

Virginia Tech Sustainability Annual Report 2011-2012

The Virginia Tech Office of Energy and Sustainability is pleased to present the Virginia Tech Sustainability Annual Report for 2011 - 2012. The purpose of this report is to provide a summary status of implementation of the Virginia Tech Climate Action Commitment and Sustainability Plan (VTCAC&SP).

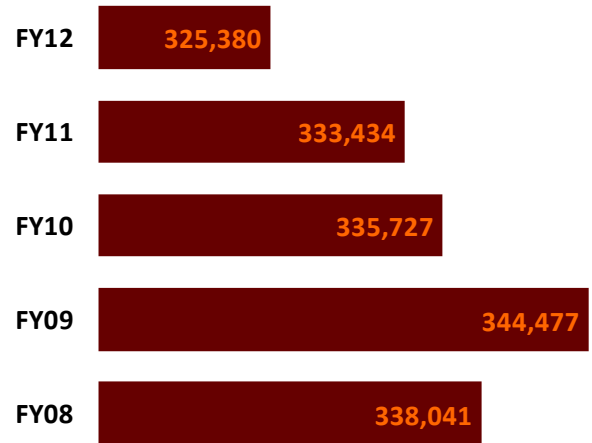
A. KEY SUSTAINABILITY METRICS

1. **Greenhouse Gas (GHG) Emissions:** “Virginia Tech will establish a target for reduction of campus GHG emissions to 80% below 1990 emission level by 2050...” (VTCAC&SP)

Comments

- FY2012 results were lower due in part to moderate winter and summer temperatures, but also to Central Power Plant switching over to 100% natural gas in April due to its historical low cost
- University GHG emissions are primarily driven by coal-generated purchased electricity from Appalachian Electric Power Company (56.7% of FY2012 total emissions)
- Three successful biofuel/coal co-firing trial burns were completed in Central Power Plant boilers during FY2012

Total GHG Footprint (Tons CO_{2e})

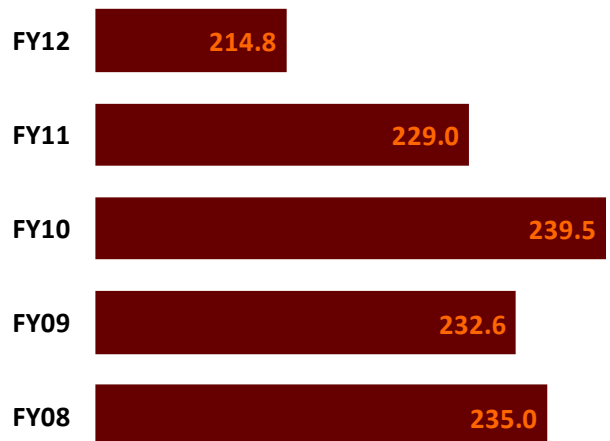


2. **Energy Use Intensity (kbtu's/GSF):** “Virginia Tech will improve electricity and heating efficiency of campus facilities and their operations...” (VTCAC&SP)

Comments

- 5.9% reduction from FY2011 due in part to moderate winter and summer temperatures
- Phase 1 of the Performance Contract program (ESCO) approved for \$5.33 million of energy reduction projects across five campus buildings; project on track for 3/13 completion
- Distribution of monthly electricity reports to all Residence Halls and Dining Facilities began in September 2011

Energy Use Intensity (EUI) (kBtu's / GSF)

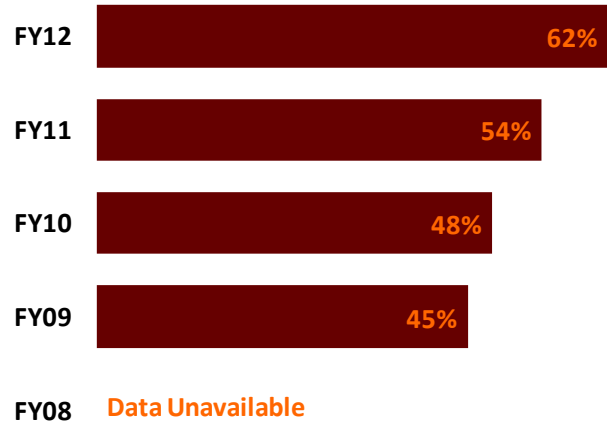


3. **Alternative Transportation Use:** “Virginia Tech will improve transportation energy efficiency on campus through parking, fleet, and **alternative transportation** policies...” (VTCAC&SP)

Comments

- Virginia Tech was again among 15 employers nationwide recognized with a "Race to Excellence" award by The Best Workplaces for Commuters, a program managed by the National Center for Transit Research and designed to encourage sustainable transportation innovation
- Virginia Tech’s Director of Transportation and Campus Services, Steve Mouras, received a 2012 Governor’s Award for Innovation for increasing efficiency and productivity of Virginia Tech’s parking, fleet, and alternative transportation services

Alternative Transportation (%)

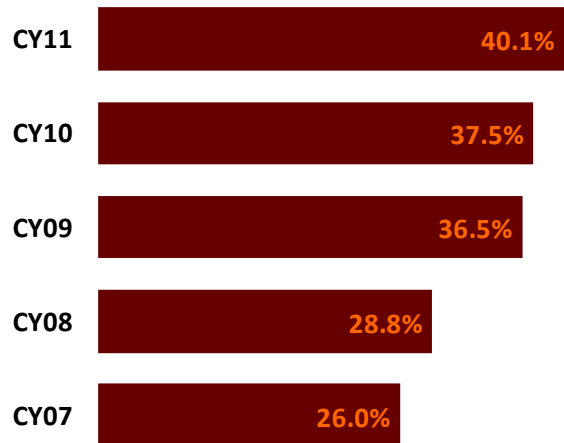


4. **Recycling:** “...Virginia Tech Recycling will adopt a goal of **35% recycle rate by 2012** and 50% by 2025.” (VTCAC&SP)

Comments

- Calendar-year 2011 result of 40.1% marked the third consecutive year to surpass 2012 goal of 35% recycle rate
- New outdoor mixed paper recycling containers near residence halls, coupled with increased emphasis on paper recycling across campus, resulted in a nearly 10% increase in paper recycling from the previous year
- Dining Services food waste composting increased by 25% to a record 406 tons
- RecycleMania 2012 collected over 381,000 pounds of primary recyclable material, a 33% increase from the previous year

Overall Recycle Rate (%)



5. **Student Intern Teams:** “Virginia Tech will establish an Office of Sustainability to...manage a **campus-wide student internship and undergraduate research program** using the campus as a sustainability laboratory” (VTCAC&SP)

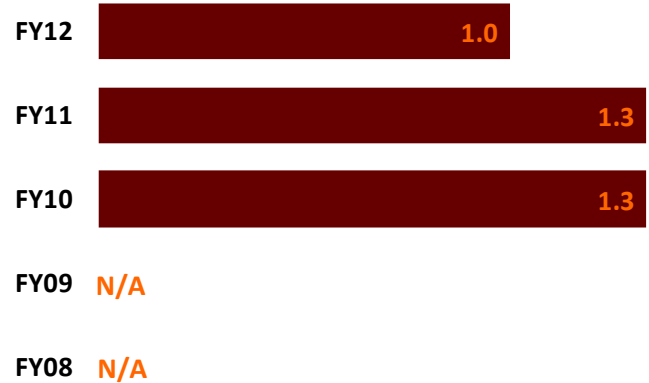
Comments

The recently redesigned student intern teams program is ready for implementation beginning fall semester 2012:

- Steering and Curriculum committees staffed for ongoing program development
- Advisory Teams of faculty and staff members created for each project team
- Professional development component expanded for academic year 2012-13
- Six teams totaling 30 students are assigned for academic year 2012-2013

OES Student Intern Project Teams

(Average No. Per Semester)



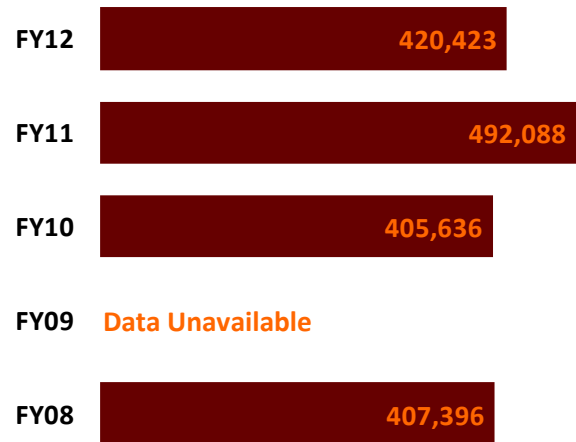
6. **Water Consumption:** “Virginia Tech will engage students, faculty and staff through education and involvement to reduce consumption of energy, **water**, and materials in academic and research buildings, dining and residence halls, and other facilities.” (VTCAC&SP)

Comments

- Xeriscape landscaping techniques continue to be used, including the selection of drought tolerant plants. The Virginia Tech Campus Design Principles document specifies many drought-resistant trees and shrubbery native to the Appalachian Mountains for use on campus
- The three campus areas, including the Virginia Tech Golf Course, are irrigated using non-potable water from the Duck Pond. The Inn @ Virginia Tech uses a rain sensor to automatically adjust its irrigation schedule.

Water Consumption

(Thousands of Gallons)



B. OTHER FY2012 SUSTAINABILITY HIGHLIGHTS

- Virginia Tech continued to demonstrate its commitment to being a leader in campus sustainability by: (1) achieving a silver rating from AASHE “Sustainability Tracking Assessment & Rating System” (STARS); (2) being selected by the *Princeton Review* as one of 16 colleges and universities achieving the “Green Honor Roll”; and (3) by winning the Arbor Day Foundation’s Tree Campus Spring Event.
- The Virginia Tech Climate Action Commitment and Sustainability Plan was referenced and supported in “A PLAN FOR A NEW HORIZON: Envisioning Virginia Tech 2012-2018” approved by the Virginia Tech Board of Visitors on June 4, 2012.
- The Institute for Critical Technology and Applied Sciences-II (ICTAS II) received US Green Building Council LEED Gold Certification; ICTAS II is the first LEED certified research building on campus.
- Virginia Tech’s first major solar photovoltaic power system, located on the top level of the Perry Street Parking Garage on the Blacksburg campus, was commissioned spring 2012 and is expected to generate 136,000 kilowatt-hours of solar-generated electricity, or approximately 13 percent of the annual energy use of the parking garage.
- Gobblerfest, Sustainability Week, RecycleMania, Earth Week, and Ytoss - five highly visible sustainability events sponsored by the university engaged a high level of staff, student and community participation.
- Eco-Olympics, the annual inter-Residence Hall electricity usage and water consumption reduction competition was again conducted in the spring with high participation levels.
- The “Student Organization Sustainability Initiatives Program” (Green RFP) was funded, with \$37,070 dedicated for student-initiated campus sustainability-related projects
- A Sub-Committee of the university Energy and Sustainability Committee began in March to review and reassess the Virginia Tech Climate Action Commitment Resolution and accompanying Sustainability Plan; specific Sub-committee objectives include:
 1. Analyze and report on progress toward accomplishment of the fourteen goals identified in the Virginia Tech Climate Action Commitment Resolution
 2. Evaluate and recommend updates to the Climate Action Commitment and Sustainability Plan to reflect current technologies and best practices
 3. Establish interim goals to measure and verify progress toward the fourteen targeted goals stated in the CAC Resolution at periodic intervals of 3-4 years
 4. Identify resources needed for successful implementation of the fourteen targeted CAC goals