

St. Cloud State University

Climate Action Plan

Version 2.0

2014



EDUCATION FOR LIFE.

Report Issue Date: January 15, 2014

*Prepared to meet the requirements of the
American College & University Presidents'
Climate Commitment*



January 16, 2014

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Presidents' Climate Commitment
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Dear Leaders of the American College & University Presidents' Climate Commitment:

I am pleased to submit our second Climate Action Plan for St. Cloud State University, in fulfillment of the requirements of the American College and University Presidents' Climate Commitment.

Sustainability is at the core of who we are and what we believe on campus. Obligations as global citizens compel us to take action on this pressing issue; our role as educators requires that we also show our students how we get there, how they can join us and how they can become environmental stewards after they leave St. Cloud State University.

Achieving climate neutrality will not be easy. However, we are optimistic. We have engaged an Energy Savings Company (ESCO), who is finalizing their investment grade audit of our campus to uncover energy savings projects. Once the audit completed, the ESCO guarantees the energy savings and arranges financing. Loan payments are made with the difference between our current energy bills and our new, lower bills. This program has great potential to have a significant potential to dramatically impact our carbon footprint and decrease our greenhouse gas emissions.

A portion of our energy saving projects will involve the use of bio-fueled (waste food) cogeneration micro turbines. In addition to self-producing our own electricity, there will be substantial research opportunities, leveraged by our pursuit of a substantial grant offered by our local electricity provider, which will enable us to provide an un-paralleled educational opportunity to local students of all types.

Our byline is: "Education for Life." We believe this plan dovetails into this message perfectly.

Sincerely,

Earl H. Potter III
President



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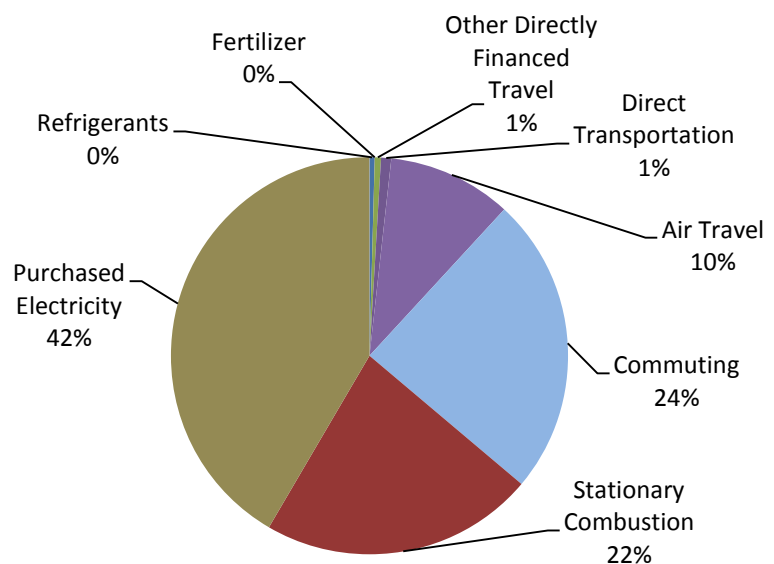
A. Executive Summary

Overview

St. Cloud State University President Earl H. Potter III signed the American College & University Presidents Climate Commitment (ACUPCC) in 2009. Signatories of the ACUPCC have agreed to create Climate Action Plans for accelerating research and educational efforts to equip society to re-stabilize the earth's climate and reducing their campus greenhouse gas (GHG) emissions. They have also agreed to publicly report their plans and subsequent progress reports and adaptations to the plan. This document shall serve as St. Cloud State University's plan to achieve climate neutrality.

In September, 2010, a Greenhouse Gas Emissions Inventory was completed for St. Cloud State University for FY 2004-2009 and was submitted to the ACUPCC website. A second inventory was completed in January, 2013, which documented the emissions for fiscal years 2010, 2011, and 2012. SCSU emitted 44,802 metric tons of eCO₂ in FY 2012. Total emissions have decreased by 5,160 metric tons since FY 2009, a reduction of 10 percent.

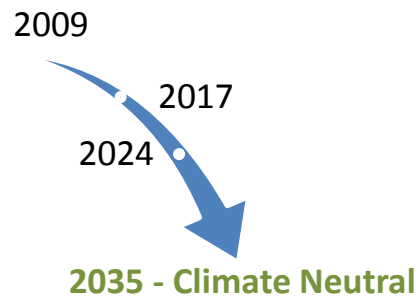
The most significant source of eCO₂ emissions for St. Cloud State University has been electricity purchased from Xcel Energy. This source, coupled with transmission and delivery (T & D) losses, accounted for 42 percent of SCSU's total GHG emissions in FY 2012. On-campus stationary sources, such as heating and cooling, accounted for 22 percent of total eCO₂ emissions. Daily commuting by students, faculty, and staff represented 24 percent of the total eCO₂ emissions. Air travel, including for study broad programs, represented 10 percent of the total eCO₂ emissions. Mobile combustion sources (i.e. vehicles owned or paid for by the University) represented 1% of SCSU's total eCO₂ emissions. In total, transportation accounted for 36 percent of total eCO₂ emissions. Fugitive emissions resulting from the use of refrigerants and fertilizers accounted for only 0.08% of eCO₂ emissions.



2012 Total Emissions by Sector

Greenhouse Gas Emissions Target

St. Cloud State University has established a targeted carbon neutrality date of 2035, with a short-term target of a 15% reduction by 2017 and a mid-term target of a 40% reduction by 2024.



Summary of Recommendations

St. Cloud State University is making strides to reduce its emissions. However, additional energy conservation measures will only have an incremental effect on the overall emissions. In order to achieve the ultimate goal of climate neutrality, dramatic changes will have to be made.

To reach campus emission targets, this Climate Action Plan has outlined and prioritized mitigation strategies by emission source categories. Tracking each mitigation strategy in terms of scopes 1, 2 and 3 will help ensure all forms of emissions are addressed. The first goal will be to reduce usage. An overall reduction in energy used will not only reduce the greenhouse gas emissions, it will reduce operating budgets. As renewable energy sources are integrated into the campus, the energy savings will reduce the size of the energy demand and subsequent size of the renewable energy sources required.

In order to integrate renewable energy sources, the Climate Action Plan starts with smaller systems that will be included with new building and site improvement projects. Longer term strategies call for more ambitious systems that will deliver wind, solar and other renewable energies to the campus on a larger scale. Due to the location of the campus within the City of St. Cloud, these initiatives may be implemented on land located off the main campus, perhaps in partnership with other entities.

St. Cloud State will be the first MnSCU campus to utilize the state's Guaranteed Energy Savings Program (GESp). The University is partnering with energy services company (ESCO) McKinstry in a comprehensive campus-wide energy efficiency project. The program will be self-funded through energy, utility, and operational savings. The total project cost will be \$12 million to \$15 million and will result in annual energy savings of \$800k to \$1 million.

While every effort will be made to reduce eCO₂ emissions through conservation and by developing University sponsored renewable energy sources, offsets or sequestration may be necessary. Air travel for example, will be particularly difficult to mitigate without offsets unless major technology changes are made in that industry.

Methodology

St. Cloud State University has a wide variety of sustainable and energy efficiency measures already in place. The first task was to research and document these initiatives to provide a baseline in which to begin crafting a plan to achieve climate neutrality.

John Frischmann, Interim Director of Facilities Management, worked with GLTArchitects to interview and collect information from a wide variety of University departments including facilities, academics, research and administration. This ambitious action plan was created by investigating what other institutions have done, evaluating current strategies and brainstorming new ideas.

Implementation

Many of the initiatives outlined in this Climate Action Plan will be implemented by the facilities department at SCSU. With the climate neutrality goal in place, this plan will serve to guide facilities and equipment purchases and repair. A sustainability committee which includes a wide range of university departments is in place at SCSU. This group will continue to meet and provide direction for faculty, students and staff to ensure this plan is implemented, measured and updated.

Due to improvements in technology and unforeseen future challenges, this Climate Action Plan is seen as a living document that will be updated periodically.

B. Acknowledgements

St. Cloud State University

Earl H. Potter III, President

Tammy L.H. McGee, Vice President for Finance and Administration

John Frischmann, Interim Director of Facilities Management

Joe Teff, Safety Administrator

Ron VanHeuveln, Physical Plant Director

Dan Gregory, Interim Dean, College of Science and Engineering

Kurt Helgeson, Professor, College of Science and Engineering

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GLTArchitects

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McKinstry

Bernie Eikmeier, Senior Project Manager

Xcel Energy

Scott Hinde, Project Manager

C. Introduction

The American College and University Presidents' Climate Commitment (ACUPCC) was formed by a small group of higher education institutions concerned that the earth's climate is rapidly destabilizing. The ACUPCC signatories recognize global climate change as the defining challenge of the 21st century.

The commitment also acknowledges the important role universities play in research, education and modeling solutions relative to this challenge. Since its inception, the ACUPCC has grown from 12 founding members to 679 signatories, including 11 MnSCU institutions.

As a signatory to the American College and University President's Climate Commitment (ACUPCC), St. Cloud State University has committed to eliminating our greenhouse gas (GHG) emissions in a reasonable period of time. An inventory of current and past GHG emissions has been completed and will be updated every other year to measure our progress. Additionally, SCSU has agreed to create and implement a Climate Action Plan with a target date and interim milestones for achieving campus climate neutrality. We have agreed to integrate sustainability into the curriculum and make it part of the educational experience. SCSU has also agreed to make the action plan, inventory, and periodic progress reports publically available.

This document shall serve as the second Climate Action Plan for St. Cloud State University and was prepared in accordance with the guidelines established by the ACUPCC. This plan is not intended to be relied upon by any person, entity, or institution. It is an aspiration, and none of the contents shall be binding on St. Cloud State University, its employees, or assignees.

ACUPCC Timeline

As a signatory to the ACUPCC, St. Cloud State University has made a commitment to publicly report on their progress, set a precedent for transparency, be accountable to their peers, stakeholders, and the public, and enable the network to share innovation and best practices.

2009

President Earl H. Potter III signed the American College & University Presidents' Climate Commitment

2010

Greenhouse Gas Inventory completed for FY 2004-2009

2012

Climate Action Plan Completed

2013

Greenhouse Gas Inventory completed for FY 2010-2012

2014

Submit Progress Report on Climate Action Plan

In future years, GHG inventories and Progress Reports are due every other year, ongoing.

D. Overview of Campus Energy Use and Greenhouse Gas Emissions

Greenhouse Gas Emissions Inventory

In September, 2010, a Greenhouse Gas Emissions Inventory was completed for St. Cloud State University and was submitted to the ACUPPC website. This inventory established a baseline to which future inventories and emissions reduction strategies could be compared. In January, 2013, a second Greenhouse Gas Emissions Inventory was completed. The following is a summary of the inventory. The full report can be found on the ACUPCC website.

Methodology

Under the direction of John Frischmann, Interim Director of Facilities Management, GLTArchitects created the inventory, interviewing campus sources and vendors to collect data on six separate categories:

- **Institutional Data**
- **On-Campus Stationary Fuel Use**
- **Purchased Electricity**
- **Agriculture (Fertilizer Use)**
- **Refrigeration**
- **Transportation**

This inventory included data from fiscal years (FY) 2010, 2011, and 2012, covering the period of time from July 1, 2009 to June 30, 2012.

The inventory included data related to all properties owned by the University, including the main campus and the Minnesota Highway Safety Research Center. Leased spaces (University Welcome Center, Coborn Plaza Apartments, and the Twin Cities Graduate Center) were not included in the study. Institutional data was collected, including building square footages; operational budgets; and staff, faculty, and student counts. This allows for limited peer-to-peer comparisons to be made based on per person and per square foot calculations.

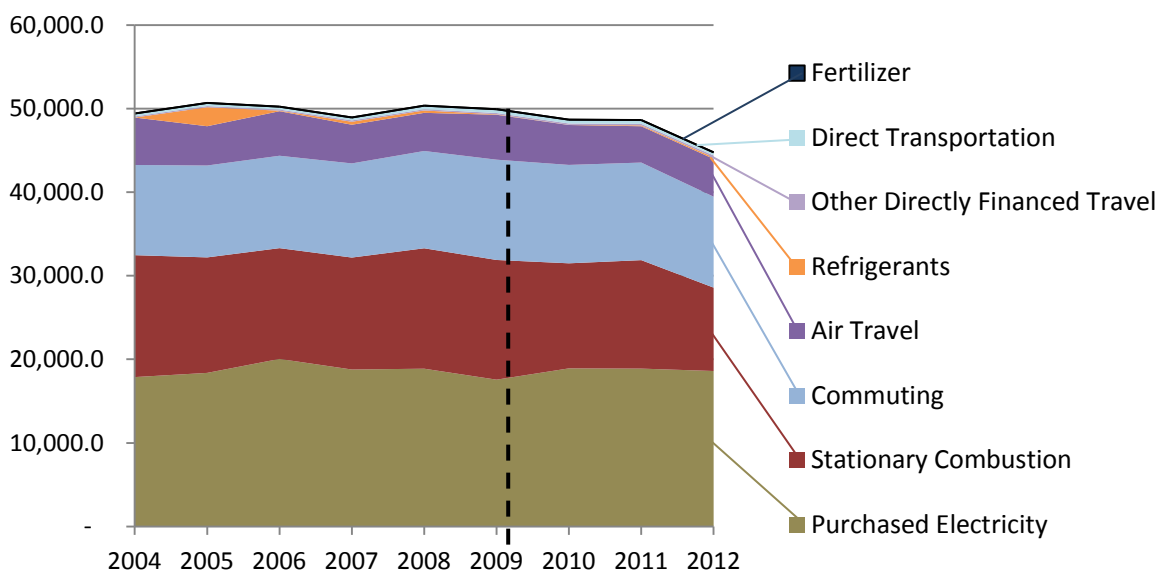
The data gathered was entered into the *Campus Calculator* (software developed by Clean Air-Cool Planet and the primary calculator used higher education institutions). The Calculator converted the information into greenhouse gases, and reported it as CO₂ equivalents (eCO₂) to estimate the carbon footprint of the University. The eCO₂ is reported in metric tons.

Results

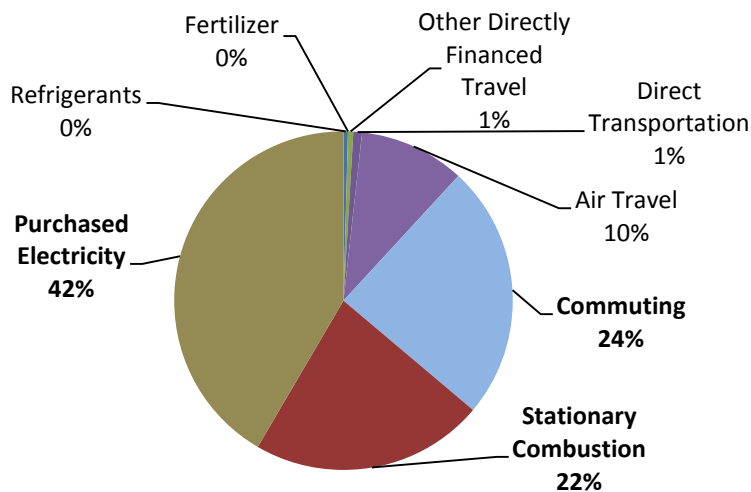
SCSU emitted the equivalent of 44,802 metric tons of eCO₂ in FY 2012. In comparison, FY 2009 saw total eCO₂ emissions of 49,925 metric tons. Therefore, total annual emissions have decreased by 5,160 metric tons since FY 2009, a reduction of 10 percent.

Purchased electricity (including transmission and delivery losses) was responsible for 42 percent of emissions. On-campus stationary sources such as boilers accounted for 22 percent of emissions. Air travel was responsible for 10 percent of emissions, and daily commuting totaled 24 percent of emissions.

Total Emissions by Sector (in Metric Tons of eCO₂)



2012 Total Emissions by Sector



Conclusion

St. Cloud State University's best opportunities to improve its carbon footprint will be to reduce its dependence on purchased electricity, continue to reduce the carbon produced by on-campus stationary sources, and reduce the amount of fuel consumed in those sources by providing alternative methods of energy. St. Cloud State University will also need to consider methods to reduce the emissions resulting from daily commuting by students, faculty, and staff, as well as emissions resulting from air travel. Carbon offsets will likely not prove cost effective for SCSU to offset its carbon usage, as carbon offsets are generally expensive relative to the offset created.

SCSU's Greenhouse Gas Equivalencies

St. Cloud State University's 2012 eCO₂ emissions are equal to:

Annual greenhouse gas emissions from 9,334 passenger vehicles

CO₂ emissions from 1 of the following:

- 5,022,646 gallons of gasoline consumed.
- 104,191 barrels of oil consumed.
- 591 tanker trucks of gasoline.
- The annual electricity use of 6,164 homes.
- 1,866,750 propane cylinders used for home barbeques.
- Burning 192 railcars of coal.

Carbon sequestered by 1 of the following:

- 1,148,769 tree seedlings grown for 10 years
- 36,723 acres of U.S. forests in one year
- 346 acres of U.S. forest preserved from conversion to cropland for one year

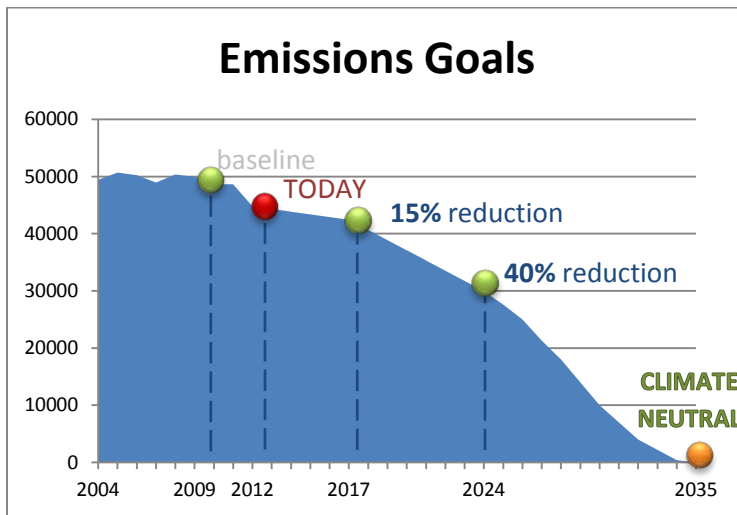
Source:

<http://www.epa.gov/cleanenergy/energy-resources/calculator.html>

E. Emissions Targets

St. Cloud State University has established a target carbon neutrality date of 2035, with a short-term target of a 15% reduction by 2017 and a mid-term target of a 40% reduction by 2024.

St. Cloud State University has a history of pursuing energy-conserving measures and will continue to do so. As St. Cloud State University continues to implement energy efficiency projects, additional energy-reduction strategies will provide incrementally smaller returns. Therefore, to reach the ultimate goal of climate neutrality, dramatic changes will have to be made. The long-term goal of carbon neutrality will require the campus to replace fossil fuel energy sources with cleaner, renewable alternatives.



F. Mitigation Strategies

St. Cloud State University participated in a program called PBEEEP (Public Buildings Enhanced Energy Efficiency Program) with the Minnesota Department of Administration and the Center for Energy and Environment. Through this program, the campus was screened to identify potential energy saving projects with a specified payback period. The evaluation process was completed in 2012. Many of these items have been implemented or are being actively pursued.

St. Cloud State University is a member of the Drive Electric MN initiative, and was the first higher education organization to participate. This organization is a partnership of state and local government, utilities, private business and nonprofit entities working together to bring electric vehicles (EVs) and plug-in charging infrastructure to Minnesota.

Guaranteed Energy Savings Program

St. Cloud State will be the first MnSCU campus to utilize the state's Guaranteed Energy Savings Program (GESp). The University is partnering with energy services company (ESCO) McKinstry in a comprehensive campus-wide energy efficiency project. The program will be self-funded through energy, utility, and operational savings.

- Projected total project cost: \$12 million to \$15 million
- Projected annual savings: \$800k to \$1 million
- Simple payback: 12 to 15 years

Schedule

- Complete Preliminary Assessment September 2013
- Start Investment Grade Audit October 2013
- Complete Investment Grade Audit February 2014
- Presentation to Leadership Council February 2014
- Presentation to MnSCU Board of Trustees March 2014
- Construction Begins Spring 2014

Projected Outcomes

- Reduce by 20% energy costs in academic buildings
- Reduce by 24% CO2 emissions from utility energy
- Improved learning environment comfort for staff and students
- Career relevant experiential learning
- Demonstration of environmental awareness and improvement

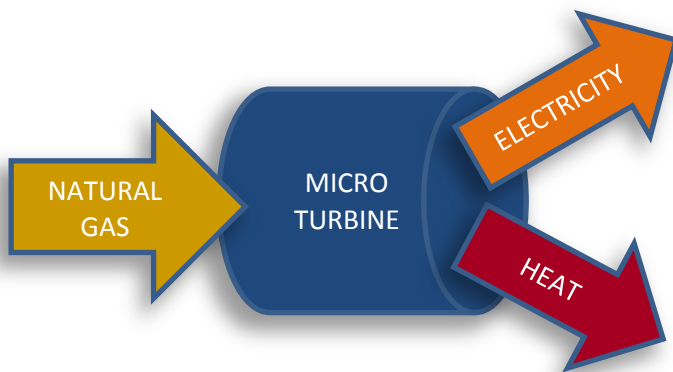
Contributing Energy Conservation Measures (ECMs)

- Cogeneration Microturbine Plants
- High- to Low-Pressure Steam Operations
- Stack Heat Recovery
- Reverse Osmosis Boiler Makeup
- Lighting Upgrades
- Digital Control Upgrades
- Water Conservation Measures
- Domestic Hot Water Improvement
- Building Envelope Improvements
- Solar PV/Solar Air Preheat
- Green IT Measures
- Condenser Coil Coating
- V-Belt Drive Upgrades
- Transformer Upgrades
- Education Bldg. HVAC Upgrade
- Vending Miser

Cogeneration Microturbine

A key energy conservation measure project is the cogeneration microturbines. A total of four are planned and will be located throughout campus near facilities that can best make use of the heat generated. The distributed electrical generation will supply the campus with an efficient electrical power generation while providing a backup source in case of utility interruption. This local source also serves to reduce the line loss found with electrical production at the utility and distributed over miles of power lines.

Three of the four cogeneration microturbines will be traditional units that use natural gas to produce both electricity and heat.



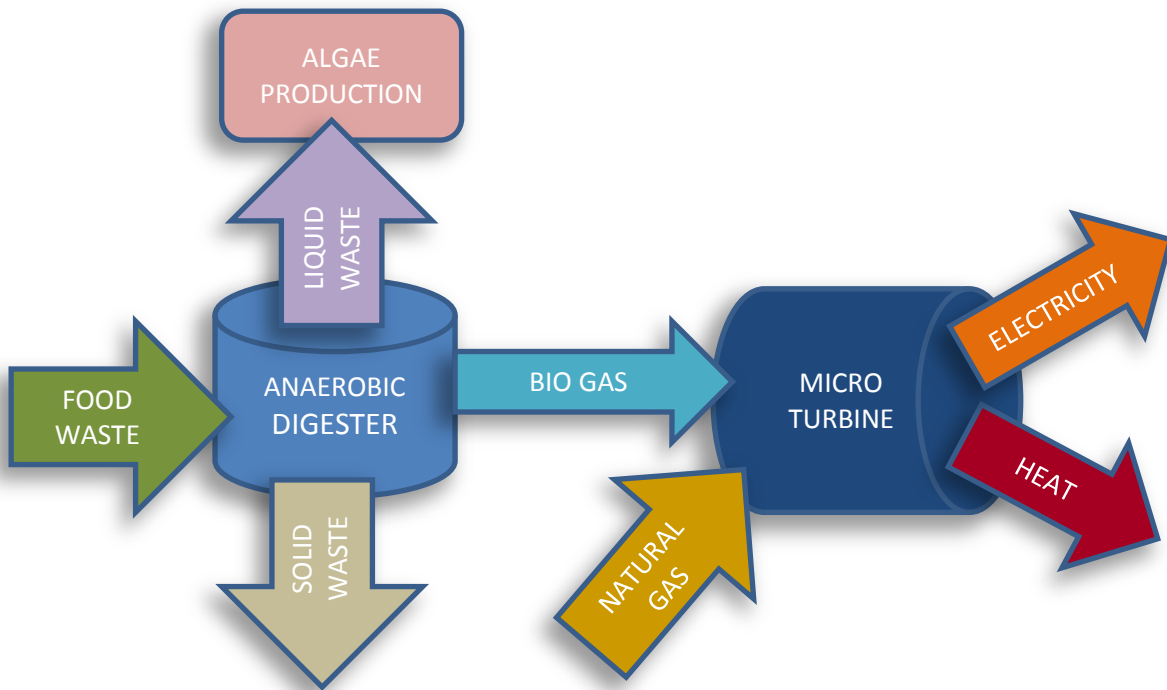
Cogeneration Microturbine / Biofuel

One of the four microturbines will incorporate an anaerobic digester and algae production to further expand the efficiency while providing an education and research

opportunity. While the other three turbines will be largely functional, at this location it will be contained in a larger facility designed for student and faculty access to the anaerobic digester, cogeneration and algae production. A classroom space is included and will also serve as a location for the public to view and learn about the process.

The anaerobic digester will serve several purposes. The source of the digester will be food waste primarily from campus which would otherwise have to be trucked off campus. The digester also provides the opportunity for education and research in an active functional environment. The biofuel produced will be used to supplement the natural gas primary source. This blended fuel source allows the turbine to continue to produce at full capacity as the digester output varies.

St. Cloud State University has a strong science program which includes a unique focus on algae research. The digester waste products provide an opportunity to expand this research. The solid waste will be used as fertilizer, however the liquid waste will go on to be used as a food source in algae production. In addition to the education and research benefit the algae produced is a valuable product that may be sold for several uses.



Mitigation Strategy Tables

To reach campus emission targets, the sustainability committee has outlined mitigation strategies by emission source categories. The mitigation strategies are vast and vary in both impact and cost. Some projects may be implemented in the short-term with few resources; others will take longer due to cost and complexity. The campus will adjust implementation plans over time based on industry breakthroughs and technological improvements and the level of support from the campus community and partners.

Although this plan prioritizes carbon mitigation strategies into short, medium and long-term approaches, future implementation schedules may change as the campus investigates the viability of each strategy. Financial considerations, environmental impacts, technological advances, and campus academic needs may factor into the prioritization.

The following tables identify strategies SCSU is pursuing to reduce their carbon emissions. To remain consistent with the greenhouse gas emissions inventory and aid in tracking the progress, the strategies are broken down as follows.

Main Categories

Scope 1 Emissions – Sources owned and /or controlled by the University

- On-Campus Stationary Sources
- Mobile Combustion

Scope 2 Emissions – Indirect emissions from purchased electricity

Scope 3 Emissions – Other indirect emissions

- Commuting
- Air Travel

Additional Mitigation Strategies

- Sequestration and Carbon Storage
- Carbon Offsets
- Renewable Energy Certificates

Sub-Categories

Short Term – Ongoing strategy, or to be implemented within 5 years

Medium Term – Implementation anticipated between 6 and 12 years

Long Term – Implementation anticipated between 13-23 years

Status Indicator

- 1 **Ongoing / Currently Implemented:** The strategy has been enacted in part or in full.
- 2 **Actively Pursuing:** Actively working to implement strategy.
- 3 **Researching and Evaluating:** Discussing feasibility for future implementation.
- 4 **Future:** Identified as a viable strategy, have not currently reviewed or implemented.

Scope 1 Emissions – Sources owned and/or controlled by the University

On-Campus Stationary Combustion	22%
<i>Emissions from all on-campus fuel combustions, excluding vehicle fuels</i>	<i>of 2012 emissions</i>

Short Term	Status	Comments
Explore feasibility of installing microturbine combined cycle plant that can utilize both natural gas and an alternative fuel source, such as algae or food waste (ESCO).	2	
New buildings: <ul style="list-style-type: none"> • Construct all new buildings to the Minnesota State B3 guidelines, and meet or exceed requirements that would qualify for LEED Silver or above. • Commission all new buildings to ensure that equipment and systems are working and energy performance goals are met. • Enhanced commissioning of all new buildings. • Incorporate separate meters for electricity, steam, and water use in new buildings. 	1 1 1 1	
Renovation projects/existing buildings: <ul style="list-style-type: none"> • Add insulation during roof replacements. • Replace remaining single-paned windows with double-paned, thermally efficient glass. • Additional metering (electricity, steam, and water) during each building renovation project. • Improve the building envelope performance and reduce energy consumption by decreasing exterior air infiltration (ESCO). 	1 1 1 2	Develop list of buildings with single pane glass and payback period.
Energy management: <ul style="list-style-type: none"> • Control heating and cooling temperature/set points. • Continue and intensify off peak energy conservation measures and reduced heating. (ESCO) • Manage building fan scheduling, increasing set-points, and limiting areas of dehumidification to reduce energy use. (ESCO) • Delay the start of the summer cooling season until necessary. Base decisions on weather conditions instead of a date on the calendar. 	1 2 1 1	State mandated for all state owned buildings to reduce energy use by 10%.
Cooling: <ul style="list-style-type: none"> • ESCO hired to evaluate cooling capacity and to improve efficiency. 	1	2012

<ul style="list-style-type: none"> • Add new high efficiency cooling tower. • Upgrade chiller programming. • Revise chilled water piping to improve efficiency per cooling study. • Clean and treat condenser coils and add HVAC fouling to each refrigeration system to improve thermal performance (ESCO). 	<p>1</p> <p>1</p> <p>2</p> <p>2</p>	<p>Maintain old chiller for backup (2013). 2013</p>
<p>Motors, fans, and pumps:</p> <ul style="list-style-type: none"> • Reduce needless pumping by eliminating unnecessary three-way by-pass valves. • Utilize CO₂ sensors. • Install high-efficiency motors and variable frequency drives. • Replace V-belts on air handling units (AHU) fan motors equipped with VFDs with Gates poly-chain belts (ESCO). • At Centennial Hall, install solar air preheaters with bypasses on outside air intakes on make-up air units, roof top units and selected air handling units (ESCO). • Replace existing make-up air units (MAUs) and select air handling units or roof top units with new, desiccant-equipped roof top units. Add desiccant units to provide outside air to some AHUs. 	<p>1</p> <p>2</p> <p>1</p> <p>2</p> <p>2</p> <p>2</p>	
<p>Steam:</p> <ul style="list-style-type: none"> • Replace faulty steam traps. • Repair steam and condensate leaks. • Burn natural gas in the campus steam plant exclusively, and continue to forgo burning of any Number 6 fuel oil. • Switch to natural gas supplier that does not limit availability at peak times. • Conduct steam study to review capacity and usage. • Implement recommendations from steam study. • Convert summer and shoulder season high-pressure steam production to low pressure. Modify boiler #2 to provide low-pressure steam. Modify terminal equipment and distribution subsystems to function as desired in low-pressure environment (ESCO). • In Halenbeck Hall, install equipment to divert flue gas from the chimney to heat recovery coils. Use recovered energy to heat combustion air, preheat make-up water, and provide domestic hot water (ESCO). • Install reverse osmosis water conditioning system to pre-treat boiler water make-up (ESCO). 	<p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>1</p> <p>2</p> <p>2</p> <p>2</p> <p>2</p>	<p>2011</p> <p>Study completed 2012.</p>

Hot water:		
<ul style="list-style-type: none"> Evaluate domestic hot water across campus. Upgrade to more efficient and alternative fueled units. 	2	
<ul style="list-style-type: none"> Evaluate the hydronic hot water boilers across campus in terms of redundancy and efficiency, and look for opportunities to upgrade to more efficient or alternative-fueled boilers. Review steam to hot water exchangers. 	2	
<ul style="list-style-type: none"> Install new low-flow fixtures or upgrade plumbing on existing fixtures to reduce water consumption while maintaining desired performance (ESCO). 	2	
<ul style="list-style-type: none"> Convert domestic hot water production to instantaneous gas heaters in individual buildings. Schedule recirculation pumps in DDC or with stand-alone controls (ESCO). 	2	
Laboratory hoods:		
<ul style="list-style-type: none"> Adjust operation/settings/controls to improve energy efficiency. 	1	Completed in Robert H. Wick Science Building in 2011.
<ul style="list-style-type: none"> Evaluate user operations. 	1	
<ul style="list-style-type: none"> Arrange for removal of unneeded equipment. 	1	
<ul style="list-style-type: none"> Upgrade to variable frequency drives and/or heat recovery technology. 	1	
<ul style="list-style-type: none"> In new labs, utilize ductless hoods. 	1	New ISELF building has ductless hoods (2013).
Space utilization:		
<ul style="list-style-type: none"> Increase online class offerings 	2	Governor's goal: 25% of credits to be earned through online courses by 2015.
<ul style="list-style-type: none"> Improve space utilization 	1	
Energy management systems:		
<ul style="list-style-type: none"> Update building systems software and controls to maximize savings through scheduling. 	1	
<ul style="list-style-type: none"> Switch to direct digital control (DDC) systems 	1	
<ul style="list-style-type: none"> Campus energy control center. 	1	
Building automation:		
<ul style="list-style-type: none"> Increase staff in the Building System Automation Center to create a position that focuses on commissioning and energy-conservation. 	1	SCSU has a central energy control center.
<ul style="list-style-type: none"> Use the campus energy control center to provide both educational opportunities and increased control over building operations. Make results easily accessed by the public. 	2	
<ul style="list-style-type: none"> Re-commission existing direct digital controls (DDC). Convert the existing pneumatic controls to new electronically actuated DDC. Add the stand alone controls to the DDC system. Add programmable thermostats to the control system (ESCO). 	2	

Use of economizer ventilation for Data Center heat removal.	2	
Medium Term	Status	Comments
Operational commissioning: <ul style="list-style-type: none"> Increase operational commissioning. Consolidate standards across campus for all building maintenance and cleaning to meet the intent of LEED for Existing Buildings and Operation and Maintenance. 	2 2	National Hockey Center is the 1 st building on campus to conduct operational commissioning.
Invest in renewable fuels to replace the use of natural gas in the campus steam plant.	3	
Inventory curtains/shading for buildings with overheating issues. This includes: <ul style="list-style-type: none"> Increasing shading on the west sides of buildings, where practical, to reduce cooling costs and electricity use during summers. Installing thermal shades on the north sides of buildings, where practical, to save on heating costs and steam use. 	3 3	
Space utilization: <ul style="list-style-type: none"> Improve class scheduling year round, especially during summer term. Consolidate classes to the most energy-efficient buildings that meet teaching needs. 	3 3	
Long Term	Status	Comments
Evaluate and install solar water heaters.	4	
Choose socially responsible investments that promote sustainable, environmentally friendly techniques.	4	

Mobile Combustion

1%

Emissions from the burning of fuels by institution-owned transportation devices or directly financed by the institution (excluding air travel)

of 2012 emissions

Short Term	Status	Comments
<p>Reduce size of campus vehicle fleet:</p> <ul style="list-style-type: none"> Rent vehicles in lieu of purchasing. Contract with rental agency to include stipulations on availability of hybrid and high-efficiency vehicles. Eliminate redundant and/or underutilized vehicles. 	<p>1</p> <p>1</p> <p>1</p>	<p>All vehicles that were previously leased are now rented on an as-needed basis (2012).</p> <p>Eliminated 15 vehicles from fleet to date (2012).</p>
<p>Switch to hybrid / electric options:</p> <ul style="list-style-type: none"> Switch to hybrid or electric fleet vehicles. Evaluate alternative grounds equipment (mowers, weed trimmers, etc.). 	<p>1</p> <p>3</p>	<p>Currently have 4 GEM electric cars (2013).</p>
<p>Increase efficiency of existing vehicles:</p> <ul style="list-style-type: none"> Reduce vehicle idling through education and creation and enforcement of an anti-idling policy. Perform scheduled tune-ups. Use most efficient vehicle for the task. 	<p>1</p> <p>1</p> <p>1</p>	
<p>Enact efficiency standards for purchasing vehicles across campus (department, fleet, maintenance, etc.)</p>	<p>2</p>	
Medium Term	Status	Comments
<p>Conduct a fleet efficiency assessment:</p> <ul style="list-style-type: none"> Evaluate all vehicle needs and types required. Enact a replacement policy based on efficiency assessment. 	<p>2</p> <p>2</p>	
<p>Increase efficiency of existing vehicles:</p> <ul style="list-style-type: none"> Purchase tire pressure monitors for campus service vehicles. 	<p>3</p>	
<p>Alternative fuels:</p> <ul style="list-style-type: none"> Evaluate opportunities and implement the use of biofuels in grounds equipment and fleet vehicles. Explore options for natural gas-powered vehicles 	<p>3</p> <p>3</p>	
<p>Purchase solar-powered trash compacting/recycling receptacles to reduce the number of collections.</p>	<p>3</p>	<p>Units can wirelessly communicate when pickups are needed.</p>

Long Term	Status	Comments
On campus system to eliminate snow hauling to an offsite location (R&D).	4	

Fugitive Emissions

Emissions resulting from the use of refrigerants and fertilizers

<1%

of 2012 emissions

Short Term	Status	Comments
Reduce refrigerant use, where possible.	2	

Medium Term	Status	Comments
Utilize xeriscaping landscape techniques, including drought tolerant plants, to reduce dependence on water and fertilizer.	3	
Eliminate use of R22 coolant at National Hockey Center.	2	

Scope 2 Emissions – Indirect emissions from purchased energy

Sources that are neither owned nor operated by the University but whose products are directly linked to on-campus energy consumption.

Purchased Electricity		42%
<i>Emissions from the production of any electricity the University purchases including transmission and delivery losses</i>		<i>of 2012 emissions</i>
Short Term	Status	Comments
New buildings: <ul style="list-style-type: none"> Construct all new buildings to the Minnesota State B3 guidelines, and meet or exceed requirements that would qualify for LEED Silver certification or above. Commission all new buildings to ensure that equipment and systems are working and energy performance goals are met. Incorporate separate meters for electricity, steam, and water use in new buildings. 	1 1 1	
Renovation projects / existing buildings: <ul style="list-style-type: none"> Install high-efficiency motors and variable frequency drives in all renovation projects. Add insulation during roof replacements. Replace remaining single-paned windows with double-paned, thermally efficient glass. Additional metering (electricity, steam, and water) during each building renovation project. 	1 1 2 1	
Exterior lighting upgrades: <ul style="list-style-type: none"> Upgrade exterior HID lights with new LED fixtures (ESCO). Replace all non-LED wallpacks and flag lights with new LED units (ESCO). 	2 2	
Indoor lighting upgrades: <ul style="list-style-type: none"> Install occupancy sensors for lighting where practical (ESCO). Replace lighting with more efficient bulbs and fixtures (ESCO). Evaluate and reduce light levels where appropriate (ESCO). Ban all incandescent bulbs. Lighting and control upgrades to National Hockey Center. Convert all exit lighting to LEDs or photo-luminescent signs that require no electricity. 	1 2 1 1 1 2	Non-Toxic/Radioactive photo-luminescent only.

<p>Create an equipment and appliance policy:</p> <ul style="list-style-type: none"> • Reorganize and reduce the number of printing devices within a purposeful, businesses-needs framework. Move to centrally-located multi-function color printers and eliminate other devices (ESCO). 2 • Establish an Energy Star policy for all applicable new (and replacement) appliances and equipment purchased across campus and in campus housing. 1 • Inventory refrigerators on campus: identify opportunities to consolidate, retire and/or replace older units with more efficient models. 2 	
<p>Vending:</p> <ul style="list-style-type: none"> • Evaluate having an exclusive beverage vending contract to reduce redundancy. 1 • Reduce the number of vending machines 3 • Require all vending machines to be Energy Star certified and utilize Vending Miser technology (ESCO). 1 	
<p>Computers / technology:</p> <ul style="list-style-type: none"> • Measure the energy waste generated by PCs, assess the feasibility of recovery, and implement software and policies to achieve the maximum recovery without overly impacting user experience (ESCO). 2 • Consolidate servers and encourage use of virtual servers. 3 • Conduct a data center energy audit. 3 • Institute remote power management settings for campus computers using Active Directory or a proprietary software. 2 • Create a green computing page to highlight sustainable choices in equipment purchasing, power management, printing, and more. 3 • Require that all computers on campus have their power management features engaged and be shut off when offices are closed. 2 	
<p>Food service:</p> <ul style="list-style-type: none"> • Evaluate kitchens for equipment utilization and efficiency. 3 • Eliminate redundant equipment and replace old inefficient equipment with new high efficiency replacements. 3 	
<p>Encourage the use of stairwells instead of the elevator for those who are able. 2</p>	<p>"Do" stickers</p>

Increase the partnership with the campus electricity provider, Xcel Energy, for the campus to purchase power from renewable sources.	1	Governor set 25 by 25 goal for renewable energy requirements. This mandates 25% of power from renewable sources by 2025. It further requires Xcel Energy, SCSU's provider, to supply 30% by 2020.
Install solar photovoltaic (PV) panels to supplement current electrical load (ESCO).	2	
Replace old, inefficient transformers throughout campus with new ultra-high-efficient models (ESCO).	3	
Medium Term	Status	Comments
Energy management systems: <ul style="list-style-type: none"> Use the campus energy control center to provide educational opportunities. Display results on website. 	3 3	
Increase building metering to monitor energy and water use in residence halls. Provide information through a dashboard to encourage conservation behavior in students living on campus.	2	
Inventory curtains/shading for buildings with overheating issues. This includes: <ul style="list-style-type: none"> Increasing shading on the west sides of buildings, where practical, to reduce cooling costs and electricity use during summers. Installing thermal shades on the north sides of buildings, where practical, to save on heating costs and steam use. 	3 3	
Re-commission older buildings to ensure the optimal operations of existing equipment. <ul style="list-style-type: none"> Priority should be given to buildings with high energy demands, such as research buildings. Thermal comfort surveys should be used as part of the re-commissioning process to assess occupant comfort and find opportunities to reduce overheating or overcooling. 	3 3	
Outdoor lighting efficiency: <ul style="list-style-type: none"> Study existing lighting locations and levels. Evaluate if lights can be eliminated or if light levels can be reduced. Implement results of this study to reduce lights and light levels. 	2 3	

<ul style="list-style-type: none"> Utilize “dark sky” techniques to direct illumination where it is needed. Upgrade outdoor lighting to LED fixtures. Explore the use of solar or wind powered walkway and street light fixtures. 	1 1 3	
Reduce and eliminate individual appliances (space heaters, coffee machines, refrigerators, etc.).	3	
Consider Responsible Centered Management (RCM), in which each department pays for expenses and is rewarded for savings.	4	
Progressively add renewable energy generation, like wind turbines or solar panels, to new and existing facilities.	3	
Consider geothermal systems for future projects.	4	
Use solar water heaters where feasible, or to preheat water.	4	
Require owners of vending machines to assume the direct financial and polluting-associated burdens associated with their machines.	4	
Long Term	Status	Comments
Research and install renewable energy. <ul style="list-style-type: none"> Install a large scale photovoltaic array. Install wind turbines. Evaluate and implement other renewable energy sources. 	4 4 4	Explore an off campus partnership or an SCSU owned property off the central campus. Continue to evaluate as technology changes. Make use of the University as a research facility and seek opportunities to partner with renewable energy companies.
Continue to pursue purchasing electricity from hydroelectric.	4	Existing hydroelectric dam located next to SCSU on the Mississippi River.
Work with local utilities and green energy companies to research and test renewable energy storage. Set up on-campus pilot projects.	4	One of the difficulties with renewable energy is peak energy production does not necessarily match peak demand.

Scope 3 Emissions – Other indirect emissions

Other emissions attributed to the University. This includes emissions from sources that are neither owned nor operated by the University but are either directly financed or are otherwise linked to the campus via influence or encouragement.

Commuting		24%
<i>Emissions from regular commuting by faculty, staff, or students (does not include student travel to and from home over breaks)</i>		<i>of 2012 emissions</i>
Short Term	Status	Comments
Utilize technology to reduce travel: <ul style="list-style-type: none"> • Increase online class offerings. • Increase video-conferencing utilization. • Expand telecommuting opportunities. 	1 1 1	
Encourage the use of more efficient vehicles: <ul style="list-style-type: none"> • Consider installing electric vehicle charging stations in campus parking lots. 	2	
Promote bike riding as an alternative commuting mode: <ul style="list-style-type: none"> • Increase access to bike racks; address additional bike parking needs in overflow areas. 	1	
Promote bus riding as an alternative commuting mode: <ul style="list-style-type: none"> • Continue to utilize used cooking oil as an alternative fuel for a bus. • Work with MetroBus to use compressed natural gas as the fuel source of buses serving the SCSU community. • Continue free bus service for students. • Improve bus shelters. 	1 2 1 2	Since 2008, SCSU has collaborated with St. Cloud MetroBus to fuel a bus with recycled deep fryer vegetable oil. MetroBus will be building a CNG refueling station and replacing some of its fleet with CNG buses. (2013).
Provide access to short-term rental vehicles on campus to reduce the need for individual cars.	2	
Promote carpooling: <ul style="list-style-type: none"> • Create an online "carpool board" for common destinations. • Offer pay-lot parking incentives for carpooling. 	1 3	Rideshare website: http://www.stcloudstate.edu/atwood/rideshare.asp
Medium Term	Status	Comments
Establish an energy dashboard on the web to document bus ridership.	3	

Offer pay-lot parking incentives for hybrid, electric, or alternative fuel vehicles.	3	
Increase motorcycle and scooter parking availability.	3	
Promote bike riding as an alternative commuting mode: <ul style="list-style-type: none"> • Create a master bicycling plan to identify facility, campus, and community needs for providing safe and convenient ways to bike to campus. • Plan for showers in new buildings to promote biking or walking/running. 	2 2	
Long Term	Status	Comments
Support and lobby for the extension of light rail to St. Cloud from Minneapolis. A large number of students commute daily from the Minneapolis / St. Paul I-94 corridor.	4	Northstar Commuter rail currently makes it to Big Lake. St. Cloud Metro Bus offers a Northstar Link bus ride from Big Lake to St. Cloud.

Air Travel

10%

Emissions from air travel that is paid for by the University, as well as study abroad air travel

of 2012 emissions

Short Term	Status	Comments
Increase video-conferencing utilization to reduce travel.	1	
Evaluate and determine the most efficient meeting locations based on participant locations.	2	
Medium Term	Status	Comments
Long Term	Status	Comments
Include corresponding carbon offset with all airline travel.	4	Include cost in departments' budgets to further encourage the reduction of air travel.

Additional Mitigation Strategies

While every effort will be made to reduce eCO₂ emissions through conservation and by developing University sponsored renewable energy sources, offset credits may be necessary. SCSU will also consider developing or purchasing additional carbon sequestration projects.

A carbon offset is a reduction or removal of carbon dioxide equivalent (eCO₂) greenhouse gas (GHG) emissions that is used to counterbalance or compensate for (“offset”) emissions from other activities.

Renewable Energy Certificates (REC) may also be purchased. These certificates represent the non-power attributes of renewable power generation. A certificate is created for every 1000 kilowat-hours of electricity placed on the grid.

Carbon Sequestration projects include reforestation, afforestation (new forest on previously non-forested land), and enhanced forest management.



Sequestration and Carbon Storage

The removal of carbon dioxide from the atmosphere and its storage in plant tissue as a result of photosynthesis.

Short Term	Status	Comments
As buildings are consolidated and removed, continue to convert open land to green space.	1	SCSU master plan also calls for increasing green space on campus.
Medium Term	Status	Comments
Investigate opportunities to increase carbon sequestration through additional University resources and lands, such as reclaiming sites.	3	

Carbon Offsets

Purchased units that fund or otherwise enable projects that reduce, avoid, or sequester emission outside the institution's boundaries.

Short Term	Status	Comments
Look to include carbon offset in parking permit fees.	3	
Medium Term	Status	Comments
Require a corresponding carbon offset when purchasing airline tickets or renting a car if not already zero emission.	3	Cost would be included in department's expenses to further encourage reductions in usage.
Long Term	Status	Comments
Evaluate possibility of purchasing carbon offsets when it is not feasible or technologically possible to eliminate carbon emissions.	4	

Renewable Energy Certificates (RECs)

Purchased product representing the environmental attributes of the power produced from renewable energy projects that are sold separately from the physical electricity.

Short Term	Status	Comments
Increase renewable energy purchases through the Xcel Energy Windsource program.	1	
Medium Term	Status	Comments
Look to partner / purchase renewable energy or renewable energy certificates from the Mississippi River hydroelectric dam adjacent to SCSU.	3	
Purchase all energy used from renewable sources.	3	The combination of energy use reductions, state mandates on energy providers and the current and anticipated future availability of renewable energy make this a feasible goal

G. Education

Current activities:

All St. Cloud State University undergraduate students are required to complete the Liberal Education Curriculum, which is organized into ten goals. Goal 10 is "People and the Environment."

The stated goal is "to improve students' understanding of today's complex environmental challenges. Students will examine the interrelatedness of human society and the natural environment. Knowledge of both bio-physical principles and socio-cultural systems is the foundation for integrative and critical thinking about environmental issues." The objective is to "examine the interrelationship of humans and the natural worlds from scientific and socio-cultural perspectives and the complex environmental challenges that result. Students can meet this requirement through one approved course or experience."

In addition, St. Cloud State University students participate in sustainable programs in 4 major ways: as part of class projects, service-learning projects, volunteering, and participating in student organizations.

These programs include the following:

1. SCSU class projects:

- a. In the spring of 2009, St. Cloud State University faculty and instructors were invited to voluntarily participate in a survey developed by the Faculty Task Force on Sustainability. The survey showed that sustainability themes are included in the education curriculum in 23 departments and programs across campus. Respondents listed over 90 courses in which sustainability content is included. These courses included Biology, English, Gerontology, and Business Computer Information Systems courses.
- b. SCSU Environmental students have taken their class project (re-landscaping a portion of the Mississippi River shoreline to prevent erosion, encourage native species and make the shoreline more user friendly) and have been meeting with the city and donors to turn a class project into a real project.
- c. Fall 2010 academic sustainability initiatives:
 - Project 1: Irrigation system for the Community Garden
 - Project 2: Storm water survey and workshop coordination for SCSU's MS4 permit
 - Project 3: Storm water rain garden design for SCSU's MS4 permit

*"A student once told me, if not now
(while at the University) then when?"
Margaret Vos, Director of Atwood Center*

- Project 4: Trick or Trash Cleanup
- Project 5: Mississippi River Cleanup
- Project 6: Develop a Storm Water Education Program for SCSU's MS4 permit
- Project 7: Saving the endangered species ONE MN K-12 student at a time

2. SCSU service-learning projects:

- a. Over two dozen environmental service-learning projects have been enacted with area community partners since 2005. Projects have included organizing neighborhood and river cleanups, storm water educational guides for organizations and the general public, and analyses for lake association groups.

3. SCSU volunteer projects:

- a. Volunteering with the Department of Natural Resources to prevent lake pollution.
- b. Participating in forums that promote sustainable food production.
- c. Working with neighborhood organizations to create sustainable neighborhoods (Climate Protection Agreement Green Party Healthy Neighborhoods).
- d. SCSU Community Garden
- e. St. Cloud Pedestrian and Bicycle Workforce
- f. Tree planting along the Mississippi river
- g. Native Women's Garden Project (Twin Cities)
- h. Sierra Club Mississippi River Connections
- i. Annual park, river, and neighborhood clean-ups tied to academic/environmental courses:
- Annual "Trick-or-Trash" Clean-up
 - Annual Sauk River Clean-up
 - Adopt-a-Block program
 - Annual Mississippi River Clean-up



4. SCSU Student organizations – focused on sustainability and the environment:

- a. Animent: Action on Campus: Promotion of humane treatment of animals; promotion of environmental stewardship and tree planting.

- b. Biology Graduate Student Association: for biology students at SCSU working towards a master's in Ecology and Natural Resources or Cell and Molecular Biology.
- c. Environmental & Technological Studies Club (ETS): promote technological literacy and environmental awareness in our community and educational institutions through networking with professionals, interacting with youth, and enhancing our professional development.
- d. SCSU Ecology Club/Wildlife Association: a student-led organization in participation with the Minnesota Wildlife Society Chapter. Provides information for students about volunteer work with Minnesota DNR, US Fish and Wildlife Service, The Nature Conservancy and many others.
- e. Wind Energy Association: a collective of student majors in Meteorology, Applied Computer Science, Environmental Science and Mechanical Engineering.

Proposed activities: Short-term

Implement the Husky Paw program:

- Green Husky Paw highlighting sustainable initiatives on campus. The paw campaign serves to educate visitors, faculty and students about sustainability measures on campus.
- Encourage others to participate in energy reduction and sustainability measures.
- The paw logo will include a link to the SCSU sustainability website to provide information on the sustainable initiative highlighted.

Expand and continue student energy conservation programs and support student-led energy-related events:

- Conduct energy conservation educational programs in campus residence halls to encourage computer power management and turning off appliances and lights.
- Post energy and water conservation information on bulletin boards, incorporate it into resident advisor duties, and institute sustainability initiatives and contests by floor and by building.
- Support student-led energy-awareness, such as Earth Hour, Nightwalk for Safety and Sustainability, fairs, movies, and more to encourage dialogue on energy and sustainability issues.
- Administer building-to-building competitions, such as RecycleMania.
- Continue and expand offerings for open seminars with experts clarifying aspects of climate change and fossil fuels resource depletion.

- Present green living and campus sustainability topics during Welcome Week (a required event for incoming freshmen).
- Create and disseminate a Sustainable Living Guide for students living on and off campus.
- Encourage student academic and civic engagement activities related to energy conservation and other sustainability issues.
- Encourage students to write articles, opinion editorials, and letters to the editor to promote sustainability.

Expand and continue staff and faculty programs in energy conservation:

- Develop a faculty/staff curriculum and educational outcomes (i.e., what each faculty/staff should know about energy conservation, sustainability, greenhouse gas emissions and other sustainability elements or actions). This could include listening sessions to create a dialog with various departments to discuss attitudes and hear what barriers there might be to implementation.
- Provide at least one activity per year for staff and faculty to learn about environmental wellness.
- Offer “Green Your Office” trainings.
- Encourage power strips or smart strip use for faculty/staff/departments to control vampire power load.
- Pilot a program with foot warming mats in exchange for space heaters (mats are safer and use much less energy).

Incorporate sustainability into classrooms and labs:

- Develop student educational outcomes (i.e., determine what students should know at each point in their SCSU education career related to energy, sustainability, and greenhouse gas emissions).
- Query course descriptions and review survey data to determine which classes/faculty offer energy and/or sustainability education in classes. Track the number and type of courses taught, and publicize energy and sustainability learning opportunities for students.
- Create coursework or integrate lessons into existing courses that support sustainability and energy education outcomes.
- Establish an interdisciplinary freshman course in sustainability that counts towards degree requirements.
- Incorporate sustainability research results into courses taught throughout campus.
- Incorporate sustainability and energy-saving tips into lab safety training and audits/inspections.

- Develop faculty training for sustainable classroom management (i.e., reducing paper, electronic media, etc.).

Expand regional community education strategies:

- Offer or identify sustainability internship opportunities.

Proposed activities: Medium-term

Expand staff and faculty programs in energy conservation:

- Develop seminars and opportunities for faculty and staff to learn more about how to reduce their impact within their department. Seminars will be delivered within a department and supported by a handbook. Each department will have a liaison to act as the contact for that department.

Incorporate sustainability into classrooms and labs:

- Identify ways to connect campus operational activities to student courses and research opportunities with the outcome of providing real-world application of classroom knowledge to improving the operations of campus systems.
- Create educational exchange programs with other regional colleges and universities so that students can learn from what other campuses are doing.
- Offer competitive financial awards to innovative and interdepartmental classes.

Proposed activities: Long-term

Integrate sustainability into the SCSU experience:

- Establish an “eco-house”: An area/floor/building within campus housing where student residents choose an experience that pushes the boundaries of energy and water conservation, reducing landfilled waste, and other eco-conscious living habits.

Expand regional community education strategies:

- Increase connections to better communicate sustainability-related research activities and results.
- Expand partnerships with regional sustainability leaders.
- Partner with local municipalities, organizations, and agencies to promote further educational outreach endeavors.

H. Research

Current activities:

St. Cloud State University faculty is actively involved in sustainable research. This work encompasses a wide breadth of areas, including researching organic semiconducting materials for use in devices like organic solar cells, determining the effect of land management techniques on the reintroduction of species, studying transit systems within urban community development, modeling environmental and economic systems and investigating renewable energy options.

Current research also includes projects that explore bio-remediation techniques using algae to break down waste. This research is focused on animal waste from small to medium sized farms and lagoons. The resultant by-products may be able to be used as feedstock or for power generation.

Other research projects involve studying water quality throughout the nation and its effects on fish growth and other aquatic life.

In addition, St. Cloud State University researchers are evaluating how damming affects the river environment, aquatic life and the impact on the environment when dams fail.



There is also on-going research regarding chemical-free and contact-free cleaning techniques.

A new \$44.8 million science and engineering building opened for classes and research Fall, 2013. The Integrated Science and Engineering Laboratory Facility, or ISELF, provides state of the art facilities to support sustainable research and partnerships with companies that are global leaders in bio-agriculture, renewable energy, medical devices, pharma/biologics and animal science.

Proposed activities: Short-term

Promote sustainability research:

- Conduct a survey to determine extent of current sustainability research on campus.
- Help coordinate student research projects in the areas of sustainability.
- Work with Sponsored Programs to publish funded research. Review current database, submit projects related to sustainability for uploading on the University website. Facilitate future identification of related projects by adding a “Sustainability Project” check box on the proposal transmittal sheet. Update website with relevant projects on a monthly basis.
- Continue a colloquium/seminar/brown bag series featuring SCSU researchers.
- Celebrate, reward, and publicize research by faculty members on climate change and sustainability.
- Brand existing SCSU signature programs.

Expand capacity for sustainability research:

- Provide administrative support for grant writing for sustainable research (i.e. editing and formatting proposals, filling out forms, compiling resumes, routing for signatures.)
- Develop a proposal alert system to reduce missed research opportunities.
- Establish fellowships, seed grant program, or other financial support mechanisms to develop new research programs related to climate change and sustainability.
- Provide reassign time to faculty to develop sustainability activities related to the needs of the region.
- Provide access to various new energy efficient and renewable energy technologies to faculty and students for research and education purposes.

Facilitate a network of researchers:

- Create a listserv with interested participants.
- Publish a database indicating the sustainability-related research interests of faculty.
- Develop a newsletter to highlight researchers.
- Continue to provide travel funds to researchers to establish new relationships that lead to joint proposals.

"ISELF is about putting people in the same physical space to interact and collaborate around projects that are cross-disciplinary. That's how work gets done in the real world."

*David DeGroote,
Former Dean of College of Science and
Engineering*

I. Outreach

The Faculty Task Force on Sustainability conducted a survey of St. Cloud State University faculty and instructors spring 2009. While the survey primarily focused on assessing sustainability activities of faculty, respondents were able to list current community partnerships, as well as community partnerships they felt would be needed in the future.

The Husky Paw campaign is a new program to highlight and promote sustainability at SCSU. The paw will be displayed to call attention to and provide facts about sustainable features throughout campus.



In addition, many of the sustainability education and research initiatives previously outlined include outreach components.

J. Implementation

The Facilities Management Department will be responsible for implementing many of the strategies found in this climate action plan. It will take the cooperation of the entire University community to achieve the ambitious goal of carbon neutrality. The SCSU sustainability committee will provide direction and leadership to prioritize, implement and ensure the action plan stays on course.

To be successful, SCSU will rely on the expertise, research, and roles of faculty and staff across campus. Establishing partnerships will create buy-in from University stakeholders and will expedite implementation.

K. Administrative Support

Administration and Human Resources Actions:

- Continue membership in the Association for the Advancement of Sustainability in Higher Education (AASHE) program.
- Create a Green Award for campus staff, faculty, and students to reward their contributions and improvements in energy and water conservation, waste and recycling, and other sustainable actions.
- Seek ways to reward faculty who teach and conduct sustainability and energy research in an interdisciplinary environment, focusing on the interrelationships between environmental, economic, and social systems.
- Incorporate energy and water conservation, recycling, and sustainability into job descriptions and job evaluations to ensure successful applicants are aware that they are expected to demonstrate a commitment to sustainable practices.

L. Funding

Funding Actions:

- Continue to apply for Energy Rebates from Xcel Energy for efficiency projects.
- Continue to use Repair and Rehabilitation and HEAPR (Higher Education Asset Preservation Replacement) funds through SCSU Facilities Management to upgrade systems and buildings for energy and water efficiency.
- Utilize the state's Guaranteed Energy Savings Program (GESP) to self-fund energy saving projects.
- Explore the potential of Minnesota's Community Based Energy Development (C-BED) legislation, which would provide the campus with financially attractive options for installing renewable energy technologies.
- Encourage cost-share opportunities between campus departments and facilities management to implement energy and water conservation projects.
- Consider establishing a Green Revolving Fund and involve students, staff, and faculty on decision making to make energy-efficient projects more visible.
- Consider establishing an alumni fund for green campus efforts.
- Explore external grant funding for energy research projects both on and off campus.
- Encourage student-led funding initiatives (e.g. green fees).
- Seek Development Office partnerships to solicit donor funding from foundations for energy projects.

M. Measurement and Assessment

St. Cloud State University will conduct a Greenhouse Gas Emissions Inventory at least every-other year to track progress. These inventories will be made publicly available through the ACUPCC website and will be shared with the campus community.

This Climate Action Plan identifies strategies that St. Cloud State University intends to take in the short, medium, and long term to achieve its goal of becoming carbon neutral. It is a living document that should remain flexible to take advantage of new opportunities and technology. This document shall be periodically updated to reflect actual outcomes and to incorporate strategic initiatives.

Appendix 1. Other University sustainability initiatives that do not directly affect eCO₂ emissions

For the purposes of the ACUPCC, climate neutrality is defined as having no net greenhouse gas emissions.

While the ACUPCC allows for tracking of eCO₂ emissions from solid waste, it is optional for signatories to include it in their inventory. St. Cloud State University has chosen not to include it in their inventory. Therefore, any reduction in solid waste, while worthwhile, does not impact the reported eCO₂ emissions.

St. Cloud State University has undertaken many additional initiatives that may not directly reduce the reported eCO₂ emissions but that contribute to a sustainable campus. The following chart documents these activities.

Current	Comments
Buildings: <ul style="list-style-type: none"> • Continually improve indoor air quality and monitor indoor air quality. • Has an active preventative maintenance plan. • Use green or environmentally preferable materials. • Use LEED silver / B3 building as minimum guidelines. 	
Purchasing: <ul style="list-style-type: none"> • Has a campus-wide stated preference to purchase environmentally preferable products. • Purchases Green Seal green cleaning products. • Purchases recycled content office paper. • Purchase Energy Star equipment. • Purchases office paper, paper towels, and toilet paper with post-consumer recycled content. 	
Landscaping: <ul style="list-style-type: none"> • Prioritizes use of native plant species in landscaping. • Has program in place to protect and/or create wildlife habitat on campus-owned land. • Has implemented technologies or strategies to reduce the environmental impacts of snow and ice removal. • Composts or mulches waste from grounds keeping, including grass trimmings. 	

<ul style="list-style-type: none"> • Uses low impact fertilizers. • Works to improve the sustainability of campus grounds through Integrated Pest management (reduction of chemical use). • Uses a live catch program. 	
<p>Water:</p> <ul style="list-style-type: none"> • Has taken measures to reduce water consumption. • Uses water reducing faucets. • Uses water reducing shower heads. • Uses ultra-low flow toilets. • Has implemented policies and programs to reduce stormwater runoff and resultant water pollution. • Uses rain gardens for stormwater retention and cleaning. • Uses bio-swales for stormwater retention and cleaning. • Has a SWPPP (Stormwater Pollution Prevention Plan). • Has building-level water consumption meters. • Uses native plant material on campus. • Uses weather data or weather sensors to automatically adjust irrigation practices. • Has used underground storm water storage tanks to reduce storm sewer loading. 	
<p>Reduce waste:</p> <ul style="list-style-type: none"> • Has a waste reduction policy. • Has a written policy on hazardous waste material disposal. • Has a reuse policy. • Has a recycling policy. • Knows where waste is disposed. • Diverts construction and demolition wastes. • Has an e-waste recycling and/or reuse program. • Verifies that e-waste is being properly disposed. • Seeks to minimize and safely dispose of all hazardous, universal, and non-regulated chemical waste. • Recycle used oil, paint, Styrofoam, cardboard, fluorescent lamps, car batteries and antifreeze. • Has a surplus department or formal office supplies exchange program that facilitates reuse of materials. • Limits free printing for students in all computer labs and libraries. • Has a policy for students to obtain course catalogues or schedules online before receiving a printed copy. • Has a program to reduce residence hall move-in waste. • Has a program to reduce residence hall move-out waste. • Has a residence hall room furniture exchange or reuse program. • Utilizes inter-office reusable envelopes for campus mail. • Use tri-fold paper towels with jumbo roll units or replace with high-efficiency hand dryers. 	

<p>Food:</p> <ul style="list-style-type: none"> • Has a sustainable food policy. • Purchases local foods. • 10% of foods purchased are locally produced. • 150 miles radius qualifies as local foods for the campus. • Has a food waste reduction program. • Uses non-disposable dishes in dining facilities. • Employs trayless dining. • Offers diverse, complete-protein vegan and vegetarian dining options during every meal. • Uses frying oil that does not include trans-fats. • Seeks to avoid food that includes trans-fats in dining operations. • Donates leftover or surplus food. • Uses recycled content napkins in its dining service operations. • Packaging is recycled. • Cooking oil is used as fuel in transit buses. • Pre & post-consumer food waste is sold to local farmer for swine production. 	
<p>Improve maintenance processes:</p> <ul style="list-style-type: none"> • Utilize a chemical dispensing system to ensure correct dilution ratios. • Use microfiber dusters and mopping units to reduce water use. • Use cleaning products that meet Green Seal certification standards whenever practicable. 	<p>Launched the Hillyard CCAP program in 2010 to reduce cost of cleaning materials and increase use of "green" products.</p>
<p>Increase recycling:</p> <ul style="list-style-type: none"> • Increase recycling in housing by ensuring that every floor has a dedicated recycling area. • Continue to plan for and build recycling areas into new and renovated buildings. 	
<p>Create a move-out donation/swap program to reduce landfilled waste:</p> <ul style="list-style-type: none"> • Provide recycling dumpsters at move-in/move-out times. • Expand the move-out donation/swap program to off-campus students. • Increase coordination between the University and the garbage/recycling vendors, especially around the end of spring semester when off campus waste disposal behaviors can be problematic. 	

Short-term	Comments
<p>Increase recycling:</p> <ul style="list-style-type: none"> • Set a goal for recycling efficiency. • Increase communication so campus members can make appropriate choices on materials. • Eliminate desk-side garbage pick-up, and instead collect recycling, to make staff and faculty more aware of their waste and encourage recycling. • Increase access to recycling bins in crowded common areas. • Implement a program in the residence halls and computer labs to recycle printer cartridges. • Implement a single-sort recycling program. 	
<p>Reduce waste:</p> <ul style="list-style-type: none"> • Encourage the creation of “green events” that do not create unneeded waste. • Continue to make more publications available “on-line” rather than “in-print.” • Consider using trashcan liners that are biodegradable rather than made from petroleum-based resin. • Consider coreless toilet paper. • Use fonts like Century Gothic to reduce toner usage. 	
<p>Improve maintenance processes:</p> <ul style="list-style-type: none"> • Consolidate standards across campus for all building maintenance and cleaning to meet the intent of LEED for Existing Buildings and Operation and Maintenance. • Install polished terrazzo floors where practical so no further floor finish or stripping processes are required. 	
<p>Continue and expand sustainable food service practices:</p> <ul style="list-style-type: none"> • Continue the food waste recycling program and look for ways to expand composting across campus. • Continue trayless dining program. • Provide locally grown foods. 	<p>Leftover food is sold to a local farmer to use as swine feed.</p>
<p>Continue and expand locally grown food options:</p> <ul style="list-style-type: none"> • Continue on-campus farmer’s market to make locally grown foods available for purchase. • Continue on-campus community garden. 	

<p>Improve water quality:</p> <ul style="list-style-type: none"> • Encourage student organization to restore river habitat. • Maintain on-campus rain gardens. • Follow the Stormwater Pollution Prevention Plan (SWPPP). • Continue to implement strategies to reduce the environmental impacts of snow and ice removal (i.e. environmentally preferable salts). 	
<p>Reduce water usage:</p> <ul style="list-style-type: none"> • Install water-saving fixtures on all new projects and repairs for bathroom equipment, sinks, and showers. • Default all clothing washers in housing to use the cold water setting. • Use waterless urinals. 	
<p>Encourage paper reduction through equipment and faculty requirements:</p> <ul style="list-style-type: none"> • Default set at double-sided copies. • Scan and post online rather than print and mail. 	
<p>Medium Term</p>	<p>Comments</p>
<p>Reduce waste:</p> <ul style="list-style-type: none"> • Consolidate waste and recycling standards across campus, meeting the intent of LEED for the Existing Buildings and Operation and Maintenance program. • Establish a campus swap program or “free store,” to reduce waste and expenses. • Reduce lab waste through communication about recyclable materials (i.e., pipette tip boxes, pipette tips, centrifuge tubes, and cardboard boxes). 	
<p>Reduce water usage:</p> <ul style="list-style-type: none"> • Install shower timers in a residence hall as a pilot project to evaluate their effectiveness in reducing shower time and water use. • Use grey water for irrigation or flushing toilets. 	

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