University Perspective

In 2007, JHU committed to reduce its greenhouse gas emissions (GHG) by 51% by 2025. This includes emissions derived from electricity, natural gas, distillate oil, and gasoline consumed by university owned properties and vehicles. In addition to carbon dioxide, methane (CH4), nitrogen dioxide (N2O), and refrigerants are measured and normalized based on their global warming potentials. While Johns Hopkins University continues to grow in size, the rate at which energy consumption increases is at a much slower pace as a result of energy conservation measures that have been implemented.

Total Energy:
University energy consumption is tracked in MMBTU, which combines kWh of electricity, therms of natural gas, and the energy content of liquid fuels for transportation and buildings. Since FY08, total energy consumption has increased by 4.6%.

Building Footprint:
As the university often has less ability to implement conservation measures in leased spaces, only properties owned by Hopkins are tracked. In FY15, university-owned buildings increased by almost 25,000 square feet. Since FY08, the university has grown by 9.3%.

Greenhouse Gas Reduction:
In FY15, the university emitted 304,490 metric tons CO2-equivalent (MTCO2e), a 30% reduction since FY08. Much of the change is attributed to the regional electric grid, which has been consuming proportionally more natural gas and renewable sources, while reducing its reliance on coal.

Energy Density:
New construction and vacating of existing buildings can drastically affect the university’s total energy consumption, and therefore make it difficult to see the benefits of energy conservation measures. An energy density calculation—energy per gross square foot—is a useful metric that normalizes energy use with the size of facilities. In FY15, university-owned properties averaged 203 kBTu/sq ft, almost a 5% reduction since FY08. This reduction in energy, and ultimately GHGs, can be attributed to a number of initiatives including lighting retrofits and the implementation of high performance building guidelines for new construction and major renovations.

Act on Climate.
President Daniels joined other university Presidents for the White House’s Act on Climate Initiative in advance of the Paris Climate negotiations in 2015. In doing so, President Daniels reaffirmed the university’s own commitment to reduce its GHG emissions.
Keswick & Mt. Washington Campuses

**Total Energy Consumption**
The university began moving tenants into Keswick in FY11. With increased occupancy, energy usage has steadily risen each year. Keswick consumed 28,387 MMBTU in FY11 and 46,024 MMBTU in FY15. Mt. Washington rose from 96,219 MMBTU in FY08 to 108,077 MMBTU in FY15.

**Energy Density**
As with total energy, energy density has continued to increase for Keswick. At Mt. Washington, its energy usage can vary year-to-year if changes are made to its energy-intensive data center. In FY15, Keswick consumed 93 kBTU/sq ft, up from 58 kBTU/sq ft in FY11. Mt. Washington’s energy density was 74 kBTU/sq ft in FY08 and is now 83 kBTU/sq ft.

**Greenhouse Gas Emissions**
Despite the addition of the Keswick facility in FY11, GHG emissions for the combined campuses were almost unchanged relative to FY08. Mt. Washington alone emitted 21,778 MTCO2e in FY08, while both contributed 21,360 MTCO2e in FY15. Cleaner electricity from the grid helped mitigate an emissions increase.

**Waste Diversion**
Both campuses continue to improve their recycling and composting efforts. In FY11, the combined diversion rate was 30%, and in FY15 Keswick achieved a 40% diversion rate and Mt. Washington reached 51%. This includes the collection of 115,000 lbs of compostable material during the year. By comparison, the average diversion rate for the entire university was 44% in FY15.

**Domestic Water Consumption**
Domestic water consumption was almost 25,000,000 gallons between the two campuses, an increase from FY14. The university consumed an estimated 360,000,000 gallons in all of its owned buildings in FY15.

---

**by the numbers:**

- $288K in Utility Rebates for energy conservation measures since 2008
- 6 Charging Stations for electric vehicles (EV)
- 51% of Copy Paper contains at least 30% recycled content
- 6 Green Office Certifications since 2014