Minutes*

Senate Consultative Committee
Thursday, October 21, 2010
3:00 – 4:30
Room 238A Morrill Hall

Present: Kathryn VandenBosch (chair), Aaron Carlson, Don Cavalier, Christopher Cramer, Carol Chomsky, Nancy Ehlke, Michael Hancher, Jonathan Lundberg, Jan McCulloch, Luke Nichols, Terrance Paape, Steven Pearthree, Francis Strahan, Sarah Waldemar

Absent: Peter Bitterman, Thomas Brothen, Nancy Carpenter, Shawn Curley, Bree Dalager, Barbara Elliott, Marti Hope Gonzales, Thomas Haarstick, Jeffrey Kahn, Russell Luepker, Michael Oakes, Mark Privratsky, Eddie Symons

Guests: Associate Vice President Michael Berthelsen (Facilities Management), Professor Emily Hoover (UMTC Sustainability Committee)

Others: none

[In these minutes: (1) senate committee reorganization; (2) report from the UMTC Sustainability Committee]

1. Senate Committee Reorganization

Professor VandenBosch convened the meeting at 3:00 and began by reporting that an ad hoc group of four (two faculty, two staff) had been asked to look at the Senate committee structure to see if there were any redundancies or gaps. The Committee discussed the organization and operation of several committees.

Professor VandenBosch said she would speak with the appropriate committee chairs about the recommendations.

2. Report from the UMTC Sustainability Committee

Professor VandenBosch next welcomed Associate Vice President Berthelsen and Professor Hoover to discuss the work of the UMTC Sustainability Committee. Mr. Berthelsen and Professor Hoover, co-chairs of the UMTC Sustainability Committee, presented a series of slides about its work. (Professor Hoover noted that each campus has its own sustainability committee; this report is about the work of the Twin Cities committee.)

Professor Hoover noted recent sustainability milestones, including the 2004 Regents' policy on sustainability, joining the Chicago Climate Exchange the same year, formation of the Institute on the Environment in 2006, President Bruininks signing the Climate Commitment in 2008, establishment of systemwide sustainability goals/outcomes/measures in 2009, appointment of the UMTC Sustainability

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Committee in 2010, and launching of the sustainability portal in 2010. She explained how the system, campus, and local sustainability efforts fit together and then reviewed the charge to the UMTC committee (which can be found at http://www.sustaintc.umn.edu/). The committee has three subcommittees, on energy and operations, research, and education and outreach; Professor Hoover co-chairs the last one and Mr. Berthelsen co-chairs the first one.

The University is a charter member of the Association for Advancement of Sustainability in Higher Education – Sustainability Tracking, Assessment, and Rating System (AASHE STARS). Institutions are being graded, Professor Hoover said, and the goals of the group are transparency, accountability, and measuring progress. President Bruininks signed the American College & University Presidents' Climate Commitment in January, 2008, which acknowledges the need to slow global warming, reduce emission levels through operational, educational and societal changes, and has as its goal the achievement of climate neutrality. The institutions need to make substantial progress by mid-century to become climate neutral, Professor Hoover said, and the University will set interim goals along the way that can be revised and improved as time passes. The committee is currently working on gathering campus input into the draft plan due to the President by December 2010. During spring semester, the committee will again solicit input from the campus community for the next version. The plan will be reviewed every other year to track progress.

Mr. Berthelsen next explained UMTC greenhouse gas total emissions for 2008, about 643,000 metric tons of carbon dioxide. There are three ways to measure it: sources owned by the institution (203,000 metric tons, the vast majority of which are from the steam plant), indirect emissions generated in electricity production consumed by the institution (about 342,000 metric tons), and all other indirect emissions from activities of the institution but from sources not controlled or owned by the institution, such as commuting and air travel (about 98,000 metric tons). The two biggest sources are facilities-related: purchased electricity and the steam plant. The campus's emissions are roughly equivalent to 122,000 average passenger vehicles driven for a year, or the energy used by 54,000 average homes for a year, or the carbon sequestered by 16 million tree seedling over ten years of growth.

Minnesota appears to have about the same amount of emissions per square foot as peer institutions; Mr. Berthelsen provided data for Illinois and Ohio State. UNC-Chapel Hill has almost twice the emissions as the three Midwestern schools, and campuses "are all over the map" on emissions, he said, and there is no one answer to the size of the problem.

Why are the emissions so large? Mr. Berthelsen explained that it is because of the size of the campus (24 million square feet, one of the largest in the country), the research labs and medical facilities (there needs to be much more air exchanging and heating and cooling, so a lot more energy use), the fuel mix used, and the climate (buildings have to be heated).

The guiding principles for energy management are reliability, environmental stewardship, and cost control, Mr. Berthelsen told the Committee, and the University cannot try to accomplish only one of the three.

Mr. Berthelsen reviewed the projected fuel mix for the steam plant for FY11, which will be 70% gas and 22% coal; oat hulls are 5% and oil 3%. The cost per million BTUs for gas is $6.12 (the lowest they have ever seen it, and the most volatile in pricing), $5.04 for oat hulls, $3.51 for coal, and $17.32 for oil (which they try to avoid if at all possible). Professor VandenBosch asked why the plant only uses oat

hulls and not other biomass materials; because that is all they are permitted for, Mr. Berthelsen said. They could use wood, but at present other users in the Twin Cities have contracts to take it all. They are looking for other materials but have not found any yet.

Operations highlights include a $120-million investment in steams plants to add new and highly-efficient boilers, to enable the use of biomass, and to reduce emissions drastically. The campus has also added the transitway with circulators and connector busses and increased public transit ridership. Mr. Berthelsen also noted that while the gross square footage on the campus has increased over 2 million gross square feet since 1999, the emissions from utilities have been declining over that same period, and the total carbon footprint from the steam plant operations is down 30% over the decade. Mr. Berthelsen commented that the greenest energy is the energy not used, and in that regard, the campus reduced emissions by 25,000 tons and saved $2.5 million due to energy conservations efforts in FY10 – primarily through re-commissioning buildings.

Professor VandenBosch asked if there were questions or comments.

Mr. Strahan asked whether, given the goal of climate neutrality by 2050, they know what the interim steps along the way will be. They do not, yet, Mr. Berthelsen said. They have developed five interim goals in order to get to zero by 2050, but are now developing ideas and categorizing them by when the University should do them. They will evaluate the goals as they go along.

Mr. Strahan suggested working with the Morris campus, which is light-years ahead of everyone else. Professor Hoover said that the use of wind turbines was interesting; the University can build them at Morris but cannot use them for providing energy on the Twin Cities campus through the power grid. Mr. Berthelsen explained that Morris is in a relatively windy area compared to the Twin Cities campus. The University has constructed one wind turbine and Morris and working on a second, as well as making biomass gasification work—which comes with challenges.

Mr. Berthelsen said that accomplishments are a matter of scale; the Twin Cities campus made changes sufficient in FY10 to reduce its carbon footprint by the equivalent of the carbon footprint of Macalester College.

Professor Hancher said he was startled by a pie chart on one of the slides indicating that 8% of the emissions were attributable to purchased air travel. That is one of the most difficult things to measure, Mr. Berthelsen said, and they are trying to do better. They can say how much money was spent and try to relate that amount to energy used. The number is large, Professor Hancher observed; airline travel is very bad in terms of emissions, Mr. Berthelsen said. He said there are initiatives that could be taken but that they do not know what they would be.

Mr. Nichols asked what they have done to encourage participation. He said he has received an email but hoped there would be more. Mr. Berthelsen said they have done several things: Representatives have met with student organizations, Energy Management has involved students in energy-conservation efforts, they have met with the Minnesota Student Association, and other student groups are engaged in the topic. Mr. Stennes reported that they have also provided slides and posters to residence halls and Coffman union, they have asked faculty to talk about the subject in their classes, and have tried to get articles in the Daily.

When they talk about a zero carbon footprint in 2050, Professor McCulloch said, and when they talk about the sizeable investment required for windpower, what conversations are they having about replacing it with better and better technology over time? Mr. Berthelsen said that they always try to improve how utilities are provided on campus. They always look at what is cost-effective and sustainable. He agreed that they have to be open to the next idea.

Professor Chomsky observed that one can turn off the lights but that one's computer is on for 24 hours to allow updates and remote use of the desktop; technology advances create challenges of their own. Mr. Berthelsen agreed and pointed out that Energy Management has reported that one can power down a computer so it is hibernating, which will save 90% of the power consumption but will still allow updates and through the use of 'active directory' we can still access files and programs through servers. It is possible to change technology so that people do not have to live with less. Enhancements can also make buildings work better (e.g., so people do not have to use space heaters when the air conditioning is on).

Mr. Strahan observed that the lights and scoreboard in the football stadium are on all the time. Mr. Berthelsen said that many of the stadium lights are LED, which are brighter and use dramatically less electricity, but they can try to do better.

Professor VandenBosch suggested that Mr. Berthelsen and Professor Hoover return in the spring for another update. She thanked them for the presentation and adjourned the meeting at 4:30.

-- Gary Engstrand

University of Minnesota