Sustainable Duke: Sustainable Investment and Procurement

by

Kaitlyn Siegel

Melissa Tso

Dr. Charlotte Clark, Advisor

April 29, 2016

Masters project submitted in partial fulfillment of the requirements for the Masters of Environmental Management degree in the Nicholas School of the Environment of Duke University

Executive Summary

Since the signing of the American College & University Presidents' Climate Commitment by President Brodhead in 2007, Duke University has been committed to achieve carbon neutrality by 2024. After developing a Climate Action Plan to achieve this goal, the Campus Sustainability Committee (CSC) chose to move beyond greenhouse gas emissions and work towards solving larger campus sustainability issues. Each year, the CSC chooses a new focus area; for fiscal year 2015, a dual focus on sustainable investment and procurement was identified. The objectives of this study are defined as follows:

Sustainable Procurement:

- Assess the current efforts toward sustainable procurement at Duke
- Compare these efforts with those documented in the 2013 Duke Masters Project
- Benchmark sustainable procurement practices at peer universities
- Report on best practices and develop recommendations

Sustainable Investment:

- Assess the current state of Duke's sustainable investment practices
- Benchmark sustainable investment practices at peer universities
- Report on best practices and develop recommendations

Data was collected through web-based research, interviews with staff at Duke and peer universities, and observational research at subcommittee meetings. Universities studied for the sustainable procurement section of this research include Harvard University, Brown University, Yale University, Stanford University, and Cornell University. For the investment portion of this research, studied universities include Harvard, Yale, Stanford, and the University of California.

The universities studied in the sustainable procurement portion of this research have all had success in influencing some areas of environmentally friendly purchasing, but most are struggling with the same issues such as cost, behavior change, setting policies or mandates, etc. Our analysis revealed five main themes of sustainable procurement at institutions of higher education: 1) EPP Guidelines or Policies 2) PO terms and conditions and RFP Language 3) Working with Vendors 4) Education of university purchasers and product end users 5) Focus on specific commodities including electronics, cleaning products, recycled paper, and furniture. Based on our findings, we recommend the following four actions:

- 1. Work with vendors to install green alternative pop-up boxes on Buy@Duke
- 2. Develop a mechanism for pre-commitment to green products on Buy@Duke
- 3. Alter RFP language for certain commodities
- 4. Continue to communicate with peer universities

For sustainable investment, the four universities studied have a similar investment model to Duke, but differ with regards to their sustainable investment policy. Common best practices of the universities studied include being signatories to sustainable investment initiatives, having environmental proxy voting guidelines, offering a socially responsible investment fund, and having a green revolving fund. Based on these best practices and the current efforts at Duke, we recommend the following three actions to create positive impact through investments:

- 1. Collaborate with other institutional investors
- 2. Draft environmental proxy voting guidelines
- 3. Create a designated green revolving fund for energy efficiency projects on campus

We believe the recommendations in both focus areas reflect not only the best practices at peer universities, but are compatible with Duke's current practices and capabilities.

Table of Contents

Executive Summary	2
I. Introduction	5
II. Objectives	6
Sustainable Procurement	6
III. Background	6
IV. Methods	
V. Findings	
VI. Sustainable Procurement Recommendations and Discussion	44
Sustainable Investment	
VII. Background	
VIII. Methods	52
IX. Findings	57
X. Sustainable Investment Recommendations and Discussion	
Appendix A: Interview Guides	85
Appendix B: EPP Guidelines	88
Appendix C: RFP & PO Terms and Conditions	
Appendix D: Duke University Guideline on Socially Responsible Investing	
Appendix E: Impact Alpha Competition Proposal	

I. Introduction

In 2007, Duke University President Richard Brodhead committed Duke to climate neutrality when he signed the American College & University Presidents' Climate Commitment (ACUPCC) (Duke University, 2009). In order to fulfill that commitment, Duke formed the Campus Sustainability Committee (CSC) consisting of faculty, staff, and students. The CSC was charged with developing a Climate Action Plan (CAP) that outlined Duke's goal of carbon neutrality by 2024, interim milestones, and strategies to achieve that goal. Tavey Capps, the Environmental Sustainability Director and head of Sustainable Duke, is in charge of managing the work of the CSC. Since the creation of the CAP, Duke has made great strides in reducing its greenhouse gas (GHG) emissions.

In the past few years, Duke wished to move beyond solely evaluating GHG emissions and explore other elements of campus sustainability (Duke University, 2012). This led to the creation of the Sustainability Strategic Plan (SSP), which reviews the status and progress of sustainability projects in the areas of water, transportation, supply chain management, recycling and waste reduction, food, and campus natural resources. Recommendations and targets for future improvements are offered as well. The CSC has standing subcommittees such as carbon offsets, transportation, and communication; but each year, the committee decides the focus of the SSP for the following academic year. Over the past three years, the SSP has covered work on procurement and waste (Liu & Shepherd, 2013b), sustainable food sourcing (Anderson, 2014), and campus natural resources (Li & Upshaw, 2015). For fiscal year 2015 (FY15), the CSC has chosen a dual focus of sustainable investment and (a return to) sustainable procurement. This study provides research efforts to support those foci.

II. Objectives

This paper, completed on behalf of Sustainable Duke, covers the topics of sustainable procurement and sustainable investment to provide assistance and recommendations to the CSC. Procurement was a SSP topic during FY2013, with a focus mainly on waste and an overview of procurement intended for future use (Liu & Shepherd, 2013). This paper will revisit that research in order to gain a current and clear understanding of the function of the procurement department, while also looking into new areas that procurement can target. Our objectives for each topic are as follows.

Sustainable Procurement:

- Assess the current efforts toward sustainable procurement at Duke
- Compare these efforts with those documented in the 2013 Duke Masters Project
- Benchmark sustainable procurement practices at peer universities
- Report on best practices and develop recommendations

Sustainable Investment:

- Assess the current state of Duke's sustainable investment practices
- Benchmark sustainable investment practices at peer universities
- Report on best practices and develop recommendations

Sustainable Procurement

III. Background

Sustainable procurement can be defined as "the pursuit of sustainable development objectives through the purchasing and supply process" (Walker, Miemczyk, Johnsen, & Spencer, 2012). It is often also referred to as green purchasing, or sustainable/environmental supply chain management. Supply chain management can be defined as "the planning and management of all activities involved in sourcing and procurement, conversion, and all logistics management activities" (Council of Supply Chain Management Professionals, 2016). In recent years, sustainable procurement has become a topic of increasing interest in both academia and business (Walker & Brammer, 2012) (Tate, Ellram, & Kirchoff, 2010). Our literary review revealed that little peer-reviewed research exists on sustainable procurement at institutions of higher education (IHE), we therefore used research on corporate sustainable procurement as a proxy.

Colleges and Universities are attempting to work towards more sustainable procurement practices, as the items that these institutions buy "constitute a significant environmental impact when summed up" (Mosgaard, 2015). Universities, such as Duke, that are concerned with sustainability would be neglecting a large part of their social and environmental impact if they did not consider how and what they buy. In addition, a lack of understanding of one's supply chain can be a large risk and ultimately negatively impact environmental and financial performance if problems are found to exist (Handfield, Sroufe, & Walton, 2005). However, organizations that proactively work with their suppliers can use supply chain management, as a competitive advantage.

It was necessary to consider stakeholder groups during our research in order to fully understand procurement at Duke and to craft meaningful recommendations; stakeholders often drive sustainability measures, and their support is necessary for sustainable procurement to be effective. According to a study by Schneider and Wallenburg, supply chain stakeholders can be placed into 3 groups: "internal [company] actors, actors external to the company but internal to the supply chain, and supply chain external actors" (Schneider & Wallenburg, 2012). In the for profit world, these three groups would be represented by corporate leadership and purchasing

management, customers and suppliers, and competitors and non-profits. Within Duke's supply chain, these groups are represented by executive leadership within the University and campus purchasers, vendors, and organizations that have an interest in procurement at IHE, such as The Association for the Advancement of Sustainability in Higher Education (AASHE).

IHE can use many tools to promote the purchase of sustainable products; through our research we found 4 commonly used tools. The first tool, electronic procurement systems, are increasingly important to the success of green procurement. E-procurement can benefit sustainable procurement in two ways: it allows customers to easily access green products in online catalogs, while reducing waste from purchasing departments (Walker & Brammer, 2012). Nevertheless, e-procurement does have some negative impacts on sustainability. Evidence suggests that e-procurement limits purchases from small, local, and minority owned businesses, as these small businesses "typically lack the capabilities to adopt e-procurement" (Walker & Brammer, 2012). These trade-offs must be assessed when developing procurement goals and strategies for implementation.

IHE can also adopt Environmentally Preferable Purchasing (EPP) Guidelines or Policies in order to promote the purchase of green products. EPP began as a United States EPA program after the signing of Executive Order 12873 by President Clinton in 1993. The Executive Order tasked EPA with creating guidelines for agencies that deal with procurement (Coggburn & Rahm, 2005). In this context, environmentally preferable refers to "products or services that have a lesser or reduced effect on human health and the environment when compared with competing products or series that serve the same purpose" (US EPA, 2016a). In 1999, EPA published 5 guiding principles:

- "Environment + Price + Performance = Environmentally Preferable Purchasing. Include environmental considerations as part of the normal purchasing process.
- 2. Pollution Prevention. Emphasize pollution prevention as part of the purchasing process.
- 3. Life Cycle Perspective/Multiple Attributes. Examine multiple environmental attributes throughout the products and service's life cycle.
- Comparison of Environmental Impacts. Compare environmental impacts when selecting products and services.
- Environmental Performance Information. Collect accurate and meaningful environmental information about environmental performance of products and services" (US EPA, 2016a).

EPP programs are either mandatory or voluntary. No evidence suggests that one approach is better, as highly successful mandatory and voluntary programs are in place all over the country (Coggburn & Rahm, 2005). Coggburn and Rahm also note that while developing an EPP is important, the success of the program is highly dependent on the "priorities and enthusiasm of the administration." In addition to the priorities of the administration, they also cite inadequate awareness and guidance, as well as decentralized decision making as challenges to EPP implementation. They suggest raising awareness of the EPP and clarifying priorities and values as ways to overcome these hurdles.

Commodity strategies are the third type of tool that can be implemented to increase green purchases. A Commodity strategy can be defined as "the specific decisions concerning sources of supply, number of suppliers, number of stocking points and relationship with suppliers that a company makes concerning any single commodity, while staying within the boundaries defined by the purchasing strategy" (Handfield et al., 2005). Handfield et al. (2005) suggest developing

green commodity strategies by first selecting a few commodities based on value and environmental importance.

An electronics policy, in the form of an EPEAT or Energy Star policy, is a very common type of commodity strategy. EPA's EPP program was responsible for launching the EPEAT initiative. According to EPA, Electronic Product Environmental Assessment Tool (EPEAT) "registered products must meet environmental performance criteria that address: materials selection, design for product longevity, reuse and recycling, energy conservation, end of life management, and corporate performance"(US EPA, 2016b). Similar to EPEAT certification for electronics is Energy Star certification. Energy Star is also an EPA program that "identifies and promotes energy-efficient products and buildings in order to reduce energy consumption" and pollution (ENERGY STAR, n.d.-a). Many state and local governments in the U.S. have adopted policies that refer to Energy Star in purchasing requirements (ENERGY STAR, n.d.-b); additionally, IHE such as Duke have adopted similar policies that promote the purchase of environmentally friendly electronics on their campuses (Duke University, n.d.-d).

IHE can make significant progress towards greening procurement by gaining the support of executive leadership, utilizing tools such as e-procurement, and taking care of "low hanging fruit", like recycled content paper. After these steps have been taken, the process of sustainable procurement becomes more difficult as "perceived trade-offs between increased environmental responsibility and performance" are encountered (Handfield et al., 2005). In the past, green products were not cost competitive due to lack of demand; now these products may be costeffective, but higher up-front costs and longer payback periods may hinder purchases (Coggburn & Rahm, 2005). Research shows that these trade-offs may become less important as

organizations experience cost savings from reduced waste when sustainable supply chain measures are implemented (Handfield et al., 2005).

IV. Methods

University Selection

For both procurement and investment, our client suggested we begin by researching IHE that are part of the Ivy Plus Sustainability Consortium, which is a group of 14 "progressive and prestigious" IHE that are committed to developing and working collaboratively on campus sustainability initiatives; see **Table 1** for a complete list of Ivy Plus Sustainability Consortium Universities (GreenerU, n.d.). Because these universities are similar to Duke with respect to academic and sustainability leadership, they provided an appropriate benchmarking starting point.

 Table 1. Ivy Plus Sustainability Consortium Universities

Brown University	John Hopkins University
Columbia University	Massachusetts Institute of Technology
Cornell University	Princeton University
Dartmouth College	Stanford University
Duke University	University of Chicago
Georgetown University	University of Pennsylvania
Harvard University	Yale University

In addition to these universities, we also used relevant sustainability related reporting frameworks to identify other IHE that are innovating in the fields of sustainable investment and procurement.

AASHE Sustainability Tracking, Assessment & Rating System (STARS) was chosen to identify universities, additional to the Ivy Plus Sustainability Consortium, that are making strides in the field of green procurement. STARS "is a transparent, self reporting framework for colleges

and universities to measure their sustainability performance" (Association for the Advancement of Sustainability in Higher Education, 2015a). Over 700 universities in 24 countries use the STARS reporting system, making it "the most widely recognized standard for higher education sustainability" (Association for the Advancement of Sustainability in Higher Education, 2015b). Two levels of access exist within the STARS system; the basic level allows IHE to register and use the tool to track and share sustainability data, while full access to the system allows the IHE to be scored and compared with other IHE (Association for the Advancement of Sustainability in Higher Education, 2015b). Any IHE can register and become a reporter, but there is a fee for full access to the system.

STARS version 1.0 was released in January 2010 and 118 universities have been scored using the system; version 2 was released in October 2013 and 175 universities have been scored. Both versions 1.0 (V1) and 2 (V2) contain sections concerning procurement, making STARS the most comprehensive reporting system to use in order to identify additional IHE to research. The version 2 scores were chosen for this analysis as they are the most recent, and changes to the credits have resulted in a more stringent grading system than in V1 (**Table 2**). STARS allows the user to filter by country, AASHE membership, ACUPCC signatory status, STARS rating, and Full Time Equivalent (FTE) enrollment. In addition, up to 4 STARS categories and subcategories can be viewed in greater detail. Scored universities were filtered to find institutions similar to Duke in student enrollment; the filter used in STARS was FTE enrollment of 10,000-19,000. We believed that this filter, and a filter for the STARS category for overall purchasing scores provided a list of universities that were most relevant to our work. IHE are able to achieve a maximum of 6.00 credits in the purchasing category of V2. Credits can be achieved for various initiatives and procurement practices including: electronics initiatives, cleaning products

initiatives, office paper initiatives, inclusive and local purchasing, life cycle cost analysis, and guidelines for business partners (**Table 2**). Some credits (or portions of credits) are awarded in full for having a stated university wide preference for certain items; other credits (or portions of credits) are awarded based on the quantity of those products purchased by the university. For an in depth description of the AASHE STARS credit system please refer to the V2 Technical Manual (http://www.aashe.org/files/documents/STARS/2.0/stars_2.0_technical_manual_-_____administrative_update_two.pdf).

This study focused on IHE that received scores of 4.00 or more as they were in the top 25% of scores for available procurement data; these higher scoring IHE were assumed to have the best procurement practices available. The IHE that fit these criteria include the University of Victoria, George Washington University, Stanford University, the University of New Hampshire, Dalhousie University, Carnegie Mellon University, and Appalachian State University. Many of the Ivy Plus Sustainability Consortium Universities used STARS V1, but had not yet participated using V2 at the time when university selection for this research was completed; Duke earned a gold rating in V1.2, but has elected to only participate as a reporter for V2.

	Version1	Credits	Version 2	Credits
Total Credits		7.5		6
Electronics	Institution wide preference for EPEAT Silver or higher computers	0.5	Institution wide preference for EPEAT or similar computers and electronics	0.25
	Actual purchase of EPEAT silver or gold standard computers and monitors	1.5	Actual purchase of computers and other electronics	0.75
Cleaning Products	Institution wide preference to purchase Green Seal or Eco Logo certified cleaning products Actual purchase of Green Seal or Eco Logo certified products	0.5	Institution wide preference to purchase Green Seal, UL Environment (Eco Logo), or similar cleaning and janitorial supplies Actual purchase of certified cleaning and janitorial supplies by main cleaning/housekeeping departments	0.25
Office Paper Purchasing	Institution wide preference to purchase recycled content office paper Actual purchase of recycled content office paper	0.5	Institution wide preference to purchase recycled content, FSC certified or similar office paper Actual purchase of paper with post consumer, agricultural residue, and FSD certified content	0.25
Inclusive and Local Purchasing	Institution supports underutilized businesses, minority owned and women owned businesses Institution gives preference to local products and businesses	0.5	Institution wide intent to support disadvantaged businesses, social enterprises and local community based businesses Actual purchase of goods from disadvantaged businesses, social enterprises and local community based businesses	0.25
Life Cycle Cost Analysis	N/A		Institution uses Life Cycle Cost Analysis when evaluating energy and water using products and systems	1
Guidelines for Business Partners	Institution wide vendor code of conduct that sets expectations about the social and environmental responsibilities of vendors	1	Institution wide policies or similar that set expectations about the social and environmental responsibility of its business partners	1

Table 2. AASHE STARS Version 1 & 2 Credits

Source: Association for the Advancement of Sustainability in Higher Education

Data Collection

A) Web-based Research

Background research was completed using the Duke University library resources and

Google Scholar. Web-based research of traditional and social media was completed for each IHE

identified above. Benchmarking research of selected schools was completed using Google;

searches included the university name, "green/environmentally preferable/sustainable

procurement" or "purchasing" -- for example, "Brown University sustainable purchasing."

A criteria matrix was created in excel in order to decide which IHE warranted further research and possible interviews of staff. Matrix categories included finding evidence of the following:

- Environmentally Preferable Purchasing (EPP) Guideline or similar
- Surplus program
- Current campus committee researching procurement
- Post-consumer recycled paper initiative
- Electronics policies (Energy Star or EPEAT)
- Purchasing website tool that helps buyers more easily locate green products
- Green cleaning products initiative
- Outreach concerning green purchasing

Based on this research, we invited all IHE for interviews that had an EPP Guideline or similar currently in place (not in development), as well as universities that may not have had an EPP Guideline, but checked every other category (**Table 3**).

University	EPP	Suraline or ci	Came, program	Recuest Committee	Electron aper 1.	Purch Durch Polic	Green Wehr	Outro- Cleaning D.	ach roducti
Duke University	х	х	х	х	х	х	х	х	
Brown University	х	х							
Columbia University		х							
Cornell University		х	х	х	х	x*	х	х	
Dartmouth College			х	х					
Georgetown University									
Harvard University	х	х			х		х	х	
Johns Hopkins University		х							
Massachusetts Institute of									
Technology		х	х					х	
Princeton University				х			х		
Stanford University	х			х	х		х	х	
University of Chicago	x*								
University of Pennsylvania		х			х	х			
Yale University	х			х	х		х		
University of Victoria		х		х	х				
George Washington University	x*					х			
University of New Hampshire				х	х		х		
Dalhousie University				х	х			х	
Carnegie Mellon University					х				
Appalachian State University					х		х		

 Table 3. Procurement peer university selection matrix

*in development

Zotero citation software was used to keep track of and organize sources.

B) Interviews

Interviews of Duke faculty and staff, as well as staff at other IHE, were conducted as part

of the data collection process. A complete list of interviews conducted for this research can be

found in **Table 4**. Duke interviews were conducted in-person throughout the data collection process, while interviews with other universities and organizations were conducted over the phone or through email responses. In person interviews ranged in length from 30 minutes to 1 hour, and phone interviews ranged in length from 15 minutes to 30 minutes. Typed notes were taken at the time of each interview.

Name	Title	Affiliation
Mary Crawford	Director of Procurement Programs & Small	Duke University
	Business Liaison Officer	
Kris Locke	Director of Strategic Procurement	Harvard University
Joe Mastracchio	Sourcing Manager	Yale University
Michael Winters	Director of E-business Procurement System	Cornell University
Sue Wilcox	Procurement Officer	Cornell University
Mary Flaherty	Unknown	Cornell University
Jessica Berry	Sustainability Manager	Brown University
Jack Soll	Professor, Materials Management	Duke University
	Subcommittee member	_
Megan Maltenfort	Sustainability Manager	VWR
Lynn Moore	Regional Director	VWR

Table 4. Interviews conducted for sustainable procurement research

Interview requests and prepared interview guides for peer IHE were emailed to sustainability staff at the selected universities in early November 2015. All interviews were completed by late January 2016. Interview guides were developed based on web-based research, as well as client and committee input (**Appendix A**). Some universities did not consent to a phone interview, but instead typed responses to the interview questions and e-mailed them back. Additional questions that arose after formal interviews were conveyed and answered via e-mail.

C) Observational Research

Observational research was conducted at Campus Sustainability Committee, Materials Management Subcommittee, and Sustainable Investment Subcommittee meetings. These groups met monthly to hear from faculty and staff involved in sustainable procurement and investment, and to provide feedback and discuss options for implementing changes at Duke. Both handwritten and typed notes were taken during these sessions and were combined afterwards to create an accurate account of committee discussions.

We provided updates and presentations on benchmarking research at one CSC meeting and nearly all subcommittee meetings. During these updates, fellow committee members were invited to ask questions and to provide feedback concerning subjects on which they wanted more information, and on what they felt the best course of action would be. The results of these presentation sessions helped inform our work, helped us tailor interview questions, and provided additional contacts at peer universities.

D) Client Meetings

In addition to committee meetings, weekly meetings with our client and advisor were scheduled throughout the 2015-2016 academic year to update them on our progress and to allow for feedback, suggestions, and questions.

Data Analysis

Collected data were saved as word files and pdfs, and were coded using electronic highlighters in Microsoft Word and Adobe Reader. After being coded by one researcher, a document was checked for reliability by the other researcher. Inter-coder reliability was relatively consistent, and any discrepancies were solved during meetings. Once coding was complete, we determined common themes from interviews, online research, and meeting notes.

V. Findings

Sustainable Procurement at Duke University

Observational Findings

A presentation by Mary Crawford, Director of Procurement Programs and Small Business Liaison Officer, at a Campus Sustainability Committee meeting yielded the following summary of function of the Procurement and Supply Chain Management Office at Duke University (23 Oct 2015 presentation to the CSC). In order to satisfy the needs of all the students, faculty, and staff on campus, Duke University Procurement and Supply Chain Management staff are responsible for organizing purchases of products ranging from office supplies and cleaning products to vehicles. This role includes establishing supplier relationships by developing and soliciting requests for proposal (RFPs), managing contracts, ensuring vendor compliance, and facilitating communication between vendors and buyers (23 Oct 2015 presentation to the CSC). Further, Duke procurement is responsible for complying with federal requirements, streamlining the buying and paying process, and working to lower costs. The Procurement and Supply Chain Management Office at Duke performs these functions for both the University and the University Health System. While the Office does work with departments, Duke's approach to purchasing on campus is decentralized and purchasing decisions are ultimately the decision of the individual.

Web-based Findings

In June 2004, recognizing the impact from campus purchasing decisions on the environment and human health, Duke adopted a set of Environmentally Preferable Purchasing Guidelines with an aim to minimize this impact (Duke University, 2004a). Under the Guidelines, the priorities of procurement and supply chain management staff are to:

- "Ensure the health and safety of workers and citizens
- Support the Durham community by purchasing goods and services from local vendors

- Procure environmentally friendly goods and services without compromising cost or quality
- Comply with all local, state, and federal laws that govern procurement activity" (Duke University, 2004a)

The guidelines contain 6 focus areas: source reduction, recycled content products, energy and water savings, landscaping, toxics and pollution, and forest conservation.

In addition to the EPP Guidelines, Duke has various other initiatives and programs to promote sustainable purchasing. Examples of such programs include an Energy Star and EPEAT policy for electronics, educational programs for housekeeping staff who could use (but do not individually buy) green cleaning products, and a large surplus program to encourage reuse of products (Duke University, n.d.-d). A summary of Duke's initiatives, as well as a comparison to peer universities included in this study can be found in **Table 6**.

Interview Findings

Duke Procurement includes environmental stewardship language in both its standard Purchase Order (PO) terms and conditions as well as certain Requests for proposal (RFPs) (13 Nov. 2015 Interview with Mary Crawford). A PO is a document created by the buyer that becomes a legally binding agreement when agreed to by the vendor. The document can include descriptions of the products, quantities, prices, payment terms, etc. (BusinessDictionary.com, 2016). An RFP is a document that an organization uses to request bids for a certain project or program; an RFP outlines contract terms and vendors reply with proposals detailing how they would fulfill those terms (Investopedia, 2011). These documents help to ensure that the products that vendors sell to Duke meet certain criteria such as minimized packaging; examples of the

language that can be found in Duke's standard PO and RFPs will be included later in the findings section of this report.

2013 Procurement Master's Project

As mentioned previously, a 2013 Duke Master's Project focused on sustainable procurement. Upon review of this study, we have determined that our findings are consistent with those of the 2013 project. However, a few changes have occurred in the past 3 years. The most significant change is the University-wide launch of the Buy@Duke system that occurred in 2015. Buy@Duke is an "online electronic marketplace [that] provides central governance and controls to better identify, support, and track green purchases across the university" (23 Oct 2015 presentation to the CSC). In 2013 the portal provided service to 3 departments and service was provided by 25 scientific supply vendors (Liu & Shepherd, 2013). The system now has expanded to 49 vendor catalogs from vendors of all types, with 18 vendors identifying green products, and is used by all University departments. Because the system is now universally used for purchases, university employees no longer need to navigate to the websites of the individual suppliers as they did in 2013. Further, this system allows much more purchasing detail to be tracked; these data were not available in 2013, which limited the extent of the study by Liu and Shepard. Basic analysis of the current data are being completed by the Materials Management Subcommittee and will be discussed later in this report. The 2013 study also included four recommendations: 1) Move to a more centralized purchasing system 2) Establish a comprehensive purchasing tool, borrowing from Yale, Arizona State University, and George Mason University 3) Add a filter for green products on Buy@Duke or publish sustainable information about vendors 4) Set double side printing as default; recommendations 3 and 4 have been followed to some degree. For

instance, Buy@Duke does not have a green products filter currently, but purchasers are able to identify green products by a green leaf icon.

Peer University Benchmarking

Overall Findings

Five universities were chosen for further study and staff interviews: Harvard University, Yale University, Brown University, Cornell University, and Stanford University. Staff at all universities except Stanford agreed to be interviewed; however, Stanford sustainability staff reviewed a summary of our research and agreed that is was an accurate. In the following section, we summarize the main sustainable procurement themes identified across studied IHE, provide a detailed comparative matrix of IHE, and summarize highlights of each university textually.

Interviews with staff highlighted five main themes of sustainable purchasing at IHE: 1) EPP Guidelines or Policies 2) PO terms and conditions and RFP Language 3) Working with Vendors 4) Education of university purchasers and product end users 5) Focus on specific commodities including electronics, cleaning products, recycled paper, and furniture; each main theme is discussed below, and all themes discussed in the interviews are listed in **Table 5**. The decisions concerning which themes to include in the main 5 were made based on client input, as well as discussion of the themes by the Duke Materials Management Subcommittee.

Theme	IHE which highlighted it
EPP Guidelines or Policy	Brown, Harvard, Yale
PO Terms and Conditions	
RFP Language	Cornell, Harvard, Yale, Brown
Working with Suppliers	Cornell, Harvard, Yale
Education	Brown, Cornell, Harvard, Yale
Electronics Focus	Cornell, Harvard,
Cleaning Products Focus	Brown, Yale

Table 5. Sustainable Procurement Interview Theme

Theme	IHE which highlighted it
Recycled Paper Focus	Cornell, Yale
Furniture Focus	Harvard
Campus Committee	Brown, Yale
Challenges	Brown, Cornell, Yale

The following information is based on interviews conducted with Kris Locke from Harvard University; Joe Mastracchio from Yale University; Michael Winters, Sue Wilcox and Mary Flaherty from Cornell University; and Jessica Berry from Brown University, supplemented in some cases by web based research, and is summarized by IHE in Table 6. Four of the five universities currently have EPP Guidelines or Policies in place to govern sustainable purchasing; copies of these Guidelines and Policies can be found in Appendix B. Additionally, two of the four universities indicated that they are looking to draft further sustainable procurement policies in the hope that executive leadership will support them. Cornell does not have a EPP Guideline or Policy in place and did not indicate any current efforts to develop one (22 Dec 2015 interview with Winters, Wilcox, & Flaherty). None of the universities interviewed for this research include environmental stewardship language in their standard PO terms and conditions; nevertheless, four universities do include this type of language in their RFPs. Four of the universities detailed their steps to work with vendors to increase green purchases; these strategies ranged from making changes to the vendor's online catalogs, to making sustainability part of the requirements for being a preferred supplier. All universities studied indicated a use of educational workshops, meetings, and marketing in order to influence either consumer behavior on campus or behavior of the users of purchased products. All universities have focused on one or more specific commodity in addition the steps detailed above. Common commodities include electronics, green cleaning products, recycled paper, and furniture; strategies used to target these commodities differed between universities. For a detailed description of the sustainable

procurement efforts by the universities included in this study please see **Table 6**, as well as the sections on the individual universities below.

		5	1	1	1	
Criteria	Duke University	Harvard University	Yale University	Stanford University	Cornell University	Brown University
EPP Guidelines or Policies	Environmentally Preferable Purchasing Guidelines	Sustainable Purchasing Guidelines; drafting policies	Sustainable Procurement Standards Guide	Sustainable Purchasing Guidelines	No guideline or policy	Environmental Awareness Policy; drafting policies
Sustainability Language in PO	Yes	No language	No language			
Sustainability Language in RFPs	Yes, amended for certain commodities	Yes	Yes, amended for certain commodities		Yes	Yes
Current Campus Committee Focusing on Procurement	1 of 2 focus areas for the CSC in FY 2016		Materials & Management Committee focusing on waste and procurement		Purchasing Focus Team	Sustainability Strategic Planning Committee
Working with Vendors	Pick up & recycling of certain productsEasy to identify green products in catalog	-Vendors comply with and report on progress in meeting Harvard sustainability goals and standards -Vendors develop CSR reports	-Auto-sub catalogs -Green products pop-up box -No idle policy for deliveries	 Pick up & recycling of certain products Working to consolidate Fedex deliveries and pickups 	-Green products appear first in searches -Fast Tracks -Preferred supplier scorecard - \$50 min. order size -Green products pop-up box	
Education and Outreach	-Teach facilities and housekeeping staff about green cleaning products	Procurement leadership team with participation from schools	-Teach staff about green cleaning products -Certified procurement staff in sustainable purchasing -Chief procurement officer in charge of change management	-Annual green products shows -Conduct FYI forums with recycling department -Work with student groups to increase education	-Proactive Marketing to departments and individuals	-Work individually with departments to identify green products -Promote reduced purchases
Surplus Program	Surplus items collected and donated within Duke and externally				ReUse programs sell or donate surplus property	Program focused on furniture reuse
Electronics	-Energy Star policy and EPEAT Standards -Electronic waste recycling program	-Sustainable IT standards -Reducing electronic waste per capita	Energy Star and EPEAT preference in procurement guide	Promote Energy Star and EPEAT electronics	Energy Star purchasing initiative	Energy Star preference
Recycled Paper	Promote use of recycled content paper	Managed program to increase purchases	Auto-sub catalog for 30% recycled content paper	All purchased paper has recycled content	Promote purchase of recycled paper through marketing campaigns	
Green Cleaning	No policy, educate staff	Green Cleaning Standards, University wide compliance by 2020	-Educate staff - List certifications to look for in procurement guide	 Use Green Seal products, microfiber cloths & vacuums w/ HEPA filters Use recyclable paper products 	Staff use Green Seal certified products and microfiber cloths	Promote use of "Green Seal approved" cleaning products, microfiber applications, and other green products
Furniture	Standardization with a focus on sustainable manufacturing processes unable to confirm or find	Limit CFRs in furniture	List certifications to look for in procurement guide	Campus Wide Agreement with manufacturer whose processes minimize environmental impact	Preferred supplier uses green purchasing, manufacturing, and distribution processes	

Table 6. Comparative analysis of sustainable procurement practices at duke and peer universities

Harvard University

At Harvard University, Strategic Procurement works with the Office of Sustainability in order to forward progress on green purchasing. Strategic Procurement represents the University in terms of administration, but departments within Harvard are not obligated to use the office when making purchases. In order to increase collaboration and the ability to leverage sourcing options, Strategic Procurement has created a leadership team that works with the different schools.

Currently, Harvard's standard PO does not contain any environmental stewardship or sustainability language in the terms and conditions. However, staff at the University has indicated that language is added to third party contracts "when necessary." Third party vendors are also asked to disclose any "initiatives that they or their primary manufactures have undertaken to address environmental issues" (2015 interview with Kris Locke).

The office is also in the process of drafting policies and procedures concerning green purchasing that they hope will be supported by executive leadership. A set of Sustainable Purchasing Guidelines were developed in order to assist the different schools in making informed purchasing decisions, but these guidelines are in the process of being updated by procurement staff and are currently not available for external audiences (2015 interview with Kris Locke). According to the University's website, the guidelines provide information on green purchasing in the following areas (Harvard University, n.d.-d):

- Energy consumption and efficiency
- Water
- Toxins and pollutants
- Bio-based products

- Forest conservation
- Recycling
- Packaging and transportation
- Green Building

Harvard has numerous other managed programs surrounding specific products (Harvard University, n.d.-c). These include University wide compliance with green cleaning standards by 2020; compliance with sustainable IT standards by 2017; a commitment to reduce and dispose of electronic waste responsibly; and an initiative to drive consumer purchases towards recycled paper. In addition to their product specific initiatives, Harvard has developed commitments concerning vendor sustainability including:

- "Requiring all major vendors to report on progress in meeting Harvard standards and specified third party environmental certifications, and demonstrate their commitment to sustainability through corporate responsibility reporting, by 2016.
- Requiring all vendors, as appropriate, to comply with applicable Harvard sustainability goals and standards by 2020, and encourage vendors to align their practices with all sustainability commitments" (Harvard University, n.d.-c).

Staff within Strategic Procurement was unable to comment on specific ways in which the office is driving consumer purchases towards EPPs, as they are only beginning to see an increase in the purchase of these products and need to analyze trends over a longer time period.

Yale University

Yale is unique among the universities interviewed as their Sustainable Procurement Standards Guide lists standards that purchasers should look for when buying a specific product (Yale University, 2011). For example, when buying light bulbs purchasers are directed to look for Energy Star certified compact fluorescent bulbs (Yale University, 2011).

No language exists in Yale's standard PO terms and conditions concerning sustainable procurement. However, the University indicated that their RFPs are very specific and make sure that certain products are sustainable. For example, procurement recently added language to the RFP for computers concerning packaging and shipping, as well as end of life management (21 Dec 2015 interview with Joe Mastracchio).

Yale is running numerous other innovative initiatives that impact sustainable purchasing. In working with their vendors, Yale has been able to auto-sub their online catalog so buyers cannot purchase anything less than 30% recycled content paper (21 Dec 2015 interview with Joe Mastracchio). Their vendor also uses a pop-up box to alert buyers to green alternatives for products in their shopping cart. Currently, the University is focusing on waste and procurement. The materials and management committee is analyzing waste on campus to see where procurement may be able to focus their efforts and effect change.

Changing the behavior of faculty and staff on campus is one of the biggest challenges for procurement staff at Yale (21 Dec 2015 interview with Joe Mastracchio). Much of the work they have done in the past attempts to circumvent the buyer, only allowing them to purchase the more sustainable product. Now they are attempting to actively work on changing the behavior of buyers at the University; the chief procurement officer at Yale is also the Leader of Change Management. They have "made progress" in this area with facilities staff and green cleaning products. By showing staff that the more sustainable products clean just as well, and don't have the same detrimental effects on human health they have been able to alter the behavior of "some employees."

Brown University

Brown, like the other universities interviewed for this research, allows departments to make their own decisions concerning purchasing but "strongly encourages" students, faculty, and staff to buy environmentally friendly products. Unlike the other universities interviewed, Brown has a policy in place that states the University's preference for EPPs; it is referred to as the Environmental Awareness Policy (Brown University, 2014). The policy encourages departments to take the following factors into account before making a purchase:

- Energy efficiency
- Shipping Materials
- Recycled Content
- Other (refers to the environmental performance of the supplier)

However, an interview with Sustainability Staff at Brown revealed that no expectation exists for faculty, staff, or students to follow the policy, and that it is "more of an initiative" (17 Dec 2015 interview with Jessica Berry). Berry also stated that the committee in charge of sustainability strategic planning at Brown has made it a goal to develop a "real" green procurement policy within the next 2 years.

Staff within the Sustainability Office at Brown was unaware of language in the PO terms and conditions and RFPs that the University issues to vendors. The procurement office indicated that language is included in RFPs for specific commodities (16 Feb 2016 e-mail from Raymond Stewart).

According to the Brown 2015 Sustainability Progress Report, Brown has an Energy Star requirement for new electronic appliances and building products. Purchasing also manages a

surplus program, which facilitates the reuse of furniture; the office is creating an online interface that will allow departments to easily procure these items (Brown University, 2015).

In order to influence consumer behavior, sustainability staff work with the different University departments independently to identify EPPs that they can purchase (17 Dec 2015 interview with Jessica Berry). Staff cited cost as one of the highest barriers to convincing consumers to buy sustainably. In an effort to overcome this challenge, sustainability staff try to promote cost savings by purchasing less unneeded equipment, and then use those savings to offset the higher costs of EPPs.

Cornell University

Cornell was the only university interviewed that does not have an EPP Guideline of Policy in place. However, the University has a large amount of programs and initiatives concerning both green purchasing and supplier labor standards (Cornell University, n.d.-b). In order to reach campus consumers and encourage green purchases, the procurement office at Cornell is involved in a "significant" amount of "proactive marketing", an example of this practice is explained below (22 Dec 2015 interview with Winters, Wilcox, & Flaherty).

No language exists in Cornell's standard PO terms and conditions concerning sustainable procurement. However, the University's RFPs contain clauses that deal with the issue. Sustainability is also part of the evaluation process for the University's vendors; scorecards are issued annually for Cornell's larger suppliers and sustainability is a part of that scoring process (22 Dec 2015 interview with Winters, Wilcox, & Flaherty).

Cornell has a large breadth of sustainable purchasing initiatives; these include:

- A Purchasing Focus Team
- Cornell Organization for Labor Action

- Cornell Students Against Sweatshops
- Equipment Efficiency Standards Policy
- A Green Cleaning initiative
- ReUse programs
- Sustainable Enterprise Association
- A Think Big Live Green Campaign

The University also promotes the use of Energy Star, EPEAT, and FSC certified products (Cornell University, n.d.-a).

Cornell engages in "proactive marketing" on campus in an attempt to influence buyer behavior. Using data on paper purchases from their e-procurement system, staff in the procurement office determined purchasers who were still buying virgin paper and specifically marketed recycled paper to them. Purchasers were sent samples of different types of recycled content paper and the IT department demonstrated that this paper worked in all copiers and printers on campus (22 Dec 2015 interview with Winters, Wilcox, & Flaherty). Procurement staff also worked with their supplier so greener options, like recycled paper, appear first in online searches. In addition, their supplier WB Mason uses online pop-ups to show purchasers green options for items in their cart. Cornell is currently attempting to implement "fast tracks," where they make it even easier to navigate to the most commonly purchased recycled content items. *Stanford University*

In line with Stanford's sustainability goals, the University's purchasing department developed Sustainable Purchasing Guidelines in order to facilitate the purchase of EPPs (Stanford University, n.d.-b). The Guidelines convey that University personnel should purchase an EPP when it performs satisfactorily and at a similar cost (taking life cycle costs into account). Procurement staff is responsible for developing and implementing campus wide agreements for EPPs and for developing contracts with suppliers that are environmental leaders. Further, if a widely recognized authority has developed a guideline for EPP, then Stanford personnel should abide by that guideline. The Sustainable Purchasing Guidelines detail the specific responsibilities of the procurement department and university purchasers in reference to buying EPPs, and also include a checklist that can guide the purchase of EPPs. Some of the standards that Stanford focuses on when deciding if a product is environmentally preferable include:

- Use of recycled or recyclable materials
- Minimal packaging
- Environmental and financial costs over the product's life
- Toxicity of materials or application
- Ability to reduce energy or water consumption
- Durability and product life
- Maintenance needs
- Environmental impact of product disposal

In addition to its Sustainable Purchasing Guidelines, Stanford also has a number of initiatives that promote sustainable purchasing (Stanford University, n.d.-a). These include:

- An initiative to promote the purchase of recycled office paper, toilet paper, and paper towels
- Recycling of used printer and toner cartridges
- Use of Green Seal certified cleaning products, as well as microfiber cloths and vacuums with HEPA filters.
- Development of a program to consolidate deliveries to campus

- Purchase of EPEAT certified electronics, and rebates for other energy star certified appliances
- Outreach in the form of a yearly green products show, and other campus education about purchasing and recycling decisions.

RFP & PO Terms and Conditions

We requested examples of environmental stewardship language in PO terms and conditions and RFPs from the universities that indicated such language was used in these documents; the universities that complied with this request include Harvard, Cornell, and Brown. Overall, the standard contract language and RFP language supplied by the universities is very general in terms of sustainability. The documents urge suppliers to consider environmental impacts, reduce packaging and waste, and to supply the universities with ample choices of green product options. RFP language can be much more specific about what a university wants in terms of EPP; however, RFPs are not solicited for every purchase/contract and sustainability language is only added for certain commodities (1 Feb 2016 email from Mary Crawford). The following are examples of sustainability language that can be found in the PO terms and conditions and RFPs of Duke and Harvard University. Full versions of the language supplied from all Universities included in this study can be found in **Appendix C**. All text in boxes has been copied directly from emails.

Duke University

Standard PO terms and conditions:

"Duke is committed to environmental stewardship, and Contractor shall take reasonable steps to minimize negative environmental impact. 1. Contractor shall minimize the amount of packaging and other incidental waste discarded in the course of distributing products and rendering other services. Contractor shall reuse and/or recycle such materials whenever feasible.

2. To the extent possible, Contractor shall opt for materials that do not pose environmental and health risks.

3. When supplying products covered by Energy Star guidelines, Contractor shall supply products that meet these guidelines. Product categories, program details, model listings, and product criteria are available at <u>www.energystar.gov</u>. In all other product areas, Contractor shall supply energy efficient products.

4. Primary Contractors must submit a plan documenting their environmental stewardship efforts.

5. Following Purchase Order/Agreement award, the Contractor is required to maintain records that identify both first and second tier efforts and submit quarterly progress reports" (1 Feb 2016 email from Mary Crawford).

Sample language from a furniture RFP:

"Duke University strives to become a leader in environmental stewardship. Toward this purpose, Duke has initiated an Environmentally Preferable Purchasing (EPP) program. Our goals are to minimize waste, reduce pollution, conserve natural resources, and model environmental protection practices within the Duke University and Duke Medicine. For details, see Duke's EPP Guidelines at <u>www.procurement.duke.edu/procurement/eppguidelines.pdf</u>. All primary suppliers must submit a plan with their bid, indicating how they intend to partner with Duke to help fulfill our environmental sustainability goals. Each plan will be evaluated based on good faith efforts and the ability for each supplier to effectively communicate their social and environmental accountability based on the following:

- Packaging with post-consumer recycled content
- Packaging that is locally recyclable
- Minimized packaging
- Packaging reclamation and reuse programs
- *Product reclamation and recycling programs*
- Reusable alternatives to commonly discarded products
- Familiarization with LEED-CI point rating systems and the availability of qualifying products
- Previous LEED-CI projects that supplier has been involved with
- A list of LEED accredited professionals within the organization and any fee schedule associated with the consultation of this staff

- The ability to provide a detailed list of materials, manufacturers, facility locations and waste produced from the manufacturing of each product offered
- Personnel that will seek-out, identify and promote environmentally friendly products through their purchasing systems, including print material and online ordering systems with a specific icon that is clearly explained in the print or online catalog
- The ability to provide quarterly spend reports with regards to green product purchases
- Active participation in Duke's EPP program, including dissemination of information and collection of recyclable and reusable materials upon delivery and at end of life
- An accessible staff that follows the fundamental beliefs stated in Duke's Environmental Statement, which can be viewed at: http://www.duke.edu/sustainability/documents/Duke Env Policy statement.pdf" (1 Feb 2016 email from Mary Crawford).

Harvard University

Harvard Standard Contract Language

"If germane to the transaction herein contemplated, Customer and Vendor shall work jointly to develop and implement programs for
Harvard that support EPP (as defined hereafter). For purposes of this Agreement, "EPP" means the practice of buying products and/or services that have a lesser or reduced impact on the environment and human health, when compared to competing products or services that serve the same purpose. To this end, Vendor shall: (i) provide an extensive selection of green products and ensure that products offered meet the appropriate criteria and (ii) work with Customer, on behalf of Harvard, to identify new green products as they become available and to actively market those products to Customer, on behalf of Harvard" (21 Jan 2016 email from Kris Locke).

RFP Language

"Harvard demonstrates institutional practices that promote sustainability, including measures to increase efficiency and use of renewable resources, and to decrease production of waste and hazardous materials, both in Harvard's own operations and in those of its suppliers. For more information visit <u>http://green.harvard.edu/</u>" (21 Jan 2016 email from Kris Locke)..

The University also indicated that additional language is added to the RFP itself, depending on what is being bid on.

The FY 2015-2016 Materials Management Subcommittee

This summary represents the process of the MMS as of April 17, 2016.

Observational Research

The 2015-2016 Materials Management Subcommittee (MMS) was tasked with the goal of creating "a structure to inform and influence the supply chain at Duke," as well as determining metrics to track the progress of procurement in the future (23 Oct 2015 meeting of the MMS). Duke uses a series of accounting codes to track purchasing data; a Company Code is the highest level of identification and separates different purchasing entities in the accounting system (Duke University, n.d.-b). From the outset the subcommittee decided to only focus on Company Code 10, which covers purchases by the University, the School of Medicine, and the School of Nursing. The daily operational needs of the hospital system and other purchasing entities are significantly different from the University system, and thus were not considered to be appropriate for this study. Two foci were defined: a macro level focus, covering what Duke can do on an operational level to influence purchasing, and a micro level focus, dealing with ways to educate and influence individual purchasing decisions. In addition, the subcommittee also wished to define what Duke considered sustainable purchasing, and benchmark with peer institutions.

In order to determine which product areas were of interest for the macro level focus, the MMS first examined a list of the major general ledger (G/L) codes used by the University. A G/L code is 6-digit accounting code used by the University, but is much more specific than the Company Code; G/L codes refer to the type of product or service being purchased, such as housekeeping supplies or copying services (Duke University, n.d.-b). From the list of major G/L codes supplied by purchasing staff, 14 codes were chosen by the MMS as their expenditures amounted to more than \$1million for Fiscal Year 2015 (FY15). The chosen codes included: computer supplies, grounds-keeping supplies, housekeeping supplies, copying service, office

supplies, office subscriptions, publication expense, machinery and equipment, minor machinery, furniture and furnishings, office machines, computers and minor, direct mail marketing, and public relations marketing (26 Jan 2016 meeting of the MMS). G/L codes are not only broad categories of product items, but are also coded by the purchaser, so G/L codes might not always accurately represent what is being bought. In order to further narrow the list of products to focus on, the subcommittee decided to look at Buy@Duke data tracking purchases for these codes; as the Buy@Duke system was launched University wide in FY15, significantly more detail concerning the types of products purchased could be accessed (26 Jan 2016 meeting of the MMS). Finally, in order to further narrow the focus, the subcommittee looked at G/L codes starting with a 6, which refers to expenses. These codes refer to products that are purchased on a daily basis by the University, and the MMS believed better opportunities would exist to influence purchasing of these items. For the chosen codes, an average of 54% of the purchases were made through Buy@Duke (2 March 2016 meeting of the CSC). The subcommittee then requested data concerning the top 10 products from the top 5 vendors in each 6xxxxx category. The data were analyzed by committee members to determine areas of large spend that could be further influenced by either implementing EPP Policies and Guidelines, or automatically substituting (auto-subbing) the greener option when a product is searched for; categories such as cleaning and housekeeping supplies, recycled content paper, vehicles, furniture, and bottled water were identified. Research is ongoing into the environmental impact of these purchases, as well as the feasibility of implementing policies in these areas. The G/L code for publication expenses was also of interest to the committee, as the amount of material that is printed is large and it is uncertain whether or not it is done on recycled content paper. The committee is considering reaching out to departments with large spend values in this area to have

conversations concerning whether or not all of the material needs to be printed, and if printing is being done using sustainable practices (2 March 2016 meeting of the CSC). After presenting draft recommendations to the greater CSC, Tallman Trask has agreed to implement some of these policies, pending final recommendation from the subcommittee.

The committee has also looked into the opportunity for creating a policy around vehicle purchases. Although no RFP or standard process for vehicle purchases exists, a policy might be feasible in this case as Tallman Trask, the executive vice president and co-chair of the CSC, signs off on all university vehicle purchases (18 Feb 2016 meeting of the MMS). It would be challenging to influence vehicle purchases in any other way, as the Procurement Office generally does not get involved until after a department has chosen a vehicle. It was suggested by Jack Soll at the February 2 meeting of the MMS to approach the most popular vehicle vendors and discuss more environmentally friendly choices with them.

Finally, it was also suggested by Casey Roe at the February 2 meeting of the MMS to include green procurement information in certifications through the Sustainable Duke Office. Sustainable Duke has University wide certifications including a Green Classroom Certification, Green Lab Certification, and Green Workplace Certification, among others (Sustainable Duke, n.d.). Green procurement resources could include cheat sheets of high impact products that can be avoided through EPP alternatives, metrics on the impacts of certain purchases, and behavioral changes that could be made to reduce purchases such as duplex printing. Sustainable procurement information will also be added to the quarterly sustainability workshops that Sustainable Duke offers (Apr 2016 presentation to the CSC).

Interviews

Eighteen out of 49 vendors within Buy@Duke already identify green products in their catalogs. We met with several committee members and representatives from VWR, an University lab supplier, and Staples, the University's preferred office supplier, to discuss how the vendors vet their labeled green products, and other ways to promote the purchase of green products. VWR stated that they can provide the university with a catalog containing only EPP, and are also able to label green products in the storeroom on campus (29 Jan 2016 meeting with VWR). The committee was also particularly interested in the purchase of 129,274 plastic water bottles from Staples; the company is able to provide detailed information concerning who on campus is purchasing these bottles, if the committee wishes to influence this spend category (18) Feb 2016 meeting of the MMS). After these meetings, committee members recommended to the CSC that moving forward Duke request all vendors label EPP in their catalogs; for those vendors who have already identified these products the committee wishes to understand how they evaluate these products, have the products labeled in Buy@Duke, and set up a standard reporting schedule and format (2 March 2016 meeting of the CSC). The MMS is still considering incentives for vendor compliance to these requests.

We also met with several MMS members and staff from Buy@Duke to discuss how the portal could be used to market green products. The vendors themselves must identify products as green or environmentally friendly for the icon to appear in Buy@Duke (18 Feb 2016 meeting of the MMS). Currently there is no way filter out all of the green products in the system; a purchaser must search for a specific commodity and then apply filters. If Duke wanted to pursue other strategies, such as the green alternative pop-up boxes that peer universities are using, the functionality would have to come from the vendor. Buy@Duke can also highlight vendors who are working with Duke on making procurement more sustainable. Some opportunities include,

highlighting of vendors on the new Buy@Duke landing page, adding a green leaf icon on the catalog billboard in order to better identify which vendors provide EPP products, including EPP information in the Buy@Duke training, and possibly including EPP information at vendor fairs (18 Feb 2016 meeting of the MMS). Buy@Duke also has the option to develop guidelines for vendors concerning EPP products and designation, and could even develop a vendor scorecard based on these guidelines. Some practices that could be included in the guidelines include designating EPP products and providing Duke with the criteria for evaluating those claims, providing a search functionality for EPP products, highlighting EPP products on their website, and providing an auto-suggest function for EPP products (2 March 2016 meeting of the CSC).

Finally, we met with Jack Soll to discuss opportunities to change purchasing behavior at Duke. In a 2015 study, Larrick, Soll, and Keeney developed 4 principles, known as CORE, that can be used to help educate consumers and allow them make more informed energy focused purchasing decisions (Larrick, Soll, & Keeney, 2015). The second and third principles focus on making information relatable to something the purchaser values and expressing the information "relative to meaningful comparisons" (Larrick et al., 2015). The study may have been focused on energy related decisions making, but we believe that the basic principles apply to all purchasing decisions; therefore, any additional information supplied to the consumer, in order to alter his or her behavior, needs to be both relatable and meaningful. For example, when explaining to a purchaser why an environmentally preferable product is "better," one should explain the environmental impacts of the products in terms that the purchaser can make comparisons to and easily understand. One example could be that selecting the non-green product option is equivalent to leaving x light bulbs on for an hour (9 Feb 2016 meeting with Jack Soll). Identifying a department or school's green percentage of total spend could also be

used to compare between departments and be an incentive to increase EPP purchases. Duke can also influence purchasing behavior by "nudging" consumers to make better choices. According to Soll, consumers have "the tendency to over-weight immediate gratification while underweighting the long-term implications of a choice" and this may lead them to buy non-EPP items (Soll, Milkman, & Payne, 2015). It is therefore more likely that consumers will buy green items if they do not have to think about the choice at the time of purchase. There are two main ways that Duke can promote "future-focused thinking:" by having purchasers choose green products they would like to buy in advance of the actual purchasing decision, or by having them pre-commit to making the more environmentally friendly decision (Soll et al., 2015). Having consumers create their own shopping cart of easily accessible, common environmentally friendly products is one way to have them choose in advance (9 Feb 2016 meeting with Jack Soll). This shopping cart could be part of a training session, or green certificate offered on campus. Additionally, if Buy@Duke had the capability of offering an entire catalog of only green products, users could pre-commit to only viewing items from that catalog in the system. Final Materials Management Subcommittee Recommendations

Tavey Capps, Environmental Sustainability Director at Duke, presented final recommendations of the Materials Management Subcommittee to the Campus Sustainability Committee in April 2016, they are:

"Macro Level Focus:

- 1) Focus on B@D current vendors expanding identification and reporting on products
- Work with campus stakeholders to research and develop EPP policies/guidelines in key areas

Micro Level Focus:

- 1) Enhance Buy@Duke EPP educational efforts
- 2) Explore other educational opportunities for purchasers
 - Develop EPP Resource Guides/Shopping Lists
 - Develop EPP focused Sustainability Workshop
 - Explore Departmental/School competitions (Apr 2016 presentation to the CSC)"

VI. Sustainable Procurement Recommendations and Discussion

Duke's current procurement model is highly decentralized and highlights the freedom of the consumer to purchase whatever he or she needs. While this model works very well for the University, it also makes meaningful progress towards more sustainable procurement difficult. Nevertheless, peer universities also use this model and in terms of benchmarking with these peers, Duke's practices are comparable. The universities studied have all had success in influencing some areas of sustainable procurement, but most are struggling with the same issues such as cost, behavior change, setting policies or mandates, etc. In addition to the recommendations from the Materials Management Subcommittee and in light of our findings, we recommend the following four actions:

- 5. Work with vendors to install green alternative pop-up boxes on Buy@Duke
- 6. Develop a mechanism for pre-commitment to green products on Buy@Duke
- 7. Alter RFP language for certain commodities (see below)
- 8. Continue to communicate with peer universities

Multiple universities studied are already using green alternative pop-up boxes to alter consumer behavior. As some vendors already have this functionality, it should be easy to include a pop-up box on the Buy@Duke system. This would be a relatively simple way to begin informing Duke purchasers about alternative product options. Additionally, the MMS is beginning to ask vendors for reporting information, and it would be interesting to see how purchases of green products change after a pop-up box was implemented.

Second, developing a mechanism of pre-commitment on the Buy@Duke portal would be a reliable way to encourage users to purchase green products. This mechanism could take multiple forms: if it were possible for Buy@Duke to develop a catalog of only green products, users could elect to only view that catalog when making a purchase; alternatively, if vendors had catalogs of only green products, users could make this same choice. Buy@Duke could also request that vendors develop a standard and easy to navigate shopping cart of green products within their catalogs. Finally, Buy@Duke could request vendors allow users to save a shopping cart of their favorite and commonly bought green products. When a consumer is trying to quickly purchase items like office supplies, they are more likely to purchase an EPP when they do not have to think about the choice (9 Feb 2016 meeting with Jack Soll). Pre-committing to this choice is one way to encourage sustainable purchasing.

Third, including sustainability language in RFPs is one way that procurement departments can make certain that commodities offered on campus are as sustainable as possible. We recommend that Duke's procurement office include the following language in their RFPs:

Packaging

It would be beneficial for all RFPs to include sustainability language concerning packaging of products. Points to highlight include:

- "Packaging with post-consumer recycled content
- Packaging that is locally recyclable
- Minimized packaging
- Packaging reclamation and reuse programs

• Product reclamation and recycling programs" (Crawford, 2016)

Janitorial Products

If janitorial products have been proven an efficient agent with no additional labor required, vendors shall endeavor to ensure that products purchased by Duke meet one of the following criteria:

- Green Seal certified
- USDA bio based certified
- Eco Logo certified
- EPA DfE Approved

In addition, vendors must strive to offer the following environmentally friendly janitorial supplies:

- Unbleached paper towels
- Micro fiber cloths and mops
- Vacuums with HEPA filters

Furniture

If products can be supplied at a similar cost, vendors shall endeavor to ensure that products

purchased by Duke meet one of the following criteria:

- BIFMA level certified
- EPA DfE Approved
- GREENGUARD certified
- FSC Certified
- SMaRT Consensus Sustainable Product Standard Certified

Lab Supply

Vendors who provide Duke with laboratory supplies must strive to label "green products" on their website, as well as on the Buy@Duke website. Vendors shall also strive to:

- Provide lab chemicals that can be easily disposed of without harming the environment
- Offer recycling programs for lab supplies such as pipettes, and safety glass
- Organize and/or take part in products shows that highlight green products

Fourth, throughout the course of this research it was evident that making procurement more sustainable was an issue that all the universities studied are interested in. These universities have found the most success in making purchases more environmentally friendly by altering the procurement cycle before the consumer is involved, as opposed to asking consumers to willingly change their behavior. Some universities accomplish this by including language in contracts that prompt vendors to supply more sustainable products, while others auto-sub catalogs making it "nearly impossible" for purchasers to buy anything but green items. Currently, many of the universities studied are trying to find ways to move past these actions and purchase even more green products by changing consumer habits and behaviors. As Duke and our peers pilot different ways to accomplish this goal, increased communication could help spread and spark novel ideas. This communication could also help provide leverage with vendors. Many of the steps that Duke could take depend upon vendor approval and ability. If Duke was part of a group of universities asking vendors to make changes that could result in more sustainable purchases, we may be able to be more successful. We believe that these recommendations, if adopted, will help fulfill the goals of the Materials Management Subcommittee for FY 2015.

Sustainable Investment

VII. Background

Socially responsible investment (SRI), also known as sustainable investment, has become a worldwide movement in the past decade (Renneboog, Ter Horst, & Zhang, 2008a). It is an investment process that integrates environmental, social, and governance (ESG) factors into investment-making decisions (Renneboog et al., 2008a). Compared to traditional investments, sustainable investment involves shareholder engagement and use of "screens" to filter, or select and exclude, assets based on criteria of interest (Renneboog et al., 2008a).

The concept of SRI originates from religious traditions and the belief that people should not exploit others for profit. In the 1920s, the United Kingdom (UK) Methodist Church, Church of England, and Society of Friends or Quakers avoided investments in "sinful" companies, such as those involved with alcohol, tobacco, defense, and gambling (Sparkes, 2003). Islamic investors likewise avoided investments related to pork production, pornography, gambling, and interest-based financial institutions (Renneboog et al., 2008a). The Pioneer Fund, formed in 1928, was the first modern mutual fund to screen investments based on such religious traditions.

Modern sustainable investment began to take form when anti-war campaigns, civil rights movements, and pro-environmental policies made investors aware of the social impacts of their investments. The first modern SRI fund, the Pax World Fund, was created in 1971 and opposed any investments profiting from the Vietnam War (Sparkes, 2003). In the 1980s, social investors involved in the anti-apartheid movement pressured companies to divert their business from South Africa, and urged other investors to exclude or divest companies pursuing activities in South Africa from their portfolios (Renneboog et al., 2008a). These divestiture campaigns played a significant part in the end of apartheid in South Africa. Environmental disasters, such as the

Chernobyl nuclear power plant explosion and the Exxon Valdez Alaska oil spill, of the late 1980s further led to investors' concerns for company environmental protection. Today, sustainable investment has come to include screens for human rights, labor, transparency, governance, and sustainability.

Some of the largest investment funds in the world currently engage in sustainable investment practices. These include incorporating ESG factors into investment decisions, engaging in shareholder activism, and applying screens (Renneboog et al., 2008a; Sparkes, 2003). Taking ESG factors into consideration means analyzing how well a company regards the environment, treats its employees, addresses the supply chain, and interacts with shareholders (Renneboog, Ter Horst, & Zhang, 2008b). This is done on top of taking financial performance into account, so SRI investors have both economic and social objectives. Shareholder activism is a way in which shareholders can influence actions of a company. Portfolio managers, who traditionally would play a more passive role in company engagement, may practice this by directly communicating with management, exercising proxy voting rights, and submitting or sponsoring shareholder resolutions (Renneboog et al., 2008a). A shareholder resolution is a proposal filed by a shareholder, "usually to protest a strategy, an action, unintended consequences, or the negative outcome of actions taken", that is voted upon by all shareholders at annual company meetings (Boerner, 2012, p. 35). The goal of these resolutions is to improve corporate policies and practices. Examples of issues addressed by resolutions are equal employment opportunity, environmental responsibility, and company transparency (Boerner, 2012; Logsdon & Van Buren, 2009). Shareholders who are absent from the meeting may vote on resolutions by casting a proxy vote (Logsdon & Van Buren, 2009). Negative screens filter out investments based on certain criteria like tobacco and fossil fuel production, while positive

screens select investments that meet minimum corporate social responsibility (CSR) standards. A type of positive screen more recently used is the "best-in-class" approach. It is based on the notion that firms in the same sector face the same social and environmental challenges, so portfolios should select firms that perform better than others (Bilbao-Terol, Arenas-Parra, & Cañal-Fernández, 2012). In the US, about 10% of total assets are managed under SRI portfolios (Renneboog et al., 2008a). These assets, which include retail and institutional funds, have grown from \$639 billion in 1995 to \$2.29 trillion in 2005. Much of the worldwide growth has been due to regulations, most of which are from Europe, requiring companies to disclose ESG information (Renneboog et al., 2008a).

Since the 1990s, multiple empirical studies have assessed the financial performance of SRI funds (Renneboog et al., 2008a). Some additionally compare SRI fund performance to conventional, non-SRI funds. The results of these studies are mixed as there are no consistent findings that SRI funds significantly under or outperform non-SRI funds (Barnett & Salomon, 2006; Bauer, Derwall, & Otten, 2007; Bauer, Koedijk, & Otten, 2005; Bauer, Otten, & Rad, 2006; Goldreyer & Diltz, 1999; Gregory, Matatko, & Luther, 1997; Hamilton, Jo, & Statman, 1993; R. G. Luther & Matatko, 1994; Robert G. Luther, Matatko, & Corner, 1992; Mallin & Saadouni, 1995; Renneboog et al., 2008b; Schröder, 2004; Statman, 2000). However, the study conducted by Renneboog et al (2008b) reveals that investors are willing to accept lower returns from firms that fulfill personal social and ethical values because despite studies showing underperformance of SRI funds in Europe and Eastern Asia, growth in sustainable investment continues in these place. The study by Goldreyer & Diltz (1999) also concludes that SRI funds using positive screens significantly outperform SRI funds that do not.

The recent growth in SRI funds have also resulted in the creation of several organizations that serve as collaborative initiatives for investors committed to sustainable investment (Gond & Piani, 2013). These include the United Nations supported Principles for Responsible Investment (PRI), Carbon Disclosure Project (CDP), and Ceres Investor Network on Climate Risk (INCR). These organizations "facilitate the emergence of collective action" by offering resources to foster collaboration among and between institutional investors and companies on issues of ESG and GHG reporting (Gond & Piani, 2013). The PRI principles, launched in 2006, focus on aligning ESG factors consistent with an investor's fiduciary responsibility and are listed below (Principles for Responsible Investment, n.d.).

- "We will incorporate ESG issues into investment analysis and decision-making processes.
- We will be active owners and incorporate ESG issues into our ownership policies and practices.
- 3. We will seek appropriate disclosure on ESG issues by the entities in which we invest.
- 4. We will promote acceptance and implementation of the Principles within the investment industry.
- 5. We will work together to enhance our effectiveness in implementing the Principles.
- We will each report on our activities and progress towards implementing the Principles."

PRI also oversees the Montreal Carbon Pledge, which was launched in September 2014 (Principles for Responsible Investment, 2014). Investors who sign the pledge commit to annually measure and publicly disclose the carbon footprint of their investment portfolios. The CDP offers the largest collection of company-level self-reported data on GHG emissions, water use, and

forest management (CDP Worldwide, 2016). Investors can become a member of the CDP as well as a signatory to their climate change, water, forests, and Carbon Action programs. Similar to the previous two organizations, INCR mobilizes investor leaders to address climate change and other key sustainability risks while building low-carbon investment opportunities (Ceres, n.d.).

VIII. Methods

University Selection

Similar to the methods used in the sustainable procurement research for this report, we began by researching IHE that are part of the Ivy Plus Sustainability Consortium. Other IHE for sustainable investment research were identified using The Global Universities Index (GUI) and recommendations of members of the Duke University CSC Sustainable Investment Subcommittee. GUI is a report conducted by the Asset Owners Disclosure Project (AODP), an independent non-profit that works with long-term investment funds to improve disclosure and industry best practices in order to address risks posed by climate change (Asset Owners Disclosure Project, n.d.). The Index assesses and ranks universities worldwide based on the financial risks that climate change poses to their investments (Asset Owners Disclosure Project, 2015). The universities are ranked using a rating scale from AAA to X as shown in **Table 7**, where AAA is the highest rating.

Rating
AAA
AA
А
BBB
BB
В
CCC
CC
С
D
Х

 Table 7. Sustainable investment university selection matrix

We were not only interested in schools ranked highly by the index, but also those that have an endowment size similar to Duke's. Five schools had a rating of CC or better on the rating scale; the remaining schools either ranked a D or an X. Of the top five schools ranked, only University of California (UC) was selected for further research because the other four schools have endowments less than \$1 billion. By suggestion of the Sustainable Investments Subcommittee, the University of Texas system was selected for further research as well, due to its large endowment size and transparency of its investment holdings, which must be published annually and available for public viewing.

Data Collection

A) Web-based Research

As with procurement, Duke University Library resources and Google searches were used to gain a background understanding of sustainable investment. Information about sustainable investment policies, endowment size, relevant organization memberships, and non-endowment campus investment projects were found using a combination of different online sources. If a university submitted an AASHE STARS report, details about the university's sustainable

investment committee and policies regarding the endowment were obtained from the credits for Committee on Investor Responsibility, Sustainable Investment, and Investment Disclosure under the Investment subcategory. As suggested by our client, we obtained information for similar content from the Sustainable Endowments Institute's College Sustainability Report Card. Specifically, we looked in the categories of Endowment Transparency, Investment Priorities, and Shareholder Engagement. Another online resource used was the Intentional Endowments Network, which provides information about selected schools' sustainable investment initiatives and commitments, and links to webpages for Investment Policy Statements, Sustainable Investment Funds, Committees on Investor Responsibility, and other sustainable investing practices. The Billion Dollar Green Challenge was used for research regarding green revolving funds. Individual Google searches for each university were conducted by typing the school name and "sustainable/socially responsible investing" and similar phrases to find information that the resources listed above did not already provide.

Based on our research, certain schools were eliminated for interview contact because too little information was available about them online. Universities chosen for interviews first had to have endowment size similar to Duke's (defined as \$1 billion or higher). Second, they had to have three or more of 8 criteria, which can be seen as the column headings in **Table 8**:

Table 8. Sustainable investment university selection matrix

University	PRI Siener	CDP Sign	Sustain-4.	Investment p. c.	Green p. Construction Construction	SRI fund	Educaria	Interact outreach	cat to SIS members
Duke University			х	x		х			
Brown University				x		х			
Columbia University				x			x		
Cornell University					х				
Dartmouth College				x	x				
Georgetown University				x	х				
Harvard University	х	х	х	х	х	х		х	
Johns Hopkins University				x					
Massachusets Institute of Technology	/			x	х				
Princeton University			х		х				
Stanford University			х	х	х				
University of Chicago						х			
University of Pennsylvania				x	х				
Yale University			х	х	х			х	
University of California	х	х	х	х	(x)	(x)		х	
University of Texas					(x)				

(x) at individual campus

After presenting our preliminary research of the schools, members of the CSC showed great interest in Yale's Carbon Charge Project, Harvard's Social Alternative Fund, and UC's framework for sustainable investing. Taking into consideration the above criteria and the interest from the Sustainable Investment Subcommittee members, we narrowed down the schools to four: Harvard, Stanford, Yale, and UC. These four were also chosen because more information about sustainable investment practices at these universities were available from the resources utilized compared to the other universities on our list, and the four are consistently recognized leaders in university sustainable investment.

B) Interviews

Interviews of Duke faculty and staff, as well as staff at other IHE, were conducted as part of the data collection process (**Table 9**). Refer to the methods section above about the interview request process. For sustainable investment, Duke interviews were conducted in-person and ranged in length from 15 to 40 minutes. Interviews with other universities conducted over the phone ranged from 15 minutes to 1.5 hours. Handwritten notes were taken at the time of the interviews.

Table 9. Names and title of staff and facu	lty interviewed at Duke and	peer universities
--	-----------------------------	-------------------

Name	Title	Affiliation
Jennifer Dimitri	Chief Compliance Officer	DUMAC
Tom Hadzor	Associate University Librarian for Development	Duke
Kevin McCarthy	Associate Dean, Nicholas School	Duke
Betsy Poole	Director of Annual Giving and Major Gifts Officer, Divinity School	Duke
Beth Sturkey	Director of Development, Sanford School	Duke
Alicia Seiger	Deputy Director, Steyer-Taylor Center for Energy Policy & Finance	Stanford
Ryan Laemel	Carbon Charge Project Coordinator	Yale
Amy Jaffe	Executive Advisor	UC

C) Observational Research

Our methods for observational research for sustainable investment were identical to those

described for sustainable procurement.

D) Client Meetings

Our client meetings for sustainable investment were identical to those described for

sustainable procurement.

Data Analysis

Our methods for data analysis for sustainable investment were identical to those described for sustainable procurement.

IX. Findings

Sustainable Investment at Duke University

Duke University Endowment

Duke University Management Company (DUMAC) manages Duke's \$7.3 billion endowment fund, also referred to as the Long Term Pool (LTP), as well as the employees' retirement plan, Duke University Health System investments, and The Duke Endowment assets, which collectively totals over \$16 billion¹ (Duke University, n.d.-e). DUMAC was created in 1989 by the University's Board of Trustees and is governed by an 11-member Board of Directors that includes the President and Executive Vice President of Duke, President of DUMAC, Chair of the Board of Trustees, and trustees and investment professionals appointed by the Board of Trustees Executive Committee (Duke University, n.d.-e). The investment organization follows an endowment model of investing, meaning it hires third party investment managers to invest most of the assets (Dimitri, 2015a). The portion that is not invested via third party managers is directly invested. Investments done through third party managers are typically invested in publicly traded companies or private partnerships. Confidentiality agreements with managers restrict communication about these investments outside of DUMAC; in most instances, DUMAC staff and board members have access to the entire portfolio, but due to contractual restrictions and other considerations, the information is not disclosed to the broader Duke community

¹ Not to be confused with Duke's overall endowment fund, The Duke Endowment is a private foundation created by James B. Duke in 1924 to support higher education, health care, rural church, and child care in North and South Carolina (The Duke Endowment, 2015). For clarity in this document, we will refer to the endowment funds of Duke University as Duke's endowment funds, and to the assets of The Duke Endowment as TDE assets.

(Dimitri, 2015b). These arrangements give Duke an advantageous ability to gain access to preferred investments and fee-reducing arrangements, which benefits Duke's bottom line and helps it meet investment goals.

Duke's Board of Trustees oversees DUMAC's management of the University's \$7.3 billion endowment investments. They have a fiduciary responsibility to maximize the financial returns of these investments, while taking into account appropriate risks and ethical factors (Duke University, 2004b). Currently, investment decisions made by DUMAC undergo positive and best-in-class screening as well as ESG factor analysis (Dimitri, 2015a). Positive screens are conducted for local community investments and companies with positive environmental impacts, such as renewable and clean energy companies (Duke University, n.d.-f). Regarding ESG consideration, the University's Guideline on Socially Responsible Investing (**Appendix D**) set forth in August 2004 gives the Board of Trustees authority to instruct DUMAC to take special action when a corporation's policies or practices are found to cause "substantial social injury" (Duke University, 2004b). The actions listed in the Guidelines are exercising university shareholder rights, direct correspondence with company management, divestment of company holdings, or any other action deemed appropriate.

Before the Board of Trustees decides what actions to instruct DUMAC, they receive recommendations forwarded by the President of Duke (Duke University, 2013). The Advisory Committee on Investment Responsibility (ACIR) was created to assist the President in making recommendations consistent with the Guideline on Socially Responsible Investing (Duke University, 2013). The ACIR is comprised of 14 voting members: a trustee, two undergraduate students, two graduate students, one alumnus, four faculty members, the University Counsel, the

Deputy Treasurer, and two administrative appointees chosen by the President. Their responsibilities include the following:

- "Receive issues referred to it by members of the Duke community;
- Monitor trends and activities in investment responsibility that have an impact on educational institutional investors;
- Conduct research, update Duke's files on companies, and provide analyses when requested by the President;
- Make recommendations to the President on how to vote proxies when the committee believes proxies should be voted outside the standard protocol of 'economic interest;' whether to sponsor shareholder resolutions; whether to correspond with the management of corporations directly in which the University holds an identifiable equity position; when to divest; and on any new issues, which may warrant attention" (Duke University, 2013)

Duke has made decisions in the past regarding company policies and practices found to cause "substantial social injury." The three cases were in regards to the apartheid movement, Darfur, and conflict minerals (Cox, 2014). In 1986, Duke committed to divest \$36 million worth of holdings in companies doing business in South African that refused to end racial segregation and discrimination in employment practices (Divest Duke, 2013; The New York Times, 1986). The action was taken to bring about change in the South African government system. Similarly in 2008, the ACIR recommended and the Board of Trustees approved a resolution prohibiting Duke from making investments in companies doing business in Sudan as a protest against the human rights violations in Darfur (Duke Today, 2008). This was the first time the ACIR made recommendations following the Guideline on Socially Responsible Investing since its formation

in 2004. Duke's divestment in conflict minerals occurred in 2012, and also resulted in a resolution as recommended by the ACIR (Riddell, 2012). The recommendations were for Duke to:

- Adopt the proxy voting guideline to vote in favor of "well-written and reasonable shareholder resolutions that ask companies for reports on their policies and efforts regarding their avoidance of conflict minerals and conflict mineral derivatives"
- Engage with companies that report continued use of conflict minerals
- Review the policy five years after adoption to reevaluate the full consequences

The most recent issue referred to the ACIR by members of the Duke community is in response to the growth of the fossil fuel divestment movement, which, in-part, prompted the development of the Sustainable Investment Subcommittee. In Fall of 2013, a group of graduate students organized the Divest Duke campaign to urge the university to divest its endowment funds from the top 200 publicly-traded fossil fuel companies based on carbon reserves (Wang, 2013). Since its formation, Divest Duke has expanded to include undergraduates, gathered over 3,500 petition signatures by students, created working groups to focus on different aspects of the campaign, held open forum meetings and discussion panels, and gathered commitments from alumni to not donate until the university divests (Divest Duke, 2013). In December 2013, Divest Duke put forth a formal proposal for fossil fuel divestment to President Brodhead and the ACIR, asking them to publicly remove Duke's investments from fossil fuel companies identified by the Carbon Tracker Initiative (Divest Duke, 2013).

In response, ACIR members considered the request but rejected the proposal, recommending against divesting on grounds that the Guideline on Socially Responsible Investing was not properly met (Cox, 2014). The specific reasons include:

- a lack of sufficient discourse on the subject
- a lack of clarity that divestment will have any impact on our dependence upon fossil fuels
- a lack of symbolic value in light of Duke's other steps towards using clean energy and limiting CO₂ emissions
- the companies in question have not "been afforded reasonable opportunity to alter their activities" (Cox, 2014, p. 10)

In a report addressed to President Brodhead on November 24, 2014, the ACIR unanimously approved several recommendations it believed Duke can take while maintaining holdings in fossil fuel companies that would be consistent with responsible action of Duke's endowment fund (Cox, 2014). These recommendations include:

- "Annual reports by DUMAC to the ACIR on Duke's fossil fuel energy and clean energy/ technology holdings;
- Regularly meeting with DUMAC representatives to discuss DUMAC's programs, policies and practices designed to support through its investment activity reductions in carbon emissions and promotion of non-fossil fuel energy;
- Directing DUMAC, consistent with the fiduciary obligations of its officers and directors, to have among its strategies targeting investments that advance environmentally friendly clean energy strategies;
- With respect to significant direct equity holdings in fossil fuel companies, directing DUMAC to engage those companies to encourage their managers to develop strategies consistent with the quest for clean or cleaner sources of energy; and
- When exercising the power to vote proxies, directing DUMAC to support well-crafted and reasonable proposals that appear consistent with the objective of encouraging a firm's

managers to report on, or take action with regard to, efforts to reduce carbon emissions" (Cox, 2014, pp. 1–2).

President Brodhead forwarded this report to Divest Duke on January 27, 2015 with a statement of agreement with the report's recommendations (Brodhead, 2015).

Social Choice Fund

On October 2013, Duke established a Social Choice Fund as an alternative fund within the endowment for donors interested in having their contributions invested in a more socially responsible manner (Schoenfeld, 2013). The current investment vehicle is the Vanguard FTSE Social Index Fund, which screens for certain social, human rights, and environmental criteria (23 Mar 2016 meeting of the SIS). The fund has a minimum donation requirement of \$50,000, but it has yet to receive contributions. Interviews with development officers from the Nicholas School, Duke Chapel, Duke Libraries, Sanford School, and Divinity School were conducted to understand why there has been no donor contribution. Each staff member we interviewed informed us of the process development officers take when donors want to make a contribution. Because all four of the development officers interviewed had no previous knowledge of Duke's Social Choice Fund before our mention of it, they only offered donors the option of investing their money into Duke's LTP (Interviews with University Development Staff: Hadzor, 2015; Poole, 2015; McCarthy, 2015; Sturkey, 2015). The Social Choice Fund was therefore not presented as an alternative. Kevin McCarthy and Beth Sturkey mentioned that there is likely interest among their donors in investing through the Social Choice Fund, but Tom Hadzor and Betsy Poole believe that donors would only be interested if the fund is shown to generate a return competitive with the LTP because donors want to maximize their contribution. Since our initial contact, Kevin McCarthy has spoken with staff at the Office of Gift Planning in regards to

getting information about the Social Choice Fund added onto the Duke Forward website. This information is now included under the Frequently Asked Questions page at https://dukeforward.duke.edu/ways-to-give/endowment/endowment-giving.

Peer University Benchmarking

This section provides findings about the four universities chosen for further study and staff interviews about sustainable investment practices.

Overall Findings

Due to the sensitive and confidential nature of the topic, staff at Harvard, Stanford, and Yale preferred not to release information beyond what is public on their websites. Because UC is a public system, they were open to an interview to discuss sustainable investment practices regarding their endowment.

Three of the four universities studied are currently members of one or more organizations for investors committed to sustainable investment. As previously mentioned in the background, the three major organizations for institutional investors are PRI, CDP, and INCR. **Table 10** shows which universities are members of these three. UC is the only university of the four studied that has additionally signed the Montreal Carbon Pledge.

Like Duke, the four universities studied use third-party investment managers. With the exception of Yale, which solely uses third party managers, the three other schools also have internal investment professionals to make direct investments of the endowment. Additionally, all the universities studied have some form of sustainable investment policy addressing non-financial factors in investment-making decisions. These approaches are integrating ESG criteria into decisions, exercising proxy voting rights on environmental or sustainability issues, applying negative and positive screens, collaborating with companies and other institutional investors,

conducting a carbon footprint of the portfolio, and providing annual reports of investments to increase transparency.

Three of the universities studied have some form of a social choice fund similar to Duke's, but each is managed differently. Yale's SRI fund is a small portion of the endowment and is managed by undergraduate students. The two other university SRI funds lie outside of their endowment. Harvard's is invested in an equity fund, while the one at UC Berkeley is managed by students pursuing a Master of Business Administration (MBA) or Master of Financial Engineering (MFE). Although not traditionally linked to sustainable investment, all four universities studied also have a campus green revolving fund (GRF). A GRF is a selfgenerating fund for energy efficiency, renewable energy, waste reduction, and sustainability projects with cost savings (Billion Dollar Green Challenge, n.d.-b). Such cost savings are used to replenish the initial fund. These funds have been successful investment vehicles outside the endowment as the funds finance projects with short payback periods and high cost savings. Each fund has therefore grown from their initial value. For a detailed description of the sustainable investment efforts by the universities included in this study, see **Table 10** as well as the sections on the individual universities below.

Criteria	Duke	Harvard	Stanford	Yale	UC
Endowment size (billion \$)	\$7.3	\$35.9	\$21.4	\$23.9	\$8.8
Investment model	Mainly use third party managers; small portion of direct investments	Both internal investment professionals and third party managers	Mainly use third party managers	External investment managers in 7 asset classes	Both internal investment professionals and third party managers
Sustainable investment policy	Socially responsible investing guidelines	3-pronged approach 1. ESG integration 2. Active	Investment responsibility core social policy statements	The Ethical Investor guidelines	Framework: ESG integration, collaboration, active ownership, investing in

Table 10. Comparative analysis of sustainable investment practices at Duke and peer universities

Criteria	Duke	Harvard	Stanford	Yale	UC
		ownership 3. Collaboration			solutions, and reporting
PRI signatory	No	Yes	No	No	Yes
CDP signatory	No	Yes	No	No	Yes
INCR signatory	No	No	Yes	No	Yes
Exercise proxy voting rights	Yes	Yes	Yes	Yes	Yes
Environmental negative screen	No	No	Yes; coal	No	No
Social choice fund	Yes	Yes (no minimum) Parnassus Core Equity Fund	No	Yes; portion of Dwight Hall endowment	No; SRI option for private pension, Berkeley Haas School of Business SRI fund
Green revolving fund	No	Yes; \$12m	Yes; \$619,000	Yes; \$100,000	Yes; UCLA \$15m
Other				Carbon Charge Project	Carbon footprint of portfolio

Harvard University

The Harvard Management Company (HMC) was formed in 1974 (Harvard Management Company, 2015a) and manages Harvard University's \$35.9 billion endowment (National Association of College and University Business Officers, 2015). Under a hybrid model of investing, HMC manages funds through both internal investment professionals and third-party managers (Harvard Management Company, 2015a). HMC takes a three-pronged approach to sustainable investment: ESG integration, active ownership, and collaboration. They assess prospective funds and direct investments for ESG risks when making decisions, exercise proxy voting on environmental issues on a case by case basis, engage with companies on ESG issues of concern, and work with global investors to develop and define sustainable investment best practices through their involvement in initiatives (Harvard Management Company, 2015b). HMC is a signatory to the CDP's climate change program and is the first university endowment in the US to be a signatory to PRI (Harvard Management Company, 2015b).

In 2013, Harvard established the Social Alternative Fund for its donors (Weinstock, 2013). This fund, managed separately from the endowment, is invested in the Parnassus Core Equity Fund, which gives special consideration to ESG factors. The Social Alternative Fund has no minimum donation amount, and at the beginning of each year, 20% of the fund's market value will be used to support financial aid at the university. It is currently provided as an option to potential donors through Harvard's Alumni website (Harvard University, 2016).

Harvard additionally has several programs and funds for campus sustainability projects. As part of the Billion Dollar Green Challenge, Harvard started a \$12 million green revolving fund in 2001 (Harvard University, n.d.-b). This fund provides up-front capital for highperformance campus design, operations, maintenance, and occupant behavior projects that reduce environmental impact. Funded projects have a maximum payback period of 10 years and are repaid back into the fund with operating cost savings. There have already been 200 projects supported with over \$4 million in annual energy savings since the fund was established. Harvard's Student Sustainability Grant Program, established in 2010, also offers funding to support smaller student efforts to reduce GHG emissions and promote sustainability (Harvard University, n.d.-e). Another fund recently created in 2014 is the Climate Change Solutions Fund (CCSF) to support climate and energy research initiatives (Harvard University, n.d.-a). The university committed \$1 million in grant funding for the 2014-2015 academic year. The Harvard Center for the Environment has two other funds: undergraduate summer research fund and faculty grants for exploratory research. Both funds provide financial support for research projects that address problems related to energy and the environment (Harvard University, 2010). As

Harvard is a very decentralized university, there are many other funds across their 12 schools that provide similar resources as those mentioned above (Durrant, 2016).

Stanford University

Established in 1991, Stanford Management Company (SMC) invests and manages the university's \$21.4 billion endowment (National Association of College and University Business Officers, 2015; Stanford Management Company, 2014). It is governed by a Board of Directors appointed by the Board of Trustees, and provides information on endowment holdings and performances by broad asset category. SMC primarily invests through third-party managers and makes some direct investments itself, but is in the process of transitioning to using all external managers since the introduction of a new CEO (Seiger, 2016). Additionally, SMC is a current member of INCR.

Stanford's Advisory Panel on Investment Responsibility and Licensing (APIRL) was created in 1971 with the adoption of the Statement on Investment Responsibility. The panel, made up of 12 voting members comprised of students, faculty, staff, and alumni, advises the President and Board of Trustees on social and environmental impacts of Stanford's investments (Stanford Report, 2015). The APIRL factors in corporate policies or practices that create substantial social injury in investment decisions. The university also has a sustainable investment policy that includes negative screens, environmental sustainability proxy voting guidelines, and core social issue policy statements. Stanford applies negative screens for coal, tobacco, and human rights. Under the environmental sustainability proxy voting guidelines, Stanford votes "yes" on resolutions for companies to adopt sustainability principles and analyze, reduce, and report actions related to GHG emissions caused by company action (Stanford University, 2013). Outside the endowment, Stanford has had a version of a green revolving fund called the Energy Retrofit Program (ERP) since 1993 (Flynn, 2011). This fund targets campus projects aimed at resource reduction and conservation to generate energy savings. Funding therefore originated from the Utilities Division, but is annually replenished by Stanford's central administrative budget. Priority is given to projects with a five year simple payback period and strong return on investment. Between 2004 and 2012, the ERP had an average annual ROI of 22%. In 2004, Stanford introduced the \$30 million Whole Building Energy Retrofit Program (WBERP) to work in complementary to the ERP. This fund targets larger scale, multi-million dollar projects in the 12 most energy-intensive buildings on campus. Average annual ROI has been 23%, and building energy consumption is projected to decrease by 28% after retrofits (Flynn, 2011).

University of California

UC has an \$8.8 billion endowment (Office of the Chief Investment Officer, 2016). It is managed by the Office of the Chief Investment Officer of the Regents (OCIO). The investment portfolio itself is managed both internally and externally, and consists of equities, fixed income securities, and alternative assets. These holdings are publicly available on their website for viewing. In 2015, UC's framework for sustainable investment committed the university to three actions:

- 1. Join and participate in sustainable investment collaborative initiatives
- Integrate ESG factors as a core component of portfolio optimization and risk management
- Allocate at least \$1 billion over five years to climate change solutions (Office of the Chief Investment Officer, n.d.)

To follow, OCIO has partnered with PRI and select global investors to develop best practices for addressing climate change and carbon at the portfolio level (UC Office of the President, 2015a). UC also became the first public university in the US to be a signatory to PRI and the first university worldwide to sign the Montreal Carbon Pledge. It is additionally a member of INCR and signatory to the Japan Stewardship Code and CDP's climate change, water, and forests programs (Bachher, n.d.).

By signing the Montreal Carbon Pledge, UC pledges to measure and publicly disclose the carbon footprint of their investment portfolio. As two-thirds of the securities within their portfolio do not report on carbon footprint, UC used two organizations (MSCI and South Pole Group) to calculate the carbon footprint of their entire portfolio in 2015 (Chief Investment Officer of the Regents, 2016). The results produced had a 16% deviation, with differing percentages of companies contributing to the footprint (Jaffe, 2016). Though most of their holdings are invested in low carbon companies, the analysis allowed UC to gain knowledge of companies susceptible to climate risk. As a result of the calculation, UC decided to divest from coal mining securities and oil sand companies on the basis that they are investment risks (Jaffe, 2016).

In regards to ESG integration, UC is engaging with their external fund managers to ensure that they understand ESG criteria. OCIO will implement asset class-specific manager selection and monitoring guidelines, incorporate ESG criteria into agreements, and review manager performance against a set of ESG performance indicators (Jaffe, 2016). This ensures that the investment goals of managers are aligned with the goals of the UC.

UC's plan to commit \$1 billion over the next 5 years in investment capital for climate change solutions is ongoing (UC Office of the President, 2015a). It is not just a social statement,

but a statement about where UC believes good long-term investments will be (Jaffe, 2016). UC has already signed a letter of intent to invest \$500 million through Aligned Intermediary, a new non-profit investment advisory group that will link large, long-term investors to clean energy projects (Aligned Intermediary, n.d.). UC is in the process of helping to create screens for these investments with the goal that they will give returns in line with the endowment fund (Jaffe, 2016). UC is also the only university that has joined the Breakthrough Energy Coalition, a group of investors led by Bill Gates committed to invest in clean energy technology (UC Office of the President, 2015b). Another investment is the UC Ventures fund established in 2014 as an independent fund to pursue investments in UC research-fueled enterprises (UC Office of the President, 2014). It has an initial commitment of up to \$250 million and will promote entrepreneurship and innovation at their universities. The fund involves an independent advisory group of leading figures that students can go to for advice and industry insight.

Funds and programs for sustainability also exist at each of the 10 individual UC campuses to help reach the system-wide goal of carbon neutrality by 2025. Although there are many projects, a few stand out with regards to sustainable investment. UCLA started a \$15 million green revolving fund in 2014, making it the largest university GRF (Billion Dollar Green Challenge, n.d.-c). UC Berkeley's Haas School of Business has an SRI fund. Created in 2008, the fund takes into account ESG factors in additional to financial factors, and is managed by MBA and MFE students interested in finance and corporate responsibility (Berkeley Haas, n.d.). Since its founding, the fund has grown from the initial investment of \$1.1 million to over \$2 million. The SRI Fund's annual report highlighting the investment approach, performance, holdings, and portfolio management can be found on the Haas website. Though there is no system-wide SRI fund for donors, there exists a social responsible investment option to manage

private pensions of faculty members (Jaffe, 2016). This is available to faculty when they sign up for options as part of their benefits package.

Yale University

Yale was one of the first to address ethical responsibilities of institutional investors. In 1969, professors and students at the university wrote the book *The Ethical Investor: Universities and Corporate Responsibility*, which provides guidelines for how a university could consider factors other than financial returns for investment decisions (Yale University, n.d.-b). Yale adopted such guidelines in 1972, establishing the Advisory Committee on Investor Responsibility (ACIR), which guides Yale University's Investment Office in managing the school's now \$23.9 billion endowment (National Association of College and University Business Officers, 2015). In August 2014, Yale updated their proxy voting guidelines to include climate change (Yale University, n.d.-d):

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

About 75% of the endowment fund originate from donor gifts, while the remaining comes from quasi-endowment money that the Yale Corporation Investment Committee chooses to invest and treat as endowment (Yale University, 2014). Yale only makes investments through external fund managers in seven asset classes: private equity, real estate, absolute return, foreign equity, natural resources, domestic equity, and fixed income. Yale has about \$1.4 billion invested

in sustainability industries, which includes certified sustainable timber land, renewable energy, and clean technology investments (Association for the Advancement of Sustainability in Higher Education, 2011). Additionally, a small portion of the endowment of Dwight Hall, a non-profit organization on campus, is managed by 20 undergraduate students as an SRI fund (The Dwight Hall SRI Fund, n.d.). Its portfolio consists of a mix of mutual funds, fixed income, and real estate funds. Created in 2008, the fund is meant to teach students about different asset classes, SRI alternatives, and manager selection criteria.

On August 2014, Yale's President created a task force to investigate the feasibility of and develop a blueprint for a university-wide carbon pricing mechanism to incentivize campus units to reduce their carbon footprint (The Presidential Carbon Charge Task Force, 2015). With building-level energy metering systems in place throughout the campus, the six-month pilot for the Carbon Charge Project began on December 1, 2015 and will end May 31, 2016 (Laemel, 2016). Scopes 1 and 2 emissions will be covered, but there are plans to evaluate and include scope 3 air travel emissions at a later time. This pilot is testing four different carbon pricing models among 20 university buildings to determine the best model for Yale's campus (Yale University, 2015). The four models involve a redistributive charge, a performance target, an energy efficiency earmark, and a new energy bill. The models work to target behavioral carbon consumption to ideally achieve a long-run 5-10% reduction in building energy. Other models that were considered but excluded in the pilot were a cap and trade model, and models used by Microsoft and Disney (Laemel, 2016). The federal government's value for the social cost of carbon of \$40/ton was used for the pilot (The Presidential Carbon Charge Task Force, 2015). The first bill for the pilot is expected to come soon after accounting for and evenly allocating losses from the on-campus power plant, which is usually at 3-5% (Laemel, 2016). At the end of
the pilot, each model will be evaluated by staff preferences and carbon reductions compared to historic three-year averages.

There are several projects and funds on campus to finance sustainable projects at Yale. In 2014, the university announced a committed \$21 million in capital investment, \$7 million per year for 3 fiscal years, for projects that improve energy conservation and GHG reduction in campus buildings (Salovey, 2014). Projects scheduled for completion are in 10 buildings and five parking garages. These investments include an Energy Solutions Fund of \$100,000/year rewarded to student energy efficiency projects. Yale also has a \$100,000 green revolving fund called the Sustainability Microloan Fund created in 2005 (Yale University, n.d.-c). This fund rewards members of the Yale community between \$500-\$25,000 to projects with short payback periods that reduce energy use, water consumption, material purchasing, or waste production. From 2015-2019, Yale plans to offer two \$15,000 fellowships annually in grant funding for student, faculty, and staff ventures in sustainability (Yale News, 2015). These Green Innovation Fellowships offer 3-5 dedicated mentors from relevant fields as well. The Yale Community Carbon Fund (YCCF) supports local carbon mitigation projects for low income-people in New Haven (Yale University, n.d.-a). Contribution for this fund is financed by contributions from Yale-affiliated individuals or groups and donor grants.

The FY 2015-2016 Sustainable Investment Subcommittee

Throughout the academic year, the conversation within the Sustainable Investment Subcommittee took into consideration the recommendations by the ACIR, but prioritized tasks that would integrate well with the current investment structure of DUMAC.

As a direct response to the Divest Duke and ACIR reports, the Subcommittee wanted to avoid negative activities such as divestment and discuss positive activities Duke can take

regarding the endowment (5 Oct 2015 meeting of the CSC). As such, the initial focus was to explore opportunities for Duke to be proactive in supporting sustainable technology through endowment investment portfolio, proxy voting and engagement with companies; to work with DUMAC to propose guidelines to inform their work; to execute the complexities of the ACIR report; and to create a process for feedback to the campus community on these efforts.

After initial benchmarking research of peer universities, there was a desire to focus on opportunities for impact beyond DUMAC, mainly because its current structure and primary use of external managers make incorporation of sustainable investment practices difficult to execute. Other opportunities included more creative projects, such as a GRF and internal carbon tax like that of Yale's, and further promotion of Duke's Social Choice Fund (2 Nov 2015 meeting of the CSC). These opportunities would create a positive environmental impact, but would be easier to move forward with. Although there was discussion of implementation challenges of a carbon tax on Duke's campus and how Deans of individual departments would react, the committee members supported further research into the subject. One suggestion was to submit a proposal to Bass Connections, which is a university-wide initiative at Duke that engages faculty and students in interdisciplinary research teams to explore real-world issues within the themes of Brain and Society; Information, Society and Culture; Global Health; Education and Human Development; and Energy (Duke University, n.d.-a).

The question of whether Duke should conduct a portfolio carbon analysis came up as well. Eric Smith, a member of the Duke team of graduate students that won Yale's National Low Carbon Case Competition in December 2015, agreed to attend subsequent Sustainable Investment Subcommittee meetings to detail the framework of their winning proposal for a low carbon investment fund designed for universities and other institutional investors interested in

divestment from high carbon-emitting companies (Townsend, 2015). Eric presented a similar decarbonization plan for Duke, which involves Duke conducting a carbon analysis of their investment portfolio, just as UC conducted a carbon footprint of theirs. The subcommittee members debated the usefulness of such an analysis due to the lack of transparency by DUMAC and high turnover of the university's equities (1 Jan 2016 meeting of the SIS).

The discussions above have led to the current recommendations of the Sustainable Investment Subcommittee (20 Apr 2016 meeting of the CSC):

- 1. Create a Duke Impact Choice Fund to actively target low carbon investment; evaluate performance compared to current investment strategy to consider future expansion
- 2. Create opportunities for increased education about sustainable investment at Duke
 - a. Utilize Bass Connections to evaluate an internal, campus carbon tax
 - b. Explore Impact Alpha Competition

The Duke Impact Choice Fund would be separate from the Social Choice Fund and would be for donors interested in climate solutions (23 Mar 2016 meeting of the SIS). An internal Duke advisory committee comprising of Fuqua impact investment faculty, graduate students, and DUMAC representatives would determine the best investment approach. This would build on DUMAC's expertise, but also allow for external ESG expertise.

Billy Pizer, Professor at the Sanford School, submitted the proposal for the Bass Connections project titled "Developing Department Energy Reports and a Carbon Pricing Program for Duke University" (Duke University, n.d.-c). Eight students (two graduates and six undergrads) would be working with faculty members during the 2016-2016 academic year to analyze the feasibility of a carbon pricing system at Duke, just as the Yale Carbon Charge Task Force had done.

Lastly, the Impact Alpha Competition would be an inter-university case competition, where student teams would make recommendations on how their university should invest a small portion of the endowment (23 Mar 2016 meeting of the SIS). Performance would be judged based on financial and ESG weighted criteria. Refer to **Appendix E** for an outline of the proposed competition.

X. Sustainable Investment Recommendations and Discussion

We agree with the three recommendations of the Sustainable Investment Subcommittee. In addition, we recommend the following three actions to create positive impact in sustainable investing at Duke University.

- 4. Collaborate with other institutional investors
- 5. Draft environmental proxy voting guidelines
- 6. Create a designated GRF for energy efficiency projects on campus

First, as Harvard and UC have done, Duke can benefit from joining and participating in sustainable investment collaborative initiatives like PRI, CDP, and INCR. Such organizations provide access to resources such as like-minded investors, sustainable investment best practices, and company-reported GHG data. Linking with other institutional investors to form a coalition urging companies to be more transparent about their carbon risk exposure could also initiate a movement for change that would benefit all types of funds just as the fossil fuel divestment movement had done to gain the attention of investors.

Second, although Duke does exercise shareholder proxy voting rights, the ACIR does not have written guidelines on how to vote. Duke should therefore look to Stanford's proxy voting policy statements and guidelines as an example to draft guidelines for how committee members should vote on resolutions regarding issues such as renewable energy, corporate climate change policies, energy efficiency, and sustainability standards.

Duke has made large investments in campus energy efficiency and sustainability projects since 2009, but it lacks a designated GRF that would help promote what Duke is already doing for campus infrastructure and utility investments. Duke should therefore look into establishing a campus GRF, possibly participating in the Billion Dollar Green Challenge, and utilize the Green Revolving Investment Tracking System (GRITS) to help manage and analyze energy, finance, and carbon data of such projects (Billion Dollar Green Challenge, n.d.-a). This fund would be a great way to show how well Duke's investments are generating returns outside the endowment.

References

- Aligned Intermediary. (n.d.). Aligned Intermediary. Retrieved from http://www.alignedintermediary.org/
- Anderson, K. (2014, May). Sustainable Food Sourcing in Higher Education: Definition and Goal-setting for Duke University. Duke University.

Asset Owners Disclosure Project. (2015). *The Global Universities Index* (p. 25). Retrieved from http://aodproject.net/images/docs/AODP_GUI.pdf

- Asset Owners Disclosure Project. (n.d.). AODP Global Climate 500 Index. Retrieved February 8, 2016, from http://aodproject.net/climate-ratings/aodp-global-climate-500-map/
- Association for the Advancement of Sustainability in Higher Education. (2011, June 29). Yale University. Retrieved from https://stars.aashe.org/institutions/yale-universityct/report/2011-06-29/PAE/investment/PAE-18/
- Association for the Advancement of Sustainability in Higher Education. (2015a). STARS Overview. Retrieved March 8, 2016, from https://stars.aashe.org/pages/about/starsoverview.html
- Association for the Advancement of Sustainability in Higher Education. (2015b). Why participate in STARS? Retrieved from https://stars.aashe.org/pages/about/why-participate.html
- Bachher, J. S. (n.d.). Japan Stewardship Code Letter. Retrieved from http://www.ucop.edu/investment-office/ files/japan-stewardship-code-letter.pdf
- Barnett, M. L., & Salomon, R. M. (2006). Beyond dichotomy: the curvilinear relationship between social responsibility and financial performance. *Strategic Management Journal*, 27(11), 1101–1122. http://doi.org/10.1002/smj.557
- Bauer, R., Derwall, J., & Otten, R. (2007). The Ethical Mutual Fund Performance Debate: New Evidence from Canada. *Journal of Business Ethics*, 70(2), 111–124. http://doi.org/http://dx.doi.org.proxy.lib.duke.edu/10.1007/s10551-006-9099-0
- Bauer, R., Koedijk, K., & Otten, R. (2005). International evidence on ethical mutual fund performance and investment style. *Journal of Banking & Finance*, 29(7), 1751–1767. http://doi.org/10.1016/j.jbankfin.2004.06.035
- Bauer, R., Otten, R., & Rad, A. T. (2006). Ethical investing in Australia: Is there a financial penalty? *Pacific-Basin Finance Journal*, 14(1), 33–48. http://doi.org/10.1016/j.pacfin.2004.12.004
- Berkeley Haas. (n.d.). Haas Socially Responsible Investment (SRI) Fund. Retrieved from http://responsiblebusiness.haas.berkeley.edu/programs/haassrifund.html
- Bilbao-Terol, A., Arenas-Parra, M., & Cañal-Fernández, V. (2012). A fuzzy multi-objective approach for sustainable investments. *Expert Systems with Applications*, *39*(12), 10904–10915. http://doi.org/10.1016/j.eswa.2012.03.034
- Billion Dollar Green Challenge. (n.d.-a). Green Revolving Investment Tracking System 1.2. Retrieved February 23, 2016, from http://greenbillion.org/
- Billion Dollar Green Challenge. (n.d.-b). The Challenge. Retrieved from http://greenbillion.org/about/
- Billion Dollar Green Challenge. (n.d.-c). University of California, Los Angeles. Retrieved February 22, 2016, from http://greenbillion.org/
- Boerner, H. (2012). Tell Me a Story: What Your Company's Story Reveals and What Shareholder Proxy Resolutions Are Saying. *Corporate Finance Review*, 17(1), 34–38.

- Brodhead, R. (2015, January 27). Brodhead Letter Divest Duke. Retrieved from https://today.duke.edu/showcase/reports/2015-01-08_Brodhead_Letter_Divest_Duke.pdf
- Brown University. (2014, April 24). Environmental Awareness Policy. Retrieved February 21, 2016, from https://www.brown.edu/about/administration/policies/environmental-awareness
- Brown University. (2015). *Eight Annual Sustainability Progress Report*. Retrieved from http://www.brown.edu/Facilities/Facilities_Management/docs/Sustainability_Report_201 5.pdf
- BusinessDictionary.com. (2016). Purchase Order Definition. Retrieved April 11, 2016, from http://www.businessdictionary.com/definition/purchase-order.html
- CDP Worldwide. (2016). Catalyzing business and government action. Retrieved from https://www.cdp.net/en-US/Pages/About-Us.aspx
- Ceres. (n.d.). Investor Network on Climate Risk (INCR). Retrieved from http://www.ceres.org/investor-network/incr
- Chief Investment Officer of the Regents. (2016, January 28). The Carbon Footprint of the UC Public Equities Holdings. Retrieved from http://www.ucop.edu/investmentoffice/sustainable-investment/reporting/carbon-footprint.html
- Coggburn, J. D., & Rahm, D. (2005). Environmentally Preferable Purchasing: Who Is Doing What in the United States? *Journal of Public Procurement*, 5(1), 23–53.
- Cornell University. (n.d.-a). Green Purchasing Resources. Retrieved February 21, 2016, from https://www.dfa.cornell.edu/procurement/about/procurement-initiatives/sustainability/resources
- Cornell University. (n.d.-b). Purchasing. Retrieved February 21, 2016, from http://www.sustainablecampus.cornell.edu/purchasing
- Council of Supply Chain Management Professionals. (2016). CSCMP Supply Chain Management Definitions and Glossary. Retrieved April 16, 2016, from https://cscmp.org/supply-chain-management-definitions
- Cox, J. (2014). ACIR Report and Recommendations on Fossil Fuels (p. 10). Duke University. Retrieved from http://today.duke.edu/showcase/reports/2014-11-24_ACIR_Report.pdf
- Crawford, M. (2016, February 1). Duke RFP Language.
- Divest Duke. (2013). Report Proposing Fossil Fuel Divestment for the President's Advisory Committee on Investment Responsibility (p. 30). Duke University. Retrieved from http://divestduke.org/wp-content/uploads/2014/10/Divest-Duke-ACIR-Proposal.pdf
- Duke Today. (2008, February 29). Trustees Approve Banning Future Investments With Sudan-Linked Companies. Retrieved March 22, 2016, from https://today.duke.edu/2008/02/sudan.html
- Duke University. (2004a). *Duke University Environmentally Preferable Purchasing Guidelines*. Duke University. Retrieved from http://finance.duke.edu/procurement/green/epp.php
- Duke University. (2004b, August 20). Guideline on Socially Responsible Investing. Retrieved from

https://sustainability.duke.edu/documents/ACIR%20and%20Guideline%20on%20Sociall y%20Responsible%20Investing.pdf

- Duke University. (2009). *Duke University Climate Action Plan*. Duke University. Retrieved from http://sustainability.duke.edu/climate_action/Duke%20Climate%20Action%20Plan.pdf
- Duke University. (2012). *Duke's Sustainability Strategic Plan*. Duke University. Retrieved from http://www.hr.duke.edu/media/sustainability/2012_SSP_Progress%20Report_FINAL.pdf

Duke University. (2013, October 4). Creation of President's Special Committee on Investment Responsibility. Retrieved from https://sustainability.duke.edu/documents/ACIR%20and%20Guideline%20on%20Sociall y%20Responsible%20Investing.pdf

Duke University. (n.d.-a). About Bass Connections | Bass Connections. Retrieved March 22, 2016, from https://bassconnections.duke.edu/content/about-bass-connections

Duke University. (n.d.-b). Accounting Codes Overview. Retrieved March 17, 2016, from https://finance.duke.edu/accounting/glaccts/overview.php

- Duke University. (n.d.-c). Developing Departmental Energy Reports and a Carbon Pricing Program for Duke University (2016-2017) | Bass Connections. Retrieved April 18, 2016, from https://bassconnections.duke.edu/project-teams/developing-departmental-energyreports-and-carbon-pricing-program-duke-university-2016
- Duke University. (n.d.-d). Green Purchasing. Retrieved February 15, 2016, from http://finance.duke.edu/procurement/green/index.php
- Duke University. (n.d.-e). Investment Managers. Retrieved February 21, 2016, from https://dukeforward.duke.edu/ways-to-give/endowment/investment-managers
- Duke University. (n.d.-f). Sustainability : Financial Investments. Retrieved March 21, 2016, from http://sustainability.duke.edu/campus initiatives/investment/
- ENERGY STAR. (n.d.-a). About ENERGY STAR. Retrieved March 8, 2016, from https://www.energystar.gov/about
- ENERGY STAR. (n.d.-b). Policies that specify the use of ENERGY STAR tools. Retrieved March 8, 2016, from https://www.energystar.gov/buildings/program-administrators/stateand-local-governments/policies
- Flynn, E. (2011). Stanford University: The Building Energy Retrofit Programs. Stanford University. Retrieved from http://greenbillion.org/wpcontent/uploads/2011/10/Stanford.pdf
- Goldreyer, E. F., & Diltz, J. D. (1999). The performance of socially responsible mutual funds: Incorporating sociopolitical information in portfolio selection. *Managerial Finance*, 25(1), 23–36.
- Gond, J.-P., & Piani, V. (2013). Enabling Institutional Investors' Collective Action The Role of the Principles for Responsible Investment Initiative. *Business & Society*, *52*(1), 64–104. http://doi.org/10.1177/0007650312460012
- GreenerU. (n.d.). *Ivy+ Sustainability Consortium Five Year Strategic Plan 2014-2019 Executive Summary*.
- Gregory, A., Matatko, J., & Luther, R. (1997). Ethical Unit Trust Financial Performance: Small Company Effects and Fund Size Effects. *Journal of Business Finance & Accounting*, 24(5), 705–725. http://doi.org/10.1111/1468-5957.00130
- Hamilton, S., Jo, H., & Statman, M. (1993). Doing well while doing good? The investment performance of socially responsible mutual funds. *Financial Analysts Journal*, 49(6), 62.
- Handfield, R., Sroufe, R., & Walton, S. (2005). Integrating environmental management and supply chain strategies. *Business Strategy and the Environment*, 14(1), 1.
- Harvard Management Company. (2015a). About HMC. Retrieved from http://www.hmc.harvard.edu/about-hmc/
- Harvard Management Company. (2015b). Sustainable Investment. Retrieved from http://www.hmc.harvard.edu/investment-management/sustainable_investment.html

Harvard University. (2010, November 8). Faculty Grants for Exploratory Research [Text]. Retrieved February 22, 2016, from http://environment.harvard.edu/grants/faculty-grants

Harvard University. (2016). The Social Alternative Fund. Retrieved February 22, 2016, from http://alumni.harvard.edu/ways-to-give/social-alternative-fund

Harvard University. (n.d.-a). Climate Change Solutions Fund. Retrieved February 22, 2016, from http://vpr.harvard.edu/internal-funding-opportunities-1

Harvard University. (n.d.-b). Green Revolving Fund. Retrieved February 22, 2016, from http://green.harvard.edu/programs/green-revolving-fund

Harvard University. (n.d.-c). Harvard University Sustainability Plan. Retrieved February 21, 2016, from https://issuu.com/greenharvard/docs/harvard_sustainability_plan-web/1

Harvard University. (n.d.-d). Purchasing. Retrieved February 21, 2016, from http://green.harvard.edu/topics/purchasing

Harvard University. (n.d.-e). Student Grants. Retrieved February 22, 2016, from http://green.harvard.edu/programs/student-grants

Investopedia. (2011, January 10). Request For Proposal (RFP) Definition. Retrieved March 21, 2016, from http://www.investopedia.com/terms/r/request-for-proposal.asp

Larrick, R. P., Soll, J. B., & Keeney, R. L. (2015). Designing better energy metrics for consumers. *Behavioral Science & Policy*, 1(1), 63–75.

Li, S., & Upshaw, M. (2015). Evaluating and Prioritizing Duke's Natural Landscapes. Retrieved from http://dukespace.lib.duke.edu/dspace/handle/10161/9657

Liu, Y., & Shepherd, J. (2013a). Sustainable Duke: Procurement & Waste. Retrieved from http://dukespace.lib.duke.edu/dspace/handle/10161/6881

- Liu, Y., & Shepherd, J. (2013b, April). Sustainable Duke: Procurement & Waste. Duke University.
- Logsdon, J. M., & Van Buren, H. J. (2009). Beyond the Proxy Vote: Dialogues Between Shareholder Activists and Corporations. *Journal of Business Ethics*, 87, 353–365. http://doi.org/http://dx.doi.org.proxy.lib.duke.edu/10.1007/s10551-008-9807-z
- Luther, R. G., & Matatko, J. (1994). The Performance Of Ethical Unit Trusts: Choosing An Appropriate Benchmark. *The British Accounting Review*, *26*(1), 77–89. http://doi.org/10.1006/bare.1994.1007

Luther, R. G., Matatko, J., & Corner, D. C. (1992). The Investment Performance of UK "Ethical" Unit Trusts. *Accounting, Auditing & Accountability Journal*, 5(4), 57.

Mallin, C. a., & Saadouni, B. (1995). The Financial Performance of Ethical Investment Funds. Journal of Business Finance & Accounting, 22(4), 483–496.

Mastracchio, J. (2015, December 21). Sustainable Procurement Benchmarking Interview: Yale University.

Mosgaard, M. A. (2015). Improving the practices of green procurement of minor items. *Journal* of Cleaner Production, 90, 264–274. http://doi.org/10.1016/j.jclepro.2014.11.077

National Association of College and University Business Officers. (2015). U.S. and Canadian Institutions Listed by Fiscal Year 2014 Endowment Market Value and Change in Endowment Market Value from FY2013 to FY2014. National Association of College and University Business Officers. Retrieved from

http://www.nacubo.org/Documents/EndowmentFiles/2014_Endowment_Market_Values_ Revised.pdf Office of the Chief Investment Officer. (2016). *Endowment Investment Review as of December* 31, 2015 (Quarterly report). University of California. Retrieved from http://www.ucop.edu/investment-office/ files/invinfo/COI 2015 Q4 Summary.pdf

- Office of the Chief Investment Officer. (n.d.). *Sustainable Investment Framework*. University of California. Retrieved from http://www.ucop.edu/investment-office/_files/sustainable-investment-framework.pdf
- Principles for Responsible Investment. (2014). The Montréal Carbon Pledge. Retrieved February 22, 2016, from http://montrealpledge.org/
- Principles for Responsible Investment. (n.d.). The Six Principles. Retrieved from http://www.unpri.org/about-pri/the-six-principles/
- Renneboog, L., Ter Horst, J., & Zhang, C. (2008a). Socially responsible investments: Institutional aspects, performance, and investor behavior. *Journal of Banking & Finance*, 32(9), 1723–1742. http://doi.org/10.1016/j.jbankfin.2007.12.039
- Renneboog, L., Ter Horst, J., & Zhang, C. (2008b). The price of ethics and stakeholder governance: The performance of socially responsible mutual funds. *Journal of Corporate Finance*, 14(3), 302–322. http://doi.org/10.1016/j.jcorpfin.2008.03.009

Riddell, R. V. (2012). Resolution Relating to the Recommendation of the President's Advisory Committee on Investment Responsibility. Duke University. Retrieved from http://spotlight.duke.edu/acirforum/files/2012/03/Duke-Univ-ACIR-Conflict-minerals-Board-of-Trustees-resolution-2012-06-15-adopted-signed.pdf

Salovey, P. (2014, August 27). New Sustainabilit Initiatives at Yale. Retrieved from http://sustainability.yale.edu/planning-progress/president

- Schneider, L., & Wallenburg, C. M. (2012). Implementing sustainable sourcing—Does purchasing need to change? *Journal of Purchasing and Supply Management*, 18(4), 243– 257. http://doi.org/10.1016/j.pursup.2012.03.002
- Schoenfeld, M. (2013, October 5). Duke Revises Approach to Socially Responsible Investing. Retrieved February 22, 2016, from https://today.duke.edu/2013/10/endowmentchanges
- Schröder, M. (2004). The performance of socially responsible investments: Investment funds and indices. *Finanzmarkt Und Portfolio Management*, 18(2), 122–142. http://doi.org/http://dx.doi.org.proxy.lib.duke.edu/10.1007/s11408-004-0202-1
- $\frac{1000}{1000} = \frac{1000}{1000} = \frac{1000}{1000$
- Soll, J. B., Milkman, K. L., & Payne, J. W. (2015). A User's Guide to Debiasing. In *In Review*. Sparkes, R. (2003). *Socially Responsible Investment: A Global Revolution*. John Wiley & Sons.
- Sparkes, R. (2003). Socially Responsible Investment: A Global Revolution. John Wiley & Sons.
- Stanford Management Company. (2014). Welcome to Stanford Management Company. Retrieved from http://www.smc.stanford.edu/

Stanford Report. (2015, September 29). New Stanford investment responsibility structure aims for clarity, responsiveness. *Stanford Report*. Retrieved from http://news.stanford.edu/news/2015/september/invest-new-job-092915.html

- Stanford University. (2013). Social Issue Proxy Voting Policy Statements and Guidelines. Stanford University. Retrieved from http://web.stanford.edu/group/apirl/docs/public/Stanford%20University%20Social%20Issue%20Proxy%20Voting%20Polic y%20Statements%20and%20Guidelines.pdf
- Stanford University. (n.d.-a). Purchasing. Retrieved February 21, 2016, from https://sustainable.stanford.edu/purchasing
- Stanford University. (n.d.-b). *Sustainable Procurement Guidelines*. Retrieved from https://sustainable.stanford.edu/sites/default/files/documents/Stanford_sustainable_procur ement_guidelines.pdf

Statman, M. (2000). Socially responsible mutual funds. *Financial Analysts Journal*, 56(3), 30–39.

- Sustainable Duke. (n.d.). Duke Sustainability. Retrieved March 17, 2016, from http://sustainability.duke.edu/
- Tate, W. L., Ellram, L. M., & Kirchoff, J. F. (2010). Corporate social responsibility reports: a thematic analysis related to supply chain management. *Journal of Supply Chain Management*, 46(1), 19+.
- The Duke Endowment. (2015). Enriching Lives and Communities. Retrieved March 21, 2016, from http://dukeendowment.org/about/about-the-endowment
- The Dwight Hall SRI Fund. (n.d.). About Us. Retrieved from http://www.dwighthallsri.org/site/about
- The New York Times. (1986, May 4). DUKE WOULD SELL ITS HOLDINGS IN SOUTH AFRICA. *The New York Times*. Retrieved from http://www.nytimes.com/1986/05/04/us/duke-would-sell-its-holdings-in-southafrica.html
- The Presidential Carbon Charge Task Force. (2015). *Carbon Charge Report*. Yale University. Retrieved from http://provost.yale.edu/sites/default/files/files/Carbon-charge-report-041015.pdf
- Townsend, A. (2015, November 18). Nic School Weekly Update 11/18/15.
- UC Office of the President. (2014, September 15). University of California proposes creation of new venture fund to invest in UC innovation. Retrieved February 22, 2016, from http://www.universityofcalifornia.edu/press-room/university-california-proposes-creation-new-venture-fund-invest-uc-innovation
- UC Office of the President. (2015a, February 19). UC progress on sustainable investments strategy. Retrieved February 22, 2016, from http://universityofcalifornia.edu/press-room/uc-progress-sustainable-investments-strategy
- UC Office of the President. (2015b, November 29). UC only university to join coalition led by Bill Gates to invest in climate solutions. Retrieved February 22, 2016, from http://universityofcalifornia.edu/press-room/uc-only-university-join-coalition-led-billgates-invest-climate-solutions
- US EPA, O. (2016a, January 14). About the Environmentally Preferable Purchasing Program [Overviews and Factsheets]. Retrieved March 7, 2016, from http://www.epa.gov/greenerproducts/about-environmentally-preferable-purchasingprogram
- US EPA, O. (2016b, February 1). Electronic Product Environmental Assessment Tool (EPEAT) [Overviews and Factsheets]. Retrieved March 7, 2016, from http://www.epa.gov/greenerproducts/electronic-product-environmental-assessment-toolepeat
- Walker, H., & Brammer, S. (2012). The relationship between sustainable procurement and eprocurement in the public sector. *International Journal of Production Economics*, 140(1), 256–268. http://doi.org/10.1016/j.ijpe.2012.01.008
- Walker, H., Miemczyk, J., Johnsen, T., & Spencer, R. (2012). Sustainable procurement: Past, present and future. *Journal of Purchasing and Supply Management*, 18(4), 201–206. http://doi.org/10.1016/j.pursup.2012.11.003
- Wang, G. (2013, September 9). Student-led campaign aims to divest Duke from fossil fuel industries. Retrieved November 19, 2015, from

http://www.dukechronicle.com/article/2013/09/student-led-campaign-aims-divest-duke-fossil-fuel-industries

- Weinstock, S. Y. (2013, May 27). Harvard Picks Parnassus for Social Choice Fund. *Harvard University*. Retrieved from http://www.thecrimson.com/article/2013/5/27/parnassus-social-choice/
- Yale News. (2015, March 20). Update on Yale's sustainability initiatives. *Yale News*. Retrieved from http://news.yale.edu/2015/03/20/update-yale-s-sustainability-initiatives
- Yale University. (2011). *Sustainable Procurement Standards Guide*. Yale University. Retrieved from http://policy.yale.edu/sites/default/files/3201gd.02.pdf
- Yale University. (2014). *Endowment Update 2014*. Yale University. Retrieved from http://investments.yale.edu/images/documents/Yale Endowment 14.pdf
- Yale University. (2015, October 26). Experimental Design. Retrieved from http://carbon.yale.edu/experimental-design
- Yale University. (n.d.-a). About the Carbon Fund. Retrieved from http://sustainability.yale.edu/research-education/community-carbon-fund/about-carbonfund

Yale University. (n.d.-b). Committee History and Mission. Retrieved from http://acir.yale.edu/

- Yale University. (n.d.-c). Frequently Asked Questions. Retrieved from http://sustainability.yale.edu/tools-resources/yale-green-fund/frequently-asked-questions
- Yale University. (n.d.-d). Policies and Past Actions. Retrieved from http://acir.yale.edu/policies and past actions.html

Appendix A: Interview Guides

Interview Guide for Sustainable Duke Masters Project: Procurement

Tell me about your position? How does it relate to campus procurement?

How is your procurement/purchasing department structured i.e. do you have more control over what people purchase or less?

Do you have any policies or mandates concerning sustainable (green) purchasing? How are you implementing these?

Is there environmental stewardship/sustainability and supplier diversity language in your standard PO terms and conditions?

What kinds of questions do you ask vendors in regard to their sustainability practices? Is there any specific language that lends itself towards making sure suppliers are providing more sustainable products?

What kind of sustainable purchasing initiatives does your university have? Are there any that are not advertised on your website?

For your specific initiatives (paper, cleaning products, etc.), how have you tried to influence buyer behavior?

How successful has it been and what have the major challenges been?

Have you tried other tactics in the past?

Do you know of other schools doing anything innovative with sustainable procurement?

Is there anything else you would like to add, or do you have any questions you would be interested in having me ask to staff at other universities that I'm interviewing*?

*We will provide the results of our study at its conclusion

Interview Guide for Sustainable Duke Masters Project: Sustainable Investment

How is the university's endowment investments managed and structured? Does it use third party managers or manage the fund directly?

What policies or practices does the university have regarding sustainable investment of the university's endowment? How are these policies being implemented and have they been effective?

Are there other investments or funds for sustainable projects on- or off-campus outside the endowment?

Does the university offer educational courses or opportunities for students to learn about sustainable investment?

Do you know of any other innovative projects or policies at other schools pertaining to sustainable investment worth mentioning?

Is there anything else you would like to add, or do you have any questions you would be interested in having me ask staff at other universities that I'm interviewing*?

*We will provide the results of our study at its conclusion

Harvard-specific

Harvard is currently a signatory of the Carbon Disclosure Project's climate change program and UN supported Principles of Responsible Investment. How have these resources been used for sustainable investment efforts?

Has the university seen success in its social alternative fund since starting it? How is it introduced or advertised to potential donors? Why was the Parnassus Equity Income Fund chosen over other funds?

Describe Harvard's \$12 million green revolving fund and the Student Sustainability Grant Program. Where does the funding originate from and how successful have they been at reducing energy use?

Stanford-specific

Has Stanford had the opportunity to use its climate change proxy voting guidelines? How has Stanford's membership in the Investor Network on Climate Risk been a useful resource for sustainable investment efforts?

UC-specific

UC is currently a member or signatory of the Carbon Disclosure Project, Investor Network on Climate Risk, and UN supported Principles of Responsible Investment. How have these resources been used for sustainable investment efforts?

Can you describe how the UC plans to invest at least \$1 billion over the next 5 years to climate change solutions? Additionally, how is the UC Ventures fund set up and implemented?

UCLA recently established their \$15 million green revolving fund. Do you know details about its seed funding or how successful it has been at reducing energy use? Do other UCs have a green revolving fund or similar funds for campus projects?

Yale-specific

How is the pilot currently being implemented? How have different departments on campus responded to Yale's university-wide carbon pricing system?

Describe the success of Yale's funds for energy efficiency and sustainable projects such as the Sustainability Microloan Fund, Energy Solutions Funds, Green Innovation Fellowships, and Community Carbon Fund. Where does the funding originate from?

Appendix B: EPP Guidelines



Environmentally Preferable Purchasing (EPP) Guidelines

Purpose

Recognizing our impact as a major purchaser of goods and services, Duke University gives preference to environmentally friendly products whose quality, function, and cost are equal or superior to more traditional products. This policy will

- conserve natural resources
- minimize pollution
- · reduce the use of water and energy
- · eliminate or reduce environmental health hazards to workers and our community
- support strong recycling markets
- reduce materials that are landfilled
- · increase the use and availability of environmentally preferable products
- reward vendors who reduce environmental impacts in their production and distribution systems or services
- create a model for successfully purchasing environmentally preferable products that encourages other purchasers in our community to adopt similar goals
- support locally produced goods and services
- · educate ourselves, our vendors, and our end users

Definitions

Environmentally Preferable Product: A product that has a lesser or reduced negative effect on human health and the environment when compared to competing products that serve the same purpose. This comparison may consider raw materials acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, and disposal of the product. This term includes recyclable products, recycled products, and reusable products.

Life Cycle Analysis: The comprehensive examination of a product's environmental and economic effects throughout its lifetime, including new material extraction, transportation, manufacturing, use, and disposal.

Practicable: Satisfactory in performance and available at a fair and reasonable price.

Post-consumer Content: The percentage of materials collected from end-users and recycled into the new product.

Recyclable Product: A product that, after its intended end use, can be demonstrably diverted from the University's solid waste stream for use as a raw material in the manufacture of another product, preferably higher value uses.

Reusable Product: A product, such as a washable food or beverage container or a refillable ballpoint pen, that can be used several times for an intended use before being discarded.

Data Collection and Performance Reporting

For purposes of setting goals and evaluating the performance of the University's green purchasing program, vendors may be requested to report the environmental attributes of their products.

Procurement and Supply Chain Management responsibilities:

- Collaborate with vendors to design and implement a data collection system for tracking the environmental attributes of products
- Compile records for the purpose of producing an annual summary of the University's environmentally responsible purchasing actions, and for evaluating the effectiveness of these actions in reducing the environmental impacts of University procurement
- · Identify opportunities to educate end users about the impacts of their product choices

Priorities

- Ensure the health and safety of workers and citizens
- Support the Durham economy by purchasing goods and services from local vendors
- Procure goods and services that are environmentally friendly without compromising cost or quality
- · Comply with all local, state, and federal laws that govern our procurement activity

Areas of Focus

1. Source Reduction

Reducing unnecessary waste at the source allows the University to both mitigate the inefficient use of our natural resources and benefit economically from decreased handling and disposal costs.

Procurement activity may include:

- Institute practices that reduce waste, resulting in the purchase of fewer products whenever practicable and cost-effective, but without reducing safety or workplace quality
- Purchase remanufactured products such as laser toner cartridges, tires, furniture, equipment and automotive parts whenever practicable, but without reducing safety, quality or effectiveness
- Consider short-term and long-term costs in comparing product alternatives. Include evaluation of total costs expected during the time a product is owned, including, but not limited to, acquisition, extended warranties, operation, supplies, maintenance, disposal costs and expected lifetime compared to other alternatives
- Purchase products that are durable, long lasting, reusable or refillable
- Request that vendors eliminate packaging or use the minimum amount necessary for product protection to the greatest extent practicable
- Request packaging that is reusable, recyclable or compostable when suitable uses and programs exist
- Reuse pallets and packaging materials
- Require that all equipment bought after the adoption of this Policy, when practicable, be compatible with products and services that provide source reduction benefits

2. Recycled Content Products

The University has made significant investments in developing a successful recycling system and recognizes that recycled content products are essential to the continuing viability of that recycling system, and for the foundation of an environmentally sound production system.

Procurement activity may include:

- Products for which the United States Environmental Protection Agency (U.S. EPA) has established minimum recycled content standard guidelines – such as printing paper, office paper, janitorial paper, construction, landscaping, transportation, vehicles, and non-paper office products – and which contain the highest post-consumer content practicable, but no less than the minimum recycled content standards established by the U.S. EPA Guidelines.
- Copiers and printers that can be used with recycled content products
- Re-refined lubricating and industrial oil for use in vehicles and other equipment, as long as the product is certified by the American Petroleum Institute (API) as appropriate for use in such equipment
- Asphalt concrete, aggregate base or portland cement concrete for road construction projects that contains recycled, reusable or reground material
- Recycled content transportation products including signs, cones, parking stops, delineators, and barricades

3. Energy and Water Savings

Recognizing that the generation of electricity is a major contributor to air pollution and global warming issues, and that clean water is a finite resource, the University values products that minimize the use of these valuable resources.

Procurement activity may include:

- Energy-efficient equipment with the most up-to-date energy efficiency functions, including, but not limited to, high-efficiency heating and cooling systems.
- Efficient lighting with energy-efficient equipment
- Products for which the U.S. EPA Energy Star certification is available and which meet Energy Star certification, when practicable. When Energy Star labels are not available, choose energy-efficient products that are in the upper 25% of energy efficiency as designated by the Federal Energy Management Program
- Water-saving products.

4. Landscaping

Supporting low maintenance and environmentally sensitive landscapes minimizes the unnecessary use of fertilizers and water resources, therefore reducing the University's impact on the natural environment.

Procurement activity may include:

- Employ sustainable landscape management techniques for design, construction and maintenance. These techniques include, but are not limited to, integrated pest management, grasscycling, drip irrigation, composting, and procurement and use of mulch and compost that give preference to those produced from regionally generated plant debris and/or food waste programs.
- Minimize waste by selecting plants that are appropriate to the microclimate, species that can grow to their natural size in the space allotted them; Place preference on native and drought-tolerant plants that require no or minimal watering once established
- Limit amount of impervious surfaces by procuring permeable substitutes such as permeable asphalt or pavers for walkways, patios and driveways

5. Toxics and Pollution

The use of toxics and the generation of pollution should be minimized to reduce risks to health, safety, and the environment.

Procurement activity may include:

- Refrain from procuring cleaning or disinfecting products (i.e. for janitorial or automotive use) containing carcinogens, mutagens, or teratogens. Chemicals to be avoided are listed by the U.S. EPA or the National Institute for Occupational Safety and Health on the Toxics Release Inventory.
- Phase out chlorofluorocarbon-containing refrigerants, solvents and similar products.
- Procure readily biodegradable surfactants and detergents that do not contain phosphates.
- Maintain buildings and landscapes, manage pest problems through the application of prevention techniques and physical, mechanical and biological controls
- Procure products with the lowest amount of volatile organic compounds (VOCs), highest recycled content, and low or no formaldehyde in materials such as paint, carpeting, adhesives, furniture and casework.
- Reduce or eliminate the use of products that contribute to the formation of dioxins and furans, including, but not limited to:
 - Paper, paper products, and janitorial paper products that are bleached or processed with chlorine or chlorine derivatives
 - Products that use polyvinyl chloride (PVC), including, but not limited to, office binders, furniture, flooring, and medical supplies
- Procure products and equipment with no lead or mercury. For products containing lead
 or mercury, give preference to those with lower quantities of these metals and to
 vendors with established lead and mercury recovery programs.
- Consider vehicle procurement alternatives to diesel such as compressed natural gas, biobased fuels, hybrids, electric batteries, and fuel cells, as available.

6. Forest Conservation

The University has made significant investments in sustainable forestry, evident in the preservation of 7,000 acres of Duke Forest. That commitment extends to the purchase of wood products, in recognition of the valuable human and ecological health services provided by forests.

Procurement activity may include:

- Procure wood products such as lumber and paper that originate from forests harvested in an environmentally sustainable manner. Give preference to wood products that are certified to be sustainably harvested by a comprehensive, performance-based certification system. The certification system shall include independent third-party audits, with standards equivalent to, or stricter than, those of the Forest Stewardship Council certification.
- · When practicable, procure locally, sustainably harvested wood.

Environmental Awareness

Introduction

Environmental impact should be considered in purchasing decisions, when appropriate.

Policy Statement

Brown University encourages departments/schools to consider the use of products and services that impact the environment less than competing products. Consideration should be given to factors such as:

- Energy Efficiency. Purchase equipment that is Energy Star-rated (or, if there is no Energy Star rating, equipment that is highly energy efficient). Energy Star is a program helping businesses and individuals protect the environment through superior energy efficiency.
- Shipping Materials. Purchase products that are shipped in containers that are returnable or reusable and made from recycled content (i.e. cardboard boxes). Also request bulk packaging when multiple items are ordered for delivery at the same time.
- Recycled Content. Purchase products made with recycled content suitable for the intended use. Look for a high percentage of post-consumer content. 'Post-Consumer' is material that has served its intended purpose and has been discarded for disposal or recovery by a business or consumer. Other recycled content includes post industrial wastes which are by-products of a manufacturing process that would normally not be reused in the process.
- Other. Environmental performance of the supplier and/or producer should also be considered, such as waste prevention, waste reduction, pollution prevention, clean air and water programs, re-use of materials, minimization of scrap material, and any other green factory initiatives, etc. The University strongly desires to minimize the amount of waste sent to landfills. Both the product purchased and the packaging materials associated with it should be minimized to prevent waste as much as possible.

Responsibilities

University Departments. University Departments are responsible to make best value decisions regarding environmentally friendly goods and services.

Related Information<u>Brown is Green</u> <u>Recycling for Faculty & Staff</u> <u>EPA Website</u> Policy Owner**Approved by** Director, Insurance & Purchasing Services **Contact(s)** Jeanne Hebert Director, Insurance & Purchasing Services <u>Jeanne_Hebert@brown.edu</u> 401-863-3366

Revision Date: Thu, 2014-04-24 14:47

Source URL (retrieved on 2015-Oct 31):

Page 1 of 2

Source: Brown University

STANFORD UNIVERSITY



SUSTAINABLE PROCUREMENT GUIDELINES

Purpose

Consistent with Stanford's sustainability goals, the purpose of these guidelines is to support and facilitate the purchase of products, services and materials that minimize the harmful effects to the environment from their production, transportation, use and disposition. It is Stanford's goal to purchase and use Environmentally Preferable Products (including services) whenever they perform satisfactorily and can be acquired at similar total value (taking into account quality and Life Cycle Cost). A related purpose is to develop and implement common purchasing programs to be used by all Stanford personnel that support suppliers of Environmentally Preferable Products, and thereby help to bring down the costs of such products.

Applicability

These guidelines are intended to apply to all general *business-related* purchases. While it is the University's goal to likewise provide guidance for *research-related* purchases, we recognize that some research activities can have very specific product needs. For this reason and while we further develop our knowledge in this area, these guidelines do not directly apply to research-related purchases at this time.

Definitions

- A. "Environmentally Preferable Products" (EPP) means products and services that have a lesser negative or reduced negative effect on resource consumption, human health and the environment when compared with similar products that serve the same purpose. This comparison may consider factors including: resource (including energy and water) use; raw material content; and impacts associated with acquisition, production, manufacturing, packaging, distribution, reuse, operation, maintenance, and/or disposal of the product.
- B. "Life Cycle Cost" means the amortized annual cost of a product, including capital costs, installation costs, operating costs, maintenance costs, and disposal costs discounted over the useful life of the product.
- C. "Recycled Material" means material and by-products that have been recovered or diverted from solid waste, and have been utilized in place of raw or virgin material in the manufacturing of a product. It is derived from post-consumer recycled material, manufacturing waste,

industrial scrap, agricultural waste, and other waste material, but does not include material or by-products generated from, and commonly reused within, an original manufacturing process.

D. "Recycled Product" means a product manufactured with waste material that has been recovered or diverted from solid waste. Recycled material may be derived from post-consumer waste (material that has served its intended end-use and been discarded by a final consumer), industrial scrap, manufacturing waste, or other waste that would otherwise have been wasted.

Guidelines

- A. All Stanford University personnel should purchase Environmentally Preferable Products (including services) whenever they perform satisfactorily and can be acquired at similar total value (taking into account quality and Life Cycle Cost).
- B. Stanford University will promote the use of Environmentally Preferable Products, services, practices and suppliers by developing and implementing Campus-Wide Agreements (CWA's) with preferred suppliers, and product and service standards.
- C. The University Procurement Department will seek to secure contracts with suppliers that are environmental leaders in their respective markets whenever practicable.
- D. Where such criteria are available, Stanford should procure Environmentally Preferable Products and services using criteria that have been established by governmental or other widely-recognized authorities (e.g., Energy Star, EPA Eco Purchasing Guidelines).

Examples of some of the qualities of Environmentally Preferable Products are:

- Highly energy efficient in production and use
- Made of recycled materials, maximizing post-consumer content
- Durable and/or reusable products as opposed to single use, customized or disposable items
- Recyclable or compostable at the time of disposal
- Non-toxic or minimally toxic, preferably biodegradable
- Manufactured in an environmentally sound, sustainable manner by companies with good environmental track records
- Causing minimal or no environmental damage during normal use or maintenance
- Shipped with minimal packaging (consistent with care of the product), preferably made of recycled and/or recyclable materials
- Reflecting appropriate Life Cycle Costs and benefits
- Obtained from a vendor with a demonstrated commitment to sustainable operations, products and services
- Minimizing transportation distances (e.g., produced locally), as well as campus deliveries

Examples of some Environmentally Preferable Products are:

- Recycled paper and paper products
- Computers and electric appliances that are Energy Star Rated
- Compact fluorescent lamps (with Energy Star Seal on package)
- Re-crushed cement concrete aggregate and asphalt
- Cement and asphalt concrete containing glass cullet, recycled fiber, plastic or tire rubber
- Remanufactured tires and products made from recycled tire rubber
- Re-refined lubrication and hydraulic oils
- Green Seal cleaning products

Responsibilities of Procurement Department

Stanford University is committed to actions designed to make efficient use of energy, water and other resources, and to protect the environment. It is the responsibility of the Procurement Department, in conjunction with all University departments, to promote the development and use of Environmentally Preferable Products (including services) through the following activities:

- Develop and implement common purchasing programs (Campus Wide Agreements CWA's) that identify, make financially feasible, and make available Environmentally Preferable Products (and services) to Stanford purchasers.
- Review contracts, bids and specifications for goods and services to ensure that, whenever
 practicable and economical, they are amended to provide for the use of Environmentally
 Preferable Products.
- Consult with all user departments to identify new Environmentally Preferable Products and services, as well as improvements/changes in industry standards that may impact the environment.
- Require the use of recycled materials and recycled products by incorporating them in bid specifications where practicable.
- Purchase from suppliers that provide Environmentally Preferable Products and services, or suppliers that are environmentally sensitive in their daily operations.
- Seek new suppliers and encouraging existing suppliers to review the manner in which their goods are packaged. Work with suppliers in the areas of reduction and reuse of packaging materials.
- Use cost/benefit analysis and Life Cycle Cost to arrive at the correct sourcing decision one that remains economically practical, reflects effective purchasing practices, satisfies the requirements of the user department, and supports the University's sustainability goals.
- Make suppliers aware of the Stanford's Sustainable Procurement Guidelines.
- Develop tools to track goals, assist in identifying and financially evaluating green products and services, make it easier to measure achievement of goals, and integrate green purchasing into everyday decisions.
- Utilize the Sustainable Procurement Checklist for use in University purchasing.
- Participate in training for implementing and improving the procurement of environmentally friendly products.

Responsibilities of Departments

- A. First consider whether the product or service is truly necessary. If so and where available, take advantage of Campus-Wide Agreements (CWA) that covers the intended purchase. The CWA is located here <u>http://fingate.stanford.edu/staff/buypaying/cwa.html</u> at the Gateway to Financial Activities Site. Where a CWA is not available, consider factors such as the following in making a purchase:
 - Reduction of energy/water consumption
 - Maximizing of recycled products used in product
 - Environmental cost of entire product or Life Cycle Cost
 - Reuse of existing products or materials in product
 - Recyclability and/or compostability of product
 - Minimization of packaging
 - Toxicity reduction or elimination
 - Elimination of uncertified hardwoods in product or service life cycle
 - Durability and maintenance requirements
 - Ultimate disposal of the product

Further guidance can be found in the Sustainable Procurement Checklist below.

- B. Inform employees of these guidelines and of their responsibilities under these guidelines; provide them with information about Environmentally Preferable Products and environmental procurement opportunities.
- C. Submit new ideas or suggestions to Procurement Services.

Stanford University Sustainable Procurement Checklist

The following questions can help guide both procurement and departmental customers in minimizing the adverse environmental effects of their purchases.

First, determine if the product or service is truly necessary. (The product with the least environmental impact will usually be the one that is not purchased at all.)

If a purchase is necessary, consider asking the supplier about the following (while noting the need to balance EPP considerations with issues of product performance, cost, and availability):

 Waste reduction: Is the product durable? Can it be easily and economically serviced and maintained? Is the product designed to reduce consumption and minimize waste? Is the product reusable? Is the product technically and economically recyclable in the immediate area? Do facilities and internal collections systems exist to recycle the product? Can the product be returned to the supplier at the end of its useful life? Is the product compostable and are systems in place to compost the product on or off-site? Will the product biodegrade over time into hamless elements?

- Packaging: Can it be eliminated? Is minimal packaging used? Is the product packaged in bulk? Is the packaging reusable or recyclable? Are Recycled Materials used to produce the packaging and at what percent post-consumer waste? Can the packaging be returned to the supplier? Is the packaging compostable?
- Material source: Are Recycled Materials used in the product? If so, what percentage? What
 percentage of post-consumer materials is used? If wood is used in the product, what is its
 source and how is it harvested? Is the product manufactured from tropical rainforest wood?
- Energy efficiency: Is the product energy efficient compared to competitive products? Are Energy Star rated products available? Can the product be recharged? Can the product run on renewable fuels? Does the product require less energy to manufacture than competing products?
- Supplier environmental record: Is the company producing the product in compliance with
 all environmental laws and regulations? What is the company's record in handling
 environmental and safety issues? Can the company verify all environmental claims? Does the
 manufacturer/supplier have a company environmental policy statement? What programs are in
 place/planned for promoting resource efficiency? Are printed materials available documenting
 these programs? Has the company conducted an environmental or waste audit? Is the product
 supplier equipped to bid and bill electronically? Has an environmental life-cycle analysis of
 the product (and its packaging) been conducted by a certified testing organization, such as
 Green Seal?
- Minimize Transportation: Can the required products be obtained from local sources or can they be supplied by existing suppliers who already have delivery routes on campus?

Environmentally Preferable Purchasing (EPP) Resources

- A. EPA's Comprehensive Procurement Guidelines (http://www.epa.gov/cpg/)
- B. EPA's EPP Web Site (www.epa.gov/oppt/epp)
- C. EPPNet (www.nerc.org/eppnet.html)
- D. Green Seal (www.greenseal.org)
- E. Energy Star (www.energystar.gov)
- F. Office of the Federal Environmental Executive (www.ofee.gov)

Source: Stanford University

Policies, Procedures, Forms, Guides, & Quick Steps ale University Guides

3201GD.02 Sustainable Procurement Standards Guide Revision Date: 4/1/2011

Overview

6/6/2011

Yale relies on a wide range of goods and services to operate and carry out its mission. Each year the University spends more than \$1 billion on commodities ranging from vehicles, to office supplies, and lab equipment to construction materials, food, and computers. The type, quality, and quantity of commodities being procured have far reaching environmental impacts. In fact these impacts extend beyond the borders of the institution, to the companies and markets being supported and on to our environment due to manufacturing, use, and disposal.

At Yale, purchasing decisions and vendor relationships must be based on a mix of social, environmental, and economic considerations. To the greatest extent possible, the most commonly purchased commodities and services are now evaluated and compared using life cycle assessments. These commodities and services are chosen based upon the best available information relative to the economic and environmental impacts on Yale University and the outside world.

Yale's Sustainable Procurement Standards are designed to facilitate the University's efforts to monitor and reduce its environmental impacts. Items that meet the standards have fewer negative effects on human health and/or the environment relative to comparable products or services. When buying these products or services, look for at least one of these standards. These standards will be reviewed and updated on a regular basis. Also refer to the Yale University Green Purchasing website (http://www.yale.edu/procurement/green_purchase.html) for additional information.

products or services	Look for these Standards
Office Supplies	
Multi-use office paper	30% or greater post-consumer recycled content
Toner cartridges	Remanufactured cartridges
Break room supplies	Post-consumer recycled content Biodegradable/compostable
Binders and indexes	Post-consumer recycled content
Envelopes and shipping supplies	Post-consumer recycled content
Filing supplies	Post-consumer recycled content
Paper products	Post-consumer recycled content
Writing instruments	Post-consumer recycled content
General office supplies	Post-consumer recycled content
Electronics	
Computing equipment (e.g. desktops, laptops, monitors, servers)	EPEAT Certified (verification level "Silver" or "Gold") Energy Star certified
Office equipment (e.g. copiers, printers)	Energy Star certified
Cleaning Supplies	
Cleaning supplies (e.g. cleaners, disinfectants, floor cleaning and waxing materials)	Green Seal certified EPA DfE Approved

When buying these

1 of 2

The official version of this information will only be maintained in an on-line web format. Any and all printed copies of this material are dated as of the print date. Please make certain to review the material on-line prior to placing reliance on a dated printed version.

Guide 3201 GD.02 - Sustainable Procurement Standards Guide

Paper products (e.g. toilet tissue, paper towels)	EcoLogo certified
	Green Seal certified
	EPA Compliant
Furniture	
Office furniture (e.g. chairs, desks, modular	BIFMA Level certification
walls/furniture)	Cradle to Cradle certified
	Indoor Advantage certification
	PVC Free
Paint	
Paint	Low or no volatile organic compounds (VOCs)
University Vehicles	
Vehicles	Electric for light-duty campus-only vehicles
	Zero or ultra low emissions
Light Bulbs	
Screw-In Type Bulbs	Energy Star qualified CFL(Compact Fluorescent)
Pin-Type Bulbs	TCLP Compliant
Water Service	
Drinking Water	Filtration Unit
Appliances	
Refrigerators	Energy Star certified
Dishwashers	Energy Star certified
Washing Machines	Energy Star certified
Room Air Conditioners	Energy Star certified

8/13/2010 Page 2 of 2 The official version of this information will only be maintained in an on-line web format. Any and all printed copies of this material are dated as of the print date. Please make certain to review the material on-line prior to placing reliance on a dated printed version.

Source: Yale University

Appendix C: RFP & PO Terms and Conditions

Duke University

Sample Language from a furniture RFP

5. Diversity and Environmental Programs

B. Environmental Program

Duke University strives to become a leader in environmental stewardship. Toward this purpose, Duke has initiated an Environmentally Preferable Purchasing (EPP) program. Our goals are to minimize waste, reduce pollution, conserve natural resources, and model environmental protection practices within the Duke University and Duke Medicine. For details, see Duke's EPP Guidelines at www.procurement.duke.edu/procurement/eppguidelines.pdf.

All primary suppliers must submit a plan with their bid, indicating how they intend to partner with Duke to help fulfill our environmental sustainability goals. Each plan will be evaluated based on good faith efforts and the ability for each supplier to effectively communicate their social and environmental accountability based on the following:

Packaging with post-consumer recycled content

Packaging that is locally recyclable

Minimized packaging

Packaging reclamation and reuse programs

Product reclamation and recycling programs

Reusable alternatives to commonly discarded products

Familiarization with LEED-CI point rating systems and the availability of qualifying products Previous LEED-CI projects that supplier has been involved with

A list of LEED accredited professionals within the organization and any fee schedule associated with the consultation of this staff

The ability to provide a detailed list of materials, manufacturers, facility locations and waste produced from the manufacturing of each product offered

Personnel that will seek-out, identify and promote environmentally friendly products through their purchasing systems, including print material and online ordering systems with a specific icon that is clearly explained in the print or online catalog

The ability to provide quarterly spend reports with regards to green product purchases Active participation in Duke's EPP program, including dissemination of information and collection of recyclable and reusable materials upon delivery and at end of life

An accessible staff that follows the fundamental beliefs stated in Duke's Environmental Statement, which can be viewed at: <u>http://www.duke.edu/sustainability/documents/Duke Env</u> <u>Policy statement.pdf</u>

Duke gives preference to suppliers with a commitment to cost, quality, and environmental excellence. Bidders are encouraged to include concise information on reduced impact products and services. Include relevant certifications of materials sources and manufacturing processes.

Standard PO terms and conditions that all vendors agree to are stated as follows: SECTION 37: ENVIRONMENTAL STEWARDSHIP

Duke is committed to environmental stewardship, and Contractor shall take reasonable steps to minimize negative environmental impact.

Contractor shall minimize the amount of packaging and other incidental waste discarded in the course of distributing products and rendering other services. Contractor shall reuse and/or recycle such materials whenever feasible.

To the extent possible, Contractor shall opt for materials that do not pose environmental and health risks.

When supplying products covered by Energy Star guidelines, Contractor shall supply products that meet these guidelines. Product categories, program details, model listings, and product criteria are available at <u>www.energystar.gov</u>. In all other product areas, Contractor shall supply energy efficient products.

Primary Contractors must submit a plan documenting their environmental stewardship efforts. Following Purchase Order/Agreement award, the Contractor is required to maintain records that identify both first and second tier efforts and submit quarterly progress reports. SECTION 38: SUPPLIER DIVERSITY

Duke maintains a voluntary Supplier Diversity Program in order to provide an equitable competitive environment for historically underutilized business sectors. Diverse Suppliers are firms that are small, disadvantaged, woman, veteran, service-disabled veteran, HubZone or LGBT (lesbian, gay, bisexual, transgender) owned. Ownership refers to at least 51% financial control as well as operational management. Diverse Suppliers are recognized with appropriate documentation of ownership status as certified by a recognized certifying organization or agency. Recognized certifying bodies include: U.S. Small Business Administration, N.C. Department of Historically Underutilized Business, Durham Department of Equal Opportunity/ Equity Assurance, National Minority Supplier Development Council, North Carolina Minority Supplier Development Council, Women's Business Enterprise National Council, National Gay and Lesbian Chamber of Commerce, as well as local, regional, city and state certifying agencies. In addition to primary suppliers, Duke pursues maximum participation through second-tier efforts. Primary contractors must submit a plan for their involvement with diverse second-tier suppliers. Following Purchase Order/Agreement award, the Contractor is required to maintain both first and second-tier efforts and submit quarterly progress reports. By taking an active role in working with Diverse Suppliers, Duke can optimize price, service, and delivery conditions while building the local community and economy. Supplier diversity will be one, but not the sole, consideration in all Purchase Order/Agreement awards.

Harvard University

CFR Amendment Language

Unless in conflict with local state law or city ordinance, Vendor shall endeavor to ensure that Materials or products purchased by Harvard under this Agreement meet the State of California Department of Consumer Affairs TB117-2013 standard (including the inner resilient filling, upholstered cover fabric, barrier materials and decking materials) and a label (in accordance with California Senate Bill 1019 and Section 19094 of the California Business and Professions Code) will clearly state whether or not flame retardant chemicals have been added. Vendor shall endeavor to ensure that plastic parts for TB 117-2013 furniture are free of flame retardant chemicals (as defined in California legislation SB 1019 and Section 19094 of the California Business and Professions Code)."

Harvard Standard Contract Language

<u>Environmentally Preferable Purchasing</u>. If germane to the transaction herein contemplated, Customer and Vendor shall work jointly to develop and implement programs for Harvard that support EPP (as defined hereafter). For purposes of this Agreement, "EPP" means the practice of buying products and/or services that have a lesser or reduced impact on the environment and human health, when compared to competing products or services that serve the same purpose. To this end, Vendor shall: (i) provide an extensive selection of green products and ensure that products offered meet the appropriate criteria and (ii) work with Customer, on behalf of Harvard, to identify new green products as they become available and to actively market those products to Customer, on behalf of Harvard.

RFP Language

<u>Environmental Responsibility</u>: Harvard demonstrates institutional practices that promote sustainability, including measures to increase efficiency and use of renewable resources, and to decrease production of waste and hazardous materials, both in Harvard's own operations and in those of its suppliers. For more information visit http://green.harvard.edu/.

Identify and discuss any initiatives that you or your primary manufacturer has undertaken to address environmental issues.

Cornell University

Environmental Certifications

Please explain what awards or certifications the manufacturer has attained due to environmental friendly programs. What special certifications have been awarded to new and existing buildings (ie/ LEEDS Certification, etc.?) What percentage of the corporation (buildings or facilities) meets these certifications and at what level?

Environmental Packaging

It is required that ALL packaging be removed and returned, by the installer, to the manufacturer for reclamation and re-use where possible. Please explain your policy in reference to Environmental packaging re- use, construction of, and reduction practices.

Environmental Policy

Please outline what the manufacturer's policy is towards environmental concerns. What practices make your company stand out compared to your competitors?

Environmental Preferable Purchasing

Cornell University's pledge of support and participation from all levels of the campus in protecting the environment and building a sustainable future (one in which its environment, natural resource base, and the functions and viability of natural systems is protected) is a challenging yet desirable and attainable goal. The Office for Supply Management Services recognizes the positive impact that it can make on the environment through its purchasing decisions. It is our goal to increase our acquisition of environmentally preferable products and services to the extent feasible, consistent with price, performance, availability and safety considerations. In direct response to this question, vendors should comment on how they are integrating these same principles into their manufacturing processes as well as the goods and services that they are producing. Some examples of the areas in which vendors may wish to provide comments: recyclable content, pre- and post- consumer waste use and content, recycling of used customer products, energy efficiency, biodegradability, hazardous waste minimization, resource conservation, renewable power.

Environmental Production Practices

Please outline what the manufacturer is doing to address production concerns from an environmental standpoint. For example what alternative power sources are being utilized? How is waste being reduced in the production process? What is the split of recycled versus recyclable

and non-recyclable materials for products? Please outline anything that may address this category.

Environmentally Friendly Transportation

What has your company done to provide the most efficient and eco-friendly transportation means to its customers?

Environmentally Friendly use of Partnerships

What does your company impose on its suppliers to do business with your company?

Energy Star Requirements

In compliance with Cornell University Energy Star requirements, all electronic appliances, equipment, microcomputers (including personal computers), printers that are deliverables under the procurement or are purchased by the University shall be equipped with or meet the energy efficiencies and efficient low-power standby feature as defined by the EPA Energy Star program (unless the equipment always meets EPA Energy Star efficiency levels). The microcomputer, as configured with all components, must be Energy Star compliant.

This low-power feature must already be activated when equipment is delivered to the University and be of equivalent functionality of similar power managed models. If the equipment will be used on a local area network, the vendor must provide equipment that is fully compatible with the network environment. In addition, the equipment will run commercial off-the-shelf software both before and after recovery from its energy conservation mode.

Products must meet or exceed the product efficiency established at the "Energy Star for Higher Education" Web site, <u>http://www.energystar.gov/index.cfm?c=higher_ed.bus_highereducation</u>

Brown University

Excerpt from a cover letter attached to RFPs:

It is Brown's intention to consider any sustainable/green applications to products that we buy. Please specify if and how the product(s) offered contribute to that goal.

If your company is a diversity supplier (eg: minority owned business enterprises (MBE), women owned business enterprises (WBE), disadvantaged, and veteran owned businesses) please include information with your response

Appendix D: Duke University Guideline on Socially Responsible Investing

Guideline on Socially Responsible Investing August 20, 2004

To fulfill its educational and humanitarian purposes, Duke University must manage its investment assets wisely. Thus the primary fiduciary responsibility of the Board of Trustees in overseeing the management of the University's investment assets must be to maximize the financial return on those resources, taking into account the amount of risk appropriate for the University.

At the same time, the University wishes to be a good corporate citizen and a responsible and ethical investor. The authority of its Board of Trustees to take ethical factors into account when setting investment policies and practices derives from the very stewardship responsibilities which attend the ownership of endowment securities. We recognize that sometimes a corporation's policies or practices can cause substantial social injury—that they may have a gravely injurious impact on employees, consumers, and/or other individuals or groups that results from specific actions by a company. For example, corporate actions may violate domestic or international laws intended to protect individuals and/or groups against deprivation of health, safety, or civil, political, and human rights.

Thus for investments not governed by the Employee Retirement Income Security Act (ERISA), when the Board of Trustees judges that corporate policies or practices cause substantial social injury, it will give weight to this factor in investment practices related to corporate securities. Actions the University takes may or may not materially affect an offending corporation, but such actions may have significant symbolic value. When the University community has engaged in substantive discourse on an issue and expressed broad concern that substantial social injury is being caused by such policies or practices, the president may make a recommendation to the Board of Trustees.

Where the Board of Trustees finds that a company's activities or policies cause substantial social injury, and that a desired change in the company's activities would have a direct and material effect in alleviating such injury, it may instruct the Duke University Management Company (DUMAC) to take appropriate action, including the exercise of the University's practicable shareholder rights to seek modification of the company's activities to eliminate or reduce the injury, using such means as

a) direct correspondence with management

b) proxy votes

c) sponsoring shareholder resolutions.

If the Board of Trustees further concludes that the company has been afforded reasonable opportunity to alter its activities, and that divestment will not impair the capacity of the University to carry out its educational mission (for example, by causing significant adverse

action on the part of governmental agencies), then it may instruct DUMAC and its managers to divest the securities in question within a reasonable period of time.

Appendix E: Impact Alpha Competition Proposal

Impact Alpha Competition

3 April 2016 Prepared for Campus Sustainability Committee Prepared by Alex Klonick

Goals

Create a competition that creates a network of top universities to move towards cohesive ESG impact investment criteria and consolidates efforts to encourage alternative endowment strategies.

Structure

Universities select a committee representative and a student led team. The representative would join the inter-university committee that debates with judges about the performance criteria in financial, carbon, and ESG terms. The judges would be representatives from industry and strategic partners.

The competition officially begins at the start of the calendar year. Each university would choose to stake an amount of at least \$100K USD and no more than \$1M USD. 10% of each stake would go into a bucket managed by the third party manager as a baseline.

Student teams makes recommendations on how the universities remaining stake should be managed. The recommendations are presented to the individual university's endowment manager. The manager chooses to either

Accept the recommendations to the key third party manager for implementation or,

Deny the recommendation solely based on a highly unreasonable amount of risk that would beyond a doubt significantly diminish the universities stake.

The third party manager would manage all universities activities as well as the aggregate bucket separately in an industry baseline ESG fund. The competition would end after six months at which point the winners would be rewarded with the returns from the baseline aggregate bucket. The inter-university committee meets over the following months to re-evaluate the criteria for the next year.

Precedent

RISE (Redefining Investment Strategy Education) – World's largest student investment conference. Drew 150 universities worldwide. Students manage real money in competition. Began in 2001. Discontinued in 2015.

Yale/ Commonfund Low Carbon Portfolio Case Competition - Teams develop investment management strategies to respond to fossil fuel divestment campaigns. Began in 2014. Additionally, Duke teams strategy being built into actual fund.

Timeline

Now - July: Determine financial feasibility and logistics with DUMAC.

July – August: Market to universities to get buy in. Creation of inter-university committee. August – September: Committee debates and decides on criteria for judging competition. September – December: Universities field their team. Funds deposited to third party managers January – July: Teams compete