

## **Update on Endowment Net-Zero Goal**

May 2023

### **Executive Summary:**

The endowment's mission is to support both current and future generations at Penn. Totalling \$20.7 billion as of June 30, 2022, the endowment will distribute over \$950 million this fiscal year to fund scholarships, teaching, research, medical innovation, and thousands of other programs and initiatives across the University. Penn's Office of Investments manages the endowment on a day-to-day basis, overseen by an Investment Board consisting of University trustees. The Office invests the endowment by partnering with external investment management firms who, in turn, select individual companies in which to invest. Penn's investment manager relationships span the globe, encompassing investments across a range of asset classes and strategies.

In April 2021, the Office of Investments set a goal of reducing the net anthropogenic greenhouse gas emissions associated with the endowment's investments to zero by 2050. Our approach to net-zero prioritizes real-world decarbonization while pursuing our mission of maximizing risk-adjusted returns for the University and its health system. In our periodic community updates, we highlight areas of focus for the Office, including carbon accounting, manager engagement, and transition-related investments.

This update centers on new investment activity related to the energy transition. Penn's energy transition exposure now accounts for approximately 2% of the endowment, a figure we expect will continue to grow over the long term as decarbonization efforts expand throughout the broader economy. Before turning to investment activity, we provide a brief update on our engagement and research efforts. Globally, the vast majority of companies, both public and private, do not yet report their carbon footprints. We continue our efforts to expand and standardize data availability by engaging with our partners on best practices around data collection and reporting. To further these efforts, Penn recently joined the ESG Data Convergence Initiative (DCI), an investor coalition that aims to standardize ESG data reporting in the private markets.

### **Engagement & Research:**

Calculating the endowment's carbon footprint requires aggregating emissions data across thousands of underlying companies. Most companies do not yet report emissions, however, leaving Penn and its partners with limited company-specific data for now. The Office of Investments is therefore working with its investment partners to increase reporting and apply consistency across reporting frameworks.

Over the past year, we have engaged with many of Penn's private equity managers as they build carbon management systems. Ownership of private businesses gives Penn's buyout managers the ability to improve the emissions reporting and decarbonization of the portfolio companies they invest in. Many of the underlying portfolio companies in this asset class are small, however, without pre-existing teams dedicated to carbon management. They will need to allocate significant human and financial resources to build their carbon measurement, reporting, and mitigation capabilities. The Office's discussions with our buyout managers have focused on three primary areas: (i) the standardization of metrics for measurement and reporting, (ii) understanding industry-specific best practices for effective decarbonization, and (iii) developing a formal assessment of manager efforts towards emissions management and climate mitigation.

*Carbon reporting:* Today, many of Penn’s buyout managers are vetting consultants and setting up measurement procedures, with the goal of creating an initial baseline for each portfolio company’s emissions. A smaller number have already progressed to the point that all their portfolio companies are measuring and reporting emissions. Two of Penn’s buyout managers have had portfolio company emissions reduction targets approved by the Science Based Targets Initiative, and another has begun the approval process.<sup>1</sup> A core focus of our efforts in the coming years will be to work with our partners to track their progress towards their commitments.

A near-universal source of frustration for our investment partners is the varying set of emissions and ESG reporting requests they receive from their investors. Consensus across investors on a common set of carbon KPIs should not only drive increased reporting by investment managers but should also support clarity and accountability around operational progress. In order to support this standardization, the Office joined the ESG Data Convergence Initiative (DCI), an industry effort that aims to standardize ESG data reporting in the private markets. Among other metrics, DCI reporting includes the measurement of Scope 1, Scope 2, and, where applicable, Scope 3 emissions for portfolio companies, as well as disclosure on the percentage of electricity consumption procured from renewable power sources.<sup>2</sup> To encourage adoption among investment funds, the initiative designed the initial metrics to be simple and straightforward. We consider the current set of metrics a starting baseline and expect the initiative to expand them in scope and nuance in future years. We will encourage our buyout managers to measure and report in accordance with the DCI. We recognize that the measurement and collection of such data create material organizational costs, both at the portfolio company level and for our partners. Nonetheless, we believe the importance of managing companies’ carbon footprints, and the business risks of failing to do so, more than justify the costs.

*Industry best practices:* The endowment has an open dialogue with many of our buyout managers regarding their efforts to drive decarbonization at their portfolio companies. To better evaluate decarbonization efforts and share best practices, we closely examined companies that have set and begun to follow ambitious, science-backed decarbonization plans validated by rigorous third-party standards. We initially focused on decarbonization efforts by companies in the industrial, consumer discretionary, and consumer staples sectors, as these are three core industry exposures within our buyout portfolio.

Simplified examples highlight the range of decarbonization paths and challenges facing portfolio companies, often tied to their industry. For businesses with energy-intensive operations, a large fraction of the total lifecycle emissions typically come from Scope 1 and Scope 2 emissions. The paths to reduced emissions for such companies are relatively straightforward to identify. Decarbonization typically entails transitioning to renewable power sources and upgrading to more energy-efficient equipment, processes, and logistics—in some cases, energy efficient measures are also cost-effective in the long run, but in others, this transition can be complicated and costly to implement. In contrast, companies that have higher Scope 3 emissions footprints face a very

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<sup>1</sup> More generally, Penn’s private equity managers are increasingly participating in specific carbon management or reporting frameworks, including Science Based Targets Initiative, the Venture Capital Alliance, the ESG Data Convergence Initiative, and the Net Zero Asset Managers Initiative.

<sup>2</sup> Scope 1 emissions are the direct emissions produced by assets owned or controlled by a company. Scope 2 emissions are indirect emissions generated in the production of electricity that is consumed by the reporting entity. Scope 3 emissions are other indirect emissions that occur elsewhere in the reporting entity’s value chain. More broadly, the DCI includes eleven additional key metrics on diversity, work-related accidents, net new hires, and employee engagement.

different set of challenges. For example, aggregate emissions for a fast-moving consumer goods company are largely Scope 3 emissions from goods and services purchased upstream, the downstream lifecycle of their products (including packaging disposal), and transportation of both raw materials and finished goods. As the majority of their total carbon footprint is derived from elsewhere in their value chain, such companies will often have to use their economic influence and engagement to drive change externally. Initiatives to reduce emissions for such a company could include pushing suppliers to lower the emissions profile of their purchased goods, improving logistical efficiency, and re-engineering products and packaging.

*Formalizing assessment of manager decarbonization:* The Office is developing a more formal framework to help objectively assess managers' efforts and progress on emissions and climate mitigation. This framework will help to standardize and guide our evaluation of managers across a range of dimensions, including the integration of carbon assessments into the investment process; the measurement and reporting of emissions at portfolio companies; the quality of decarbonization initiatives at portfolio companies; and both internal and external staffing to develop and practice emissions mitigation. We plan to share our framework with our partners to help them better understand our expectations and goals in these areas.

### **Investments:**

Funding investments that drive real-world decarbonization remains one of the most impactful ways Penn will contribute to the energy transition. Today, we estimate that approximately 2% of the endowment is invested in companies that support the energy transition. Over the last twelve months, the Office initiated two new investment partnerships and significantly expanded one existing partnership focused on companies driving real-world decarbonization. Beyond these dedicated strategies, many of Penn's existing investment managers are devoting significant time and resources to identify and evaluate energy transition opportunities.

The endowment's aggregate exposure to the energy transition is derived from nearly 150 companies or assets that are directly or indirectly reducing carbon emissions. This large number of underlying holdings reflects the significant number of early-stage transition-related companies in our venture capital portfolio. Our overall exposure to companies involved in the energy transition is likely to fluctuate significantly over short periods of time, driven by new investments, exits, and even company failures. Assuming the opportunity set remains attractive, however, we expect our exposure to grow over the long term. The following segments represent the majority of Penn's energy transition exposure:

- Approximately 30% relate to transportation and mobility, with business models clustered around the EV supply chain, shared mobility, and fuel efficiency. For instance, Penn is invested in a leading lithium-ion battery recycling company. This company extracts raw materials—including lithium, nickel, and cobalt—from end-of-life lithium-ion batteries and reuses them to manufacture components for the EV battery market. The end products of this closed-loop recycling process carry a much lower emissions footprint than the full-lifecycle emissions of mined battery metals.
- Another 20% of Penn's energy transition investments are tied to power generation and distribution. In this category, companies focus on renewable energy production, energy storage, grid infrastructure, and low-carbon fuels like hydrogen. For example, one of Penn's buyout managers is scaling a company that provides equipment and installation services for solar rooftops on commercial and residential properties.

- Carbon removal and industrial decarbonization comprise approximately 30% of our energy transition exposure. To illustrate, two of Penn’s partners have made a sizeable investment in a company working with industrial emitters to capture, transport, and sequester their carbon emissions. Other examples of industrial decarbonization include investments focused on decarbonized manufacturing, supply chain improvement, waste management, and recycling of carbon-intensive materials.

As noted above, the Office recently made several new commitments to funds focused on the energy transition.

- Penn committed to a fund focused on the development and commercialization of carbon mitigation projects. The fund made its first sizeable investment in a company that develops and deploys methane-destroying infrastructure for industrial customers, thereby generating high-quality carbon credits. Methane has a materially higher Global Warming Potential than carbon dioxide, making the reduction and mitigation of methane emissions a critical factor in the fight against global warming. The company’s infrastructure reduces about 90% of the methane emissions of its industrial customers, significantly reducing their Scope 1 footprint.
- The Office partnered with a newly launched firm that invests in companies that produce the underlying products and services propelling the energy transition. The fund will invest in companies that provide the equipment, services, and technology that enable the development of industrial-scale solar and wind power generation, the ongoing upgrading and stabilization of the electric grid, and environmental testing and remediation. Many companies in the firm’s investment universe lower the cost of, improve the efficiency of, or accelerate the deployment of renewable power generation and distribution. Such businesses will play a critical role in facilitating the energy transition.
- The Office augmented its ongoing long-term partnership with an existing manager that provides bespoke financing and growth capital to businesses enabling real-world decarbonization. For instance, this manager has built a business that provides reliable charging infrastructure solutions for commercial EV fleet owners, thereby supporting a step-change increase in EV fleet adoption.