SUNY Clean Energy Partnership Program

October 15, 2012

Potsdam
THE STATE UNIVERSITY OF NEW YORK

State University of New York
CLINTON
Community College
Executive Summary - Describe the new or expanded academic, public service or research scope that is the central theme of this proposed project – 2 pages

SUNY Canton, SUNY Potsdam and Clinton Community College (CCC) have come together to create the **SUNY Clean Energy Partnership Program** as part of SUNY’s 2020 Challenge Grant. This strategic partnership will combine a wind turbine at SUNY Canton with supporting academic programs and collaborative efforts at all three institutions. The Program is one that could be replicated statewide by delivering clean and renewable wind energy on a localized scale to public institutions across the State of New York.

The Program will center on a 1.5 megawatt wind turbine to be constructed at SUNY Canton. The turbine project was originally part of an initiative developed by the New York Power Authority (NYPA). NYPA had selected SUNY Canton in 2009 as a potential site to develop what it labeled as a “distributed wind power system.” The turbine located at SUNY Canton would create a distributed wind power model, localizing energy generation at the institutional level rather than on the larger electrical “grid.” The turbine has made it through the conceptual stage and is ready to move into phase 1 construction. SUNY Canton also has received financial commitments from both NYPA and National Grid toward the construction of the turbine. SUNY Canton would pay back the costs through energy savings over several years. However, the awarding of a SUNY 2020 grant would cut the payback time nearly in half. Furthermore, this project has the potential to serve as a model to be replicated statewide at various public facilities, such as institutions of higher education, state prisons, and school districts. The energy generated locally would help institutions offset their electrical costs over a period of time.

The Program also will create strategic partnerships between SUNY Canton, SUNY Potsdam, and Clinton Community College (CCC). SUNY Canton already has both Alternative and Renewable Energy Systems (ARES) and Civil and Environmental Engineering Technology bachelor-degree programs, which concentrate research and learning on both renewable energy and sustainable technologies. SUNY Potsdam will contribute to the Program by creating a geographic information systems (GIS) laboratory in the Department of Geology. Through curriculum development, SUNY Potsdam will develop new courses on natural and renewable energy resource allocations for the further development of renewable energy projects. SUNY Potsdam will also pilot a GIS professional certificate, using the new laboratory created with SUNY 2020 funding to train the regional workforce in spatial data management. The certificate is unlike any other being offered in Northern New York and would benefit existing academic programs in Biology, Geology, Environmental Studies, and Anthropology at SUNY Potsdam as well as Civil and Environmental Engineering Technology, ARES, Homeland Security, and Emergency Management at SUNY Canton. CCC, which currently offers an associate’s degree in Wind Energy and Turbine Technology, will greatly benefit from a physical wind turbine located at SUNY Canton to further train students to be certified wind technicians. Students would be able to visit SUNY Canton’s turbine with support from the SUNY 2020 grant. Furthermore, CCC would use SUNY 2020 funding to renovate an alternative energy laboratory on its campus. In addition, SUNY Canton and CCC would develop an articulation agreement, which would allow CCC graduates to enroll directly into SUNY Canton’s ARES program. SUNY Canton and SUNY Potsdam will also explore opportunities for future shared minors related to energy, environment, and sustainability.

The Program is also strongly aligned with the North Country Regional Economic Council’s vision for long-term economic vitality in northern New York. The Program would train wind turbine technicians (CCC), alternative energy and sustainability engineering technologists (SUNY Canton), and professionals with a certificate in GIS spatial data management (SUNY Potsdam). Graduates from any of the programs – as
well as other academic programs that support clear energy systems such as Civil and Environmental Engineering, Geology, and Environmental Studies – will greatly contribute to the economy of Northern New York. Today, two large-scale wind farms exist in Northern New York – Maple Ridge and Noble Chateaugay Windpark. These wind farms are not only contributing to clean energy production in New York State, they are also providing long-term, stable jobs in our region. Training a workforce that is well-versed in sustainable energy systems will help further develop future clean energy projects in the region and help retain an educated and employable workforce.

The **SUNY Clean Energy Partnership Program** would set the stage for similar models of strategic academic and economic partnerships focused on clean energy while also serving as an example for statewide distributed wind power generation systems throughout the State of New York.
Regional Economic Development Vision - Describe how this project will bring together SUNY, the local community and stakeholders in accordance with strategies created by the Regional Economic Development Councils. Provide endorsements from surrounding local governments and community members in support of the plan from authorized endorsing officials – 1 page and Appendices

The North Country Regional Economic Development Council’s Progress Report of 2012 identified placing SUNY Campuses at the center of the State’s Regionally-based economic revitalization strategy in regards to the SUNY 2020 Challenge. They further state that they support initiatives that are collaborative partnerships, leverage external funding, provide broad based student impact, and create job opportunities.

The report further details the objectives of creating the greenest energy economy in the state as well as mobilizing the creativity and capacity of the graduates of our outstanding institutions of higher education. Within the region, there are 10 universities and colleges. This proposal engages 30 percent of those institutions in further expanding their students’ hands-on learning experience with the latest in wind technology and associated technologies. The result will be better qualified employees in significant demand by employers.

Jobs related to wind power are a potential source of new employment opportunities. Renewable energy is a key piece of the “green economy,” and wind power is the fastest growing sector of renewable energy. The North Country Regional Economic Development Council outlines in their vision the need for workforce development, clean energy, and opportunities to attract and retain new business. The proposed program would train a workforce, provide clean energy for use by SUNY Canton and potentially attract wind technology business to the area from the United States and Canada. The SUNY Canton turbine will be used as a model of implementing renewable energy sources as well as being a dynamic instructional tool.

Wind power is present in the North Country with two large-scale wind farms – Maple Ridge and Noble Chateaugay Windpark. These wind farms are not only contributing to clean energy production in New York State, they are also providing long-term, stable jobs in our region. Training a workforce that is well-versed in sustainable energy systems will help further develop future clean energy projects in the region and help retain an educated and employable workforce.

The initiatives outlined in this proposal flow directly from the strategies developed by the North Country Regional Economic Development Council, as outlined in its report: (http://regionalcouncils.ny.gov/themes/nyopenrc/rc-files/northcountry/northcountry_2012progressreport.pdf)

The Program is strongly aligned with the North Country Regional Economic Council’s vision for long-term economic vitality in northern New York. The SUNY Clean Energy Partnership Program has received the endorsement of the Regional Economic Council, which pledged to collaborate with the stakeholders in implementing the project if funded.

The Program would train wind turbine technicians, alternative energy and sustainability engineering technologists, and professionals with a certificate in GIS spatial data management. Graduates from any of the programs – as well as other academic programs that support clear energy systems such as Civil and Environmental Engineering, Geology, and Environmental Studies – will greatly contribute to the economy of Northern New York.
**Economic Impact** - Describe the long term economic impact of the project inclusive of job creation. Each application should have a specific, measureable job development objective beyond the immediate jobs created by the construction, renovation and maintenance of the facility – 1 page

The Workforce Development strategy lies at the core of the Program. Wind is the fastest growing energy source in the United States. In 2007, wind energy production increased by 21 percent, and a recent report by the U.S. Department of Energy suggests that it could contribute 20 percent of the Nation’s electricity by 2030. Although Bureau of Labor Statistics does not collect data specifically on wind energy employment, the American Solar Energy Society estimates that in 2006, there were 16,000 jobs in wind turbine construction and maintenance. These jobs were once confined to a few States that were early promoters of renewable energy, but wind farms—a group of wind turbines connected to a central utility—now operate in 34 States across the country.

The demand for persons trained in the Science, Technology, Engineering, and Math (STEM) disciplines is well known and has been the object of many other initiatives, including most recently a $2.95 million NSF grant to SUNY to improve the STEM pipeline. The North Country has an especially great need for a highly trained workforce, given the recent decline in industrial production. This proposal seeks to improve the training opportunities in precisely the fields generally seen as most conducive to economic growth in the region. Through collaboration, SUNY Canton, SUNY Potsdam, and Clinton Community College can produce highly skilled employees ready to join this vibrant industry.


**Academic Excellence & Student Success** - Describe the impact on students. It should aim to be comprehensive and inclusive – 2 pages

Academic excellence and student success lies at the very heart of the three academic institutions outlined here. SUNY Canton, SUNY Potsdam, and Clinton Community College pride themselves on their student-centered atmosphere. In particular both SUNY Canton and Clinton Community College are dedicated to offering high quality technical programs to give graduates access to good paying jobs. SUNY Potsdam has had a guiding philosophy of handcrafted education: an orientation among faculty members and college staff to assist and nurture students to a successful completion for their educational goals.

As noted earlier, all three colleges have a long rooted history with providing educational opportunities in the sciences and technology but bringing them together adds several new dynamics that increases their individual impact exponentially. Together, they open up a network of collaboration and opportunity for their students. *The SUNY Clean Energy Partnership Program* combined with natural and economic resources of eastern and western Northern New York expands internship opportunities, industry networking, and most significantly access to the most recent technology to students.

One of the key strategies in the Program is the strategic partnership proposed between SUNY Canton, SUNY Potsdam and Clinton Community College. The Program would link to the existing curricula of the three institutions involved:

- **SUNY Potsdam**: Biology, Geology, Environmental Studies, and Anthropology
- **Clinton Community College**: Wind Energy and Turbine Technology

If funded, the Program could provide a catalyst for strengthening the ties between SUNY Potsdam’s School of Arts and Sciences and SUNY Canton’s Canino School of Engineering. Funding of the turbine project would provide the ultimate hands-on laboratory for students interested in renewable energy, sustainable growth, and environmental concerns. The Program combines the strengths of our institutions to provide our students with the interdisciplinary skillset that they will need to fully understand the technical, scientific, and environmental policy issues associated with diversifying our energy needs. Specifically, we envision the following collaborative efforts:

Expansion of the shared minor concept and pilot projects. Possibility for academic collaboration include the SUNY Potsdam students (from Geology, Environmental Studies, Economics, etc.) earning a minor in Renewable and Alternative Energy by taking classes at SUNY Canton and SUNY Canton students (from
Alternative and Renewable Energy Systems and Civil and Environmental Engineering programs) earning a minor in Environmental Studies by taking classes at SUNY Potsdam.

Development of new courses to serve the natural sciences and engineering. Construction of the turbine would allow the schools to offer a variety of introductory and or upper level classes that focus on conventional and renewable energy resources. We could combine existing strengths in conventional energy (coal, oil, nuclear) at SUNY Potsdam (Geology Department) with those in renewable resources at SUNY Canton (Alternative and Renewable Energy Systems). Introductory classes could give incoming students exposure to science and engineering in a way that is not presently possible at either institution; advanced upper-level courses that explore these topics in more detail and could count as upper-level electives in related programs.

A pilot study to assess the feasibility of a Geographic Information Systems (GIS) Certificate built around alternative energy, environmental impacts, and sustainability. A geographic information system is software that allows users to analyze and interpret spatial data and to explore the complex relationships between geographical, environmental, societal, and infrastructure-based datasets. GIS technology supports and underlies our search for cleaner, more responsible means of energy production, transmission, and distribution (http://www.esri.com/library/bestpractices/renewable-energy.pdf). Although both schools offer 300-level courses that introduce students to the capability of the software, neither school presently offers more advanced courses in GIS analysis and problem solving. SUNY Potsdam School of Arts and Sciences wishes to develop upper-level courses (seats could be reserved for SUNY Canton students) that would use the turbine as a springboard for GIS analysis of the complex issues surrounding renewable energy and environmental planning. This certificate would be unlike anything presently offered by the four colleges in the Potsdam-Canton area and would benefit existing programs in Biology, Geology, Environmental Studies, and Anthropology at SUNY Potsdam and programs in Civil and Environmental Engineering Technology, Alternative and Renewable Energy Systems, Homeland Security, and Emergency Management at SUNY Canton.

The articulation agreement between Clinton Community College and SUNY Canton enhances their students’ career prospects by making a smooth transition into a four year degree program. Clinton Community College is highly regarded in renewable technology training. Their labs are state of the art and their faculty are highly accomplished with the goal of providing for their students with the best training. A partnership between SUNY Canton and CCC would be a rewarding addition to students at both colleges.

The resulting partnership of the three colleges will create an educational center for clean energy technicians, engineers, and scientists will attract the attention and support of the renewable energy industry. The potential for significant research opportunities is present. Our region’s natural resources provide us with immense opportunity to educate our next generation of clean energy professionals who will lead New State into the future.
Partnerships - Describe strategic partnerships aimed to increase academic, research and economic benefits – 1 page

The SUNY Clean Energy Partnership Program will depend on partnerships between SUNY Canton, SUNY Potsdam and Clinton Community College. The partners involved will take advantage of the wind turbine situated at SUNY Canton; the partners will share faculty resources related to clean energy technologies; and the partners will create new programs and pathways to ensure students have the resources of all three institutions at their disposal. In addition to the academic partnerships, the Program will also develop strategic private-public partnerships between multiple entities, including SUNY, the New York Power Authority, National Grid, and the New York State Energy Research Development Authority.

As outlined in our Executive Summary, SUNY Canton already has both an Alternative and Renewable Energy Systems (ARES) and Civil and Environmental Engineering Technology bachelor-degree programs, which concentrate research and learning on both renewable energy and sustainable technologies. SUNY Potsdam will contribute to the Program by creating a geographic information systems (GIS) laboratory in the Department of Geology. Through curriculum development, SUNY Potsdam will develop new courses on natural and renewable energy resource allocations for the further development of renewable energy projects. SUNY Potsdam will also pilot a GIS professional certificate, using the new laboratory created with SUNY 2020 funding to train the regional workforce in spatial data management. The certificate is unlike any other being offered in Northern New York and would benefit existing academic programs in Biology, Geology, Environmental Studies, and Anthropology at SUNY Potsdam as well as Civil and Environmental Engineering Technology, ARES, Homeland Security, and Emergency Management at SUNY Canton.

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In addition, SUNY Canton and CCC would develop an articulation agreement, which would allow CCC graduates to enroll directly into SUNY Canton’s ARES program. SUNY Canton and SUNY Potsdam will also explore opportunities for future shared minors related to energy, environment, and sustainability.
In tandem with SUNY’s strategic plan, the 6 Big Ideas, this program brings together not only institutions of higher education but creates a model for the private-public partnerships. The three colleges combining with NYPA, NYSERDA and National Grid are creating a highly trained workforce that will drive further the green economy of the North Country.

Specifically, the program meets the **Entrepreneurial Century** goal by merging the academic strengths of three North Country institutions to develop new programming and enhance existing programming dedicated to the understanding and further development of clean and renewable energy.

The use of wind power as a primary source for campus needs addresses the **Energy Smart New York** initiative by delivering an alternative energy system at a SUNY institution, while committing intellectual resources to the quest for further energy solutions. In addition, the US Department of Energy predicts that wind power can supply 20 percent of the nation’s electricity by 2030. In the process, wind energy may reduce projected CO$_2$ gas (greenhouse gas) by 25 percent. We anticipate the energy savings will be used to increase academics with focus on STEM programs.

The Program also contributes to the **Seamless Education Pipeline** by providing a laddered approach for students graduating from CCC’s associate degree program to enter SUNY Canton’s bachelor degree program. It also provides SUNY Canton students and SUNY Potsdam students the opportunity to draw upon the academic resources of both institutions in shared minors.
**Collaboration** - Describe the qualifications and roles for each member of the collaborative team. Partners could include individuals from SUNY State Operated, Community Colleges and Statutory Colleges, other state agencies, other colleges/universities, corporations and research institutions. Include letters of commitment from these entities from an authorized endorsing official – 1 page and Appendices

**The SUNY Clean Energy Partnership Program** consists of the academic leadership of the three partners and faculty members within the curricula of Biology, Geology, Environmental Studies, and Anthropology, Civil and Environmental Engineering Technology, Alternative and Renewable Energy Systems, Homeland Security, Emergency Management, and Wind Energy and Turbine Technology. In addition, the New York Power Authority, NYSERDA, and National Grid have endorsed this Program.

**The SUNY Clean Energy Partnership Team:**
Carli Schiffner, Interim President, SUNY Canton
John Schwaller, President, SUNY Potsdam
John E. Jablonski, President, Clinton Community College
Karen Spellacy, Interim Provost, SUNY Canton
Margaret Madden, Provost, SUNY Potsdam
Cheryl A. Reagan, Vice President for Academic Affairs, Clinton Community College
Natalie Higley, CFO, SUNY Potsdam and Canton
David Gerlach, Vice President for Advancement, SUNY Canton
David Wells, Dean, Canino School of Engineering Technology, SUNY Canton
Steve Marqusee, Dean of Arts and Sciences, SUNY Potsdam
Michael Newtown, Assistant Dean, Canino School of Engineering Technology, SUNY Canton
Angela Barnaby, Technology Department Chair, Clinton Community College
Michael C. Rygel, Associate Professor, SUNY Potsdam
MWBE - Describe how the project will help drive the achievement of the SUNY and State MWBE goals. How does this differ from current practice? – 1 page

It is the policy and practice of SUNY Canton, SUNY Potsdam and Clinton Community College to actively seek out and utilize whenever possible, minority and women-owned business enterprises. All partners involved will take measures to ensure that affirmative action is upheld through the competitive bidding process for both design and construction of the wind turbine as well as the laboratories at SUNY Potsdam and Clinton Community College.
**Implementation** - Describe the plan’s implementation timeline including expansion plans, faculty hires, property to be purchased or renovated and equipment to be purchased – 1 page

**SUNY Canton Wind Turbine Construction Timeline**

<table>
<thead>
<tr>
<th>ID</th>
<th>Task Name</th>
<th>Duration</th>
<th>Start</th>
<th>Finish</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SUNY Canton Windmill</td>
<td>413 days</td>
<td>Thu 11/1/12</td>
<td>Mon 6/2/14</td>
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<tr>
<td>2</td>
<td>Contact Execution</td>
<td>10 days</td>
<td>Thu 11/1/12</td>
<td>Wed 11/14/12</td>
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<tr>
<td>3</td>
<td>Phase 1</td>
<td>215 days</td>
<td>Mon 11/19/12</td>
<td>Fri 9/13/13</td>
</tr>
<tr>
<td>4</td>
<td>Site Assessment</td>
<td>30 days</td>
<td>Mon 11/19/12</td>
<td>Fri 12/8/12</td>
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<td>5</td>
<td>30% Design Submittal</td>
<td>20 days</td>
<td>Mon 12/31/12</td>
<td>Fri 1/25/13</td>
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<tr>
<td>6</td>
<td>60% Design Submittal</td>
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<td>Mon 1/28/13</td>
<td>Fri 2/22/13</td>
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<td>7</td>
<td>Final Design Submittal</td>
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<td>Mon 2/25/13</td>
<td>Fri 5/17/13</td>
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<td>8</td>
<td>Permitting</td>
<td>60 days</td>
<td>Mon 5/20/13</td>
<td>Fri 8/9/13</td>
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<td>9</td>
<td>Interconnection Application</td>
<td>20 days</td>
<td>Mon 2/25/13</td>
<td>Fri 3/22/13</td>
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<tr>
<td>10</td>
<td>CESIR - Utility impact study (Others)</td>
<td>100 days</td>
<td>Mon 3/25/13</td>
<td>Fri 8/9/13</td>
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<td>Building Permit</td>
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<td>Mon 8/12/13</td>
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<td>12</td>
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<td>Mon 6/2/14</td>
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<td>13</td>
<td>Secure Site-Mobilize</td>
<td>10 days</td>
<td>Mon 8/12/13</td>
<td>Fri 8/23/13</td>
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<td>14</td>
<td>Procure Turbine</td>
<td>120 days</td>
<td>Mon 8/12/13</td>
<td>Fri 1/24/13</td>
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<td>15</td>
<td>Construct Road</td>
<td>30 days</td>
<td>Mon 8/26/13</td>
<td>Fri 10/4/13</td>
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<td>16</td>
<td>Construct Foundation</td>
<td>20 days</td>
<td>Mon 8/26/13</td>
<td>Fri 9/20/13</td>
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<td>Underground Electrical</td>
<td>20 days</td>
<td>Mon 8/12/13</td>
<td>Fri 11/1/13</td>
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<td>18</td>
<td>Utility Upgrades (Others)</td>
<td>40 days</td>
<td>Mon 8/12/13</td>
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<td>19</td>
<td>Turbine Delivery</td>
<td>20 days</td>
<td>Mon 3/10/14</td>
<td>Fri 4/4/14</td>
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<tr>
<td>20</td>
<td>Turbine Erection</td>
<td>10 days</td>
<td>Mon 4/7/14</td>
<td>Fri 4/18/14</td>
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<tr>
<td>21</td>
<td>Tower Elect/Com</td>
<td>20 days</td>
<td>Mon 4/21/14</td>
<td>Fri 5/16/14</td>
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<td>22</td>
<td>Start Up/Commission</td>
<td>10 days</td>
<td>Mon 5/19/14</td>
<td>Fri 5/30/14</td>
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<tr>
<td>23</td>
<td>Commercial Operation</td>
<td>1 day</td>
<td>Mon 6/2/14</td>
<td>Mon 6/2/14</td>
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</table>

**Academic Timeline:**

<table>
<thead>
<tr>
<th>Completion Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>SUNY Canton and Clinton Community College articulation agreements</td>
</tr>
<tr>
<td>Faculty hires at SUNY Canton and SUNY Potsdam (minors)</td>
</tr>
<tr>
<td>Lab renovation at Clinton Community College, SUNY Canton and SUNY Potsdam</td>
</tr>
<tr>
<td>Equipment and Software Purchases</td>
</tr>
<tr>
<td>SUNY Canton and SUNY Potsdam certificate and minor development</td>
</tr>
<tr>
<td>Faculty hires at Clinton Community College</td>
</tr>
</tbody>
</table>
Leveraging Funding - Provide a budget and budget justification describing costs requested under this program and matching funds put forth by the project partners or other sources – 1 page

New York SUNY 2020
Round 2 Challenge Grant
NYPA, SUNY Canton, SUNY Potsdam, SUNY Clinton Community College
Distributed Wind Energy Consortium

6 year plan

<table>
<thead>
<tr>
<th></th>
<th>Budget</th>
<th>Cost Share</th>
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<tbody>
<tr>
<td>SUNY Canton/NYPA Distributed Wind Power System</td>
<td>$3,000,000</td>
<td>$5,083,500</td>
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</table>

Strategic Partnerships and Collaborations

<table>
<thead>
<tr>
<th></th>
<th>Budget</th>
<th>Cost Share</th>
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<tbody>
<tr>
<td>SUNY Clinton Community College</td>
<td>$1,781,084</td>
<td>$705,908</td>
</tr>
<tr>
<td>SUNY Potsdam</td>
<td>$458,192</td>
<td>$300,000</td>
</tr>
<tr>
<td>SUNY Canton</td>
<td>$1,107,564</td>
<td>$1,028,000</td>
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</table>

**TOTAL COST**

|                                | $6,346,840 | $9,389,773 |

**Budget Narrative:**

The **SUNY Clean Energy Partnership Program** is a three year implementation and budget plan. A detailed budget is included in the appendices. The budget includes a project coordinator hired by SUNY Canton and will include fringe and benefits. The breakdown is as follows:

Clinton Community College will include the renovation of a laboratory which includes construction, upgrades to equipment, and an additional faculty. The cost share contribution includes TAACCCT grant, exciting equipment, Perkins grant, and staff time.

SUNY Potsdam will develop a minor in Environmental Studies and renovate space to create a GIS lab. In addition, a new faculty member will be hired. Cost share will be classroom and lab space.

SUNY Canton will also be developing a minor for SUNY Potsdam students in ARES. Lab space will be renovated and new courses will be developed. A new faculty member and one project coordinator will be hired. Cost share centers on the ongoing growth of the Center for Renewable Energy and Sustainable Technologies grant work.
APPENDICES

- Detailed Budget
- Letters of Support
- Call to Action
- Executive Order 111
### SUNY Canton/NYPA Distributed Wind Power System

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost Share</th>
<th>Budget</th>
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<tbody>
<tr>
<td>Off set - original payback is 16 years for turbine - reduction of 50%</td>
<td>$4,961,612</td>
<td>$3,000,000</td>
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<tr>
<td>Cost of wind turbine and its installation</td>
<td>$500,000</td>
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<tr>
<td>NYPA Grant</td>
<td>$744,253</td>
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<td>NYPA Project Management</td>
<td>$400,000</td>
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<tr>
<td>NYSERDA Customer-Sited Wind Turbine Incentive (PON 2097)*</td>
<td>$750,000</td>
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<tr>
<td>National Grid Renewable Energy and Economic Development incentive*</td>
<td></td>
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**Subtotal**                                                                  | $7,355,865   | $3,000,000|

### Strategic Partnerships and Collaborations

**SUNY Clinton Community College**

<table>
<thead>
<tr>
<th>Description</th>
<th>Cost Share</th>
<th>Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scholarships for CCC Transfer students into ARES 4 year program</td>
<td>$262,540</td>
<td>$420,000</td>
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<tr>
<td>Renovation of Alternative Energy Lab</td>
<td>$63,006</td>
<td>$650,000</td>
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<tr>
<td>TAACCCT grant</td>
<td>$262,540</td>
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<tr>
<td>Existing equipment</td>
<td>$311,362</td>
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<tr>
<td>Perkins</td>
<td>$63,006</td>
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<tr>
<td>Staff time</td>
<td>$69,000</td>
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<tr>
<td>Hire New Faculty ($40,000 x 6 years)</td>
<td>$240,000</td>
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<tr>
<td>Fringe Benefits for new faculty ($40,000/year x State rates)</td>
<td>$132,032</td>
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<tr>
<td>Training workshops at SUNY Canton</td>
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<tr>
<td>Transportation (4 per year x 4 years x $2000)</td>
<td>$32,000</td>
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<tr>
<td>Lodging (80 students per year = 20 rooms x $100 x 3 nights x 4 years)</td>
<td>$24,000</td>
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<tr>
<td>Meals (80 students x government per diem $56 x 4 days x 4 years)</td>
<td>$71,680</td>
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<td>Training materials</td>
<td>$60,000</td>
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</tr>
<tr>
<td>Wind Tech Safety &amp; HYTORC cert course at SUNY Canton Workshop (2/year x 4 x $5,000)</td>
<td>$60,000</td>
<td></td>
</tr>
<tr>
<td>Wind Tech Safety &amp; HYTORC non-credit cert course for CCC students</td>
<td>$72,000</td>
<td></td>
</tr>
<tr>
<td>Wind Tech Safety &amp; HYTORC Workforce Training (20 per year x $225 x 4 years)</td>
<td>$18,000</td>
<td></td>
</tr>
<tr>
<td>Transportation Costs for faculty meetings at SUNY Canton (206 miles rt x .555/mile x2 x6)</td>
<td>$1,372</td>
<td></td>
</tr>
</tbody>
</table>

**Subtotal**                                                                  | $705,908     | $1,781,084|
**SUNY Canton**

Student transportation to SUNY Canton/SUNY Potsdam students - Minibus lease with maintenance  
\[ \text{Cost} = 56,400 \]

Student Transportation Driver ($25,000 x 4 years)  
\[ \text{Cost} = 100,000 \]

Driver fringe benefits ($25,000 x 4 x State Rate)  
\[ \text{Cost} = 80,000 \]

Lab Renovation/Equipment  
\[ \text{Cost} = 600,000 \]

Faculty member ($55,000 x 4 years)  
\[ \text{Cost} = 220,000 \]

Fringe benefit ($55,000 x 4 years x State Rate)  
\[ \text{Cost} = 124,344 \]

Development of minor - faculty release time($800/credit hour/semster x 4)  
\[ \text{Cost} = 12,800 \]

Web based computer simulation and monitoring  
\[ \text{Cost} = 30,000 \]

Laptop lab for simulation (25 laptops, blue print printer, smart cart)  
\[ \text{Cost} = 32,000 \]

Small wind turbine with installation  
\[ \text{Cost} = 75,000 \]

MET tower and equipment  
\[ \text{Cost} = 200,000 \]

Tower climbing simulation equipment  
\[ \text{Cost} = 100,000 \]

Project coordinator ($40,000 x 6 years)  
\[ \text{Cost} = 240,000 \]

Project coordinator fringe benefits ($40,000 x 6 years x State Rate)  
\[ \text{Cost} = 135,648 \]

Classroom space (2 rooms x 800 sq. ft. x $20/sq. ft. x 4 years)  
\[ \text{Cost} = 128,000 \]

Transportation Costs for faculty meetings at SUNY Canton (206 miles rt x .555/mile x 2 x 6)  
\[ \text{Cost} = 1,372 \]

**Subtotal**  
\[ \text{Cost} = 1,107,564 \]


**SUNY Potsdam**

Development of minor - faculty release time($800/credit hour/semster x 4)  
\[ \text{Cost} = 12,800 \]

Fringe Benefits for Release time (4800/credit hours/semester x 4 x State rates)  
\[ \text{Cost} = 6,656 \]

Wind Tech Safety & HYTORC SUNY Potsdam students taking cert course at SUNY Canton (10/year x $225 x 4 years)  
\[ \text{Cost} = 9,000 \]

GIS Lab Equipment (24 HD displays with computer workstations x $2,000)  
\[ \text{Cost} = 48,000 \]

Renovation for GIS Lab  
\[ \text{Cost} = 100,000 \]

Faculty member - GIS Instructor (new hire) $45,000/year for 4 years  
\[ \text{Cost} = 180,000 \]

Fringe Benefits GIS for Release time ($45,000 x 4 x State rates)  
\[ \text{Cost} = 101,736 \]

Classroom/lab space (2 rooms 1875 sq. ft. x $20/sq. ft x 4 years)  
\[ \text{Cost} = 300,000 \]

**Subtotal**  
\[ \text{Cost} = 458,192 \]

**TOTAL COST**  
\[ \text{Cost} = 6,346,840 \]

\[ \text{Cost} = 9,389,773 \]

* pending final approval
October 11, 2012  
Brian Hutzley, Vice Chancellor & CFO  
SUNY System Administration  
State University Plaza  
353 Broadway  
Albany, NY 12246  

Re: Letter of Commitment for SUNY Canton Wind Project  

Dear Mr. Hutzley,

The New York Power Authority (NYPA) is pleased to provide this letter of commitment for the State University of New York (SUNY) Canton Wind Project which is applying for a program grant from SUNY 2020.

NYPA is working with SUNY Canton to develop a distributed wind generation project. The wind project will involve the installation of a MW scale wind turbine at the SUNY Canton campus to generate wind energy in a net metered configuration. This is first of its kind large scale distributed wind project at a SUNY Campus. NYPA believes that the success of the project will bring a multitude of benefits to SUNY Canton, wind industry and the State of New York. This project will not only encourage the growth of green jobs in this region, but will also provide valuable educational opportunities to augment SUNY Canton’s existing bachelor’s degree program in “Alternative and Renewable Energy Systems”. In addition, we believe that the project will provide critical insight into how to best develop distributed wind generation projects, especially on the public entity’s land where tax incentives cannot be applied. The project will serve as a model for universities and other facilities nationwide, which have a reasonable wind resource and are looking for best practices in installing wind turbines.

NYPA is a non-profit public benefit corporation and the nation’s largest state-owned power organization, supplying approximately 20 percent of the electricity for New York State. NYPA is also a national leader in promoting energy efficiency and the development of clean energy technologies. NYPA is committing to provide $500,000 in project funding to be used towards the cost of the wind turbine and its installation.

In conclusion, NYPA is looking forward to working with SUNY Canton and other partner universities on this exciting project. If you need additional information, please do not hesitate to contact me.

Sincerely,

[Signature]

Guy Sliker  
Director, Clean Energy Technology
October 12, 2012

Dr. Carli Schiffner
Interim President
State University of New York at Canton
34 Cornell Drive
Canton, NY 13617

Dear Interim President Schiffner:

I am pleased to write in support of SUNY Clean Energy Partnership Program as part of the SUNY 2020 challenge grant program.

As the Academic Vice President of an institution that grants a Bachelor of Technology degree in Alternative and Renewable Energy, the presence of a wind turbine on campus affords many possibilities for faculty and students. SUNY Canton will invite SUNY Potsdam and Clinton Community College to develop new curricula focused on energy. SUNY Potsdam’s Department of Geology will contribute to this project by creating a GIS laboratory for spatial data management and through curriculum development to teach renewable energy resource allocations, including natural resource materials needed for construction and transmission of alternative energy systems. Clinton Community College, which currently has an associate’s degree program in Wind Energy and Turbine Technology, will benefit from SUNY Canton’s wind turbine to further train students to be wind technicians. SUNY Canton and Clinton Community College will also work to develop an articulation agreement for students to enroll directly into SUNY Canton’s ARES bachelor-degree program. SUNY Canton and SUNY Potsdam will also explore opportunities for future shared minors related to energy, environment and sustainability.

The uniqueness of this project as a model for distributed localized wind power, rather than “grid” power, builds in academic opportunities not inherent in the simple presence of a wind turbine on campus. While the presence of the tower and what it accomplishes for energy focused technology programs cannot be discounted, the project offers a wider range of academic opportunities. The potential for faculty and students in areas of business, finance and marketing to view the model of power distribution rather than energy generation as a potential target for research exists.

SUNY Canton’s proposal highlights several of SUNY’s “Six Big Ideas,” including Entrepreneurial Century, Energy Smart New York, and the Seamless Education Pipeline. This initiative also will help SUNY Canton move toward achieving New York Executive Order 111 directing state agencies to be more energy efficient and environmentally aware. Once again, this project could create the potential for other institutions to follow.

Thank you for considering SUNY Canton’s 2020 challenge grant proposal.

Sincerely,

Karen M. Spellacy
Interim Provost and Vice President for Academic Affairs
October 12, 2012

Dr. Carli Schiffner  
Interim President  
State University of New York at Canton  
34 Cornell Drive  
Canton, NY 13617  

Dear Interim President Schiffner:  

I am pleased to write in support of SUNY Canton’s Distributed Wind Power System and Integrated Energy Program as part of the SUNY 2020 challenge grant program.  

Originally an initiative developed by the New York Power Authority (NYPA), this model of distributed wind power localizes energy generation at the institutional level rather than at the larger electrical “grid.”  

This model has the potential to be replicated statewide at various public facilities, such as institutions of higher education, state prisons and school districts. The energy generated locally will help institutions offset electrical costs over a period of time. By locating a 1.5 megawatt wind turbine on its campus, SUNY Canton will serve as a model for statewide distributed wind power generation systems.  

SUNY Potsdam is pleased to cooperate with SUNY Canton and Clinton Community College to develop new curricula focused on energy. SUNY Potsdam’s Department of Geology will contribute to this project by creating a GIS (Geographic Information Systems) laboratory for spatial data management and through curriculum development to teach renewable energy resource allocations, including natural resource materials needed for construction and transmission of alternative energy systems. SUNY Canton and SUNY Potsdam will also explore opportunities for future shared minors related to energy, environmental studies, and sustainability.  

SUNY Canton’s proposal highlights several of SUNY’s “Six Big Ideas,” including Entrepreneurial Century, Energy Smart New York, and the Seamless Education Pipeline. This initiative also will help SUNY Canton move toward achieving New York Executive Order 111 directing state agencies to be more energy efficient and environmentally aware. Once again, this project could create the potential for other institutions to follow. Moreover it will be an important pilot program to explore the utilization of wind energy in the St. Lawrence Valley outside of the immediate river corridor and Thousand Islands.  

We look forward to cooperating with SUNY Canton’s Distributed Wind Power System and support this NY SUNY2020 challenge grant proposal.  

Sincerely,  

[Signature]

John F. Schwallier  
President  
Office of the President  

Phone: (315) 267-2100  
Fax: (315) 267-2496  

44 Pierrepont Avenue  
Potsdam, New York 13676-2294  
www.potsdam.edu
THE STATE UNIVERSITY OF NEW YORK

Potsdam

12 October 2012

To Whom It May Concern:

SUNY Potsdam welcomes the opportunity to explore academic collaborations related to SUNY Canton’s proposal seeking funding for a wind turbine. The foundation of the academic collaboration between SUNY Potsdam and SUNY Canton will be the SUNY Institute for Arts, Sciences, and Technology, an organizational structure that will facilitate academic collaborations between faculty and departments on the two campuses. It will host shared programs, which may range from cross-college minors, where one department offers a minor for students in a department at the other campus, to jointly registered programs farther in the future. This framework will be important to sustain continued exploration of mutually beneficial shared or reciprocal programs made possible by opportunities such as the wind turbine.

We do have some specific ideas about possibilities. For example, SUNY Potsdam students could use the wind turbine in a SUNY Canton-based minor in renewable and alternative energy, which would serve SUNY Potsdam’s geology or environmental studies majors. In exchange, SUNY Potsdam could offer an environmental studies minor that might appeal to SUNY Canton’s students seeking more robust understanding of policy and societal issues related to energy.

The turbine also could be used in courses taught at SUNY Potsdam. SUNY Potsdam’s geology department is interested in creating a lower level class that focuses on energy, including fossil fuels, nuclear, and renewable; the wind turbine could be featured in that course. At the upper level, an advanced course in geological science and renewable energy could be created that would serve students on both campuses.

As the departments and faculty work together on collaborations we are certain that new initiatives will arise. The opportunity to share a resource such as the wind turbine would be valuable to the academic programs at SUNY Potsdam.

Sincerely,

[Signature]

Margaret E. Madden, Provost
and Vice President for Academic Affairs
October 12, 2012

Dr. Carli Schiffner  
Interim President  
State University of New York at Canton  
34 Cornell Drive  
Canton, NY 13617

Dear Interim President Schiffner:

I am pleased to write in support of SUNY Canton’s Distributed Wind Power System and Integrated Energy Program as part of the SUNY 2020 challenge grant program.

Originally an initiative developed by the New York Power Authority (NYP A), this model of distributed wind power localizes energy generation at the institutional level rather than at the larger electrical "grid." This model has the potential to be replicated statewide at various public facilities, such as institutions of higher education, state prisons and school districts. The energy generated locally will help institutions offset electrical costs over a period of time. By locating a 1.5 megawatt wind turbine on its campus, SUNY Canton will serve as a model for statewide distributed wind power generation systems.

SUNY Canton, with its bachelor’s degree program in Alternative and Renewable Energy Systems (ARES), will invite SUNY Potsdam and Clinton Community College to develop new curricula focused on energy. SUNY Potsdam’s Department of Geology will contribute to this project by creating a GIS laboratory for spatial data management and through curriculum development to teach renewable energy resource allocations, including natural resource materials needed for construction and transmission of alternative energy systems. Clinton Community College, which currently has an associate’s degree program in Wind Energy and Turbine Technology, will benefit from SUNY Canton’s wind turbine to further train students to be wind technicians. Clinton Community College offers access to state of the art trainers and the two wind certifications. SUNY Canton and Clinton Community College will also work to develop an articulation agreement for students to enroll directly into SUNY Canton’s ARES bachelor-degree program. SUNY Canton and SUNY Potsdam will also explore opportunities for future shared minors related to energy, environment and sustainability.

SUNY Canton’s proposal highlights several of SUNY’s “Six Big Ideas,” including Entrepreneurial Century, Energy Smart New York, and the Seamless Education Pipeline. This initiative also will help SUNY Canton move toward achieving New York Executive Order 111 directing state agencies to be more energy efficient and environmentally aware. Once again, this project could create the potential for other institutions to follow.

Thank you for considering SUNY Canton’s 2020 challenge grant proposal.

Sincerely,

Cheryl A. Reagan  
Vice President for Academic Affairs  
Clinton Community College
October 12, 2012

Dr. Carli Schiffner
Interim President
State University of New York at Canton
34 Cornell Drive
Canton, NY 13617

Dear Interim President Schiffner:

We are pleased to write in support of the SUNY Clean Energy Partnership Program as part of the SUNY 2020 Challenge Grant.

The Program will center on a 1.5 megawatt wind turbine to be constructed at SUNY Canton. Originally an initiative developed by the New York Power Authority (NYPAP), the turbine will create a distributed wind power model, localizing energy generation at the institutional level rather than on the larger electrical "grid." This model has the potential to be replicated statewide at various public facilities, such as institutions of higher education, state prisons, and school districts. The energy generated locally would help institutions offset their electrical costs over a period of time.

The Program also will create strategic partnerships between SUNY Canton, SUNY Potsdam, and Clinton Community College (CCC). SUNY Canton’s Alternative and Renewable Energy Systems (ARES) bachelor-degree program concentrates research and learning on renewable energy technologies. SUNY Potsdam will contribute to the Program by creating a geographic information systems (GIS) laboratory in the Department of Geology. Through curriculum development, SUNY Potsdam will develop new courses on natural and renewable energy resource allocations. It will also pilot a GIS professional certificate, using the new laboratory to train the regional workforce in spatial data management. CCC, which currently offers an associate’s degree in Wind Energy and Turbine Technology, will benefit from the wind turbine at SUNY Canton to further train students to be certified wind technicians. An articulation agreement will be developed to allow CCC graduates to enroll directly into SUNY Canton’s ARES program. SUNY Canton and SUNY Potsdam will also explore opportunities for future shared minors related to energy, environment, and sustainability.

The Program meets several of SUNY’s “Six Big Ideas,” including Entrepreneurial Century, Energy Smart New York, and Seamless Education Pipeline. The Program is also strongly aligned with the North Country Regional Economic Council’s vision for long-term economic vitality in northern New York and NCREDC’s Cleaner, Greener Communities Initiatives.
The SUNY Clean Energy Partnership Program would set the stage for similar models of strategic academic and economic partnerships focused on clean energy while also serving as an example for statewide distributed wind power generation systems throughout the State of New York.

The North Country Regional Economic Development Council supports SUNY Canton’s proposal and will collaborate with the stakeholders in implementing the project if funded. Please let us know how the Council can help.

Sincerely,

[Signatures]

Garry Douglas
Co-Chair, NCREDC

Anthony Collins
Co-Chair, NCREDC
A CALL TO ACTION

SUSTAINABILITY EDUCATION IN NEW YORK’S COLLEGES AND UNIVERSITIES

The New York State Sustainability Education Working Group

Executive Committee

Sherburne B. Abbott, University Professor of Sustainability Science and Policy, Vice President For Sustainability Initiatives, Syracuse University

Hillary Brown, FAIA, M.Arch., Professor of Architecture, Program Coordinator, Sustainability In The Urban Environment, City College of New York CUNY

Steven Cohen, Ph.D., Professor, Executive Director, Chief Operating Officer, Earth Institute, Columbia University

Gary S. Kleppel, Ph.D., Professor, Director, Biodiversity Conservation and Policy Program, Department of Biological Sciences, University at Albany, SUNY

G. Peter Lederer, Ed.D., Co-Founder, New York State Sustainability Education Working Group, and Sustainability Education Advocate and Activist

Mary Pearl, Ph.D., Associate Dean and Chief Academic Officer, Macaulay Honors College, City University of New York

Susan E. Powers, Ph.D., PE, Spence Professor In Sustainable Environmental Systems, Professor, Department of Civil and Environmental Engineering, Clarkson University

Dennis Showers, Ph.D., Professor, Science Education, School of Education, SUNY Geneseo

September, 2012
BACKGROUND

The New York State Sustainability Education Working Group (SEWG) was formed in the spring of 2011. (See Addendum for Collaborators and Supporters below). The purpose of the Sustainability Education Working Group is to advocate for, and promote, the expansion of sustainability studies in New York's public and private colleges and universities. The Working Group is engaging higher education institutions in a discussion about the need for, and the possible actions to attain, the goal of sustainability literacy for every student who graduates from a school of higher education in New York.

The SEWG was launched as an informal organization, a network of faculty, administrators, and staff, who are committed to the expansion of sustainability education at New York colleges and universities. A more formal structure is envisioned in the near term to attract funding and to project legitimacy and credibility to a wider audience.

At the April 1, 2012 Roundtable at the Syracuse Center of Excellence in Environmental and Energy Systems, 34 experts, Deans, and Program Directors, representing the Working Group, agreed to use a modified "Brundtland" (United Nations) definition of sustainability - that is, the ability to meet the needs of the present without impeding the ability of future generations to meet their needs. Sustainability equally encompasses Economic Viability; Ecological Sustainability; and, Social Justice. The goal of sustainability is to improve human well-being now and into the future, while protecting the life support systems of the planet. To do this, students must understand how social, economic, and ecological systems are integrated and underlie our health, happiness, security, and prosperity.

Sustainability education emphasizes: real world problem-solving; hands-on learning; project-focused instruction; competency-based and inquiry-based learning; inter-disciplinary teaching; critical thinking; and, systems thinking. According to Cornell's Atkinson Center For a Sustainable Future, "Sustainability education transcends individual disciplines, while resting on a foundation of disciplinary understanding."

The New York State Sustainability Education Working Group is a direct response to the challenge set by the 2010 Call To Action from the Association For The Advancement of Sustainability In Higher Education (AASHE), which advocates for the creation of regional centers to serve campuses in their home regions with faculty development and curriculum development workshops, ongoing support for faculty, and other action steps to advance sustainability literacy and education. AASHE cites the critical need for "higher education to provide college and university graduates with the skills, background knowledge, and habits of mind that will prepare them to meet the challenges presented by climate change; loss of biodiversity; a world population of 9 billion in 2020; limited water resources; global health issues; and, extreme poverty."
SHORT-TERM MILESTONES

By the end of the 2013-2014 school year:

1. Every campus in New York State will have a point person identified for sustainability education.

2. Ten percent of all college courses offered in New York will help students understand the interaction between social, environmental, and economic forces, and how to apply that understanding to real-world problems.

3. All New York State private and public Boards of Trustees and Regents will have been offered an opportunity to understand education for sustainability and its relevance and importance.

4. All New York institutions that are signatories to the American College and University Presidents' Climate Commitment will have reviewed the commitments they made to assess their progress and to take remedial action, if it is needed.

5. All New York institutions of higher education will be asked to include sustainability in their strategic documents.

As cited by Second Nature in the 2010 Blueprint for Education For Sustainability, most colleges and universities in the United States do not have sustainability programs. This presents New York's college and university educators and administrators with the opportunity to lead the nation, if we develop sustainability education across the curriculum in every institution in the State. Doing so will mean that New York's college graduates will be better prepared for creating and living in healthier, and more resilient communities.

Achieving universal sustainability literacy for all New York college graduates within the next five years is ambitious. It will require the active participation, consensus, and goodwill of Sustainability Education Working Group members and all parts of the higher education establishment in New York, including faculty, administrators, students, state education officials, the Regents, trustees, and political officeholders such as Governor Cuomo and State Legislators. Thus, the approach for the Sustainability Education Working Group is inclusive, actively persuasive, and collaborative, as we move our recommended agenda forward.

-ii-
RECOMMENDED ACTION STEPS

The Goals of The New York State Sustainability Education Working Group: Ensuring that every graduate of a New York college or university will be literate about how to live sustainably and why it is essential to do so, individually and collectively. And, we are advocating for every New York college and university to "embrace sustainability as a normative goal, transforming their teaching, learning, operations, and community engagement practices in all disciplines and in all departments so they contribute to creating a healthy, just, and sustainable society" in New York and beyond. (Second Nature).

We recommend that the NYS Sustainability Education Working Group seek full engagement across all post-secondary educational campuses in New York State, with faculty, administrators, students, and operations staff represented in each setting. We recommend that faculty and students engage with administrators and staff in using the campus and community as a context for sustainability studies.

Here are our recommended Action Steps to achieve sustainability literacy for all post-secondary students in New York.

1. Create Two Pilot Bioregion Programs As Tools For Expanding Sustainability Education
   a. The inspiration for forming two experimental Bioregions in New York (one upstate, one downstate) comes primarily from a project at Evergreen State College in Washington. The leaders of the Evergreen project, a consortium of colleges and universities, define Bioregions as life places which are characterized by the interrelated natural and social systems upon which humans rely for their well-being. The project is named, "Curriculum For The Bioregion Initiative." The Evergreen led higher education consortium uses the local Bioregion as a platform for building sustainability concepts and principles into and across the undergraduate curriculum. The Bioregion is used as a living laboratory for curriculum and faculty development, for place-based sustainability studies, experiential learning, environmental research, and interaction with local citizens, community organizations, agencies, government entities, and K-12 schools. The consortium works with local people to address environmental and climate change challenges and to ensure the long-term social, cultural, and economic viability of the local bioregion. The Evergreen Consortium says it is merging place, people, and science to educate and to create sustainable solutions.
   b. Sustainability Education Working Group to create a white paper examining the topic of Bioregions in New York, describing the potential benefits, and explaining the potential roles Bioregions can play in advancing the sustainability education agenda.
   c. Sponsoring/Co-Sponsoring workshops focused on the topic of Bioregions
2. Continue & Expand the survey presented by Steven Cohen at the April 1,2012 Roundtable at Syracuse COE, "Sustainability Curriculum Trends Among New York State Institutions of Higher Education," by Alison Miller and Haley Rogers at Columbia University's Earth Institute

3. Professional Development For Existing and New Faculty

   a. Provide incentives for faculty participation,e.g.,stipends,course releases

   b. Include a sustainability component in new faculty orientation to inform incoming faculty about the college's commitment to sustainability education

   c. Create policy guidelines for campuses regarding release time and travel grants for faculty to learn about sustainability principles

   d. Create guidelines to encourage hiring across the curriculum of faculty with sustainability expertise,including multi-disciplinary faculty

   e. Create tenure and promotion paths for non-traditional faculty

   f. Establish campus,regional and state awards, regarding incentives and recognition (like the SUNY Chancellor's awards) for distinguished sustainability scholars

   g. Form campus Presidential advisory committees that bring together faculty,staff, and students to influence institutional effort

4. Continued Sponsorship/Co-Sponsorship of a series of Sustainability Education Workshops, Symposia, Colloquia,Retreats over five years,focused on sustainability education topics relevant for different audiences, to take place on different campuses across the State,such as the day-long workshop at Hobart on July20,2012, which brought together sustainability and service learning/civic engagement professionals to identify opportunities for, and to foster, collaborative sustainability education projects on campus and in communities

5. Create both top-down and bottom-up calls for action on sustainability education

   a. Ask SUNY Chancellor Nancy Zimpher to send a letter to all campuses endorsing the work of the SEWG in promoting sustainability in campus curriculums and campus operations, citing SUNY’s Vision Statement and Strategic Plan

   b. Ask CUNY Chancellor Matthew Goldstein to send a letter to all CUNY campuses endorsing the work of the SEWG in promoting sustainability in campus curriculums and operations, citing Sustainable CUNY and The Center For Sustainable Energy

   c. Ask Governor Cuomo to call for a task force to recommend ways to promote sustainability in post secondary education and campus operations throughout New York State.

   d. Create a Working Group white paper on how sustainability education and action on campus promote student leadership development and critical thinking skills. Survey recent graduates of sustainability programs to assess student outcomes
6. Create Website to facilitate sharing of best practices, sample curriculums, service learning opportunities, other sustainability-related learning materials

Organization of Website:

A. Resources For Instructors: syllabi; case studies; problem sets; online tutorials; laboratory exercises; and, active learning exercises. Suggested models: National Science Digital Library (nsdl.org); Analytical Sciences Digital Library (www.asdl.org)

1. Learning Materials for use in sustainability major courses
2. Learning Materials for use in discipline based science
3. Learning Materials to introduce sustainability in general education courses
4. Calendar of sustainability education related events statewide

B. Resources for Academic Administrators:

1. Examples of how sustainability-related academic programs are structured at different institutions
2. Regional Speakers Bureau: academic; industry; and, government

7. Design and implement targeted interactive social media strategy to reach students, to assess and to stimulate student interest in sustainability education.

8. a. Design four-year pathways so that community college students can earn Bachelor's Degrees in sustainability-relevant areas

b. Consider developing core courses in sustainability for all freshmen

9. In collaboration with sustainability coordinators and service learning and civic engagement educators, create meaningful participation of students in campus operations, starting with some model programs. One candidate for this is student engagement in measurement of energy use at Cornell. Another is the student competition, created by RIT in collaboration with Clarkson, RPI, SUNY Buffalo, and others through the Pollution Prevention Institute.

10. Design mechanisms to bridge the campus operations/faculty divide. Ideas include: Competitions, such as buildings v. buildings for percentage reduction in energy use; create integrated task forces that include faculty, facilities personnel, and students; create webinars for regional faculty development and networking.
11. Provide financial incentives to improve infrastructure, create sustainability course components and courses, and conduct research on topics such as pollution prevention.

Potential sources of funding include: The New York State Energy Research and Development Authority (NYSERDA); New York State Department of Environmental Conservation (DEC); New York State Pollution Prevention Institute; Senator Kirsten Gillibrand's office; New York State Department of Labor; New York State Department of Education; National Science Foundation; SUNY "Conversation in The Disciplines" funds; New York State Economic Development Regional Councils, which are required to produce sustainability plans for ten regions; and, foundations.

12. The Sustainability Education Working Group will develop a clearinghouse for the collection and dissemination of relevant sustainability education information. The Clearinghouse will leverage existing on-line resources. The Clearinghouse will mine from, and offer key information to:

   a. The full range of sustainability benchmarking groups
   b. The full range of other sustainability networks at all scales, local to international
   c. Range of all relevant student organizations
   d. Professional organizations such as AASHE, American College Personnel Association (student affairs professionals); APPA (physical plant professionals); Society For College and University Planning; and, others

13. The Working Group will survey and identify key informal communication networks of its members. For example, Daemen College is part of an informal network of small liberal arts colleges in the Buffalo area.

   Identifying the smaller networks embedded in our larger, statewide network will help spread information, facilitate groups' knowing about, and communicating with, each other, and encourage their participation in the sustainability education initiative.

15. Confront the unfortunate politicization of “sustainability” and “environment.” Reframe the consideration of sustainability in terms of new economy success, such as increased energy efficiencies, or improved well-being, and contribute to a fuller information base for political discourse. Frame sustainability in terms of the business and health, improved outcomes, better risk management, and pollution abatement.

16. Encourage The New York Campus Compact (service learning and civic engagement professionals) and other organizations to include sustainability professionals on their boards and committees, and likewise, recommend that sustainability organizations such as The Working Group, the New York Coalition For Sustainability In Higher Education, and the Hudson Valley Environmental Consortium include service learning professionals on boards and committees to facilitate cross-pollination of ideas, and to promote collaboration.
ADDENDUM

Sustainability Education Working Group April 1, 2012 Roundtable Attendees at The Syracuse Center of Excellence In Environmental and Energy Systems:

Sherburne B. Abbott, University Professor of Sustainability Science and Policy, Vice President For Sustainability Initiatives, Syracuse University

Katherine Aubrecht, Assistant Professor, Department of Chemistry, Stony Brook University

Richard C. Back, Ph.D., Interim Dean, College of Liberal Arts and Sciences, Oswego, SUNY

Ed Bogucz, Executive Director, Syracuse Center of Excellence For Environmental and Energy Systems, Syracuse University

Peter S. Brouwer, Ph.D., Dean, School of Education and Professional Studies, SUNY Potsdam

Hillary Brown, FAIA, M Arch., Professor of Architecture, Program Coordinator, Sustainability In The Urban Environment, City College of New York, CUNY

Marian Brown, Special Assistant To The Provost For Sustainability, Sustainability Initiatives, Ithaca College

Enid Cardinal, Senior Sustainability Advisor, Office of The President, Rochester Institute of Technology

Brian Chabot, Ph.D. Professor, Ecology and Evolutionary Biology, Faculty Fellow-Atkinson Center For A Sustainable Future, Cornell University

John Clinton, Ph.D., Associate Professor, Director, Environmental Policy and Sustainability Management, The New School

Steven Cohen, Ph.D., Professor, Executive Director, Chief Operating Officer, Earth Institute, Columbia University

Laurie E. Drinkwater, Ph.D., Associate Professor, Department of Horticulture, Cornell University

John F. Elter, Ph.D., Empire Innovation Professor of Nanotechnology, and Executive Director, The Center For Sustainable Ecosystem Nanotechnologies, SUNY Albany (Ret.), Currently, President Sustainable Systems, LLC

Kim Fortun, Ph.D., Professor, Department of Science and Technology Studies, Rensselaer Polytechnic Institute

John Gowdy, Ph.D., Professor and Chair, Department of Economics, Rensselaer Polytechnic Institute

Frederick L. Hildebrand, Ph.D., Assistant Provost, Academic Programs and Assessment, SUNY System Administration

-x-
Michael P. Hoffmann, Ph.D., Associate Dean, College of Agriculture and Life Sciences and Director, Cornell Experiment Station, Cornell

Thomas Horvath, Ph.D., Director, Environmental Sciences Program, Associate Professor of Biology, SUNY Oneonta

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New York State

Executive Order 111
Directing State Agencies To Be More Energy Efficient And Environmentally Aware "Green And Clean State Buildings And Vehicles"

WHEREAS, New York is dedicated to the mutually compatible goals of environmental protection and economic growth;

WHEREAS, New York has adopted measures designed to allow energy markets to operate more competitively and has significantly reduced taxes in order to reduce energy costs and encourage continued economic growth;

WHEREAS, the generation and use of energy has a significant impact on the environment, contributing to emissions of sulfur dioxide, nitrogen oxides, greenhouse gases, and other pollutants;

WHEREAS, State government is a major consumer of energy, spending approximately $300 million per year and purchasing approximately 1500 new vehicles annually with a concomitant impact on the environment; and

WHEREAS, it is appropriate that State government assume a leadership role in promoting the efficient use of energy and natural resources in the interest of the long-term protection and enhancement of our environment, our economy, and the health of our children and future generations of New Yorkers.

NOW, THEREFORE, I, GEORGE E. PATAKI, Governor of the State of New York, by virtue of the authority vested in me by the Constitution and Laws of the State of New York, do hereby order as follows:

I New Energy Efficiency Goals.
All agencies and departments over which the Governor has Executive authority, and all public benefit corporations and public authorities the heads of which are appointed by the Governor (hereinafter referred to as "State agencies and other affected entities"), shall seek to achieve a reduction in energy consumption by all buildings they own, lease or operate of 35 percent by 2010 relative to 1990 levels. All state agencies and other affected entities shall establish agency-wide reduction targets and associated schedules to reach this goal and shall also be responsible for establishing peak electric demand reduction targets for each state facility by 2005 and 2010. No buildings will be exempt from these goals except pursuant to criteria to be developed by the New York State Energy Research and Development Authority ("NYSERDA"), in consultation with the Division of the Budget ("DOB"), the Office of General Services ("OGS") and the Advisory Council on State Energy Efficiency ("Advisory Council") as established herein.


A. Existing Buildings.
Effective immediately, State agencies and other affected entities shall implement energy efficiency practices with respect to the operation and maintenance of all buildings that they own, lease or operate.
Such practices may include, but shall not be limited to:

(1) shutting off office equipment when it is not being used;

(2) adjusting the setting of space temperatures;
(3) turning off lighting in unoccupied areas;

(4) inspecting and re-commissioning or re-tuning heating, air conditioning and ventilation equipment to ensure optimal performance; and

(5) cycling and restarting equipment on a staggered basis to shed electricity loads and minimize peak electricity demand usage. State agencies and other affected entities shall strive to meet the ENERGY STAR building criteria for energy performance and indoor environmental quality in their existing buildings to the maximum extent practicable.

Within 180 days of the date of this Executive Order, NYSERDA shall develop guidelines to help agencies and other affected entities implement energy efficiency practices in their buildings.

B. New Buildings and Substantial Renovation of Existing Buildings.
In the design, construction, operation and maintenance of new buildings, State agencies and other affected entities shall, to the maximum extent practicable, follow guidelines for the construction of "Green Buildings," including guidelines set forth in Tax Law § 19, which created the Green Buildings Tax Credit, and the U.S. Green Buildings Council's LEED rating system. Effective immediately, State agencies and other affected entities engaged in the construction of new buildings shall achieve at least a 20 percent improvement in energy efficiency performance relative to levels required by the State's Energy Conservation Construction Code, as amended. For substantial renovation of existing buildings, State agencies and other affected entities shall achieve at least a ten percent improvement. State agencies and other affected entities shall incorporate energy-efficient criteria consistent with ENERGY STAR and any other energy efficiency levels as may be designated by NYSERDA into all specifications developed for a new construction and renovation.

III Procurement of Energy-Efficient Products.
Effective immediately, State agencies and other affected entities shall select ENERGY STAR energy-efficient products when acquiring new energy-using products or replacing existing equipment. NYSERDA shall adopt guidelines designating target energy efficiency levels for those products for which ENERGY STAR labels are not yet available.

IV Purchase of Power from Renewable Sources.
State agencies and other affected entities with responsibility for purchasing energy shall increase their purchase of energy generated from the following technologies: wind, solar thermal, photovoltaics, sustainably managed biomass, tidal, geothermal, methane waste and fuel cells. State agencies and other affected entities shall seek to purchase sufficient quantities of energy from these technologies so that 10 percent of the overall annual electric energy requirements of buildings owned, leased or operated by State agencies and other affected entities will be met through these technologies by 2005, increasing to 20 percent by 2010. No agency or affected entity will be exempt from these goals except pursuant to criteria to be developed by NYSERDA, in consultation with DOB, OGS and the Advisory Council.

V Procurement of Clean Fuel Vehicles.
State agencies and other affected entities shall procure increasing percentages of alternative-fuel vehicles, including hybrid-electric vehicles, as part of their annual vehicle acquisition plans. By 2005, at least 50 percent of new light-duty vehicles acquired by each agency and affected entity shall be alternative-fueled vehicles, and by 2010, 100 percent of all new light-duty vehicles shall be alternative-fueled vehicles, with the exception of specialty, police or emergency vehicles as designated by DOB. State agencies and other affected entities that operate medium- and heavy-duty vehicles shall implement strategies to reduce petroleum consumption and emissions by using alternative fuels and improving vehicle fleet fuel efficiency.

VI Role of NYSERDA and Creation of the Advisory Council on State Energy Efficiency.
NYSERDA shall coordinate implementation of this Executive Order and shall assist each agency and affected entity in the fulfillment of the responsibilities imposed herein in a cost-effective manner. To assist NYSERDA in fulfilling the requirements imposed by this Executive Order, there is hereby established an Advisory Council on State Energy Efficiency consisting of the following members, who shall serve ex officio:

- the President of NYSERDA;
- the Director of the Division of the Budget;
- the Commissioners of OGS;
- the Department of Environmental Conservation;
- the Department of Correctional Services;
- the Office of Mental Health and
- the Department of Transportation;
- the Chairman of the Public Service Commission;
- the Chancellor of the State University of New York;
- the Secretary of State;
- the Chairman of the New York Power Authority;
- the Chairman of the Metropolitan Transportation Authority;
- the Executive Director of the Dormitory Authority;
- and the President of the Long Island Power Authority.

The President of NYSERDA shall serve as the chair of the Advisory Council. The members of the Advisory Council may designate one or more persons to act as their designee(s). The Advisory Council shall meet regularly, but no less than twice a year, for the purpose of advising NYSERDA as to how it can best assist state agencies and other affected entities in achieving the goals of this Executive Order with the greatest degree of cooperative effort and effectiveness. Members of the Advisory Council shall receive no compensation but shall be entitled to reimbursement for any necessary expenses incurred in connection with the performance of their responsibilities.

VII Assistance and Cooperation.
Every agency and department over which the Governor has executive authority, and all public benefits corporations and public authorities the heads of which are appointed by the Governor, shall provide all reasonable assistance and cooperation requested by NYSERDA and the Advisory Council for the purpose of carrying out this order. Such assistance may include the assignment of staff and the provision of support services.

VIII Participation of other governmental entities.
Local governments and school districts that are not subject to the requirements of this Executive Order are encouraged to review their energy efficiency practices and procedures, to institute appropriate operational and maintenance modifications, and to accelerate the implementation of energy efficiency projects. NYSERDA, OGS, the New York Power Authority and the Long Island Power Authority are hereby directed to offer any assistance as may be appropriate to assist local governments and school districts to achieve the goals of this Executive Order, including, but not limited to, assistance with procurement.

IX Repeal of Prior Executive Order.
Executive Order No. 132, promulgated on January 2, 1990, and continued unamended and unmodified, is hereby revoked and superseded by this Executive Order as of the date hereof.

Signed: George E. Pataki
Dated: June 10, 2001