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Looking Beyond Fossil Fuel Divestment: Combating Climate Change in Higher Education

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CHAPTER ONE

The Climate Question and the Divestment Answer

In 2007, Secretary-General Ban Ki Moon of the United Nations recognized anthropogenic climate change as "the defining challenge of our age."[1] It seems natural that college-aged students would be eager to take up this challenge, as universities have been the breeding ground in the past for activism on other defining challenges, activism supporting civil rights and protesting poverty and inequality, apartheid and slavery, and war. As the best and brightest of the upcoming generation, as future leaders who will soon have money and power thrust into their nervously shaking hands, how are college and university students now responding to the defining challenge of their age—the climate crisis?

For there is little doubt that the climate is indeed in crisis. There is a well-established international scientific consensus that greenhouse gas (GHG) emissions resulting from human activities are causing climate change. The most recent assessment report from the United Nations Intergovernmental Panel on Climate Change (IPCC) states that it is extremely likely, a 95-100% chance, that human influence is the dominant cause of the rising average world temperatures observed since the mid-20th century.[2] Along with rising temperatures, the IPCC warns of related effects such as rising sea levels, ocean acidification, decreased biodiversity, and severe weather

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[1] Elisabeth Rosenthal, "Ban Calls Climate Change 'Defining Challenge of Our Age,'" *The New York Times*,

[2] IPCC, 2013: Summary for Policymakers. In: Climate Change 2013: The Physical Science Basis. Contribution of Working Group I to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Stocker, T.F., D. Qin, G.-K. Plattner, M. Tignor, S.K. Allen, J. Boschung, A. Nauels, Y. Xia, V. Bex and P.M. Midgley (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

patterns. For human populations around the world, this means increased vulnerability to coastal flooding, water- and vector-borne disease, food and water insecurity, and natural disasters.[3]

In 2009, the world community established a goal of holding global temperature increases at 2°C, a scientifically determined threshold beyond which damages from climate change will become dangerously disruptive and unpredictable.[4] Reaching an agreement on effective and meaningful political responses to this indisputable threat has been difficult. One such effort has been the social movement to keep the planet livable by reducing the carbon concentration in the atmosphere from its current 405 parts per million to under 350 parts per million. Founded in 2008 by environmental activist and writer Bill McKibben, the grassroots organization 350.org has spearheaded multiple campaigns directed at holding the fossil fuel industry accountable for its role in perpetuating anthropogenic climate change. On college campuses across the United States, the most prominent of 350.org's campaigns is its movement for fossil fuel divestment. As announced on Gofossilfree.org, its official website, the movement calls for institutions to "immediately freeze any new investment in fossil fuel companies, and divest from direct ownership and any commingled funds that include fossil fuel public equities and corporate bonds within five years."[5] Simply put, to divest from fossil fuels is to withdraw one's money from all investments in fossil fuel companies.

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[3] IPCC, 2014: Summary for policymakers. In: *Climate Change 2014: Impacts, Adaptation, and Vulnerability. Part A: Global and Sectoral Aspects. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change* [Field, C.B., V.R. Barros, D.J. Dokken, K.J. Mach, M.D. Mastrandrea, T.E. Bilir, M. Chatterjee, K.L. Ebi, Y.O. Estrada, R.C. Genova, B. Girma, E.S. Kissel, A.N. Levy, S. MacCracken, P.R. Mastrandrea, and L.L. White (eds.)]. Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

[4] Peter Frumhoff, "2° C or Not 2° C: Insights from the Latest IPCC Climate Report," September 27, 2013, *Union of Concerned Scientists – The Equation*, accessed September 20, 2014, http://blog.ucsusa.org/2-c-or-not-2-c-insights-from-the-latest-ipcc-climate-report-255.

[5] "Frequently Asked Questions," *Fossil Free*, accessed September 20, 2014, http://gofossilfree.org/frequently-asked-questions/.

This movement has grown explosively since its inception in 2011, creating hundreds of campaigns worldwide and harnessing the energy of students on campuses everywhere. 350.org is the organizing force behind the fossil fuel divestment movement, but the public face of the movement is the college student. On campuses all across the United States, student-run divestment campaigns are pushing for college and university Boards of Trustees and Managers to commit to an endowment investment policy that excludes The Carbon Underground 200, a list of the top 100 public coal companies and top 100 public oil and gas companies according to the potential carbon dioxide emissions of their reported reserves. Together, these companies cover 97% of the privately held, publicly traded fossil fuel reserves listed on the stock exchange.[6] It is important to note, however, that the portion of the world's reserves controlled by these privately held companies is quite small: country governments, through nationalized companies, control more than 75% of world oil production.[7]

The fossil fuel divestment movement is not primarily an economic strategy, but a social and political one. The movement hopes to push society and policymakers towards acting on climate change by bringing attention to the moral nature of anthropogenic climate change and protesting the immoral actions of the fossil fuel industry, especially their practice of lobbying for special breaks from the government. According to Gofossilfree.org, divesting from fossil fuel companies will "[take] the fossil fuel industry to task for its culpability in the climate crisis. By naming this industry's singularly destructive influence…we hope that the fossil fuel divestment movement can help break the hold that the fossil fuel industry has on our economy and our

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[6] "The Carbon Underground 200," *Fossil Free Indexes, LLC,* September 23, 2014, accessed November 1, 2014, http://fossilfreeindexes.com/wp-content/uploads/2014/09/Carbon-Underground-200_FACT-SHEET-9-23-14.pdf.
[7] Ian Bremmer, "The Long Shadow of the Visible Hand," *The Wall Street Journal*, May 22, 2010, accessed September 20, 2014, http://www.wsj.com/articles/SB10001424052748704852004575258541875590852.

governments."[8] Ultimately, the movement hopes to exert enough social and political pressure on fossil fuel companies to force them to keep 80% of their reserves underground, the amount that Fossil Free Indexes calculates cannot be burned in order to keep climate change below the 2°C threshold.[9]

In addition to universities, the fossil fuel divestment movement also urges other institutions such as local governments and religious institutions to divest, but for the purposes of this thesis, I am only addressing its activism on college campuses. I have restricted my scope in this way because of my limited time and resources, although I anticipate that the conclusions drawn from this thesis may be applicable to other types of institutions facing requests to divest. Thus, from this point onward, when I refer in this thesis to "institutions" in the context of divestment, I am referring only to institutions of higher education, colleges and universities, in the United States.

Despite student fervor, fossil fuel divestment has remained a debated tactic for combating anthropogenic climate change on campuses. According to Gofossilfree.org, as of September 2014, only 13 colleges have agreed to divest.[10] At least 24 colleges have declined to divest[11] and numerous others have not yet opened official consideration of fossil fuel divestment despite pressure from students. For institutions that have released an official decision on divestment, given reasons for agreeing or declining to divest vary but commonly fall into several categories. Reasons for agreeing to divest include ensuring the future stability of the endowment and adhering to the institution's social and environmental responsibility. Reasons for declining to

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[8] "Frequently Asked Questions," *Fossil Free*.
[9] "The Carbon Underground 200."
[10] "Divestment Commitments," *Fossil Free*, accessed September 16, 2014, http://gofossilfree.org/commitments/.
[11] Jessica Grady-Benson, a leader of the Claremont Colleges divestment campaign, documented 24 rejections as of early 2014 in her thesis. This number has continued to grow since then. Due to time constraints, my focus is not to compile an exhaustive list of rejections, but rather to use her list as a solid sample of responses to examine motives behind declining to divest. However, Gofossilfree.org maintains a complete list of universities that have agreed to divest, so the number of successes *is* confirmed as of September 2014.

divest include a perception of excessively high costs and risks, and the fact that divestment is likely to have minimal environmental impact. These given reasons are crucial to better understanding the motives behind institutions' decisions on divestment. I will return to examine them in detail in Chapter 2.

Looking Beyond Divestment

This paper will not address the question of whether or not institutions of higher education should divest from fossil fuels. It is clear from the varying responses of institutions thus far that each institution perceives a unique set of advantages and disadvantages when considering divestment, so arguing for or against a blanket recommendation on fossil fuel divestment is not my purpose. Rather, I will propose that, regardless of its merits, pushing for fossil fuel divestment alone is definitively insufficient. It is only one of many tactics for fighting climate change that should be pursued together. Furthermore, this thesis will argue that the current tendency of the movement's discourse to elevate divestment above all other tactics to fight climate change, and to disparage other tactics as counteroffers to divestment, is counterproductive. Of course, the divestment movement is not monolithic. Only some divestment activists contribute to these harmful aspects of the discourse. However, all divestment activists, and everyone concerned about the climate crisis, have a stake in changing the divestment discourse for the better. This must happen if we have any hope at a cohesive response towards anthropogenic climate change on college campuses.

As a social movement, fossil fuel divestment's main strength is the potential to rally society to save the climate – to focus attention on achieving the wide variety of behavioral and

systemic changes necessary to combat climate change. But does the current divestment discourse fulfill this potential, or does it take away from it?

Jessica Grady-Benson's 2014 thesis *Fossil Fuel Divestment: The Power and Promise of a Student Movement for Climate Justice* is the primary scholarly work that has been produced thus far on the young movement. In this work, Grady-Benson criticizes the "appeasement tactic of addressing lesser, campus-based environmental initiatives" used by institutions that are unwilling to divest, initiatives such as committing to a plan for neutralizing all campus GHG emissions. She portrays these "appeasement actions" as simply "a frustrating method of delaying divestment."[12] Furthermore, the thesis includes harsh characterizations of institutions unwilling to divest as lacking leadership and values. Grady-Benson quotes divestment activist Kai Orans, who declares, "…we'll have to leave leadership and values to schools like Pitzer [that have decided to divest]," in the same published article in which he accuses Pomona College, who has declined to divest, of "false heroism, flip-flopping, and opportunism."[13]

These quotes reveal an attitude that elevates divestment as a singularly important goal above all other environmental sustainability actions that campuses can take, and in the process, disparages those other actions. As mentioned before, not everyone in a social movement will hold the same outlook. However, when the primary scholarly work on the movement thus far so strongly portrays this attitude, it indicates that the attitude is prominent in the movement's discourse. Patrick Pelegri-O'Day, a former divestment activist, confirms that, in his experience, the movement "looked down on local environmental sustainability initiatives as a counteroffer from college or university administrations to our request to divest. In response, we turned to

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[12] Jessica Grady-Benson, "Fossil Fuel Divestment: The Power and Promise of a Student Movement for Climate Justice" (B.A. thesis, Pitzer College, 2014), 57.
[13] Kai Orans, "Pitzer Sets the Claremont Curve," *The Student Life*, April 25, 2014, accessed September 22, 2014, http://tsl.pomona.edu/articles/2014/4/25/opinions/5281-pitzer-sets-the-claremont-curve.

confrontational actions and adversarial language. I don't agree with that because it attacks administrations for doing something in line with our goals: shifting resources to facilitate a transition towards a sustainable society."[14]

The divestment movement has the potential to be either a multiplier of social force to fight climate change or a counterproductive distraction, and unfortunately, it seems that aspects of its current discourse push it towards the latter. When the climate activism landscape on a campus is dominated solely by divestment, it stands to take away much-needed focus from other tactics that are essential to combating the climate problem. We should be wary if the disproportionate attention given to divestment allows it to become, in the organizational culture, in the mind of the institution, emblematic of *all* tactics in the war against anthropogenic climate change. The persistence of the divestment movement is admirable, but it is counterproductive if it provides an excuse for institutions that have agreed to divest to be satisfied that they have "done their part," while neglecting to push further. It is also counterproductive if it provides an excuse for institutions that are unwilling to divest to do nothing at all, overlooking the numerous other possibilities for fighting climate change that might appeal more strongly to them than divestment does.

Unfortunately, my personal experience as a student worker in the Sustainability Integration Office (SIO) at Pomona College points to a campus culture that demonstrates precisely such divestment tunnel vision. The divestment movement occupies center stage in campus climate change discourse, becoming emblematic of all environmentally beneficial behaviors (I define "environmentally beneficial behaviors" as human behaviors that contribute to the ability of humanity to live within the regenerative capacity of the Earth's ecosystems).

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[14] Personal interview by author, November 21, 2014.

Although I have never been a participant in the fossil fuel divestment movement, fellow students will often assume that I am one, simply because of the pro-environment nature of my academic and extracurricular activities.

"You're an EA [Environmental Analysis] major, right? Where do you work?" students will ask me.

"The Sustainability Integration Office," I reply.

The frequent response: "Oh! So, you must do divestment, then."

Students conflate divestment with all other environmentally beneficial behaviors, despite the fact that the SIO is a branch of the Pomona College administration, and thus can neither participate in nor express an official position on divestment separate from the administration's position. Instead, the main purpose of the office is to establish a variety of programs and initiatives to encourage environmentally beneficial behaviors on campus, and to monitor our progress towards the goals enumerated in the institution's adopted Sustainability Action Plan. Regarding climate change in particular, the office facilitates progress towards the goals enumerated in the institution's adopted Climate Action Plan and its stated commitment to become carbon-neutral—to bring campus net GHG emissions down to zero—by the year 2030.[15]

It is duly noted that institutionally focused actions, such as the creation of Pomona College's Climate Action Plan, do not inhabit the same realm of collective action as the grassroots social justice activism that Jessica Grady-Benson suggests is the main strength of the push for fossil fuel divestment.[16] Institutionally focused actions, by which I mean actions focused on reducing the institution's own contribution to climate change, do not explicitly target

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[15] Carlos Ballesteros, "Pomona Aims to be Carbon Neutral by 2030," *The Student Life*, February 14, 2014, accessed September 26, 2014, http://tsl.pomona.edu/articles/2014/2/14/news/4720-pomona-aims-to-be-carbon-neutral-by-2030.

[16] Grady-Benson, "Fossil Fuel Divestment," 9.

social and political processes outside the institution. However, this thesis will argue that inherent differences between these two approaches to fighting climate change do not indicate that one is better or more important than the other. This thesis will refute Grady-Benson's claim that emissions reduction efforts at the institutional level are "lesser actions" than those for which the fossil fuel divestment movement strives. On the contrary, even a cursory look at institutional consumption and behavioral patterns reveals that taken cumulatively, these patterns can matter immensely. For example, in fiscal year 2012-2013 alone, the net GHG emissions generated by Pomona College were equal to the emissions from 4,662 passenger cars or the energy required to power 2,020 homes![17]

Furthermore, because environmental degradation itself can be regarded as a form of maladaptive human behavior, one should not downplay the role of altering consumption and behavioral patterns in combating the climate problem.[18] From the perspective of organizational psychology, individuals control the decisions that determine the direction of institutions. The attitudes of individuals, as members of an institution, are crucial. Furthermore, taken together, these attitudes form an organizational culture that may itself further influence large-scale decision-making. Thus, changing individual attitudes and behaviors creates a far larger impact than the sum of the individual changes. When it comes to environmentally beneficial behaviors specifically, research by Ones et al. proposes that employees are indeed at the root of their organization's culture: an organizational culture will become increasingly pro-environment only when employees in the organization demonstrate a high level of involvement in environmentally

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[17] Emissions number from "Pomona College Sustainability Annual Report 2012-2013," *Sustainability Integration Office,* accessed September 24, 2014, http://www.pomona.edu/administration/sustainability/resources/Sustainability-Annual-Report-12-13.pdf. Equivalency calculated by author using calculator from "Greenhouse Gas Equivalencies Calculator," *US EPA*, accessed September 24, 2014, http://www.epa.gov/cleanenergy/energy-resources/calculator.html.

[18] Deniz S. Ones and Stephan Dilchert, "Environmental Sustainability at Work: A Call to Action," *Industrial and Organizational Psychology* 5 (2012): 452.

beneficial behaviors.[19] It seems clear that applications of organizational psychology can be reasonably extrapolated to institutions such as college campuses, where occupants also perform habitual behaviors and interact with each other in various roles, contributing to a distinct long-term institutional culture.

Therefore, working on a level smaller than widespread activism can create impacts not just from altering the consumption and behavior patterns of individual students, but also from altering the significant resource consumption of large institutions like universities. Furthermore, it is important to consider what kinds of behavior patterns are made into norms and taught to students, faculty, and staff within these institutions. This influence is extended through the university's presence in the surrounding community, and through the value systems that its graduates and employees take with them upon leaving the campus. It is commonly understood that the role of institutions of higher education is to educate and establish the habits and values of the world's next generation of leaders. If, as Secretary General Ban Ki Moon stated, anthropogenic climate change is the defining issue of our age, it is vital for leaders in coming decades to be familiar with and dedicated to a wide variety of environmentally beneficial behaviors.

Illuminating Motives for Environmentally Beneficial Behavior

Fossil fuel divestment holds an important place in combating the climate problem, but it is insufficient when pursued alone because it appeals only to a couple of possible motives within the wide array of motives that may persuade people to engage in environmentally beneficial behavior. Socio-psychological explanations for why people engage in environmentally beneficial

[19] Deniz S. Ones and Stephan Dilchert, "Measuring, Understanding, and Influencing Employee Green Behaviors," in *Green Organizations: Driving Change with I-O Psychology*, ed. Ann Hergatt Huffman and Stephanie R. Klein (New York: Routledge, 2013), 116.

behavior have been extensively studied and categorized. Two major theories, the Norm Activation Model and the Value-Belief Norm Theory, posit that this behavior is galvanized by "pro-social" motives such as concern for humans, concern for other species, and concern for the Earth. The Theory of Planned Behavior, the major theory in opposition to NAM and VNT, is based on a rational choice model that predicts that humans will engage in behavior that maximizes self-interest.[20]

Empirical research conducted by Ones and Dilchert further breaks these blocs of motives down into smaller categories. Their study, conducted in conjunction with their students and colleagues, investigates the environmental-related behaviors of each test subject and chronicles the distinct functional motives that each subject gives for the environmentally beneficial behaviors.[21] The motives are then classified into the categories shown in the taxonomy in Figure 1. It should be noted that there is no hierarchical relationship between the categories in this taxonomy. The categories are simply a tool for conceptual organization.[22]

The taxonomy in Figure 1 can be used to select specific messages to emphasize in order to most successfully appeal to the motives that are strongest in a given target audience:[23]

- The **environmental concern** motive involves a concern for protecting the Earth's ecosystems and other species from harm. Thus, tactics that emphasize healing and protecting nature are most successful in appealing to this motive.
- The **responsibility** motive involves engaging in behaviors because it is the subject's responsibility to do so. Tactics that reduce carelessness are most successful to appeal to this motive, perhaps, for example, by requiring environmentally beneficial behaviors within an institution (and thus creating an institutionally-mandated obligation).

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[20] Ibid, 139-140.
[21] Deniz S. Ones and Stephan Dilchert, "Employee Green Behaviors," in *Managing Human Resources for Environmental Sustainability*, ed. Susan E. Jackson et al. (Jossey-Bass, 2012), 90.
[22] Brenton M. Wiernik, email message to author, October 1, 2014.
[23] "Taxonomy of Environmental Motives," *Greenfive.org*, accessed September 10, 2014, http://greenfive.org/aashe/greenfive-handout.pdf

- The **health and safety** motive involves a concern for one's own health and safety. Tactics that point out how environmentally beneficial behaviors can also be safer and better for human health are most successful.

- The **financial and self-interest** motive involves a concern for one's own gain. Tactics that justify environmentally beneficial behaviors through financial analyses are most successful. Self-interest motives may also be aimed at improving public image, which consequently leads to other benefits. For example, for colleges and universities, these benefits may manifest as an increase in ranking or positive media attention.

- The **altruism** motive involves a concern for protecting other people from harm, including future generations. Tactics that emphasize morality and keeping other people from harm are most successful in appealing to this motive.

- The **convenience** motive involves engaging in behaviors that easily fit into the subject's preferred routines and habits. Thus, tactics that increase the ease of engaging in environmentally beneficial behaviors are most successful.

- The **ability and support** motive involves engaging in behaviors because the subject knows how, and because there is strong support from the institutions in which the subject exists. Thus, tactics that increase knowledge of environmentally beneficial behaviors and the integration of such behaviors into institutional culture are most successful.

Figure 1: Taxonomy of Environmental Motives[24]

[24] This graphic, created by the author, is a representation of the taxonomic categories found at "Taxonomy of Environmental Motives," *Greenfive.org*, accessed September 10, 2014, http://greenfive.org/aashe/greenfive-handout.pdf.

The idea that examining motives is key to changing behaviors for the benefit of the environment appears frequently in social psychology. "Community-based social marketing" is a strategy that has been developed for identifying and targeting the numerous barriers to changing from environmentally harmful behavior to environmentally beneficial behavior. These barriers vary from person to person, and are also activity specific: for example, the barriers to engaging in composting are different from the barriers to engaging in fossil fuel divestment. The strategy differentiates between internal barriers, or psychological barriers, and external barriers, or extenuating circumstances that affect the ease of engaging in the environmentally beneficial behavior.[25]

The barriers to engaging in behaviors identified in community-based social marketing can be conceptualized as the *inverse* of the motives for engaging in behaviors identified by Ones et al. When motives are strong enough, they incite environmentally beneficial behavior; conversely, when barriers are strong enough, they prevent environmentally beneficial behavior. The **environmental concern, health and safety, financial and self-interest**, and **altruism** motives are related to internal barriers, or the lack thereof. The **ability and support** and **convenience** motives are related to external barriers, or the lack thereof. The **responsibility** motive may be related to both internal and external barriers, depending on whether or not there is an institutionally mandated responsibility that imposes an external pressure to be responsible. Community-based social marketing reinforces the research done by Ones et al. by asserting that using only a self-interest strategy, or only a strategy that enhances knowledge about the environment and attempts to change attitudes, is usually not adequate. Instead, a successful campaign to foster environmentally beneficial behavior must focus on overcoming each

[25] Doug McKenzie-Mohr, *Fostering Sustainable Behavior: An Introduction to Community-Based Social Marketing*, 3rd ed. (New Society Publishers, 2011), 9.

decision-maker's internal and external barriers for the specific target behavior.[26] Given the inverse relationship between barriers and motives, this is just another way of saying that a successful campaign must appeal to each decision-maker's strongest motives for engaging in the target behavior.

From this perspective, then, the disparagement of institutionally focused efforts demonstrated by aspects of the divestment movement discourse is counterproductive and a waste of time, resources, and passion for protecting the climate. The two approaches are, in fact, natural complements to each other and partners in the battle against climate change. Some motives in Figure 1 will galvanize some people to environmentally beneficial action, while other motives will appeal to other groups. Divestment might fulfill some motives, but there are many other tactics that appeal to motives that divestment does not. A multi-pronged strategy that encompasses many tactics is flexible and more inclusive, so it would be disastrous for those concerned about climate change to lose sight of possibilities for action other than divestment.

From Patrick Pelegri-O'Day's experience as a divestment activist, it is easy to forget that divestment is just one means to an end. "What frustrated me about the movement is that when we tried to persuade people, we talked about divestment, not climate change. Climate change can barely come up in some of these conversations…. [Activists] get so caught up in the means that they forget about the end," he laments. "They start thinking that what they're working for is divestment, but it's really not. It's to lower carbon emissions."[27]

There are many means to the desired end. When institutions decline to divest, this does not necessarily mean that they do not care about climate change. Not everyone is going to think that divestment is one of the most productive tactics – it depends on whether or not the motives

[26] Ibid.
[27] Personal interview by author, November 21, 2014.

that divestment fulfills match their strongest motives for environmentally beneficial behavior. Rather than attacking their decisions and expending all time and resources to push for a reconsideration, which will likely create more resistance, it seems reasonable to try another pathway: use a multi-pronged approach to advocate for other environmentally beneficial behaviors that appeal to a different set of motives.

Pomona College geologist Richard Hazlett characterizes the climate crisis as a multi-pronged problem that requires a multi-pronged approach. "There are multiple big problems, they're all interlinked, and if you look only to divestment to solve them, it won't work," he says. "My main critique of the divestment movement is that it's not part of a larger package of solutions. The public will only buy into something if it is a specific goal with multiple pathways for achieving it."[28]

It is my intention that this thesis will act as a guide and starting point for institutions and activists to craft such a larger package of solutions, with multiple pathways for fighting climate change. This paper will provide an index of alternative actions that may appeal to institutions in lieu of, or in addition to, fossil fuel divestment. These alternatives can be taken as a menu of options from which institutions should strive to create a holistic, multi-pronged climate action plan.

Clarification of the Limits of this Thesis

I am neither a sociologist nor a psychologist, and this is a thesis in Environmental Analysis. Therefore, I am not attempting to debate the merits of the socio-psychological research that underlies the taxonomy in Figure 1 or its supporting arguments. I recognize that there are a

[28] Personal interview by author, November 13, 2014.

variety of other ways to conceptualize motives for environmental-related behavior; I have chosen the taxonomy in Figure 1 simply because it organizes motives into categories in a straightforward and easily understandable way. Taking the taxonomy as given, I am interested in using it as a theoretical framework to illuminate the extent to which various behaviors to help combat climate change may appeal to institutions.

So Where Do We Go From Here?

Chapter 2 of this paper will contain a detailed examination of the motives of institutions that have released an official decision on divestment to gain insight into the gaps that divestment leaves open, gaps that a multi-pronged approach can address. Chapter 2 will posit that divestment alone does not appeal to a wide enough array of motives for environmentally beneficial behavior to achieve frequent success with institutions. Offering a variety of alternatives in lieu of, or in addition to, divestment in the context of a holistic climate action plan will appeal to a wider array of motives, and thus may achieve more frequent success with institutions than simply requesting divestment alone.

Chapters 3 through 5 will investigate a selected index of alternative actions available to institutions in lieu of, or in addition to, fossil fuel divestment. Chapter 3 will address the American College and University Presidents' Climate Commitment to achieve climate neutrality. Chapter 3 will detail measures to reduce campus GHG emissions through changes to operations and facilities, and measures to neutralize remaining emissions. Chapter 4 will discuss financial measures other than divestment, such as the development of various types of green funds and the establishment of an internal institutional carbon tax. Chapter 5 will address environmental education measures, such as curriculum requirements and peer-education programs.

Finally, this paper will conclude with a discussion of the significance of the analysis and alternative actions presented here.

Statement of Positionality

I have no significant conflict of interest in writing about fossil fuel divestment, given that I have worked neither for nor against the divestment movement since its inception. However, it is important to note my firsthand experience, as a student worker in the Pomona College Sustainability Integration Office (SIO), with the difficulties of implementing some of the alternative institutionally focused actions included in this paper. My impetus for writing this thesis stems from three years of frustrating conversations with fellow students who: (1) cannot physically find their sustainability office, as it is located in a remote corner of campus, which may indicate that environmental sustainability is of low priority to the Pomona administration; (2) cannot engage fully in environmentally beneficial behaviors due to a lack of convenience and support, which may indicate a poor integration of environmental sustainability into Pomona's organizational culture; and (3) do not understand why environmentally beneficial behaviors are important, or "worth the trouble," which may indicate too little environmental education provided at our institution of higher education. It is not hard to imagine that these systemic obstacles to action, common among students, might extend to faculty, staff, and the wider campus community. Thus, while my primary motive for writing this paper remains to illuminate alternatives for *all* institutions of higher education, my affiliation with the SIO yields a secondary motive. I hope the arguments laid forth below may spur greater commitment and stronger focus amongst the Pomona College administration and trustees in combating the climate

problem, through an increased prioritization of and support for the integration of environmental sustainability into Pomona's organizational culture.

It may also be appropriate here to mention how my individual circumstances might impact my views on this subject. As a woman of color, born and raised in a city where each school I attended from K – 12th grade had metal detectors guarding its doors, there are many situations in which I am not able to claim privilege. However, I recognize that I must claim privilege with regards to issues of environmental and climate justice. Because of my positionality as a Claremont Colleges student and a middle-class citizen of the United States, I am not overburdened with daily struggles of environmental injustice. Despite this, I have compassion for those who suffer from injustices, and I would never claim that grassroots activism against environmental and climate injustice, such as the divestment movement, is not a noble and worthy cause.

However, I also strongly believe in the power of institutionally focused actions against climate change, whether in combination with grassroots activism or alone. I would not be in the middle of my third year of working at the SIO if I did not. I also would not be writing my thesis, my one enduring product of scholarship in my undergraduate years and my all-consuming labor of love for four months, on this subject if I did not. However, I would venture to say that a thesis topic born of passion and conviction is the best kind of thesis topic. Therefore, with all my caveats in mind, I invite you to consider my work below.

CHAPTER TWO

The Stated Motives of Institutions

This chapter will examine the stated motives of a selection of institutions that have released an official decision on divestment. For the purposes of this paper, a "stated motive" is a reason offered by an institution, for example, in a press release or statement from institution administrators, for why they have agreed or declined to divest. It is duly noted that the specific motives cited by trustees and administrators on record may not represent the full range of reasons for their decisions. However, unless we engage in wild speculation, there is really no way to identify their motives other than the motives that they themselves offer. Therefore, this paper will take these officially stated reasons as reasonably complete and forthcoming representations of their motives. It is also duly noted that there are arguments for and against divestment that this chapter does not include, and nuances within the included arguments that this chapter does not explore, but the scope of this paper is limited to the official stated motives of institutions on record.

Of course, one place where some analytical jumps must occur is in the interpretation of these stated motives. Hume's Law, also known as the *is-ought* thesis posited by philosopher David Hume, asserts that an ethical statement cannot be solely derived from a factual statement.[29] In other words, one cannot come up with a reason for why one should or should not do something simply based on what one believes are the facts. There must be something else involved. I propose that the something else is a concept I will call a "value." The Oxford Dictionary offers the most useful definition of my intention in using the word "value": "one's

[29] Charles Pigden, "Hume on Is and Ought," *Philosophy Now*, March/April 2011.

judgment of what is important [or worthwhile] in life."[30] One's reasoning about what *ought to be* (or what one ought to do) is a function of one's own beliefs about what *is* fact, as well as one's own values about what is important or worthwhile.

In the context of decision-making about divestment, this means that institutions are motivated to divest or not divest by these same two necessary components: (1) what they believe are the facts about the potential harm and effectiveness of divestment, and (2) values about what results are most important and worthwhile to achieve with their decision. Interpreting institution's stated motives can sometimes be easier when they are dissected into stated beliefs and values. For example, an institution may state that they will not divest because they believe divestment is not effective in terms of direct environmental impact and there are more effective tactics for causing impact. Explicit is their belief of what is fact: divestment's lack of effectiveness. Implicit, however, is their value: that direct environmental impact is the most important and worthwhile result. Thus, it becomes clear that the **environmental concern** motive appeals strongly to this institution.

It is important to emphasize that the "what *is*" portion is not necessarily indisputable fact, but merely what institutions believe is fact. A small amount of disagreement about divestment may stem solely from differences in beliefs of what *is*. These types of disagreements can be resolved as time goes by and institutions that have divested build up a body of empirical evidence about the true harm and effectiveness of fossil fuel divestment.

However, a more significant amount of disagreement about divestment stems at least partly from differences in values. Hume would say that activists cannot provide a bunch of "what *is*" statements – divestment is not financially harmful, divestment is going to force the fossil fuel

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[30] "Value," *Oxford Dictionaries*, accessed November 8, 2014, http://www.oxforddictionaries.com/us/definition/american_english/value

industry to change – and hope to derive a "we *ought*" decision from institutions using those statements alone. To persuade institutions that they *ought* to do something, activists must address their values about what is important and worthwhile. A common mistake of activists is to assume that their audience shares their same values when there is no evidence to support that assumption, or even contrary evidence to refute it. In the context of divestment, we cannot presume to know what trustees and institution administrators believe and value, aside from what they tell us they believe and value in their public statements. It will become apparent later in this chapter that some trustees and administrators indeed do not share the same values as the divestment movement.

Hume's argument also suggests that it may not be worth activists' time to try to change their audience's values. As a naturalist, Hume cautions that each person's set of values is a result of that individual's natural inclinations, and it is very difficult to change these natural inclinations.[31] This statement may seem ludicrous, but consider that there would probably be much less debate about issues like how to respond to anthropogenic climate change if it was easy to change anybody's values. Rather than trying to change values, activists should try to identify their audience's existing values, take these values as given, and then adapt a plan that will appeal to those values. This is exactly what this thesis advocates.

Keeping in mind the two components of motives (beliefs of fact and values) and using the taxonomy in Figure 1 as a theoretical framework, this chapter will identify how institutions' stated motives fall into the taxonomy's categories of motives for environmentally beneficial behavior. The stated motives given by institutions that have agreed to divest can reveal which motives the divestment action most commonly appeals to. On the other hand, the stated motives

[31] Pigden, "Hume on Is and Ought."

given by institutions unwilling to divest can reveal which motives the divestment action fails to appeal to, gaps that the divestment movement leaves open. Figure 2 below summarizes the findings that are examined in detail in the rest of this chapter. This chapter will conclude with a discussion of why these gaps indicate that fossil fuel divestment is neither necessary nor sufficient for institutions wishing to fight climate change, and that pursuing a variety of other tactics in a multi-pronged strategy is critical to combating climate change.

Figure 2. Summary of Identified Stated Motives

	Agree to Divest	Decline to Divest
Environmental Concern	• NONE: divestment proponents acknowledge divestment's lack of direct environmental impact.	• Divestment lacks direct environmental impact, so other actions with direct impact are preferable.
Altruism	• NONE: divestment proponents acknowledge divestment's lack of direct impact on avoiding the harm to humanity that climate instability causes.	• Divestment lacks direct impact on avoiding the harm to humanity that climate instability causes, so other actions with direct impact are preferable.
Responsibility	• Institutions have a duty as educators to educate the public about the climate problem and the fossil fuel industry's role in it. • If institutions have an existing policy dictating responsible investment choices, they have a duty to adhere to it. • If divestment is in the best interest of the endowment, divesting aligns with fiduciary duty.	• If divestment is not in the best interest of the endowment, it does not align with fiduciary duty. • Institutions do not have a duty to make an ideological statement using their endowment because it may politicize and interfere with their primary duty, that of academia.
Financial & Self-Interest	• Divestment is financially beneficial because it will reduce risk related to climate change: the "stranded asset risk" argument. • Divestment will cause little or no financial harm to the endowment.	• Divestment would entail unacceptably high financial risks and costs from potential increased risk in the portfolio and transaction costs incurred from reallocating assets.

Convenience	• NONE	• Tied to the discussion of transaction costs, divestment is extremely difficult to integrate into routine investment behavior.
Health & Safety	• NONE	• NONE
Ability & Support	• NONE	• NONE

Successes

Among institutions that have committed to divest, each has offered reasons, or motives, for their decision. By examining these stated motives, it is possible to identify the motives that most commonly support divestment.

Figure 3 is a table of colleges and universities that have officially agreed to divest from fossil fuels to some extent, and their stated motives for this decision, as indicated in press releases and statements from institution administrators. Jessica Grady-Benson compiled the original table for her thesis on the fossil fuel divestment movement. I have made edits to clarify abbreviations. I have also made additions to bring the table up to date to include all 13 institutions that have agreed to divest as of September 2014, according to Gofossilfree.org, the official website of the fossil fuel divestment movement.[32] I have indicated all of my edits and additions to the original table with brackets.

Figure 3. College and University Divestment Successes[33]

COLLEGE	**MOTIVATIONS FOR FFD** (According to press releases)

[32] "Divestment Commitments."
[33] Grady-Benson, "Fossil Fuel Divestment," 34-35.

1. HAMPSHIRE COLLEGE	• Alignment with values of social and environmental responsibility • Previously established [Environmental, Social and Governance investment] policy
2. UNITY COLLEGE	• Alignment with values • Power of educational institutions to take a stand against [fossil fuel companies] • Expect minimal harm to endowment
3. STERLING COLLEGE	• Alignment with values • Long-term endowment stability
4. COLLEGE OF THE ATLANTIC	• Student leadership and empowerment
5. GREEN MOUNTAIN COLLEGE	• Alignment with values
6. SAN FRANCISCO STATE UNIVERSITY	• Alignment with sustainability clause
7. FOOTHILL-DE ANZA COMMUNITY COLLEGE DISTRICT	• Alignment with values • Expect minimal harm to endowment • Long-term endowment stability
8. NAROPA UNIVERSITY	• Alignment with values • Expect minimal harm to endowment • History of socially responsible investment
9.PERALTA COMMUNITY COLLEGE DISTRICT	• Alignment with values • Providing for future students
10. PRESCOTT COLLEGE	• Alignment with values • Long-term endowment stability
11. PITZER COLLEGE	• Alignment with values • Expect minimal harm to endowment • Part of holistic climate action plan
[12. STANFORD UNIVERSITY][34]	• Alignment with values • Consistent with previously established Statement on Investment Policy on investment responsibility • Wide availability of alternatives to coal[35]
[13. UNIVERSITY OF DAYTON][36]	• Alignment with values • Reducing risk underlying fossil fuel stock for long-term endowment stability

[34] "Stanford to Divest from Coal Companies," *Stanford Report*, May 6, 2014, accessed October 1, 2014, http://news.stanford.edu/news/2014/may/divest-coal-trustees-050714.html.

[35] It should be noted that Stanford University has only agreed to divest from approximately 100 coal extraction companies, not the top 200 fossil fuel companies called for by the divestment movement.

[36] "Dayton Divests," *University of Dayton News*, June 23, 2014, accessed October 1, 2014, https://www.udayton.edu/news/articles/2014/06/dayton_divests_fossil_fuels.php.

It is immediately evident from the above table that the most frequent stated motive for divesting is alignment with values of social and environmental **responsibility**. Divestment appeals to these institutions because they perceive a duty to contribute to the goals of the divestment movement: to raise awareness about the climate problem, to put pressure on policymakers to act, and to hold fossil fuel companies accountable for their role in creating and perpetuating the problem. Explicit is their value that these goals are worthwhile; implicit is their belief that divestment will be effective in accomplishing these goals.

In a statement to the public about Unity College's commitment to divest, President Stephen Mulkey asserts that institutions of higher education have a responsibility to educate policymakers and the public misled by denial campaigns about the true nature of the climate problem: "As educators, we have an obligation to do so."[37] Donald Gould, a trustee and chair of the investment committee at Pitzer College, agrees: "…the academy has a duty to educate not only its students but also society at large. Divestment is an educational statement, not a political one."[38] Similarly, Sterling College president Matthew Derr writes, "Colleges and universities across the United States have an obligation to speak out on the critical environmental and social issues facing our country."[39] More specifically, Stanford University president John Hennessey states, universities have a responsibility to promote sustainability for the planet, and Steven A. Denning, chairman of the Stanford Board of Trustees, believes that their pledge to divest from

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[37] "President Stephen Mulkey Announces Unity College's Fossil Fuel Divestment," *Unity Focus*, November 9, 2012, accessed October 1, 2014, http://www.unity.edu/unity-focus/president-stephen-mulkey-announces-unity-college-s-fossil-fuel-divestment.

[38] Donald P. Gould, "Why We Said Goodbye to Fossil-Fuel Investments," *The Chronicle of Higher Education*, July 28, 2014, accessed October 1, 2014, http://chronicle.com/article/Why-We-Said-Goodbye-to/147929/.

[39] Matthew Derr, "Why Sterling College Divested from Fossil Fuels," *The Huffington Post*, February 6, 2013, accessed October 1, 2014, http://www.huffingtonpost.com/matthew-derr/college-fossil-fuel-divestment_b_2632391.html.

coal accomplishes that goal: "We believe this action provides leadership on a critical matter facing our world."[40]

Another form of the **responsibility** motive is the duty of institutions to adhere to their previously existing policies governing investment choices. In a few cases, institutions were able to interpret their prevailing mandates in favor of divestment. Stanford University was able to divest from coal because its Statement on Investment Responsibility, adopted in 1971, allows trustees to factor in whether or not "corporate policies or practices create substantial social injury" when deciding where to invest.[41] Likewise, Hampshire College interpreted divestment to align with existing Environmental, Social and Governance investment guidelines, adopted in 2012, to seek out businesses that prioritize social benefit and long-term sustainability.[42] Similarly, Green Mountain College interpreted divestment to align with the commitment to socially responsible investments outlined in its strategic plan "Sustainability2020."[43] When the policies that dictate the investment duties of trustees can be interpreted in favor of divestment, divestment appeals to the **responsibility** motive.

Closely related is the argument, though contentious, that fossil fuel divestment will actually benefit institutions financially in the long run. Although Pitzer trustee Don Gould is a notable exception,[44] institutions have most commonly defined the fiduciary duty of trustees as an obligation to choose investments with the aim of acting in the financial best interest of the

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[40] "Stanford to Divest from Coal Companies."
[41] Ibid.
[42] "Hampshire College Adopts Environmental, Social and Governance (ESG) Investing Guidelines," *Hampshire College News and Events*, January 3, 2012, accessed October 5, 2014, https://www.hampshire.edu/news/2012/01/03/hampshire-college-adopts-environmental-social-and-governance-esg-investing.
[43] "Green Mountain College Board Approves Divestment of Fossil Fuel Holdings," *Green Mountain College News and Events*, May 14, 2013, accessed October 5, 2014, http://www.greenmtn.edu/news_events/new_releases/green-mountain-college-board-approves-divestment-of-fossil-fuel-holdings.aspx.
[44] Gould, "Why We Said Goodbye to Fossil-Fuel Investments."

endowment.[45] When proponents argue that divestment is in the financial best interest of the endowment, they appeal simultaneously to the **responsibility** and **financial and self-interest** motives by demonstrating how divestment aligns with the fiduciary duty to maximize financial benefit. In other words, institutions will be convinced if their values dictate that it is most worthwhile to fulfill fiduciary duty by acting in the endowment's financial best interest, and believe that divestment will fulfill this obligation.

The financial argument in favor of fossil fuel divestment asserts that divesting will reduce portfolio risk and contribute to long-term endowment stability. Also known as the "stranded asset risk" argument, this argument claims that fossil fuel stocks are overvalued in the market because valuation methodologies do not take into account that 60-80% of fossil fuel reserves will be rendered 'unburnable' if the world has a chance of achieving its goal to keep global warming under 2°C.[46] Thus, fossil fuel companies are spending billions of dollars of wasted capital from investors on finding and developing stranded assets, fossil fuels that will never be used.

It is important to note that the stranded asset risk claim assumes that the fossil fuel industry will be operating in a world increasingly hostile to carbon-intensive energy sources as we strive to adhere to the 2°C warming limit set by global agreement in 2009.[47] According to a report by the Generation Foundation, stranding could occur in three major ways: (1) an increase in direct and indirect regulation limiting the use of fossil fuels or mandating the use of renewable energy sources; (2) a shift of capital allocation from fossil fuels to renewables as renewable technology becomes more appealing; and (3) sociopolitical pressures that put the fossil fuel

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[45] Cornell University Law School's Legal Information Institute defines fiduciary duty as "a legal duty to act solely in another party's interests" (see http://www.law.cornell.edu/wex/fiduciary_duty). In this case, the trustees are subject to a legal duty to act in the best interests of the endowment on behalf of donors.

[46] "Wasted Capital and Stranded Assets Press Release," *Carbon Tracker Initiative News and Events*, April 19, 2013, accessed October 8, 2014, http://www.carbontracker.org/in-the-media/wasted-capital-and-stranded-assets-press-release/.

[47] Frumhoff, "2° C or Not 2° C."

industry into disfavor.[48] Uncertainty due to the threat of impending regulation may also harm the fossil fuel industry, as credit and equity markets react in anticipation of future regulation.[49] Thus, the stranded asset risk argument appeals to the **responsibility** and **financial and self-interest** motives by claiming that eliminating the increasingly unpredictable risk related to fossil fuels and climate change will fulfill the trustees' duties to act in the best financial interest of the endowment.

A couple of institutions have cited avoiding climate change-related risk as a stated motive for agreeing to divest. Martin Neiman, the treasurer of the Foothill De-Anza Foundation, says that divesting may be a wise long-term investment strategy.[50] This is due to climate change-related risk, a Prescott College press release asserts: "Global climate change…is a tremendous risk source for humanity."[51] Furthermore, according to Thomas Van Dyck, a financial advisor and consultant for the University of Dayton, stranded assets are a specific source of this climate change-related risk. "Fossil fuel companies have a valuation that assumes every single drop of oil, everything they have in the ground, will be taken out," Van Dyck explains. "More and more people are understanding the…valuation risk associated with owning fossil fuel companies."[52]

However, despite the scattered successes of the stranded asset risk argument, it remains highly contentious. The viability of the argument depends heavily on the assumption that regulation will severely restrict fossil fuel extraction and use in the future. Even some proponents

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[48] "Stranded Carbon Assets: Why and How Carbon Risks Should Be Incorporated in Investment Analysis," *Generation Foundation,* October 30, 2013, accessed October 8, 2014, http://genfound.org/media/pdf-generation-foundation-stranded-carbon-assets-v1.pdf.
[49] Ibid.
[50] "Foundation Votes to Divest From Fossil Fuel Investments," *Foothill-De Anza Community College District Stories*, October 24, 2013, accessed October 8, 2014, http://www.fhda.edu/stories/storyReader$303.
[51] "Prescott College Commits to Fossil Fuel Divestment Resolution," *Prescott College Experience News and Events*, February 28, 2014, accessed October 8, 2014, http://www.prescott.edu/experience/news/fossil-fuel-divestment-resolution.html.
[52] "Dayton Divests."

of divestment, such as Pitzer trustee Don Gould, question the viability of the argument: "…'stranded assets' is a little bit of an exercise in wishful thinking…. [It is] asserting that just because we need to change to cleaner energy that we will change. The evidence, frankly, does not favor that to date."[53] This reveals that, despite valuing divestment as worthwhile for other reasons, Gould does not believe that divestment will likely benefit endowments financially in the future. Although a few institutions have stated that the **financial and self-interest** motive—in the form of the stranded asset risk argument—has contributed to their decision to divest, it is not a motive to which the divestment action consistently and strongly appeals.

The **financial and self-interest** motive can also be conceptualized as the inverse of a barrier that is broken down when institutions agree to divest.[54] Many institutions have stated that they decided to divest because they believe that it will cause little or no harm to the endowment. Thus, they have rejected the barrier of anticipated financial harm. For instance, Pitzer trustee Don Gould expects little harm from divestment: "The proceeds from divestment will be reinvested in something [and] historically, [fossil fuel] companies' stock performance has been roughly in line with the rest of the stock market…"[55] Press releases from both University of Dayton[56] and the Foothill-De Anza Community College District[57] indicate that they also expect no significant effect on their investment returns. Likewise, estimates produced for Unity College show that "divesting is consistent with maintaining a return that will continue to beat the market averages under current prices."[58] However, there are conflicting opinions on the anticipated financial harm that may result from divestment. Many of the institutions that have rejected

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[53] Quoted in Grady-Benson, "Fossil Fuel Divestment," 100.
[54] For a discussion of the inverse conceptual relationship between barriers and motives, see Chapter 1 of this thesis, page 15.
[55] Gould, "Why We Said Goodbye to Fossil-Fuel Investments."
[56] "Dayton Divests."
[57] "Foundation Votes to Divest From Fossil Fuel Investments."
[58] "President Stephen Mulkey Announces Unity College's Fossil Fuel Divestment."

divestment have taken just the opposite view: that meaningful financial harm can result from divestment. Institutions will decline to divest when the anticipated financial harm is large enough to be perceived as a barrier to environmentally beneficial behavior. I will examine this viewpoint in detail in the next section of this chapter.

It appears, then, that the dominant motive that tips the scale in favor of divestment is **responsibility**. Alignment with values of social and environmental responsibility comes up as a stated motive for almost all institutions that have agreed to divest. Adhering to previously mandated investment policies and fiduciary duty are also forms of **responsibility**. Divestment seems to appeal to **financial and self-interest** in a few of the abovementioned cases, but the argument for the financial benefits of divestment is contentious, which limits its appeal. The **financial and self-interest** motive is also invoked when institutions do not believe that divestment involves much cost or risk to the endowment.

Rejections

Among institutions that have officially declined to divest, each has also offered reasons, or motives, for their decision. By examining these stated motives, it is possible to identify the motives to which the divestment action fails to appeal, and thus identify opportunities to fill in the gaps by pushing for other environmentally beneficial behaviors. It is useful again here to conceptualize *motives* for environmentally beneficial behavior as the inverse of *barriers* to environmentally beneficial behavior,[59] as each stated motive for declining to divest will most likely involve a barrier to engaging in environmentally beneficial behavior, rather than an entire lack of motive to pursue environmental goals.

[59] For a discussion of the inverse conceptual relationship between barriers and motives, see Chapter 1 of this thesis, page 15.

Figure 4 is a table of a selection of institutions that have officially declined to divest, and their stated motives for this decision, as indicated in press releases and statements from institution administrators. Jessica Grady-Benson compiled the original table for her thesis on fossil fuel divestment. I have made edits to clarify abbreviations and indicated all of my edits to the original table with brackets. It is important to note that, for the purposes of this thesis, the table below is not intended to be an exhaustive list of all institutions of higher education that have officially declined to divest. Instead, this selection is intended as a sample to demonstrate the most frequently stated motives for institutions that decline to divest.

Figure 4. College and University Divestment Rejections[60]

COLLEGE	**REASONS FOR REJECTION**
BATES COLLEGE	• Fiduciary responsibility • Costs - affect financial aid
BOSTON COLLEGE	• Contradictory to divest while burning fossil fuels • Minimal impact[61] • Costs
BOWDOIN COLLEGE	• Costs and risks • Minimal impact
BROWN UNIVERSITY	• "Not the right tool" • Minimal impact
BRYN MAWR COLLEGE	• Costs • Fiduciary responsibility • Minimal impact • Shareholder advocacy
COLORADO COLLEGE	• Costs and risk • Minimal impact
CORNELL UNIVERSITY	• Risk • Should solve climate change with

[60] Grady-Benson, "Fossil Fuel Divestment," 52-53.

[61] To clarify, Grady-Benson uses "minimal impact" in this table as shorthand for minimal "impact on the fossil fuel companies or carbon emissions" (see Grady-Benson, "Fossil Fuel Divestment," 50.).

	technological solutions
DAVIDSON COLLEGE	• Costs • Minimal impact
FORT LEWIS COLLEGE	• Costs • Minimal impact
HARVARD UNIVERSITY	• Costs and risks • Don't make political statement with endowment
HAVERFORD COLLEGE	• Costs and risks • Minimal impact • "Not the right step"
MIDDLEBURY COLLEGE	• Costs and risks • Fiduciary duty • Minimal impact / unknown impact
POMONA COLLEGE	• Costs and risks • Minimal impact
SWARTHMORE COLLEGE	• Costs: predict $10-15 million lost a year • Minimal impact • "The cost of divestment would outweigh any potential benefit"
SEATTLE UNIVERSITY	• Minimal impact • Don't make statement with endowment
TUFTS UNIVERSITY	• Established Tufts Divestment Working Group April 2013, which voted not to divest • Costs - Fiduciary duty and endowment structure • Establish a Sustainability Fund and pursue other climate action (such as expanding curriculum) • Financial analysis of costs: $75 million over 5 years
TULANE UNIVERSITY	• Not appropriate or effective: minimal impact • Don't make political or ideological statement with endowment • Risk to the endowment
UNIVERSITY OF RHODE ISLAND	• Costs and risks
WHITMAN COLLEGE	• Costs and risks • Contradictory to divest while burning fossil fuels • There are more effective ways to address [anthropogenic climate change]

It is apparent at once that the **financial and self-interest** motive poses as the most common barrier to divesting among institutions that have officially declined to divest. These institutions believe that divestment would entail unacceptably high financial risks and costs. For example, Tufts University estimates that their endowment would decrease $75 million in market value over the next five years,[62] Swarthmore College estimates losses of $10-15 million in endowment income per year,[63] and Pomona College estimates a total decrease of $485 million in endowment performance over ten years.[64] Jessica Grady-Benson identifies three major sources of the risk and cost of divestment cited by institutions: potential increased risk in the portfolio, the difficulties of divesting due to endowment structure, and transaction costs incurred from reallocating assets.[65] Because I am not an expert in investment theory, the following is only a basic discussion of the risks and costs of divesting, designed to reveal how the **financial and self-interest** motive can pose as a barrier to divesting.

Divestment causes potential increased risk in institutions' portfolios because it restricts the institution's investment choices, thus constraining their use of diversification, a widely accepted risk management technique. A portfolio that is diversified, containing a wide variety of investments in different asset classes that are not perfectly correlated, will, on average, pose a lower risk than any individual investment in the portfolio. Diversifying buffers against unsystematic financial risk. In a diversified portfolio, the investments that do well will neutralize

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[62] Tony Monaco, "Statement on Divestment from Fossil Fuel Companies," *Tufts University Office of the President*, February 12, 2014, accessed October 10, 2014, http://president.tufts.edu/2014/02/statement-on-divestment-from-fossil-fuel-companies/.

[63] "An Open Letter on Divestment," *Swarthmore College Board of Managers*, September 11, 2013, accessed October 10, 2014, http://www.swarthmore.edu/board-managers/open-letter-divestment.

[64] David W. Oxtoby, "President David Oxtoby's Letter to Community on Divestment Decision," *Pomona College Office of the President*, September 24, 2013, accessed October 10, 2014, http://www.pomona.edu/news/2013/09/files/oxtoby-divestment-letter.pdf.

[65] Grady-Benson, "Fossil Fuel Divestment," 102.

those that do poorly.[66] In the context of divestment, Haverford president Daniel Weiss states, "A portfolio that excludes a major asset class will under-perform a more fully diversified portfolio."[67] Constraining diversification by avoiding investments in fossil fuel companies could raise potential risks in institutions' portfolios.

The way that endowments are now structured also poses difficulties to divesting, with related costs. Several decades ago, universities invested directly in individual companies, which made it relatively easier to decide to divest from certain individual companies. However, endowment structures have now changed in response to evolving markets and standards of investing. Tufts University president Tony Monaco offers an easily understood explanation of the difficulties that institutions face:

> …Our endowment, like those at many other universities, makes extensive use of commingled or pooled funds, in which multiple investors hold a "slice" of an investment portfolio…. one drawback of this investment structure is that investors cannot dictate the guidelines of the commingled fund; they can only choose whether or not to invest under guidelines specified by the fund manager. Because of this "in-or-out" choice, if we decided to begin a process of divesting today, Tufts would have to turn over about 60 percent of its current investments and find substitute managers willing to invest in a fossil-fuel-free approach.[68]

Similarly, Bates College estimates that between a third and a half of their endowment would need to be liquidated and replaced with separately managed accounts. It also emphasizes that the use of commingled funds is critical to diversification and risk management.[69]

Of the costs that institutions would incur from divesting, the majority of losses would stem from the "need to withdraw from the best actively managed commingled funds," according

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[66] "Diversification," *Investopedia*, accessed October 10, 2014, http://www.investopedia.com/terms/d/diversification.asp

[67] Daniel Weiss, "Fossil Fuels Divestment," *Haverford College*, accessed October 10, 2014, http://www.haverford.edu/fossilfuelsdivestment/.

[68] Monaco, "Statement on Divestment from Fossil Fuel Companies."

[69] Clayton Spencer, "President Clayton Spencer's Statement on Climate Change and Divestment," *Bates Office of the President*, January 21, 2014, accessed October 10, 2014, http://www.bates.edu/president/2014/01/21/statement-on-climate-change-and-divestment/.

to President Oxtoby of Pomona College.[70] In other words, committing to divestment means that institutions must avoid some of the best-performing funds if they include investments in fossil fuels.

Closely related is the concern that reallocating such a large proportion of assets would result in the high transaction costs of liquidating them and finding new fund managers willing to avoid fossil fuel companies.[71] While this can be part of the **financial and self-interest** motive because transaction costs can be construed as opportunity costs in terms of both time and money, it is also a permutation of the **convenience**, or ease, motive. Discussions of high transaction costs indicate that institutions believe divestment is difficult to integrate into their routine investment behavior.

It is clear that the **financial and self-interest** motive poses as a barrier for some institutions, depending on their judgment of the estimated cost of divestment and forsaking certain investment vehicles. As shown above, these cost estimates can vary widely. Analyses of the financial costs of divestment are not universally applicable because the consequences can vary according to the specific structure of each endowment. For example, although Pomona College and Pitzer College are neighbors, they came to diverging decisions on the financial risks and costs of divestment. Jessica Grady-Benson cites Pitzer trustee Don Gould as saying, "[Pitzer's] costs may be different than Pomona's because our endowment is different."[72] The **financial and self-interest** motive is a major determinant in why Pitzer College decided to divest, while Pomona College did not.

Discussions surrounding unacceptably high financial risks and costs often come hand-in-

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[70] Oxtoby, "President David Oxtoby's Letter to Community on Divestment Decision."
[71] Spencer, "President Clayton Spencer's Statement on Climate Change and Divestment."
[72] Grady-Benson, "Fossil Fuel Divestment," 104.

hand with discussions of fiduciary duty, the obligation of trustees to act in the best interests of the endowment on behalf of donors. This duty invokes the **responsibility** motive. As mentioned previously, institutions have most commonly defined the fiduciary duty of trustees as an obligation to choose investments with the aim of maximizing the financial benefit to the endowment. Pomona College president David Oxtoby places this obligation at "the level of a sacred trust…. Managing an endowment is a matter of keeping faith with both past benefactors and future students, for whom the endowment is the sole guardian of generational equity."[73]

When institutions simultaneously value this conception of fiduciary duty, and believe that divestment is not in the best financial interest of the endowment, they will state that divestment does not align with their fiduciary responsibility. Thus, the **responsibility** motive poses as a barrier to divesting. In addition to Pomona, several institutions have cited this barrier. The Investment Policy Subcommittee at Bryn Mawr College states that fossil fuel divestment is not in line with its fiduciary responsibilities "to provide a return on the investments over time that supports at least a constant proportion of the College's operating budget, and to preserve the purchasing power of the endowment for future generations."[74] Similarly, President Clayton Spencer of Bates College states, "The Board of Trustees has a fiduciary responsibility to protect our ability from generation to generation to offer the high quality liberal arts education envisioned by our founders…. In addition, the Board has an explicit responsibility to honor the wishes of donors past and present…"[75] Furthermore, as Middlebury College President Ronald D. Liebowitz's response shows, there is a logical connection between the fiduciary duty argument and arguments about unacceptably high costs and risks: "Given its fiduciary responsibilities, the

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[73] Oxtoby, "President David Oxtoby's Letter to Community on Divestment Decision."
[74] Cheryl R. Holland, *Board of Trustees of Bryn Mawr College*, August 27, 2013, accessed October 10, 2014, http://news.brynmawr.edu/files/2013/08/August_27_2013BMCDivest-1.pdf.
[75] Spencer, "President Clayton Spencer's Statement on Climate Change and Divestment."

board cannot look past…the difficulty and material cost of withdrawing from a complex portfolio of investments, and the uncertainties and risks that divestment would create."[76]

The **responsibility** motive also poses as a barrier when institutions do not feel that it is their responsibility to make a political or ideological statement using their endowment. According to Scott Cowen, president of Tulane University, "funds comprising Tulane's endowment are given to the university with the understanding that they will be managed…apart from any political positions or ideological considerations."[77] More specifically, institutions have expressed that putting their endowment at risk is not an appropriate way for institutions of higher education to fulfill their responsibilities as educators and leaders combating climate change. In fact, some institutions claim, risking the endowment actually places the ability of the institution to fulfill its responsibilities as educator and leader in unnecessary jeopardy. Haverford president Daniel Weiss believes divestment would harm the institution's educational mission: "…because [divestment] would likely depress endowment value going forward…it would undermine our ability to achieve our core goal of educating…students…"[78] In addition, Harvard University president Drew Faust warns against actions that "position the University as a political actor rather than an academic institution. Conceiving of the endowment not as an economic resource, but as a tool to inject the University into the political process or as a lever to exert economic pressure for social purposes, can entail serious risks to the independence of the academic enterprise."[79] Thus, when institutions believe that divestment may politicize and interfere with

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[76] "Middlebury College Statement on Divestment," *Middlebury News Stories*, August 28, 2013, accessed October 10, 2014, http://www.middlebury.edu/newsroom/archive/524638/node/459563.

[77] Scott S. Cowen, April 23, 2014, accessed October 13, 2014, http://www.divesttulane.org/uploads/2/4/6/6/24661412/reponse_from_president_cowen_and_the_board_of_tulane_university.pdf.

[78] Weiss, "Fossil Fuels Divestment."

[79] Drew Faust, "Fossil Fuel Divestment Statement," *Harvard University Office of the President*, October 3, 2013, accessed October 12, 2014, http://www.harvard.edu/president/fossil-fuels.

their primary duty, that of academia, the **responsibility** motive poses as a barrier.

The **environmental concern** and **altruism** motives can also pose as barriers to divesting. Some institutions express dissatisfaction with divestment's minimal tangible impacts on protecting both the environment and the human race from the negative consequences of climate change. This indicates that these institutions are motivated by environmental concern or altruism, but do not believe that divestment will fulfill these goals. For example, a letter from Bryn Mawr's Investment Policy Subcommittee states that "…divestment will not accomplish the larger and central goal of reducing the use of fossil fuels."[80] Likewise, President Oxtoby of Pomona College points out that it is "unclear that divestment would have anything more than a symbolic impact in fighting climate change."[81] Gil Kemp, chair of the Swarthmore College Board of Managers, also believes that "[divestment] is far from our best option…for having real impact on the fossil fuel industry."[82]

There are many potential avenues for having a tangible environmental impact against climate change, and it is often not clear which avenue(s) these institutions are referring to when they state that divestment will have little impact. Do they believe that divestment has little impact in harming the fossil fuel industry's profits? In exerting pressure on them to change their behavior? In persuading policymakers to act on climate change? In convincing society to consume less fossil fuel? In any combination of the above? It is not explicitly stated. Regardless of the avenue, it is clear that these institutions value protecting Earth's ecosystems, other species, and/or the intergenerational human species from harm, and that they do not believe that divestment directly fulfills this goal. Thus, the **environmental concern** and **altruism** motives act

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[80] Holland.
[81] Oxtoby, "President David Oxtoby's Letter to Community on Divestment Decision."
[82] "An Open Letter on Divestment."

as barriers to divesting.

Regarding the first two avenues of potential impact mentioned above, it is widely understood among institutions that divestment will cause negligible financial disturbance to fossil fuel companies and will not force fossil fuel companies to change their destructive behavior by exerting economic pressure. Brown president Christina H. Paxson hits on this point when she asserts, "It is clear that divestiture would not have a direct effect on the companies in question…. divestiture would not reduce profits even if Brown's holdings were orders of magnitude larger."[83] Furthermore, as Harvard's President Faust states, "Universities own a very small fraction of the market capitalization of fossil fuel companies. If we and others were to sell our shares, those shares would no doubt find other willing buyers."[84] Moreover, if a commitment to divestment requires institutions to release a flood of fossil fuel stock into the market by a self-imposed deadline, the reduced prices of shares may further encourage willing buyers.

The divestment movement itself acknowledges the minimal direct environmental impact of divestment. Their response is that reducing GHG emissions is not the primary goal of the movement. Grady-Benson, a Claremont Colleges divestment campaign leader, states that the divestment movement does not expect to change or halt the behavior of fossil fuel companies, but rather to "morally bankrupt the fossil fuel industry through the power of stigmatization."[85] When institutions withdraw as investors and express their disapproval for the role that fossil fuel companies play in perpetuating climate change, it sends a powerful moral message to policymakers and the public. The divestment movement asserts that this will then cause environmental impact indirectly, through political and social change.

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[83] Christina H. Paxson, "Coal Divestment Update," *Brown University Office of the President*, October 27, 2013, accessed October 10, 2014, http://brown.edu/about/administration/president/2013-10-27-coal-divestment-update.
[84] Faust, "Fossil Fuel Divestment Statement."
[85] Grady-Benson, "Fossil Fuel Divestment," 120.

This indicates that divestment proponents and opponents both believe that divestment lacks direct environmental effects. The difference might be one of values, a disagreement about whether or not to value a symbolic message that comes without concrete changes. The difference might also be one of beliefs of fact, a disagreement about whether or not a moral message will spur policymakers or society to act. This brings us to the third and fourth potential avenues for impact mentioned above: influencing policy on and societal consumption of fossil fuels.

A common argument from institutions is that although it is desirable to stigmatize fossil fuel companies, it is hypocritical for institutions to do it while continuing to rely heavily on fossil fuels. Davidson College president Carol Quillen questions "the integrity of making a symbolic gesture while continuing to power our campus with energy produced from fossil fuels."[86] Harvard's President Faust also sees "a troubling inconsistency in the notion that, as an investor, we should boycott a whole class of companies at the same time that, as individuals and as a community, we are extensively relying on those companies' products and services for so much of what we do every day."[87] The Swarthmore College Board of Managers agrees: "divestment's potential success as a moral response is limited…so long as its advocates continue to turn on the lights, drive cars, and purchase manufactured goods, for it is these activities that constitute the true drivers of fossil fuel companies' economic viability…"[88] These statements may indicate that institutions do not value a moral message that is not backed by concrete actions. They may also indicate that institutions do not believe their moral message will carry any weight with policymakers or the public, given their reliance on fossil fuels. Regardless of whether it is because of values or beliefs of fact, however, it is clear that the divestment movement's

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[86] Lincoln Davidson, "Trustees Reject Students' Call to Divest from Fossil Fuels," *DavidsonNews.net*, March 1, 2014, accessed October 13, 2014, http://davidsonnews.net/blog/2014/03/01/college-trustees-reject-divestment-referendum/.
[87] Faust, "Fossil Fuel Divestment Statement."
[88] "An Open Letter on Divestment."

argument about sending a moral message does not appeal sufficiently strongly to institutions that cite the lack-of-impact barrier.

The lack-of-impact barrier is often coupled with a citation of the costs and risks of divestment in order to assert that high and unpredictable costs outweigh the minimal direct benefits. Pomona's President Oxtoby expresses an acute obligation to weigh costs and benefits, and finds that the minimal impact of divestment on climate change makes it "hard to make the case that it would be worth the significant cost to future Pomona students."[89] The Swarthmore College Board of Managers also assesses that divestment "would have no measurable effect on halting climate change and at the same time would pose an unacceptable risk to the College's finances…. the cost of divestment would far outweigh any potential benefit."[90] Thus, some institutions that are motivated by **environmental concern** and/or **altruism** are resistant to divestment if they believe there is a financial cost (although an uncertain one) with little or no payoff in environmental impact.

The lack-of-impact barrier is especially apparent when institutions decline to divest, and instead commit to engaging in some other action to combat climate change with a more tangible environmental impact. For example, instead of divesting, Haverford's Board of Managers will conduct a review of campus environmental sustainability measures to identify future improvements.[91] At Middlebury College, the Investment Committee will develop stronger Environmental, Social and Governance guidelines for both portfolio investments and campus operations, and increase the amount of the endowment dedicated to ESG investments.[92] Tufts University has accepted the recommendations of the Tufts Divestment Working Group, which

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[89] Oxtoby, "President David Oxtoby's Letter to Community on Divestment Decision."
[90] "An Open Letter on Divestment."
[91] Weiss, "Fossil Fuels Divestment."
[92] "Middlebury College Statement on Divestment."

advises that, in lieu of divestment, Tufts should establish a Sustainability Fund, assess ways to strengthen climate change education and research within the institution, promote interest for sustainability among students, and harness the policy expertise of faculty and students to engage with policymakers about climate change.[93]

It is important to note, however, that some institutions that currently prefer other actions do not preclude the possibility of divesting in the future. "At this point, we're not prepared to commit to divest from fossil fuels, but I would never say never," says Barry Mills, the president of Bowdoin College.[94] Likewise, Tufts president Tony Monaco states that Tufts will continue to examine the feasibility of divesting in the future.[95] At Pomona College, John Jurewitz, a professor specializing in energy economics and policy, has proposed an alternative plan that first targets energy efficiency measures on- and off-campus, and then pushes for reducing taxes on income and investment and re-balancing the tax system with a federal carbon tax to discourage consumption and investment in carbon-intensive industries. For Jurewitz, divestment of college portfolios should only be done when accompanied by these essential steps.[96] This line of thinking – reduction of carbon footprint first, divestment second – indicates that pushing for institutions to adopt other actions to combat climate change may actually help to further the divestment movement in the long run. Some institutions that are resistant to divesting now are likely to consider it in the future within the context of a multi-pronged, holistic climate action plan.

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[93] "Recommendations of the Tufts Divestment Working Group," Tufts University Office of the President, accessed October 14, 2014, http://president.tufts.edu/recommendations-of-the-tufts-divestment-working-group/.
[94] Marisa McGarry, "Mills Says College Will Not Divest from Fossil Fuels," *The Bowdoin Orient*, December 7, 2012, accessed October 11, 2014, http://bowdoinorient.com/article/7814.
[95] Monaco, "Statement on Divestment from Fossil Fuel Companies."
[96] Wes Haas, "Joint Panel Tackles Divestment Campaign," *The Student Life*, February 15, 2013, accessed October 14, 2014, http://tsl.pomona.edu/articles/2013/2/15/news/3585-joint-panel-tackles-divestment-campaign.

Gaps in Stated Motives

As shown by the variety of responses from institutions, the issue of fossil fuel divestment is contentious. Although some institutions have agreed to divest, the number of institutions that have officially declined to divest, or have thus far declined to go through a consideration process, greatly outnumbers the successes. So how can activists and institutions concerned about climate change move forward in the face of this resistance? Pushing for a holistic climate action plan that uses a multi-pronged approach would be more effective than continuing to press for fossil fuel divestment alone because a multi-pronged approach can appeal to motives for environmentally beneficial behavior that divestment alone does not.

What are the gaps left open by a singularly divestment-centered approach? The examination of stated motives in this chapter can illuminate them. It is apparent from stated motives that both proponents and opponents of divestment most commonly consider the divestment question using the **responsibility** and **financial and self-interest** motives. In cases where these motives are sufficiently strong, institutions choose to divest. In cases where these motives are either not sufficiently strong, or are construed instead as a barrier, institutions decline to divest. Therefore, divestment is only sometimes successful in appealing to these two motives. This indicates that there is room for improvement: in instances where divestment alone is not successful, a multi-pronged approach may be successful if the approach includes actions that appeal more strongly to the target institution's **responsibility** and **financial self-interest** motives.

The stated motives of institutions also reveal that fossil fuel divestment does not appeal to the **environmental concern** and **altruism** motives when institutions do not value divestment's solely symbolic message and/or believe it will be ineffective in eventually inciting environmental

impact. This is a large gap that divestment leaves open because it is possible that, for many institutions, these two motives are their strongest motives for engaging in environmentally beneficial behavior. An approach that includes actions that appeal to these two motives is likely to be more successful than divestment alone. This inference is supported by the instances discussed above, where institutions decline to divest, but commit to other actions with more tangible environmental impacts.

Because institutions that have agreed to divest do not mention the **convenience** motive, it appears that they do not believe divestment is easy to integrate into their routine investment behavior. Institutions that are strongly motivated to divest for other reasons (for example, because they believe it is their social responsibility or because they believe it has financial benefits) will divest regardless of whether or not it is easy. The above examination of stated motives also does not explicitly mention **convenience** as a barrier for institutions that decide not to divest. Instead, the difficulties of divesting are tied up in the discussion of transaction costs: divestment is difficult when it involves liquidating or finding new fund managers for large portions of the endowment, but according to their stated motives, institutions seem more concerned about the unacceptably high transaction costs of these actions than the actual difficulties they entail. Therefore, actions that do not have high transaction costs associated with difficulties will appeal more successfully to the **convenience** motive than divestment does.

It should be noted that divestment does not necessarily have to take an all-or-nothing approach. One potential compromise is for institutions to divest to the extent that it does not involve unacceptably high transaction costs. For instance, institutions could instruct their financial managers to avoid all fossil fuel holdings unless they happen to be embedded in large index fund vehicles such as the S&P 500. In most actively managed portfolios, this will

eliminate the great bulk of fossil fuel holdings, but not all of them.[97] Institutions could then compensate for the remaining fossil fuel investments by increasing purchases of clean energy funds and/or Renewable Energy Credits (RECs).[98] There are many ways for institutions to craft a creative strategy for partial divestment that would avoid unacceptably high transaction costs. Offering this type of compromise might be very effective for activists in situations where the **convenience** motive, through unacceptably high transaction costs, poses as a main barrier to divestment.

From institutions' responses, it is evident that **ability and support** is not a strong motive in the face of other barriers. The taxonomy in Figure 1 construes **ability and support** as having the knowledge necessary to be able to do something, as well as institutional or cultural support in favor of doing it. Institutions are well informed about divestment: in letters and statements from administrators, institutions often commend student divestment groups for their thorough and informative campaigns. On some campuses, divestment also enjoys public support. However, despite being well informed about divestment, many institutions still decline to divest. Some of these institutions also disregard student referendums that show widespread support for divestment. These institutions justify their actions by citing extremely high barriers to divestment in the form of costs, risks, and/or responsibilities. Therefore, it appears that the **ability and support** motive is not effective for divestment when other barriers are high. However, it is important to capitalize on **ability and support** when it comes to actions for which institutions do not perceive extremely high barriers.

Finally, the **health and safety** motive is entirely disregarded by both sides of the divestment debate. An approach that includes actions that appeal to the **health and safety** motive

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[97] John Jurewitz, email message to author, November 20, 2014

[98] For further discussion of RECs, see page 61 of this thesis.

would take advantage of this entire category of potential that remains untapped by the divestment movement.

The gaps above show that divestment alone does not appeal to a wide enough array of motives for environmentally beneficial behavior to achieve frequent success with institutions. Just because a school decides not to divest, it does not mean that they will not embrace many other possible initiatives to combat climate change. Pushing for the adoption of multiple tactics in a holistic climate action plan is more likely to succeed because it is flexible. Multi-pronged plans can adapt to each target institution by matching specific tactics to their strongest motives for environmentally beneficial behavior. This is especially important when targeting institutions that have already declined to divest. Trying a different set of motives might spur them to take actions other than divestment, rather than doing nothing.

It should be noted that even institutions that agree to divest already recognize the importance of a multi-pronged approach. Press releases and statements from administrators often present their new divestment commitment alongside mentions of their existing programs and initiatives to combat climate change. For example, in its press release on divestment, Green Mountain College mentions its commitment to reducing campus fossil fuel consumption: the college's main heating source is a biomass plant that uses locally harvested woodchips.[99] Prescott College sees divestment as a logical next step after constructing a LEED Platinum-certified, net-zero energy student dorm, and developing a long-term Climate Action Plan "with a comprehensive series of projects to minimize greenhouse gas emissions through investments in energy conservation, renewable energy, and carbon offset origination."[100] Similarly, Naropa University regards divestment as a fitting complement to its Statement of Commitment to the

[99] "Green Mountain College Board Approves Divestment of Fossil Fuel Holdings."
[100] "Prescott College Commits to Fossil Fuel Divestment Resolution."

Practice of Sustainability, which commits the university to "sustainability-in-action; employing strategic initiatives to move the community towards specific goals, such as, but not limited to, zero waste, climate neutrality, and 100% renewable energy."[101] When asked to consider the divestment question, the Pitzer College Board of Trustees instead went above and beyond, committing to a holistic climate action plan of which divestment is only one part. Other aspects of the plan include reducing the college's carbon footprint by 25% by 2016, establishing a campus Sustainability Task Force, and exploring the possibilities for investment in offsite renewable energy projects and community behavioral changes for energy conservation and efficiency.[102]

These institutions have chosen to place divestment within the context of existing or new institutionally focused actions. Institutionally focused initiatives are not conveyed as lesser or appeasement tactics, as current divestment movement discourse suggests they should be regarded. This choice indicates that institutions, even those that agree to divest, do not regard divestment to be of singular importance, but rather one option among a menu of alternatives for crafting a holistic action plan to combat the climate problem. If the discourse of the divestment movement is hostile to this popular perspective and disparages institutionally focused actions, this may incite avoidable resistance from institutions. In addition to flexibility, this is yet another reason why a holistic, multi-pronged approach is preferable: it is amenable to the existing tendency of institutions to place divestment within the context of other environmentally beneficial behaviors without elevating it to a higher status.

The aspect of the current divestment discourse that disparages institutionally focused actions is problematic. It essentially implies that if institutions are not willing to divest, then they

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[101] "Naropa University Divests from Fossil Fuels," *Naropa Press Releases*, October 31, 2013, accessed October 13, 2014, http://www.naropa.edu/media/naropa-press-releases/press-2013/naropa-divests-from-fossil-fuels.php.
[102] Grady-Benson, "Fossil Fuel Divestment," 41.

must not be fully committed to fighting climate change. This implicitly (and sometimes explicitly) alienates those institutions that claim to hold that value, but do not believe divestment alone is an effective tool for achieving that goal. Rather than simply criticizing those who decline to divest, it is more productive to advocate for a broader portfolio of actions in lieu of, or in addition to, divestment. This applauds institutions for committing to fighting climate change, and then *holds them accountable for this commitment.* With so many other options available, institutions cannot claim to care about the climate without doing something about it, even if they feel they should not divest. Furthermore, this does not close off the conversation, allowing room for activists to pursue an ongoing and escalating push for various tactics to fight climate change. The following chapters will explore a selection of such tactics from the menu available to institutions to craft a holistic, multi-pronged climate action plan.

CHAPTER THREE

ACUPCC and Climate Neutrality

Many institutions of higher education have already crafted multi-pronged, holistic climate action plans for combating climate change. A number of these institutions have done so as part of the requirements of the American College and University Presidents' Climate Commitment (ACUPCC). The ACUPCC is a commitment created by a group of college and university presidents in 2006.[103] By signing the ACUPCC, college presidents pledge to eliminate campus net GHG emissions and promote research and education to help society achieve climate neutrality.[104] The ACUPCC is not meant to be a replacement for an institution's current climate action measures. Rather, it creates a larger context and common framework in which institutions can design and adopt a climate action plan with their own target date for campus climate neutrality, depending on what they judge is feasible, cost effective, and right for their own circumstances. Given this flexibility, all current and planned climate action initiatives at institutions have a place in their ACUPCC plan to achieve climate neutrality.[105]

Signatories of the ACUPCC commit to meeting a set of requirements, despite the flexibility that is provided in *how* to meet them. Within one year of signing, the institution must complete an inventory of all GHG emissions attributed to the campus, and this inventory must be updated every other year thereafter. Within two years of signing, the institution must complete a

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[103] "Frequently Asked Questions," American College and University Presidents Climate Commitment, accessed November 2, 2014, http://www.presidentsclimatecommitment.org/about/faqs.

[104] ACUPCC defines climate neutrality as "to stop systematically increasing the concentrations of greenhouse gases in the atmosphere" by eliminating net greenhouse gas (GHG) emissions. It notes that going beyond climate neutrality to climate positivity, or reducing the concentration of GHGs in the atmosphere through restorative solutions, is likely to be necessary to avoid the worst consequences of climate change, but that climate neutrality must be achieved first.

[105] "Frequently Asked Questions," American College and University Presidents Climate Commitment.

climate action plan, including a target date to achieve campus climate neutrality, interim goals and actions to achieve neutrality, actions to integrate climate neutrality into the institution's research and educational efforts, and mechanisms for tracking progress towards those goals. The ACUPCC also requires signatories to adopt two or more tangible actions from their provided list while the long-term climate action plan is being developed. The climate action plan, GHG emissions inventories, and periodic progress reports must be submitted to the ACUPCC Reporting System.[106]

Signing the ACUPCC is not the only option for institutions of higher education looking to craft a holistic climate action plan; institutions can also approach the task independently. However, joining the commitment leverages the benefits of high-profile collective action and support from peer institutions. Each institution that signs on builds positive momentum in encouraging others to join, exerting a greater impact than if acting alone. The collective action of the ACUPCC unites the higher education sector in sending strong signals to other sectors of society, including business and government. Furthermore, the ACUPCC signatories offer support from peer institutions in the form of best practices and resources, enabling economies of scale and knowledge sharing. Finally, the ACUPCC is participatory and flexible: it is a program created and managed by college and university presidents, and signatories have the option to engage with their colleagues to shape the initiative.[107]

This thesis does not attempt to present the ACUPCC as the best or only approach for a multi-pronged, holistic climate action plan. However, its large number of signatory institutions—

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[106] "Text of the American College and University Presidents' Climate Commitment," American College and University Presidents Climate Commitment, accessed November 2, 2014, http://www.presidentsclimatecommitment.org/about/commitment.

[107] "Frequently Asked Questions," American College and University Presidents Climate Commitment.

thus far, 684 signatories have submitted 533 climate action plans[108]—makes the ACUPCC a sort of industry standard when it comes to institutionally focused climate action measures in higher education. For institutions looking to join ACUPCC, comprehensive information about requirements and guidelines is available in the ACUPCC Implementation Guide,[109] and examples of college and university climate action plans that have been created under the commitment can be found on their website.[110]

Institutionally focused measures to reduce GHG emissions and achieve campus climate neutrality, whether they are pursued for ACUPCC or not, may help to fill in the significant gaps left by the fossil fuel divestment movement as identified in Chapter 2. Most importantly, some institutions will prefer steps towards climate neutrality because these actions appeal to their **environmental concern** and **altruism** motives. That may be why, when some institutions decline to divest, they point instead to their efforts to reduce campus GHG emissions as evidence of a commitment to environmental protection. Many of these institutions state that it is hypocritical to divest while continuing to emit GHGs. Even institutions that agree to divest will often present divestment as a partner to institutionally focused measures to reduce campus GHG emissions. This reveals a strong attachment across the board to actions that directly reduce GHG emissions, actions that will directly mitigate the negative impacts of climate change on Earth's ecosystems and/or humanity, both present and future. Therefore, activists might find more success in appealing to this strong attachment, encouraging institutions to commit—or escalate their existing commitment to—actions towards campus climate neutrality.

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[108] "Signatory List by Institution Name," American College and University Presidents Climate Commitment, accessed November 2, 2014, http://www.presidentsclimatecommitment.org/signatories/list.

[109] "American College & University Presidents' Climate Commitment Implementation Guide Version 2.1," 2012, accessed November 4, 2014, http://www.presidentsclimatecommitment.org/files/documents/ACUPCCImplementationGuide_V2.1.pdf.

[110] "Overview & Examples of Climate Action Plans," American College and University Presidents Climate Commitment, accessed November 2, 2014, http://www.presidentsclimatecommitment.org/node/3090/.

Becoming a signatory of the ACUPCC in particular might appeal to the non-financial aspect of the **financial and self-interest** motive. Joining a high-profile commitment might improve an institution's public image by casting them as a leader in climate action in higher education.

Finally, campus climate neutrality might also appeal to the **ability and support** motive. The taxonomy in Figure 1 construes **ability and support** as having the knowledge necessary to be able to do something and institutional or cultural support in favor of doing it. The process of creating a plan for campus climate neutrality sets off a cycle of institutional support and knowledge. A climate action plan might include measures that are not widely known or popular on campus at the time, but the administration gives it legitimacy and institutional support by approving the plan to become internal policy. Furthermore, as the institution strives to fulfill its goals as delineated in the plan, organizational knowledge of how to fulfill those goals will also increase.

To achieve climate neutrality, institutions must eliminate their net campus GHG emissions by minimizing their GHG emissions as much as possible, and then using carbon offsets or other measures to neutralize the remaining emissions. The GHG inventories required by ACUPCC divide campus GHG emissions into three scopes.[111] Scope One references direct emissions produced through campus activities by sources that are directly controlled or owned by the institution (e.g., on-site combustion of natural gas). Scope Two references indirect emissions resulting from the production of energy and other utilities purchased by the institution. These emissions are the result of on-campus activities, but the emissions themselves take place off-site (e.g., off-site combustion of natural gas due to off-site power generation). Scope Three

[111] "American College & University Presidents' Climate Commitment Implementation Guide Version 2.1."

references indirect emissions from sources that are not directly controlled or owned by the institution, but are central to campus activities, such as student and employee commuting and institution-funded travel.

While institutions can strive to reduce their emissions, it is infeasible for them to eliminate them altogether. At least some Scope One emissions, from on-site combustion of natural gas, for example, are usually unavoidable. Institutions usually must also purchase at least some electricity from utilities. Because these utilities have carbon-intensive fuel in their power mix, the purchased energy results in Scope Two emissions that must be neutralized. Eliminating Scope Three emissions altogether is also infeasible because some routine commuting is unavoidable, and institutions will resist cutting down on institution-funded travel because it will reduce educational and professional opportunities for students, faculty, and staff. Therefore, carbon offsets and other methods of neutralizing GHG emissions are almost always necessary for institutions pursuing campus climate neutrality. This chapter will first discuss strategies to reduce GHG emissions as much as possible, and then present different options to neutralize the remaining emissions.

GHG Emissions Reduction Strategies

One organization affiliated with the ACUPCC is the Association for the Advancement of Sustainability in Higher Education (AASHE). As a professional association of colleges and universities, AASHE offers a wide variety of resources to institutions looking for ways to begin or expand their institutionally focused climate and environmental actions. This chapter, and subsequent chapters of this thesis, will refer readers frequently to AASHE resources in its discussion of options for climate action, as there is no need for this thesis to “reinvent the wheel”

when AASHE resources can provide much more extensive guidance from experts in the field, as well as lessons learned from peer institutions.

One such resource is *Cool Campus!*, AASHE's guide to climate action planning. Below is a brief summary of some general GHG reduction strategies found in the *Cool Campus!* guide that can be tailored to any particular campus. For more information about these strategies, see the guide.[112]

Energy Conservation and Efficiency: Because burning fossil fuels for energy is the primary source of GHG emissions, energy conservation and efficiency measures to reduce energy consumption are crucial to reducing GHG emissions. There are two necessary components to reducing energy consumption on campus: (1) active behavioral changes in campus occupants and (2) passive energy efficiency changes in existing facilities. Behavioral changes can be as simple as turning off lights and electric appliances when not in use, but even these changes require a persistent energy awareness program on campus that utilizes a variety of tactics and different media outlets. The goal of such a program is to ingrain a campus culture where occupants feel an impetus, whether motivated by environmental concerns, financial savings for the campus, or other reasons, to change their behavior to save energy.

Passive energy efficiency changes are also extremely important because there are numerous opportunities for retrofitting existing facilities to conserve energy or improve energy efficiency. Identifying and evaluating these measures for feasibility require tapping into the expertise of campus facilities managers. A few significant examples include building envelope improvement and insulation, replacing inefficient lighting, installing automatic lighting controls

[112] Walter Simpson, "Cool Campus! A How-To Guide for College and University Climate Action Planning," 2009, accessed November 10, 2014, http://www.aashe.org/files/resources/cool-campus-climate-planning-guide.pdf.

like sensors and timers, replacing inefficient boilers and chillers, and establishing thermostat set points for heating and cooling buildings.

Heating and Power Plant Solutions: If an institution has an on-site central heating or power plant, it is likely the single largest consumer of energy on campus. In these cases, making campus buildings more energy efficient, as mentioned above, can reduce the amount of fuel that the power plant consumes by reducing its load. These campuses can also reduce their GHG emissions by changing to co-generation (combined heat and power) and/or changing their power plant's fuel from carbon-intensive coal to less carbon-intensive options like natural gas, biomass, landfill gas, or geothermal.

Install Renewable Energy Technologies on Campus: Institutions can install renewable energy technologies to generate carbon-free energy and replace some of the energy from carbon-intensive fuels consumed on campus. These technologies include PV (photovoltaic) solar electric arrays, solar thermal water heating, and wind and geothermal installations. Other strategies include converting waste fryer grease into biodiesel to fuel campus fleets, installing lighting controls or sensors to utilize daylighting, and capturing the passive solar that enters windows throughout the day for use in other areas or at other times of day.

Avoid or Minimize New Construction, and Make All New Construction Green: Unless new construction is net-zero energy or replaces a more energy-intensive building, even the most energy-efficient building will increase GHG emissions. Campuses can avoid increasing GHG emissions by avoiding new construction and instead maximizing the density of how existing

space is occupied. Before approving new construction, institutions should first determine if reconfiguring existing space could meet space needs. If new construction is essential, it should be designed according to green design standards. There are many possible green design strategies, so choosing a design team with experience in green design is essential. Campus facilities can also be certified by a green building rating system, an accreditation that would contribute to an institution's public image of commitment to environmental stewardship. Some of the most popular green building rating systems are the U.S. Green Building Council's Leadership in Energy and Environmental Design (LEED), the Living Building Challenge, the Architecture 2030 Challenge, and the U.S. Environmental Protection Agency and Department of Energy's Labs21 program for laboratory buildings.

Sustainable Transportation Solutions: Changes can be made to make the campus fleet and buses less carbon-intensive, such as using the most fuel-efficient vehicles and/or vehicles that run on alternative fuels like electricity, biodiesel, or compressed natural gas. Rather than driving trucks around campus, staff might consider smaller vehicles like electric golf carts when appropriate. In comparison to the campus fleet, however, routine commuting by students, faculty, and staff is a much larger transportation contributor to GHG emissions, especially at campuses where commuter students dominate. While it is impossible to eliminate routine commuting altogether, measures can be taken to reduce commuting. For example, institutions could discourage commuting by automobile and encourage carpooling by reducing parking areas, increasing fees for parking, creating a rideshare program, and providing incentives for carpooling such as parking reserved for carpools. They could also encourage commuting by bicycle or public transit by increasing bicycling facilities on campus and subsidizing public transit fares.

Other Sources of GHGs (waste, purchasing, food): Although it can be hard to quantify other sources of campus GHG emissions, it is still important to consider minimizing them. All of the waste that campuses send to landfill will produce the GHG methane during decomposition. Some landfills capture the methane and burn it to generate electricity or heat, but if the methane is released into the atmosphere, it is twenty times as potent in global warming potential than carbon dioxide. For this reason, waste minimization is a good way to reduce GHG emissions attributed to campus activities.

Another source of GHG emissions is the embedded emissions in food and other products that are purchased for use on campus. Almost all products and their packaging contain embedded emissions because fossil fuels are a component in the product and/or provide the energy required for the manufacturing, distribution, and transportation of the product. Similarly, fossil fuels provide the energy required for the production, harvesting, processing, distribution, and transportation of food. For this reason, institutions should maximize reuse of products before purchasing new products, and prioritize the purchase of locally produced products and products with high levels of recycled content. Food purchases should be local and organically produced (or with minimized fossil fuel inputs) whenever possible.

With so many available options for measures to reduce campus GHG emissions, institutions must choose and prioritize certain measures for their climate action plan. Each institution faces a unique set of possibilities and constraints in GHG emissions reduction. Conducting frequent inventories of campus GHG emissions is essential for gathering the information needed to evaluate sectors and campus activities for GHG reduction potential.

Institutions should choose a reduction strategy for each of the sources identified in the GHG inventory, but some measures should be prioritized over others. The ACUPCC Implementation Guide provides some criteria to consider when deciding which reduction options to prioritize:[113]

1. Potential to avoid or reduce GHG emissions
2. Flexibility as a step towards future emissions-reduction measures
3. Return on investment or financial impact
4. Potential to create positive and/or negative social and environmental side-effects
5. Relationship to other potential measures and opportunities for synergistic measures
6. Potential to be scaled upward if successful
7. Potential to involve students and faculty[114]

In addition to these criteria, it is also important to keep in mind that certain measures to reduce or avoid GHG emissions can cut operational costs and generate savings. The ACUPCC Implementation Guide suggests that institutions establish mechanisms to capture and reinvest these savings. These funds can then enable the underwriting of emissions reduction measures that may have higher upfront costs, long or uncertain payback periods, or uncertain returns on investment.[115]

Despite best efforts to reduce campus GHG emissions, it is infeasible to completely eliminate them altogether. Although emissions can be minimized through the reduction strategies discussed above, campuses will most likely still have some residual emissions that would be extremely costly, if not virtually impossible, to eliminate. To achieve climate neutrality, then, it is necessary to neutralize the remaining emissions using offset strategies. Purchasing green electricity, carbon offsetting projects, and retiring cap-and-trade carbon allowances are strategies discussed in this next section.

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[113] "American College & University Presidents' Climate Commitment Implementation Guide Version 2.1."

[114] For an extensive discussion of educational measures as outreach to students and faculty, see Chapter 5 of this thesis.

[115] For an extensive discussion of how internal financial mechanisms might complement a climate action plan by financing institutionally focused GHG reduction measures, see Chapter 4 of this thesis.

GHG Emissions Offset Strategies

Renewable Electricity Products and Renewable Energy Certificates (RECs)

Many states have renewable portfolio standards, regulation that requires utilities to supply a proportion of their power mix from renewable sources. However, these utilities will still have some carbon-intensive fuel in their power mix, so energy purchased from utilities still results in Scope Two emissions that must be neutralized. To address these emissions, institutions of higher education can make voluntary purchases of green energy, at a premium price above the standard price of electricity, in the form of renewable electricity products or renewable energy certificates (RECs).

Depending on the electricity market in their state, institutions might be able to purchase renewable electricity products directly from their electricity provider by paying a premium on their electric bill. Purchasing renewable electricity products whenever possible helps institutions pursuing climate neutrality to maximize the proportion of their electricity that comes from renewable sources. Most renewable electricity products come in one of three types:[116] (1) a fixed quantity block of 100 percent renewable electricity offered for a fixed monthly price, (2) an energy blend where green power comprises a fixed percentage of the customer's monthly electricity use, or (3) a long-term fixed price contract that buys a portion of the output of a renewable energy project.

However, only some utilities offer one of these options for directly purchasing renewable electricity products. Institutions in states with a competitive electricity market can switch to a different power supplier that offers renewable electricity products if their current provider does

[116] "Guide to Purchasing Green Power," March 2010, accessed November 28, 2014, http://www.epa.gov/greenpower/documents/purchasing_guide_for_web.pdf.

not offer the option. In contrast, institutions in states without retail competition in electricity are limited to buying power from their local utility. Therefore, those institutions can buy renewable electricity products only if their local utility offers the option.[117]

RECs, also known as green tags, green certificates, and renewable energy credits, are different from renewable electricity products. RECs are fungible certificates that represent an environmental "attribute," or benefit, associated with the generation of one megawatt-hour of electricity from an eligible source of renewable energy.[118] Eligible sources are those renewable energy sources with the highest environmental benefit and lowest footprint, including solar, wind, geothermal, biogas, some biomass, and small and low-impact hydropower.[119] Because RECs represent environmental benefit, institutions should only purchase RECs that have gone through third-party certification and verification to confirm the claimed environmental attribute.

Purchasing RECs is a more flexible option than purchasing renewable electricity products because institutions are not limited to purchasing RECs from their power providers. RECs are fungible in the voluntary market and they are not tied to the physical delivery of electricity. Therefore, any institution of higher education pursuing climate neutrality, regardless of electricity provider or type of electricity market, can purchase RECs to offset their emissions and support the increased development of renewable energy.

Some skeptics point out that purchasing RECs does not actually offset GHG emissions unless the purchase leads to the generation of more renewable power than would have otherwise happened, contributing to a shift away from carbon-intensive fuels. However, this caveat does not detract from the viability of RECs. It simply emphasizes the importance of effective

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[117] Ibid.
[118] Ibid.
[119] "Green Power Market," United States Environmental Protection Agency, April 15, 2014, accessed November 28, 2014, http://www.epa.gov/greenpower/gpmarket/index.htm.

oversight by a regulatory authority to ensure that each REC generated actually leads to the generation of a megawatt-hour of renewable power. In a centrally balanced electricity grid, this extra megawatt-hour of renewable power causes power generated from carbon-intensive sources to be backed down by a megawatt-hour. In a well-regulated REC system, this displacement is guaranteed.[120]

Carbon Offsets and Carbon "Onsets"

Another option for neutralizing remaining GHG emissions is by purchasing carbon offsets. A carbon offset is a mechanism that would allow institutions of higher education pursuing climate neutrality to pay for the reduction or removal of GHG emissions not associated with their campus to compensate for some equivalent amount of campus emissions.[121] Carbon offsetting projects can take many forms, including reforestation, methane flaring or capture, and carbon capture and storage projects. Purchasing carbon offsets can also fund energy conservation and efficiency or fuel switching projects.[122] Besides purchasing offsets associated with a project owned by another body, institutions of higher education can also use their expertise to create their own carbon-offsetting project.

The ACUPCC has a Voluntary Carbon Offset Protocol that provides a list of recommendations for legitimate carbon offset purchasing.[123] Most importantly, a legitimate carbon offset must have "additionality," producing additional reductions in GHG emissions beyond reductions that would have happened anyway. This excludes emissions reductions that

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[120] John Jurewitz, email message to author, December 1, 2014

[121] "ACUPCC Voluntary Carbon Offset Protocol," American College & University Presidents' Climate Commitment, November 2008, accessed November 28, 2014, http://www2.presidentsclimatecommitment.org/documents/ACUPCCVoluntaryCarbonOffsetProtocol_Nov08.pdf

[122] Simpson, "Cool Campus! A How-To Guide for College and University Climate Action Planning."

[123] "ACUPCC Voluntary Carbon Offset Protocol."

occur to comply with regulations, or reductions that would have occurred anyway under a reasonable business-as-usual scenario. A legitimate offset can only be generated by people taking a GHG reduction action that they would not otherwise take, but for their ability to sell the offset. Third-party certification and verification processes are essential to establish a high degree of credibility for the "additionality" of the actions that produce any offset.

Legitimate offsetting projects should also be transparent, so that institutions purchasing offsets are aware of the details of the project. Offsetting projects should operate in good faith, avoiding any double counting of the emissions reductions and taking into consideration any emissions directly or indirectly caused by the project itself. Emissions reductions should also be measured and verified by a third-party, and registered with a well-regarded registry. More detailed guidelines can be found in the ACUPCC's guide to investing in voluntary carbon offsets, the accompanying document to the protocol.[124]

The traditional carbon offset concept can also be re-imagined. At the 2014 AASHE annual conference, Pacific Lutheran University (PLU) and the environmental organization Earth Deeds presented on their collaboration to re-imagine the traditional carbon offset concept at PLU, something they called carbon "onsetting." This involves offsetting a source of institution GHG emissions by choosing or creating specifically related and locally visible offset projects. This encourages students to draw more educational connections and feel more ownership towards carbon offsetting.

While looking for a way to make their domestic and international Study Away program more carbon-conscious, PLU considered traditional carbon offsets to neutralize the program's carbon footprint. However, Earth Deeds identifies several drawbacks to traditional carbon

[124] "Investing in Carbon Offsets: Guidelines for ACUPCC Institutions," American College & University Presidents' Climate Commitment, November 2008, accessed November 28, 2014, http://www2.presidentsclimatecommitment.org/documents/CarbonOffsetsGuidelines_v1.0.pdf.

offsets: Carbon offsets can be inefficient because as little as 30 cents per dollar makes it to the offset project itself after paying middlemen from third-party offset providers.[125] Furthermore, it is uncertain how much true climate impact is created from buying offsets when Earth Deeds alleges that as many as 70% of offsetting projects might have happened anyway, regardless of whether or not it was funded by the purchase of carbon offsets.[126] In addition, carbon offsets are subject to market-based pricing, resulting in volatile prices not dependent on the actual impact of the offset. Finally, offsetting projects are often located far away from the purchasers of carbon offsets, which removes the educational and emotional connection that gives meaning to the purchase of carbon offsets. Because of these drawbacks, the PLU Study Away program sought an alternative to supplement their use of traditional carbon offsets.

In response to these challenges, PLU has partnered with Earth Deeds to develop carbon "onsetting" for their Study Away program, now in its first pilot year. "Onsetting" begins with an educational component where students learn about the purpose of the program and calculate the carbon footprint of their Study Away trips through the Earth Deeds calculator. The carbon footprint is then priced according to the social cost of carbon, which is currently established by the Obama administration at $37/metric ton, but is projected to keep rising.[127] The idea behind using the social cost of carbon is that it is more meaningful to value the carbon footprint at its true social cost instead of using market-based pricing.

PLU's carbon "onsets" support existing GHG mitigation projects chosen by the program with the help of Earth Deeds. These projects are either local to campus, or local to the places around the world where PLU has established Study Away connections. This set-up offers many

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[125] Daniel Greenberg and Tanya Ulsted, "Beyond Carbon Offsetting: Making PLU Study Abroad Carbon Conscious" (case study presentation at the annual AASHE conference and expo, Portland, Oregon, October 26-29, 2014).
[126] Ibid.
[127] Ibid.

benefits compared to the sole use of traditional carbon offsetting. By choosing specific projects or creating their own, PLU Study Away can verify that the "onsetting" projects really exist and would not have happened without the "onset." "Onsetting" also reestablishes the educational and emotional connection of GHG mitigation because local projects are visible and meaningful to students, and further reinforces PLU Study Away's relationships with communities around the world.[128]

Purchasing and Retiring Cap-and-Trade Carbon Allowances

A few cap-and-trade programs for GHG emissions currently exist, including the first comprehensive state program in the United States, adopted by California in 2011. Cap-and-trade is a form of regulation to limit GHG emissions. Governments mandate a set limit, or "cap," on the amount of emissions released annually and then issue a number of permits for emissions. California's program applies to six major GHGs, nitrogen trifluoride, and other fluorinated GHGs, and regulates various categories of emissions sources whose annual emissions equal or exceed 25,000 metric tons of GHGs in carbon dioxide equivalent.[129] Each of these regulated sources, also known as covered sources, is legally required to turn in an emissions allowance for every metric ton of GHGs they emit. These emissions allowances can be allocated to covered sources by the government, bought through auctions, traded between sources, or created through offset projects. The "trade" aspect of cap-and-trade allows sources to sell their unneeded allowances, letting market forces distribute and price allowances.

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[128] Ibid.

[129] "Summary of California's Cap and Trade Program," C2ES: Center for Climate and Energy Solutions, accessed November 28, 2014, http://www.c2es.org/us-states-regions/action/california/cap-trade-regulation.

California's program also allows entities that are not legally bound by regulation to voluntarily purchase, hold, sell, and retire allowances.[130] Institutions of higher education could take this opportunity to purchase cap-and-trade allowances and hold on to them until they expire. Because the number of allowances in each compliance period is capped at a set limit, purchasing and retiring allowances voluntarily will prevent them from being used to allow emissions. This will reduce the total amount of allowances available, forcing legally covered sources to reduce their total emissions by the amount equal to the allowances voluntarily purchased and retired. Institutions pursuing climate neutrality could use this method to compensate for some or all of their remaining emissions that they cannot eliminate through reduction strategies.

Although this approach involves paying for the reduction of GHG emissions off-campus to compensate for remaining campus emissions, it is distinct from the carbon offset project approach. As discussed above, legitimate carbon offsets are only produced when offset generators do things to reduce their emissions above and beyond what they would have done anyway. With offsets, there is always a concern with verifying this "additionality," which can be difficult. In contrast, voluntarily purchasing and retiring carbon allowances within a set pool of allowances in a cap-and-trade system is not subject to "additionality" concerns. By reducing the total amount of allowances in the pool available to legally regulated sources, institutions guarantee that GHG emissions will be reduced by an additional amount exactly equal to the number of allowances they purchase. Therefore, although this method also neutralizes on-site emissions by reducing off-site emissions, it warrants special note because it is not subject to the "additionality" concerns of carbon offsetting.

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[130] Ibid.

Funding

For institutions wishing to engage in emissions neutralization measures, there are a variety of sources of funding. Costs could be taken directly out of a general or department fund. For example, in order to avoid placing extra burden onto students, PLU has built the price of carbon "onsetting" into the existing Study Away budget for its pilot year.[131] In addition, many schools have grant-disbursing green funds that might give out grants to neutralize emissions. Chapter 4 goes into detail about these green funds, as well as a variety of sources from which green funds can derive funding, including donations and student green fees. These same types of funding sources might also fund any of the options for neutralizing emissions. For example, Southern Oregon University charges a dedicated student Green Tag Fee of $13 per term,[132] which provides funds to purchase, among other things, RECs to offset 100 percent of campus electricity consumption and carbon offsets to offset 100 percent of natural gas consumption.[133]

Conclusion

This chapter has presented a menu of actions for institutions of higher education to reduce their GHG emissions and achieve climate neutrality within the framework of the ACUPCC. Institutions should strive to minimize their GHG emissions, and then neutralize the remaining emissions. There are a wide variety of GHG reduction strategies to minimize GHGs. After emissions are minimized, the remaining emissions can be neutralized with the purchase of renewable energy, carbon offsetting or "onsetting," and the purchase and retirement of cap-and-trade carbon allowances.

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[131] Greenberg and Ulsted, "Beyond Carbon Offsetting."

[132] "Required Fees," Southern Oregon University, accessed November 28, 2014, http://www.sou.edu/enrollment/financial-services/policies/required-fees01.html.

[133] "News & Announcements," Southern Oregon University, accessed November 28, 2014, http://www.sou.edu/sustainable/newsannouncements.html.

CHAPTER FOUR

Fossil fuel divestment is not the only financial tactic that institutions can use to combat climate change. It is increasingly common for institutions to establish a campus green fund as an internal financial mechanism designed to fund institutionally focused initiatives to combat climate change. Thus far, money from green funds has underwritten a wide variety of environmental sustainability projects on campuses, including but not limited to renewable energy installations, energy retrofits, educational outreach, and the hiring of sustainability personnel.[134] Although the names of green funds may differ from institution to institution, all green funds take on one of two main forms: funding specific projects with grants that are not expected to be repaid, or funding specific projects with loans that are expected to be repaid, with or without interest. Under the second format, once the project repays the loans (as well as any interest payments), the original seed money from the revolving fund is then free to be loaned out to another project – thus, the revolving nature of the fund. I will refer to a grant-disbursing fund as a "green fund," and a loan-disbursing fund as a "green revolving fund."

These two types of funds are not mutually exclusive. In fact, they are complementary in that it might be advantageous to use loans to fund projects with shorter payback periods, and use grants to fund projects with longer or uncertain payback periods or projects with benefits that are difficult to measure or estimate in monetary terms.[135] Using a green revolving fund to loan money to projects with a shorter payback period ensures that the loans can be paid back quickly and the green revolving fund money freed up to fund another project. However, payback period is not the only important consideration when deciding whether or not to underwrite a project

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[134] "Campus Sustainability Green Funds Database," AASHE, Association for the Advancement of Sustainability in Higher Education, accessed November 16, 2014, http://www.aashe.org/resources/green-funds/.

[135] Mark Orlowski and Emily Flynn, "Developing Green Revolving Funds to Reduce Environmental Footprint" (student summit presentation at the annual AASHE conference and expo, Portland, Oregon, October 26-29, 2014).

using a green revolving fund loan. Considering lifespan is also important because projects with a longer lifespan will generate savings for a longer period of time. Thus, the total projected savings might still be higher than another project option, even if the payback period is longer.

On the other hand, there is no expectation that green fund grants get repaid. Therefore, it can be more palatable to institutions to use green fund grants to fund projects that have an uncertain payback period or projects that might not break even, but still have educational and/or environmental value. Use of a green fund encourages institutions to be less tied to projects with obvious and measurable economic rewards when selecting sustainability projects, and to go the extra mile by funding projects that will have value beyond financial savings.

Establishing green funds and green revolving funds may appeal to different motives for environmentally beneficial behavior than fossil fuel divestment does. First, these measures may be more effective in appealing to the **environmental concern** and **altruism** motives. As discussed in Chapter 2, divestment proponents and opponents both believe that divestment lacks direct environmental effects in terms of combating climate change. However, some institutions decline to divest because they instead value actions that will directly mitigate the negative impacts of climate change on Earth's ecosystems and humanity, both present and future. These institutions prefer actions that directly reduce GHG emissions and resource consumption. Therefore, it may appeal to them to establish a green fund and/or green revolving fund on campus for the purpose of funding projects that achieve these goals.

The actions suggested in this chapter may also appeal to the **financial and self-interest** motive. As discussed in Chapter 2, some institutions decline to divest because they believe divestment entails significant financial risks and costs, and these risks and costs are not worthwhile simply to make what they consider a symbolic statement. Green funds and green

revolving funds may appeal to these institutions because these financial mechanisms can be used to underwrite many projects that will save the institution money in operating costs over the long run. For green revolving funds in particular, there is growing empirical evidence that using this model to facilitate investments in energy and resource efficiency projects can result in high cost savings and high returns on investment. I will go into further detail on the financial benefits of green revolving funds in particular later in this chapter.

Green fund and green revolving fund projects also have the potential to appeal to the **ability and support** motive. Again, the taxonomy in Figure 1 construes **ability and support** as having the knowledge necessary to be able to do something and institutional or cultural support in favor of doing it. Knowledge is a built-in consideration in managing green funds and green revolving funds because the fund's managers will select projects that appear to be feasible, based on available knowledge of how to execute them. Furthermore, when the structure of some green funds and green revolving funds allows students to submit project ideas for consideration, it is likely that the fund's projects will enjoy widespread public support on campus.

A final motive to which green funds and green revolving funds may appeal is **convenience**. Of course, institutions may not construe the process of establishing a green fund or green revolving fund as particularly *easy*. However, there are many resources available to help facilitate the process.[136] In addition, these funds are established and managed through a process internal to the college, which means that, unlike fossil fuel divestment, institutions will not have to collaborate extensively with external investment advisors and/or fund managers. This has the potential to cut down significantly on transaction costs. Furthermore, a consensus among the trustees may not be necessary—or, if necessary, may not be as controversial as divestment—to

[136] See the discussion of the resources provided by joining the Billion Dollar Green Challenge, page 82 of this chapter.

establish green funds and green revolving funds with funding sources that do not require the direct approval of the trustees. In these cases, administrators could handle the fund while simply keeping the trustees aware of the program.

Of course, green funds and green revolving funds might also appeal to the other motives in the taxonomy. Green funds in particular may fund a wide variety of projects that open up many possibilities, and such flexibility is one of this option's main strengths. Green funds that fund projects that address environmental health, for example, by swapping out chemical cleaning products for green ones, might appeal to the **health and safety** motive. Green funds that fund on-campus research to combat climate change, or form energy efficiency or environmental education initiatives in surrounding communities, might appeal to the social and environmental **responsibility** motive. Finding projects to appeal to motives that are especially strong at any particular target institution is just a matter of imagination. This makes green funds and green revolving funds important tactics to consider including into a holistic climate action plan.

Green Funds

A green fund is simply a pot of money that disburses grants to fund campus climate action or related sustainability projects. There are a wide variety of models of grant-disbursing green funds in practice now. As of November 2014, AASHE's Campus Sustainability Green Fund Database includes information about 154 green funds at 136 institutions.[137] Green funds can vary widely in their sources of funding, as well as the way that they are managed.

[137] "Campus Sustainability Green Funds Database."

Sources of Funding

Student Fees: Student fees are a source of funding for many green funds. There are two ways that student fees can fund sustainability measures: (1) dedicated student fees and (2) budget cycle to budget cycle allocation.[138]

To fund a green fund using dedicated student fees, schools charge a green fee as part of the student fees collected at the beginning of each year or semester. The money collected then forms the green fund. Some sample green fees include the $15 per semester charged at the College of William and Mary and the $0.25 per credit hour charged at Central Oregon Community College.

Using a dedicated student fee to fund a green fund has the benefit of institutionalization, which means that green funds receive a stable source of funding year after year. The addition of a dedicated student fee is generally approved through student elections, and can be written to expire after a set number of years unless it is renewed, so funding a green fund in this manner is also transparent, visible, and valuable for educational purposes. However, it is important to note that increasing student fees may cause hardship to students, especially lower-income students. With that consideration in mind, green fees can be optional, taking either an *opt-in* form, where the default is not paying the fee unless the student decides to pay, or an *opt-out* form, where the default is paying the fee unless the student declines to pay.[139] While it allows for more flexibility, however, making the fee optional reduces the size of the pot and might take away from its stability as a funding source if student willingness to contribute fluctuates.

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[138] "Student Fees for Sustainability," AASHE, Association for the Advancement of Sustainability in Higher Education, accessed November 16, 2014, http://www.aashe.org/resources/student-fees-sustainability/.
[139] Ibid.

Funding a green fund using budget cycle to budget cycle allocations from the overall student government budget has similar advantages and drawbacks to an optional green fee. In this funding option, the student government budgeting process allocates money to the green fund from its whole pool of funds derived from student fees. This allows for flexibility to adapt to each budget cycle's particular circumstances. However, because the green fund must compete with all of the other projects and programs that request funding in the budgeting process, this funding option is less stable than funding through a non-optional student fee.[140]

External Donations: Another source of funding for green funds is donations from alumni and other donors. Some institutions give donors the option to specifically allocate their donations to a green fund. For example, donors to the University of Notre Dame can indicate that their donation should be earmarked for the university's grant-disbursing Eco-Fund.[141] In addition to general gifts to their Sustainability Fund, Oregon State University also offers opportunities to donate to specific current projects on campus.[142] Similarly, donors to The Massachusetts Institute of Technology (MIT) have the option of giving to a number of funds to support various aspects of the MIT Energy Initiative, including expanding energy-related education or research.[143] Some green funds, such as the University of Connecticut's Campus Sustainability Fund, also attract donations from corporations.[144] This model of funding also has the disadvantage of being less stable and predictable from year to year, although seeking donations has the potential to gather more funding than levying a student green fee alone.

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[140] Ibid.
[141] "Alumni," Sustainability - University of Notre Dame, accessed November 16, 2014, http://green.nd.edu/sustainability-in-action/alumni/.
[142] "Donate," Sustainability at OSU, accessed November 16, 2014, http://fa.oregonstate.edu/sustainability/donate.
[143] "MIT Energy Initiative (MITEI)," Giving to MIT, accessed November 16, 2014, http://giving.mit.edu/priorities/mitei/.
[144] "UConn's Campus Sustainability Fund," UConn Office of Environmental Policy, accessed November 16, 2014, http://www.ecohusky.uconn.edu/CSF.html.

Internal Discretionary Budgets: Yet another source of funding for green funds is through university presidential discretion. Individual college and university presidents can create green funds using money from their annual discretionary budgets. For example, at Pomona College, President David Oxtoby has used his discretionary budget to create the President's Sustainability Fund, which funds student-proposed projects that focus on campus infrastructural or operational changes. Since 2007, the President's Sustainability Fund has granted over $40,000 to fund projects such as installing water-bottle refill stations, constructing a mobile solar array to power campus events, and implementing programs for post-consumer composting and reusable bags and dishware.[145] This model has the benefit of visibility, demonstrating that environmental sustainability is important to the college administration and setting the tone for an institutional culture that values sustainability. However, this model is also vulnerable to elimination from the president's discretionary budget in the hands of a future president who does not prioritize sustainability and combating climate change.

Internal Carbon Taxes: Taxing campus carbon-intensive activities, such as university-funded travel, can also be a source of funding for green funds. Taxing emissions from university-funded travel is a logical approach for institutions wishing to start small, because travel can constitute a significant portion of an institution's carbon footprint and is fairly easy to track. There are many ways that institutions wishing to pursue this method can go about doing so. Some questions that should be asked include, should the tax be a flat fee on all travel, or a per-mile fee? Should there be a cap on the maximum amount charged? Should the tax be levied on the institution's general fund, or individual department funds? If departmental, should the tax impact all departments

[145] "Funding for Sustainability On Campus," Pomona College, accessed November 16, 2014, http://www.pomona.edu/administration/sustainability/students/funding.aspx.

equally, or should special consideration be given to departments, such as athletics or study abroad, that must fund travel much more frequently than others?

At the 2014 AASHE annual conference, Southern Oregon University made a presentation about its recent experience in battling with these questions to implement a policy to tax university-funded travel. After considering a flat per-person fee to be levied on individual departments, Southern Oregon University decided instead on a 1% tax on all university-funded air travel to be levied on its general fund, after approval through the budgeting process. The benefits of this approach include providing money for climate action on campus, bringing attention to the carbon footprint of university travel, and preventing some departments from being too heavily impacted compared to others. The drawbacks involved with this approach, however, include a significant challenge: there is always the possibility that the tax will be denied in the budgeting process because it is up for approval every budgeting cycle.[146] Once again, stability of funding can be a major issue with this model as a source of funding. Regardless of the approach to taxation, however, taxing university-funded travel does have the benefit of compelling a wider campus audience to consider the carbon footprint of their travel.

University-funded travel is only one part of an institution's total campus carbon footprint. Institutions wishing to be pioneers in fighting climate change might consider a revolutionary step like a self-imposed internal carbon tax on *all* GHG emissions. A few notable global corporations, including Microsoft, Disney, and Shell, have instituted this measure to reduce their emissions. At Disney, the internal tax provides a strong incentive for the corporation to aggressively pursue energy efficiency measures such as changing thermostat set points, installing light sensors and efficient bulbs, increasing the efficiency of chillers, heat exchangers and pumps, and shutting

[146] Roxane Beigel-Coryell, "Taxing Campus Air Travel to Create a Climate Action Fund" (briefing presentation at the annual AASHE conference and expo, Portland, Oregon, October 26-29, 2014).

down the lights on park icons like Cinderella's Castle and Spaceship Earth when the parks are closed.[147] Revenues from the internal tax are spent to buy carbon offsets to contribute to Disney's long-term goal of zero net emissions. Such funds from an internal carbon tax levied by institutions of higher education might similarly incentivize aggressive pursuit of energy efficiency measures while, at the same time, providing a source of funding to a green fund in order to implement those measures.

A self-imposed internal carbon tax would most likely be campus-wide and taken out of a general fund. The other alternative, taxing individual departments, would involve many complications when calculating which emissions to attribute to each department. Many departments may share buildings and resources – something that should be encouraged from a sustainability standpoint – and it would be nearly impossible to divide up the emissions of inter-departmental endeavors. Taxing an institution's general fund for all campus GHG emissions would have far lower transaction costs, especially because many institutions already track their total campus GHG emissions. Signatories of the ACUPCC (American College and University President's Climate Commitment) are required to track all GHG emissions both directly and indirectly resulting from campus activities as part of the commitment.[148] Similar to a tax on university-funded travel, a self-imposed internal carbon tax would incentivize institutions to aggressively cut GHG emissions while providing funding to do so. Institutions wishing to take strong action to fight climate change should consider being among the first to implement this progressive measure towards reducing campus GHG emissions.

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[147] Marc Gunther, "Disney, Microsoft and Shell Opt for Self-imposed Carbon Emissions Taxes," *The Guardian*, March 26, 2013, accessed November 16, 2014, http://www.theguardian.com/sustainable-business/carbon-emissions-tax-microsoft-disney-shell.

[148] For more information about ACUPCC greenhouse gas tracking, see page 54-55 of this thesis.

In summary, there are a multitude of options to fund a grant-disbursing green fund. Funding for projects can be drawn from one of the sources suggested above or any combination thereof. As noted in the discussion above, some funding sources may be more stable from year to year than others. One way to make an unstable funding source more stable is by institutionalizing it, not making it reliant on repeated approval each budgetary cycle. Choosing a funding option that remains stable across a long time horizon is a good way for institutions to make a statement about their long-term commitment to environmental sustainability and fighting climate change. However, unpredictable or unstable funding sources can also be managed to some extent by keeping green fund expenditure levels below contribution levels until a buffer is built up to help compensate for fluctuations in contributions.[149] Of course, creating a green fund to disburse grants for campus climate action, regardless of its funding source, is better than doing nothing.

Management of Fund

Green funds can use a variety of approaches to identify potential projects to fund. One possibility is to seek leadership from the institution's offices of facilities, energy, or sustainability. These offices often already have a "wish list" of projects that they are looking to tackle. Another possibility is to call for proposals from the campus community. Some green funds, like the College of William and Mary's Green Fee Project Fund, open up the process to any individual or group of students, faculty, and staff.[150]

Other funds call for project proposals exclusively from students. For example, Pomona College's Presidential Sustainability Fund funds only student-proposed projects and reviews

[149] John Jurewitz, email message to author, November 24, 2014
[150] "Green Fee Project Proposals," William & Mary Sustainability, accessed November 16, 2014, https://www.wm.edu/sites/sustainability/committeeonsustainability/greenfee/submitproposal/index.php.

student proposals once each semester.[151] Encouraging students to independently identify and address potential climate action projects has the benefit of fostering student initiative and creative thinking using a sustainability paradigm. A drawback, however, is that this type of green fund may be underutilized due to a lack of proposals, or a lack of feasible proposals, depending on the student body's level of sustainability knowledge and interest.

Institutions with this type of green fund can address the problem of underutilization by targeted advertising, to ensure that students who are already interested in sustainability are aware of the opportunities that a green fund provides. At Pomona College, in addition to general advertising for the President's Sustainability Fund, the Sustainability Integration Office also calls for proposals from environmentally oriented student organizations such as The Ralph Cornell Society, a native planting club, and Eco-Reps, a peer education organization. Institutions can also fix underutilization of a green fund by incorporating it within the curriculum. At the University of Colorado-Colorado Springs, a number of course syllabi include a group sustainability project that requires students to utilize the campus's Green Action Fund.[152]

A committee on sustainability, usually with representation from students, faculty, and staff, oversees most green funds. At the College of William and Mary, for example, the Committee on Sustainability calls for project proposals and decides which projects to fund.[153] Similarly, the President's Advisory Committee on Sustainability administers Pomona College's Presidential Sustainability Fund.[154] These committees review project proposals, recommend revisions to proposals, approve projects, and can also provide guidance on implementing the

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[151] "Funding for Sustainability On Campus."
[152] For an extended discussion of this program, see pages 94-96 of this thesis.
[153] "Green Fee Project Proposals."
[154] "Funding for Sustainability On Campus."

project. Any dedicated sustainability staff or an office of sustainability is also a great resource for providing guidance to see a green fund project through to completion.

Green Revolving Funds

Green revolving funds differ from green funds because they give out loans instead of grants. While green revolving funds can support many types of projects, they typically target energy, water, and waste reduction projects with high potential cost savings, such as lighting upgrades, boiler replacements, water pipe insulation, low-flow toilets, building envelope upgrades, and solar panels.[155] A green revolving fund gives loans to fund these energy- and resource-efficiency projects, and then captures the cost savings from the reduced energy and/or resource use in order to repay the loan. In this way, a successful green revolving fund is self-replenishing and self-sustaining, institutionalizing a stable source of funding for campus projects that have the potential to generate large cost savings. This makes green revolving funds very appealing to institutions. As of November 2014, AASHE's Campus Sustainability Revolving Loan Funds Database includes information about 84 green funds at 80 institutions containing a total of $118,737,518.[156]

A great resource for institutions looking to start up a loan-disbursing green revolving fund is The Billion Dollar Green Challenge, a challenge launched by the Sustainable Endowments Institute in 2011 to encourage non-profit organizations to invest a combined total of one billion dollars in self-managed revolving funds that finance energy efficiency

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[155] Joel Indvik, Robert Foley, and Mark Orlowski, "Green Revolving Funds: A Guide to Implementation and Management," August 6 2013, accessed November 20, 2014, http://greenbillion.org/wp-content/uploads/2013/08/GRF_Full_Implementation_Guide.pdf.

[156] "Campus Sustainability Revolving Loan Funds Database," AASHE, Association for the Advancement of Sustainability in Higher Education, accessed November 16, 2014, http://www.aashe.org/resources/campus-sustainability-revolving-loan-funds/.

improvements. By joining The Billion Dollar Green Challenge, institutions wishing to create a green revolving fund will get continued support from the Sustainable Endowments Institute and a network of peer institutions, as well as use of GRITS, an online tracking tool specifically for green revolving funds developed by the Sustainable Endowments Institute.[157] As of November 2014, the Billion Dollar Green Challenge has 49 participant institutions that have invested a total of $107 million into their green revolving funds.[158] I will not go into as much detail about green revolving funds in this chapter because there is already comprehensive information available for institutions wishing to set up a green revolving fund, all gathered in a central location at The Billion Dollar Green Challenge's website.

Sources of Funding

Although green revolving funds are self-sustaining, they do require some seed capital to invest in the first project and begin the cycle. There are many sources from which institutions may generate seed capital to start their green revolving fund. The Sustainable Endowments Institute reports 14 distinct funding sources among Billion Dollar Green Challenge green revolving funds,[159] including the institution's general operating budget, alumni donations, utility rebates, student government funding,[160] student green fees,[161] efficiency or conservation savings from a project completed prior to starting the green revolving fund, the institution's cash reserves, or a portion of the institution's endowment. It should be noted that using endowment

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[157] "The Challenge," Billion Dollar Green Challenge, accessed November 20, 2014, http://greenbillion.org/the-challenge/.
[158] Ibid.
[159] "Emily Flynn, Mark Orlowski, and Dano Weisbord, "Greening the Bottom Line 2012," October 30, 2012, accessed November 20, 2014, http://greenbillion.org/wp-content/uploads/2012/11/Greening-the-Bottom-Line-2012.pdf.
[160] For a discussion of budget-by-budget allocation from student government funding, see page 75 of this chapter.
[161] For a discussion of student green fees, see page 74 of this chapter.

money as seed capital should be structured as an endowment investment in the green revolving fund, not an endowment payout. This mitigates issues related to donor restrictions on gifts to the endowment.[162]

Management of Fund

Management of green revolving funds is similar to management of green funds, except for the need of a monitoring and enforcement mechanism to oversee the project to ensure repayment of loans. Otherwise, like grant-disbursing green funds, green revolving funds might take proposals from facilities or sustainability offices, students, or any individual or group on campus. Like green funds, their management also usually consists of a committee drawn from different stakeholder groups on campus, including but not limited to students, faculty, facility or energy managers, administrators, sustainability coordinators, and others. Some funds may also be managed directly by administrators or by facilities, finance, or sustainability departments.[163] A comparison of some green revolving fund committees and their structures is available in "Greening the Bottom Line," a publication by the Sustainable Endowments Institute.[164]

Additional Benefits of Green Revolving Funds

As discussed at the beginning of this chapter, there are many ways in which both green funds and green revolving funds might appeal to motives for environmentally beneficial behavior. In addition to those, there are several other notable ways that green revolving funds, in particular, might hold special appeal.

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[162] Flynn, Orlowski, and Weisbord, "Greening the Bottom Line 2012."
[163] Indvik, Foley, and Orlowski, "Green Revolving Funds."
[164] Flynn, Orlowski, and Weisbord, "Greening the Bottom Line 2012."

According to the Billion Dollar Green Challenge website, establishing a green revolving fund encourages the institution to see the upfront costs of energy- and resource-efficiency projects as investments that yield returns over time, rather than simply as expenses.[165] Because most green revolving funds are only several years old, there is limited long-term data available so far. However, there is strong evidence that a green revolving fund makes money for those who use it: once the initial loan (as well as any interest) is repaid to the green revolving fund, the department that initiated the project gets to keep the remaining savings. With an average payback period of only 3.8 years, green revolving funds can begin to yield financial benefits for their users relatively quickly.[166] Returns can be quite impressive: established green revolving funds have reported returns on investment ranging from 20% to 57%, with a median annual return on investment of 28%.[167] Notably, investments in these projects can even significantly outperform average endowment investment returns. This means that investing a portion of the endowment into a green revolving fund, as an alternative or as a complement to a plan for fossil fuel divestment, may benefit the institution financially.[168] According to Mark Orlowski, Founder and Executive Director of the Sustainable Endowments Institute,[169] institutions that have divested should consider green revolving funds as a reinvestment opportunity because they "avoid overweighting the portfolio in another traditional sector…. [In addition,] because they are not typical investments tied to market performance, they generate returns regardless of stock market activity."[170] These benefits may appeal to the **financial and self-interest** motive.

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[165] "The Challenge."
[166] Flynn, Orlowski, and Weisbord, "Greening the Bottom Line 2012."
[167] Ibid.
[168] Ibid.
[169] The Sustainable Endowments Institute is a special project of Rockefeller Philanthropy Advisors and runs the Billion Dollar Green Challenge.
[170] Mark Orlowski, email message to author, December 1, 2014

Some may argue that the financial benefits of creating a green revolving fund are overstated because institutions should already be pursuing projects that yield very high rates of return through the normal capital budgeting process as a matter of good financial management. According to this argument, creating a green revolving fund only has the incremental benefit of enabling the underwriting of projects with rates of return too low to be considered in the normal capital budgeting process.[171] Although this argument may have some merit depending on the capital budgeting practices of individual institutions, it is important to note that institutions are subject to capital constraints in any given budgeting cycle and may not always be able to simultaneously pursue all projects worth pursuing. The strength of green revolving funds, according to Mark Orlowski, is their ability to "amplify an institution's impact using existing resources and solve the problem of dealing with tight budgets that can't (and shouldn't have to) finance these capital intensive but high return projects."[172] Green revolving funds might also further augment the amount of capital available to institutions by attracting new fundraising opportunities, as donors become interested in how the impact of their gift is magnified through the revolution of the fund.[173]

A green revolving fund's sole mandate to fund environmentally beneficial projects also ensures that such projects will not be delayed again and again in favor of other projects. This is important because capital intensive but high return efficiency projects are not necessarily prioritized in the normal capital budgeting process, and when they are delayed again and again, the environmental benefit, as well as the potential cost savings, that would have occurred during that time period is lost. Placing a spotlight on environmentally beneficial projects to compel

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[171] John Jurewitz, email message to author, November 24, 2014
[172] Mark Orlowski, email message to author, December 1, 2014
[173] "The Challenge."

university decision-makers to pay deliberate attention to them signals an enduring value of environmental stewardship. This may appeal to the non-financial aspect of the **self-interest** motive, benefitting the institution's public image by demonstrating a commitment to sustainability beyond the sum of one-time projects.

Finally, green revolving funds in particular can make things easier for sustainability and facilities staff, which might appeal to the **convenience** motive. The "revolving" nature of the fund institutionalizes a mechanism for funding sustainability projects because it is self-perpetuating. It also streamlines the internal process for facilities staff to acquire capital from the institution to finance their projects.[174] Therefore, the facilities and sustainability offices would not have to go through an external budget process each time they must secure funding for a project, which may allow them to tackle their existing "short-listed" projects faster and increase cost and emissions savings even further.

Conclusion

This chapter has discussed green funds and green revolving funds as financial mechanisms to combat climate change that an institution may implement in lieu of, or in addition to, fossil fuel divestment. These mechanisms may appeal to the **environmental concern, altruism, financial and self-interest, ability and support, and convenience** motives, especially for institutions that prefer actions with direct environmental impacts, or actions without the perceived financial risks and costs of divestment. Both of these mechanisms have their own strengths. The strength of loan-disbursing green revolving funds in particular is its financial and convenience appeal, while the strength of grant-disbursing green funds in particular

[174] Ibid.

is the flexibility to choose projects to fund that appeal to any of the motives in the taxonomy. For these reasons, institutions should consider including one or both of these mechanisms in a multi-pronged climate action plan.

CHAPTER FIVE

This chapter discusses ways that institutions can contribute to educating their students, the leaders of the upcoming generation, about the interconnected topics of environmental protection, environmental sustainability,[175] and climate change. According to AASHE, these topics can inform any and all of the following areas in higher education: workforce development, general education, education within a major or discipline, graduate education, co-curricular education, and stand alone programs in sustainability including certificates, minors, majors, and graduate degrees.[176] However, the scope of this chapter is limited to presenting a few case studies about general education, curriculum infusion within any discipline, and peer co-curricular education.

One option for environmental education is for institutions to incorporate a sustainability requirement into their general education program. Most institutions of higher education have some form of mandatory general education sequence, and ensuring that all students are exposed to issues related to climate change is one way for colleges and universities to demonstrate commitment to fighting climate change. This chapter includes one case study below as an example of how a general education program might incorporate a focus on sustainability.

Another option is to infuse environmental education into the curriculum at large by creating multiple sustainability-focused courses and/or incorporating the sustainability

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[175] There are a variety of different understandings of the term "sustainability." In this thesis, I am defining the term as "the ability for humanity to meet its needs without detracting from the regenerative capacity of the Earth's ecosystems that provide ecosystem services essential for meeting humanity's future needs."

[176] "Sustainability Curriculum in Higher Education: A Call to Action," *AASHE*, 2010, accessed November 22, 2014, http://www.aashe.org/files/A_Call_to_Action_final(2).pdf.

paradigm[177] into existing classes on other subjects. This ensures that students studying a wide variety of subjects will be exposed to a paradigm of sustainability without adding another general education requirement to their load. This chapter will discuss two case studies where the integration of sustainability into the curriculum resulted in benefits.

Yet another option for environmental education focuses on education outside of the classroom. Peer-to-peer environmental education programs, often known as "Eco-Rep" programs, are becoming popular at institutions of higher education. Although these programs vary in structure, the essential idea is to leverage social networks within the student body to spread awareness about sustainability and climate issues. Students who are already interested and well versed in these topics can become Eco-Reps to engage their peers. The ultimate goal of peer-education programs is encourage students to use a paradigm of sustainability in everyday life and establish sustainable behaviors as a cultural norm. This chapter will discuss one case study as an example of how an Eco-Rep program might be structured.

Institutions also have the capacity to make an impact through research on new technologies and strategies to fight climate change. Although this option is important to note, this thesis will not address research initiatives. Each institution faces a unique set of resources and constraints when it comes to conducting climate change research, so it is not helpful for this thesis to make any overarching suggestions in this area. AASHE offers a variety of databases with information on current sustainability research initiatives in higher education.[178]

All of the abovementioned environmental education initiatives are most likely to appeal to the **responsibility** motive. As discussed in Chapter 2, the most common argument in favor of

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[177] A paradigm of sustainability, as used in this thesis, refers to a worldview that critically evaluates economic, social, and environmental systems with the end-goal of achieving the above definition of sustainability.

[178] "Resources on Sustainability Research," AASHE, Association for the Advancement of Sustainability in Higher Education, accessed October 20, 2014, http://www.aashe.org/resources/resources-sustainability-research/.

divestment is that institutions of higher education have a social and environmental responsibility to raise awareness about the climate problem. Even institutions that have declined to divest still acknowledge this responsibility to educate. However, some of these institutions state that divesting would actually hamper their ability to fulfill the responsibility of providing their students with the best education and maintaining the independence of the academic enterprise. In contrast, pushing for an intensification of environmental education on campus might appeal to the social and environmental responsibility that institutions feel. Through educational initiatives, institutions could fulfill their responsibility to prepare students to fight climate change, without any of the misgivings that some institutions have about divesting.

Intensifying environmental education might also appeal to the **convenience** and **ability and support** motives. After all, education is the core mission of a college. However, just as with the other suggestions offered in this thesis, institutions may not always perceive environmental education initiatives as *easy*. For example, a robust effort at infusing a sustainability paradigm into many disciplines must begin with the faculty, who will need to be educated on how to teach sustainability. In addition, developing sustainability learning outcomes is complex, as learning outcomes must vary between disciplines. Furthermore, the existing organization of departments at institutions may not easily support the interdisciplinary nature of sustainability studies, and may require adjustment.[179] At all institutions, though, faculty members frequently offer new classes and syllabi for existing classes are revised often. Therefore, integrating sustainability into the curriculum would fit into already-existing curriculum revision processes, which might potentially appeal to the **convenience** motive. The **ability and support** motive may also be present: before beginning to teach about sustainability, teachers should gain the knowledge that

[179] "Sustainability Curriculum in Higher Education: A Call to Action."

they need through professional development. For example, University of Wisconsin-Oshkosh conducted faculty workshops on sustainability before launching their new general education program, which includes a focus on sustainability.[180]

Intensifying environmental education may not appeal to the **environmental concern, altruism, health and safety,** or **financial and self-interest** motives if the educational initiative itself does not have immediate direct impact in these areas. However, it is important to keep in mind that the effects of education do not always manifest themselves in the form of immediate action. Nonetheless, students may go on to use the knowledge that they gained from environmental education initiatives in college to make large impacts in these areas in the future.

The tactics that this chapter will touch upon are only the tip of the iceberg. Many possibilities exist for integrating climate and broader environmental education into higher education, as stand-alone initiatives or in some combination. As an undergraduate studying Environmental Analysis, it is best if I leave it to the professional educators to figure out exactly how to best achieve this goal at their own institutions. However, I *will* assert that it seems only logical that teaching future leaders to see the world through a paradigm of sustainability is one of the best ways for institutions of higher education to make a large impact on combating the climate problem. Much of the existing curriculum in higher education is tailored to focus on the knowledge and skills needed prepare students for specific professions.[181] In contrast, combating the climate problem requires students to learn how to think systemically about the consequences of humanity's current relationship to the Earth, and a curriculum that encourages students to fundamentally change how they think about environmental, economic, and social resources. This chapter includes some suggestions for how one might get started.

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[180] Jim Feldman, "Sustainability in Gen Ed After 1 Year: Assessment and Challenges" (case study presentation at the annual AASHE conference and expo, Portland, Oregon, October 26-29, 2014).
[181] "Sustainability Curriculum in Higher Education: A Call to Action."

General Education

To teach students to view the world through a paradigm of sustainability is to teach them to become productive citizens in a modern era defined by climate change, regardless of their area of study or profession. Addressing issues of sustainability and climate change in general education programs is a good way to ensure that each and every student is reached. The following is a case study of how the University of Wisconsin-Oshkosh incorporated sustainability into revisions of their general education program.

Case Study: University of Wisconsin-Oshkosh

At the 2014 AASHE conference, the University of Wisconsin-Oshkosh presented their new general education program, created during an overhaul of general education at the institution initiated in 2007. The general education program is based around three signature questions, one of which is, "How do people understand and create a more sustainable world?" It does not expect teachers to teach outside of their disciplines to incorporate the sustainability question. Rather, it provides faculty workshops to enable faculty to integrate the signature questions into their general education courses.[182] Professional development is valuable not only for the purpose of teaching current students about sustainability, but for infusing sustainability into the worldview of faculty with the hope that they will pass on the paradigm to students and faculty that they come into contact with in the future. Another feature of the new program is its small class sizes. Unlike typical large general education courses, the general education courses at the University of

[182] Feldman, "Sustainability in Gen Ed After 1 Year."

Wisconsin-Oshkosh are capped at 25 to provide a small, liberal arts atmosphere that encourages students to participate, engage with each other, and exercise critical thinking skills.

Although this program, first implemented in fall 2013, is still too new for full assessment, there is some anecdotal evidence of the challenges that have arisen so far. One challenge reported is that first-years, fresh out of high school, are not used to learning within the critical thinking framework of the liberal arts. Therefore, this new general education program makes it crucial for teachers to facilitate a transition to critical thinking in addition to teaching the material itself. Teachers also reported that students easily understood how personal behaviors related to sustainability, but had difficulties making connections to larger structural influences.[183] Rather than indications of the difficulties of incorporating sustainability into general education, however, these challenges can be interpreted as a sign that the program is filling a gap in education that incoming first-years at the University of Wisconsin-Oshkosh were previously lacking. As the program evolves to respond to these challenges, first-years will gain the ability to think critically and systemically, both within a sustainability paradigm and outside it, while bolstering their college-preparedness.

Curriculum Infusion

Infusing environmental education throughout the curriculum into classes of various disciplines is another way to expose students in various areas of study to sustainability and climate issues. The following are two case studies of successes. At the University of Colorado-Colorado Springs, sustainability group projects in a variety of classes connect students with the institution's Green Action Fund in a symbiotic relationship. At Pomona College, a senior

[183] Ibid.

capstone course challenges students to tackle real-life environmental problems and gives them marketable career skills.

Case Study 1: Curriculum – Green Fund Partnerships

At the 2014 AASHE conference, the University of Colorado-Colorado Springs (UCCS) laid out their model for infusing environmental education into the curriculum at large by incorporating a semester-long sustainability group project into a range of courses in various disciplines. Through these semester-long endeavors, students work with the institution's grant-disbursing Green Action Fund, which is funded by a dedicated student green fee of $5 per semester and managed by a committee of students, faculty, and staff.[184] With the support of a faculty mentor and/or the Sustainability Office, each group must submit a campus sustainability project proposal that meets the requirements of the Green Action Fund and then implement that project throughout the semester using a grant from the fund. A number of projects with tangible impacts have been completed so far at UCCS under this model. These projects include showerhead and toilet retrofits, the installation of skateboard racks with an educational component on low-carbon transportation, and a mass switch from incandescent light bulbs to CFLs.[185]

Despite these accomplishments, UCCS's experience with this model has not been without its challenges. For example, a common obstacle is when students choose projects that are not feasible from a practical standpoint. Another obstacle is the attrition of student interest in their projects over time, especially for the implementation of projects that take longer than one semester, the length of the course. Implementing projects with a longer time horizon requires

[184] For further discussion of funding sources and structures of green funds, see Chapter 4 of this thesis.
[185] Linda Kogan and Mae Rohrbach, "Connecting Academic Work with Funds to Address Campus Sustainability" (case study presentation at the annual AASHE conference and expo, Portland, Oregon, October 26-29, 2014).

dedicated students who are willing to see the project through to completion even after the semester is over. UCCS's presentation offered some lessons learned thus far in facing these challenges and ways to fine-tune the model to get the most out of the curriculum-green fund partnership. Faculty mentors should get the students started early in the semester and front-load the work to capitalize on student energy and excitement. Furthermore, they should allow passion to drive the students' selections of projects, but also provide realistic feedback on whether or not projects are feasible early in the process.[186] Finally, it was suggested during discussion after the presentation that perhaps students who have already been through the process could mentor future student groups.

It appears that this model is more compatible with green funds than green revolving funds. This is because loan-disbursing green revolving funds are best suited to projects that have high returns on investment and short payback periods, while grant-disbursing green funds can fund any type of project. Therefore, without the expectation of repaying a loan, students could pursue a wider variety of projects in their coursework, including projects that may never break even but still have educational or environmental value. However, partnering classwork with a green revolving fund might also work if students were given a list of pre-approved green revolving fund projects from which to choose.

A partnership between academic work and an institution's green fund is a symbiotic relationship with benefits for all parties. Incorporating a sustainability group project into courses in various disciplines fosters a new way of thinking in students who might not be exposed to a sustainability paradigm otherwise. Tackling a real-world project also gives students valuable experience in problem solving, teamwork, and engaging with stakeholders that may not be

[186] Ibid.

cooperative. Finally, it is an effective way for green funds to ensure that money is spent on impactful and well-thought-out projects. This is especially important for those green funds that are routinely underutilized due to a lack of project proposals that are submitted through the normal submission process. In this way, linking a green fund to courses in the curriculum has benefits for both an institution's educational offerings and its operations.

Case Study 2: Developing Environmental Problem-Solving Skills

The Environmental Analysis program at Pomona College also offers a model that showcases the benefits of incorporating environmental education into a curriculum. In the second semester of their senior year, Environmental Analysis majors are required to enroll in a capstone course that places them into teams of three to five students. These groups act as consultants on environmental problems of concern to local clients near Pomona's Southern California campus. Past clients of the program have included the City of Claremont, the Rancho Santa Ana Botanical Garden, the NGO TreePeople, and the United States Geological Survey. At the end of the semester, each team presents their results and recommendations to their clients and other stakeholders in an open forum on campus. Many of these teams then go on to make a second presentation off-campus, at company or local government forums. According to Professor Richard Hazlett, one of the founders of this program, the idea behind this capstone course is to "duplicate the conditions that students would experience with environmental problem solving in the real world."[187]

Since its inception in 2011, the capstone program has been a success. Many past capstone projects have actually achieved tangible impacts in fighting climate change. One student group

[187] Personal interview by author, November 13, 2014.

provided advice to a 5-star hotel in nearby Dana Point on the installation of solar panels and using solar to charge its large fleet of battery-powered golf carts. Another project offered a cost-benefit analysis to local city planners on the best route for installing new energy-saving street lighting. A third group examined ways to best capture and recycle storm water in Claremont, reducing the amount of electricity needed to transport water to meet the area's demand. Yet another capstone project advised the City of Claremont on how to reduce the carbon footprint of its waste disposal processes.[188]

Again, despite these achievements, the senior capstone course is not without its challenges. However, Hazlett believes that these challenges are actually important learning opportunities for students. "In the real world, a lot depends on the reliability of your client and teammates," he says. "A lot of the [capstone] learning experience is negotiating relationships and work habits…. There is no guarantee that there won't be any difficulties, but that is part of the experience."[189] Other valuable career skills that the capstone teaches, according to Hazlett, are how to plan strategically and organize for a team, how to present data orally and in writing, and how to relate to and represent a client professionally. In this way, the senior capstone course enables students to connect with local stakeholders on environmental issues and fosters valuable real-world teamwork and problem solving skills. It also prepares students for the future, giving them experience with some of the same problems they will face upon graduation and beyond.

Peer Education

Peer-education programs are fundamentally different from the classroom environmental education initiatives discussed above because the educators are fellow students. Although peer

[188] Ibid.
[189] Ibid.

environmental education programs are often called "Eco-Rep" programs (short for "Eco-Representative"), not all such programs have "Eco-Rep" in their title. The following shared characteristics set peer education programs apart from other environmental education initiatives:

- Focus on sustainable living practices
- Are based in residential buildings
- Use peer education techniques
- Have a direct relationship with or are supervised by an employee of the institution[190]

Thus, Eco-Rep organizations usually consist of students educating other residential students on how to live sustainably, and are integrated into the college or university administration through a faculty or sustainability staff supervisor. Despite this supervision, Eco-Reps programs are usually student-developed and student-run. This egalitarian, grassroots structure may appeal to students more than a hierarchical structure developed and run by adults.[191]

According to the University of Vermont Eco-Reps program, the logic behind peer environmental education is that training peer educators to educate residential students will lead to an educated campus populace that practices environmentally sustainable behaviors. This, in turn, will decrease the campus ecological footprint and result in tangible cost savings.[192] Furthermore, by making sustainable habits a cultural norm in college, Eco-Reps programs could have a ripple effect if graduates leave campus and maintain and establish sustainable practices elsewhere. Patrick Pelegri-O'Day, the Head EcoRep at Pomona College for the 2014-2015 school year, believes that imparting a paradigm of sustainability to the student body is important because those same students will go on to hold positions of power and carry a sustainable way of thinking with them. Peer education programs, he asserts, will "build a cohort of leaders who

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[190] Christina Erickson, "Student Sustainability Educators: A Guide to Creating and Maintaining an Eco-Rep Program on Your Campus," 2012, accessed October 22, 2014, http://www.aashe.org/files/documents/resources/eco-reps_guide.pdf.
[191] Ibid.
[192] Ibid.

could make careers out of sustainability, or who will act on environmental issues [beyond campus] and influence others to do the same."[193]

Despite sharing these similar goals, peer environmental education programs will be different from institution to institution. The following is a case study at Pomona College, where the recently established EcoReps program has experimented with two different ways to structure itself. For institutions looking to start their own program, other examples can be found on the AASHE website's database of existing peer environmental education programs,[194] and an extensive guide on creating and maintaining an Eco-Rep program is also available from AASHE and the National Wildlife Federation.[195]

Case Study – Pomona College EcoReps

The EcoRep program at Pomona College is relatively new, first piloted in fall 2013. The program is funded through the budget of the Sustainability Integration Office within the college's facilities department. The director of the Sustainability Integration Office interviews and selects students for the EcoRep positions each year and otherwise supervises the program. Like other peer education programs, the purpose of the EcoRep program is for students to act as a resource on environmental education for their peers, encouraging them to adopt sustainable living habits and teaching them about topics like energy usage, waste reduction, composting, and recycling.[196]

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[193] Personal interview by author, November 21, 2014.

[194] "Student Peer-to-Peer Sustainability Education Programs," AASHE, Association for the Advancement of Sustainability in Higher Education, accessed October 22, 2014, http://www.aashe.org/resources/peer-peer-sustainability-outreach-campaigns.

[195] Erickson, "Student Sustainability Educators."

[196] Anthony Bald, "EcoReps Program Promotes Sustainability in Dorms," *The Student Life*, November 15, 2013, accessed October 25, 2014, http://tsl.pomona.edu/articles/2013/11/15/news/4522-ecoreps-program-promotes-sustainability-in-dorms.

During its first year, the 2013-2014 school year, the program was structured so that there was one EcoRep assigned to each freshman residence hall. The idea was to target first-year students for behavioral modifications, as they are not yet entrenched in their campus lifestyle habits and might be more receptive to engaging with sustainability.[197] Although the EcoReps worked individually within their residence halls, getting to know their own residents well, the group also held a weekly EcoReps meeting to coordinate their efforts and to plan monthly themed events for their residents.[198]

In its second semester, the program expanded beyond its focus on first-year residence halls, adding several EcoRep positions to operate the "Eco-Desk," an informational desk that provides sustainability resources to all campus residents. The central location of the Eco-Desk allowed the EcoRep program to establish a presence on North Campus, the area where most upperclassmen live.[199] This model continued to operate through the beginning of the program's second year.

Recently, however, the EcoRep program at Pomona College has decided to radically restructure itself to address several challenges that have arisen during its first two years. The small number of EcoReps – only eight in the program's second year – severely limited the scope and number of projects and events that the program could accomplish. Existing EcoReps were feeling both overextended in their responsibilities and underwhelmed with their impact on campus as a group. In response, the EcoReps developed a new model, opening up their program to all students interested in sustainability and environmental education projects on campus. The program is no longer limited to one EcoRep per residence hall. Anybody who wishes to become

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[197] Ibid.

[198] Anna Nichols, "EcoReps Expand Coverage, Promote Sustainable Habits," *The Student Life*, February 21, 2014, accessed October 25, 2014, http://tsl.pomona.edu/articles/2014/2/21/news/4786-ecoreps-expand-coverage-promote-sustainable-habits.

[199] Ibid.

an EcoRep and sign up to contribute to a project, or propose his or her own project, may do so. With increased capacity, the EcoRep program is now looking towards projects of larger scope, such as campus-wide book sales and clothing swaps.

According to the original model, the EcoRep position was considered a work-study position and EcoReps received wages for two hours of work per week. This is no longer possible under the new model, given the drastically growing number of EcoReps: the organization has since recruited about twenty additional members. However, the program is now trying out a structure where the experienced EcoReps from the original model continue in paid leadership positions as EcoRep Coordinators. In addition to fostering sustainability in their assigned residence hall, these experienced EcoRep Coordinators will each spearhead their own environmental education project, for which they will mobilize and lead a group of volunteer EcoReps. This two-tier system ensures that the EcoReps program maintains expertise while also attracting new blood because paid EcoRep Coordinator positions have a prerequisite of experience with sustainability, while volunteer EcoRep positions do not.

As Pelegri-O'Day describes it, the original program was a bicycle wheel model, with him as Head EcoRep in the center and spokes connecting him to each of the EcoReps. In contrast, the new program is a snowflake model, with each of the EcoRep Coordinators as a hub of spokes in their own right. "I think [the snowflake is] an effective organizational model that allows for more ownership, with clear lines of accountability," he says. "In the past, the EcoReps weren't as engaged because they didn't have as much leadership responsibility. A big part of ownership is having other people rely on you. If you are beholden to others, you rise to meet the challenges that you face."[200]

[200] Personal interview by author, November 21, 2014.

The idea behind this new model is that the experienced EcoRep Coordinators will take on the responsibility of helping inexperienced EcoRep volunteers build sustainability knowledge and capacity for enacting campus change. Not only does the new model increase the manpower of the EcoRep program, but it also ensures that the program is self-perpetuating, as the program can draw on past volunteer EcoReps to become the next year's EcoRep Coordinators. This new model is currently being piloted as of November 2014, so it is still too early to evaluate these changes.

This case study provides two different potential models for structuring a peer environmental education program. It should be noted, however, that Pomona College is a relatively small school with well under 2,000 students, so certain models feasible at Pomona may not be feasible at much larger institutions. Finding a model that works best for the campus has been an iterative process of program evaluation and development for the relatively new EcoReps program at Pomona, as it would be for a program at any other institution.

Conclusion

As the above case studies show, there are a variety of ways for institutions, through environmental education, to prepare their students to contribute to fighting climate change. Through educational initiatives, institutions can fulfill their perceived social and environmental **responsibility** to combat climate change. These initiatives might also appeal to the **convenience** and **ability and support** motives. As long as environmental education initiatives are integrated properly into the campus curricular and co-curricular life, both student and faculty leaders should feel adequately prepared to take on their new roles.

Although making an immediate environmental impact is not a top priority for education initiatives, it is important to note that some of the models discussed in the case studies above actually do so. In the first curriculum case study, some students worked on projects to reduce the institution's water and energy consumption. In the second curriculum case study, past capstone projects have had tangible impacts in reducing clients' carbon footprints. This shows that it is possible for environmental education initiatives to appeal to the **environmental concern** and **altruism** motives by demonstrating that education might sometimes have a direct immediate environmental impact. Learning through projects that create tangible impact may also increase students' confidence, interest in environmental action, and feelings of efficacy. These are all potential other benefits of infusing a sustainability paradigm into curriculum.

CONCLUSION

The purpose of this thesis has not been to argue for or against a blanket recommendation on fossil fuel divestment. Rather, it has been to point out that divestment is only one option among many possible actions for institutions of higher education looking to shrink their carbon footprint and join the fight against climate change. This thesis has shown that campus climate activists should not pursue divestment single-mindedly because divestment often does not appeal to institutions' motives for engaging in environmentally beneficial behavior. Divestment also often fails to overcome the barriers that hold institutions back from engaging in environmentally beneficial behaviors. Moreover, concentrating solely on divestment may give institutions that have agreed to divest an excuse to do nothing further, and allows institutions that are unwilling to divest to do nothing at all.

Instead, campus climate activists should pursue a multi-pronged, holistic climate action plan that can be customized to match each individual institution's values and beliefs. Divestment activists who continue to hit walls while solely pushing for divestment should try a different strategy. One climate activist who has done just that is Patrick Pelegri-O'Day, a former divestment campaign leader at Pomona College. "[The divestment movement's] attack-and-defend strategy is not the right move," he says. "You should hear [the institution's] perspective and identify values you have in common, and then try to create a solution based on that common ground. It's much harder to get people to do something they just don't want to do."[201] As Head Eco-Rep, Pelegri-O'Day continues to serve his passion for fighting climate change after leaving the divestment movement, but now believes in a more holistic approach.

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[201] Personal interview by author, November 21, 2014.

So how can institutions of higher education and campus climate activists get together and, as Pelegri-O'Day suggests, create solutions based on common ground? This thesis has presented a menu of actions that might appeal to institutions, including GHG emissions reductions on campus, GHG emissions neutralization and offset actions, and environmental and climate education initiatives. It has discussed how pursuing these options in lieu of, or in addition to, divestment might fill in the gaps where pursuing divestment alone falls short. Although the list of actions in this thesis is far from exhaustive, it does provide a look into how rich and extensive the options truly are.

So Why Does This Matter?

One of the fossil fuel divestment movement's main contributions is the development of a national network of experienced and passionate climate activists. This network is a crucial tool for the mobilization and coordination of resources against climate change. However, once divestment has already been accomplished, or even when pushing for divestment does not seem to make any headway, this network should not go to waste. All the energy and knowledge in the network should be harnessed for other equally important battles. It is essential for climate activists to look beyond divestment because when divestment dominates the climate activism landscape on a campus, *crucial opportunities for other actions are missed, regardless of whether or not that institution decides to divest.* With the climate in crisis, we cannot afford any missed opportunities.

It is especially a loss when all parties involved are concerned about climate change, as both climate activists and institutions of higher education claim to be, but simply cannot agree on

the best way to combat it. When aspects of the divestment movement's current discourse disparage other options for combating climate change, it is counterproductive because fossil fuel divestment and institutionally focused measures to reduce emissions and increase climate education are two sides of the same climate action coin. The divestment movement's current discourse must change from combative to cooperative, or risk losing sight of the ultimate goal: to halt systematic GHG emissions increases, remediate damages from past emissions, and save the climate from disaster.

Institutions of higher education are specially poised to make a strong impact on the fate of the climate by making a strong impact on every student that passes through their campus, the future leaders and citizens of the Earth. Pomona College geologist Richard Hazlett pinpoints the necessity of widespread change, and the vital influence of higher education in reaching each and every student. "General public awareness [on climate change] is lacking," he laments. "Higher Ed prepares students for very resource-consumptive white-collar jobs, in which individuals are educated in specialized ways that are frankly too narrow to deal with our collective impact on the environment. Right now, students don't receive the education or mentorship they need in order to change their behaviors and the way they see the world."[202]

Institutions of higher education can change this by integrating climate education into the curriculum, by making environmentally sustainable lifestyle choices a cultural norm amongst young people, and by visibly demonstrating to its students that reducing humanity's carbon footprint is important, starting with the institution's own. Divesting from fossil fuel holdings is one possible step, but it alone cannot infuse each and every student with knowledge and purpose

[202] Personal interview by author, November 13, 2014.

for climate action. Continuing to push solely for divestment on college campuses overlooks the most important investment of all.

Activist Patrick Pelegri-O'Day cuts straight to the bottom line. "You want to talk about investment and what colleges should and shouldn't invest in?" he asks me. "Talk about this: colleges' greatest resource is not their financial capital—it's their students. These are the people who will be influencing other people as leaders and creating the systems of the future, so they are the ones who most need to think about the climate and the environment. If colleges could create that change, nothing would be more powerful."[203]

[203] Personal interview by author, November 21, 2014.

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