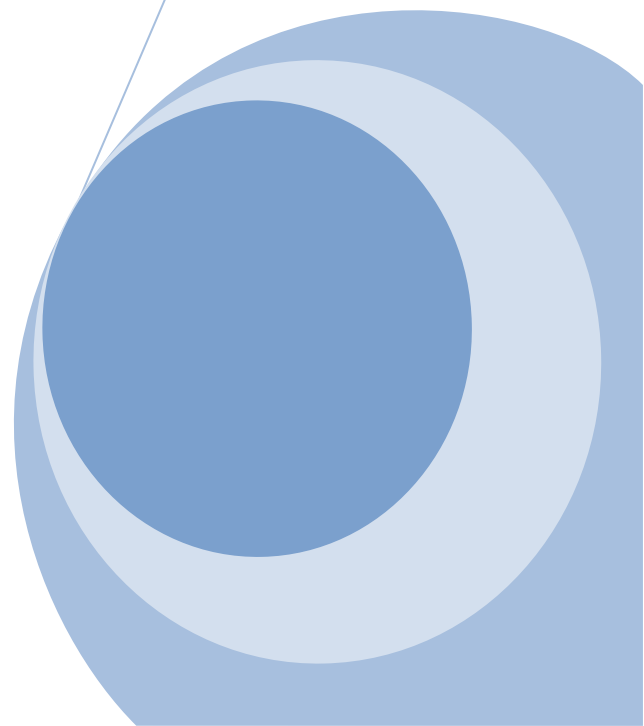
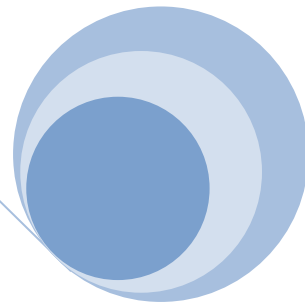
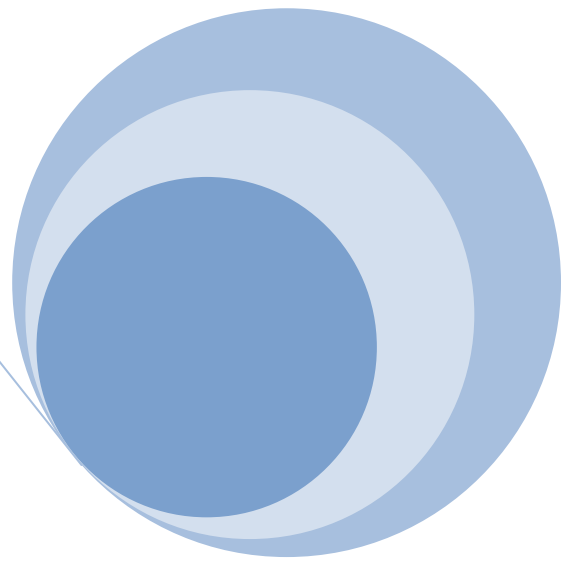


**A Climate Action Plan for
Wells College**



Prepared in
partial fulfillment
of the
American College and University Presidents' Climate Commitment

Spring 2011

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Table of Contents

Section 1	Executive Summary	5
Section 2	Introduction	7
	<i>2.1 Wells College and the Presidents' Climate Commitment</i>	
	<i>2.2 Global Climate Change and Wells College</i>	
	<i>2.3 Sustainability and Greenhouse Gas Mitigation Efforts to Date</i>	
	<i>2.4 The President's Climate Committee</i>	
	<i>2.5 References for Section 2</i>	
Section 3	Wells College's Climate Commitment	11
	<i>3.1 Goals of Wells College's Climate Action Plan</i>	
	<i>3.2 Wells College's Mission and the Presidents' Climate Commitment</i>	
	<i>3.3 Wells College's Institutional Goals and the Presidents' Climate Commitment</i>	
	<i>3.4 Wells College's Academic Goals and the Presidents' Climate Commitment</i>	
	<i>3.5 References for Section 3</i>	
Section 4	Education, Research and Public Engagement	14
	<i>4.1 Sustainability Education</i>	
	<i>4.2 Research Efforts Toward Climate Neutrality</i>	
	<i>4.3 Community Outreach Efforts Related to the Achievement of Climate Neutrality</i>	
Section 5	Wells' Campus Carbon Footprint	16
	<i>5.1. Organizational Boundary for Greenhouse Gas Inventory</i>	
	<i>5.2 Greenhouse Gas Inventory Overview</i>	
	<i>5.3 Calculating Scope 1 and Scope 2 Emissions</i>	
	<i>5.4 Calculating Scope 3 Emissions</i>	
	<i>5.5 Greenhouse Gas Inventory Results</i>	
	<i>5.6 Future Greenhouse Gas Emissions if "Business as Usual"</i>	
	<i>5.7 References for Section 5</i>	
Section 6	Greenhouse Gas Emissions Mitigation	22
	<i>6.1 Section 6 Overview</i>	
	<i>6.2 Implementation Timeline</i>	
	<i>6.3 Mitigation Actions</i>	
	<i>6.3.1 Infrastructure-Based Energy Efficiency Opportunities (EEOs)</i>	
	<i>6.3.2 Other Infrastructure Actions</i>	
	<i>6.3.2A Additional Facility Needs</i>	
	<i>6.3.2B Infrastructure Recommendations for Scopes 1 through 3 reductions</i>	
	<i>6.3.2B (i) Scope 1 Emissions</i>	
	<i>6.3.2B (ii) Scope 2 Emissions</i>	

	6.3.2B (iii) <i>Scope 3 Emissions</i>	
	6.3.3 <i>Behavior Change Recommendations for Scopes 1 through 3 Reductions</i>	
	6.3.3A <i>Energy Conservation</i>	
	6.3.3B <i>Water Conservation</i>	
	6.3.3C <i>Waste Production</i>	
	6.3.3D <i>Recycling/Food Services</i>	
	6.3.3E <i>Transportation/Parking</i>	
	6.3.4 <i>Renewable Energy</i>	
	6.3.4A <i>Incremental Increases in Renewable Electricity Purchasing</i>	
	6.3.4B <i>Renewable Energy Generation on Campus</i>	
	6.3.5 <i>Offsets</i>	
	6.4 <i>Mitigation-Related Activities</i>	
	6.5 <i>Trajectories for Future Emissions</i>	
	6.6 <i>Target Date for Achieving Climate Neutrality, with Interim Milestones</i>	
	6.7 <i>References</i>	
	6.8 <i>Tables and Figures</i>	
Section 7	Barriers and Solutions	40
	7.1 <i>Section 7 Overview</i>	
	7.2 <i>Financial Constraints</i>	
	7.3 <i>Decision-Making Processes</i>	
	7.4 <i>Lack of Dedicated Staffing and Support</i>	
	7.5 <i>Aging Infrastructure and Foreclosed Opportunities</i>	
	7.6 <i>Communications Challenges</i>	
Section 8	Costs and Financing	42
	8.1 <i>Section 8 Overview</i>	
	8.2 <i>Cost Estimates</i>	
	8.3 <i>Financing Options</i>	
Section 9	Implementation Structure and Tracking Progress	44
Section 10	Communications Strategy	45
	10.1 <i>Communications Within the Wells Community</i>	
	10.2 <i>Communications Beyond the Wells Community</i>	
Section 11	Next Steps	47
Section 12	Acronyms and Units Used in this Document	48

Section 1

Executive Summary

Climate change is widely recognized as the most serious environmental problem of our time. Human activities, including those on college and university campuses, contribute to climate change, primarily by burning fossil fuels that produce greenhouse gases such as carbon dioxide. The American College and University Presidents' Climate Commitment (ACUPCC) is a high-visibility effort to address global climate change being undertaken by over 670 colleges and universities nationwide.

Wells College became a signatory to the Presidents' Climate Commitment when President Lisa Marsh Ryerson signed it in 2008. A President's Climate Committee comprised of faculty, staff and students has led Wells' compliance. Signatories make institutional commitments to eliminate net greenhouse gas emissions, and also agree to promote research and educational efforts related to the broad topic of climate change. Signatories agree to make their institutions climate neutral no later than 2050; climate neutrality is achieved when a campus's greenhouse gas emissions have been reduced as much as possible and when the remainder are offset. A climate action plan outlines concrete steps and interim milestones on the path to climate neutrality.

Mitigation, education, research and public engagement (outreach) are all important aspects of compliance with the Presidents' Climate Commitment. A comprehensive study of Wells' carbon footprint determined that Wells was responsible for the production of 5,842 MT CO₂E in 08-09. This fiscal year is the baseline year for the purposes of compliance with the Presidents' Climate Commitment. Taking into account projected growth in enrollment and greenhouse gas emissions, Wells' emissions in 2050 under a "business as usual" model is estimated to be 7,711 MT CO₂E. A variety of mitigation actions will need to be employed to reduce these emissions. A combination of infrastructure-based mitigation actions, behavior change and increased purchasing of electricity generated from renewable sources will reduce our greenhouse gas emissions by about 50%. The remaining 50% will need to be neutralized by purchasing carbon offsets later in the implementation of this climate action plan. Investments in renewable energy on campus would significantly reduce the need for offset purchasing, and the expense of paying a premium for electricity generated from renewable sources, as well as provide additional benefits to the Wells College community and beyond.

Climate change and related topics, as well as the broader concept of sustainability, are already represented in aspects of Wells' curriculum, student/faculty research, and

public engagement efforts. Compliance with the Presidents' Climate Commitment requires these efforts to be increased and enhanced. For example, some measure of sustainability education will need to be considered for all Wells students, possibly as part of revised general education requirements. In addition both faculty and staff members need greater support in professional development opportunities that address climate change.

A recurring theme in this climate action plan is the pressing need for dedicated staffing for implementation and advancement of sustainability efforts on campus. Without dedicated staffing (be it partial or full, faculty or staff, with a title of or similar to "Sustainability Director") our efforts are at best sporadic and uncoordinated. Taking advantage of the opportunities that sustainability offers for Wells, not just because it is the socially responsible thing to do, but also because it is a tool to increase enrollment and retention, takes labor hours. This climate action plan and the vast majority of the work in support of the Presidents' Climate Commitment to date has been the result of volunteered time, primarily by members of the President's Climate Committee, but also by student groups such as the Campus Greens. These groups will continue to be important during implementation of the plan, but they alone are not sufficient to execute it.

An apparent disconnect between the "ground level" of work toward sustainability on campus and the institutional level of decision-making needs to be addressed, as it is a significant handicap to achieving our climate neutrality goal. While financial constraints will continue to be a reality at Wells, we need to keep in mind the cost savings associated with energy conservation, and the return on investment of measures that we will undertake. We also need to make the most of the investments we have already made in sustainability on campus. One way this could be achieved is through greater publicity of our work on the Wells website.

Wells needs to begin its work immediately. Next steps include securing appropriate staffing for climate action plan implementation, increasing the proportion of our purchased electricity that is generated from renewable sources, and addressing infrastructure and behavior components of our footprint. With "top down" institutional support and "bottom up" interest and commitment, Wells will be able to meet its goal of climate neutrality by our target date of 2050.

Section 2

Introduction

2.1 Wells College and the Presidents' Climate Commitment

Wells College centers its mission statement on its drive to educate students to “think critically, reason wisely, and act humanely as they cultivate meaningful lives” (Wells College Catalog, 2010-2011). This is the same drive that students, faculty and staff have brought to the table in response to the President of the College, Lisa Marsh Ryerson, signing the American College and University Presidents' Climate Commitment (ACUPCC or the Presidents' Climate Commitment) in 2008.

When the President's Climate Commitment was signed, Wells was already manifesting various aspects of a commitment to sustainability. Students were pursuing courses in environmental studies, tending an established campus garden, and working in campus groups to promote sustainability in a variety of ways outside of the classroom. It is clear that many members of the Wells community are willing to work for the environment and for sustainability. Since the signing of the Commitment, we have made more strides toward climate neutrality. However, we still have a long way to go. As a signatory to the Presidents' Climate Commitment we agree to make Wells College climate neutral no later than 2050. Climate neutrality is achieved when greenhouse gas emissions are minimized, and when any remaining emissions are neutralized (offset). This Climate Action Plan (CAP) will help bring us closer to reaching our goal and give us the stepping stones we need along the way.

2.2 Global Climate Change and Wells College

Although Wells College has fewer than 600 students, it makes an impact on the environment. We know that change needs to happen on the individual and institutional levels. All constituencies of the Wells community have a role to play in limiting our contributions to climate change.

Climate change is the term used to describe long term changes in temperature and precipitation patterns. This can manifest itself as changes in precipitation levels, a rise in ocean temperatures, a rise in overall global temperature (“global warming”), an increase in storm severity and weather variability, or in other ways (IPCC, 2007). These changes affect ecological systems and human health. In recent years human activity has been the primary cause of these changes (IPCC, 2007).

One of the main determinants of climate change is the accumulation of greenhouse gases in the atmosphere. These include carbon dioxide, methane, and nitrous oxide. These gases trap heat, causing Earth's temperature to rise. Some of the main anthropogenic contributors to greenhouse gas emissions are fossil fuel usage (by cars, power plants, industry), agriculture (fertilizers), and cooling systems (refrigeration, air conditioning). As the atmospheric concentration of carbon dioxide has risen above what is often cited as a sustainable level of 350ppm, climate change and the embedded issue of global warming have become causes for concern (www.350.org). Many individuals have become aware of their contribution to climate change and have tried to find ways to lessen their environmental impact.

The Wells College Mission "prepares students to appreciate complexity and difference, to embrace new ways of knowing, to be creative, and to respond ethically to the interdependent worlds to which they belong" (Wells College Catalog, 2010-2011). The Climate Action Plan we have developed will bring Wells on its way to climate neutrality while also supporting the institutional mission. Through implementing the CAP we will reduce our adverse effect on the planet's climate considerably.

2.3 Sustainability and Greenhouse Gas Mitigation Efforts to Date

In 2008 Wells' President's Climate Committee was formed. The Committee advised President Ryerson to sign the Commitment. After the signing of the Commitment in October of 2008, the Committee started taking the necessary steps to meet its goals. In February of 2009, over two-thirds of the Wells faculty participated in a "Teach-In" on climate change, which was well-attended by college constituents and the surrounding community. A greenhouse gas inventory was completed in 2010 with the help of an external consulting group (O'Brien and Gere). Using a consulting agency assisted greatly in the process and provided us with a baseline against which to track usage and progress in the future.

Waste minimization has been addressed through participation in the National RecycleMania competition. Recyclemania has been a great way for students to become involved in our emissions reduction effort. In the two years in which students have participated, we have performed well. We placed in the top 10 of the Grand Champions category in 2010, and have been proud of our success minimizing waste production on campus.

Decreasing waste production on campus has been successful outside of Recyclemania as well. Wells College dining has eliminated using trays in the dining hall. We have also stopped using disposable cups during "tea time", a celebrated college tradition, promoting instead the use of reuseable mugs. In the dining hall, a "Waste-LESS

Wednesday” promotion is in place. On Wednesdays, disposable cups are no longer available in the dining hall, getting students ready for a permanent change in the future. Wells Dining supports a recent student initiative to recycle all yogurt cups used in the dining hall.

Energy usage is the greatest contributor to our emissions. Five percent of the electricity Wells purchases is wind-generated. This percentage will be increased in the future. Wells has also taken steps to buy only Energy Star certified appliances, including the recent update of washers in a few of the dormitory buildings.

A campus group has also assisted with mitigation efforts on campus. Campus Greens, run by students with a faculty advisor, has held campus clean-ups, attended Powershift in 2009 and 2011, worked on a campus garden employing composting and sustainable farming, and engaged in other efforts to promote sustainability. The group has shared information on campus about the individual’s role in climate change. They have also hosted 350 Campaign and Earth Hour events on campus.

2.4 The President’s Climate Commitment Committee

The President’s Climate Commitment Committee meets during each semester to advance the fulfillment of the ACUPCC. This Climate Action Plan will guide our work in future semesters, years and decades. The Committee includes representatives of all constituencies on campus; its spring 2011 membership is listed below. While dedicated staffing for the implementation of the Climate Action Plan (CAP) is needed, the President’s Climate Committee will continue to have an important role as Wells further develops its sustainability efforts in general, and its Climate Action Plan in particular.

Niamh O’Leary, Professor of Environmental Studies
Sharon Vitello ’12, student and intern on the CAP
Elly Ventura, Programming Director, Wells Dining
Milene Morfei, Professor of Psychology
Tom Gunderson, Special Adviser to the President for Facilities
Terry Newcomb, Chief Operating Officer
Mark Witmer, Visiting Professor of Biology
Joel McCarthy, Dean of Students
Michael McGreevy, Vice President for Advancement
Kristie Zieler, Coordinator of Learning Support Services

2.5 References for Section 2

IPCC. 2007. Intergovernmental Panel on Climate Change. *Climate Change 2007: Synthesis Report*. Nov 2007.

www.350.org. See <http://www.350.org/en/about/science>

Wells College Catalog, 2010 – 2011. Available from www.wells.edu

Section 3

Wells College's Climate Commitment

3.1 Goals of Wells College's Climate Action Plan

Wells College's Climate Action Plan describes many goals for the institution. As outlined in this document and summarized in Table 3.1, our Climate Action Plan encompasses goals in the areas of education, research and public engagement as well as specific greenhouse gas mitigation goals.

Table 3.1. Major goals included in the Wells College Climate Action Plan.

Aspect of Presidents' Climate Commitment	Discussed Primarily in Section(s):	Major Goals
Education	Section 4	<ul style="list-style-type: none">• Exploration of incorporation of sustainability concerns into education of all students• Completion, coordination and follow-up with class projects
Research	Section 4	<ul style="list-style-type: none">• Focus of senior thesis projects• Encouraging support for faculty scholarship/development
Outreach	Sections 4 and 10	<ul style="list-style-type: none">• Climate Resource Center with Sustainability Director (see also Section 6)• Expanded Membership of President's Climate Committee• Presentations/Publications in a variety of venues• Presence on www.wells.edu
Mitigation	Section 6	<ul style="list-style-type: none">• Infrastructure improvements• Encouraging behavior change• Shifting to renewable energy• Exploring offsets

A solid basis for our action plan is the alignment between the goals of the Presidents' Climate Commitment, and the College's mission, institutional goals and academic program goals as described below.

3.2 Wells College's Mission and the Presidents' Climate Commitment

The Wells College mission statement includes many elements pertinent to the fulfillment of the Presidents' Climate Commitment. Below we have italicized the parts of our mission statement that we believe speak most strongly to the goals of the Presidents' Climate Commitment:

The mission of Wells College is to *educate students to think critically, reason wisely, and act humanely as they cultivate meaningful lives*. Through Wells' academic program, residential atmosphere, and *community activities*, students learn and practice the ideals of the liberal arts. The Wells experience *prepares students to appreciate complexity and difference*, to embrace new ways of knowing, to be creative, and to *respond ethically to the interdependent worlds to which they belong*. Committed to excellence in all areas of its reach, Wells College equips students for *lifelong learning and for sharing the privileges of education with others* (Wells College Catalog, 2010 – 2011).

3.3 Wells College's Institutional Goals and the Presidents' Climate Commitment

In support of her mission, Wells College has established five institutional goals (Wells College Catalog, 2010 – 2011). We have italicized below the goals that we believe are most directly related to the fulfillment of the Presidents' Climate Commitment:

1. Provide an educational experience that supports students as unique individuals engaged in the study and practice of the liberal arts.
2. Maintain an excellent faculty that is skilled in teaching, dedicated to rigorous intellectual development, and actively committed to pursuing new knowledge and learning strategies.
3. *Develop students' intellectual curiosity, analytical and critical capabilities, and aesthetic awareness and creativity.*
4. *Provide a rich community environment that fosters awareness and sensitivity to social diversity and encourages responsible action in an interdependent world.*
5. *Develop self-confident individuals who exercise sound judgment and have the knowledge and skills for thoughtful decision-making.*

3.4 Wells College's Academic Program Goals and the Presidents' Climate Commitment

Academic program goals are derived from our mission statement and our institutional goals. Several of the academic program goals listed below will be addressed as we fulfill the Presidents' Climate Commitment. We have italicized the ones we believe to be most relevant.

A Wells College education enables students to (Wells College Catalog, 2010 – 2011):

- *examine enduring and contemporary questions that shape human understanding*
- *use the scholarly and creative traditions of the liberal arts and contemporary technologies to locate and evaluate information*
- *communicate reasoned points of view to inform and persuade a variety of audiences*
- incorporate an understanding of diversity in their academic work and as members of a learning community
- develop an appreciation of languages and cultures in a global context
- acquire knowledge based on scholarship and research about women
- *engage in collaborative practices in the classroom, in campus life, and in the community at large*
- *develop thorough knowledge of basic principles, methods of inquiry, and current issues in an academic field of study*

3.5 References for Section 3

Wells College Catalog, 2010 – 2011. Available from www.wells.edu

Section 4

Education, Research and Public Engagement

4.1 Sustainability Education

Sustainability has become an increasingly important focus of a Wells education since President Ryerson signed the Presidents' Climate Commitment in the fall of 2008.

Wells has had a major and minor in Environmental Studies since 1991. The major includes two concentrations; one in environmental science, and one in environmental policies and values. The curriculum is taught by faculty in the natural sciences, social sciences, and humanities, and many of the courses are taken by students not majoring or minoring in Environmental Studies. We are also currently examining our general education requirements and may make changes that will increase student exposure to sustainability issues.

Many class projects, both within and outside of the Environmental Studies major, have attempted to shape behaviors of campus community members, and increase awareness of environmental sustainability. We need to continue these types of projects and also improve their coordination, as well as ensure better follow-up.

A student group, Campus Greens, is involved in many projects that enhance the environmental education of the student body. Members of that group have attended the Powershift conference for the last three years. They have also hosted 350 Campaign and Earth Hour events on campus. One of our goals is to include this group more in the work of fulfilling the Presidents' Climate Commitment. Coordination and better alignment of activities would be beneficial.

4.2 Research Efforts Toward Climate Neutrality

Wells hired an outside firm (O'Brien and Gere) to do an audit of its greenhouse gas emissions; this work concluded in the spring of 2010. We will continue to monitor these emissions as we work toward climate neutrality. Faculty and students will want to be, and need to be, involved in these efforts.

As mentioned above, there have been numerous student research projects related to sustainability issues. These projects will continue with an increasing focus on helping Wells to achieve climate neutrality. Environmental Studies students are all required to complete a senior project/thesis, and some of these projects are focused on campus sustainability issues. Faculty scholarship can also benefit from a focus on sustainability,

as it relates to grant opportunities, professional development, and research efforts related to various aspects of the climate action plan. These activities need greater institutional support.

4.3 Community Outreach Efforts Related to the Achievement of Climate Neutrality

Wells College is located on Cayuga Lake, in the heart of the Finger Lakes Region. The Cayuga Lake Watershed Network office is housed on the Wells campus, and the Campus Greens student group has increased its connections to the Network through shared projects. Both of these groups could be better integrated into the work of the Presidents' Climate Committee.

Wells holds an Activism Symposium each year, and a number of panels and presentations are dedicated to issues of sustainability. One of the presentations this year was specifically devoted to the Presidents' Climate Commitment. The Symposium is open to the surrounding community, and some of the sessions are led by community members. In addition the Environmental Studies major hosts an Earth Day speaker each year. This event is open to the public and is often attended by community members. We plan to continue using these opportunities to present information relevant to climate change and the Climate Action Plan.

We also plan to make the Climate Commitment and other sustainability efforts more visible to the wider community by providing links from the main Wells website. We need to move materials from internal sites, and present them in an appropriate way for a wider audience. These efforts will create a better presence for our work.

The hiring of a Sustainability Director (staff or faculty position, see section 6) would greatly facilitate our ability to reach out to the local community, including local schools and school districts. Ideally this community member would be housed in a Climate Change Resource Center that would act as a focal point for constituencies both on and off campus.

Section 5

Wells' Campus Carbon Footprint

5.1 Organizational Boundary for Greenhouse Gas Inventory

The organizational boundary defines the extent of the reporting organization and is defined on the basis of either ownership or control of emission sources. Wells College has chosen an organizational boundary based on operational control of emission sources. Specifically, Wells College reports greenhouse gas emissions from sources that are metered/measured by Wells College and for which future emission reduction actions can be taken.

5.2 Greenhouse Gas Inventory Overview

In 2010 a greenhouse gas inventory was completed for Wells College. As part of the study, the following 22 Wells facilities were assessed: Macmillan Hall, Stratton Science Center, Schwartz Athletic Center, Main Building, Dining Hall, Weld House, Leach House, Dodge House, Barler, Long Library, Zabriskie Hall, Maintenance Building, Cleveland Hall, Morgan Hall, Smith/Sommer Center, Bellinzoni Building, Campbell, Glen Park Residence Hall, the Boathouse, Peachtown School, the Health Center and Pettibone (O'Brien and Gere, 2010). All of these facilities except for Dodge House, Long Library, Bellinzoni Building, the Boathouse, Peachtown School and the Health Center are heated by the central heating plant.

The inventory included the three scopes of greenhouse gas emissions, as they are defined by the Presidents' Climate Commitment (ACUPCC, 2007).

- Scope 1 emissions are defined by the ACUPCC as direct emissions. Direct emissions from stationary sources, mobile sources, and fugitive sources are included in this category.
 - Stationary sources included all boilers, generators, chillers and water heaters burning natural gas, #6 fuel oil, #2 fuel oil, diesel and propane
 - Mobile sources included all light trucks, passenger vehicles, mowers, and tractors burning gasoline and diesel
 - Fugitive sources included chillers using the refrigerant HFC-134a
- Scope 2 emissions are indirect emissions from purchased electricity
- Scope 3 emissions included those generated by commuting of faculty, staff and students, as well as those generated by air travel for study abroad and from waste decomposition.

Emissions of the six Kyoto Protocol greenhouse gases (CO₂, CH₄, N₂O, SF₆, hydrofluorocarbons, perfluorocarbons) were considered, as appropriate, and related to carbon dioxide equivalents (CO₂E) using their global warming potentials.

The inventory included all three scopes for fiscal year 08-09; this is being used as our baseline year for the purposes of compliance with the Presidents' Climate Commitment. An inventory of Scopes 1 and 2 only was also conducted for fiscal years 04-05 through 07-08.

5.3 Calculating Scope 1 and Scope 2 Emissions

The inventory of scopes 1 and 2 emissions was conducted by O'Brien & Gere consultants (www.obg.com), in collaboration with Wells College. The inventory was part of a comprehensive energy assessment of the College (O'Brien and Gere, 2010)

Methods used were consistent with the World Resources Institute/World Business Council for Sustainable Development (WRI/WBCSD, 2004) greenhouse gas accounting protocols, as recommended by the ACUPCC (2007). These are also consistent with the Clean Air Cool Planet Campus Carbon Calculator, which is widely used by U.S. colleges and universities, and was used in our calculation of Scope 3 emissions.

5.4 Calculating Scope 3 Emissions

The inventory of scope 3 emissions was conducted by Andrea Muñoz '10 using the Clean Air-Cool Planet Campus Carbon Calculator Version 6 (Clean Air-Cool Planet, 2008). Her work also included a survey of Wells faculty, staff and students regarding their commuting activities (Muñoz, 2010).

5.5 Greenhouse Gas Inventory Results

Total greenhouse gas emissions for fiscal year 2008-2009 were estimated to be 5,842 metric tons CO₂E (MT CO₂E) (Table 5.1). Sixty eight percent of these emissions were Scope 1, 24% were Scope 2, and 8% were Scope 3 (Figure 5.1).

Scope 1 (Figure 5.2) and Scope 3 (Figure 5.4) emissions were broken down to examine their sources. The majority (94%) of Scope 1 emissions arose from stationary sources (Figure 5.2). Figure 5.3 shows a breakdown of emissions from stationary combustion sources on campus. Number 6 fuel oil is the biggest contributor to this type of emissions. Study abroad air travel was the biggest contributor to Scope 3 emissions (Figure 5.4).

Indirect emissions from electricity usage (Scope 2) and direct emissions from stationary combustion sources (the major component of Scope 1) together comprise the majority

(88%) of the total footprint. As Wells College works towards its obligations under the Presidents' Climate Commitment, we will need to focus on emissions from stationary combustion installations and purchased electricity in order to make significant reductions.

Over the period 2004-2005 to 2008-2009, Scope 1 and Scope 2 emission intensity was normalized by full-time equivalent students (FTE). These results are shown in Table 5.1. A 51% increase in enrollment over the time period shown is contemporaneous with a 32% increase in CO₂E. This represents an increase in energy efficiency over between 04-05 and 08-09 of 13%.

5.6 Future Greenhouse Gas Emissions if "Business as Usual"

Without any mitigating measures we would expect an upward trajectory for the campus' greenhouse gas emissions in coming years, primarily due to projected increases in enrollment. Projections with and without mitigating measures are discussed in Section 6.

5.7 References for Section 5

American College and University Presidents' Climate Commitment (ACUPCC), 2007. Implementation Guide: Information and Resources for Participating Institutions. (Available at: <http://www.presidentsclimatecommitment.org/>).

Clean Air-Cool Planet Campus Carbon Calculator Version 6 (2008). Available from <http://www.cleanair-coolplanet.org/toolkit/>

Muñoz, A. 2010. Wells College's Carbon Emissions. Senior Thesis in Environmental Studies. Available from faculty in Environmental Studies.

O' Brien and Gere, 2010. Energy Efficiency Assessment of Wells College. FlexTech Study. Available from the President's Office at Wells College

World Resources Institute and World Business Council for Sustainable Development (WRI/WBCSD), 2004. The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard. (Available at: <http://www.ghgprotocol.org>).

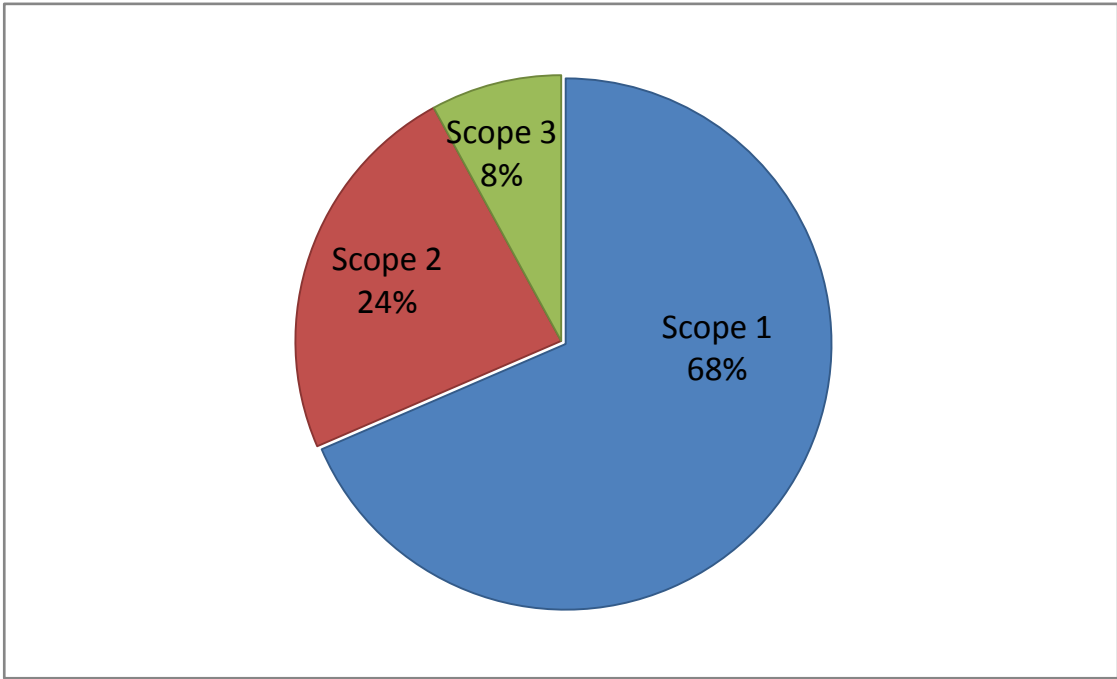


Figure 5.1. Contributions (in CO₂E) to Wells' Greenhouse Gas Emissions in 08-09.

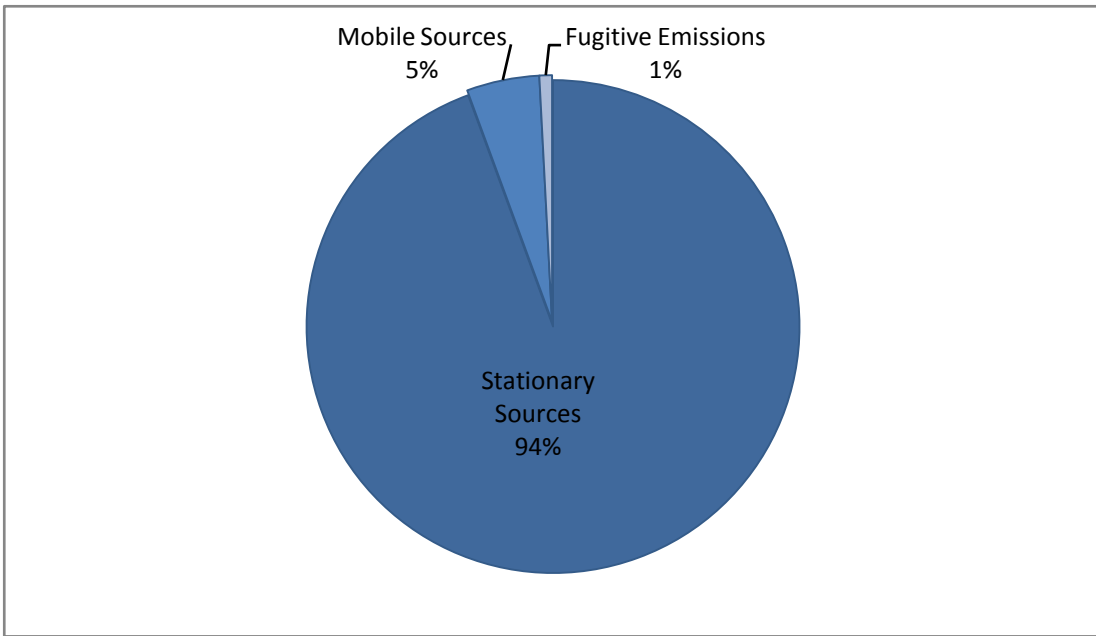


Figure 5.2. Breakdown of Wells' Scope 1 Emissions (in CO₂E) in 08-09.

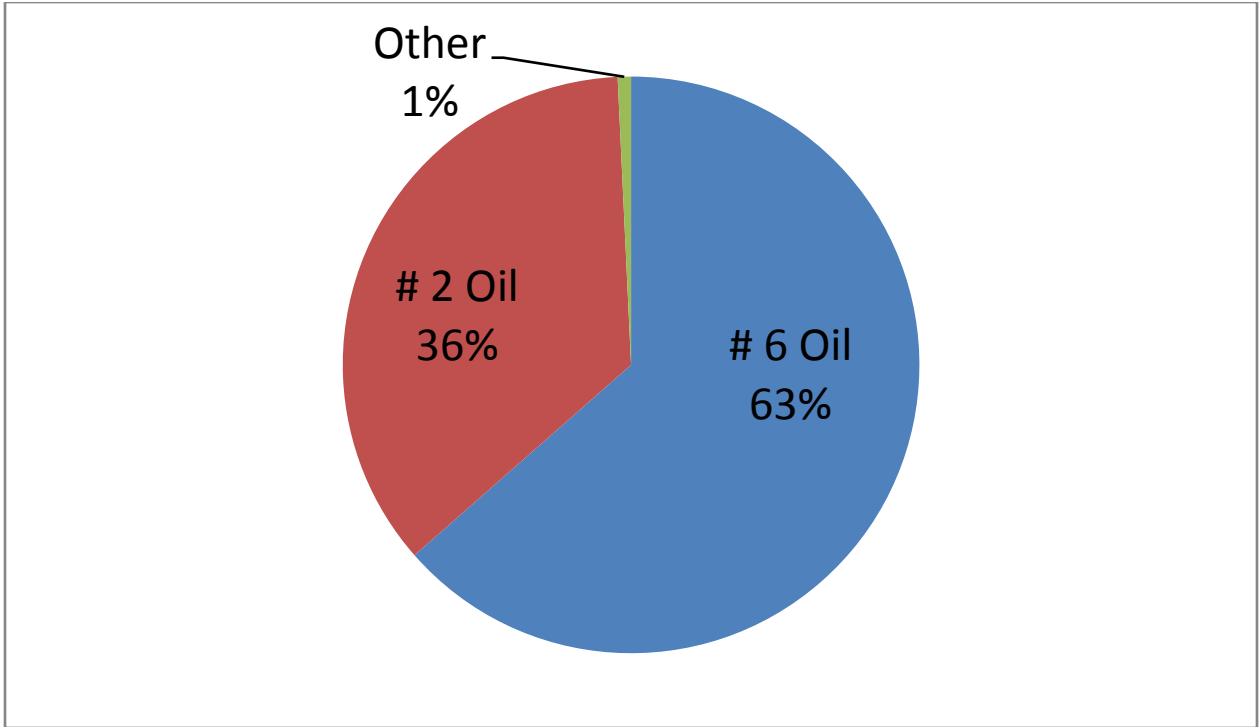


Figure 5.3. Breakdown of Wells' Emissions (in CO₂E) from fuels used in Stationary Sources in 08-09. The "other" category includes natural gas, diesel and propane.

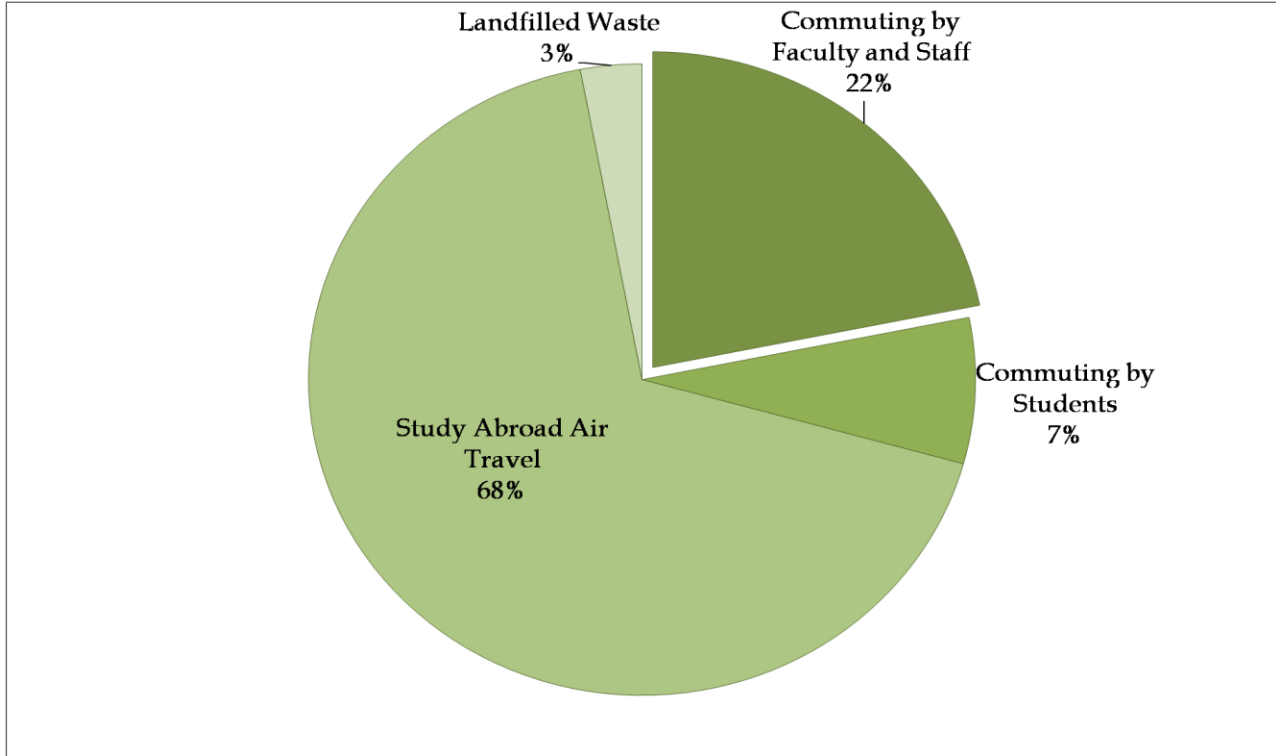


Figure 5.4. Breakdown of Wells' Scope 3 Emissions (in CO₂E) in 08-09.

Table 5.1. Greenhouse gas emissions (MT CO₂E), student enrollment (FTE) and emissions intensity/student (MT CO₂E/FTE) from 04-05 through 08-09.

Fiscal Year	Total Emissions ^a (MT CO ₂ E)	Renewable CO ₂ Offset ^b (MT)	Student Enrollment (FTE)	Emissions Intensity/Student (MT CO ₂ E/FTE)
04-05	4,073	0	385	10.6
05-06	4,418	0	407	10.9
06-07	4,575	0	469	9.8
07-08	4,527	-40	541	8.4
08-09	5,842	-60	583	10.0

^aTotal includes only Scopes 1 and 2 for 04-05 through 07-08. Scope 3 emissions were available only for 08-09 and are included in the total for that year.

^bPurchased 5% of electricity from renewable sources

Section 6

Greenhouse Gas Emissions Mitigation

6.1 Section 6 Overview

Section 6 describes the specific actions Wells will undertake in order to reduce our greenhouse gas emissions, and a timeline for their implementation. Mitigation actions directly reduce greenhouse gas emissions in one or more of the three scopes defined by ACUPCC (2007). Mitigation-related activities are also described; these are actions that in and of themselves do not reduce greenhouse gas emissions, but that are necessary to achieve and support our mitigation actions. Climate neutrality will be reached when we have first minimized greenhouse gas emissions as much as possible, and then offset the remainder. Our target date for achieving climate neutrality is 2050; interim milestones and trajectories for future emissions are also presented.

The remainder of this section is organized into sub-sections as follows:

6.2 Implementation Timeline

6.3 Mitigation Actions

6.3.1 Infrastructure-Based Energy Efficiency Opportunities (EEOs)

6.3.2 Other Infrastructure Actions

6.3.2A Additional Facility Needs

6.3.2B Infrastructure Recommendations for Scopes 1 through 3 reductions

6.3.2B (i) Scope 1 Emissions

6.3.2B (ii) Scope 2 Emissions

6.3.2B (iii) Scope 3 Emissions

6.3.3 Behavior Change Recommendations for Scopes 1 through 3 Reductions

6.3.3A Energy Conservation

6.3.3B Water Conservation

6.3.3C Waste Production

6.3.3D Recycling/Food Services

6.3.3E Transportation/Parking

6.3.4 Renewable Energy

6.3.4A Incremental Increases in Renewable Electricity Purchasing

6.3.4B Renewable Energy Generation on Campus

6.3.5 Offsets

6.4 Mitigation-Related Activities

6.5 Trajectories for Future Emissions

6.6 Target Date for Achieving Climate Neutrality, with Interim Milestones

6.7 References

6.8 Tables and Figures

6.2. Implementation Timeline

Mitigation and mitigation-related activities will be employed according to the general timetable of implementation phases described in Table 6.1.

6.3 Mitigation Actions

A large number and a wide diversity of projects, measures, and programs that will reduce Wells' greenhouse gas emissions are described in this section. We refer to these collectively as mitigation "actions". Actions were chosen based primarily on the comprehensive work done by O'Brien and Gere consultants as part of an overall assessment of the campus' energy efficiency (O'Brien and Gere, 2010). Their report includes recommendations to increase energy conservation and energy efficiency. Wells' President's Climate Committee also had input into action selection and prioritization. We have grouped our actions into categories as described in Table 6.2.

We have used terminology consistent with the O' Brien and Gere (2010) report. O'Brien and Gere initially identified sixteen energy efficiency opportunities (EEOs) for Wells College. Six of these were selected for more detailed study, and are referred to as developed EEOs. As illustrated in Table 6.2, our general approach is to focus first on conservation, efficiency and infrastructure elements that need replacement in the short term. In later phases of implementation we will incorporate on-campus generation of electricity and purchasing of carbon offsets. Some actions, such as behavior change, will be relevant throughout all phases of implementation.

6.3.1 Infrastructure-Based Energy Efficiency Opportunities (EEOs)

Infrastructure-Based Energy Efficiency Opportunities (EEOs) are divided into three types as described in Table 6.3. Developed EEOs were studied in depth by O'Brien and Gere (2010); the priority developed EEOs will be undertaken in summer 2011. Undeveloped EEOs were identified as energy savings opportunities by O'Brien and Gere, but have not been studied in depth at this time. We have included in Table 6.3 estimates of the greenhouse gas reductions associated with each EEO.

6.3.2 Other Infrastructure Actions

This includes a wide variety of actions as described in Sections 6.3.2A and 6.3.2B below.

6.3.2A Additional Facility Needs

We will be able to conserve energy and reduce greenhouse gas emissions as we address the following additional facilities needs identified by O'Brien and Gere (2010) and by the Facilities representative on the President's Climate Committee:

- Campbell – new ventilation system
- Dining hall/Kitchen – new steam supply; new water supply
- Glen Park – replace heating system
- Health Center – upgrade heating system with new boiler and zone control valves
- Leach – upgrade heating system with individual room controls
- Macmillan – replace heating system
- Main Building – upgrade heating system with room controls
- Maintenance Building – replace roof membrane and boilers
- Morgan Hall – replace heating system, electrical system, windows
- Schwartz Athletic Center – complete Phase 2 renovation (includes additions that will eliminate need for staff offices currently in trailers)
- Zabriskie Hall – Replace or rehabilitate roof; new heating system
- Smith Hall - new heating system

6.3.2B Infrastructure Recommendations for Scopes 1 through 3 reductions

O'Brien and Gere (2010) recommended that in the development of our comprehensive greenhouse gas reduction strategy Wells College also consider the following options for achieving reductions in greenhouse gases from Scopes 1, 2, and 3 sources:

6.3.2B (i) Scope 1 Emissions - Direct emissions from stationary and mobile sources

- *College Fleet Vehicles*: Consider purchasing hybrid vehicles; create institutional policies requiring energy-efficient vehicles; recommend fuel efficient rental cars; increase number of electric utility vehicles
- *Campus Safety Vehicles*: More bicycle patrol and electric utility vehicles for on-campus patrols
- *Grounds Equipment*: Investigate feasibility of running equipment on biodiesel; diesel retrofits; electric utility vehicles; continually upgrade equipment with energy-efficient models when old ones are replaced; consider purchasing a new, more efficient diesel dump truck; create no-mow/low-mow areas
- *Boilers, Chillers, Emergency Generators*: Use energy-efficient models when due for replacement
- *Refrigeration Units*: Standardize replacement strategy to include emissions/efficiency as criteria with new purchases (use existing energy star purchasing policy); reduce the number of small fridge units; create incentives to get rid of fridges; inventory small fridges; consider establishing employee lounges on each floor with fridge, microwave, etc. (with the goal of personal kitchen equipment being eliminated from campus)
- *Air Conditioning Units*: Need institutional backing for thermostat settings.

6.3.2B (ii) Scope 2 Emissions - Emissions from purchased electricity

- *Lighting*: Put LED (light emitting diode) lights in all exit signs; change gym lighting to T5s; install daylight sensors in hallways; install occupancy sensors for all rooms including hallways and stairwells; replace all incandescent bulbs with CFLs (compact fluorescent lights) or LEDs; convert all T12 fixtures to T8; replace gym metal halide fixtures with T5 fixtures
- *Plug Loads on Information Technology (IT) equipment*: Purchase energy star-certified computers, monitors, and other IT equipment; implement and ensure continued operation of computer and monitor power management features.
- *Other Plug Loads*: Reduced number of space heaters, mini-fridges, coffee makers; buy several "Kill-A-Watt" units to demonstrate how much energy office equipment uses and thus provide more information to encourage behavior change
- *Information Technology*: Program PCs into power save modes or utilize occupancy sensor controlled surge bars; use smart strips for electronics; replace desktops with laptops where practical; consider moving further away from personal printers to networked printers; expand the online library; look for web-based software to reduce server demand; move toward more wireless access; investigate green computing efforts at other institutions; offer more information to encourage behavior change; create uniform plug load plan; create a checklist of considerations when dealing with technology (environmental impact, supportability, energy efficiency- heat/electricity; lifecycle cost; longevity; support cost - human/capital; impact of equipment location); move to thin clients & cloud computing; create more virtual meetings & trainings; find more efficient light bulbs for projectors; unplug or remove TVs in classrooms (computers can act as substitutes); determine the feasibility of reducing the number of copiers in office areas.
- *Peak Load*: Need demand load management; monitor demand and shed loads to minimize peak demand; connect equipment that's not currently tied into the main control system
- *Heating and Cooling*: Create a cooling "setback" point for electric heat, similar to the current heating setback, and program both for automatic operation; standardize/institutionalize temperature set points, eg: heating to 68°F, cooling to 76°F; calibrate or replace all temperature sensing devices; enable fan coil unit day/night controls where available, install where possible
- *Water Use*: Installation of motion-activated and time-release faucets where feasible; installation of low flow showerheads
- *Equipment Replacement*: Institutional policy to require all replacements to be NEMA (Association of Electrical and Medical Imaging Equipment Manufacturers) premium efficiency; update purchasing procedures to include specifications for energy efficiency
- *Building Envelope Tightening*: Seal around windows; put window treatments on those

without; install more insulation where possible; install vestibules at entrances to minimize infiltration of outside temps; thermal image whole building during peak heating season to identify losses; purchase of monitoring equipment for in-house use; consider replacing roofs with more energy efficient technology

- *Copiers*: Encourage scanning over copying
- *Policy*: Institutional policy requiring premium efficiency on all replacements of equipment over 1 hp (NEMA standard); need policies of how to deal with technology change and how to consider the green components (big picture thinking); institutional policy to turn off computers when not in use – enforcement will be key

6.3.2B (iii) **Scope 3 Emissions - Emissions from commuting, air travel and solid waste**

- *Recycling*: Investigate feasibility of creating a recycling center that can accept clothing, furniture, household items, etc. from students; create annual electronics recycling drive open to students and community
- *Sharecycle*: Also known as “Move Out Mania”. Expand existing program.
- *Paper Use*: Create a Green Office Certification Program; consider charging for printer use (especially in the library); encourage faculty to post hand-outs on the GLOBE instead of paper copies; continue offering "paperless classroom" training (make sure adjuncts are involved in the trainings); need electronic signatures to be acceptable on forms; continue converting forms to electronic format
- *IT Purchasing*: Consider purchasing remanufactured toner cartridges; consider purchasing laptops instead of bulky desktops
- *Teleconferencing/Videoconferencing*: Need to make it more user-friendly; make available at all college campus sites; ensure faculty teaching with these technologies are trained in the proper pedagogy for using it
- *Commuting*: When renting a vehicle, encourage people to use vehicles that get more than 30 mpg; encourage carpooling through incentives such as premium parking spots; consider partnering with bus companies to get students a discounted/free pass; create a “guaranteed ride home” two times a semester; examine working from home strategies; examine the option of 4-day open campus with 3 days shut down
- *Business Air Travel*: Evaluate the cost benefit of driving vs. flying (time, carbon footprint, cost); encourage train, bus rides
- *Cafeteria*: Use china and silverware; use compostable trash bags; investigate production of biodiesel for college equipment use

6.3.3 Behavior Change Recommendations for Scopes 1 through 3 Reductions

In addition to opportunities related to campus infrastructure, Wells will need to consider potential behavioral changes that could mitigate campus greenhouse gas emissions. Some behavioral change operates at the individual level and some operates at the institution level. The institution level is also important in setting policies and establishing an overall climate in which individuals operate and choose certain behaviors over others. Examples of necessary institution level policies include increasing recycling programs, offering more administrative and academics-related documents in an online format, and discontinuing outsourcing to non-local suppliers.

Potential behavioral changes that could mitigate campus greenhouse gas emissions are discussed in the following 5 areas:

- Energy Conservation (addresses Scopes 1 and 2 emissions)
- Water Conservation (addresses Scopes 1 and 2 emissions)
- Waste Production (addresses Scope 3 emissions)
- Recycling/Food Services (addresses Scopes 1, 2 and 3 emissions)
- Transportation/Parking (addresses Scope 3 emissions)

6.3.3A Energy Conservation

- Accept a broader range of indoor temperatures
- Power down computers during periods of non-use or set them to “sleep” mode
- Turn off lights when you leave a room for more than five minutes; use only as much light as you need
- Purchase energy efficient electronics and appliances, including Energy Star products and energy-efficient fluorescent light bulbs
- Turn off your electronics devices (e.g., television, cell phones and other equipment) when you are not using them
- Use a power strip that can be turned off when you're not using your electronics
- Refrain from using push-button automated door-opening mechanisms if not needed
- When possible, take the stairs instead of the elevator

6.3.3B Water Conservation

- Accept low-flow showerheads and faucets
- Wash clothes in warm or cold water; run at a full load
- Turn the water off while shaving or brushing teeth
- Landscape campus with low-water-using plants
- Report all toilet and faucet leaks immediately

6.3.3C Waste Production

- Edit, spell and grammar check on screen to reduce printing
- Choose reusable or refillable products instead of disposables; buy durable goods
- File information electronically
- Send documents and invitations electronically
- Remove yourself from junk mail and catalog lists
- Avoid individual bottled beverages, use pitchers of tap water instead
- Purchase, minimally, 30% recycled paper
- Reuse paper, cardboard, containers, plastics, electronics, and furniture
- Do two-sided printing and copying, or scanning for electronic viewing
- Publish and share documents on-line
- Reuse envelopes, folders and the blank side of a printed sheet of paper
- Design documents/shrink images to minimize paper consumption
- Use rechargeable batteries
- Choose to repair items rather than discarding them

6.3.3D Recycling/Food Services

- Take only what you can eat in the dining hall or cafeteria
- Recycle all recyclable materials
- Opt for travel mugs and reusable water bottles
- Buy recycled or recycled-content products, both pre- and post-consumer
- Donate old electronics and used equipment to schools or other organizations to ensure reuse and recycling
- Use reusable bags / containers for shopping
- Buy organic, sustainably-grown foods
- Buy locally grown, seasonal food and products when available
- Use sustainable, “green” products

6.3.3E Transportation/Parking

- Whenever possible, combine activities, meetings and errands into one trip
- Use conference calls or schedule meetings back to back
- Consider options like telecommuting or distance learning
- Dine in, walk to a restaurant, or pack a lunch to avoid driving during the day
- When it's time to buy a new car, choose one that offers good gas mileage and/or choose a hybrid / alternative fuel vehicle
- Keep your car well-tuned

6.3.4 Renewable Energy

In addition to implementing the internal emission reduction projects described above, Wells will also need to address how the electricity it does use is generated. When used to produce electricity, renewable energy sources generate fewer greenhouse gas emissions than non-renewable energy sources

6.3.4A Incremental Increases in Renewable Electricity Purchasing – Wells will purchase additional Renewable Energy Credits/Certificates (RECs) for green power to mitigate its Scope 2 emissions. Currently 5% of our purchased electricity is generated from renewable sources. We will increase this to 15% immediately and incrementally thereafter as described in Table 6.4, until 100% of our purchased electricity is generated from renewable sources in 2050.

6.3.4B Renewable Energy Generation on Campus – As indicated in Table 6.2, Wells plans to generate some of its own electricity on campus from renewable sources. Consistent with our focus first on energy conservation and efficiency, this will probably not be undertaken until the last phase of implementation. However, it would be desirable to employ this mitigation action sooner for its educational value in the curriculum. We are setting a goal of generating 5% of our electricity needs on campus by 2050.

6.3.5 Offsets

Offsets include carbon credits from voluntary and regulatory markets, and carbon allowances under regulatory markets. Like RECs, offsets provide no return on investment. In addition, offsets are projected to become more costly under expected future regulatory programs. For these reasons, offsets will be a lower priority than implementing emission reduction projects, and will not be employed until Phase V.

6.4 Mitigation-Related Activities

The activities described in this section don't reduce greenhouse gas emissions in and of themselves, but they are necessary to track our emissions, achieve our mitigation goals, and keep the Presidents' Climate Commitment on track, including the updates and adjustments that will be necessary for Wells' Climate Action Plan.

- Staffing/support – This Climate Action Plan (CAP) was written by the President's Climate Committee acting on a volunteer basis. This will not be sufficient in order to implement the CAP. It is a priority for Wells to include this work in a member of the community's job description. This could be achieved by either adjustment of the job description of an existing staff or faculty member, or by a new hire. Hiring consultants to do this work is a possibility, but this type of outsourcing limits the engagement of the community in sustainability efforts, and does not have the same educational value as in-house staffing and support. The College's annual Activism Symposium could be used as a model. It was started as a volunteer activity by a faculty member, and then later was accomplished through the work of a designated staff member.
- Sub-metering – In order to track Scope 2 emissions on a finer level, more of the campus' buildings will need to be sub-metered for electricity.
- Studies Needed -
 - A comprehensive study of space utilization on campus in 11-12 would likely identify buildings or building zones that could be closed for all or part of the year. This could result in significant savings of greenhouse gas emissions.
 - The possibility of employing geothermal heating/cooling for some or all of the buildings on campus was discussed by the President's Climate Committee. Given that the majority of our emissions arise from the central heating plant, there is great potential in using renewable geothermal energy to avoid the bulk of our emissions entirely. This would greatly reduce the need for costly offsets in later stages of implementation of the CAP. A comprehensive study of the potential for using geothermal energy, including all direct and indirect associated costs needs to be conducted.
 - O'Brien and Gere (2010) also recommended further study of the following possible opportunities for energy savings and resource use:
 - Retro-commissioning of Stratton Science Center
 - Further studies of building ventilation and building shells
 - Greater utilization of our existing on-site gas well

6.5 Trajectories for Future Emissions of Greenhouse Gases

Wells is overbuilt in both academic and residential facilities. Given the sources of the majority of our emissions and the nature of our physical plant (described in Section 5), we don't expect projected increases in enrollment to have a very large effect on our total emissions.

FTE enrollment goals for 11-12 and 12-13 are 616 and 701, respectively. Our current strategic plan does not project enrollment beyond 12-13. We will assume for the purposes of this document that Wells will maintain a total enrollment of 701 from 12-13 forward. We will adjust our projections once the new strategic plan has been developed (the new strategic plan will be available in spring 2012).

08-09 is the last year covered by the greenhouse gas inventory data (baseline year - presented in Section 5). We will assume that CO₂E/FTE for 09-10 through 12-13 will increase to 11 MT, this represents a modest increase over the 08-09 value (Table 5.1). Given the assumptions above we project our total emissions under a "business as usual" model to be 7,711 MT CO₂E per year, as shown in Table 6.6.

6.6 Target Date for Achieving Climate Neutrality, with Interim Milestones

Wells' target date for achieving climate neutrality is 2050. Interim milestones for the end of each implementation phase are based on application of mitigation actions and are presented in Table 6.5.

Overall contributions of different types of mitigation actions to the achievement of climate neutrality are presented in Figure 6.1. Cumulatively, half of our mitigation is achieved by offsets, a quarter by renewable energy (primarily purchasing), one fifth via infrastructure modifications and the remainder by behavior changes. Figure 6.2 illustrates emissions projections with and without adherence to the Climate Action Plan.

6.7 References for Section 6

American College and University Presidents' Climate Commitment (ACUPCC), 2007. Implementation Guide: Information and Resources for Participating Institutions. (Available at: <http://www.presidentsclimatecommitment.org/>).

O' Brien and Gere, 2010. Energy Efficiency Assessment of Wells College. FlexTech Study. Available from the President's Office at Wells College

6.8 Tables and Figures

Table 6.1. Implementation phases for Wells' Climate Action Plan.

Implementation Phase	Timeframe	Descriptor
Phase I	2011 to 2015	Very short term
Phase II	2015 to 2020	Short term
Phase III	2020 to 2030	Medium term
Phase IV	2030 to 2040	Long term
Phase V	2040 to 2050	Very long term

Table 6.2. Actions chosen to mitigate greenhouse gas emissions. Sub-sections in which actions are discussed are shown parenthetically.

Action Category	Actions	Implementation Phase(s)
Infrastructure-Based EEOs ^a (Section 6.3.1)	Priority Developed EEOs	Phase I
	Other Developed EEOs	Phase II
	Undeveloped EEOs	Primarily Phases II - III
Other Infrastructure Actions (Section 6.3.2)	Additional Facility Needs (Section 6.3.2A)	Phases II - III
	Infrastructure Recommendations for Scopes 1 through 3 reductions (Section 6.3.2B) <ul style="list-style-type: none"> • Scope 1 (Section 6.3.2B (i)) • Scope 2 (Section 6.3.2B (ii)) • Scope 3 (Section 6.3.2B (iii)) 	Phases I - III
Behavior Change (Section 6.3.3)	Behavior Change Recommendations for Scopes 1 through 3 reductions <ul style="list-style-type: none"> • Energy Conservation (Section 6.3.3A) • Water Conservation (Section 6.3.3B) • Waste Production (Section 6.3.3C) • Recycling/Food Services (Section 6.3.3D) • Transportation/Parking (Section 6.3.3E) 	Phases I – V
Renewable Energy (Section 6.3.4)	Incremental Increases in Renewable Electricity Purchasing (Section 6.3.4A)	Phases I – V
	Generation on Campus (Section 6.3.4B)	Phase V, possibly earlier
Offsets (Section 6.3.5)	Offsets	Phase V

^aEEOs are Energy Efficiency Opportunities

Table 6.3. Estimated mitigation achieved by infrastructure-based energy efficiency opportunities

Actions		Estimated GHG Reduction (MT CO ₂ E) ^b
Priority Developed EEOs	Central Heating Plant Boiler Upgrade	369
	Central Heating Plant Steam and Condensate Infrastructure Upgrade	378
Other Developed EEOs	Conversion of Electric Heat to Steam at Long Library	38
	Lighting Retrofit in Schwartz Athletic Center	14
	Municipal Water Pumping Upgrade	8
Undeveloped EEOs	Solar water heating for pool	22
	LED exterior lighting/street lights	3
	Upgrading to energy star vending machines	32
	Fuel switching to natural gas in central heating plant ^a	290

^aRequires construction of approximately 37,000 feet of natural gas pipeline to connect to supply in Union Springs

^bEstimated by O'Brien and Gere (2010)

Table 6.4 Purchase of electricity generated from renewable sources.

Increase Percent of Purchased Electricity Generated by Renewable Sources to	Implementation Year/Phase
15%	In 11-12
30%	By end of Phase I (2015)
45%	By end of Phase II (2020)
60%	By end of Phase III (2030)
75%	By end of Phase IV (2040)
100%	By end of Phase V (2050)

Table 6.5. Interim milestones for the end of each implementation phase, based on application of mitigation actions. 2009 is the baseline year and is included here for reference. Units are MT CO₂E.

		Implementation Phase						Totals
		End of Phase I	End of Phase II	End of Phase III	End of Phase IV	End of Phase V		
Year	2009	2015	2020	2030	2040	2050		
Without CAP	5842	7711	7711	7711	7711	7711	7711	
With CAP								
	Infrastructure-Based EEOs ^a		-747	-60	-347		-1154	
	Other Infrastructure ^b		-154	-154	-77		-385	
	Behavior Change ^c		-77	-77	-77	-77	-385	
	Renewable Energy ^d		-386	-386	-386	-386	-1930	
	Offsets ^e					-3856	-3856	
Total Mitigation in Each Phase with CAP			-1364	-677	-887	-463	-4319	
Total Cumulative Mitigation with CAP			-1364	-2041	-2928	-3391	-7710	
Total Emissions with CAP			6346	5669	4782	4319	0	

^aEstimated by O'Brien and Gere (2010)

^bEstimated by President's Climate Committee; assume 5% reduction of 7711 MT CO₂E total by Phase V

^cAssume 1% reduction of 7711 MT CO₂E in each phase, 5% by Phase V

^dSee Section 6.3.4A

^eNeeded for remainder of emissions to be neutralized

Table 6.6 “Business as Usual” Projections for Total GHG Emissions, 2009 - 2050.

Fiscal Year	Enrollment (FTE)	MT CO ₂ E/ FTE	Total Emissions (MT CO ₂ E)
08-09	583 ^a	10 ^a	5,842
09-10	555 ^a	11 ^b	6,105
10-11	553 ^a	11 ^b	6,083
11-12	616 ^b	11 ^b	6,776
12-13 to 2050	701 ^b	11 ^b	7,711

^aActual

^bEstimated/Projected

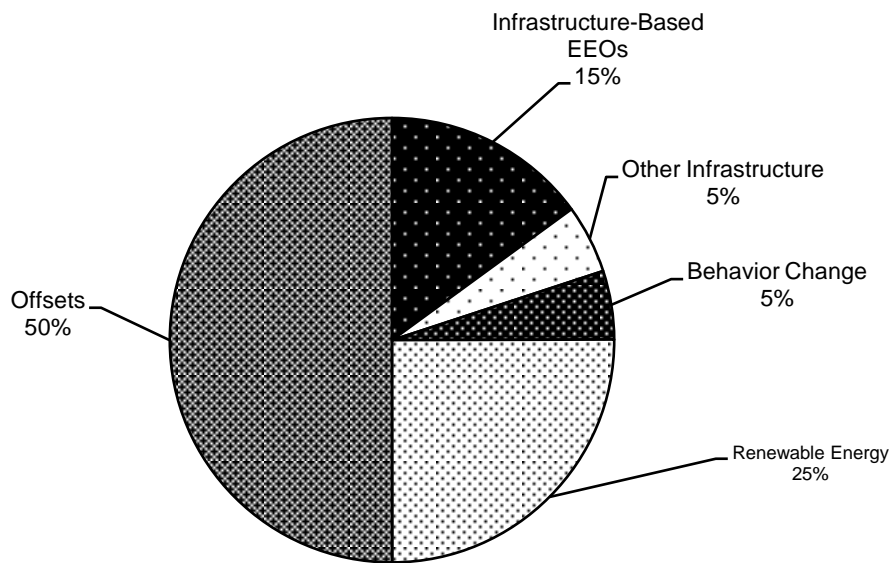


Figure 6.1. Cumulative Contributions of Mitigation Actions to Climate Neutrality in 2050.

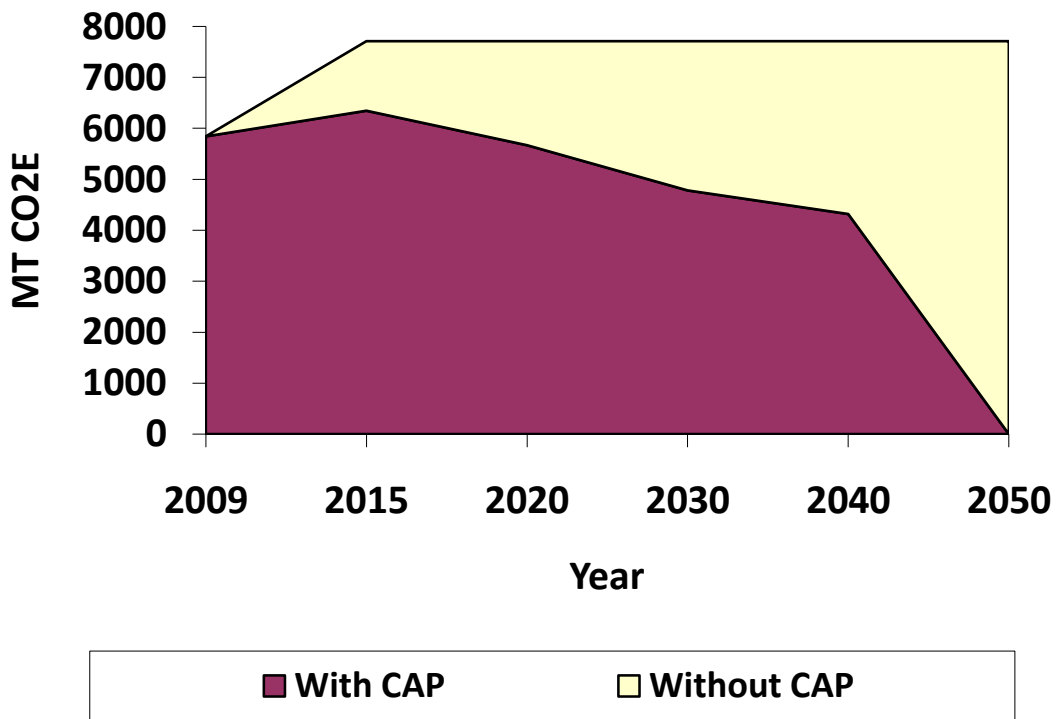


Figure 6.2. Trajectories for future greenhouse gas emissions without Climate Action Plan (“business as usual”) and reduced by implementation of Climate Action Plan.

Section 7

Barriers and Solutions

7.1 Section 7 Overview

What barriers will stand in the way of Wells implementing its Climate Action Plan (CAP)? As described in this section, the President's Climate Committee has considered some major likely obstacles; we have also proposed solutions and/or included some commentary that we feel will be helpful during the CAP implementation phase.

7.2 Financial Constraints

The downturn of the stock market in 2008 and the resultant financial crisis have dramatically affected Wells College. Concerns regarding current revenues and expenditures are paramount. This has led to a short-term focus in many areas, and leaves sustainability near the bottom of a long list of immediate concerns for those in decision-making positions. Successful implementation of many aspects of this CAP will result in energy conservation and dollar savings, and so should be appealing to all members of the community.

Projects with significant upfront costs (such as geothermal energy and on campus electricity generation from renewable sources) will pay for themselves and lead to significant cost savings on oil and purchased electricity. These investments are not just good for the environment, they will help reduce our need for costly purchasing of offsets and renewable energy credits later in CAP implementation, expenses that offer no return on investment. We need further study including detailed cost estimates of these alternatives.

Seeking funding for "green" projects may seem a low priority to donors and administrators at this point in time. While economic limitations are indeed a large barrier to Wells' sustainability initiatives, the hope is to see the future pay off of projects as a convincing argument to make these changes sooner rather than later.

7.3 Decision-Making Processes

There is a disconnect between the "ground level" of work toward sustainability in classrooms and on the President's Climate Committee, and the institutional level of decision-making. Representation of senior administrators on the President's Climate Committee has been inconsistent since its inception. The Committee has not had a direct voice in some very significant climate-relevant decisions. Additionally, there have been struggles with getting timely feedback and answers on ideas and requests. In

order for the CAP to be successfully implemented, the President's Climate Committee needs to be better integrated into the college's decision-making structures and processes.

7.4 Lack of Dedicated Staffing and Support

This is discussed in sections 6 and 11; its vital importance warrants its inclusion in this section also. Simply put, any concrete, coordinated and meaningful effort toward the fulfillment of the Presidents' Climate Commitment and implementation of this CAP requires a minimum of a partial staff or faculty position.

7.5 Aging Infrastructure and Foreclosed Opportunities

Many buildings on the Wells campus are one hundred years old or older. These buildings are particularly inefficient when it comes to energy use. Aging structures are a handicap, but because they require improvements in the short term, they afford opportunities for energy-conscious alternatives to be selected. The 2010 decision to remain with an oil-based central heating system foreclosed the possibility of campuswide geothermal (or other renewable) heating/cooling approaches. However this does not preclude consideration of the adoption of geothermal systems on a building-by-building basis as campus infrastructure is continually improved and upgraded.

7.6 Communications Challenges

It is a given on college campuses that student turnover will lead to challenges in communicating with the community about the CAP and the Presidents' Climate Commitment. Turnover of staff and faculty add to the problem. An improved electronic presence for efforts related to the CAP (see section 10) would go a long way to addressing this issue. The responsibility for the maintaining electronic resources should rest with a dedicated staff or faculty member (see section 7.4 above), ideally housed in a Climate Resource Center on campus (see section 4).

Section 8

Costs and Financing

8.1 Section 8 Overview

The CAP is not complete without consideration of costs and financing of proposed mitigation measures and mitigation-related activities. Cost estimates are approximate, and are provided primarily for actions and activities to be undertaken in Phases I and II. Financing options and opportunities are discussed in general terms. During CAP implementation the points below will need to be considered in a much more detailed way.

8.2 Cost Estimates

- Staffing/support for CAP implementation – as little as \$5,000 - \$10,000 in the salary of an existing or new community member would make a significant impact on the likelihood of the CAP being successfully implemented. .
- Increasing the portion of purchased renewable energy from current 5% to 15% as soon as possible - Wells pays an 0.83 cent premium for each kWh generated from renewable resources. The 10% immediate increase in renewable purchasing recommended would equate to a cost of about \$3,488.
- Construction of 37,000 feet of natural gas pipeline to connect with existing pipeline infrastructure in Union Springs – estimated cost is \$1.75 million
- See Table 8.1 below for estimates of costs and paybacks for some of the major mitigation actions discussed in Section 6.

Table 8.1. Estimated costs and paybacks of some near term mitigation actions

Actions	Estimated Cost (\$) ^a	Estimated Payback (yrs) ^a
Central Heating Plant Boiler Upgrade	2,217,550	17
Central Heating Plant Steam and Condensate Infrastructure Upgrade	2,676,036	16
Conversion of Electric Heat to Steam at Long Library	547,186	20
Lighting Retrofit in Schwartz Athletic Center	63,130	13
Municipal Water Pumping Upgrade	52,000	19

^aEstimated by O'Brien and Gere, 2010. Energy Efficiency Assessment of Wells College. FlexTech Study. Available from the President's Office at Wells College

8.3 Financing Options

Below we have listed some funding opportunities that seem appropriate for Wells to investigate. Exploration of financing options will be greatly facilitated by resources such as those available at <http://www.presidentsclimatecommitment.org/financing> and publications such as 'Financing Sustainability on Campus' by Ben Barlow (http://www.nacubo.org/Products/Publications/Sustainability/Financing_Sustainability_on_Campus.html). A number of important issues need to be addressed before we can take advantage of financing opportunities. First, dedicated staffing and support are needed in order to explore and follow through with the options below. Second, institutional participation and firm institutional backing are required.

- Grants
- Donors
- Operational budget
- Loans
- Green fee for students

Section 9

Implementation Structure and Tracking Progress

This section summarizes how the implementation of the Climate Action Plan will be tracked, managed and coordinated.

Implementation will be achieved in 5 phases, as described in Table 6.1. The first two phases are each 5 years; the remaining phases are each ten years. This structure allows us to distinguish clearly between short term goals and longer term plans.

Greenhouse gas inventories will be completed every two years as required by the ACUPCC. An inventory will be completed every even spring covering the previous two years. For example the next inventory will be completed in spring 2012 and will cover fiscal years 09-10 and 10-11. Inventories will be facilitated by the greenhouse gas “scorecards” that are continually being filled out by our facilities personnel. The Clean Air Cool Planet calculator (see Section 5) or a similar calculator will be used to compile the inventory.

Interim reports will be published every 5 years starting in 2015. A total of 8 interim reports and a final report to be published in 2050 will all be made publicly available. These reports will help us track progress, as well as to make mid-course corrections.

Successful execution of the implementation structure requires both the continued work of the President’s Climate Committee, as well as dedicated staffing in the form of a Sustainability Director, as described in Sections 4, 6, 7 and 11.

Section 10

Communications Strategy

10.1 Communications Within the Wells Community

Wells College participated in the Middle States reaccreditation process in 2008-2009. The approach taken towards completing the Self-Study was very creative, and successful. The President's Climate Committee intends to mirror some of the same strategies to communicate the efforts and progress of fulfilling the Presidents' Climate Commitment.

The Middle States Steering Committee was both transparent and inclusive in the development of the Self-Study. Documents were posted on the Globe for review, and open meetings were held for discussion of both the process and the content of those reports. This strategy promoted "buy-in" while also educating the community to a point where it became common nomenclature to discuss the College Mission Statement and the Middle States upcoming Site Visit. It is the ambition of the President's Climate Committee to recreate this effect for the Presidents' Climate Commitment.

Documents will be made public, and open meetings will be scheduled. Comments, suggestions, recommendation and criticisms will be welcomed throughout all aspects of the process. While dedicated staffing for the Climate Action Plan (CAP) is needed, the President's Climate Committee will continue to have an important role on a volunteer basis. Participation from across campus will continue to be welcomed and encouraged.

As the community becomes more engaged and educated about the President's Climate Committee's efforts to fulfill the Presidents' Climate Commitment, an anticipated result is behavior change by our community members. This will increase the campus's focus on related issues and ultimately garner a stronger institutional backing to make Wells College a forerunner in carbon neutrality.

The Campus Greens is a student organization that has existed on campus for at least 5 years. Members of this group have made it their mission to heighten awareness of environmental issues. The recommendation from the President's Climate Committee is to actively engage Campus Greens in the planning and implementation of the College's CAP. Membership in this organization is voluntary and as with all student organizations, turnover is high. However it is the strong intent of this Committee to increase the ownership of the Presidents' Climate Commitment across the student body and this is the reasonable place to start.

10.2 Communications Beyond the Wells Community

The primary means of communication about the work of the President's Climate Committee is contained on The Globe – the internal database/information center for campus. A webpage has been created on the campus web page:

https://global.wells.edu/ics/Campus_Life/Campus_Groups/Sustainability_Group/Sustainability_Initiatives_Happening_at_Wells.jnz

This website houses information and resources on the campus' progress towards meeting the requirements of the Presidents' Climate Commitment. While The Globe is primarily accessible to the campus community, some of the information is accessible to the public as well. In order to stay true to the Middle States model, a large portion of the current Globe page will need to be made accessible to a wider audience.

President's Climate Committee members have taken advantage of multiple opportunities to spread the word about the Presidents' Climate Commitment. Presentations have been given to student, faculty, staff and other audiences in a number of different venues both on campus and nationally. Articles have been published in the alumni publications highlighting some of the efforts that have fulfilled "Tangible Actions" of community members. For example, Wells students participated in the national RecycleMania competition in the 2009 and 2010 with much success. This was promoted in both internal publications and local newspapers and websites.

Additional communications strategies are outlined in section 4 of this document.

Section 11

Next Steps

In this section we attempt to highlight what we see as the most important “next steps” for Wells College, as we embark on implementing our climate action plan (CAP).

- Staffing/support - As discussed in Section 6.4, successful implementation of this CAP requires efforts beyond those of volunteers and students working for credit. Without adequate staffing and support, implementation of the CAP, including the readjustments that will need to be made along the way, will be difficult. A dedicated individual is needed in order to assist the volunteer efforts of the President’s Climate Committee.
- Priority developed energy efficiency opportunities (EEOs) - An upgrade of the central heating plant boiler and the associated steam and condensate infrastructure will be undertaken in summer 2011 as described in Section 6.
- Infrastructure Recommendations – See Section 6.3.2A for a discussion of facility needs that need to be addressed in the very short term and Section 6.3.2B for a discussion of recommendations that should be considered to decrease emissions in all three scopes in the short term
- Behavior Change Recommendations -See Section 6.3.3 for a discussion of recommendations that should be considered to decrease emissions in all three scopes in the short term
- Increase purchasing of electricity generated from renewable sources – To remain in compliance with the Climate Commitment we need to increase to 15% the percentage of electricity we use that is generated from renewable sources. See section 6.3.4A for discussion.
- A study of space utilization on campus should be undertaken immediately. See Section 6.4.
- A study of the possibility of geothermal heating/cooling in some or all of the campus buildings should be undertaken immediately. See Section 6.4.
- Renewed participation in ‘Recyclemania’ competition to further waste minimization efforts on campus
- Undertaking a greenhouse gas inventory in spring 2012, as required by the Presidents’ Climate Commitment

Section 12

Acronyms and Units Used in this Document

ACUPCC – American College and University Presidents’ Climate Commitment

CAP – Climate Action Plan

CO₂ – Carbon dioxide

CO₂E – Carbon dioxide equivalents

EEO – Energy efficiency opportunity

GHG – Greenhouse gases

MT – Metric tons

MT CO₂E – Metric tons of carbon dioxide equivalents