

# NJHEPS June 2006

NJHEPS

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## From the Executive Director, John Cusack

June is here, spring semesters are completed, and budgets for higher education fiscal years starting 1 July are being prepared (with much pain this year). Unfortunately, some financial people don't understand that sustainability efforts are not really a cost, but rather are an investment in the future, often with very short pay-back periods. Working on the process of "becoming sustainable" is a never-ending process for people, businesses, governments and higher education institutions, similar to the "continuous improvement" mantra heard in quality standards such as ISO 14,000. Sustainability is a state of mind, and those who believe investing in such projects can be postponed, are in many cases hurting the future financial stability of their institutions by doing so.

Some examples that come to mind are recent improvements to the heat recovery systems at Princeton University, which between capital costs avoided and annual energy cost savings, had a 2 year payback (i.e., a 50%/year return on investment). I only wish that my retirement portfolio had a return like that! Another example is the Rowan University cogeneration project, that will save \$1.2m/year at 2002 energy prices, and even more as the cost of electricity continues to skyrocket, and which also received a capital cost refund of \$1m from the NJ BPU's Office of Clean Energy.

Many other examples of projects with good financial returns that also protect the environment and help the educational process are available in the High Performance Design Guidelines for campuses and buildings that NJHEPS has published. 15 higher education institutions in New Jersey have adopted these guidelines for future new buildings and renovation projects. The new book just pub-

lished in May by NACUBO (and partially sponsored by NJ BPU and NJHEPS) on the "Business Case for Renewable Energy at Colleges and Universities" also has great examples of financially-sound best practices for the use of renewable energy as part of moving your campus towards sustainability.

I would point out that sustainability is not just a trend in the higher education world, but also in the business and financial worlds. The Financial Times business newspaper recently had an entire special section on "Sustainable Banking" in the June 12<sup>th</sup> edition of the paper. The emphasis was not on "doing good for good's sake", but rather on how implementing sustainability concepts at banking and financial institutions helped limit and manage risks, make better investments, improve the bottom line, and improve an institution's reputation with regulators, shareholders and stakeholders. Several global financial institutions, including Bank of America, Citigroup, JP Morgan Chase, HSBC, Swiss Re and Credit Suisse have announced quantifiable goals for voluntary greenhouse gas (GHG) reductions over the coming years. Both HSBC and the World Bank Group have already achieved "carbon-neutrality" in their operations through energy-efficiency improvements in their operations and through purchases of clean renewable energy.

While pressure from shareholders and stakeholders has certainly encouraged this process, the financial institutions have discovered that reducing GHG emissions also reduces their energy costs- a not insignificant factor since some of these firms employ 100,000+ people in millions of square feet of office space at thousands of locations around the world. Citigroup identified millions of dollars of cost-savings from a global energy



audit of their facilities, and some banks are meeting GHG commitments by loaning money to their landlords for energy efficiency improvements, which increases their loan book (the business they are in), at very low risk (the building lease with the bank ensures cash flow) while lowering operating costs (since utility bills are typically passed through to tenants). And all they have to do differently is add a sentence to their loan documents reserving to the bank the renewable energy credits or carbon credits resulting from the increase in building efficiency to get credit for the fourth benefit of reducing GHG emissions!

A little-known fact is that buildings use two-thirds of the electricity generated in the United States, which represents one-quarter of the total GHG emissions produced in the country. Higher education needs to do its part to make our existing buildings more efficient, and to make new educational buildings *extremely* efficient (since they will probably be there for the next 100 years). For example, the largest single user of electricity in the state of California is the California state university system. As part of our 2006 NJHEPS project of quantifying the GHG reductions of New Jersey higher education institutions over the past 15 years, we hope to be able to produce an estimate of what share of New

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Jersey's energy use is attributed to our colleges and universities. I think it will be a larger number than many people think.

So as we rest on the beach this summer, please think of how the solar energy you are absorbing can also be used to generate electricity or heat for your campus buildings and operations, and go home from vacation with a renewed interest in applying for NJ BPU clean energy subsidies, turning off your PC at night, putting motion detectors in 24-hour research laboratories, buying hybrid vehicles for employee use, or thinking of how you can encourage your students, faculty and staff to take mass transit to school every day. We owe our students, our state, and our planet, a responsibility to do this in both good and bad fiscal times, and turn our energy savings into educational investments for the future.



## The Burlington County Electech Electric Car, "The Olympian," Wins Tour de Sol!



Under the direction of Mr. Paul Kydd, EEVC member and volunteer, and with the assistance of automotive instructor Tom Molnar and several of his BCIT students, the Olympian was outfitted with a pack of lithium-ion batteries connected in parallel with 12 volt advanced sealed lead acid batteries donated by GNB, a subsidiary of Exide Corporation. Such an arrangement, referred to as a compound or hybrid battery is unusual and was considered by many to be impractical. Even the Tour de Sol technical panel questioned the wisdom of the parallel combination. But after succeeded in charging and discharging the pack with no problems and driving the car

over 200 miles with the new pack, the Burlington County Electechs became known as the "Myth Buster" team of 2006.

The cars competing in the American Tour de Sol Championship were tested in technical readiness, reliability, efficiency, greenhouse gas emission, hill climb, cone and acceleration tests, range, and auto-cross event. "The Olympian", was awarded first place.

Advisor of the Electechs Team include Professors Jack Braun and Tom Houck from BCC, Tom Molnar auto instructor from BCIT, and volunteers Dr. Paul Kydd and

Oliver Perry from the EEVC. BCC students are Dan Carson, Jacques Snijders, Eric Crane, Ryan Gibney, Lavinia Forbes, Kevin Wittmer, Jason Kehley, Jim Ciparone, Aria Farhad-Garousi,

"The Olympian" a converted 1986 Ford Escort, has competed in the American Tour de Sol battery electric vehicle division for nine consecutive years. It has consistently placed within the top cars. This is the Olympian's first number one finish. The "old" 1986 Escort finally finished in the winner's circle.

*"We have to have a way of dealing with this that engenders confidence, trust, gives us every chance of getting the right outcome and boosts both sustainability and economic return at the same time..."*  
~ John Anderson

## Rowan University Places 3rd in RecycleMania

RecycleMania is a friendly competition among university recycling programs in the United States that provides students with a fun, proactive activity in waste reduction. Over a 10-week period, schools compete in different contests to see which institution can collect the largest amount of recyclables, the least amount of trash, and have the highest recycling rate. All participating schools are required to report measurements on a

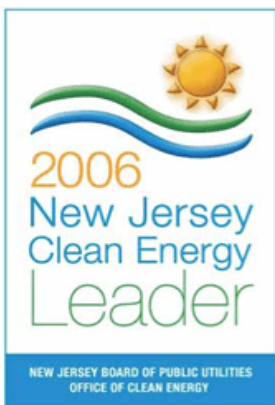
weekly basis in pounds. The university that recycles the most wins. RecycleMania provides many ways to gain recognition, including RecycleMania trophies and awards.

The main goal of this event is to increase student awareness of campus recycling and waste minimization. In the end, RecycleMania helps all participating universities make achievements

in recycling and waste reduction!

This year NJ's Rowan University participated in RecycleMania for the first time. Rowan finished third in the category Waste Minimization! Rowan is looking forward to now taking their recycling program to a higher level.

Please visit: [www.recyclemaniacs.org/results.asp](http://www.recyclemaniacs.org/results.asp)



## NJ Clean Energy Leadership Awards

The deadline to apply for the NJ Clean Energy Leadership Awards has been extended to June 30<sup>th</sup>!

**Award Categories:**  
NJ Clean Energy Business Leader of the Year  
NJ Jersey Clean Energy Market Innovator  
NJ Clean Energy Manufacturer  
NJ Clean Energy School  
NJ Clean Energy Municipality  
NJ Clean Energy YOUR POWER

TO SAVE Project of the Year

**Eligible Projects may include:**  
Clean Energy Manufacturers based in New Jersey  
Businesses that demonstrate innovation in advancing the market for clean energy and clean energy technologies  
Solar energy installations or outstanding projects that promote the use of renewable en-

ergy technology in New Jersey schools, communities, or businesses  
Projects that use renewable energy in combination with energy efficiency technology or processes  
Energy Efficient building design  
Educational programs (not exclusive to schools)

[www.njcleanenergy.com/html/awards.html](http://www.njcleanenergy.com/html/awards.html)



## Institute for Leadership in Sustainability

June 25-29, 2006, NAIS will continue its work in sustainability with the Institute for Leadership in Sustainability, a four-day residential program at the Lawrenceville School.

### Who is the institute for?

ILS is designed for school leaders (administrators, faculty, trustees, and staff) who are either new or somewhat experienced in promoting and building a culture of sustainability on campus. This is a great opportunity for a team of two or more to attend and grow in their knowledge of environmental sustainability.

### What is the purpose of the institute?

To create a reflective and interactive learning environment in which teams of administrators and faculty share their insights and experiences, discuss the challenges and concepts of environmental sustainability with experts, and construct strategies for enhancing their institution's commitment to a sustainable future.

### The institute will explore several topics including:

\* The global context from which education for sustainability has emerged

- \* Current best practice examples of environmental sustainability in independent schools
- \* Practical approaches to incorporating sustainability into the major areas of school life: mission; planning and administration; curriculum; physical operations; faculty and staff development; community outreach and service; and student life
- \* Organizational change strategies

Contact [institutes@nais.org](mailto:institutes@nais.org).  
Read more and register at :  
[www.nais.org/go/ils](http://www.nais.org/go/ils)



National Association of  
Independent Schools

## NJ Soybean Board Biodiesel Workshop

August 1, 2006  
9 am to 12:15 pm  
Rutgers EcoComplex  
Bordentown, NJ

If you're curious about the difference soy biodiesel can make to your business, join us for the workshop and luncheon.

The following topics will be covered:

9:00—9:05 Welcome: Rick Stern, New Jersey Soybean Board  
9:05—9:45 The State of the Indus-

try (biodiesel and bioheat): Tom Verry, NBB and Ellen Bourbon, NJDEP  
9:45—10:30 Tax Incentives: *Invited* Richard Little, IRS  
10:30—10:45 Break  
10:45—11:30 Storage and Handling Tips: Paul Nazarro, Advanced Fuel Solutions  
11:30—12:15 Panel Presentations: Stephen Levy, Sparague Energy Corporation; *Invited* Mike Devine, Devine Brothers; Rick Stern, New Jersey Soybean Farmer; *Invited* Greg Anderson, Nebraska Soybean

Farmer  
12:30 Lunch

For further information please call  
(609) 890-9207

*"After all, sustainability means running the global environment - Earth Inc. - like a corporation: with depreciation, amortization and maintenance accounts. In other words, keeping the asset whole, rather than undermining your natural capital. "*  
~ Maurice Strong

## NJ Clean Energy Conference

September 18, 2006  
Hyatt Regency, New Brunswick

The New Jersey Clean Energy Conference brings together over 400 leading energy professionals to learn, network, and discuss the issues shaping the energy market in general and the New Jersey energy market in particular.

This conference provides an

excellent forum for state business leaders to learn more about the economics of renewable energy and energy efficient technologies and how to hedge against rising energy costs. As gasoline and fossil fuels costs grow, so do opportunities for New Jersey's business community to leverage the financial and environmental benefits of clean energy. The conference focuses on timely issues that affect both

your business and our future!

- \* Energy Project Financing
- \* Energy Efficient Building Design
- \* Energy Procurement & Pricing Renewable Energy Certificate (REC) trading

[www.njcleanenergy.com/conference/index.html](http://www.njcleanenergy.com/conference/index.html)





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*transform the higher education community, to consistently practice sustainability, and to more effectively contribute to the world's emerging understanding of sustainability, through teaching, research, outreach, operations, and community life.*



[www.njheps.org](http://www.njheps.org)

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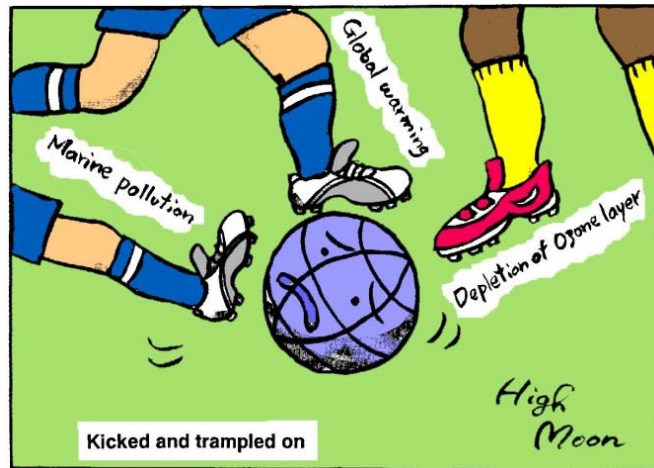
Want to share progress towards sustainability on your campus? Please send news items to Terra Meierdierck (973-642-7848; [tmeierdierck@njheps.org](mailto:tmeierdierck@njheps.org)) for inclusion in our newsletter.

This newsletter is available online (from [www.njheps.org/press.html](http://www.njheps.org/press.html)). This newsletter is sent out monthly by NJHEPS via an announcements-only listserv, [NJHEPS-news@listserv.njit.edu](mailto:NJHEPS-news@listserv.njit.edu). If you no longer wish to subscribe to this listserv, please use the tools available on the listserv's home page, at [http://listserv.njit.edu/mailman/options/njheps-news/\\*](http://listserv.njit.edu/mailman/options/njheps-news/*) (replace the "\*" with your email address), or notify [Terra Meierdierck](mailto:Terra Meierdierck), NJHEPS Research Analyst.

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Cartoon by Hiroshi Takatsuki



## Underwater windmills in NYC, invisible solution

As consumers worry over an uncertain energy future, a Virginia company is eyeing an unusual untapped power source: the rivers of the Big Apple. Within weeks, Verdant Power plans to submerge experimental turbines in the East River off the coast of Roosevelt Island, a slice of land squeezed between Manhattan and Queens.

Resembling and working much like stout underwater windmills, the six 15-foot-tall turbines will

draw energy from tidal currents to power a nearby supermarket and parking garage.

The company calls the project the first to use multiple underwater turbines to create usable power. Backers say the technology could ultimately provide a reliable, environmentally friendly and largely invisible solution to many global energy needs.

"Traditional hydropower from dams, where water is trapped at

a high level and released, provides about 7 percent of the nation's electricity, but worries over damaging river environments and harming migrating fish have hindered new development.

The "hydro-kinetic" or "in-stream" technology works by submerging turbines into the natural path of moving water, such as a river, canal or deep ocean current.

[www.verdantpower.com](http://www.verdantpower.com)



Axial-Flow Rotor Turbine Kinetic Hydropower System (KHPS)