

**Update to Engineering College Council  
Sustainable Energy Systems Curriculum  
October 2008**

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*What we said last year:*

1. Expand offerings in Master of Engineering Programs.

**Action this past year:**

- Expanded student interest in the ‘Energy Economics’ course from 13 participants two years ago to 90 this fall, including drawing students from the JGSM MBA program and Economics department. Instructor supported with (tenuous) gift monies.
- Added a Teaching Assistant to the course.
- Tours to local features: Cornell power plant, Lake Source Cooling, Milliken Power Station

**Plans for the Future (under discussion):**

- Approach NYS to create an M. Eng. Program in Sustainable Energy Systems

2. Course Development (aimed at Graduate Students but open to all)

We proposed the development of three new courses:

- Management of Earth-Energy Systems. The interplay of technology, environment, economics, politics, sociology from a systems view
- **Energy systems engineering.** Life cycle, cradle to cradle/grave systems analysis.
- Systems modeling for sustainable living. Hands-on projects to apply what was learned above

**Action:**

- Thanks to sponsorship by an Engineering alumnus, the second of these courses will be developed in AY 09-10

3. Spread “Energy Literacy”, first at Cornell and then beyond our walls.

**Action:**

- Forged a link with faculty in the Education department to sponsor a graduate student to work on best practices for outreach to the public. Alumni funds will be used to sponsor this graduate student in AY 09-10
- Faculty development of a new energy literacy course will begin this summer (several faculty to be involved) funded by an alumnus.
- The list of energy-related courses that was posted in Spring 2008 on an “Energy at Cornell” website was made into a more comprehensive and more useful source of information to students, thanks to Weiss Presidential Fellow Al George. The site has been used by faculty and students to plan their courses. We presume that this easy-to-use list has contributed to increased enrollments in this semester’s courses. For

instance, enrollment for EAS 4010 “Energy and Mineral Resources,” rose from 2 to 10.

4. Create a Graduate Field allowing a graduate minor in Sustainable Energy and reformulate graduate training with new core courses and mentoring. No PhD in Sustainable Energy Systems.

**Plan for the Future:** This task is pending the arrival of Jeff Tester in spring 2009.

Other points, not related to curriculum, are important to note in relation to the College’s Energy Initiative:

- (a) The College’s seed funding for new energy research projects, intended to stimulate faculty interest in sustainable energy projects. **The \$180,000 investment yielded \$800,000** in federal and other funding to continue the projects (a return of over 400%).
- (b) We have submitted a **\$25M proposal** to the DOE to fund innovative approaches to **coupling geothermal energy recovery and carbon sequestration**. There is a small educational component to this proposal. The proposal involves 12 faculty from the College of Engineering, led by Jeff Tester.
- (c) College faculty play a strong contributory role to a second \$25M proposal to DOE in the area of **materials design for fuel cells and photovoltaic systems**.

#### Sustainable-Energy Related Campaign Goals

The College has identified \$51 million in energy-related campaign goals, including faculty support, facilities renovations, graduate student support, curriculum development, and program funding. As of October 2008, nearly nine million dollars in private support has been raised toward these needs. Raising the remainder of these funds will enable the college to fully realize its potential for leadership in this critical area.