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The effectiveness of the Colby College electricity competition on promoting electricity conservation to students

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The effectiveness of the Colby College electricity competition on promoting electricity conservation to students

Cover Page Footnote

I would like to acknowledge Professor Nathan Chan, PhD of Colby College for his guidance throughout the research process. I would also like to acknowledge Kevin Bright, the Sustainability Coordinator at Colby College for providing the dataset on electricity usage across dormitories.

INTRODUCTION

Over the last century, the threat and potential impact of global climate change has emerged as an undeniably important issue that is generally at the forefront of current environmental and economic policy debates (Burton et al., 2006). Human emissions of greenhouse gases (GHGs) are a primary cause of global climate change, and it has become evident that the vast amount of energy usage in the United States is a driving factor contributing to its negative effects (Soytas et al., 2006). In order to combat one of the more pressing environmental and economic issues of the 21st century, several experts have indicated that policies focusing on energy efficiency could be an affective approach for reducing GHG emissions (Allcott, 2011). A 2013 study conducted by the United States Environmental Protection Agency (EPA) indicated that electricity production is the leading factor contributing to US GHG emissions, with 31% of the total GHG emissions in the US being traced back to electricity consumption (EPA, 2013). Other studies conducted by the US EPA indicate that the burning of fossil fuels creates 67% of US electricity, and that GHG emissions have increased by around 11% since 1990 due to increases in electricity demand in the United States (EPA, 2013).

Residential and commercial buildings are responsible for about two-thirds of the annual electricity consumption in the United States (Peterson et al., 2007). Considering that the average resident in the United States will spend more than 90% of their life inside buildings (Evans and McCoy, 1998), it is quite clear that the commercial and residential sector should be a major focus when it comes to reducing US energy consumption (and in turn GHG emissions). Focusing on electricity usage in United States households could be an effective method to mitigate the issues that stem from excessive electricity consumption. In order to successfully complete the task of reducing electricity consumption in United States households, behavioral changes are necessary. Behavioral changes could reduce energy consumption in households by as much as 30%, which would in turn produce an 11% reduction in the total energy consumption of the United States (Gardner et al., 2008).

Environmental damage commonly occurs through externalities or unobserved byproducts of human activities (Delmas & Lessem, 2014). Electricity consumption is a perfect example of the unseen environmental degradation that occurs due to its over-exploitation. Electricity is essentially invisible, and the environmental impacts of its use are not directly observed, making it extremely difficult for consumers to acquire an emotional investment in reducing their consumption of the good. There have been several policy interventions that have attempted to address the issues surrounding the indirect negative affects of energy consumption. However, policy

intervention can be expensive, so developing cost-effective methods to address the over-exploitation of electricity have become increasingly popular (Manne & Richels, 1997). Policies focusing on regulation through information can be an inexpensive and cost-effective mechanism to educate consumers and promote household energy conservation (Allcott, 2011). These types of information-based policies are especially economical and easy to implement due to the vast technological advances in information accessibility and telecommunication over the last several decades (Delmas & Lessum, 2014). Information-based movements focusing on social norms and public perception are designed to reduce problematic behaviors (increased electricity consumption in this case) by providing consumers with feedback that increases awareness of adverse affects of their behavior (Schultz et al., 2007).

The invisibility of electricity not only makes it difficult to understand the environmental damage that occurs from its consumption, but it also makes it difficult for consumers to receive effective and comparative feedback on their consumption levels. If a policy can be implemented that better provides feedback on electricity consumption, it could prove to be an extremely effective tool that incentivizes individuals to reduce their energy use (Fischer, 2008). By publically disclosing information pertaining to household electricity consumption, individuals may become motivated to conserve energy in order to maintain a good reputation amongst their peers (Delmas & Lessem, 2014).

This study focuses on the electricity consumption of the residence halls of Colby College in Waterville, Maine. Every academic year, Colby College participates in a two-week, school-wide “electricity saving competition” between dorms. The purpose of this study is to investigate whether different residence halls reduce energy consumption by different amounts during the Colby College electricity reduction competition.

As mentioned before, residential dwellings account for a high level of electricity consumption in the United States. The same can be said about residence halls on college campuses (Peterson et al., 2007). Observing the behavior of students living in residence halls in regards to information-based programs may provide greater insight on the effectiveness of such programs designed to target American households. Individuals occupying households receive some form of electricity consumption feedback through their monthly energy bills. This feedback alone could incentivize an individual to reduce energy consumption simply because there is a financial incentive to using less electricity (lower electricity bills). On the other hand, students living in residence halls receive little to no feedback on their electricity consumption, and also have no financial incentive to change their

behavior to reduce energy consumption simply because students do not pay for monthly utility bills. Because students in residence halls receive no energy consumption feedback and possess no financial incentive to reduce electricity usage, examining college dorms could be an extremely effective method in analyzing the behavioral effects that result from an information-based policy intervention.

During the Colby College electricity reduction competition, Colby incentivizes students to reduce electricity consumption by awarding the winning residence hall with a prize. Because of the incentives and increased environmental awareness that occurs over the competition period, it is hypothesized that most residence halls of Colby College will experience decreased levels of electricity consumption during competition time periods in comparison to non-competition time periods. This hypothesis, if proven, will provide further insight that the public perception one receives from information-based policies plays a significant factor in influencing an individual's behavior when it comes to environmental issues.

LITERATURE REVIEW

There are several recent studies that have made significant contributions to information-based policy interventions designed to reduce energy consumption of individuals. Delmas and Lessum (2014) conducted a nine-month long field experiment in the residence halls of the University of California-Los Angeles. UCLA does not have an energy reduction competition like Colby College. However, this study still focused on the effectiveness of private and public information for energy consumption of consumers. Delmas and Lessum installed real-time energy meters to get reading of energy usage for 66 residence hall rooms on UCLA's campus for one academic year. These meters broke down energy consumption by source, measuring energy usage from heating, cooling, and plug load (to measure electricity consumption). The participants of this study were the students living in these residence halls. Participants were given real-time feedback about their energy usage within their dorm. This information was private, meaning that the students only received information about their own room's energy consumption. However, a portion of these participants was also subject to receiving public information. This information was publically displayed on a poster in the residence halls for all students to see. The information included on this poster indicated rooms that were above or below the "average" dorm room in terms of energy consumption. Major findings of the study were that private information alone did not seem to properly motivate individuals in college dorms to reduce energy levels in a significant manner. However, for the participants that were subject to the distribution of public information in the residence hall, there was an

average induced energy savings of about 20%, with the majority of the savings being attributed to previously high-energy consuming individuals. Most of the energy reductions occurred through heating and cooling rather than electricity. Ultimately, the study by Delmas and Lessum provided evidence that public information-based policy interventions can be particularly useful because they can motivate individuals to adopt a behavior that encourages energy conservation, especially those who previously consumed high levels of energy (the information does not only effect those who were already conscious of their energy usage). The study by Delmas and Lessum indicates that the energy competition at Colby College could be an effective mechanism to reduce energy consumption because it provides students with incentives to reduce their electricity usage.

Peterson et al. (2007) conducted a similar study at Oberlin College in Ohio. Much like Colby College, Oberlin also has a two-week energy competition between dorms. The goal of this study was to examine if different methods of feedback and incentives influenced or encouraged students to behave in a manner that led to resource conservation. During the two-week energy competition, Oberlin students were provided with feedback, environmental education lectures, and conservation incentives, a system very similar to that of Colby College. Certain dorms in the study were provided with “high resolution feedback systems,” where they received information through the use of an automated data monitoring system that exhibited real-time, web-based feedback on each dorm’s energy and water usage. Other dorms received information through a “low resolution” feedback system, where information was provided by having the utility meters being manually read once per week. By having these two different feedback systems, Peterson et al. was able to assess whether different forms of information reception affected energy consumption behavior. Overall, the study indicated that the energy competition (that included environmental education opportunities and incentives in addition to public information) coincided with a 32% reduction in electricity use. Dorms receiving the “high resolution” public information reduced their electricity consumption by 55%, while dorms receiving information through the “low resolution” feedback systems reduced their electricity usage by 31%. This study provides evidence that the feedback system may play a role in altering students’ behavior, with a more technological approach being the most effective. Additionally, students indicated through a survey following the competition that they would continue to apply the energy conservation practices that they learned during the competition and would continue to view the web-based, real-time feedback system to monitor and further reduce their electricity consumption.

In a study conducted by Alcott (2011), OPOWER’s information-based program was evaluated. OPOWER released one of the more notable non-price energy

conservation programs by sending Home Energy Reports (HERs) to households that compared the energy usage of the subject's home to that of their neighbors while also providing tips for energy conservation. Results of this study indicated that the program led to an estimate of a 2% reduction in household energy consumption, which was equivalent to the reduction that would result from an 11-20% increase in electricity prices. This study provided further evidence that non-price, information-based interventions are favorable cost-effective mechanisms that can alter consumer behavior. Similar findings were produced in an earlier study conducted by Schultz et al. (2007), where social-norm campaigns relating to household energy consumption were examined to see their affect on human behavior. Similar to Allcot (2011), consumers were given information about their energy consumption in comparison to that of their neighbors. The study found that normative messages comparing households encouraged certain individuals to conserve energy. However, the study also noted that a "boomerang effect" might exist, where households that originally consumed less energy reacted to the public information by consuming more energy in the next period.

While it is clear that literature evaluating the effectiveness of information-based policy interventions exist, these policies are still relatively new in regards to altering human attitudes towards the environment. It is important to continue to perform case studies to gain a further understanding of the effectiveness of information-based programs on consumers. This research further contributes to the larger study examining the effectiveness of information-based programs designed to reduce electricity consumption. The paper will also provide Colby College with valuable insight and recommendations on how to enhance the competition to promote even greater energy savings amongst residence halls.

DATA

In order to complete this study, it is essential to compile data on energy usage, residence halls, and weather patterns in Waterville, Maine. The Colby College Sustainability Coordinator, Kevin Bright, and the Colby College Physical Plant Department provided the essential data on energy usage in Colby College residence halls. This dataset consists of cumulative electricity consumption readings in kilowatt hours (kWh) for each residence hall on Colby College's campus. The dataset ranges from March 14, 2014 to November 4, 2015. The dataset also includes the dates of the past two electricity consumption competitions held at Colby College. The first competition was held from March 31, 2014 to April 22, 2014 and the second competition was held from March 30, 2015 to April 22, 2015. Because the dataset of electricity consumption was cumulative, a simple manipulation was done to calculate the daily change in electricity consumption to break down the

cumulative data into daily readings. With the dataset now consisting of daily electricity readings as well as the dates of two Colby College electricity reduction competitions, this data proves to be ideal for this research.

The study also requires a dataset containing the weather data of Waterville, ME from March 14, 2014 to November 4, 2015. This dataset was provided by Weather Underground (2015). This website allows the user to locate an area by searching its zip code. The database then searches for the nearest weathervane in the area. For the specific case of Colby College, the nearest weathervane is the KWVL located at the Waterville Rober Lafleur Airport (2 Lafluer Road, Waterville, Maine 04901). The user can then go to a custom search on a range of dates and obtain the historical weather data of an area. The weather data consists of temperature (high, low, avg), dew point (high, low, avg), humidity (high, low, avg), sea level pressure (high, low, avg), visibility (high, low, avg), wind (high, low, avg), and precipitation. This study will use the average temperature, average humidity, average wind, and precipitation data, which appear to be the most important factors that determine an individual's energy usage. This dataset can only be downloaded in increments of 12 months, so it was necessary to download data in two separate ranges and combine them into an Excel spreadsheet. The first set of data is from March 14, 2014 to April 14, 2015 and the second set from April 15, 2015 to November 4, 2015.

Table 1. Summary Statistics

Variable	Observations	Mean	Std. Dev	Min	Max
Day	13,222	301	173.50	1	601
Δ KWH	13,212	186.16	304.43	0	21,332.22
AvgTemp	13,222	48.14	19.17	-4	78
AvgHum	13,222	66.98	13.88	31	96
Prec	13,222	0.20	1.75	0	30.15
Wind	13,200	5.34	3.50	0	22
Break	13,222	0.41	0.49	0	1
Competition	13,222	0.08	0.27	0	1

Table 1 provides summary statistics for the variables used in this study. The “Dorm” variable (not shown in the table above because it is a categorical variable) represents the name of the residence hall. Colby College has electricity usage data on twenty-one dorms and one faculty apartment. The residence halls included in this dataset include every residence hall at Colby with the exception of Williams and Roberts. Data on Williams is not included due to a malfunction in the electricity reader. Data on Roberts is excluded because it is a new residence hall that was built in the summer of 2015, meaning that it lacks historical electricity usage data. “Day” represents a particular day in the form of the number, with the first day being March 14, 2014 = 1 and the last day being November 4, 2015 = 601. “ Δ KWH” represents

the daily electricity usage in the form of kilowatt hours (kWh). “AvgTemp” and “AvgHum” are the average temperature (in degrees Fahrenheit) and average humidity (in percentages) on each day, respectively. “Prec” represents the precipitation (inches) for each day. “Wind” represents the average wind speed in miles per hour (mph) for each day. “Break” is a dummy variable that is equal to 1 if the day corresponds with a holiday or vacation where students are not present on Colby’s campus (Christmas break or summer vacation, for example). Lastly, “Competition” is a dummy variable that is equal to 1 if the day corresponds with the Colby College electricity reduction competition.

EMPIRICS

A regression was run using a repeated command by groups, with the variable “Dorm” representing each group. Using a repeated command with “dorm” being the group variable enables the user to run the same linear regression for each residence hall on Colby’s campus. This command provides insight to the question regarding whether different residence halls reduce electricity usage by different amounts during the Colby College electricity reduction competition. The linear regression that was run for each residence hall is given in equation 1:

Equation 1:

$$\Delta KWH_t = \beta_1 (\text{AvgTemp}_t) + \beta_2 (\text{AvgHum}_t) + \beta_3 (\text{Prec}_t) + \beta_4 (\text{Wind}_t) + \beta_5 (\text{Break}_t) + \beta_6 (\text{Competition}_t)$$

Table 2. Coefficients of relevant variables with indication of statistical significance

DORM	Avg. Temp	Avg. Hum	Precipitation	Wind	Break	Competition
Anthony	0.59 (0.58)	0.26 (0.77)	-1.18 (5.26)	7.84 (2.83)	-45.49 (20.74)**	-20.63 (35.25)
Averill	-0.62 (0.07)***	0.18 (0.09)*	-0.28 (0.65)	0.57 (0.35)	-72.09 (2.57)***	-3.26 (4.37)
Coburn	-1.44 (0.11)***	0.21 (0.14)	-0.83 (0.97)	0.16 (0.52)	-125.85 (3.85)***	-1.68 (6.54)
Dana	0.52 (0.29)*	0.08 (0.40)	-0.96 (2.71)	0.06 (1.46)	-235.74 (10.70)***	13.15 (18.18)
Drummond	0.32 (0.98)	1.99 (1.31)	-0.70 (8.97)	-2.70 (4.82)	-74.25 (35.38)**	-17.38 (60.10)
Faculty Apt	-0.10 (0.07)	-0.01 (0.09)	0.09 (0.65)	0.94 (0.35)***	-5.02 (2.60)*	-5.49 (4.41)
Foss	-0.02 (0.01)***	0.02 (0.01)***	0.02 (0.04)	-0.01 (0.02)	-3.78 (0.15)***	0.19 (0.26)
GoHo	-2.05 (1.65)	3.80 (2.20)*	-4.21 (15.06)	-3.77 (8.10)	-103.63 (59.37)*	-32.59 (100.87)
Heights	-1.40	0.92	0.95	-0.27	-106.78	-0.09

	(1.16)	(1.55)	(10.62)	(5.71)	(41.88)***	(71.16)
Johnson	-1.31 (0.07)***	0.20 (0.09)**	0.02 (0.63)	0.44 (0.34)	-69.49 (2.52)***	-1.16 (4.28)
Leonard	-0.12 (0.08)	-0.01 (0.10)	0.29 (0.74)	0.05 (0.40)	-49.42 (2.92)***	-7.48 (4.96)
Mariner	-0.29 (0.06)***	0.07 (0.08)	-0.29 (0.58)	-0.09 (0.31)	-64.30 (2.31)***	-11.01 (3.92)**
Mary Low	-0.77 (0.10)***	0.47 (0.13)***	-0.50 (0.90)	0.42 (0.49)	-105.72 (3.59)***	-5.66 (6.10)
Mitchell	0.19 (0.51)	0.31 (0.69)	-1.33 (4.69)	6.87 (2.52)***	-53.60 (18.49)***	-19.95 (31.41)
Perkins	-0.29 (0.30)***	0.05 (0.04)	0.19 (0.25)	0.16 (0.14)	-31.48 (1.00)***	-0.56 (1.71)
Pierce	-0.11 (0.04)***	0.01 (0.06)	0.74 (0.38)*	0.13 (0.21)	-44.40 (1.52)***	-6.98 (2.58)***
Piper	-0.07 (0.04)	0.11 (0.06)*	-0.09 (0.42)	-0.01 (0.23)	-20.92 (1.68)***	9.95 (2.86)***
Schupf	0.26 (0.49)	0.25 (0.65)	-1.59 (4.49)	6.69 (2.42)***	-41.79 (17.70)**	-18.07 (30.08)
Senior Apts	-1.02 (0.28)***	0.24 (0.38)	-0.74 (2.59)	0.40 (1.39)	-144.18 (10.19)***	-29.15 (17.32)*
Sturdy	0.08 (0.08)	-0.17 (0.11)*	0.34 (0.73)	-0.18 (0.39)	-54.16 (2.88)***	-17.08 (4.90)***
Treworgy	-0.32 (2.23)	3.36 (2.98)	-4.90 (20.35)	21.81 (10.95)**	-69.78 (80.24)	-69.63 (136.32)
Woodman	-0.48 (0.07)***	0.30 (-0.09)***	0.39 (0.63)	-0.11 (0.33)	-71.74 (2.48)***	-5.78 (4.20)

*** = statistically significant at 1% level, ** = statistically significant at 5% level, * = statistically significant at 10% level

Table 2 provides the coefficients of all variables from the regression ran in *Equation 1* and indicates the values of statistical significance. The weather variables used in this study did not seem to affect electricity usage across residence halls for the most part. Average temperature did have statistically significant results in 10 out of 22 residence halls. With the exception of the Dana residence hall, the coefficient for statistically significant average temperature results was negative, meaning that a 1°F increase in the average temperature leads to a decrease in electricity use for those nine dorms, holding all else constant. Intuitively, this trend could exist because warmer days occur in the early fall and late spring, which are seasons where there is extended hours of sunlight in comparison to the darker winter season. Due to the longer days and longer periods of sunlight, students can take advantage of natural light instead of turning on lamps. Students may also not be using electrical heating devices such as space heaters during the warmer seasons, which further contributes to electricity conservation. Humidity, precipitation, and wind did not seem to affect electricity usage in Colby residence halls. The “break”

variable yielded negative, statistically significant coefficients for all residence halls with the exception of Treworgy, meaning that during times where Colby students are not on campus, the residence halls use less electricity, holding all else constant. Intuitively this makes sense because during break periods students are not typically on campus, which leads to vast reductions in electricity use in residence halls. The variable of major interest in this study is the “competition” variable. 19 of the 22 dorms yielded negative coefficients during competition periods. Only the Mariner, Pierce, Senior Apartments, and Sturdy residence halls had statistically significant and negative coefficients during competition periods. The Senior Apartments reduced their electricity usage by almost 30 kWh, which is the largest reduction amongst residence halls yielding statistically significant results. Sturdy students reduced their electricity consumption by about 17 kWh, followed by Mariner (reduction of 11 kWh) and Pierce (reduction of about 7 kWh). The Piper residence hall yielded a positive and statistically significant coefficient, meaning that this dorm actually increased electricity usage during competition periods over the past two years. With only 4 of 22 residence halls significantly reducing electricity usage during competition periods, it appears that the Colby College electricity competition is only altering the behavior of a small portion of students on campus. Thus, the hypothesis of this study that most residence halls of Colby College will experience decreased levels of electricity consumption in comparison to “non-competition” time periods is rejected. It appears as though only a select few of students change their behavior during the electricity competition in a manner that promotes electricity conservation.

CONCLUSION

The findings of this study reveal that most of the students at Colby College may not be responding to the electricity competition in a manner that encourages energy conservation. However, this study proves that the competition is promoting electricity conservation amongst a select group of students, indicating that the electricity competition does alter certain students’ behavior to an extent. Furthermore, this study is evidence that Colby’s messages to conserve electricity are only reaching a small portion of students that live in residence halls.

The Colby College electricity reduction competition is a relatively new development on Colby’s Campus, having been created a mere two years ago. Students may not be changing their behavior during competition periods because they are unaware of the overall importance of electricity conservation (eg. contributing to GHGs) or of the logistical information about the competition (start dates, incentives, etc). It is important that Colby heavily advertises the competition

several weeks prior to the start of the event. This could be done through informational booths in public areas on campus, or through the Colby College General Announcements emails. In previous years, students may have lacked exposure to the importance of the competition prior to the start of the event, which could be a reason why only the students in four residence halls are actively attempting to conserve electricity.

It is extremely promising that despite in only two years of competition, Colby College has still been able to effectively promote electricity conservation to a large group of students in four residence halls. Because the competition is working to an extent despite being in the early stages of its existence, Colby College is strongly encouraged to continue motivating students on campus to participate in this competition, as it is likely that more students will alter their behavior as the competition develops over time. Other studies have found that public information-based movements on college campuses have worked exceptionally well. At University of California-Los Angeles, public information on energy consumption within dorm rooms motivated students to reduce energy usage by 20% (Delmas & Lessum, 2014). An electricity competition between residence halls at Oberlin College also saw electricity reductions of 32% (Peterson et al., 2007).

The studies completed at UCLA and Oberlin may have been more effective because of the methods of releasing information to the public. In the UCLA study, Delmas and Lessum presented yearlong, real-time energy usage feedback to students, with many participants receiving their feedback through a poster that was present in a very public area of the residence hall. At Oberlin College, Peterson et al. provided students with real-time, web-based feedback (or weekly readings of energy usage in other groups). During the two-week competition, Oberlin also provided students with environmental education lectures emphasizing the importance of energy conservation, and also provided incentives to the winning residence hall. The majority of the students at Colby may not be altering their behavior during this competition because there is not enough public information for comparisons across residence halls. The two studies at UCLA and Oberlin heavily focused on using public information as a tool to encourage electricity conservation. Colby currently does not currently offer a robust system that allows students to consistently monitor and compare their electricity usage across residence halls during competition periods. A more public information-based competition could encourage students to conserve more, as they would not want to be viewed negatively by their peers.

While the winning dorm at Colby College does receive incentives for using the least amount of electricity, there are still measures that can be taken to further encourage electricity consumption to the whole student body. One policy

recommendation is to set up some sort of database that provides students in residence halls with frequent, real-time feedback on electricity usage. Feedback systems for energy usage can be improved in a variety of different ways. Often the most effective way to encourage energy conservation through public information is to increase the frequency of feedback (Fischer, 2008). Data on electricity usage across dorms at Colby College is compiled automatically each night at midnight. If this daily electricity usage information could be relayed to the students, it may further encourage electricity conservation. It would also be effective for this feedback mechanism to compare that day's consumption to that of the previous day, or the average for the previous week or month so that students can increase their awareness on how their energy consumption compares to previous time periods. Ideally, students would also be able to view the electricity consumption levels across all residence halls to see how their own dorm compares to others in terms of electricity usage. Public information-based conservation initiatives can be most effective when individuals are able to compare themselves to those around them. Social-norm information where students can compare their behavior to that of their neighbors can encourage people to conserve energy (Schultz et al., 2007). These comparative feedback systems could even exist throughout the year to encourage energy conservation during non-competition time periods. In order to implement the recommended changes, Colby must allocate resources from the Information Technology Department to help the Office of Sustainability and Physical Plant Department set up a feedback system. This system would not only benefit the Sustainability Office during competition periods, but it would also be an easy and effective mechanism for PPD to ensure that all electricity meters are properly calibrated at all times of the year.

Further recommendations could be to conduct additional environmental education initiatives in areas of high student population during the academic week, such as the Miller Library or Pulver Pavillion. These areas have high levels of student traffic during the day. It may be effective for the environmental groups or clubs at Colby College to set up stations to increase awareness of the electricity competition. These stations can also be used as mechanisms to provide students with information on environmental conservation through the reduction of energy usage. It is also encouraged that research on this competition continues on an annual or bi-annual basis as the feedback and incentive systems are further developed. This will provide the Sustainability Office, PPD, and environmental groups on campus with additional information about how students respond to different incentives or feedback systems.

A great way to encourage students to conserve electricity is to increase the awareness of how energy consumption causes environmental degradation. If the

students at Colby are further educated about how their energy use directly contributes to pressing global issues such as climate change and resource depletion, it may increase their motivation or moral obligation to conserve energy. If Colby students are educated to the point where they receive a “warm glow” from conserving energy, then the electricity competition may cause a change in behavior where students use less electricity. Colby’s electricity competition is incredibly young, and the interest in Environmental Studies on campus is growing drastically, as Environmental Studies is now the third largest major on campus. Colby also has a young, talented, and motivated faculty in the Sustainability Office and PPD, and green clubs around campus are expanding every year. As the environmental sector continues to grow and develop, it is possible that the Colby College electricity reduction competition will not only change students behavior during the competition period, but also for the entire academic year, which would greatly reduce Colby’s ecological footprint.

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