

Responsible Energy Policy 2015

A. Preamble

An immense and ever-growing body of scientific evidence concludes that our over-reliance on fossil fuels is causing the planet to warm at dangerous rates and the climate to destabilize. To avoid the risk of devastating climate disasters, the world's top scientists agree that industrialized nations must halt the growth of global warming pollution immediately. This presents a challenge of massive proportions, one that calls for the vision and leadership of the Johns Hopkins University.

Demonstrating leadership on reversing human-induced global warming is a task that fits squarely into the educational, research, and public service missions of the Johns Hopkins University. There are few other institutions in society that have the influence, the critical mass, and the diversity of skills needed to successfully make this transformation. As a leader in higher education and steward of the Knowledge for the World Campaign, the Johns Hopkins University has a unique opportunity and an important role to play in crafting solutions to this great challenge.

B. Policy for carbon neutrality on the Homewood campus

The Homewood campus of Johns Hopkins University commits to employ fully carbon neutral operations by 2015. The University further agrees to maintain carbon neutral operations thereafter.

To realize this commitment the University shall reduce or offset the greenhouse gas emissions for which the Homewood campus is responsible. The scope of this responsibility covers all on-campus electricity use, heating fuels, procurement and disposal of materials, and University transportation associated with campus events and academic programs.

C. Definitions

For the purposes of this policy the following definitions apply:

REP 2015: The Responsible Energy Policy 2015

Carbon neutral: The net release of zero carbon emissions as a result of Homewood operations. Activities that produce and release carbon dioxide and other greenhouse gases into the atmosphere are balanced by activities that remove carbon from the atmosphere.

Carbon offset: a service or activity that results in a net reduction of carbon from the atmosphere.

Greenhouse gases: naturally occurring and man-made gases that trap radiation and heat the atmosphere. Atmospheric concentrations of these gases, especially carbon dioxide, methane, carbon monoxide, and nitrous oxides, have increased significantly in recent years due to human activity, enhancing the greenhouse effect and posing serious problems for present and future human life.

Renewable energy: Energy derived from resources that are regenerative or for all practical purposes cannot be depleted. Renewable energy resources include wind, solar, and biomass.

D. Commitments under REP 2015

Energy used in the following areas of Homewood campus operations shall be carbon neutral by 2015:

1. Electricity Use: The University currently purchases electricity generated primarily by burning fossil fuels, releasing vast amounts of carbon dioxide and other pollutants into the atmosphere. This electricity powers campus lighting, electrical devices, and cooling systems. Homewood's cooling systems circulate air that is cooled by chilled water, and the chilled water system is entirely electricity driven.

Suggested means of achieving carbon neutral electricity use include:

- (a) Reduce electricity consumption as measured by two indexes: (1) total electricity usage and (2) electricity use per square foot of building space. The goal is to decrease Homewood electricity consumption 20% by 2015.
 - (b) Reduce carbon-intensive electricity use by investing in renewable electricity sources:
 - (i) Pursue on-campus opportunities to install renewable energy sources to generate electricity.
 - (ii) Support local renewable electricity producers by engaging in long-term purchase of power contracts, energy hedge contracts, or other creative financial mechanisms.
 - (c) Offset any residual carbon-intensive electricity use by supporting local renewable electricity resources in the Baltimore community (i.e. local schools, libraries, community centers) or other creative offset programs.
2. Energy Fuels: The Homewood Power Plant has a dual-fuel capability and can burn either natural gas or heating oil to heat water for steam production. The steam is piped through tunnels to campus buildings and used for heating and hot water. Of the two fuels used, burning natural gas produces less carbon dioxide per unit energy than heating oil, but both release carbon dioxide and other harmful gases including sulfur dioxide, ozone, carbon monoxide, and nitrogen oxides into the atmosphere directly over campus. These campus emissions contribute to smog, acid rain, global warming, and a host of human health problems.

Suggested means of achieving carbon neutrality in energy fuels include:

- (a) Reduce the amount of heating and cooling fuels used on campus as measured by two indexes: (1) total fuels usage and (2) fuels use per square foot of building space. The goal is to decrease non-renewable energy fuel consumption by a minimum of 5% per year, or 40% total by 2015.
 - (b) Pursue opportunities on campus to install renewable energy resources for heating and cooling needs.
 - (c) Explore opportunities to offset the amount of non-renewable fuels used on campus by installing renewable energy resources in the Baltimore community (i.e., local schools, libraries, community centers).
3. Transportation: Faculty and staff commuting, student travel to and from Homewood, and University fleet driving are the primary components of the Homewood campus' transportation footprint. Of these, the University fleet,

including owned, rented, and chartered vehicles, is best documented and most easily controlled. In addition to high concentrations of greenhouse gases, tailpipe emissions also include sulfur oxides, carbon monoxide, nitrogen oxide, volatile organic compounds, and particulates. These compounds are released at ground level and all adversely affect human health.

Suggested means of achieving carbon neutrality in transportation include:

- (a) Reduce carbon emissions from the University's vehicle fleet through a combination of using alternative fuels, more efficient vehicles, new technologies, and campus policies. The goal is to decrease fossil fuel consumption by a minimum of 5% per year, or 40% total by 2015.
- (b) Increase the percentage of faculty, staff, and students who use alternative means to commute to campus by encouraging avenues such as carpooling, public transportation, cycling, walking, and telecommuting through incentives and awareness.
- (c) Find ways to offset the amount of fossil fuels used in transportation activities (including faculty, staff, and student commuting), and business-related travel by pursuing opportunities to provide alternative fuels in the Baltimore community (i.e., local schools, libraries, community centers).

4. **Procurement and Disposal:** The Johns Hopkins University consumes and disposes of vast amounts of products, from food and cleaning supplies to packaging building materials. Many of these products currently originate from distant suppliers and are reliant on fossil fuel transportation, while others rely on energy-intensive production processes and nonrenewable input materials. Moreover, many of the products which are included in the University's recycling program are disposed of using carbon-intensive transportation.

Suggested means of achieving carbon neutrality in procurement and disposal include:

- (a) Institute a procurement policy that prioritizes (1) the purchase of supplies that contain a high level of recycled content; (2) the purchase of equipment that meets US EPA "Energy Star" efficiency levels; (3) the purchase of supplies from local sources to reduce transporting impacts.
- (b) Implement a policy that prioritizes the sustainable disposal of supplies or materials that can be recycled or reused after their useful life at the Johns Hopkins University.

E. Accountability of REP 2015

The Johns Hopkins Sustainability Committee shall assemble an annual report of key indicators to track the University's progress. The report will be published on the Hopkins Sustainability Initiative website at the end of each fiscal year. Indicators of Homewood campus performance for each area of campus energy use should be quantifiable, verifiable, and include:

1. **Electricity:** total electricity consumption broken down by individual building where available, including the proportion and source of any renewable electricity used; electricity use per square foot of building space; percent change in electricity consumption from previous year and from adoption of this policy, broken down by individual building where available. Annual chilled water usage

for each building should be presented to help identify best candidates for energy efficiency improvements.

2. Energy Fuels: total fuel consumption of the Homewood Power Plant broken down by fuel type (natural gas, heating oil); fuel consumption per square foot of building space; percent change in fuel consumption from previous year for each fuel type. Annual steam usage for each building should be presented to help identify best candidates for energy efficiency improvements.
3. Transportation: miles-per-gallon of the University's vehicle fleet, broken down by vehicle type and fuel used, including both owned and rented vehicles; number and type of vehicles in the University fleet; percent change in fossil and alternative fuels from previous year.
4. Procurement and Disposal: amount of glass, plastics, cardboard, and paper recycled as a percentage of those materials consumed; percentage of all paper purchased with recycled content; total volume of waste sent to landfills, incinerators, or otherwise exported from campus.

Progress cannot be measured without baselines, so a comprehensive greenhouse gas inventory will be completed under the supervision of the Johns Hopkins Sustainability Committee within a year after adoption of this policy. The greenhouse gas inventory should include, at minimum: Homewood electricity use, energy fuels use, and transportation emissions from the campus fleet and University faculty and staff.

Every two years after completion of the greenhouse gas inventory the Johns Hopkins Sustainability Committee should include an addendum to the annual report in which they analyze the University's progress and suggest means to remedy any areas that appear to be falling behind the goals set forth in this policy. Adoption of this policy initiates the development of a more comprehensive plan to achieve carbon neutrality in the areas discussed, and expand this goal to eventually encompass other areas of campus operations such as food, building and renovations, and investments.