

SAINT JOHN'S UNIVERSITY

Climate Action Plan

2009 ACUPCC Implementation Outline

SJU Sustainable Campus Committee

12/29/2009

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Saint John's University

December 29, 2009

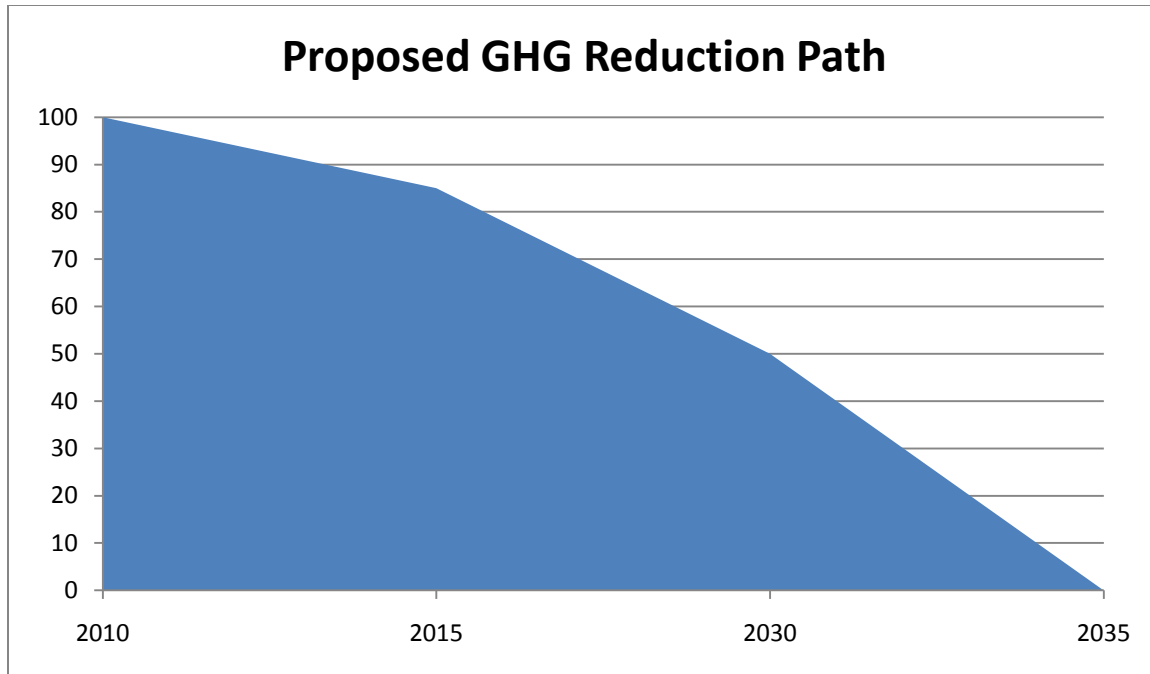
CAP introduction

As a Catholic, Benedictine institution sustainability is central to our institutional values and mission. Sustainability has indeed been an overt concern at Saint John's University for decades and formally supported by each president since an "environmental statement" was first issued in 1992. After President Dietrich Reinhart signed the ACUPCC in 2007, the college established a formal structure to coordinate existing sustainability efforts and develop a comprehensive plan leading to climate neutrality. The resulting SJU Sustainable Campus Committee is responsible for guiding this process and represents all campus/community stakeholders. Its membership includes administrators at the head of each administrative area, faculty, students, representatives of the Board of Regents, and Saint John's Abbey.

Under the direction of the SJU Sustainable Campus Committee an initial greenhouse gas (GHG) audit was completed in summer 2008. This represented the first effort to formally collect GHG data on campus and consequently suffers from significant data holes; in some areas—such as transportation—there are simply no records at all so the results include some good-faith estimates that will be adjusted as future data become available. We anticipate future GHG audits to be more accurate and to reflect more complete data than the first and have established new record-keeping procedures to address many of these shortcomings.

In 2008-09 the Council commissioned an external waste audit of the campus to improve campus recycling, participated in the STARS pilot project, established ACUPCC implementation goals that will lead to climate neutrality by 2035, established a post-graduate fellowship to support campus sustainability work, and celebrated the completion of the first LEED silver building as well as breaking ground on a four acre solar power facility designed to offset four percent of electric power annually and twenty percent of peak power in the summer.

The most challenging task before the Committee was to set appropriate targets for GHG reductions and place us on a realistic path toward the final ACUPCC goal of climate neutrality. By setting a final goal of 2035 we believe we are being as aggressive as possible given the many unknown factors involved; the interim target for 2015 is intended to create momentum and accountability in the early stages of the process. The graph below shows that we anticipate aggressive conservation measures will provide a 15% reduction by 2015 (the lower hanging fruit), working to reduce by another 35% for a total reductions of 50% by 2030 (the tougher job of reducing our dependence on coal), and the final 50% by 2035 accomplished with either new technologies (our preferred strategy) or purchasing carbon offsets. This graph is an expression of what we think is doable today and will be refined and redrawn over time as we learn more about the economics and technologies of carbon reduction.



Emissions Summary

Accuracy in reporting GHG's is improving and will continue to improve as we collect more data and establish new reporting procedures. The results prior to 2008 are based on limited data and utilize estimations in some areas such as air travel. With this in mind, St. John's emitted approximately 47,000 metric tons of GHG's in carbon dioxide equivalence in 2008. This is less than 2002-2004 despite better reporting resulting in an increase in scope 3 emissions. Stationary sources made up the largest portion of emissions with approximately 26,000 metric tons of carbon dioxide, followed by purchased electricity with 13,000 tons (scope two emissions), transportation emitting 6,000 metric tons, and solid waste with 1,500 metric tons of carbon dioxide equivalent.

Energy-related emissions account for the majority of SJU's GHG production. These are divided into on-campus stationary sources for heat, using a combination of coal, oil, and natural

gas, and off-campus emissions related to electricity purchased from Xcel Energy. Saint John's operates a co-generation power plant, and this is by far the largest emitter of green house gases for St. John's University. Co-generation produces steam, which is used for two processes: 1) the boilers generate steam at high pressure which passes through generators, thereby producing electricity. 2) The generators, in turn, exhaust steam at a low pressure which is distributed around to campus to heat the facilities or produce chilled water for cooling the facilities in the summertime. The plant heats and cools all buildings on the main campus while producing approximately one-fourth (1/4) of the electricity consumed on campus.

Just over 24 metric tons of carbon is released per student from purchased electricity annually. This is significantly higher than 12 years prior due to 240,000 square feet of added square footage without overall increased efficiency. If one were to exclude non-university buildings and operations (e.g., the Liturgical Press, the Monastery, or the Prep School), the average number of tons per student would likely still be high, but less than the average mentioned above.

Transportation emissions come from the Link bus service, which connects the university with its sister institution, the College of St. Benedict. Other transportation emissions emanate from the campus motor pool, employee air travel, and daily commutes by students, staff, and faculty. The transportation-related emission reporting in our audit is the least accurate, due largely to the absence of records for air travel and lack of any scientific study of commuter habits.

Landscaping and grounds-related emissions come mainly from fertilizer application by Trugreen, which accounts for most of our nitrous oxide emissions. Two pounds of fertilizer is applied per 1000 square feet; this number does not significantly contribute to our emissions.

Solid waste is removed by a commercial hauler and sent to a landfill with methane recovery. In 2008 we solid waste emitted an estimated 70,000 kg of methane (or 1500 tons of carbon dioxide equivalent). Much of our food waste is diverted to a hog farm and reused as animal feed, significantly reducing our landfill disposal. The amount of refrigerants used is very small and therefore we do not currently keep a record of refrigerants. No leaks major leaks have been reported and no other industrial processes that might release GHGs occur on campus.

Mitigation strategy

We anticipate updating our Climate Action Plan regularly as this structure is developed and a more accurate picture of our needs and opportunities emerges. The mitigation strategy section in particular should shift from the *process* oriented approach below to a more directly *action* oriented plan as data, financing, and institutional structures come together.

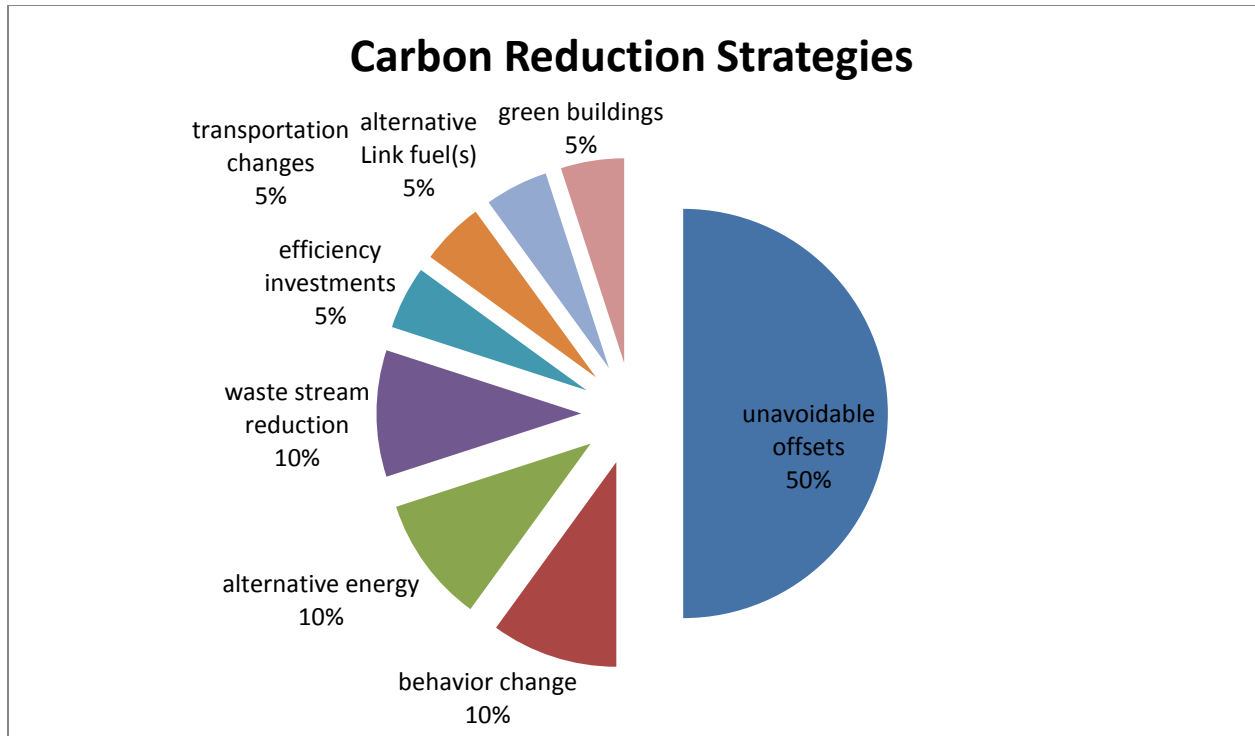
Because no GHG inventory exists prior to 2008 (and data on many areas goes back only 2-3 years) we are still in the early stages of determining where our liabilities and opportunities for improvement lie. Consequently our mitigation strategy at this point is to create a process for identifying those areas, rather than produce a list of specific targets or actions we will pursue in the short term. During 2009-10 the SJU Sustainable Campus Committee will request each operating area to produce a list of liabilities and opportunities along with a variety of options for action that note costs, barriers, and potential results in GHG reduction and other sustainability improvements. The recommendations from each area will be delivered to the Sustainable Campus Committee in late spring 2010, which will then prioritize a list for implementation and begin work on identifying funding to support that work.

This increased activity will intensify recent SJU efforts to invest in ways that would change the type and manner of energy used at SJU and other auxiliary enterprises of the Abbey. Some recent examples have been investments in energy conservation in: 1). the University kitchen (new hood and blower system), 2). building metering, 3). increasing coal use efficiency in our power plant, 4). a four acre, 400 kW solar power array, 5). continued investigation into wind power 6). a recently completed LEED silver community building and 7). building controls (installation of digital systems and of steam valves to better control steam usage). These examples highlight the combination of conservation, efficiency and new energy sources SJU is using to reduce its carbon footprint.

To facilitate this process the college established a new, full-time position of Sustainability Fellow for 2009-10. The fellow will meet with staff in each operational area, assist in the process of identifying possible actions, and provide resources and support as necessary. The Committee has further recommended that a permanent, professional staff position of Sustainability Director be established in 2010-11 as the next step in creating an Office of Sustainability to coordinate all sustainability related work. The director would take over responsibility for implementing the ACUPCC and all other sustainability efforts from the faculty who currently conduct this work on an overload/volunteer basis. Over time the director would also determine the staffing and resources needed to fully implement all of our sustainability goals, and then work with the Sustainable Campus Committee, President, and Board of Regents to determine how best to meet those needs.

From the vantage point of an initial GHG audit and working with the data and resources currently on hand, it is the best judgment of the Committee that potential reductions in GHG

emissions will break down along the lines displayed in the accompanying chart. The process outlined in this plan will help identify the areas of opportunity for the ~50% of emissions we believe may actually be eliminated and establish a process by which funding for any remaining unavoidable offsets can be identified and planned into budgets for the out years of 2030 and beyond. It was the Committee's intention in setting a preliminary goal of 15% reduction by 2015 to encourage immediate action in areas where obvious opportunities for savings exist, such as conservation and demand management. Over time the estimates attached to each segment of the chart below will be refined, costs attached, and projects initiated; at the same time the Committee will have to develop a policy for identifying and funding appropriate offsets for those emissions deemed unavoidable in the out years of the plan. Our hope is that the unavoidable offsets will actually shrink over time as technology or funding for projects with long payback times become available. The preference at SJU is to reduce carbon at SJU so long as it is financially responsible.



Education, research, and outreach

Currently students are most directly engaged in learning about sustainability through the environmental studies major and minor. For 2010-11 a faculty-led effort to more fully incorporate sustainability into the curriculum is being developed to attract faculty outside the environmental studies department. As part of this initiative we hope to create an overall university focus on sustainability (at Saint John’s University and College of Saint Benedict) throughout the year, starting with the annual fall Faculty Workshop, incorporating several endowed lectureships, involving faculty, staff and administrative action teams in all functional areas of administration and culminating in a faculty development project designed to incorporate sustainability in the curriculum in May of 2011. It is the conclusion of the faculty members of the SJU Sustainable Campus Committee that their colleagues would not support a campus-wide

academic requirement in sustainability at this time, so the strategy of building sustainability concepts into as many courses as possible will be applied instead.

Since Saint John's university is a liberal arts university the general research requirement of the ACUPCC does not directly apply. Nonetheless we have taken significant steps to increase faculty and student research in sustainability areas and climate issues in particular. A new tenure-track faculty member specializing in climate research was hired in 2009 and began offering courses on climate science open to all students in the fall; he will build a research program on climate around the resources available in our bioregion that will inform his classes and provide opportunities for participation by students and collaboration with colleagues in other fields. Our longstanding emphasis on undergraduate research also provides opportunities for students to participate in sustainability research ranging from the senior thesis project required in the environmental studies major to faculty-led projects supported by several research endowments that enable students to conduct formal research full time during the summer months.

In addition to courses and other traditional academic opportunities offered through Academic Affairs, we are in the early stages of developing sustainability education and outreach programs in other areas—most notably Student Development, which is responsible primarily for our residential life programs. Educational outreach to reach all students will take place in many forms: campus-wide events, residence-based initiatives, community outreach, and focused campaigns. Annual events on campus, coordinated by the sustainability fellow in collaboration from student environmental groups, will include Recyclemania, the Campus Energy Competition, and an entire week of events devoted to the environment (Earth Week). The goal

of these events is to reach all students and shape lifestyle choices enduring long after graduation. Campaigns will focus on the impact of personal decisions, such as encouraging students to recycle, shop at the local farmers market, and question their role in consumer culture. These campaigns will be combined with educational opportunities like touring the Saint John's Solar farm and learning more about renewable energy production. We will take full advantage of the educational potential of both the process and product of several new construction projects, all of which will meet a standard equivalent to at least LEED-silver. Campus orientation for new students and employees will also incorporate sustainability information intended to raise awareness of our community's values and highlight opportunities to make positive impacts when students and employees first arrive on campus.

Financing

Saint John's University is committed to a goal of carbon neutrality by 2035 and we anticipate using a variety of funding methods to achieve this goal. We recognize that some of our mitigation projects will be low/no cost but that significant resources will be needed to complete others. We also expect that some strategies will produce savings that can offset the initial cost and may result in long-term savings that can be reinvested in other projects. Each project will be analyzed individually as various funding sources may be applicable based on the scope of the project. These sources are internal and external, integral to and independent of the normal budgeting process. Some will be project specific while others may be linked to other strategic goals (such as new construction) as part of a package.

Possible Funding Sources

Annual budget allocations/institutional reserves

Tax exempt borrowing

Grants from foundations or government

Energy efficiency and renewable energy incentives provided by government or utilities

Fundraising

Self-financing performance contracts

Creation of revolving fund from savings generated

Endowment income from the nascent Green Fund dedicated to sustainability projects

The recent investment in campus-wide metering, solar power farm, and the LEED Silver Community Center are good examples of how we anticipate this working.

- In the summer of 2009, Saint John's Abbey, from whom SJU gets its power, allocated money from its capital budget to implement metering coupled with money coming from grant revenues. Though metering itself doesn't conserve energy, it will allow us to evaluate where conservation opportunities are and how effective conservation measures are in reducing energy use on campus.
- To generate more power from alternative sources, Saint John's Abbey (from whom SJU gets its power) and Westwood Renewables (a Minnesota-based company that specializes in solar electric development, design and education) with funding from Xcel's Renewable

Development Fund recently broke ground on a 400 kW photovoltaic (sun-tracking) solar farm on almost four acres of Abbey land. Leasing Abbey land, and using about \$2 million dollars of Renewable Development Fund funds, SJU (along with tax credit and equity investors and energy payments) and CSB/SJU students will now have the largest photovoltaic system to study in the Upper Midwest.

- Finally, SJU recently finished its first, LEED Silver community building with financing provided from fundraising activities. Over time, the building will save some of its building costs by its extra focus on LEED certification.

Tracking strategy

Responsibility for tracking progress on this Climate Action Plan will rest with a newly-created Office of Sustainability reporting to the SJU Sustainable Campus Committee and the President. Annual updates of the greenhouse gas audit will provide current and refined data on which to base this analysis. The proposed Sustainability Director (or Fellow) will establish a reporting system through which managers in each area can annually note progress toward goals in their departments; the resulting information will be compiled and tracked centrally as part of the implementation process. Assessment of specific programs—especially educational initiatives or outreach activities that cannot easily be quantified—may be incorporated into class projects or faculty research. A web-based public reporting system will offer access to summary data and real-time reporting from sources such as our planned new buildings, while an annual report to the community will summarize past efforts and lay out an agenda for the coming year.