



NJHEPS Late April 2006

NJHEPS

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From the Executive Director, John Cusack

Spring is here, and new sustainability activities and information of interest to New Jersey institutions of higher education are popping up everywhere. For example, the National Association of College & University Business Officers (NACUBO), in partnership with NJHEPS and a number of other organizations, is publishing a new book in Mid-May entitled "the Business Case for Renewable Energy in Colleges & University". I had the privilege of serving as moderator of a web telecast launching this exciting new book that was broadcast over the web by NACUBO on 25 April to over 60 higher educational institutions across the country, and watched by an estimated nearly 300 business officers, faculty and students. The book launch event consisted of Powerpoint presentations and live broadcasts by the book's two authors, Andrea Putman and Michael Philips, followed by a 35-minute question and answer session that I moderated, using questions submitted on-line by the audience. Andrea and Michael did an excellent job of describing various renewable energy alternatives, their financial costs and benefits, and examples of institutions around the country that are using renewable energy successfully. In many cases, the projects built to date are not only good for the environment, but also reduce the operating costs and/or increase revenues of the institution. One of my favorite examples was Carlton University, which built a 1.5MW wind turbine located near the campus, which sells over \$170k of electricity a year back to the local utility, which covers all operating and financing costs. Once the project loan is repaid (part of which came from the school's endowment investment fund!), the project will be very profitable for the University while reducing the environmental footprint of the University. Another example is the University of Iowa's use of oat husks (a waste product from a nearby cereal manufacturer) as a bio-fuel to replace coal, saving over \$500k a year in fuel costs and reducing plant emissions. Several schools, such as Colby College, College of the

Atlantic and Western Washington University, are even meeting 100% of their energy needs through renewable energy, either in the form of on-site generation or by purchase of Renewable Energy Certificates (REC's).

The most fascinating question in the Q&A was the last question and was probably also the shortest. The question was "if it costs more, why do it?" One answer is that you could ask that same question of people who buy a Big Bertha golf driver or a new Mercedes, when they could buy a "cheaper" golf club at WalMart or a "cheaper" car at their Kia dealer—because they get much better performance and results! Another answer will be to read the book and see all of the examples of projects that may have an initial investment requirement, but whose financial payback period was short and produced significant environmental benefits. I believe however that the key take-away from the book launch was that universities and colleges need to consider renewable energy capital spending as an investment for the future with a financial return, rather than just an a short-term operating expense. For example, Harvard University has established a \$5.5m energy-efficiency/ renewable energy revolving investment fund for internal projects that has returned 38% annually for the past few years, even beating the financial return of the fabled Harvard endowment!

In the interest of full disclosure, I will mention that the NACUBO book's foreword was co-written by myself and Dr. Donald Wheeler, senior advisor to NJHEPS, but keep an eye on the NACUBO web site (www.nacubo.org) to see when the book will be available for sale, and read it anyway! NJHEPS plans to hold a seminar here in New Jersey in the next month or two that will allow business officers and executives from NJ higher education institutions to meet the Book's authors and have them answer questions more specific to the business case for renewable energy at New Jersey colleges and universities. With rising fuel and



energy costs significantly hurting the budgets of many NJ institutions, this issue grows in importance every day. Just recently, I met with a President of one of New Jersey's premier county colleges who had just emerged from a Board meeting where his facilities director said that the college was looking at \$700-800k of un-budgeted energy costs this year. The good news is that those cost increases would have been even worse if the school had not built newer buildings to LEED standards and implemented successful energy efficiency and storage projects over the past few years. Perhaps the announcement that Governor Corzine made on 22 April that he has signed an Executive Order to increase energy efficiency in state government will help New Jersey's state schools become more energy efficient.

Of course, sustainability is not just about renewable energy and energy efficiency. There are many ways to measure and assess sustainability, and the State of New Jersey has been a leader in assembling and publishing sustainability indicators for the entire state. This project is continuing with the support of the NJ Sustainable State Institute, a joint Rutgers-NJIT project, and in addition, the NJDEP has commissioned a study to assess the economic value of the "Natural Capital" (i.e., wetlands, beaches, forests, etc.) of New Jersey, working with a world-renowned team of environmental economists. It will be interesting to see if sometime in the next few years we will be able to see the true cost of environmental degra-

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ation by measuring the value we have destroyed in the name of "progress". Certainly, full disclosure of assets and liabilities is of interest to both financial folks and environmentalists!

Finally, I would like to end with a point that the noted sustainability expert Hunter Lovins made this morning in a presentation at the Harvard University "Vision 2020: A Bridge to Campus Sustainability" Conference. She said that we should all remember that "... nature has been in the new product development business for millions of years, and that humans are just one product out of millions of products produced by nature during that time." She went on to say that "... unfortunately, all products of nature that don't succeed are eventually recalled by their maker. Let us hope the human race isn't one of those recalls." I believe higher education has a major role and responsibility to make sure that recall does not happen, and I hope NJHEPS can play a small part in making a difference!



NJ Leads the Nation with Expanded Commitment To Solar and Clean, Renewable Energy



The New Jersey Board of Public Utilities voted to approve new regulations which expand the State's Renewable Portfolio Standard (RPS) by extending the existing goals out to 2020 and increasing the required amount of renewable energy and solar energy. Under the newly adopted regulations, 20 percent of New Jersey's electricity must come from renewable sources by 2020. The new regulations also include a 2-percent solar set aside which is forecast to require 1500 MW, the nation's largest solar commitment relative to population and electricity consumption.

"Governor Corzine challenged all of us to create an ambitious new framework for energy policy in the 21st Century," said NJBPU President Jeanne M. Fox. "Strengthening the RPS will ensure the continued transformation of New Jersey's energy market. Increased use of renewable resources and specifically solar photovoltaics will provide greater fuel diversity for New Jersey, while simultaneously reducing price volatility, strengthening the economy, improving public health and reducing greenhouse gases that threaten our shoreline."

carbon dioxide, a heat-trapping gas that causes global warming, which is the equivalent of taking 1.3 million cars off the road. The standard will also remove 29.1 million pounds of nitrogen oxides, a smog-creating ozone precursor that is also associated with pulmonary and respiratory disease, which is the equivalent of taking 761,781 cars off the road," said Suzanne Leta, energy advocate for the New Jersey Public Interest Research Group.

<http://www.energyvortex.com/pages/headlinedetails.cfm?id=2318>

"The revised standard will remove a total of 15.3 billion pounds of

Two Princeton Faculty Members Elected to National Academy of Sciences

"It is horrifying that we have to fight our own government to save the environment."

~Ansel Adams

Two members of the Princeton faculty were elected to the National Academy of Sciences during the academy's annual meeting April 25 in Washington, D.C. The scholars were among 72 elected in recognition of their outstanding achievements in research.

Bonnie Bassler, professor of molecular biology, researches a phenomenon called "quorum sensing," a method that bacteria

use for sensing how many other bacteria are in their vicinity. A better understanding of quorum sensing could help with the fight against diseases such as cholera, whose bacteria often grow virulent only when they have established a significant presence in their host. Bassler was awarded a 2002 MacArthur Fellowship and last year was chosen to be a young investigator by the Howard Hughes Medical Institute.

Lyman Page Jr., the Henry DeWolf Smyth Professor of Physics, measures variations in the cosmic microwave background -- the thermal afterglow of the big bang -- in order to understand how the universe evolved. Page is one of the original co-investigators of the Wilkinson Microwave Anisotropy Probe satellite, a spacecraft that recently provided evidence for what happened in the universe's first trillionth of a second.

Making the Grade with Green Power



Start making the change like other colleges and universities and purchase green power to meet your electricity needs. Purchasing green power is a flexible and effective strategy for schools pursuing "greening the campus" initiatives and reduces your greenhouse gas emissions.

The ten schools listed below are the Green Power Partners with the largest completed green power purchases in the higher education

sector., along with their MWh usage and % of total consumption. Their actions are helping drive the development of new renewable electricity generation. The combined green power purchases of these Top 10 Partners equals 322,000 megawatt-hours annually.

1. University of Pennsylvania: 112,000, 28%
2. Northwestern University: 40,000, 20%
3. Western Washington Univer-

- sity: 35,000, 100%
4. University of Utah: 25,000, 10%
5. Syracuse University: 22,000, 20%
6. Duke University: 18,564, 11%
7. The City University of New York: 18,400, 4%
8. Pennsylvania State University: 17,600, 4%
9. Harvard University: 17,491, 7%
10. The Evergreen State College: 16,250, 100%

http://www.epa.gov/greenpower/pdf/higher_education_factsheet.pdf



NJHEPS Spring Energy Workshop: Sustainable Strategies for Conserving Energy, Reducing Costs & Generating Revenues

Friday, May 5
8: 30 am to 3:30 pm
[Rutgers EcoComplex](#)

Topics include:

- * Breakfast and Welcome from Rhea Brekke, Executive Director, NJCAT and John Cusack, Executive Director, NJHEPS
- * Rowan Energy Master Plan: featuring Concord Engineering and AJL Resources, John Imperatore, Director of Facilities, Rowan University; Mike Fischetti, Corporate Principal, Concord Engineering and Al Lutz, President, AJL Resources
- * Aquifer Thermal Storage at Richard Stockton College of New Jersey: Lynn Stiles, Professor of Physics, Richard Stockton College

- of New Jersey
- * Thermal and Ice Storage: Ted Borer, Manager, Mechanical Systems, Princeton University and Ken Olsen, Director of Facilities, Ocean County College
- * Campus Environmental and Energy Conservation: Carmine Battafarano, Director Business Development, Burns & Roe
- * RECS: Joe Sullivan, Director of Facilities Management, The College of New Jersey and Benjamin Scott Hunter, Renewable Energy Program Administrator, Office of Clean Energy, NJBPU
- * Nuts and Bolts
- * Biofuels Update: Ellen Bourbon, Clean Cities Coordinator, NJBPU
- * New Jersey Hydrogen Learning

Center Update, Nora Lovrien, Assistant Research Project Manager

- * Tour of the Rutgers EcoComplex with David Specca, Director, Rutgers EcoComplex

Please register at:
<http://www.acteva.com/booking.cfm?bevaaid=101805>

Attendees of this event will receive 4 AIA/CEU credits.

For more information please contact Terra Meierdierck at tmeierdierck@njheps.org (973.642.7848)
We hope to see you there!



The Rutgers EcoComplex

Ecostock 2006

May 31 – June 2, 2006
Richard Stockton College

PURPOSE - to encourage awareness and solutions for energy conservation through energy storage. Major topics will include seasonal, diurnal, and short term storage technologies including; geothermal heat pumps systems and other underground thermal energy storage systems for heating and cooling commercial, industrial and institutional buildings, diurnal

ice storage and other diurnal thermal storage systems; phase change materials for building and non building applications.

PRESENTATION TOPICS – Over 130 oral and poster presentations on:
Underground thermal energy storage
Phase change materials and thermal storage
Thermo chemical storage
Thermal seasonal storage
Diurnal storage

Latent and sensible heat storage
LEED (US Green Building Council rating system) and green buildings with thermal storage
Theories and design tools for thermal storage
Systems and applications using thermal storage
Ground source heat pump systems
Thermal storage and reducing greenhouse gas emissions

For registration and details please visit www.stockton.edu/ecostock

"We do not inherit the earth from our ancestors, we borrow it from our children."

~Native American Proverb

CNN Program May 5 to Target Students

CNN Presents Classroom Edition: *Melting Point: Tracking the Global Warming Threat* when it airs commercial-free on Monday, May 1, 2006, from approximately 4:10 - 5:00 a.m. ET on CNN.

Program Overview

Miles O'Brien travels from the Arctic Circle to the South Pacific to track the impact of global warming. The confusing debate over climate change that domi-

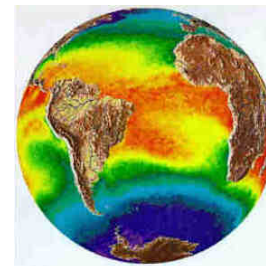
nated the past decade has given way to a new scientific consensus: The Earth is getting warmer. Now, the debate centers on why the climate is changing, what the impact will be, and what we can do to stop it. For some, global warming is no theoretical debate; it is changing their lives right now.

Grade Level: 7 -12

Objectives: Describe the causes

and potential effects of global warming. Identify real-world examples of the impact of global warming. Analyze the ongoing debate over the causes and consequences of global warming. Assess what international organizations, the U.S. government, state and local governments, businesses and individuals are doing to decrease the levels of greenhouse gas emissions.

<http://www.cnn.com/2006/EDUCATION/04/19/cnnpce.melting.point/>





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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

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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) for inclusion in our newsletter.

This newsletter is available online (from www.njheps.org/press.html). This newsletter is sent out monthly by NJHEPS via an announcements-only listserv, 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/* (replace the "*" with your email address), or notify Terra Meierdierck, NJHEPS Research Analyst.

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Cartoon by Hiroshi Takatsuki



2006 BCC Scholarship Gala honoring Bill Bobenhausen

We are delighted to inform you that noted green architect William (Bill) Bobenhausen will be honored at the Bronx Community College Foundation Annual Scholarship Gala, on Wednesday, June 7, at Gotham Hall in New York City.

Bill's illustrious career essentially began when he entered Bronx Community College, in 1967. With this solid academic foundation, he transferred to the City College of New York where he received his Bachelors degree in Architecture in 1973. For the

many years since those beginnings, he has achieved a highly respected stature as a leader in the design and development of green buildings as an Environmental Architect.

In addition to honoring Bill, your support for this event will benefit an excellent cause. The Bronx Community College Annual Gala is our primary fundraising effort to provide scholarships to deserving students. The College was recently ranked by the U.S. Department of Education among the top

30 colleges in the country granting Associate Degrees to minority students. The College is known for such cutting edge programs as nuclear medicine technology, media technology and computer and engineering science. While the majority are first generation college students, more than half advance to four-year institutions and many continue beyond baccalaureate degrees on to graduate school.

<http://njheps.org/events/2006%20gala%20journal%20form.pdf>



Bill Bobenhausen FAIA, CSI, CCS, LEED™