

Higher Education: Leading the Nation to a Safe and Secure Energy Future

As Congress considers comprehensive tax reform, the National Association of College & University Business Officers (NACUBO¹), *Second Nature*² and the *American College & University Presidents' Climate Commitment (ACUPCC)*³ are presenting policy options for changes in tax policy and federal grant programs that would allow colleges and universities to increase operational efficiencies, reduce long-term energy expenses and ultimately contribute to administrative efforts to contain college costs.

The pursuit of substantial energy savings and new energy sourcing already happening on college campuses across the country reflects a strong commitment by presidents and business administrators and a mounting community consensus that substantial shifts in campus operations are absolutely essential to maintain a healthy bottom line. Ensuring long-term energy reliability and financial security of the academy are crucial in advancing the educational mission of America's colleges and universities.

Economic Impact and Fiscal Stewardship

The nation's 4,000-plus private nonprofit and public colleges and universities educate more than 20 million students each year. They own and manage tens of thousands of buildings, heating and cooling many millions of square feet each day. For every college and university, stewardship of energy resources bears a direct impact on the institution's ability to be a good steward of its financial resources. Opportunities to significantly reduce energy consumption allow institutions to contain costs and better utilize taxpayer dollars, be they state operating funds at public institutions or federal grants and contracts supporting university-based research.

In many ways, colleges and universities are the perfect partner to engage in advanced energy solutions. Central management and administration affords campuses a unique opportunity to more effectively deploy, and broadly disseminate, market transforming methods and technology. Additionally, as enduring, well-established institutions, they are in a position to plan and make investments with a long-term view, contrary to many other industries that invest on short-time horizons or in the context of shareholder concerns.

Overcoming the "Feasibility Gap"

Many existing federal energy efficiency or renewable energy incentives were designed as tax incentives for for-profit enterprises, or as grant opportunities for state and local governments. As independent nonprofit institutions, or, in the case of public institutions, as entities of the state, colleges and universities have found it challenging to identify external sources to help finance energy efficiency or renewable energy projects on



A Northern Power NorthWind 100 MW wind turbine sits atop Appalachian State University's campus, reducing the university's dependence on fossil energy and providing an educational and research opportunity. Photo courtesy of Marie Freeman/ Appalachian State University

¹ <http://www.nacubo.org>

² <http://www.secondnature.org>

³ <http://www.presidentsclimatecommitment.org>

their campuses. This challenge has intensified in recent years due to sharp declines in state support coupled with the diminished ability of endowments to support operations.

While many hundreds of colleges and universities have tackled the low-hanging fruit of energy efficiency and conservation on campuses, deep energy efficiency – savings of 50% or more – are possible and represent a tremendous opportunity for institutions to further reduce operational costs. Because these bigger projects carry a much longer payback, often over 20 or more years, the resulting “cost feasibility gap” is simply too big for many institutions to prudently invest.

Assisting institutions in meeting the initial costs of pursuing deep energy efficiency opportunities, infrastructure modification, and renewable energy alternatives could boost institutions and allow them to adopt projects that would result in significant cost reductions.

Five Policy Options for Fostering Energy Efficiency and Renewable Energy in Higher Education

The [ACUPCC Financing Committee](#)⁴ and NACUBO's [Sustainability Advisory Panel](#)⁵, in conversations with many individual campuses, higher education associations, NGOs, and other key stakeholders, identified specific policy solutions that will enable nonprofit higher education institutions of all sizes and types to reduce energy consumption, increase efficiencies, avoid risks and improve their long-term financial sustainability.

- Allow colleges and universities to use tax exempt and revenue bond financing to pre-pay power purchase agreements.
- Develop new energy efficiency and renewable energy loan options open to institutions of higher education, including establishing a federal loan guarantee program and developing a federal revolving loan fund for energy efficiency initiatives.
- Establish, alter, and fund federal grant programs including [Section 471 of the Energy Independence and Security Act of 2007](#)⁶.
- Allow long-term charitable deductions and tax credits for biomass and bio-methane contributions.
- Extend eligibility of Clean and Renewable Energy Bonds (CREBs).

ACUPCC [Climate Leadership Summit](#)⁷ participants will have an opportunity to continue the discussion on how the ACUPCC network can encourage the federal government to help colleges and universities raise the bar and provide national leadership on deep energy efficiency and large-scale renewable energy deployment and adoption. Moving forward, Second Nature, the ACUPCC and NACUBO will develop a long-term advocacy strategy for adopting policy changes that will have the largest impact for the nonprofit higher education sector.

Smart Labs – University of California, Irvine

Research universities are extraordinarily large energy consumers because laboratories are energy-intensive, typically constituting two-thirds of the total institution's utility consumption. Until recently, attempts to improve laboratory efficiency had plateaued at about 25 percent, but at the [University of California, Irvine](#)⁸, they raised the performance bar for all labs and are achieving a savings goal in excess of 50 percent. Their “Smart Labs” concept utilizes digital controls that are integrated with advanced occupancy and air quality sensors, reducing the number of times air has to be supplied, heated, cooled, humidified, filtered, distributed, and exhausted. In the [Sue & Bill Gross Stem Cell Laboratory](#)⁸ on the UC Irvine campus, the energy savings resulting from the smart lab design criteria are equivalent to taking 130 automobiles off the road for twenty years.

⁴ <http://www.presidentsclimatecommitment.org/financing-committee>

⁵ http://www.nacubo.org/About_NACUBO/Volunteer_Leadership/Presidential_Councils/Sustainability_Advisory_Panel.html

⁶ <http://www.gpo.gov/fdsys/pkg/PLAW-110publ140/pdf/PLAW-110publ140.pdf>

⁷ <http://www2.presidentsclimatecommitment.org/summit2012/agenda.php>

⁸ <http://www.uci.edu/>

⁹ <http://stemcell.uci.edu/>