing so. While a Portfolio Manager/Analyst is never prohibited from purchasing or holding a position due to an ESG issue, consideration of these issues is made part of the investment decision.</p>
<p><b>What steps have you taken to better incorporate climate risk into your process?</b></p>	<p>Our organization continually seeks to make improvements to our approach to ESG integration and to further systemize and incorporate ESG issues into our investment processes. Our organization has an internal group that is responsible for oversight and implementation of our ESG Policy. Members of this group serve as internal leaders in the area of ESG to help frame our overall policy and serve as resources to our investment professionals globally. Among other responsibilities, these individuals conduct ESG training and help educate our investment professionals on relevant ESG issues, which may include topics such as climate change, where relevant, and help them to understand the potential risks that these issues may present to companies.</p>
<p><b>Is your organization a UNPRI Signatory?</b></p>	<p>Our organization broadly supports much of the overall philosophy of the United Nations-backed Principles for Responsible Investment; however at this time, we are not a signatory. We believe we incorporate ESG issues into our investment analysis and decision-making process and demonstrate a commitment to active ownership through our engagement and voting practices consistent with the PRI. Where relevant, we may also seek appropriate disclosure on ESG issues from the companies to help support our research and analysis. In addition, we have adopted an Environmental, Social and Corporate Governance Policy.</p>

## SAMPLE RESPONSES TO QUESTIONNAIRE (CONTINUED)

Question	Manager B
<p><b>Do you explicitly incorporate climate risk in your investment process?</b></p>	<p>Yes. Our research analysts utilize a long-term perspective in the search for high quality, sustainable growth companies, taking into account all pertinent environmental, social and governance factors in their analysis. Our analysis would include climate risks, such as carbon footprint, carbon credits and other factors where appropriate. The driving factor of the decision to purchase or sell a stock is the longer-term sustainability of the business model, and environmental, social and governance factors are an input in our analysis. We believe ESG is an integral part of our process, and as such, we do not have explicit requirements in our research process specifically dedicated to it.</p>
<p><b>Is climate change a primary factor and are you aware of climate change issues when making stock selection?</b></p>	<p>Although climate change is not a primary factor in our investment process, our analysis considers climate risks, such as carbon footprint, carbon credits and other factors where appropriate. The investment team seeks to invest in a diversified portfolio of companies that they believe can grow faster than the market for an extended period, while generating value for clients. Our research analysts utilize a long-term perspective in the search for high quality, sustainable growth companies, taking into account all pertinent ESG factors in their analysis.</p>
<p><b>What steps have you taken to better incorporate climate risk into your process?</b></p>	<p>Underscoring the firm's commitment to support our portfolio teams in their consideration of ESG issues, our organization has created two staff positions dedicated to ESG. This ESG team is a part of our organization's larger analytics group and leverages the firm's global network of over 90 independent risk and performance professionals in 14 different countries.</p> <p>Our fully integrated ESG approach leverages our organization's existing investment research teams and risk management framework. This approach applies broadly across our investment groups and has the flexibility to accommodate a number of distinct approaches to the analysis of ESG issues, in a manner consistent with each group's individual investment style.</p>
<p><b>Is your organization a UNPRI Signatory?</b></p>	<p>Yes, the firm is a signatory to the UNPRI.</p>

## SAMPLE RESPONSES TO QUESTIONNAIRE (CONTINUED)

Question	Manager C
<p><b>Do you explicitly incorporate climate risk in your investment process?</b></p>	<p>We do not explicitly incorporate climate risk in our investment process.</p> <p>We understand that the extent and magnitude of climate risk varies across and within companies, sectors, regions, and asset classes and over time. We are aware of the inconsistent and uncertain policy environment for addressing climate change generally, and the potential imposition of statutory limits on greenhouse gases that would—along with shifts in energy and transportation demand patterns, improving economics of clean energy, among others—most directly alter absolute and relative climate risk. Generally speaking, while we presently believe climate risk for broad based equity portfolios to be low, we acknowledge that risk levels are likely to change given prevailing scientific consensus and attendant public policy, legislative and regulatory remedies.</p> <p>In certain quantitative equity portfolios we incorporate an ESG factor into the alpha model. The factor leverages an external ESG rating where the rating methodology includes a company-level assessment of climate risk where it is relevant to the industry's sustainability exposure.</p>
<p><b>Is climate change a primary factor and are you aware of climate change issues when making stock selection?</b></p>	<p>Climate change is not a primary factor in our investment process.</p> <p>Over the last several years we have conducted extensive quantitative analysis of ESG factors and their correlations with equity risk and return, and research is ongoing in this area. In prior analysis of third-party climate risk ratings, we found that “low carbon” stocks were not rewarded over the testing period and in many cases were in fact penalized relative to “high carbon” stocks. This finding struck us as logical given the freedom companies enjoy to emit carbon dioxide, the greenhouse gas responsible for the bulk of anthropogenic induced climate change, without significant financial deterrents. It is our view that any meaningful change to this outcome is conditional on significant policy interventions to correct the negative externalities of greenhouse gas emissions.</p>
<p><b>What steps have you taken to better incorporate climate risk into your process?</b></p>	<p>As discussed above we have extended our understanding of the relationship between ESG factors and equity performance which implicitly incorporates climate risk in the factor. We have also assisted clients in analyzing and understanding their exposure to fossil fuels.</p>
<p><b>Is your organization a UNPRI Signatory?</b></p>	<p>Our organization is a signatory to the United Nations supported Principles for Responsible Investment. The act of signing PRI in May 2012 underscores our existing commitment to integrating ESG into our investment process, asset stewardship activities and throughout our organization.</p>

## Corporate Engagement

### Fossil Fuel Reserve Engagement

*During fiscal year 2013–14, staff continued to engage relevant energy companies held in the Global Equity portfolio concerning their fossil fuel reserve valuations. This issue was a high profile risk issue that surfaced during fiscal year 2012–13 and its significance carried over into this fiscal year.*

The Carbon Bubble Theory, also known as the Stranded Asset Theory, states that companies in the oil and gas, and coal industries are overvalued as their valuations are based on a level of fossil fuel reserves that, if burned, would increase atmospheric levels of carbon dioxide such that global temperatures would rise to a level that could not support human society. Some experts have predicted that between 40 percent and 60 percent of fossil fuel reserves would need to be sequestered if global temperatures were to remain within tolerable limits. If this sequestration were to occur, theorists claim, then the valuations of oil and gas, and coal companies would dramatically decline.

Much of the impetus for bringing this risk issue to the forefront of investor engagement efforts came from the [Carbon Tracker Initiative](#), which published several reports that detail the carbon content of the known reserves held by the top 200 fossil fuel

producing companies globally. Staff sent engagement letters to 44 U.S.-based companies with significant involvement in the exploration and production of oil, natural gas and coal asking for a dialogue on how they value their fossil fuel reserves. These companies, which represent approximately \$3.85 billion in Public Equity portfolio value, were identified by the Carbon Tracker as having the largest exposure to fossil fuels.

All companies engaged to date advised CalSTRS that they adhere to strict Securities and Exchange Commission rules on reserve valuation, and that the reserves that are the basis for their share price values are expected to be produced and sold within the next five to 10 years, making sequestration unlikely. Additionally, all companies take the position that environmental-related risks, such as climate change, are continuously evaluated and ways to mitigate carbon emissions are being actively pursued. Staff intends to continue this engagement in the 2014–15 fiscal year.

Some experts have predicted that between **40** percent and **60** percent of fossil fuel reserves would need to be sequestered if global temperatures were to remain within tolerable limits.





Investor Network on  
**CLIMATE RISK**  
a project of Ceres

### Fossil Fuel Reserve Engagement— Collaborative Efforts

CalSTRS continues to support the [Investor Network on Climate Risk](#) led engagement effort focusing on companies most involved in fossil fuels production and use. This engagement is another response to the growing belief that potential limitations on fuel reserves could impact investment value. However, this engagement effort is focusing on how fossil fuel producing companies are considering reserve sequestration when making decisions on allocating capital to new exploration projects. Additionally, this engagement effort includes utility companies and is asking those companies about the risks they face from increased carbon emissions regulation.

CalSTRS has joined many other institutional investors in this engagement, which is focused on 45 companies held in the CalSTRS Global Equity portfolio. CalSTRS' holdings in these companies have a combined portfolio value of approximately \$5.9 billion. During fiscal year 2013–14, staff led or participated in engagements with Exxon Mobil, Chevron, Occidental Petroleum, Apache Corporation and Chesapeake Energy. Staff expects dialogues with these companies, and others, to continue throughout the 2014–15 fiscal year.

Signatory of:



### Hydraulic Fracturing Engagement— Collaborative Efforts

CalSTRS staff has been engaging portfolio companies involved in natural gas exploration and production for many years as these companies are exposed to significant environmental risks and staff believes it is important to be engaging these companies to ensure that their environmental risk exposure is being properly managed.

During fiscal year 2013–14, CalSTRS agreed to be part of a [PRI](#)-led collaborative engagement of natural gas producing companies concerning how they were managing risks associated with hydraulic fracturing. CalSTRS is a signatory to the [PRI](#) and often joins [PRI](#) collaborative engagements that align with CalSTRS long-term, value accretion philosophy.

This engagement is focused on 56 companies held in the CalSTRS Global Equity portfolio. CalSTRS' holdings in these companies have a combined portfolio value of approximately \$6.8 billion. Staff expects to continue in this engagement throughout the 2014–15 fiscal year.

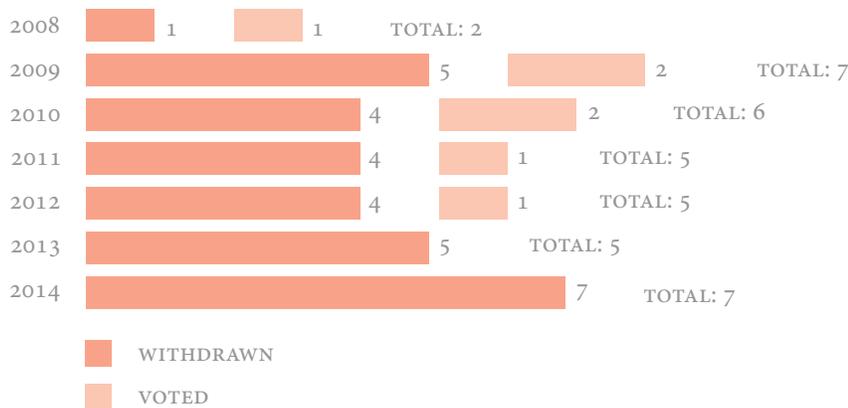
Hydraulic fracturing engagement is focused on **56** companies held in the CalSTRS Global Equity portfolio. CalSTRS' holdings in these companies have a combined portfolio value of approximately **\$6.8 billion**.

## CalSTRS Environmental Risk Shareholder Proposals

When staff does not believe that a company has made, or is willing to make, the necessary progress toward managing environmental risks, staff will strongly consider exercising CalSTRS equity ownership rights by filing a shareholder proposal with the company, calling on it to improve its envi-

ronmental risk management efforts. The intent of the proposal is to bring CalSTRS concerns to the company's shareholders and get enough support from them to convince the company to commit to CalSTRS' recommendations. Often, the filing of a proposal will increase a company's willingness to engage further with staff and lead to a committal to improve risk management and disclose.

### CALSTRS ENVIRONMENTAL SHAREHOLDER PROPOSALS FILED 2008-2014



Staff sent engagement letters to **21** companies which, at the time of the analysis, had a combined portfolio value of nearly **\$1.17 billion**.

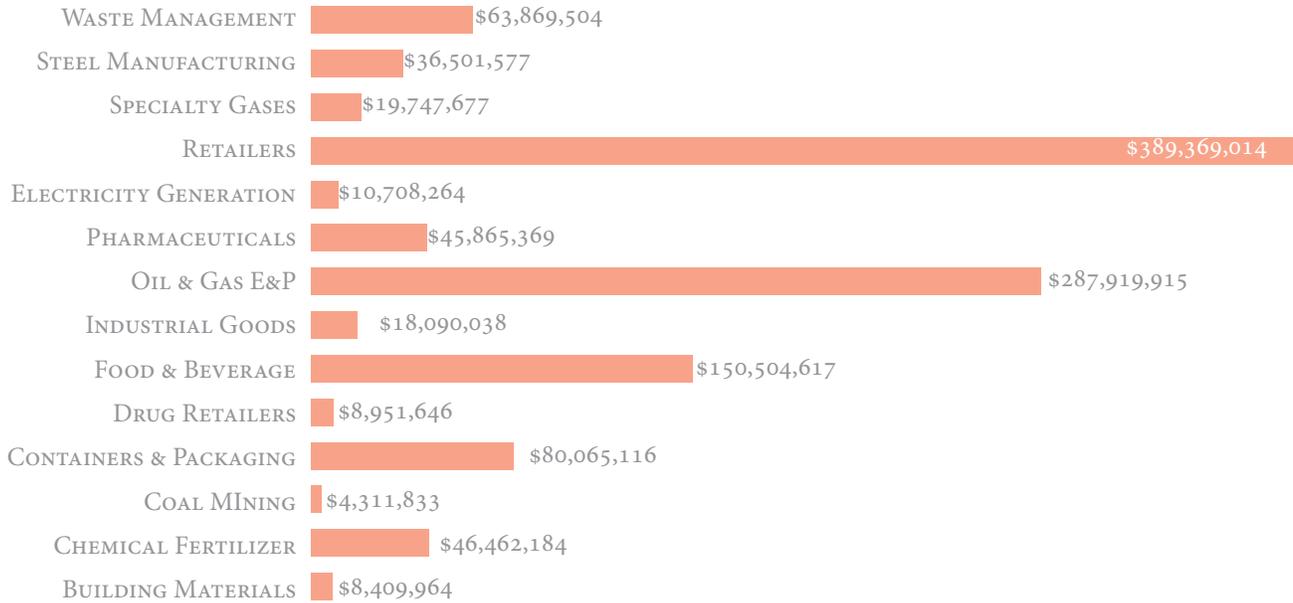
Since 2008 CalSTRS has filed 37 environmental-related shareholder proposals that called on companies to improve their environmental risk management disclosure efforts. Thirty of those proposals were ultimately withdrawn before the annual meetings as staff was able to negotiate a mutually agreeable outcome with the company. The seven proposals considered by shareholders received, on average, approximately 25 percent of the votes cast either for or against.

For the fiscal year 2013–14 proxy season, CalSTRS filed seven shareholder proposals that called on companies to report on their energy use management strategies. A detailed analysis of CalSTRS Russell 1000 Index holdings identified approximately 21 companies that appeared to be most in need of engagement on implementing and disclosing energy efficiency efforts.

Staff sent engagement letters to these 21 companies which, at the time of the analysis, had a combined portfolio value of nearly \$1.17 billion. The engagement letters outlined CalSTRS' belief that companies need to be cost effective, that incorporating efficiency initiatives into business plans would be beneficial from a financial and reputational perspective, and that disclosure surrounding the company's efforts at efficiency could be improved.

Fourteen of the 21 companies targeted responded to staff's engagement letter. The seven companies that received proposals were the companies that did not respond to the CalSTRS engagement letter. However, subsequent to receiving our shareholder proposal, all seven companies chose to engage us and either demonstrated that energy efficiency was being considered or agreed to implement energy efficiency reviews of their operations. For this reason, all seven proposals were withdrawn.

## ENERGY USE MANAGEMENT ENGAGEMENT: PORTFOLIO VALUE BY SECTOR



The chart above breaks down the energy use management engagement by sector and shows the value of CalSTRS' investments in each of these sectors.

### Proxy Voting

Voting corporate proxies is a fundamental and important way to manage the risks associated with public equity ownership. Voting proxies is also a duty of fiduciaries. The responsibility for voting CalSTRS' proxies has been delegated by the board to staff. [The CalSTRS Corporate Governance Principles](#) is a set of guidelines that CalSTRS staff uses to assist it in making proxy vote decisions. Appendix B to the principles is the Statement of Shareowner ESG Responsibility, which provides direction in determining how ESG-related proposals should be considered. The board regularly reviews, revises and approves the CalSTRS Corporate Governance Principles.

Over the course of any fiscal year, staff considers dozens of environmental-related shareholder proposals that cover a variety of issues and levels of action. Environmental proposals cover issues such as greenhouse gas emissions, energy efficiency, waste disposal, and recycling. These proposals request actions such as report preparation, establishing emissions targets, and setting waste reduction goals. During the 2013–14 fiscal year, CalSTRS considered 69 environmental proposals, supporting 43 of them and voting against 26. The following table provides a breakdown of the various issues considered and votes cast per issue.

## ENVIRONMENTAL PROPOSALS VOTED, JULY 1, 2012–JUNE 30, 2013

Issue Description	Votes Against	Votes For	Issue Votes
Comprehensive Recycling Strategies	3	1	2
Bioengineering/Nanotechnology Safety	5	0	5
Environmental/Social Committee	5	0	5
Misc. Energy/Environmental Issues	1	0	1
Action on Climate Change	9	4	5
Reducing Greenhouse Gas Emissions	21	6	15
Energy Efficiency and Renewables	1	1	0
Nuclear Facility/Waste	2	0	2
Sustainability Report	22	14	8
<b>Total</b>	<b>69</b>	<b>26</b>	<b>43</b>
<b>Percentage</b>		<b>38%</b>	<b>62%</b>

The percentage of votes against these proposals does not represent of a lack of concern surrounding environmental issues. Rather, this vote percentage reflects CalSTRS' desire to support proposals that staff believes will add value to the investment. Many of the environmental proposals were considered to be lacking shareholder

value or were substantially involving the day-to-day management of the company. Traditionally, CalSTRS supports proposals that call for improved environmental risk reporting, unless it is believed that the company already adequately discloses these risks. Generally speaking, CalSTRS does not support environmental proposals that

are intended to substitute for management's operational judgments. CalSTRS believes that companies should be managing environmental risk and that companies should be the ones to decide how to design and implement risk management systems.

During the 2013-14 fiscal year, CalSTRS considered **69** environmental proposals.



## INVESTMENT MANAGERS & MANAGER INVESTMENTS

### GLOBAL EQUITY INVESTMENT MANAGERS

*The following is a brief overview of each of the four managers in the Global Equities Sustainable Investment Program, along with a summary of a company in its portfolio.*



[New Amsterdam Partners](#) is a long-only public equity asset management firm founded on an innovative philosophy: an intellectually rigorous and disciplined blend of quantitative and fundamental investment research will produce superior stock selection. New Amsterdam Partners was founded in 1986 to bridge the chasm between the methods of quantitative and fundamental stock analysis. Discerning the strengths and limits of each, Michelle Clayman, CFA, Managing Partner and CIO, developed an approach that integrates both disciplines to yield a decisive and intellectually sound edge in stock selection.

New Amsterdam defines environmental, social, and sustainability factors as ones that relate to alcohol, tobacco, gambling, military contracting, and nuclear activities. They also consider issues surrounding community, diversity, employees, environmental performance or non-U.S. operations/products. In its investment process, when building its socially responsible portfolios, New Amsterdam screens each security for these factors after it passes through the fundamental phase of the investment process. New Amsterdam has a U.S. mandate.

## Rock-Tenn Company (New Amsterdam)

Rock-Tenn is a manufacturer of corrugated and consumer packaging. It operates in three segments: Corrugated Packaging, Consumer Packaging and Recycling. The company was founded in 1936 and is headquartered in Norcross, GA. Total revenues for fiscal year 2013 were \$9.5 billion.

As North America's largest paper recycler, Rock-Tenn has a long-standing commitment to environmental stewardship and sustainable business practices that guides how it collects, processes and recycles materials. Ensuring that forestlands remain healthy, productive and sustainable is key to the success of its business. Rock-Tenn works with its customers to develop innovative packaging solutions that optimize materials and energy use while minimizing environmental impact to individuals and communities throughout the package life cycle.

Its eight U.S. fiber procurement regions and its Canadian operations are certified to the Sustainable Forestry Initiative 2010–14 standards. All of Rock-Tenn's wholly owned North American facilities are triple chain-of-custody certified to the standards of the SFI, Forest Stewardship Council and the Programme for the Endorsement of Forest Certification. Rock-Tenn works with SFI Implementation Committees and other

outreach programs to educate forest landowners about opportunities to elevate their lands to credible certification standards.

In addition, the company recently acquired a paper mill that operates a 55-megawatt green biomass fuel cogeneration facility. The mill uses scraps and waste material to fuel its boilers to produce its own steam and electricity, the excess of which it then sells to the local utility provider. There are plans to install similar facilities in its other mills. Lastly, Rock-Tenn has been converting many of its mills from coal and oil boilers to natural gas boilers as the primary energy source.



Light Green Advisors and Rhumbline Index Management combined to create a sustainable investment fund focused on helping institutional investors channel their capital to innovative corporations that are adding value to the global economy in sustainable, resource-efficient ways. LGA has developed a systematic process, its proprietary Eco-Metrics™ research platform, to identify and manage a multi-sector portfolio comprised of leading corporations whose sustainability progress is generating environmental benefits and delivering competitive financial returns. LGA's Eco Performance Portfolio™ strategy is the longest-lived large cap sustainability and resource efficiency strategy in the U.S.

LGA is headed by Jonathan Naimon, who has served as a sustainable investment advisor to Sun Edison, Union Bank of Switzerland, WASA Insurance, Claymore Securities (now Oppenheimer), First Trust,

U.S. Environmental Protection Agency, Oregon Department of Environmental Quality, Washington Department of Ecology, and the World Business Council for Sustainable Development.

## Honeywell International (Light Green Advisors/RhumbLine)

Honeywell International is a globally diversified technology developer, manufacturer and service provider that operates in three broad market segments: Aerospace/Transportation, Building Automation and Control Systems, and Performance Materials. Within these segments, the company serves customers with aerospace products and services, turbochargers and other automotive subsystems, automated environmental sensing and security technologies for buildings, homes and industry, and other energy efficient products and services.

Honeywell believes that achieving sustainable growth requires integrating health, safety and environment into all aspects of business. With global energy demand expected to double by 2030, Honeywell's innovative technologies and cost-effective solutions for energy production and efficiency are expected to continue growing into a core profit center for the company. Honeywell offers products and services for both the supply side and the demand side of the energy equation.

Honeywell is a "smart grid" innovator. In order to address consumer utility needs, Honeywell thermostats and electric sub meters are Web-enabled hardware platforms that permit energy-using customers to define and execute strategies for load shedding and cost reduction.

Honeywell has developed a wide range of products and services that apply next generation technologies to improve energy efficiency. In energy circles, Honeywell is well known not only as a leading house-

hold thermostat company, but also as a financier and systems integrator for energy solutions for large energy users such as governments and universities

Honeywell is also taking concrete steps to further expand the scope of its energy efficiency activity to more rapidly growing developing markets. In July 2014 Honeywell signed an agreement with Midea, a leading manufacturer of home appliances in China, to reduce the environmental impact of its products.



## AGF

AGF Investments America Inc.'s sustainable global equity strategy invests in securities that fit its proprietary environmental concept of sustainable development and believes that companies focused on innovative products and services, which use resources more efficiently, are being increasingly rewarded by investors. AGF's investment strategy employs thorough due diligence on company fundamentals and emphasizes companies with viable business models derived from sustainable competitive advantages. The portfolio focuses on four mega-themes within which market relevant sub-themes are identified. The main themes are energy and energy efficiency, water and waste water solutions, waste management and pollution control, and environmental, health and safety. The portfolio will contain early-stage to mature-stage companies.

AGF is a pioneer in sustainable development investment in Canada, having launched the AGF Clean Environment Fund in 1991. Martin Grosskopf, the Portfolio Manager for this strategy and

Vice President, and who is responsible for sustainable investing at AGF, has more than 20 years of experience in financial and environmental analysis. His prior experience includes Acres International Limited where he was an environmental scientist.

## Lumenpulse

Lumenpulse is the only pure-play commercial specification-grade LED producer. The company designs, develops, assembles and sells high performance, specification-grade LED lighting solutions for commercial, institutional and urban environments. Its primary customers are project designers—architects, engineers, landscape architects and lighting designers. This market often requires customization, and Lumenpulse can deliver innovative solutions to high-demanding clientele.

Many believe that the LED market is a growth opportunity given the need to reduce energy consumption. Lumenpulse is positioned to benefit from this irrevocable industry shift toward LED lighting solutions, evidenced by the 46 percent annualized revenue growth rate for the company over the past three years.

Lumenpulse's competitive advantages include its ability to innovate ahead of the pack by designing its own electronics and lighting systems, as well as finding ways to add control to lighting. The company has disclosed that it has 25 granted patents and more than 51 patents pending around LED technology. It can differentiate its products both from a qualitative aspect while also providing more economically beneficial technologies.

**AGF is a pioneer in sustainable development investment in Canada**

# generation

Generation LLP is structured as a limited liability partnership that was established in April 2004. Former Vice President Al Gore, co-founder and Chairman, has long been a leading advocate for confronting the threat of global warming. David Blood is a Senior Partner and previously served as CEO of Goldman Sachs Asset Management. Mr. Blood's current role is focused on Generation's commitment to long-term investing and integrated sustainability research. Generation is one of CalSTRS' non-U.S. sustainable managers.

Generation uses a global investment strategy to identify public equity companies that fit its concept of sustainable investments. Generation believes investment results for equity strategies are maximized by taking a long-term investment horizon. Furthermore, it believes that sustainability issues can impact a company's ability to generate returns and therefore must be fully integrated into its investment process, along with rigorous fundamental equity analysis, to achieve optimal long-term investment results. Generation uses the term "sustainability research" as the analysis of shareholder value implications of long-term environmental as well as economic, social and geopolitical challenges.

## Ocado (Generation)

Ocado was founded in 2002 and is the United Kingdom's only 'pure play' online food retailer. E-commerce retail models present the opportunity for more efficient distribution of products than traditional store based approaches. Ocado's mission is to revolutionize the way people shop by giving them a uniquely innovative and greener alternative to traditional grocery shopping.

Today the company serves approximately 400,000 regular customers and generates nearly £1 billion in sales annually through its Ocado.com website. The company is extending its offering beyond grocery items to new areas such as pet food and home ware. As of January 2014, Ocado also earns technology licensing revenues by selling its warehouse management, transportation and website services to Morrisons.com, the online arm of the UK's fourth largest supermarket.

While many consumer goods categories have migrated online rapidly, online grocery sales have been held back by some unique challenges. On average in the UK, supermarket baskets consist of 55 separate items, each priced at about £2. Many of these goods are awkward to pack and/or deliver. For example, fruit and vegetables are perishable and can be squashed, milk bottles can leak, and ice cream cannot be left at the front door if nobody is home. After many years of technological development, Ocado now delivers baskets to 75 percent of the UK by geography, with industry-leading customer service, as measured by on-time deliveries and accuracy of orders.

Ocado's key competitive advantage is an internally developed set of proprietary technologies that ensure it has the lowest 'picking cost' (cost to pick each grocery item in the warehouse) compared to all the other models that have been tried by either large supermarkets or other new entrants.

## FIXED INCOME- GREEN BOND GROWTH

The green bond market has continued to expand at a rapid pace. According to the [Climate Bonds Initiative](#) report, *Bonds and*

*Climate Change the State of the Market in 2014*, commissioned by HSBC, \$11 billion green bonds were issued in 2013 and \$18.35 billion has been issued up to June 10, 2014. The following chart on page 27, prepared by the Climate Bonds Initiative for that report, illustrates the impressive growth rate recently seen in the green bond market.

The green bond market has also become very diverse. In addition to the development banks, there are now other issuers of green bonds, including corporations and municipalities. Green bond issuers are also issuing in approximately 21 different currencies, though most issuance has been in Euros and U.S. dollars.

The types of bonds have also changed. Most green bonds have been government related, but now there are corporate, securitized and municipal bonds. Investors

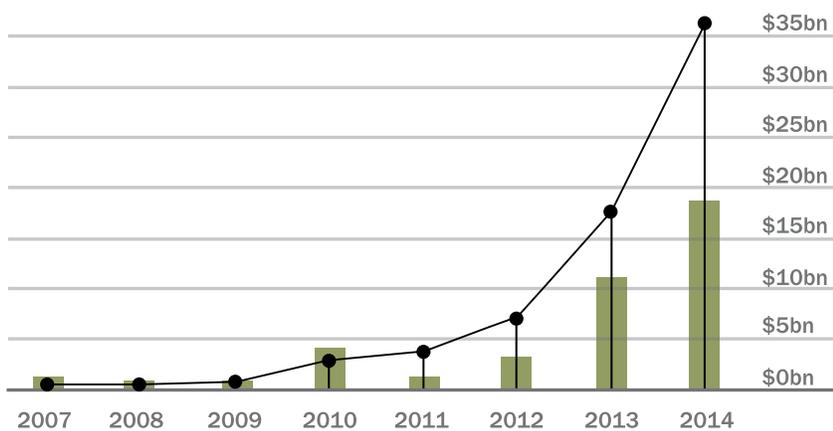
**\$11 billion green bonds were issued in 2013 and \$18.35 billion has been issued up to June 10, 2014**

have also expanded from typical ESG-mandated buyers to corporate bond investors exploring potential investments in the green bond market.

Most deals have been oversubscribed as well and staff anticipates an increase in all

types of green bonds over the next 12 months, including possible issues from other hybrid/electric vehicle manufacturers and utility companies.

## GREEN BOND ISSUANCE



### Green Bond Investments

#### Bank of America

In November 2013 Bank of America issued the first corporate green bond, with funds reserved for specific renewable energy projects. The \$500 million issue is part of Bank of America's 10-year, \$50 billion environmental business initiative. CalSTRS was a buyer of the issuance. An example of a project funded with the green bonds proceeds from the Bank of America issuance is the financing of the Antioch Unified School District in California to purchase solar panels for installation at 24 school sites. The financing will also include the purchase of energy efficiency equipment for lighting and HVAC upgrades. The project is expected to save the district \$34.3 million over the 25-year useful life of the project. Estimated annual environmental benefits include:

- Global warming metric tons CO<sub>2</sub>e avoided: 7,700
- Water use avoided (thousands of liters): 206,000
- Non-hazardous waste avoided (metric tons): 103
- MWh reduced from efficiency projects: 1,700
- MWh produced from renewable project: 8,700

Additional project information and general Bank of America green bond information can be found at <http://about.bankofamerica.com/en-us/green-bond-overview.html>.



The [International Finance Corporation](#), a member of the World Bank Group, has been issuing green bonds for several years and is considered a frequent issuer. CalSTRS currently owns \$15 million in IFC green bonds. One of its projects is Abengoa CSP SA, which consists of the construction and operation of two green-field concentrating solar power projects in South Africa's Northern Cape Province. The first project, !Ka Xu, is a 100 megawatt (MW) solar power plant, with approximately 2.5 hours of molten salt storage that will feed power to a local substation. The second project, !Khi, is a 50 MW solar power plant with approximately 2.0 hours of steam storage that will feed power into a local transmission line.

Additional project information and IFC green bond information can be found at [ifc.org/wps/wcm/connect/Topics\\_Ext\\_Content/IFC\\_External\\_Corporate\\_Site/IFC+Finance/Investor+Information](http://ifc.org/wps/wcm/connect/Topics_Ext_Content/IFC_External_Corporate_Site/IFC+Finance/Investor+Information).



#### European Bank for Reconstruction and Development

In September 2013, the [European Bank for Reconstruction and Development](#) issued a \$250 million green bond to be invested in their Green Project Portfolio. EBRD has been issuing green bonds since 2010. The construction of the first wind farm in Mongolia is part of its Green Project Portfolio. The capital of Mongolia, Ulaanbaatar, is the coldest capital in the world and also one of the most polluted. The

wind farm is expected to be operational during summer 2014 and produce up to 5 percent of the Mongolia's electric demand. It is expected to reduce carbon emissions by approximately 164,000 tons annually, which is the equivalent to the emissions of approximately 30,000 passenger cars.

Additional project information and EBRD's Socially Responsible Investments can be found at [ebrd.com/pages/workingwithus/capital/sri.shtml](http://ebrd.com/pages/workingwithus/capital/sri.shtml).

### Green Bond Collaborations



The CalSTRS Fixed Income unit continues to be a participating member of the [Climate Bond Standards Board](#). This board is multi-disciplinary and multi-member nonprofit organization that seeks to establish standards along with a certification schedule for issuers and underwriters interested in issuing green bonds. There are a number of technical and working groups attempting to establish rigorous standards in areas ranging from solar energy to bio-fuels. The Fixed Income unit continues to work closely with Corporate Governance on this initiative.

In January 2014 the Green Bond Principles were developed through guidance from issuers, investors and environmental groups and serve as voluntary guidelines on recommended process for the development and issuance of green bonds. Currently, the CalSTRS Fixed Income Unit is an Executive Committee Member. Additional information on the group can be found at [icmagroup.org/Regulatory-Policy-and-Market-Practice/green-bonds/](http://icmagroup.org/Regulatory-Policy-and-Market-Practice/green-bonds/).

In May 2014 CalSTRS Fixed Income unit also joined INCR's Green Bond Working Group. This group was born through its

role in Ceres flagship [Clean Trillion initiative](#). This group will focus on developing investor expectations for the green bond market while providing guidance to issuer and underwriters.

## PRIVATE EQUITY INVESTMENT MANAGERS

The following is a brief overview of a manager in the Private Equity Clean Technology and Energy program as well as an overview of one of the program's investments.



[Shasta Ventures](#) is a boutique, early-stage venture firm in Silicon Valley investing its third fund in enterprise and consumer technology start-ups. The firm invests in innovative approaches to enterprise and consumer technology, including cloud computing, SaaS, enterprise software, consumer services, marketplaces, commerce, mobile and networked devices. Shasta Ventures believes it can have the most positive impact on companies when it starts working with them at their earliest stages of growth, so it primarily invests in the A and B capital raising rounds.

The firm looks to support entrepreneurs who have exceptional instincts and insights into the needs, desires and behaviors of the people who use their products and are focused on delivering end-user satisfaction.



[Nest Labs](#) is an investment that was made in September 2010 by Shasta Ventures II, L.P. and is one of the most successful clean-tech investments in the CalSTRS portfolio. Shasta Ventures is based in Menlo Park, CA. CalSTRS has invested across all four Shasta funds and \$23 million in Shasta II, L.P.

Nest Labs is a home automation company that created the Wi-Fi enabled Nest Thermostat, a "learning" thermostat that learns a person's settings and actions and creates a customized program, and can be controlled through a smart phone application or Web browser.

Part of the success of the Nest Thermostat is due to the design and ease of use. The founders, Tony Fadell and Matt Rogers, are former Apple engineers who are credited as part of the original design team for the iPod and iPod software.

**Nest Labs is one of the most successful clean-tech investments in the CalSTRS portfolio.**

Google Ventures closed its acquisition of Nest Labs in February 2014 for \$3.2 billion. Nest Labs is Shasta Ventures' most successful exit to date with a 16x multiple of invested capital and \$205 million gain. The investment returned 90 percent of the \$250 million Fund II.

# REAL ESTATE: BUILDING GREEN

*The following is a brief overview of an efficiency project that one of the managers in the CalSTRS Real Estate Portfolio has successfully completed.*

## WILSHIRE LANDMARK I / LOS ANGELES, CA

### Challenge

To reduce energy costs and promote an environmentally friendly workplace, CalSTRS and the CBRE team were committed to implementing green initiatives and conserving resources.

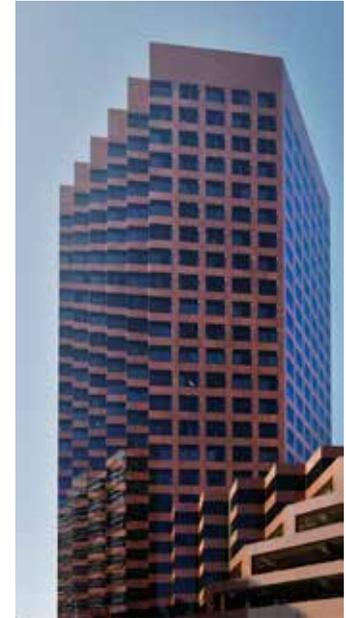
### Sample Solutions

CBRE's sustainability efforts include:

- Installation of motion sensors in all lobbies, corridors of multi-tenant floors and restrooms.
- Installation of capacitors in the main electrical room to lower the power factor correction.
- Installation of a 5 HP, low-demand domestic water pump
- Completion of two lighting retrofits
- Installation of a new, more sophisticated energy management system with integrated optimization and variable speed drives
- Installation of low-flow aerators in restroom faucets, 1.28 gallon per flush toilets, and < 0.5 GPF urinals.
- Implementation of green cleaning through the janitorial contractor.

### Results

As a result of the lighting retrofits and other measures, Wilshire Landmark has earned an ENERGY STAR® rating of 96 or higher every year since 2002, achieved LEED Silver certification in 2008 and improved to LEED Gold in 2013. Annual electricity consumption has been reduced from 6,400,800 kWh in 1995 to 4,403,151 kWh in 2013, translating into electricity cost savings of more than \$130,000 per year.



### QUICK FACTS

- Improved LEED score from Silver in 2008 to Gold in 2013
- Reduced electric usage by nearly 2 million kWh per year 2013 vs. 1995
- Reduced electric costs by over \$130,000 per year 2013 vs. 1995
- Earned an ENERGY STAR rating of 96 or higher every year since 2002

### Size

337,488 SF

### Services

Leasing/Marketing Project  
Management Property  
Management

## INFLATION SENSITIVE: GREEN INFRA-STRUCTURE

*The following are a few examples of green investments currently held in the Inflation Sensitive portfolio.*

### FIRST RESERVE ENERGY INFRASTRUCTURE FUND



#### Investment: [Renovalia Reserve](#)

The [Renovalia Reserve](#) joint venture was formed in 2011 to own and operate a portfolio of wind farms in Europe and North America. Renovalia Reserve owns two wind farms in Mexico with an expected combined capacity of 228 megawatts, enough to power between 287,000 to 359,000 Mexican households annually. Renovalia Reserve also owns and operates six onshore wind farm projects in Spain (244MW) and an additional farm (15MW) in Hungary. Renovalia Reserve has approximately 487MW of wind power capacity worldwide.

Renovalia is also actively developing proprietary technology that minimizes the environmental impact of the installation of metal structures for photovoltaic components by not using concrete when fixing the structure to the ground, making Renovalia's PV plants more environmentally friendly.



**Investment: 50Hertz Transmission**

50Hertz Transmission is one of the four transmission system operators in Germany. The company owns and operates the electricity grid in the states of Thuringia, Saxony, Saxony-Anhalt, Brandenburg, Berlin, Mecklenburg-Western Pomerania and Hamburg, an area totaling approximately 109,360 square kilometers. 50Hertz transports power to more than 18 million people.

50Hertz system already takes up 40 percent of the wind power installed in Germany, and in 2010, 50Hertz started connecting the emerging offshore wind farms in the Baltic Sea to its transmission system. By 2020, 30 percent of power generation in Germany is to be provided by renewable energies.

# INVESTMENT PORTFOLIOS & PERFORMANCE

## 1. GLOBAL EQUITY SUSTAINABLE INVESTMENT PROGRAM

The non-U.S. sustainable portfolio has enhanced the return of the Global Equity portfolio by generating **2.59 percent** of excess return.

*All the investments listed in this report were made as part of the normal course of business, received the same level of due diligence as any investment made by CalSTRS, and were made with the primary objective of receiving a maximum rate of return commensurate with an acceptable level of risk.*

Within the active components of both U.S. and non-U.S. public equity, the CalSTRS Global Equity team is pursuing the "double bottom-line" goals of both competitive returns and sustainable investing through allocations to four investment managers.

evaluate allocations to and within the sustainable investment program.

In addition, Global Equity staff actively engages the core investment managers about their continued consideration of CalSTRS' 21 Risk Factors, as set forth by the Investment Policy and Management Plan, when making investment decisions. The equity managers provide their insights on the 21 risk factors as they relate to the invested countries and companies. Environmental risk is one of the 21 risks listed in the policy that addresses key themes within the sustainability program—Climate Change, Air Quality, Water Quality and Land Protection.

In further efforts to raise awareness of environmental considerations when investing, all external equity investment managers are surveyed annually to assess how they consider climate change risk in their investment process. The results of this year's survey are discussed in the Risk Management section of this report.

### Program Summary

In 2007, CalSTRS initiated the Global Equity sustainable investment program. Since that time, the assets under management in this program have grown to more than \$966 million as of June 30, 2014. Managers are normally evaluated over a period of three to five years and the program has reached its seven-year anniversary. Since inception, the U.S. sustainable portfolio has added 0.13 percent of excess return to the Global Equity portfolio while the non-U.S. sustainable portfolio has enhanced the return of the Global Equity portfolio by generating 2.59 percent of excess return. Staff will continue to

## PROGRAM ASSETS

Manager Name	Funded	Market Value (\$millions)	Benchmark	Comments
New Amsterdam Partners	2007	\$108.9	Russell 1000 ex Tobacco	<a href="#">New Amsterdam</a> screens for environmental performance factors after it passes through the fundamental phase of the investment process.
Light Green Advisors & Rhumblin	2007	\$82.1	Russell 1000 ex Tobacco	<a href="#">Light Green Advisors</a> believes that successful environmental programs add economic value to firms in a wide range of industries through operation cost reductions and reduced litigation costs.
AGF Investments America	2007	\$260.0	MSCI World ex Tobacco	<a href="#">AGF Investments America</a> invests in companies with viable business models categorized as environmental innovators, environmental leaders, and environmentally benign companies.
Generation Investment Management	2007	\$515.2	MSCI World ex Tobacco	<a href="#">Generation</a> believes sustainability issues can impact a company's ability to generate returns; therefore, must be fully integrated with rigorous fundamental equity analysis to achieve optimal long-term investment results.
<b>Total</b>		<b>\$966.2</b>		

Source: State Street as of 6/30/2014

## PROGRAM PERFORMANCE

Annualized Performance Since Inception				
Manager Name	Inception Date	Portfolio Return	Benchmark Return	Net Excess Return
New Amsterdam Partners	7/1/2007	5.83	6.33	-0.50
Light Green Advisors	5/1/2007	7.01	6.10	0.91
<b>U.S. Sustainable Composite</b>	<b>5/1/2007</b>	<b>6.55</b>	<b>6.42</b>	<b>0.13</b>
AGF Investments America	8/1/2007	3.22	3.71	-0.49
Generation Investment Management	6/1/2007	7.79	3.18	4.61
<b>Non-U.S. Sustainable Composite</b>	<b>6/1/2007</b>	<b>5.77</b>	<b>3.18</b>	<b>2.59</b>

Source: State Street as of 6/30/2014

These managers are mandated with the "double-bottom line" goal, which includes both a dedication to sustainable investing as well as competitive returns. Evaluating these managers on traditional benchmarks is problematic as these mandates intentionally

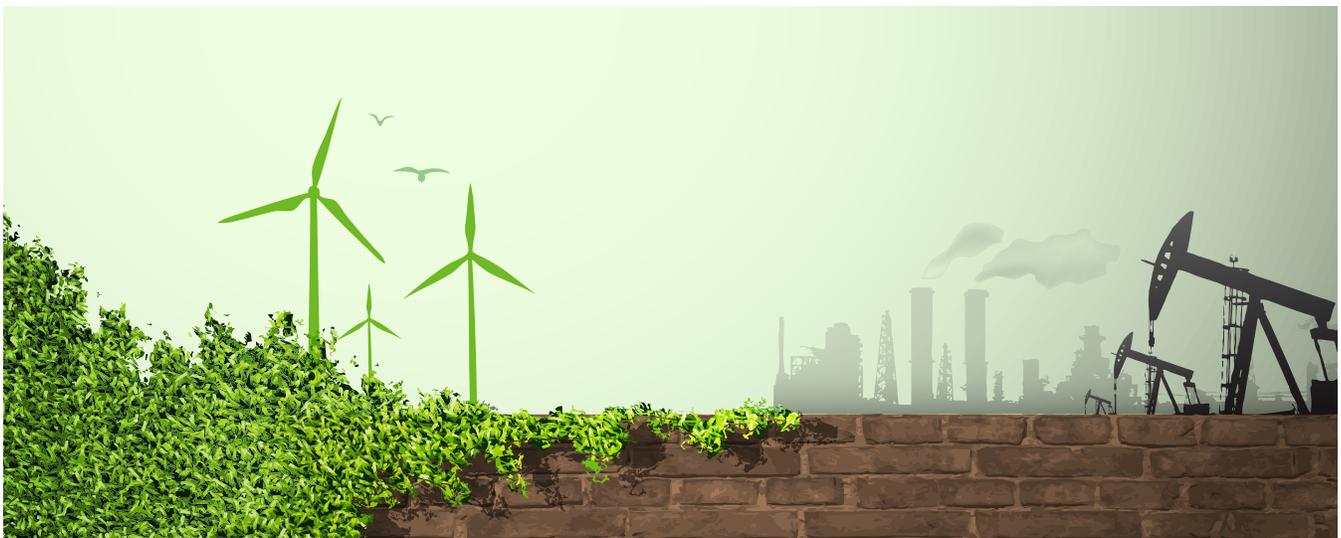
overweight sustainable stocks that may face short-term headwinds. While this mismatch is noted, these managers are expected to contribute to the excess return target over the policy benchmarks in the long-term.

## 2. PRIVATE EQUITY CLEAN TECHNOLOGY AND ENERGY PROGRAM

Private Equity clean energy portfolio investments are screened and selected using the same processes and decision making criteria consistent with the Private Equity program as a whole.

*The Private Equity clean energy portfolio is a diversified portfolio of venture and buyout investments across the clean technology and clean energy universe. Private Equity intends to be a long-term investor in the clean technology and energy sector with superior domain expertise. The program is global in scope and includes both fund investments and co-investments.*

*Potential investments are screened and selected using the same processes and decision making criteria consistent with the Private Equity program as a whole. Investments are considered side-by-side along all other Private Equity opportunities and are held to the same standards with respect to risk-expected return profiles and due diligence procedures and requirements.*



## PORTFOLIO STATUS AS OF MAY 31, 2014

As of May 31, 2014, CalSTRS Private Equity unit has committed \$696.4 million to private equity investments in the clean technology and clean energy sector as follows:

Investment Name	Year	Commitment (\$Millions)	Type	Comments
Co-investment #1	2005	\$30.0	Co-investment	Start-up company provides financing to small-scale alternative energy projects throughout the U.S.
NGEN Enable Technologies Fund II	2005	\$15.0	Venture Capital Fund	Materials sciences focus; head-quartered in Santa Barbara.
VantagePoint Cleantech Partners	2006	\$15.2	Venture Capital Fund	New practice group for longtime venture capital partner of CalSTRS; headquartered in San Bruno.
Craton Equity Investors I	2006	\$30.0	Venture Capital Fund	Los Angeles-based firm specializing in clean technology growth companies.
Carlyle-Riverstone Renewable Energy Infrastructure Fund	2006	\$50.0	Buyout Fund	Specialty product for mainline energy investment firm. Finances renewable energy projects globally, primarily in the U.S.
Hg Renewable Power Fund	2006	\$61.2	Buyout Fund	Specialty product for London-based buyout firm. Finances renewable energy projects, primarily wind assets in Europe.
Co-investment #2	2006	\$12.5	Co-investment	Company installs and operates facilities to convert landfill gas to electrical power.
USRG Power & Biofuels Fund II	2007	\$60.0	Buyout Fund	Focus on small renewable power and biofuels projects in North America; headquartered in Santa Monica and White Plains, NY.
Co-investment #3	2008	\$6.0	Co-investment	Waste to energy company that uses a proprietary plasma technology to convert municipal solid waste into an energy-rich fuel – syngas.
Riverstone/Carlyle Renewable & Alternate Energy Fund II	2008	\$300.0	Buyout Fund	Focus on worldwide buyout and growth capital control investments involving renewable and alternative energy companies.
Co-investment #4	2010	\$36.0	Co-investment	Company is a developer of utility-scale solar thermal power plants.
Hg Renewable Power Fund II	2010	\$65.5	Buyout Fund	Specialty product for London-based buyout firm. Finances renewable energy projects, primarily wind assets in Europe.
Craton Equity Investors II	2012	\$15.0	Venture Capital Fund	Los Angeles-based firm specializing in clean technology growth companies.
<b>Total</b>		<b>\$696.4</b>		

The current clean technology and clean energy portfolio accounts for 1.5 percent of the overall Private Equity portfolio in terms of total dollars committed. About 80 percent of the current clean technology and clean energy portfolio is committed to buyouts and the remaining 20 percent is committed to venture capital. Co-investments account for 10.4 percent of the overall contributed capital to the clean energy/technology portfolio.

### Portfolio Performance

(All data based on Q1 2014, cash-flow adjusted as of May 31, 2014)

As of May 31, 2014, the average age of the underlying investments in the clean technology and clean energy portfolio was approximately 6.7 years. Approximately 84.9 percent of total commitments have been called to date, with about 5.5 percent called within the last year. About 91 percent of the remaining uncalled capital is in three buyout funds that are in their investment period. Capital drawdowns have slowed compared to the prior reporting period and reflect the slowed investment activity due to lack of capital markets support for the sector.

**84.9%**  
of total  
commitments  
have been  
called to  
date.

Approximately 34 percent of the contributed capital has been realized (distributed). Similar to what was reported in last year's report, approximately 73 percent of total realizations have come from investments in buyout funds and the remaining 27 percent have

come from venture capital funds. Since June 2013, we have received additional distributions of \$38.3 million which are attributed to: NGEN II (\$0.1m), Craton Equity Investors I (\$0.1M); Hg Renewable

Power Partners (\$4.7M), USRG Power and Biofuels Fund II (\$6.3M), and Riverstone/Carlyle Renewable and Alternative Energy II (\$27.1M). Although the \$38.3 million in distributions are close to the \$32.4 million in distributions for the prior reporting period, the overall distribution pace is slower than expected for the mature part of the portfolio.

As shown in the table below, the buyout and venture capital portfolio performance declined slightly during the 11-month period ending May 31, 2014, and both were valued at slightly under cost.

## CALSTRS CLEAN TECHNOLOGY AND CLEAN ENERGY PORTFOLIO PERFORMANCE COMPARISON: JUNE 2013-MAY 2014

### Clean Technology /Energy Portfolio—Multiple of Cost

	May 31, 2014	June 30, 2013
Venture Capital	0.90x	0.97x
Buyout	0.96x	1.00x

The more mature funds, raised before the 2008 financial crisis, are currently valued at 0.55 times cost. The majority of the pre-2008 commitments went to venture capital funds, which in general have performed below expectations across all sectors. Unlike most other sectors, which have recovered since the recession, the clean tech sector continues to be lackluster. Staff believes there is potentially remaining value yet to be realized in some of the portfolio companies and expects some recovery on a multiple of money basis; however, the IRR may end up below expectations.

The funds invested post-2008 were slow to deploy capital and hence have younger portfolios that are currently valued at 1.27 times cost. Approximately 87 percent of the invested capital contributions are in buyout funds which engage in several value creation initiatives that generally take time to reflect in terms of valuation increases. Staff expects the performance of this portfolio will improve as these investments mature.

### 3. REAL ESTATE SUSTAINABLE RETURNS PROGRAM

*The goal of the CalSTRS Real Estate Green Program is to increase the risk-adjusted returns by incorporating conservation and sustainability in the development and management of the Real Estate portfolio.*

#### STEPS TO SUSTAINABLE RETURNS

1	Incorporate conservation and sustainability into the planning cycle for the existing portfolio.
2	Establish benchmarks in order to track energy use, develop capital improvement plans, make energy efficiency upgrades, and measure the benefits by reduced consumption of energy. By reducing resource consumption, value is added to the portfolio.
3	Include sustainability measures in investment decisions, including new development projects.
4	Practice conservation and sustainability within the CalSTRS-occupied facilities.

#### PROGRAM SUMMARY

*Incorporate conservation and sustainability into the planning cycle for the existing portfolio.*

In 2003, CalSTRS Real Estate staff directed all separate account investment managers to include a “Conservation/Sustainability Assessment” in their annual planning/budgeting process. The goal was to enhance value, create awareness and become more socially responsible investors. The planning process challenges managers to assess strategies relating to “green buildings,” which are defined as: “A structure that is designed, built, renovated, operated or reused in an ecological and resource-efficient manner.”

While staff encourages green-related programs in the planning/budgeting process, all capital expenditures must be supported by appropriate return on investment measures and payback periods.

*Establish benchmarks to track energy use, develop capital improvement plans, make energy efficiency upgrades and measure the benefits by reduced consumption of energy. By reducing resource consumption, value is added to the portfolio.*

**86%**  
of CalSTRS  
Separate-  
Account  
office build-  
ings are  
Energy Star-  
certified  
and ranked  
in the top  
quartile of  
energy-  
efficient  
buildings.

## THE RATING SYSTEMS: ENERGY STAR AND LEED



### Energy Star Labeling Program

In 2005, CalSTRS entered into a partnership with the EPA's [ENERGY STAR® program](#). ENERGY STAR is widely accepted and used by leaders within the real estate industry. This partnership has provided CalSTRS with a tool to take control of energy use by providing the best information and resources for improving energy and environmental performance. More specifically, the partnership has provided CalSTRS with a tracking and audit tool to benchmark and measure energy consumption.

ENERGY STAR, a voluntary labeling program for commercial and industrial buildings, is sponsored by the U.S. Department of Energy and the U.S. Environmental Protection Agency, and managed by the EPA. It uses a scale of 1–100 to rate the relative energy performance of new and existing buildings. The rating, which is certified by a professional engineer, is based on the amount of energy the building uses over a 12-month period as evidenced by utility bills; the amount of CO<sub>2</sub> it emits; the nature and intensity of its occupancy; and its location. A score of 75 or more qualifies a building for an ENERGY STAR label. This means the building is in the top 25 percent of like structures in energy efficiency for the year rated.

### Energy Star Rating System Results

As of June 30, 2014, 86 percent of CalSTRS Separate Account office buildings were Energy Star certified and ranked in the top quartile of energy-efficient buildings.

As the following table shows, the 86 percent certified is an increase from the 82 percent certified as of June 30, 2013.

## ENERGY STAR RATING SYSTEM RESULTS

Report Date	Number of Separate Account Properties	Number of Buildings With an Energy Star Rating at or Above 75	Percentage of Buildings With an Energy Star Rating at or Above 75
2007	28	13	46%
2008	28	22	79%
2009	28	23	85%
2010	33	28	85%
2011	31	28	90%
2012	28	26	93%
2013	33	27	82%
2014	43	37	86%

### The LEED Certification Green Building Rating System



The LEED, Leadership in Energy and Environmental Design, Green Building Rating System is the nationally accepted benchmark in the U.S. for the design, construction and operation of high performance green buildings. Established by the U.S. Green Building Council, LEED addresses different types of development with distinct rating systems, including LEED for New Construction and Major Renovation, LEED for Commercial Interiors, and LEED for Existing Buildings: Operations and Maintenance.

The LEED rating systems and the four levels of LEED recognition—Certified, Silver, Gold and Platinum—reflect projected or actual performance beyond certain prerequisites in five critical areas of environmental

sustainability: sustainable site development, water savings, energy efficiency, materials selection and indoor environmental quality.

The rating systems for the various types of development (and from property to property) require and reward somewhat different technologies and strategies and give different relative weight to the sustainability categories as well. Consistently, however, almost 50 percent of the points are at stake in the areas of energy and water conservation.

The following table displays the CalSTRS assets in the Separate Account portfolio that have achieved the LEED certification as of June 30, 2014. As the table shows, the number of LEED buildings in the CalSTRS portfolio grew from 24 last year to 31 this year, a nearly 30 percent increase. The percentage of buildings with LEED certification dipped slightly from 73 percent last year to 72 percent this year, a decline attributable to an increase in the total number of buildings in the portfolio.

## THE LEED CERTIFICATION GREEN BUILDING RATING SYSTEM

Report Date	Number of Separate Account Properties	Number of Buildings With LEED Certification	Percentage of Buildings With LEED Certification
Fall 2007	28	0	0%
Fall 2008	28	1	4%
Fall 2009	28	9	32%
Fall 2010	33	13	39%
Fall 2011	31	22	71%
Summer 2012	28	22	79%
Summer 2013	33	24	73%
Summer 2014	43	31	72%

The number of LEED buildings in the CalSTRS portfolio grew from **22** last year to **24** this year.

## 4. FIXED INCOME GREEN PROGRAM

*In keeping with CalSTRS' commitment to manage the risks and consider investment opportunities associated with climate change, as well as other global sustainability issues, the following summary provides an update on environmental initiatives within the Fixed Income Unit.*

### Program Summary

In keeping with CalSTRS' commitment to sustainability, the Fixed Income Unit continues to manage risks and create investable opportunities around climate change and sustainability issues across the portfolio. The Fixed Income Unit continues to screen and monitor its holdings for companies involved with sustainability initiatives. As more companies accept climate change and realize the potential for cost savings in their organizations, the adoption of sustainability architecture as part of a company's business operations has become more accepted. Companies are producing annual sustainability reports or at a minimum have a sustainability section on their website to demonstrate to investors and the public how green and/or sustainable the company has become. Many organizations even have a sustainability officer.

What follows is a review of the key areas of Fixed Income's sustainability reporting and future initiatives.

### Green Bond Portfolio

The Fixed Income Unit continues to purchase green bonds as part of its Investment Grade portfolio, and for the first time in its Short-Term/Liquidity portfolios, when both the issuer's and CalSTRS' needs align. The Fixed Income Unit currently holds a total of \$98 million green bonds, which is an increase of 288 percent from the previous year. Green bond proceeds are set aside and accounted for separately by participating agencies/companies. The green bond market has really heated up over the last 12 months with several issuers in the market for the first time with USD deals, including Bank of America, Regency Centers and Export Development Canada. Investors like CalSTRS receive periodic updates on projects and their progress.

## CALSTRS GREEN BOND PORTFOLIO

Issuer	Date Issued	Use of Proceeds
International Finance Corporation	2/22/13	Renewable energy and energy efficiency
Export-Import Bank of Korea	2/27/13	Promotion of transition to low-carbon and climate resilient growth
Solar Star Funding	6/27/13	Solar generating facilities financing
European Bank for Reconstruction and Development	9/17/13	Green project portfolio
African Development Bank	10/18/13	Climate change adaption and mitigation
International Finance Corporation	11/15/13	Renewable energy and energy efficiency
Kommunalbanken	11/21/13	Green project portfolio
Bank of America	11/21/13	Renewable energy projects
Export Development Canada	1/30/14	Special environmental projects
Toyota Motor Corporation	3/19/14	Financing hybrid/electric vehicles
Regency Centers	5/16/14	Eligible green projects
Vornado Realty Trust	6/16/14	Eligible green projects

The CalSTRS Fixed Income Unit continues to hear that other issuers are interested in issuing green bonds—industrial issuers and possibly even utility issuers. Staff had several meetings with investment bankers who are eager for investor input in green bonds.

The Fixed Income Unit currently holds a total of **\$98 million** green bonds, which is an increase of 288 percent from the previous year.

## 5. INFLATION SENSITIVE

*The CalSTRS Infrastructure Program targets essential service assets that primarily are operating and cash generating. Some late-stage development assets are considered per policy. The side letter of a fund's closing documents specifies that the manager is required to consider the CalSTRS 21 Risk Factors. The fund documents also encourage the adding of green features/technologies to new builds and existing assets. Solar energy projects, wind energy projects, hydropower and other energy efficiency based assets are part of the current Infrastructure portfolio.*

*The table on the next page highlights many of the green investments held in the Inflation Sensitive portfolio as of June 24, 2014. The investment values provided in this table are approximated.*



## GREEN INVESTMENTS IN INFLATION SENSITIVE PORTFOLIO AS OF JUNE 24, 2014

Investment Name	Year of Investment	Approximate Investment Value	Date of Valuation	Investment Description
<b>Atlantic Energia Renováveis</b>	2013	\$6,000,000	3/31/2014	Wind and one mini-hydro projects located in Brazil
<b>Aela Energia</b>	2013	\$2,000,000	3/31/2014	Wind projects located in Chile
<b>McEwan Power</b>	2013	\$25,000,000	3/28/2013	Solar energy in the U.K.
<b>SunEdison Reserve</b>	2010	\$20,000,000	3/31/2014	Solar Energy in Europe and North America
<b>Renovalia Reserve</b>	2011	\$17,000,000	3/31/2014	Wind Energy in Europe and North America
<b>Long Beach Courthouse</b>	2010	\$8,000,000	3/31/2014	Courthouse is expected to receive Silver LEED certification
<b>Montreal University Hospital Research Centre</b>	2010	\$2,000,000	3/31/2014	Health care research center on track to receive Silver LEED status
<b>Essential Power</b>	2008	\$26,000,000	6/30/2014	Gas-fired and hydro power generation located in the U.S.
<b>Dalkia Polska</b>	2006	\$29,000,000	6/30/2014	Steam and hot water supply located in Poland
<b>Pacific Hydro</b>	1996	\$118,000,000	6/30/2014	Wind and hydro energy in Australia
<b>Total Investments</b>		<b>\$253,000,000</b>		



## ISSUES, OUTLOOKS & INITIATIVES

### Fixed Income – Report on Legislative Activity

In June 2014, the Environmental Protection Agency proposed the Clean Power Plan which is aimed at cutting carbon pollution from existing power plants, which is the single largest source of carbon pollution in the United States. The proposal includes the goal of cutting nationwide power sector carbon emissions to 30 percent below 2005 levels by 2030. Voluntary carbon emissions are already at 14 percent below 2005 levels. The deadline for state compliance plans is expected to be June 2016. The new rules are expected to give states and power companies enough time and flexibility to

meet regulations. The EPA's proposal will go to the Federal Register for a 120-day comment period with plans to issue a final ruling in June 2015.

This proposal is expected to be positive for non-regulated power generators with low-carbon nuclear and renewable profiles (companies such as Exelon Generation and NextERA Energy Resources) and most regulated utilities. The outcome is not as beneficial for merchant generators (NRG Energy and Dynegy) who use coal as a large percentage of their fuel mix. The coal producers will be affected negatively by the proposal as the electric power sector is the biggest market of coal. The Fixed Income Unit is actively reviewing its utility and power generator holdings affected by the proposal.



The growing movement toward municipal adoption of energy disclosure legislation has continued.



### Private Equity—Current Industry Overview and Future Investment Outlook\*

Clean-tech investment has undergone a shift over the past year with increased investment activity but less total money invested. According to Cambridge Associates, investment in new clean-tech companies peaked in 2008 but has significantly declined since then. Cambridge Associates conducted a study on clean-tech investment over the past 10 years and found that from 2006 to 2011, a time period that represents 75 percent of clean tech investment, clean-tech underperformed biotech and IT by a considerable margin and considerably underperformed IT for similar year investments.

The last decade has seen a significant and speculative boom between 2005 and 2008, followed by a decline due to the “Great Recession.” The clean-tech learning curve has been impacted by lower natural gas prices, and shifting of regulatory incentives coupled with bankruptcies of large and well-funded clean-tech companies such as Solyndra, A123 Systems and Fisker Automotive, and the underperformance of the biofuels market.

The total universe of clean-tech investment managers has contracted due to many challenges; however, there are managers that are adapting their strategies to take advantage of more capital-efficient opportunities. Looking forward, further investment in clean-tech should require managers to have deep sector expertise, strong networks, and a history of adding value to portfolio companies. Increased population growth and increasing resource use in developing and developed countries will continue to drive the need for further development of more efficient technologies to meet ever-increasing energy and resource demand.

Based on the investment environment highlighted above, we continue to carefully review the fund offerings and focus on the risk-reward of each investment opportunity on a case-by-case basis and do so alongside the geography, sector and strategy diversification needs of the overall Private Equity portfolio.

\* Commentary adapted from: 1. “Clean Tech Company Performance Statistics,” Cambridge Associates, 2013 Report, 2. “Cleantech’s Death Has Been Greatly Exaggerated” TechCrunch, July 6, 2014

### Real Estate: Looking Forward

As was discussed in the 2012–13 report, the growing movement toward municipal adoption of energy disclosure legislation has continued, with the completion of the process in Chicago last year and new legislation just enacted in Cambridge, MA. Preliminary discussions are underway in Atlanta, Houston and Salt Lake City, with more to follow. Additionally, legislation earlier passed in California, AB 1103, finally went into effect in January 2014, after several years of dialogue and discussion among the various stakeholders.

This momentum toward regulatory disclosure of energy scores is likely partly responsible for the continued increase in both the number of benchmarked buildings and the number of buildings gaining an Energy Star label. At the same time, there has been a continued increase in the number of buildings achieving some level of LEED certification. An academic study recently published by CBRE demonstrated the significant growth of “green buildings” in the 30 largest U.S. markets. From a base of approximately 5 percent of buildings and 10 percent of all central business district office space in 2005, current numbers have risen to approximately 13 percent of buildings and nearly 40 percent of all CBD space holding either an Energy Star label or full building LEED certification. Several markets, including Minneapolis at 77 percent, San Francisco at 67 percent and Chicago at 62 percent, exceed the 50 percent mark. The study results clearly show that most large buildings in most large U.S. cities have actively sought and achieved higher sustainability and energy recognition. Green is now the norm for quality assets.

Going forward, it appears that buildings will need to find new ways to differentiate themselves in this area. One area of interest is the emerging focus on the overall occupant experience available in a sustainable building and the belief that this can lead to improved productivity and health benefits. It is an area drawing a great deal of industry and academic interest, all seeking to find empirical evidence of improved performance. This will be gaining great momentum in the coming years.

## GREEN TEAM STRATEGIC PLAN

In its 2013 report, the CalSTRS Green Initiative Task Force discussed its goals for the next fiscal year:

- 1 Continue education on environmental risk issues and environmental-themed investment opportunities.
- 2 Integrate environmental risk factors into manager procurement processes and ongoing due diligence efforts.
- 3 Consider increasing allocations to environmental-themed investments.
- 4 Integrate environmental considerations into asset allocation considerations.

Green Team members feel that goal number one was substantially accomplished. During the past fiscal year, staff brought in several environmental experts to discuss risk management and investment opportunity capture. Representatives from Trucost, Bloomberg and Ceres met with Green Team staff during fiscal year 2013–14 and Green Team members were participants in a seminar detailing carbon asset risk. For fiscal year 2014–15, staff will continue to seek educational opportunities and work to grow its knowledge base.

While progress toward goal number two continues to be made, Green Team members believe additional efforts are warranted. The CalSTRS Global Equity Unit continued to engage external managers on environmental issues, and more environmental consideration is being given during manager selection efforts, but additional efforts at integrating environmental considerations into manager evaluations are anticipated for 2014–15.

Additional progress toward goal number three was seen during fiscal year 2013–14. The CalSTRS Fixed Income Unit substantially grew its green bond holdings and the Inflation Sensitive Unit, through its infrastructure program, added more green investments to the CalSTRS Investment Portfolio. For fiscal year 2014–15, Green Team staff will continue to consider additional green investments that meet CalSTRS risk and return requirements.

After reviewing last year's accomplishments, Green Team members determined that progress toward goal number four was still not achieved to any substantive degree. However, considering the long-term horizon associated with this goal, the lack of progress in integrating environmental considerations into CalSTRS' asset allocation processes is not surprising. CalSTRS has agreed to be a participant in Mercer Consulting's upcoming 2014 climate change asset allocation study and Green Team members are hopeful that this effort will allow staff to make substantive progress toward goal number four.

**For fiscal year 2014–15, Green Team staff will continue to seek educational opportunities and work to grow its knowledge base.**



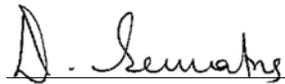
## CONCLUSION

*Consistent with CalSTRS' commitment to manage the risks and create opportunities from climate change and other global sustainability issues across the portfolio, the Green Initiative Task Force will continue to work at identifying environmentally focused strategies intended to enhance the risk-adjusted returns of the overall CalSTRS portfolio. We will continue to search for new investment opportunities and provide leadership in this area, maintaining our position at the front of the green movement.*

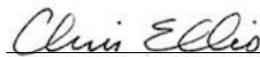
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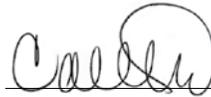
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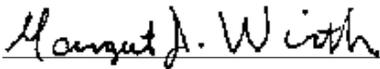
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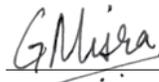
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