Recommendations of the 2015-2016 Environmental Council
May 10, 2016

The Environmental Council (EC) is an appointed body of students, faculty, and staff that advises the President on environmental matters facing the College. Each year the Council forms three or four subcommittees to address topics of interest. Below is an executive summary of these subcommittees' reports and a response to your prompt to define sustainability literacy. After that are the full reports of the three subcommittees.

Executive Summary

Responsible Offset Purchasing Guide

In 2007 the Middlebury College Board of Trustees passed a resolution calling for the College to be carbon neutral by 2016. Since then the College has made tremendous progress towards that goal and has cut its greenhouse gas (GHG) emissions substantially. In spite of this progress the College is not projected to be completely carbon neutral by the end of 2016. The remaining emissions must be made up for by the purchase of carbon offsets. Carbon offsets are GHG emission reductions in one place to offset emissions someplace else. The Board of Trustees anticipated the need for this purchase and stated offsets may be part of the College's path to reach neutrality. Here we outline the standards under which offsets should be purchased. The offsets must be (i) real, quantifiable GHG emission reductions, (2) they must be additional to what would have been done had the offset not been purchased, and (3) they must be verifiable. We should only purchase offsets that have been third-party certified to meet all three of these standards.

Although the Board stated that offsets could be part of our neutrality plan they also said these purchases should be made "after all other feasible measures have been take." In our report we outline a procedure for determining when "all other feasible measures have been taken." This determination will be easier to make after the final 2016 carbon budget has been calculated and we know how many offsets we will have to purchase.

Microgrid

After nearly two years of primarily student conversations and research regarding microgrids, the Microgrid Subcommittee of the Environmental Council proposes the creation of a new committee exclusively dedicated to microgrid implementation efforts. While over the past nine months members of the Microgrid Subcommittee have come to understand the basics of microgrid technology, we recognize that our knowledge on microgrid logistics is lacking. Consequently, we feel that the creation of a Microgrid

Committee made up of interested students and staff, those with expertise in physics and math, and members of Facilities would provide both the passion and technological expertise necessary to implement a microgrid at Middlebury. Such a Microgrid Committee could foreseeably pursue one of two options: the committee could either continue with efforts to implement a microgrid as soon as possible, or they could join with Rivermoor Energy and Green Mountain Power to create a Middlebury solar array which could be integrated into a clean, renewable microgrid system in the long term. Further efforts towards microgrid implementation seem valuable mainly due to the economic benefits of "peak shaving," the energy-surety in the face of climate change, and the clean, local energy that microgrids provide. Indeed, further investigation into microgrids by a remodeled Microgrid Committee seems economically savvy, risk-reducing, and in line with the environmental stewardship outlined in Middlebury's mission statement.

STARS

The STARS Committee reviewed the results of the EC's 2014-15 efforts to engage the Middlebury College community and solicit their feedback about the College's STARS (Sustainability Tracking Assessment and Rating System) 2014 report. They reviewed the hundreds of comments and suggestions received from that effort and decided to focus on somehow addressing issues related to lower wage earners at the College.

Several meetings were held with Human Resources, Addison County United Way, and ACTR to better understand issues facing lower income families and programs that are available to help them. In December the Committee meet with the Vermont Energy Investment Corporation, a long time partner of the College, to learn about a program they have started to work with employers to better understand their employees impacts on climate change through their home energy, transportation, and food choices. The Committee decided to partner with VEIC and participate in this program along with four other large VT employers (National Life of Vermont, Ben and Jerry's, Seventh Generation, King Arthur Flour and VEIC itself).

The primary goal of the STARS Committee efforts with VEIC is to gain insight into the needs and interests of MC employees regarding home energy usage, transportation alternatives, and access to local, fresh foods. We have worked with VEIC to refine a survey they have developed and tailor for distribution to MC's employees.

The STARS Committee had help from interns at the Office of Sustainability Integration who researched different products and services related to home energy, transportation alternatives, and food choices available and provided a list and how to contact them. Environmental Affairs also provided funding to offer a $25 incentive to the first 100 survey respondents toward purchase of one of those options. We also did

some outreach to better inform and encourage employees in Dining and Facilities, who have a greater proportion of low wage earners, in hopes that they would participate more fully in the survey. We launched the survey in early May and are currently collecting results and will report on progress at our May 10 meeting. As of May 3 we had 116 respondents in the first 24 hours after the survey was released.

We will work with the Office of Sustainability Integration to finish up the survey collection and analysis of results with VEIC and they will work on developing recommendations over the summer for how the 2016-2017 Environmental Council can implement projects and resources that will help Midd employees reduce their home energy usage, reduce costs associated with travel and commuting and better access more local, fresh, nutritious food – and who else we should partner with to help affect that support and assistance both within the College and outside of it as well.

Sustainability Literacy

The EC was informed by the Dean of Environmental Affairs that President Patton has asked if the EC could work on defining sustainability literacy for a liberal arts college community and how it might be measured and tracked. This is a very exciting and worthy project that the EC would be most willing to work on. Our suggestion for how to proceed would be to work with the Office of Sustainability Integration (OSI) and the Dean of Environmental Affairs in the short amount of time we have to outline a process for how this could be achieved and what role the EC's 2016-2017 members could play in carrying it out. We could help shape information gathering and research that could be done over the OSI's summer interns to provide a solid launching point for the EC to work on this priority (and who else to work with on it) and to complete this initiative in early Fall. We look forward to discussing this further at our May 10 meeting.

Recommendations based on EC 2015-2016 Committee work

Please refer to the following reports covering the work and recommendations of the three EC subcommittees.

1. Responsible Offset Purchasing Guide…… 4
2. Microgrid…….8
3. STARS (Sustainability Tracking Assessment and Rating System)……12

Responsible Offset Purchasing Guide

"Whereas the Carbon Neutrality Initiative Task Force has done that review and concluded that a goal of carbon neutrality for Middlebury College by 2016, while challenging, is feasible through energy conservation and efficiency, renewable fuel sources, technology innovations, educational programming and learning, and offset purchases after all other feasible measures have been taken…"

Introduction

In 2007, the Middlebury College Board of Trustees passed a resolution calling for the College to be carbon neutral by 2016. At the time, they stated that the goal was "feasible through energy conservation and efficiency, renewable fuel sources, technology innovations, educational programing and learning, and offset purchases after all other feasible measures have been taken." This statement has proven correct as the College has made tremendous progress towards the carbon neutrality goal. But the College is not projected to be carbon neutral by the end of 2016 without the purchase of some offsets.

This was anticipated in the Middlebury College Climate Action Implementation Plan. They stated that, "offsets will inevitability factor into the achievement of our carbon neutrality goal and it is important that we invest responsibility in commercial offsets." The Climate Action Implementation Plan also called for the development of offset purchasing guidelines, "in order to ensure the College is making quality carbon reducing investments."

As the College is now faced with its 2016 deadline, we present these purchasing guidelines here.

Definitions

- *Additionality*: The GHG emission reduction must go beyond what would have happened in the absence of the offset purchase.
- *Carbon offset:* A GHG emission reduction in one place made to offset an emission somewhere else.
- *Greenhouse gas (GHG)*: Gases in the atmosphere that absorb radiation, and thus contribute to the "greenhouse effect" that warms the planet. Carbon dioxide is a major GHG
- *Internal offset*: GHG emission reductions for projects that Middlebury College directly funds will be considered *internal offsets* in this document. This is to contrast them with projects that Middlebury funds through the purchase of offsets on a third-party market.

What to buy?

Potential carbon offset purchases must adhere to the following standards.

1. The offset must be *real*, meaning it must reflect quantifiable reductions in greenhouse gases from a baseline.

2. It must be *additional* – providing a *permanent* reduction of greenhouse gases beyond what would happen if the offsets had not been purchased.

3. Lastly, the reduction in greenhouse gases must be *verifiable*, meaning the reductions must be quantifiable and readily accessible and monitored.

Middlebury College should ensure that all of these standards are met for offset purchases. The best way to do that is only purchase offsets that are third-party certified. There are a number of third-party certification standards.

Offset projects generally fall into three categories: renewable energy, energy efficiency, and land management projects. Middlebury should prioritize local offset projects, in the state of Vermont or in New England. By purchasing offsets from local projects Middlebury will be helping to support the local green economy. Beyond that Middlebury students, staff, and faculty are more likely to feel a connection to local projects. Thus the offset investments will have the secondary benefit of raising environmental awareness on campus.

How long should we keep buying offset credits?

The Environmental Council recognizes that this is a complex and challenging question to answer. The pledge to reach Carbon Neutrality by 2016 stated that carbon offsets were to be used as a last resort. In line with this, the Environmental Council recommends that the College move to decrease its reliance on offsets and eventually achieve Carbon Neutrality without offset credits. A hard deadline for being offset-free requires knowledge of how many credits the College needs to reach neutrality and extensive research into the feasibility of alternative carbon reduction projects. Because of these two barriers, the Environmental Council has chosen to instead recommend a planning process and purchasing guidelines that will help guide the College to carbon neutrality without offsets. Our recommendation is two part:

1. Over the next year, Middlebury should create a plan to meet carbon neutrality without offset credits. By the end of 2016, when we achieve carbon neutrality, we will know how many offset credits we require. With this knowledge, the College should develop a plan to close the gap. This plan should include a timeline, completion date and specific plans for accomplishing the reduction in offset credits. We suggest this plan could be formed by an ES 401 or a student-led J-term class next academic year.

2. Because it will likely be several years before Middlebury achieves Carbon Neutrality without offset credits, the Environmental Council recommends the College should review and revise the purchasing guidelines every two years. We recommend this because we recognize that the offset market and needs of the College will change. A two-year review will allow the College to adapt the guidelines to meet needs and desires of the College while allowing for the College to adapt to the changing market.

What does "offset purchases after all other feasible measures have been taken" mean?

Offsets should be considered in the event that net GHG emissions exist after on-site emission reductions such as biomass and biomethane, and carbon credits from College-owned and managed lands have been calculated. The College should establish an emissions review every two years to determine largest sources of GHGs, as well as what operational changes could be make to reduce or offset them. If no operational changes are financially or logistically possible within the next calendar year, offsets should be purchased to maintain the College's status as carbon neutral with the aim of reducing the amount of offsets within each two year period.

While the goal of carbon neutrality is important, it is equally important to achieve this goal in a manner that aligns with the College's prior commitment to doing so without heavy reliance on offsets.

What to do with excess internal offsets

This last section pertains to internal offsets that the College generates directly as a result of its activities and investments, rather than offsets the college purchases from external sources. These internally generated offsets are an important part of the College's carbon neutrality plan. In the event that the College generates an excess of these credits (i.e., the credits make the College carbon *negative*), we make the following recommendations:

1. The preference should be that these credits are retired, rather than sold on a carbon market to fund College operations and allow for further carbon release from the buyer.
2. We make two exceptions to the above: *i)* The offsets could be given to another Middlebury College institution (e.g., Middlebury Institute of International Studies at Monterey, Middlebury Schools Abroad) to help in their current or any future carbon neutrality goals. And *ii)* it is possible that we hire a third party to accredit our carbon credit projects (e.g., Blue Source for Breadloaf). It is common that in such agreements the accreditation company gets paid in a fraction of the credits, which will then be sold. This is another time when we make an exception to the preference of Middlebury's carbon credits not being transferred.

Sources

Middlebury College Board of Trustees. 2007. "Resolution on Achieving Carbon Neutrality by 2016." http://www.middlebury.edu/sustainability/policy-planning/policies/neutrality/2007

MiddShift Implementation Working Group. 2008. "Climate Action Implementation Plan." https://www.middlebury.edu/media/view/243071/original/Middlebury_CAP.pdf

Responsible Purchasing Network. 2009. "Responsible Purchasing Guide: Carbon Offsets." http://www.responsiblepurchasing.org/purchasing_guides/carbon_offsets/purchasing_guide.pdf

2016 Microgrid Subcommittee Proposal

Microgrid Definition

A group of interconnected loads and distributed energy resources within clearly defined electrical boundaries that acts as a single controllable entity with respect to the grid and that connects and disconnects from such grid to enable it to operate in both grid-connected or island mode. (According to Public Act 12-148§7).

Microgrid History at Middlebury College

In 2014, the Middlebury School of the Environment wrote a report highlighting Middlebury's vulnerability to increasingly severe weather patterns (Baker et al. 2014). Indeed, based on the Vermont Climate Assessment's prediction of increased precipitation and drastic weather due to climate change, the report suggested Middlebury look into the implementation of a microgrid as a mechanism to decrease the college's susceptibility to environmental extremes. The appeal of such a microgrid system is simple: should power to the college go out on the utility grid, due to a freak weather event, cyberattack, or a fault such as the 2003 Northeast blackout, the microgrid would be able to island the college from the larger grid and generate power to keep Middlebury running despite large-scale electrical outages. Certainly, the true value of a microgrid was demonstrated by Princeton University when its microgrid powered the college for two days after a power outage caused by Hurricane Sandy. Via its microgrid power production, not only did Princeton provide heat and electricity for students and staff, but also the college served as a place of refuge for emergency service workers and local residents (Kelly, 2014).

With such clear justification for further research on microgrids, a group of students conducted a microgrid feasibility assessment during the Winter Term of 2015 (Alles et al. 2015). A full report of the group's findings can be found attached to this proposal, but the group's final conclusion was that implementing a microgrid at Middlebury seems worthy of further consideration, given its economic benefits of "peak-shaving" during the summer months and its long-term benefits of energy-surety. Additionally, creating a microgrid would give Middlebury increased autonomy over local, reliable and renewable energy, which corresponds well with the college's broad goals. Consequently, the Environmental Council created this Microgrid Subcommittee for the 2015-16 academic year.

Over the past nine months, the Microgrid Subcommittee contacted members of Middlebury's Facilities Services as well as microgrid specialists across the country to learn more about microgrid implementation in a Middlebury-specific context. From those conversations the subcommittee has produced the following proposal for future action regarding microgrids at Middlebury.

2015-16 Microgrid Subcommittee Proposal

We propose the creation of a Microgrid Committee comprised of relevant parties such as (but not limited to) dedicated Environmental Council members, interested students and faculty, especially those involved in Environmental Studies, Physics, and Math, and, perhaps most importantly, Facilities representatives with technological knowhow and understanding of Middlebury's current power grid. While this year's microgrid subcommittee did come to understand the logistics behind microgrids well, we believe that a depth in technical knowledge is necessary for any further investigation into microgrid implementation at Middlebury. Consequently, we suggest that a larger committee with a more technological focus ought to approach the microgrid initiative via one of the following avenues.

Option 1: Continue with Microgrid Planning

While the campus does have 17 backup generators for specific "necessary" buildings on campus, the reliability of those generators is questionable, and the use of diesel or propane to power these generators certainly does not seem in line with Middlebury's push towards carbon neutrality (Alles et al. 2015). Therefore, the clean, islanded energy that a fully functioning microgrid system could provide seems like a valuable addition to Middlebury's energy security measures. Furthermore, through "peak shaving," which is explained in full detail in the microgrid report created by the Winter Term class, the college could actually save money on the premium it has to pay to Green Mountain Power for energy (Alles et al. 2015). Given these benefits and others highlighted in the Winter Term microgrid report, it seems worthwhile for resources to be devoted to further investigation of this promising technology, despite Middlebury's current focus on reaching carbon neutrality by the end of 2016. The goals of such a committee that would likely involve:

- Establishing a more accurate cost estimate for Middlebury-specific microgrid implementation. This could be conducted by a member of Facilities using the attached Sandia Labs Cost Estimation for an Advanced Microgrid powerpoint as a guide.
- Writing up a grant proposal summarizing a justification to fund an initial appraisal by the most appropriate of the following candidates (listed from least to most expensive and by extention least to most well-versed in microgrid technology):
    - A student involved in the Middlebury - Dartmouth dual degree engineering program or a recent graduate of such a program.
    - A local energy firm like Green Mountain Power.
    - A national energy firm well-versed in the creation of advanced microgrid systems, like Advanced Microgrid Solutions.
- Securing initial funding for an appraisal and subsequent funding for a microgrid itself.
- Potentially partnering with the town in order to access available federal funding, because the Virtue Field House is a designated FEMA shelter that can offer Middlebury residents shelter during a storm event.

Option 2: Postpone Microgrid and Focus on Solar

Alternatively, if continued investment of time, effort, and funds directly into microgrid technology is not deemed worthwhile in the short term, such a committee could work to implement a solar array with energy storage capacity. While discussing microgrids with John Tourtelotte from Rivermoor Energy, John highlighted the value of implementing solar power capacity first and then creating a microgrid framework afterwards. During our conversation, John made it clear that the implementation of such solar technology by Rivermoor Energy in cooperation with Green Mountain Power and the VT SPEED program would come at no or at the most a low cost to the college. Indeed, the main concern of committee members attempting to facilitate the creation of this solar array would be procuring the required 10 acres of open land. The first avenue for pursuing this would be to partner with Green Mountain Power. Otherwise, a RFP could be put out to third parties for the development of the array. After implementing this clean solar energy source, this committee could begin planning steps to establish the infrastructure between the solar array and the college to create a fully functioning microgrid. Under this plan, development of a large-scale photovoltaic array would not proceed unless the ability to bring the energy source into a Middlebury microgrid is possible, as a full-scale microgrid would be the ultimate goal.

From towns to expansive college campuses, clean energy microgrids seem to be the future of secure, economical energy. However, from our research and conversations we have come to appreciate the level of complexity and nuance necessary to their implementation. Therefore, the establishment of a more comprehensive group containing members with the technological knowhow to address microgrid issues is essential. Ultimately, as an institution of higher learning grounded so deeply in environmentalism and sustainability, further investigation into the promising new technology of microgrids seems economically pertinent and environmentally just.

Key Contact Information for Subsequent Committees

Middlebury:

- Jack Byrne - Middlebury Director of Sustainability Integration and Environmental Council Co-Chair - jmbyrne@middlebury.edu - 802-443-5043
- David Allen - Middlebury Assistant Professor of Biology and Environmental Council Co-Chair - dallen@middlebury.edu - 802-443-5218
- Mike Moser - Middlebury Director of Facilities Services - mmoser@middlebury.edu - 802-443-5326
- Ted Dunakin - Middlebury Maintenance Project Manager - edunakin@middlebury.edu - 802-443-3637
- Dean Ouellette - Middlebury Energy & Technology Manager - douellet@middlebury.edu - 802-433-3080

External:

- Michael Hightower - Sandia National Laboratories Energy Systems Analysis Department - mmhight@sandia.gov - 505-844-5499
- John H. Tourtelotte - Managing Director of Rivermoor Energy - john@rivermoorenergy.com - 617-680-5136 (direct)
- Ted Borer - Princeton Energy Plant Manager - etborer@princeton.edu - 609-258-3966

Microgrid Subcommittee (for questions regarding proposal etc.):

- Zach Berzolla - 2015-16 Microgrid Committee Member, Middlebury College Class of 2018 - zberzolla@middlebury.edu
- Sedge Lucas - 2015-16 Microgrid Committee Member, Middlebury College Class of 2019 - slucas@middlebury.edu

Sources

Alles, K, et al. 2015. *Middlebury College Microgrid Feasibility Analysis.* Winter term 2015 course report. Middlebury College, Middlebury VT.

Baker, I., Cort, A., Kluchinski, D., and Parker, J. 2014. *Recommendations for Vulnerabilities of Middlebury College when Facing Climate Change 2014–2-35.* The Middlebury School of the Environment. Middlebury College, Middlebury, VT.

Connecticut House of Representatives. 2012. *An Act Enhancing Emergency Preparedness and Response.* Public Act No. 12-148. Retrived from: https://www.cga.ct.gov/2012/act/pa/pdf/2012PA-00148-R00SB-00023-PA.pdf

Kelly, Morgan. 2014. *Two years after Hurricane Sandy, recognition of Princeton's microgrid still surges*. News at Princeton. Princeton University, Princeton, NJ. Retrieved from: https://www.princeton.edu/main/news/archive/S41/40/10C78/index.xml?section=featured

Sandia National Laboratories. Module 11-Cost Estimation. *Powerpoint Slides.* http://sites.middlebury.edu/dallen/cost-estimating-for-advanced-microgrids-1/

Middlebury College Environmental Council STARS Committee Final Report

Background

The purpose of the Environmental Council STARS Committee is to find ways to improve Middlebury College's STARS report scores. STARS (Sustainability Tracking, Assessment, and Rating system) is "a transparent, self-reporting framework for colleges and universities to measure their sustainability performance." Sustainability at Middlebury has a long history, and as a community we strive to foster innovation and creativity to adapting and improving the college's physical, educational, and social systems. Sustainability is a heavy word and definitions vary, which is why the STARS report is helpful to Middlebury in clearly assessing sustainability through specific categories that allow for better comparison and reflection.

The goal of STARS is to keep improving the college's performance as a sustainability leader in education. Many colleges and universities across the nation participate in this reporting system, providing an opportunity for comparisons and inspiration. This report is comprehensive and targets many aspects of Middlebury including housing, food, employees, education, and more. Based on Middlebury College's report score and extensive feedback from the community in 2015, we decided to focus our efforts this year on areas that we believe are vital to our college's system. Thus, our committee outlined key principles to guide the pursuits of the 2015-2016 school year.

Our main focus for the year was employees at Middlebury College, specifically regarding their energy, healthy food, and transportation uses and needs. **Goals for the year included:**

1. *Gain a better understanding of **MC staff energy efficiency, food, and transportation needs, issues, and awareness.***
2. *Conduct a **survey** to find ways to best help staff reduce their expenses for energy, healthy food, and transportation**.***
3. ***Identify short term and long term action items** that the EC could pursue in collaboration with other campus groups to address employee needs regarding energy and transportation.*
4. ***Build partnerships** with Human Resources, Staff Council, United Way, and ACTR to help carry out this project.*
5. ***Improve STARS score** in energy, food, and transportation categories.*
6. ***Develop a way to measure the effectiveness of our efforts to help staff** reduce their energy, food, and transportation expenses.*

Survey

The EC STARS committee is working with the Vermont Energy Investment Corporation (VEIC), Human Resources, Staff Council, United Way, and the VP of Finance to conduct a survey of MC staff to better understand their knowledge and needs in the areas of home energy

efficiency, transportation, and food. Through VEIC, the College has partnered with four other large Vermont employers with similar goals: National Life of Vermont, Seventh Generation, King Arthur Flour, Ben and Jerry's -- plus VEIC itself. All five of these other employers are distributing the same survey to their employees and will share results and ideas about how to respond to needs that emerge from the survey.

The STARS Committee has worked with the Office of Sustainability and its interns to develop a list of resources available to MC employees who are interested in learning more about how they can increase the efficient use of energy and transportation resources and sources of fresh, local foods. The Dean of Environmental Affairs has provided funds to support a cash incentive for employees to complete the survey which they can use toward the purchase of items from these providers (see Appendix below for incentive options offered to respondents). The survey was distributed on May 3 and initial results will be available on May 9 for inclusion in our report to President Laurie Patton at our May 10 meeting with her. We will generate a report on the survey results by May 17 for analysis and initial ideas about actions the College could take in response to what is learned from the survey data. The Office of Sustainability Integration and Dean of Environmental Affairs will work on recommendations for follow up over the summer.

Survey results will aid in ascertaining how to better utilize college resources to benefit staff sustainability and livelihoods. With the results of our survey and with available funds provided by Environmental Affairs, we have the resources to pursue the rest of our goals for this project in the summer and in the upcoming fall semester. We aim to help reduce transportation, food, and energy costs of employees and help make sustainable options more affordable in their lives. Our goals are justice-oriented: staff are an integral part of the Middlebury College community, and we believe that college resources can be more effectively used to address their needs.

Possible Recommendations

While we do not yet have the survey results and analysis of data, the purpose of the survey is to learn more about the needs of employees with regard to their home energy usage, transportation issues, and food choices to develop recommendations for the college to help address employee needs in these areas. VEIC initially provided the Environmental Council with some possible options that could be considered after that survey data has been interpreted. The following options are suggestions only to give readers a better idea of ways other employers have provided support for employees. There will likely be a number of Middlebury-specific actions that emerge from our data that we could pursue as well.

Program Options for Employers (adapted from VEIC)
Summary Menu

Objective	**Could be achieved by…**	**What it could look like…**
Gauge interest, give direction & measure progress	Household Energy Survey & Reports	An annual survey helps individuals and the organization prioritize actions and supporting initiatives. Measure overall and yearly progress across energy areas.
Educate and Support Staff Savings on Home Heating Costs	Topical Workshops & Organizational Support	Company promotes a workshop focused on a topic to help orient staff to savings opportunity, available rebates and financing options. This could simplify next steps with a special package that lowers the costs and/or confusion to acting.
Reduce Staff Costs for Efficiency & Renewables	Sustainable Energy Investment Benefit	Provide company reimbursement to for *qualifying* staff sustainability expenses. Dollar amounts, eligibility, and other details are flexible to manage expense and impact. This benefit could stand alone or work in concert with other initiatives such as workshops, survey, campaigns, etc.)
Raise Awareness and Drive Specific Energy Saving Actions	Employee Energy Challenge	A point-based competition over a period of time that highlights some low-hanging low-cost fruit for energy savings. Promotion & weekly prizes for worthy participants highlight the actions and opportunities available to staff.
Provide incentives for employees to reduce travel costs to work	Commuter benefits	Company provides resources and/or implements policies that assist employees in choosing efficient ways to commute such as carpooling, vanpooling, walking, taking transit, biking, or driving electric.
Provide incentives for employees to increase the amount of fresh, local foods for their families	Discount program with local community supported agriculture (CSA) providers	Company could provide an initial year's subsidy to cover discount for employees who try a CSA. Employer could offer free workshops and release time for employees to learn how to prepare and preserve fresh produce and provide more nutritious and healthy meals.

Appendix: Survey Participation Incentives

The following incentives were offered to the first 100 survey participants, with targeted survey advertisement to Dining and Facilities Staff.

1. Food
    a. As an incentive to take the survey, employees can choose to receive discounts at one of the participating Community Supported Agriculture (CSA) vendors. CSA members contribute to the farm's yearly operating budget by purchasing a share of the season's harvest in advance. In return for help paying for seed, suppliers, labor, and equipment the farm provides members a weekly basket of fresh produce throughout the harvest season.
        i. Wood's Market Garden (Brandon, VT)
        ii. Last Resort Farm (Bristol, VT)
        iii. Half Pint Farm Organic (Burlington, VT)
        iv. Stony Loam Farm (Charlotte, VT)
        v. Elmer Farm (East Middlebury, VT)
    b. Other Food Incentives:
        i. Middlebury College Grille - $25 Gift Certificate
2. Transportation

Survey incentives in the transportation category include discounts in the following areas:

    a. Zip Car: Middlebury College has 3 Zip Cars, membership options include:
        i. Occasional Driving Plan
        ii. Monthly Driving Plan
        iii. Middlebury College (Group Discounts)
    b. Public Bus Transport
        i. Vermont Translines
        ii. Burlington Link
    c. Bike Transport
        i. The Bike Center (Middlebury)
        ii. College Bike Shop
3. Energy

Survey participants can benefit from the following rebates from Efficiency Vermont:

    a. Heat Pump Heating & Cooling System (available January 1- June 30 2016)
        i. $400 off at time of purchase
        ii. For Green Mountain Power customers, GMP offers an on-bill leasing that the Efficiency Vermont rebate could be used towards
    b. Refrigerators
        i. $250 rebate for rental properties

ii. $40 rebate for Energy Star certified model refrigerator meeting Consortium for Energy Efficiency (CEE) Tier 1 specifications
iii. $75 rebate for Energy Star Tier 2 & 3 products

c. Upgrade Home to Energy Star performance/efficiency
    i. Work with a trained Energy Star contractor to install Energy Star qualifying measures
    ii. Receive up to $2,500 in incentives
d. Electric Lawn Mowers
    i. $25 credit towards the purchase of a DR Power Equipment electric lawn mower (Vergennes)