Virginia Tech Sustainability Annual Report
2013-2014

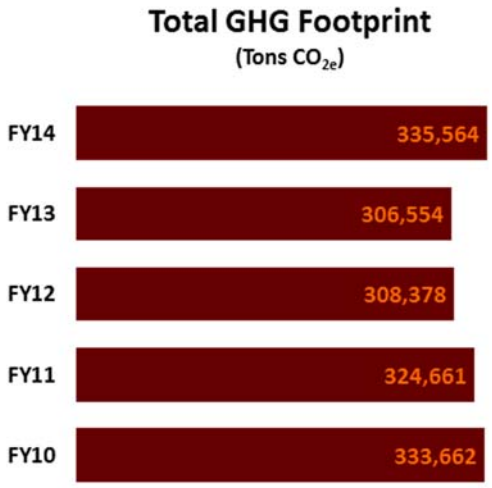
The Virginia Tech Office of Energy and Sustainability is pleased to present the Virginia Tech Sustainability Annual Report for 2013 - 2014. The purpose of this report is to provide a summary status on implementation of the Virginia Tech Climate Action Commitment and Sustainability Plan (VTCAC&SP).

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 (**38,000 tons**) by 2050…" *(VTCAC&SP)*

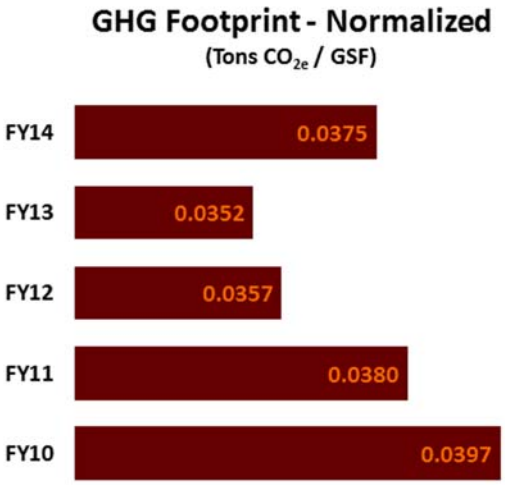
Comments

- **9.5% increase over FY2013** primarily driven by:
  - **23 % increase in boiler steam demand** combined with increased boiler consumption of coal over natural gas (higher temperature coal boiler generated steam required to operate the VT turbine-generator).
  - Similar increase in APCO coal usage expanding VTs purchased **electricity emissions** per kilowatt-hour.



- VT added more than 250,000 GSF in FY 14.

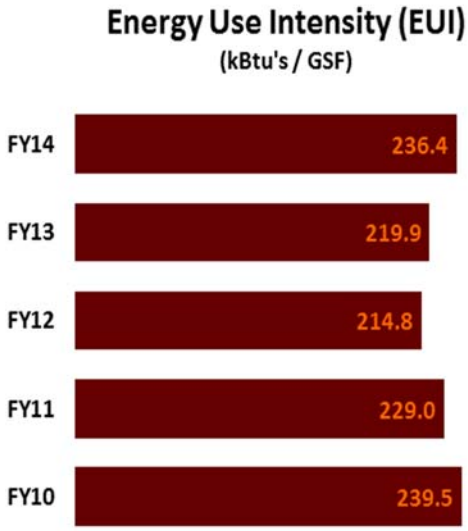
- GHG emission percentages by fuel source:
  - Purchased Electricity 51.9%
  - **Coal (+10% from last year)** 33.9%
  - Natural Gas – Steam Plant 3.8%
  - Commuting 5.1%
  - Natural Gas – Buildings 2.2%
  - All Others 3.2%



2. **Energy Use Intensity (kbtu's/GSF):** "Virginia Tech will improve electricity and heating efficiency of campus facilities and their operations by improving the heating and cooling infrastructure and operation, lighting efficiency, equipment efficiency, and metering and controls of its existing buildings." *(VTCAC&SP)*

Comments

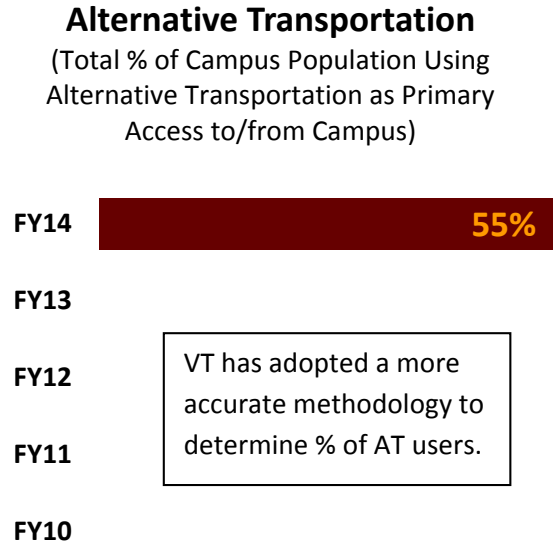
- 7.5% over FY2013 primarily driven by:
  - New buildings coming on line (Moss Arts Center, HABB1, Signature Engineering Building) resulting in a 11% increase in campus heating energy BTU consumption and a 7% increase in campus electricity consumption
  - VT turbine generator restart (offline all of FY13; back online beginning 9/13); note that while economically advantageous, operation of the turbine generator increases overall campus energy consumption



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

Comments

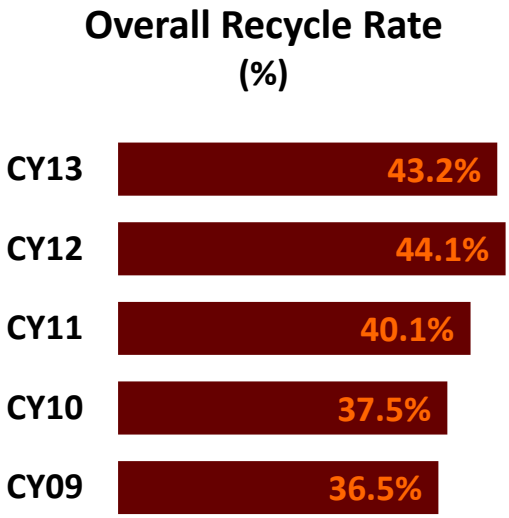
- Virginia Tech again recognized with a **Gold "Race to Excellence" award** by The Best Workplaces for Commuters; a program managed by National Center for Transit Research and designed to encourage sustainable transportation.
- Virginia Tech among 58 colleges and universities designated a **bicycle friendly university** by League of American Bicyclists for its commitment to providing a more bicycle friendly campus.
- The recent Virginia Tech commuter survey indicated that **55% of campus affiliates used alternative modes of transportation**. The percentage of faculty and staff that used AT for FY 14 was 36%, commuter and graduate students that used AT was 62%, and resident students that used AT was 88%.



4. **Recycling**: "…Virginia Tech will minimize waste and achieve a 50% recycle rate by 2020" *(VTCAC&SP)*

Comments:

- 43.2% Final Recycling Rate for Calendar Year 2013 (**second highest ever and marks the third straight year over 40%**). This is a slight decrease resulting from a decline in recycled metal from capital renovation projects.
- 598 tons of Composted Food Waste from Dining Services and The Inn at Virginia Tech (an **increase of 50 tons** from CY 2012 and represents 27% of our 2,230 tons recyclable materials).
- **Trash reduced by 27 tons** to 3,614 tons (consistent downward trend since 2007).
- Deployed 100 Big Belly Solar Trash Compactor and Bottles & Cans Recycling units (**most of any college or university nationwide**).



5. **Water Consumption**: "Virginia Tech will engage students, faculty, and staff through education and involvement to develop and implement innovative strategies for efficient and sustainable use of energy, **water**, and materials in all university-owned facilities." *(VTCAC&SP)*

Comments

- Student Affairs **installed low-flow shower heads** in all their remaining resident halls saving approx. 10,000,000 gal/year.
- Xeriscaping techniques continue to be used, including the selection of **drought tolerant plants**.
- The three campus areas, including the Virginia Tech Golf Course, are **irrigated using non-potable water** from the Duck Pond. The Inn at Virginia Tech uses a rain sensor to automatically adjust its irrigation schedule.