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PROGRESS REPORT
on the New York State Common Retirement Fund's
Climate Action Plan

Thomas P. DiNapoli OFFICE OF THE NEW YORK STATE COMPTROLLER

Message from the Comptroller

I am pleased to present the New York State Common Retirement Fund's second annual Climate Action Plan Progress Report. The report underscores our recent efforts to address climate risks and opportunities and to put the Fund on a path to a truly sustainable portfolio. Over the past two years, the Fund has made significant progress on the Plan's key action items, including increasing the Fund's sustainable and climate solutions investments to nearly $16 billion, undertaking assessments of portfolio companies in high-risk sectors to determine their readiness for the transition to a net-zero economy, and committing to transitioning the portfolio's greenhouse gas emissions to net zero by 2040.

In the last year, the Fund completed a review of shale oil and gas companies, which led to its decision to restrict investments in or divest from 21 companies; committed $2 billion to a climate transition index strategy; filed a comment letter with the Securities and Exchange Commission (SEC) supporting mandatory corporate climate disclosure rules; and announced interim targets to meet its net-zero commitment, including 50 percent portfolio alignment by 2030. In addition, the Fund has set other interim goals that include actively engaging with portfolio companies in high impact sectors on their net-zero alignment and prioritizing additional investments in climate solutions.

The Fund recognizes the specific and systemic risks climate change poses to the economy, the markets, and our investments, as well as to individuals and communities around the world. The increasing frequency and severity of climate-related disasters as well as long-term market changes such as the global energy transition create both challenges and opportunities for the Fund's diversified portfolio. Managing these risks and capitalizing on opportunities are critical in positioning the Fund's portfolio for the long term.

I am proud of the progress we have made thus far in meeting the Plan's ambitious goals. Nevertheless, increasing the Fund's long-term climate resilience and sustainability remains a top priority, and we will continue to set bold new targets as described in this report. Therefore, we are enhancing our efforts to advocate for effective public policies and government investments, encouraging portfolio companies to accelerate their net-zero transition strategies, and further allocating capital to net-zero-aligned investments.

Thomas P. DiNapoli
State Comptroller

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Introduction: Climate Action Plan

The 2019 Climate Action Plan (Plan) describes the climate beliefs of the New York State Common Retirement Fund (Fund or CRF) and delineates a set of actions which build on recommendations made by the Decarbonization Advisory Panel. The panel included six distinguished experts who suggested climate strategies for the Comptroller's consideration.

Major actions envisioned by the Plan include:

- Establishing industry-specific minimum standards and risk assessment processes to evaluate companies in high-impact sectors on their readiness to transition to a low-carbon economy.
- Developing a prioritized shareholder engagement program based on assessments of transition readiness and adherence to minimum standards.
- Creating a formal, multi-asset-class Sustainable Investments and Climate Solutions (SICS) Program with dedicated staff to pursue climate solution investments.
- Committing an additional $10 billion to the SICS Program, culminating in a total $20 billion commitment over the next decade.
- Enhancing the Fund's capacity to assess climate risks through new data, consultant engagements and climate assessments.

With leadership and direction from the Comptroller, who serves as the Fund's Trustee, the CRF established a team to implement the Climate Action Plan, including the Chief Investment Officer, the Director of Sustainable Investments and Climate Solutions, other investment professionals representing all asset classes, the Corporate Governance Bureau, and legal, risk and operations staff. The team is tasked with developing action plans and executing strategies to address climate risks and identify investment opportunities for the Fund. The Fund also calls upon the Comptroller's environmental policy expert to help inform its climate strategies. In addition, the Fund has contracted with consultants and data providers to provide unique research and analysis services.

The Fund's net-zero announcement in December 2020 was a natural extension of the Climate Action Plan.[1] The Fund is pursuing its ambitious goal through a combination of sustainable investments, engagements with portfolio companies and managers, public policy advocacy and, in limited instances where consistent with fiduciary duty, divestments. In order to measure the Fund's progress towards net zero, the Fund set an interim goal of attaining 50 percent alignment with a 1.5-degree scenario by 2030.[2] In addition, the Fund adopted other interim engagement and investment goals for 2030 that include actively engaging with 50 percent of the Fund's publicly traded assets in high-impact sectors on achieving net-zero emissions by 2040 and allocating at least 75 percent of the $20 billion committed to the SICS Program to investments in climate solutions.

1 Office of the State Comptroller, "New York State Pension Fund Sets 2040 Net Zero Carbon Emissions Target," 2020, at https://www.osc.state.ny.us/press/releases/2020/12/new-york-state-pension-fund-sets-2040-net-zero-carbon-emissions-target.

2 The Fund measures its global equities and corporate fixed income holdings' temperature alignments to assess whether companies and portfolios are aligned with a 1.5-degree Celsius scenario and on a trajectory to achieve net-zero emissions by 2040.

Assessments

The Fund believes that what is measured can be managed. While climate risk assessment tools are rapidly evolving, lack of consistent, adequate corporate disclosure makes it challenging to find research and analyses that can effectively inform our risk assessments and investment decisions. Regardless of the limitations, the Fund has reviewed the latest research and assessment tools, interviewed experts, and evaluated data providers to ensure that we gain access to the most up-to-date science, investment strategies and climate risk analyses.

While it has been difficult to identify and develop climate assessment tools, the Fund has conducted the following assessments to better understand how climate risks and the transition from fossil fuels to alternative energy sources could affect the Fund's investments. Simultaneously, the Fund continues to seek additional enhanced climate assessments that utilize the best data and practices available in the market.

Fossil Fuels Exposure Analysis

The Fund regularly measures its investments in fossil fuel producers. As of December 31, 2021, the value of the Fund's holdings in fossil fuel producers totaled approximately $3.4 billion in its public equity and corporate fixed income portfolios.[3]

3 When used in this report, the terms "fossil fuel producers" has the same meaning as in New York State Senate Bill S2126A (2019), available at https://www.nysenate.gov/legislation/bills/2019/s2126. "Coal producer" means any corporation or company, or any subsidiary or parent of any corporation or company, that derives at least 20 percent of annual revenue from thermal coal production, or accounts for more than 1 percent of global production of thermal coal, or whose reported coal reserves contain more than 0.3 gigatons of potential carbon dioxide emissions. "Oil and gas producer" means any corporation or company, or any subsidiary or parent of any corporation or company, that derives at least 20 percent of annual revenue from oil or gas production, or accounts for more than 1 percent of global oil or gas production, or whose reported combined oil and gas reserves contain more than 0.1 gigatons of potential carbon dioxide emissions.

High-Impact Sectors Exposure Analysis

In addition to measuring exposure to fossil fuel producers, the Fund assesses its investments in high-impact sectors identified by the Task Force on Climate-Related Financial Disclosures (TCFD), which was created by the Financial Stability Board under the auspices of the G20 group of nations. The following table presents a breakdown of the Fund's global equity and corporate fixed income investments in these high-impact sectors and industries.

Sector / Industry	Total ($ billion)
Energy	5.26
Utilities	4.58
Transportation	4.84
Materials including Forest Products	4.86
Industrials including Construction & Capital Goods	5.16
Agriculture, Food & Beverage	4.60
Real Estate	4.16
Financials	22.45

Carbon Footprint Study

In 2021, the Fund measured the carbon emissions intensity (scopes 1, 2) of its global equity and corporate fixed income portfolios.[4] The global equity portfolio's emissions intensity was 17.9 percent lower than its benchmark (a composite comprising 68 percent Russell 3000 and 32 percent MSCI ACWI ex-US), mainly due to lower investment in the utilities and energy sectors. Global equity also saw continued decline in year-over-year emissions intensity, with a 28.8 percent drop in combined scope 1 and scope 2 emissions from 2020, driven by reduced market capitalization and security weight changes in the energy and material sectors.

4 Scope 1 emissions are direct greenhouse gas (GHG) emissions that occur from sources that are controlled or owned by an organization (e.g., emissions associated with fuel combustion in boilers, furnaces, vehicles). Scope 2 emissions are indirect GHG emissions associated with the purchase of electricity, steam, heat, or cooling.

The corporate fixed income portfolio's emissions intensity was 9.2 percent lower than its benchmark (U.S. Bloomberg Barclays Aggregate), mainly due to a lower portfolio allocation to the materials sector and the selection of lower-emitting issuers in the energy sector. However, the fixed income portfolio's emissions intensity increased by 12 percent year-over-year due to a higher portfolio allocation to the utilities sector. This higher allocation resulted from short-term investment activity and therefore will not increase the Fund's longer-term exposure to the sector.

The Fund believes that carbon emissions metrics can be useful in assessing transition risks, especially regulatory risks, but are not an effective measure of the future direction of companies. The Fund also recognizes the significance of scope 3 emissions as a risk metric in investment analyses, but faces challenges in assessing these emissions due to the limited availability of accurate data.[5]

5 Scope 3 emissions are the result of activities from assets not owned or controlled by the reporting organization, but that the organization indirectly impacts in its value chain, such as emissions from the organization's suppliers and sold products.

Carbon Value at Risk

In 2021, the Fund entered into a new strategic partnership that enabled it to undertake a Carbon Value-at-Risk (VaR) assessment of its global equity and corporate fixed income investments. Carbon VaR analyzes transition risks and attempts to measure overall climate risk exposure to individual companies by employing a range of key assumptions in the following areas: carbon prices ($50, $100, $125 per ton); technology development; and fossil fuel demand. The VaR model assesses the effects of these key assumptions on a company's cost structure, industry prices, and cash flows, and integrates a company's direct and supply chain carbon dioxide (CO2) emissions into its analyses. The Fund believes that Carbon VaR analysis, a form of scenario analysis, enhances and complements its existing climate risk assessments.

The 2021 Carbon VaR analysis results showed that under all three carbon price scenarios, the Fund's combined global equity and fixed income portfolios' Carbon VaRs are lower than its benchmarks' Carbon VaRs. While high-emitting sectors such as energy and utilities demonstrated higher Carbon VaR from higher carbon price scenarios, there is significant variation in Carbon VaR within those high-risk sectors.

Temperature Alignment

The Special Report on Global Warming of 1.5˚C, issued in 2018 by the Intergovernmental Panel on Climate Change, found that if the world reaches net-zero emissions by 2040, the chance of limiting warming to 1.5 degrees by 2100 is considerably higher than if net zero is not achieved until 2050. As world governments begin taking serious action on climate change, it is becoming increasingly clear that net-zero alignment for the Fund is necessary to mitigate investment risk.

The Fund measured its global equities and corporate fixed income holdings' temperature alignments to assess whether companies and portfolios are aligned with a 1.5-degree Celsius scenario and on a trajectory to achieve net-zero emissions by 2040. The CRF's portfolio alignment assessment uses a number of different data points, factors and models, including companies' historical emissions and reduction trends, transition strategies and capital expenditures and emissions reduction goals, as well as public policy impacts and technological advances. The temperature assessment showed that for the Fund's combined global equity and corporate fixed income portfolios temperature alignment is currently in a range from 2.7°C to 3.7°C, depending on the weighting and aggregation methodologies, and that 13 percent of the Fund's global equity and corporate fixed income holdings are currently in line with a 1.5°C future.

Corporate Climate Data

The Fund collects and utilizes a range of corporate climate data for integration into its company and industry analyses. Key data include detailed descriptions and metrics of portfolio companies' transition strategies, capital expenditures, carbon emissions, fossil fuel reserves, implied temperature scores, physical risks, green/low-carbon revenues, climate governance practices and TCFD reporting assessments, among others. The Fund also applies to its assessments data and analyses from nonprofit organizations and academic studies, as provided by organizations such as the Transition Pathway Initiative, the Climate Action 100+ net-zero benchmarking assessments, the Carbon Tracker Initiative, the CDP, and the FAIRR Initiative. These sources inform the Fund's establishment of minimum standards, transition assessment, and prioritized engagements.

Manager Evaluation and Monitoring

The Fund utilizes a set of climate key performance indicators (KPIs) in the Fund's Environmental, Social and Governance (ESG) scorecard that was established pursuant to the Fund's ESG Strategy.[6] The ESG scorecard is used to evaluate existing and prospective external investment managers' capabilities to assess and manage climate risks and opportunities. In 2021, the Fund evaluated a number of managers based on these KPIs, which informed the Fund's due diligence and monitoring of managers. The following chart shows the KPIs used to evaluate managers.

6 https://www.osc.state.ny.us/files/common-retirement-fund/2020/pdf/ESG-strategy-report-2020.pdf

ESG Scorecard – Climate KPIs

Category	KPIs
Governance	Senior leadership oversight on climate risks.
Assessment	Systematic efforts to assess climate risks and opportunities and apply the latest climate science and best data and analytics in the market to investment analyses, including transition and physical risks and opportunities.
Active Ownership & Stewardship	• For publicly traded asset classes, corporate engagements on transition and physical risks and TCFD reporting. • Where relevant, proxy voting policies to support climate-related shareholder resolutions and to integrate climate concerns into director election votes. • Public support of global, federal, and state climate regulations.
Reporting	Robust TCFD reporting in the four categories — Governance, Risk Assessment, Strategy, and Metrics & Targets — including scenario analyses and/or enhanced risk assessments.

Physical Risks

In 2021, the Fund assessed the impacts of the “Hot House World Scenario” where physical risks are higher than transition risks.[7] The assessment showed that capital intensive businesses such as the cruise ship industry will likely experience decreased profitability under the scenario. Measuring precise physical risks is challenging, however, due to the limited accuracy of asset location data at the local level. The Fund only sees limited disclosures on the physical location of companies’ significant assets, the loss or impairment of which would impact financial results. To address the problem, the Fund, in partnership with Impax Asset Management, engaged with companies on physical risk disclosure, which is described further in the Corporate Engagement section below.

7 Network for Greening the Financial System, NGFS Climate Scenarios, June 2021, at https://www.ngfs.net/sites/default/files/media/2021/08/27/ngfs_climate_scenarios_phase2_june2021.pdf. Hot house world scenarios assume that some climate policies are implemented in some jurisdictions, but globally efforts are insufficient to halt significant global warming. The scenarios result in severe physical risks, including irreversible impacts like sea-level rise.

Investment and Divestment

Addressing investment-related climate risk and seizing climate investment opportunities require prudent investment practices. The Fund actively seeks to expand its investments in climate solutions that meet the Fund's requirements for risk, return and scale, to the extent consistent with its investment strategies. As a long-term universal investor, most of the Fund's investments are at some level of risk due to climate change, but the timing and severity of those risks varies, and not all companies within a high-risk sector or industry pose the same investment risks. Thus, we develop risk assessment frameworks for specific industries, evaluate companies that meet our threshold criteria, engage directly with many of them, and analyze their responses. Divestment is utilized only when consistent with our fiduciary duty and where the specific risk posed by a company's failure to develop any meaningful climate transition plan is extreme.

Sustainable Investments and Climate Solutions (SICS) Program

The SICS program is a formal, multi-asset-class commitment with dedicated funding for sustainable investment strategies including climate solutions. To date, the Fund has deployed nearly $16 billion to specific investment opportunities in the SICS Program across all asset classes, including actively and passively managed public equity strategies, green bonds, clean and green infrastructure funds, and private equity, as well as green building real estate funds. The Director of the SICS Program, who joined the Fund in early 2020, leads the program, including sourcing, assessing and managing investments in conjunction with asset class teams.[8]

Some examples of SICS investments in climate solutions are described below.

- The Fund has allocated $2 billion to the FTSE Russell TPI Climate Transition Index. This internally managed index utilizes five key criteria to evaluate corporate efforts to transition to the emerging net-zero economy, including fossil fuel reserves, carbon emissions, green revenues, corporate management quality and carbon performance. These criteria inform the index construction, including overweighting, underweighting, or excluding businesses based on their transition readiness.
- The Fund's fixed income portfolio held over $1 billion of solar-related asset-backed securities that fund solar panels and installation services, in addition to green bonds that fund renewable energy and green buildings.
- Brookfield Global Transition Fund ($750 million commitment by the Fund) will make strategic investments that reduce greenhouse gas emissions and energy consumption, increase low-carbon energy capacity, and support sustainable solutions.

8 Office of the State Comptroller, "Sustainable Investments and Climate Solutions Program," 2020 at https://www.osc.state.ny.us/common-retirement-fund/sustainable-investments-and-climate-solutions-program.

Transition Assessment and Minimum Standards

The Fund has been developing transition assessments and minimum standards to evaluate whether portfolio companies in high-impact sectors (as identified by TCFD) are taking appropriate steps to transition to more sustainable business model in line with the emerging net-zero carbon economy. Not all companies within a high-risk sector pose the same investment risks. As such, company-specific analysis and engagement is a key component of our efforts to assess and address risks.

The first step in each transition assessment is to establish an industry-specific assessment framework by identifying key performance indicators to evaluate individual companies' transition readiness. Subsequently, the Fund identifies companies that meet the Fund's revenue-based threshold criteria for prioritized engagement. If, after engagement and assessment, companies on this watch list fail to demonstrate minimal transition readiness, the Fund will consider taking investment actions, such as underweighting, restricting new investments, or divestment, consistent with the Comptroller's fiduciary duty to the members, retirees, and beneficiaries of the New York State and Local Retirement System. The Fund's assessment frameworks and individual company analyses have been informed by consultation with climate and investment professionals. To date, the Fund has completed reviews of energy-sector companies engaged in thermal coal mining, crude oil production from oil sands, and most recently, shale oil and gas production.

Shale Oil and Gas Transition Assessment Framework

The Fund's shale oil and gas transition assessment and minimum standards focused on portfolio companies that derive over 10 percent of their revenues from the production of crude oil and natural gas from shale. Shale deposits, fine-grained sedimentary rocks with relatively low permeability containing reserves of crude oil and natural gas, are found in the U.S. and in various other regions around the world. This sub-industry was chosen because of the significant transition risk these businesses face as a result of regulatory, environmental and financial challenges, including increasing regulation of greenhouse gas (GHG) emissions, enhanced vehicle emissions standards, the proliferation of renewable energy and the adoption of electric vehicles, among other issues.

The following chart shows the key performance indicators (KPIs) identified to evaluate shale oil and gas companies' transition readiness.

Shale Oil and Gas Industry – Transition Assessment KPIs

Category	KPIs
Transition Strategies	Strategies to transition business models towards a trajectory consistent with the goals of the Paris Agreement.
Capital Expenditures (CAPEX)	Capital spending supports transition strategies consistent with the goals of the Paris Agreement.
Emissions Targets	Targets to reduce GHG emissions from the entire value chain (scope 1, 2, and 3) in line with the Paris goals.
Low Carbon/Green Business	Percentage of revenues from low-carbon/green businesses such as renewable energy and energy efficiency, among others.
Disclosure	Disclosure in line with TCFD recommendations, including scenario analysis. Evaluation looks at decision-useful information.

In 2021, the Fund identified 42 shale oil and gas companies for assessment, engaged with each of them, and offered an opportunity for each company to provide additional information about their transition strategy. Fund staff had a number of dialogues with the companies about the opportunities and challenges they face due to the expected energy transition. The assessment concluded that 21 companies failed to meet the CRF's minimum standards, and investments in those companies have been restricted or divested. Sixteen companies met the Fund's minimum standards for a variety of reasons, including:

- establishing strategies to produce lower-cost and lower-carbon assets;
- adopting net-zero and methane reduction targets; and/or
- disclosing in line with the Task Force on Climate-Related Financial Disclosure recommendations, including conducting scenario analyses.

Five companies were not fully assessed for technical and structural reasons: one was identified as a private entity (Ascent Resources Utica Holdings LLC); and four companies had gone through either a merger or an acquisition (Bonanza Creek Energy, Cabot Oil & Gas, Cimarex Energy, and Lonestar Resources US Inc.), which means that reliable data about the new corporate entities was not available for this assessment. When reliable information becomes available for these public companies, they will be evaluated as part of the Fund's annual review if they meet the Fund's threshold criteria for shale oil and gas companies.

The following chart shows the assessment results of the 42 shale oil and gas companies.

Company Name	Result	Company Name	Result
Antero Resources Corporation	Further Engagement	**Enerplus Corporation**	Divestment
APA Corporation	Divestment	**EOG Resources, Inc.**	Further Engagement
Apache Corporation	Divestment	**EQT Corporation**	Further Engagement
ARC Resources Ltd.	Further Engagement	**HESS Corporation**	Divestment
Ascent Resources Utica Holdings, LLC	Private Company	**Laredo Petroleum, Inc.**	Divestment
Baytex Energy Corp.	Divestment	**Lonestar Resources US Inc.**	Merger
Birchcliff Energy Ltd.	Divestment	**Magnolia Oil & Gas Corporation**	Divestment
Bonanza Creek Energy, Inc.	Merger	**Marathon Oil Corporation**	Further Engagement
Cabot Oil & Gas Corporation	Merger	**Matador Resources Company**	Divestment
Callon Petroleum Company	Divestment	**Murphy Oil Corporation**	Further Engagement
Centennial Resource Development, Inc.	Divestment	**National Fuel Gas Company**	Further Engagement
Chesapeake Energy Corporation	Divestment	**Oasis Petroleum Inc.**	Divestment
Cimarex Energy Co.	Merger	**Ovintiv Inc.**	Further Engagement
CNX Resources Corporation	Further Engagement	**PDC Energy, Inc.**	Divestment
Comstock Resources, Inc.	Divestment	**Peyto Exploration & Development Corp.**	Further Engagement
ConocoPhillips	Further Engagement	**Pioneer Natural Resources Company**	Divestment
Continental Resources, Inc.	Divestment	**Range Resources Corporation**	Further Engagement
Crescent Point Energy Corp.	Divestment	**Senex Energy Limited**	Further Engagement
Crew Energy Inc.	Divestment	**SM Energy Company**	Divestment
Devon Energy Corporation	Further Engagement	**Southwestern Energy Company**	Further Engagement
Diamondback Energy, Inc.	Divestment	**Tourmaline Oil Corp.**	Further Engagement

Oil Sands Primary Assessment and Thermal Coal Mining Annual Review

As reported in last year's Climate Action Plan Progress Report, the Fund evaluated nine oil sands companies in 2021. Seven of the nine companies on that watch list failed to meet the Fund's minimum standards, resulting in investment restriction or divestment of those companies. The Fund's annual review of oil sands companies is underway, with results expected later in 2022.

In 2021, the Fund also reassessed thermal coal companies and added five new companies to the CRF watch list.[9] The Fund engaged with them and offered an opportunity for each company to provide additional information about their transition strategy. The analysis concluded that 27 companies, including all 22 that had been previously restricted and the five new additions to the watch list, failed to meet the Fund's minimum standards due to lacking transition strategies or deficient execution of stated transition strategies. As a result, the Fund restricted investment or divested from the 27 companies. There are four thermal coal companies — South32, Banpu Public, CIMIC Group, and Exxaro Resources — that met the Fund's minimum standards for a variety of the reasons, including business strategies to diversify away from coal, capital expenditures allocated to production of minerals that can be used for renewable energy technologies and electric vehicles (EVs), and net-zero targets.

Moving forward, in addition to conducting annual reviews of thermal coal, oil sands, and shale oil and gas companies, the Fund will next evaluate the transition readiness of companies in the integrated oil and gas sector.

9 The Fund's transition assessment and establishment of minimum standards focused on companies that derived at least 10 percent of their revenues from thermal coal mining.

Engagement and Advocacy

As a long-term owner that invests across all sectors of the economy, the Fund works to promote sound climate risk management practices at the companies in the Fund's portfolio through active ownership. Using the Fund's voice and votes to mitigate risks can help ensure the long-term success of the Fund's portfolio investments.

The Fund also engages with external managers, calling for them to enhance climate risk management in the Fund's portfolios. The Fund evaluates managers' policies, processes, resources, disclosure, and where relevant, active ownership activities, in order to assess the managers' approach to addressing climate risks and opportunities.

Finally, policy advocacy is a vital piece of the Fund's multi-faceted approach to climate change. The Fund is not able to address climate change, reduce investment risk and protect the Fund without governments around the world adopting robust policies that are necessary to drive the transition to a net-zero economy. The Fund thus comments on regulations, actively supporting or opposing relevant legislation and rulemaking, and meeting with and testifying before lawmakers and policy makers.

Corporate Engagement

Engagement is a critical component of the Fund's climate risk and opportunity analyses, and includes both direct discussions with company management and filing of shareholder proposals. The Fund undertakes corporate engagements with high-risk companies directly, and in collaboration with other investors through initiatives such as Climate Action 100+, the Ceres Investor Network on Climate Risk, and the CDP Non-Disclosure Campaign, which engages with companies that do not respond to investor requests for disclosure to CDP. The Fund's own direct engagements consist of writing letters to and meeting with management and company directors. The Fund also files shareholder resolutions to encourage changes in companies' strategies to address climate-related investment risks.

2021 Shareholder Proposals

Since 2008, the Fund has filed over 160 climate-change-related shareholder resolutions, reaching more than 81 agreements with portfolio companies on climate issues such as setting GHG emissions reduction targets, committing to renewable energy and energy efficiency goals, and providing enhanced climate disclosures in line with TCFD.

In 2021, the Fund reached agreements with all seven portfolio companies where it had filed climate-related shareholder proposals. This was the first proxy season in which the Fund achieved agreements on all of its climate-related shareholder proposals. Four of the companies agreed to adopt the standards of the Science Based Targets initiative (SBTi), which are considered a best practice in reducing GHG emissions. They are Domino's Pizza Inc., medical supply company McKesson Corp., commercial real estate company Realty Income Corp. and Advance Auto Parts Inc. Among these four, McKesson agreed to set the SBTs in line with a 1.5-degree scenario as outlined in the Paris Agreement. Steel maker Cleveland-Cliffs Inc. notably set GHG targets and committed to co-funding an environmentally friendly hydrogen project. Chemical maker Albemarle Corp. committed to adopting GHG targets, and water treatment company Pentair plc agreed to set GHG and clean energy targets.

Direct and Collaborative Engagements

The Fund engages in dialogues with portfolio companies across high-impact climate sectors, including those engaged in the following industries: oil and gas production, coal mining, electric and natural gas utilities, automobile manufacturing, airlines, banking, materials, and real estate. The Fund urges them to establish net-zero transition strategies, develop strategic capital expenditures (CAPEX) planning, and adopt GHG reduction targets and TCFD reporting.

The Fund is the lead investor in the Climate Action 100+ American Electric Power (AEP) engagement group. AEP is one of the largest electric utilities in the United States, with substantial reliance on coal. In 2021, AEP updated its carbon emissions targets to achieve an 80 percent reduction by 2030 and net-zero emissions by 2050. AEP also published its Climate Impact Analysis report that adopted the TCFD disclosure framework. In this report, AEP evaluated three climate transition scenarios to identify the technology and resources that would be needed and the cost to customers. The report also highlights AEP's recent efforts to address transition and physical risks and to ensure a just transition, which encompasses the company's efforts to realize environmental sustainability, as well as decent work, social inclusion and poverty eradication for its employees and the communities in which it operates. The Fund welcomes AEP's continued efforts to enhance climate risk assessment and climate reporting and will continue to engage with AEP on its decarbonization strategies and capital allocation alignment.

The Fund also actively participates in engagements with Duke Energy, Ford Motor Company and Exxon Mobil Corporation through Climate Action 100+. These engagements include discussions of decarbonization of gas utilities, scope 3 disclosure and targets, climate policy engagement, capital allocation alignment, and just transition, among other issues.

CDP Emissions Data and Other Climate Disclosures

It is important for the Fund to obtain standardized climate data in order to evaluate risks with even greater precision and comparability. CDP (formerly known as the Carbon Disclosure Project) provides a standardized and comparable data set that covers more than 13,000 companies, representing over 64 percent of total world market capitalization in 2019. The Fund believes that there is great value in bringing together information on this issue across sectors and regions, using this consistent approach. Therefore, the Fund engages with companies to urge their disclosure of emissions data and other key climate disclosures to CDP. In 2021, the Fund participated in the Non-Disclosure Campaign for the second time. The campaign is a joint initiative led by CDP with more than 160 financial institutions engaging over 1,300 companies worldwide to disclose climate information through CDP's standardized, TCFD-aligned platform. Under this initiative, the Fund sent letters to over 160 of its U.S. portfolio companies in 2021; several high-emitting companies such as NextEra disclosed climate-related information to CDP for the first time.

Physical Risks

Corporate disclosure of the physical location of major assets is limited. General geographical information about the locations of assets, such as merely noting the country of location, is insufficient for us to evaluate exposure to specific climate-related physical hazards such as wildfires, floods and hurricanes, and therefore to evaluate physical hazard risks comprehensively. There are significant differences in the physical risks within such broad geographies. Following on a letter writing initiative to S&P 500 companies on physical risk, in 2021, the Fund's staff along with Impax Asset Management's team had dialogues with some of the companies and found that there was significant variation in their understanding and preparedness for physical risks.[10] The Fund plans to continue to engage companies on physical risk in 2022.

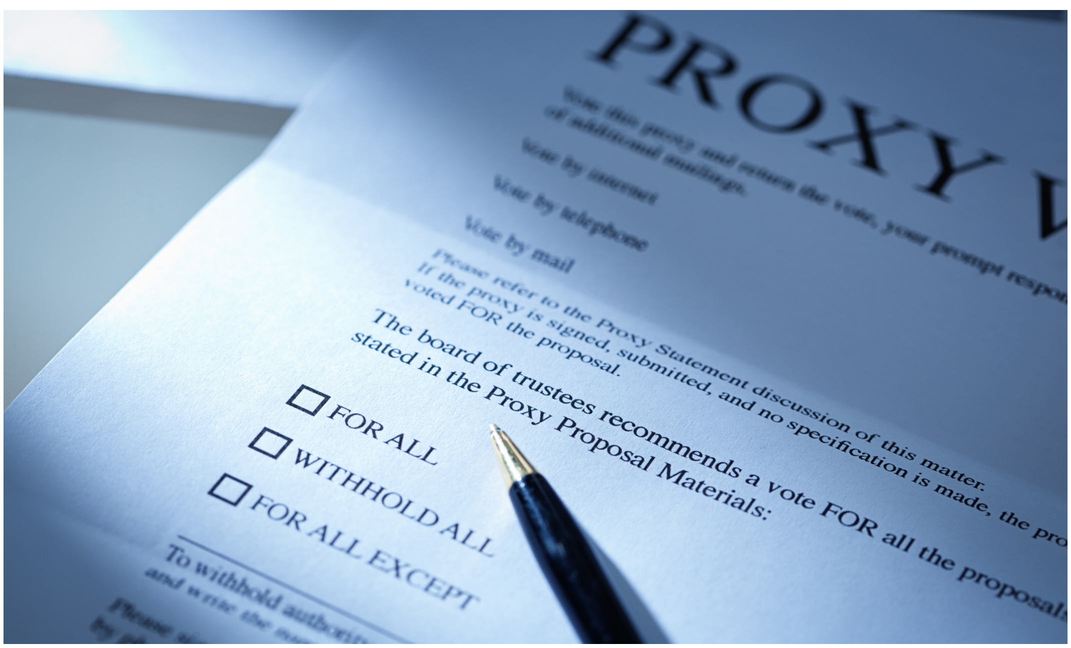
10 In 2020, the Fund, in partnership with Impax Assessment Management, wrote to S&P 500 companies calling on the companies to disclose the precise physical locations of their significant assets and their physical risk assessments.

Environmental Stewardship and Climate Risk Votes

The Fund's proxy guidelines incorporate criteria used to evaluate each company's climate performance, including climate transition targets, strategies, capital expenditure alignment, and TCFD disclosure. The Fund utilizes a variety of data sources, such as company filings, CDP disclosures, and the Climate Action 100+ net-zero benchmarking assessment, which inform the Fund's director votes. In 2021, the Fund withheld support from or voted against 404 individual directors at 88 portfolio companies that lacked robust climate risk management, including Berkshire Hathaway, Chevron Corporation, Phillips 66 and Reliance Steel. Notably, the Fund voted for an alternative slate of board candidates at ExxonMobil put forward by activist investment firm Engine No. 1 with the goal of better positioning the energy company for the low-carbon future; three candidates were successful in winning board seats, a major development for Exxon's climate risk management.

In early 2022, the Fund updated its Proxy Voting Guidelines to incorporate the Fund's expectations for portfolio companies related to the transition to a net-zero economy, alignment with a 1.5-degree future, and the integration of climate risks and opportunities into financial accounting.

Moving forward, the Fund will continue to use its voice and vote to encourage and support efforts in climate risk management, strategic planning, and reporting by portfolio companies to help them achieve a successful transition to the low-carbon economy, which is integral to long-term value creation for shareholders.



Manager Engagement

In 2021, the Fund engaged with its global equity and fixed income managers on various topics including net-zero ambitions and measurements, risk assessments of oil and gas investments, climate risk data analysis and modeling, proxy voting and dialogues with portfolio companies.

Some of the key findings from the Fund's discussions with the managers are as follows:

- Some managers have adopted a portfolio target in line with net-zero emissions and are identifying specific actions to achieve the target, including corporate engagements.
- While the measurement of portfolio alignment with net-zero emissions goals and a 1.5-degree Celsius scenario is complex and evolving, some managers have demonstrated leading practices beyond undertaking simple carbon footprint analyses. These include utilizing temperature alignment assessments and Science-Based Targets, and taking a sector-based approach to analyze corporate actions.
- An increasing number of managers are expanding corporate engagements on climate risks, and are working on enhancing proxy voting and reporting related to climate change.
- Some managers have been enhancing their proprietary climate risk assessments.

In addition, the Fund participated in a number of working groups and committees that aim to develop assessment frameworks in private equity, such as Ceres' Private Equity Paris Aligned Investment Initiative, Science-Based Targets Initiative's Private Equity Sector Working Group. The Fund also joined PRI's TCFD Infrastructure Advisory Committee. The discussions through these working groups inform engagements on climate risks for private assets.

Public Policy and Market Leadership

Exerting leadership with respect to pertinent public policy issues, including policies governing the financial markets, is an additional component of the Fund's strategy under the Climate Action Plan. The Fund supports policies and practices that promote the overall stability, transparency and functionality of the financial markets and the economy as a whole. The Fund's public policy engagement takes many forms, including meetings and correspondence with elected representatives, regulators and other public officials, testimony at hearings and forums, comments on regulatory and legislative proposals, and participation in state, national, and international forums and initiatives.

The Fund's primary public policy advocacy priorities have included promoting enhanced climate disclosures and fighting against harmful deregulation efforts surrounding climate change. In recent years, the Comptroller and the Fund's staff have weighed in on a number of important climate-related investment and regulatory issues.[11] In 2021, the Fund staff participated in a number of policy engagements, including meeting with the Environmental Protection Agency on methane emissions regulations for the oil and gas sector. In addition, the Fund filed the comments as detailed below.

11 See, e.g., Office of the State Comptroller (OSC), 2020 SEC Comment Letter on Rulemaking Petition (requiring companies to report on the physical location of their significant assets), at https://www.sec.gov/comments/4-763/4763-7741254-223137.pdf; 2020 Investor Letter to U.S. financial regulators (need to act on climate change as a systemic financial risk), at https://www.ceres.org/news-center/press-releases/40-investors-nearly-1-trillion-join-other-leaders-urge-us-financial

Fund's Public Comments on Climate Policies

Entity	Topic
U.S. Securities and Exchange Commission	Corporate Climate Disclosures
President Biden	Business and Investor Letter in Support of an Ambitious U.S. 2030 Nationally Determined Contribution
National Governments	Global Investor Statement to Governments on the Climate Crisis
The Biden Administration	Call for Ambitious Methane Regulation for the Oil and Gas Industry
Congress	Calling on Congress to Pass the Federal Economic Recovery and Infrastructure Bill
Environmental Protection Agency	Methane Emission Regulations for the Oil and Gas Industry

Moving forward, as the Biden administration has established climate change as one of its top priorities, the Fund will continue to work on key legislative and regulatory issues including corporate climate disclosures, emissions standards, meaningful carbon pricing, clean energy infrastructure funding, and tax incentives that drive climate solution investments. Specifically, in 2022, the Securities and Exchange Commission (SEC) released its proposed climate disclosure rule. The Fund staff has reviewed the proposed rule and submitted a public comment to the SEC.[12]

12 State Comptroller DiNapoli Comment on SEC's Proposed Climate Disclosure Rule, June 3, 2022, at https://www.sec.gov/comments/s7-10-22/s71022-20130550-299408.pdf.

Conclusion

Although COVID-19 generated another challenging year for the global economy, 2021 saw significant progress on climate change for the New York State Common Retirement Fund. The CRF invested in data, analytics and consultants to further its climate-related investment goals.

Additionally, numerous political, financial, and enterprise leaders around the world made concrete net-zero commitments. While these pledges are encouraging, significant work lies ahead to achieve net-zero emissions across the economy by 2040 and to address the systemic risks of climate change. Accordingly, active implementation of the Fund's Climate Action Plan remains a top priority to address climate-change-related investment risks to the Fund's portfolio and capitalize on the opportunities created by the transition to a net-zero economy.

In 2022, the Fund will focus on new minimum standards for integrated oil and gas companies; additional investments in climate solutions; enhanced risk assessments such as temperature alignment; and renewed advocacy efforts focused on supporting climate policies that are essential to making the needed swift and efficient transition to a net-zero economy.

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