

**STATE UNIVERSITY OF NEW YORK
Energy Conservation And Sustainability Implementation Plan**

DRAFT

GOAL #1: <i>Reduce energy use in buildings by 37% by 2010, as compared to 1989-90 on a BTU/sq. ft. basis. If reduction target is not applicable/attainable then obtain Energy Star Rating of 75 or better on all specific buildings. See Attachment A for campus-specific goals for 37% reduction (assuming no Energy Star 75 ratings).</i>		
ACTIONS	TIMELINE	COST
Management and Planning:		
<p><u>Campus Energy Coordinator and Campus Sustainability Task Force.</u> Each campus will designate a campus energy/sustainability coordinator who will be responsible for supervising energy conservation and sustainability activities, monitoring energy performance, and reporting. Each campus will establish a campus sustainability task force to develop plans and policies and work with the sustainability coordinator to execute those plans and policies. The task force should have representation from all parts of the campus, management, faculty, students, and facilities staff.</p>	<ul style="list-style-type: none"> • December 2007, campuses identify/establish energy coordinator and sustainability task force • January 2008, SUNY holds training for coordinators and task force chairs 	<ul style="list-style-type: none"> • Estimated \$3 million annually in PSR and OTPS for sustainability coordinators and task force activities; \$100,000 average cost per campus • \$10,000 for University-wide training (System Administration) • Sustainability Manager and Energy Conservation Manager for system Administration \$200,000 <p>NOTE: \$3M assumes that each campus will have to establish new position for this function. May not be the case. Also, if properly executed, energy sustainability coordinator positions should pay for themselves with savings.</p>

**STATE UNIVERSITY OF NEW YORK
Energy Conservation And Sustainability Implementation Plan**

DRAFT

<p><u>Campus Conservation and Sustainability Plans.</u> Each campus will develop and execute a sustainability plan to including, but not limited to the following:</p> <ul style="list-style-type: none"> • Heating and cooling temperatures for occupied academic and research buildings • Heating and cooling temperatures during unoccupied periods • Building shut down schedules during periods when classes are not in session or during low enrollment periods • Maintenance of HVAC and lighting systems • Electric load shedding priorities and procedures to meet Emergency • Demand Reduction Program requirements (15% for State facilities) • Campus strategies for incorporating sustainability and energy conservation into capital planning • On-campus marketing plan to encourage student and staff involvement in sustainability 	<ul style="list-style-type: none"> • March 2008, campus plans submitted to System Administration 	<ul style="list-style-type: none"> • Effort primarily supported by funds available for costs of energy coordinators and task force activities • \$750,000 estimated additional cost on-campus marketing plans, including cost of student “Energy Sustainability Intern” positions at each campus and production of on-campus communications materials; \$25,000 average cost per campus
<p><u>Campus Metering Plans.</u> Establish campus metering plan to measure building-specific energy use</p>	<ul style="list-style-type: none"> • January 2008, issue RFP • February 2008, begin survey of building electric meters • April 2008, design metering system • June 2008, install metering equipment 	<ul style="list-style-type: none"> • \$14.8 million capital cost

**STATE UNIVERSITY OF NEW YORK
Energy Conservation And Sustainability Implementation Plan**

DRAFT

<p><u>Energy Management and Budgeting System Upgrade.</u> System Administration (Energy Office) will develop web-based tool to facilitate campus reporting of energy consumption and expenditure data</p>	<ul style="list-style-type: none"> • December 2007, issue RFP • February 2008, select vendor • June 2008, project complete 	<ul style="list-style-type: none"> • \$200,000 one-time cost; \$100,000 recurring license/maintenance costs (System Administration)
<p><u>Training and Best Practices.</u> System Administration will establish modalities for ensuring that expertise and best practices are disseminated to all SUNY campuses, and opportunities are created for externally funded projects with multi-campus participation</p>	<ul style="list-style-type: none"> • Hold annual sustainability conference • Publish quarterly newsletter on sustainability and best practices 	<ul style="list-style-type: none"> • \$10,000 annual cost • \$24,000 annual cost

**STATE UNIVERSITY OF NEW YORK
Energy Conservation And Sustainability Implementation Plan**

DRAFT

Conservation and Sustainability Capital Projects		
<p><u>Identify and execute energy performance capital projects to increase building efficiency and reduce consumption</u></p>	<ul style="list-style-type: none"> • April 2008, start campus audits to identify energy conservation and sustainability projects • July 2008, review audit results and select measures to be implemented • August 2008 through February 2009, design of energy conservation projects • August 2008 through August 2009, start construction/ implementation • June 2012, construction complete <p>NOTE: Currently working with DASNY on pilot program for financing energy performance contracts, which could accelerate certain campus projects in this timeframe</p>	<ul style="list-style-type: none"> • \$250 million estimated capital costs financed by savings, includes \$3 million for campus project management costs, which are assumed to be capital-eligible (\$100,000 average per campus—annual cost for 3-year project construction cycle)

STATE UNIVERSITY OF NEW YORK
Energy Conservation And Sustainability Implementation Plan

DRAFT

GOAL #2: Cap Greenhouse gas emissions at current levels and reduce emissions 20% by 2014.		
ACTIONS	TIMELINE	COST
<u>Measure, Cap and Reduce Emissions.</u> System Administration to commission study that will identify methods to measure, cap and reduce greenhouse gas emissions	<ul style="list-style-type: none"> • April 2008, award University-wide engineering study to identify methods and a strategy to meet reduction goals • September 2008, complete study and begin detailed planning • November 2008, identify projects and develop budgets 	<ul style="list-style-type: none"> • \$150,000 estimated one-time cost of study • TBD cost of capital projects resulting from study • Two carbon sequestering projects \$20 million
GOAL #3: Increase use of renewable electricity (total of purchased and on-site generated) to 30% of total consumption by 2014		
ACTIONS	TIMELINE	COST
<u>Increase Renewable On-Site Generated Electricity.</u> <ul style="list-style-type: none"> • Install photo voltaic arrays on each campus • Install methane digesters and generators at three campuses • Install bio-diesel combined heat & power project SUNY Morrisville (4mw) • Install wind turbines on campuses (10x100 kw) • Install fuel cells at campuses (5x250 kw) 	For all projects: <ul style="list-style-type: none"> • April 2008, begin design • December 2008, bid projects • February 2009, award contracts • December 2012 complete projects 	<ul style="list-style-type: none"> • Photo Voltaic Arrays: \$11.8 million capital cost • Fuel Cell projects \$10.9 million • Wind Turbines \$2.6 million • Geothermal heat pumps for new buildings \$10 million

STATE UNIVERSITY OF NEW YORK
Energy Conservation And Sustainability Implementation Plan

DRAFT

<p><u>Increase Purchased Renewable Electricity.</u> Procure renewable electricity to supplement quantity generated on campuses.</p>	<ul style="list-style-type: none"> • October 2007, release bid package for renewable electricity credits • October 2007, open bids and select supplier • November 2007, buy credits for 2006-07 and 2007-08 • April 2008, bid renewable electricity credits for 2008-09 and 2009-10. For 2009-10, increase quantity of credits to 20% of electricity used 	<ul style="list-style-type: none"> • 2007-08 costs estimated at \$ 2.1 million • 2008-09, estimated at \$1,000,000 • Costs for 2009-10 and thereafter market dependent quantity needed doubles
<p>GOAL #4: <i>Increase use of bio-diesel to 10% of total motor fuel usage by 2008.</i></p>		
<p style="text-align: center;">ACTIONS</p>	<p style="text-align: center;">TIMELINE</p>	<p style="text-align: center;">COST</p>
<p><u>Purchase bio-diesel</u></p>	<ul style="list-style-type: none"> • September 2007, begin purchasing 	<ul style="list-style-type: none"> • 2007-08 costs estimated at \$450,000 • E-85 Tanks and pumps \$3.1 million
<p>GOAL #5: <i>Increase use of bio heating oil to 10% of total #2 Oil usage by 2010.</i></p>		
<p style="text-align: center;">ACTIONS</p>	<p style="text-align: center;">TIMELINE</p>	<p style="text-align: center;">COST</p>
<p><u>Purchase bio heating oil</u></p>	<ul style="list-style-type: none"> • October 2007, begin purchasing at 5% usage • July 2009, being purchasing at 10% usage 	<ul style="list-style-type: none"> • 2007-08 and 2008-09 annual cost estimated at \$320,000 • 2009-10 annual cost estimated at \$520,000
<p>GOAL #6: <i>Develop five new combined heat and power (CHP) projects by 2010.</i></p>		
<p style="text-align: center;">ACTIONS</p>	<p style="text-align: center;">TIMELINE</p>	<p style="text-align: center;">COST</p>
<p><u>Campus Evaluation, Design and Construction.</u> System Administration will work with campuses to evaluate sites, technology and fuels for combined heat and power projects. Once sites are selected projects will be designed and constructed.</p>	<ul style="list-style-type: none"> • November 2007, conduct survey of campus year-round thermal usage to determine prospects for large and small CHP sites • January 2008, review survey results and select campuses for projects • February 2008, begin design of CHP projects 	<ul style="list-style-type: none"> • Estimated cost of survey, \$125,000 • \$131 million, estimated capital costs for five projects • Methane Digesters: \$6 million capital cost • Bio-Diesel CHP: \$9.5 million capital cost

**STATE UNIVERSITY OF NEW YORK
Energy Conservation And Sustainability Implementation Plan**

DRAFT

GOAL #7: <i>Design new buildings and rehab existing ones in accordance with the Leadership in Energy and Environmental Design (LEED) silver rating or higher.</i>		
ACTIONS	TIMELINE	COST
<p>Work with State University Construction Fund and DASNY to incorporate sustainability in SUNY educational facilities and residence hall projects</p>	<ul style="list-style-type: none"> • June 2007, review design manual instructions for consultant architects and engineers • November 2007, publish any needed changes to design manuals to ensure LEED Silver standard <p>NOTE: SUNY is currently working with the Governor’s Office, DASNY and DOB on a “Green Buildings” capital program that would fund the gap between status quo design standards and LEED Silver.</p>	<p>Achieving LEED Silver standards for construction is estimated to add up to a 5% cost premium to projects. Currently, there are \$1.4 billion of educational facilities projects in design and \$264 million of residence hall facilities in design. The estimated LEED Silver premium for these projects would be \$83 million.</p>

STATE UNIVERSITY OF NEW YORK
Energy Conservation And Sustainability Implementation Plan

DRAFT

GOAL #8: <i>Procure energy and fuel at competitive prices while managing price risk in accordance with a prudent, clearly defined, and documented University Risk Management Policy that utilizes financially sound market-based products.</i>		
ACTIONS	TIMELINE	COST
<ul style="list-style-type: none"> • Continue centralized bidding of natural gas supplies • Continue to support wholesale electricity purchases from NYS ISO by SUNY Energy Buying Group • Begin risk management planning 	<ul style="list-style-type: none"> • November 2007, form Risk Management Committee • December 2007, release RFP for Risk Management Services • December 2007, establish Risk Management Policy • January 2008, award Risk Management contract 	<ul style="list-style-type: none"> • \$100,000, annual operating cost of gas procurement currently supported by recharges to participating campuses • \$250,000, annual operating cost of wholesale electricity procurement currently supported by recharges to participating campuses. • First-year costs of Risk Management Services estimated to be \$500,000 (primarily consulting).
GOAL #9: <i>Take a proactive role in rate cases before the New York State Public Service Commission and the Federal Energy Regulatory Commission to protect the University's interests.</i>		
Continue membership in Multiple Intervenor		Annual costs \$100,000 currently supported by recharges to beneficiary campuses