

April 12, 2016

To: The Yale Community

From: David F. Swensen, Chief Investment Officer

Re: Impact of Investments Office Climate Change Letter

On August 27, 2014, President Salovey announced a number of university sustainability initiatives to address the existential issue of global climate change and its consequences. (A copy of the announcement is attached as Exhibit A.) The President's statement was issued following a decision by the Yale Corporation Committee on Investor Responsibility to refrain from divestment of the University's holdings in fossil fuel companies. The President's message, which emphasized Yale's role as an academic institution and a leader in sustainability, referred to a letter I would be sending to Yale's external investment managers on the issue of climate change. (A copy of the letter is attached as Exhibit B.) I am writing to let you know about the impact that letter has had on Yale's portfolio, on the University's managers and on the Investment Office's investment process.

My letter was delivered to all of Yale's active external investment managers on August 27, 2014. Over the course of the following weeks, my staff followed up with each manager to discuss the letter. In general, Yale's managers supported the approach of the letter and appreciated the admonition to consider the economic impact of climate change on investments, without placing definitive restrictions on portfolio decisions. Many expressed enthusiastic support and highlighted actions their organizations planned to undertake to support Yale's objectives. A few expressed confusion or uncertainty and the Investments Office addressed both through additional conversations and clarification of Yale's expectations.

At the time of the distribution of the letter, a few managers held positions we felt were inconsistent with our principles. Thermal coal miners and oil sands producers are two of the obvious industries that would suffer if regulation imposed the social cost of carbon emissions on producers. As of June 30, 2015, the Endowment had *de minimis* exposure to those industries. One manager held a small position in a publicly-traded company that engaged in the production and sale of coal. Another manager held interests on Yale's behalf in two publicly-traded oil sands producers. Combined, these investments represented less than \$10 million of exposure to Yale. Since that time, the first manager exited its coal position. The firm's founder agreed climate change and carbon pricing represented unknowable risks and fossil fuel producers with significant carbon footprints were declining businesses, a profile the firm preferred to avoid. The second manager sold both positions and stated it would not initiate similar positions in the future. This manager had already begun to think about the impact of climate change on its portfolio when it received my letter and subsequently expressed support for the principles outlined in it.

Since the distribution of my August 27, 2014 letter, new investments made by the University's investment partners have been in keeping with the spirit of the approach outlined in the letter. We believe the lack of new investment in greenhouse gas intensive energy companies confirms a common understanding between Yale and its external managers.

In addition, the Investments Office has incorporated into its investment process pointed engagement with Yale's external managers on the topic of climate change. Although public scrutiny has focused on investments in fossil fuel producers, the Investments Office approaches the climate change issue more broadly by considering any exposure with risk related to climate change and potential regulations aimed at reducing emissions. That consideration includes, for example, asking managers about the implications of climate change when evaluating farmland acquisitions in southern locations or pushing our partners to consider the risks of owning low-lying coastal real estate.

In an example of productive engagement with our managers, my letter precipitated a significant effort by one of Yale's energy-focused private equity managers to develop a broadly applicable framework for energy investing in a carbon-constrained world. Leveraging its strong in-house research team, the firm developed a framework for assessing, reporting, and comparing the greenhouse gas ("GHG") intensity of fossil fuel operations on an apples-to-apples basis. The firm conducted carbon audits of its portfolio companies and assessed the exposure of each to more stringent emissions regulation. The firm led a symposium of investors to discuss the approach and shared a white paper with other industry participants. The firm hopes that by gathering data and modeling the GHG intensity of an operation, investors can build greater awareness of the characteristics that lead to lower GHG intensity and ultimately make better decisions on future investments, either by avoiding more challenged assets or by improving a project's design.

The Investments Office plans to continue its engagement with managers on the issue of climate change. Since the distribution of my letter in 2014, Yale initiated a number of new investment relationships with external partners and provided each of them a copy of the letter. The Investments Office engaged in conversations with each manager about the University's objectives in considering climate change. A number of managers called attention to the alignment that exists between Yale's policy and their current investment processes, highlighting specific actions their organizations had undertaken to address climate change. For example, Yale's new real estate managers noted that reduced energy consumption benefits their bottom lines as well as the environment. In one instance, Yale had traveled very far down the path of hiring a new energy manager. Discussions with the manager about the contents of the letter revealed a divergence of views and attitude between Yale and that manager towards the risk of climate change, including whether and how to incorporate those risks in its investment process. In part as a result of those conversations, the Investments Office decided not to pursue that investment relationship.

The Investments Office believes the risks of climate change, like any risks, should be incorporated in the evaluation of investment opportunities. This is not an easy, straightforward task. However, initiating and continuing a dialogue with our managers about those risks result in

more thoughtful consideration of investment opportunities, higher quality and lower risk portfolios for Yale, and better environmental outcomes.

Yale Sustainability

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From the President



August 27, 2014

New Sustainability Initiatives at Yale

Global climate change and its consequences are critical challenges of our time, and Yale has important and necessary roles to play in addressing them. Yale's commitment to sustainability is a fundamental part of the University's enterprise, and I write today to announce a series of new initiatives to augment this work.

The Yale Corporation's Committee on Investor Responsibility issued today its decision about actions Yale should take as an institutional investor in addressing climate change. The Corporation Committee approved new guidance for the campus-based Advisory Committee on Investor Responsibility (ACIR), instructing that:

"Yale will generally support reasonable and well-constructed shareholder resolutions seeking disclosure of greenhouse gas emissions, the impact of climate change on a company's business activities and products, and strategies designed to reduce the company's long-term impact on the global climate including through the support of sound and effective governmental policies."

During the coming year, the ACIR will implement this guidance in voting proxies on shareholder resolutions. After much deliberation, the CCIR did not recommend divestment of Yale's investments in fossil fuel companies for reasons given in its [report](#). In making these decisions, the Committee applied the standards and process that the Yale Corporation has long maintained for considering ethical principles in investing the University's endowment. I want to thank the many members of our community who offered their views to the ACIR and to the CCIR, especially members of Fossil Free Yale and the Yale College Council.

In addition, Yale's Chief Investment Officer is writing to Yale's external investment managers to indicate that those managers – as a matter of sound business practices – should take into account

the effects of climate change on the businesses in which they are or might be investing and anticipate possible future regulatory actions in response to the externalities produced by the combustion of fossil fuels.

Yale has a role as an investor as the actions of the CCIR and the Investments Office show, but I believe that Yale's most important contributions come from its teaching and research, its internal practices, and its leadership by example and encouragement among peer institutions.

Teaching and research about environmental sustainability: a signature of this university

For a century, Yale faculty members have pursued significant research and teaching on environmental sustainability. Important work that led to the detection and understanding of global warming has been carried out within our walls, and Yale has been at the forefront of research on the economic, social, and environmental impacts of climate change.

Yale has evolved over the past century into one of the world's premier training grounds for aspiring leaders in environmental science, management, law, and policy. In addition to the work of our School of Forestry and Environmental Studies, we currently have over fifteen institutes, centers, and programs directly linked to the study and promotion of the environment across the University, and many other individuals around the campus work on sustainability and climate change. Yale has also contributed significantly to public sentiment for achieving sustainability. Our graduates have been leaders of major environmental organizations in this country and around the world during the last 30 years. Yale's most important contributions will continue to emerge from our academic endeavors and from the outstanding work of our faculty and alumni.

New projects for Yale to advance sustainable practices.

I am proud that Yale has also [led by example](#) through ambitious campus carbon reduction programs, increased recycling, aggressive waste management, and more efficient building systems. Yale was a pioneer among universities in setting explicit goals for reducing greenhouse gas (GHG) emissions in 2005, and in developing a broader university-wide Sustainability Strategic Plan in 2010, which was updated last year. We have galvanized the other Ivy institutions to do the same. Even though the size of the campus has grown by 12% since 2005, Yale thus far has decreased its GHG emissions by 16%, and we will meet the goal of reducing campus GHG emissions 43% below 2005 levels by 2020.

But Yale can and will do more. I have been working with a number of individuals around campus to develop ways to extend the University's efforts. There are six new initiatives that I write about today. Several of these new initiatives derive directly from student recommendations provided this past spring as well as suggestions from faculty, staff, and alumni.

\$21 million capital investment for energy conservation and GHG reduction. Yale will invest \$7 million per year for each of the coming three fiscal years for capital projects to improve energy conservation in key buildings across campus. This will allow us to reduce Yale's GHG emissions at the Central, Medical, and West Campuses. Continued investment in energy conservation will make Yale a more sustainable campus and will have, over time, a positive effect on the operating budget. These capital investments will include an "Energy Solutions Fund" of \$100,000 per year that will be reserved for student-inspired and proposed projects, focusing on energy conservation. The Office of Facilities will oversee the Fund with assistance from the Office of Sustainability. I encourage students to learn more [here](#). I hope that the quality of the student submissions will prompt the Provost and me to allocate more to the Energy Solutions Fund.

Carbon charge pilot at Yale. Studies by faculty at Yale and elsewhere have emphasized the potential of carbon pricing as a mechanism to meet climate change objectives. A growing number of companies in the private sector and municipalities have begun to experiment with internal carbon pricing. We are unaware of any university that has implemented a carbon charge. Might Yale be able to develop a model that could be adopted by universities and higher education more generally? To

that end, I have asked Sterling Professor of Economics William Nordhaus to chair a Presidential Carbon Charge Task Force to examine over the next year whether it would be feasible and effective for Yale to institute an internal carbon pricing mechanism as part of its sustainability efforts.

Professors Dan Esty, Sharon Oster, Mark Pagani, Frances Rosenbluth, Rob Udelsman, and Dean Ted Snyder will serve on the Task Force, as well as Professor Brad Gentry, who is co-chair of the University Sustainability Advisory Council at Yale. I also will be selecting three students to serve on the Task Force, in consultation with the Yale College Council, the Graduate Student Assembly, the Graduate and Professional Student Senate, and faculty members on the Task Force. In addition, administrators John Bollier, Virginia Chapman, and Linda Lorimer, who have been involved with Yale's sustainability initiatives, will be joining the Task Force.

I have asked the Task Force to determine whether a carbon charge should be introduced at Yale, and if so to provide a blueprint for its design. In considering different plans, the objective is a program that provides incentives for different units to reduce their carbon footprint in a way that is not administratively or economically burdensome. The Task Force will examine programs that have been implemented in other organizations and will consult with experts around the country and with interested individuals across Yale. I have asked the Task Force to report early next year with the hope that it will identify a way for us to move ahead with a pilot program in selected units for the academic year 2015-16.

Expanded deployment of renewable energy. We are proceeding with the installation of a 1.25 megawatt array of solar panels at West Campus. This project, covering more than 350,000 square feet of roof area, will avoid approximately 500 metric tons of GHG emissions per year. You can learn more about this solar project [here](#). Extended use of photovoltaic technology will further expand Yale's collective low-carbon portfolio, which also includes wind and other renewables. This is yet another way that the West Campus serves as a learning lab for evaluating a range of advanced green technologies. Yale also looks forward to partnering with the State of Connecticut under Connecticut's recently announced "Solarize U" program to encourage faculty and staff to install residential solar photovoltaic in their homes.

GHG disclosure, third-party verification and comparability of data. Yale's Office of Sustainability already discloses greenhouse gas emissions associated with purchased electricity, university energy production at its power plants, and its fleet of vehicles. Next year, Yale will become a member of the Climate Registry as part of our process to adopt third-party verification of our campus greenhouse gas inventory. This will help to assure further transparency of our GHG monitoring and disclosure methods. The [Climate Registry](#) is a nonprofit collaboration in North America that sets consistent and transparent standards to calculate, verify, and publicly report greenhouse gas emissions into a single online repository. I will ask the other Ivy institutions to consider the same approach, since adopting standardized accounting and verification is central to making useful comparisons among our peers and to learning from one another's examples.

New Green Innovation Fellowships. A greener economy will require inventive new approaches in a wide range of industries, including architecture, waste management, food, conservation, and renewable energy. We want our students to become leaders in emerging green businesses, and we should support their ventures by providing mentorship opportunities and connecting them to potential investors. Since 2007, the Yale Entrepreneurial Institute (YEI) has incubated more than 70 student start-up ventures in many fields. Some of these successful student ventures already have focused on clean energy, organic products, and conservation. Since 2009, such ventures have also been the focus of the Sabin Sustainable Venture Prize awarded by the Center for Business and Environment at Yale. For 2015-19, YEI will offer at least two new Green Innovation Fellowships annually for promising student, faculty, and staff ventures in the field of sustainability. These Fellowships will provide \$15,000 in grant funding and offer three to five dedicated mentors from relevant business fields. Ventures selected for these Fellowships will be eligible to apply for up to

\$100,000 in follow-on funding through the YEI Innovation Fund. Fellows will have access to the growing array of green innovation programs being developed at the Center for Business and Environment, Center for Engineering Innovation and Design, and in related initiatives across the University. You can read more about the Green Innovation Fellowship opportunities [here](#).

Ambitious goals for the university and school-specific plans. I have asked the Sustainability Advisory Council to review the University's current Sustainability Strategic Plan and to consider whether our university-wide goals are ambitious enough. In addition, the Office of Sustainability is collaborating with each of Yale's professional schools to develop a set of Sustainability Action Plans that are tailored to the disciplines and physical contexts of the schools. Our goal is for each of Yale's professional schools to have a sustainability action plan in place by the end of the fall semester. I will be relying on the Sustainability Advisory Council to critique these plans and to offer advice to the individual deans of the Schools about the robustness of their school-specific actions.

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These new projects add to the considerable work already underway to advance Yale's sustainability objectives. We must stay attentive to what more the university can and should do in its schools, institutes, and centers, as well as through university-wide programs. To that end, I encourage all members of the community to convey additional ideas to Professors Brad Gentry and Michelle Addington for review by the Sustainability Advisory Council.

However, the responsibility for more sustainable practices falls not simply to the institution: it rests as much on us as individuals. As a social psychologist, I know how challenging it can be to change long-standing habits and practices. But this is precisely what we must do – and do every day – to ensure a sustainable world. Yale is doing a great deal; I hope each of us will consider what more we can do as global citizens.

Sincerely,
Peter Salovey
President and Chris Argyris Professor of Psychology

August 27, 2014

I write to discuss climate change and Yale's investment program. The Investments Office bases its approach to global warming on the conclusion that greenhouse gas emissions pose a grave threat to human existence. Climate change (caused by deforestation and emissions of carbon dioxide, methane and other gases) creates a substantial risk of significant changes to the world's ecosystem and from actions to address those changes, making consideration of the impact of climate change essential when evaluating investment opportunities.

Yale asks that when making investment decisions on the University's behalf, you assess the greenhouse gas footprint of prospective investments, the direct costs of the consequences of climate change on expected returns, and the costs of policies aimed at reducing greenhouse gas emissions on expected returns. Simply put, those investments with relatively small greenhouse gas footprints will be advantaged relative to those investments with relatively large greenhouse gas footprints.

A full accounting of the internal and external costs of greenhouse gas emissions will call into question the business models of some investments, which will require especially careful consideration. Today, examples include thermal coal producers, tar sands operations, companies that rely on cheap power from coal and low lying coastal real estate. Of course, the list of investments requiring special consideration will change along with changes in the population of investments with business models that rely on mispriced externalities.

Conversely, fully pricing the externalities created by greenhouse gas emissions will create opportunities for profit. Examples include companies that produce renewable energy and products that facilitate demand shifting or otherwise promote efficient use of energy.

With respect to the particular case of investments in corporate entities, as you consider the implications of climate change, Yale expects you to discuss with company managements the financial risks of climate change and the financial implications of current and prospective government policies to reduce greenhouse gas emissions. You should encourage managements to mitigate financial risks and to increase financial returns by reducing greenhouse gas emissions. Yale asks you to avoid companies that refuse to acknowledge the social and financial costs of climate change and that fail to take economically sensible steps to reduce greenhouse gas emissions.

Government policies addressing climate change will impose costs on many investments, especially those with relatively high greenhouse gas footprints. If countries around the world implement pricing schemes that reflect the true costs of greenhouse gas emissions and if in your investment decisions you properly account for the costs and risks of greenhouse gas emissions, Yale's investments will be well positioned to deal with a more enlightened regulatory

environment. On the other hand, even if governments adopt imperfect policies to control greenhouse gas emissions, the University's position will be protected by accounting for the financial impact of these policies on portfolio investments. Even in the absence of effective government policies to mitigate greenhouse gas emissions, your consideration of the costs and risks of climate change should lead you to better investment decisions.

Analyzing the greenhouse gas emissions associated with investments is far from simple and fraught with challenges. As in all aspects of investment analysis, decisions will be based on incomplete, imperfect information. That said, consideration of the risks associated with climate change should produce higher quality portfolios.

Please contact me with any questions or comments.

Sincerely,

A handwritten signature in black ink, appearing to read "D. Swensen", with a stylized, cursive script.

David Swensen
Chief Investment Officer