

Monmouth University - EPA Memorandum of Understanding Update Report - January 16, 2010

This is Monmouth University's second Update Report on the various activities identified in the Memorandum of Understanding (MOU) entered into between Monmouth University ('Monmouth' or 'the University') and the United States Environmental Protection Agency (EPA) on January 16, 2009.

This Report is organized in accordance with the main headings of the MOU.

GreenPower Partnership

In March of 2009, the University submitted an application to become an EPA GreenPower Partner. The application was submitted based on our operating solar PV system, described below. We were informed that our application could not be accepted because we sell the Solar Renewable Energy Certificates that the system generates, and therefore could not claim the renewable energy or environmental benefits of the system under the GreenPower Partnership program.

In June and July of 2009, the University entered into contracts beginning in July and August of 2009 to purchase certain quantities of electricity from the Hess Corporation. Included in the fixed price for the electricity is 10% of National Green-e Non-Specific energy certificates. Based on estimated quantities, this should amount to the purchase of 1,286,913 kWh of renewable energy over the lifetime of the contracts. From the start of the contracts through December 31, 2009, we have used approximately 688,012 kWh of green energy. Based on this, we will be reapplying to become a GreenPower Partner.

The University's solar PV system continues to produce power and reduce greenhouse gas emissions. For the period from July 1, 2009 through December 31, 2009, the 470kW system produced 207,551.27 kilowatt hours of electricity. The system resulted in a reduction of 303,469.34 pounds of CO₂ during this period, as well as reductions of 337.69 pounds of NO_x and 940.57 pounds of SO_x.

The University committed 835kW to a PJM Demand Response program for the summer of 2009 to help lessen peak loads and the need to use high greenhouse gas emitting peaking plants during periods of high demand. Although an event was not called during the summer of 2009, we did participate in a test with the results indicating that we curtailed more than the 835kW committed.

The University continues to look for on-site green power generation opportunities. However, financial incentives for both solar PV and wind generated power are not sufficient to make either technology economically feasible for us, particularly since non-profit entities such as Monmouth University cannot take advantage of the federal tax credit and the accelerated depreciation for renewable energy systems.

ENERGY STAR Building & Plant Partnership

On March 4, 2009 Monmouth became an EPA ENERGY STAR Partner.

During the period July 2009 through December 2009, the University continued to implement/install the following routine operating energy conservation measures:

- Replace incandescent bulbs with equivalent compact fluorescent bulbs where applicable
- Install lighting occupancy sensors in various locations where appropriate
- Install warm air hand dryers to replace paper products
- Completed the Wilson Hall mechanical control/equipment upgrade. This new system uses both web access and wireless technology to control the boilers, dampers, steam valves, and heat exchanger. The new technology gives the University control of the boiler operation and local controls (thermostats). With better and more definite control Wilson Hall will experience not only more stable levels of comfort but should realize energy savings once the system is in full operation.

Through December of 2009, electricity and/or natural gas usage data has been entered into EPA Portfolio Manager for 30 campus buildings, representing 919,029 sf. Fifteen of these buildings are not residence halls, so benchmark ratings are not available. Benchmark ratings for the residence hall buildings are not available since many of these buildings are individually metered for only one energy source. In the latter half of 2009, the University solicited proposals for a comprehensive energy management hardware and software system that will include metering each energy source in each building. We expect to implement this system in the first half of 2010.

Portfolio Manager data indicates that for the period from July through November 2009, site energy use was reduced by 11%, and source energy use was reduced by 5% compared to the same period in 2008.

Monmouth University, through the New Jersey Clean Energy Program, again hosted two highly successful lighting fairs in conjunction with student move-in weekend where high efficiency lighting products were offered to the campus community and the community at large at significantly reduced prices. Approximately 700 CFLs were distributed. A lighting fair is being planned for Earth Day 2010 and again for student move-in day 2010.

GreenScapes Partnership

Although Monmouth committed in the MOU to become an EPA GreenScapes Partner, we understand that as of February 1, 2009 the GreenScapes program will no longer be a member program but will continue to issue guidance on water conservation and re-use of industrial materials dealing with landscaping activities.

The following practices are employed on campus:

- Bedding trays and plant containers from annuals and other greenery are recycled and reused for the next planting season
- Plastic commercial containers are triple rinsed and recycled

- Used oil and tires from vehicles and equipment are recycled
- Equipment is cleaned with compressed air whenever possible
- Recycling receptacles are provided next to trash receptacles
- Mulch is placed over a plant's root zone to reduce moisture evaporation and conserve water
- Grasscycling-grass clippings are left in place when mowing
- Areas in need of treatment are spot treated whenever possible
- Mulch is used around trees and in flowering beds as weed prevention
- An Integrated Pest Management (IPM) program has been implemented
- Organic, biobased, or slow-release fertilizers have been utilized
- Weeds are hand cultivated
- Drought tolerant plants are used
- Our Web based irrigation system covers approximately 6 acres. The system allows access control from a wireless handheld device, a computer with network capabilities, or a PDA. The network control service allows water savings based on weather and transpiration values. The controller automatically adjusts the irrigation operating schedule to coincide with the local conditions.

WasteWise Partnership and Solid Waste Recycling

On March 13, 2009 Monmouth became a WasteWise Program Partner.

Monmouth continues to enforce recycling of the following materials: glass, aluminum and bi-metal containers; paper; cardboard; and electronic devices. Approximately 1600 cubic yards of cardboard; 500 cubic yards of comingled bottles/glass/plastic; and approximately 425 cubic yards of mixed paper were recycled during the period from July through December 2009.

The Waste and Recycling Committee of our Sustainability Advisory Council (the SAC is further discussed below) has identified a goal of increased recycling on campus. To this end we have been researching more visible recycling and trash receptacles, and ways in which to provide better education on recycling to our campus community. We are also researching potential funding available to us for these efforts. We contacted the WasteWise Partnership in this regard and received information on several possible funding sources which are being evaluated.

Along with our food service vendor, we continue to evaluate food waste management technologies, including in-vessel composting demonstrated at Montclair University and the BioHitechAmerica organic waste decomposition system.

In December of 2009 we arranged for an on-campus demonstration of the Big Belly solar trash compactor. We are currently evaluating this technology to determine the potential financial and environmental benefits.

In February of 2010 the SAC will be hearing a presentation from a representative of the Food & Water Watch organization regarding the reduction/elimination of the use of bottled water on campus. This is an initiative that will be pursued in 2010.

Re-use of Industrial Materials

The University is committed to incorporating EPA's tools and initiatives for re-use of industrial materials into construction and renovation projects and campus operations. During the period covered by this Update Report, no projects allowed for the reuse of industrial materials.

Coal Combustion Products Partnership

Monmouth was welcomed as Coal Combustion Products partner on May 26, 2009. The only active construction projects on campus during the period covered by this Update Report were the Multi-purpose Activity Center (MAC) and a new residence hall. The MAC was completed and occupied in August of 2009. Construction on the residence hall began in March of 2009, but design was completed several years ago and coal combustion products were not specified. As such, no coal combustion products were used during the reporting period.

National Clean Diesel Campaign & Clean Construction USA

We understand from Jenna Salomone, the EPA Region 2 Mobile Source Team lead for Clean Diesel Construction, that there is not a specific process for joining Clean Construction USA as it is not a partnership program. However, we did participate in a conference call with Ms. Salomone and others from the Clean Construction USA team on March 12, 2009 to learn about the program.

Monmouth University enforces a "no idling" policy for all vehicles throughout the entire campus.

WaterSense Products

Monmouth has developed and deployed a Sustainability Web page. A link to WaterSense products is included on the page.

For the period December 2008 through November 2009, 33,793,725 gallons of water were used on campus. This represents a reduction in water use of 5% compared to the period December 2007 through November 2008.

Sustainable Design, Construction and Operations Practices

No design or construction projects during the reporting period were designated for LEED certification. All future construction projects will consider LEED certification early in the design process.

The University continues to use green cleaning products wherever possible in campus facilities. Green cleaning products include glass cleaner, all-purpose cleaner, and floor cleaner.

Campus and Community Involvement

The Monmouth University Center for Human and Community Wellness and the School of Social Work are working to establish the Monmouth University Community Garden. The Community Garden will be available to people in the surrounding area to gather, garden and be a part of our community. The garden will also be open to elementary school children for educational purposes. The Community Garden will be organic, local and a great place to learn about healthy foods and a healthy social and physical environment to grow them in.

A forum was held on campus on December, 2nd to allow the campus and general public to learn about community gardens and to voice their opinions on what they would like to see as a result of the project. Dr. Chris Hirschler of Monmouth University, Tony Sloan of NOFA, and Vivian Quinn of the Monmouth County Master Gardeners, spoke about the theory behind community gardens, the health and wellness aspects of gardening, and organic gardening techniques. The short talks were followed by an open forum to discuss ideas and concerns for the garden.

The Monmouth University Sustainability Council (SAC) was formed in January of 2009. It is an interdisciplinary work group of over 30 volunteers comprised of Students, Faculty, Staff and Administrators. The mission of the SAC is to promote environmental awareness and encourage the development of an environmentally responsible and sustainable campus community in its operations, education, research, outreach and services. The SAC will propose and research energy and environmental sustainability policies and initiatives, and recommend specific policies and initiatives for the University to implement that will advance the University's sustainability goals. The SAC has established a committee structure for its research, with committees for Finance and Procurement; Outreach; Academic Programs and Research; Energy; Land and Water; Waste Management; and Greenhouse Gas.

As mentioned above, the SAC is leading an initiative to reduce waste and increase recycling on campus. The SAC also completed the Sustainability Webpage, which can be found at: <http://www.monmouth.edu/resources/SAC/default.asp>

The Monmouth University Urban Coast Institute (UCI), founded in September of 2005, continues to actively serve the University and the public interest as a forum for research, education, and collaboration in the development and implementation of science-based policies and programs that support stewardship of healthy, productive, and resilient coastal ecosystems and communities. The UCI builds on the University's program in Marine and Environmental Biology and inter-departmental strengths in marine biology, environmental science, business, economics and real estate, public policy, and the arts and social sciences. The UCI maintains a principal focus on the interactions between humans and the coastal and ocean environment, and sustainable coastal development along New Jersey's coasts and watersheds. The UCI seeks to foster collaboration among citizens, watershed and community organizations, governmental agencies, business, the scientific community, and other parties interested in coastal and watershed management, conservation, and restoration.

In October of 2009, the UCI hosted a symposium on the future of ocean fishing. Offering their views on the future of fish were Samuel D. Rauch, deputy assistant administrator for regulatory programs, National Oceanic and Atmospheric Administration (NOAA); Diane Regas, associate vice president for oceans, Environmental Defense Fund (EDF); and Raymond Bogan, counsel for the United Boatmen and the Recreational Fishing Alliance.

Other Activities

During the reporting period an initiative was begun to calculate our campus' carbon footprint, using the Clean-Air Cool Planet Campus Carbon Calculator. Energy use information has been gathered, and the initiative is currently focused on gathering data on student, staff and faculty

commuting. Once the footprint is established, goals and plans for reducing our carbon footprint will be developed.