Green Practices GHG Target and Goals Retreat Nov 2, 2009

Attendees;

H. Scott Matthews, Dave Dzombak, Marty Altschul, Don Coffelt, Barb Kviz, Melissa Cicozi, Ryan Wolfe, Marc Portnoff, Jan Held, Dave Wessell, Lt. Gary Scheimer, Christine Mondor, Marcia Gerwig, Steve Gergely, Leah Zande, Justin Sullivan, Justin Parisi (Net Impact, Tepper, CEE), Patrick W. Zimmerman, (GSA Rep, PhD candidate History), Michael Jay Furman (Green Practices Intern)

Energy

Background Information

** Steam - (plant efficiency), (coal, natural gas, engineered geothermal, bio-fueled base gas (landfill gas), solid bio-fuels.
** Chilled Water – (plant efficiency), (electricity, steam)
** Natural gas – (bio-fuels based gas), (natural gas)
** Electricity – Make electricity (co-gen, solar, wind, other)
Purchase from grid - Renewal Energy Credits (REC's) (local-national-wind–other?). What combination?

2 years

- 100% renewable now
- Higher % more important than local wind
- Energy efficiency Bellfield
- Educational aspect
- White paper - Purchasing Strategy for renewable electricity

5 years

- Investigate landfill gas REC's to replace natural gas.
- Co-gen/tri-gen @ Bellfield
- Demonstration projects on campus for renewable energies (i.e. Solar & Wind).
- Waste to energy - plasma system at Bellfield,

10 years

- Carbon Sequestration.
- Large scale engineered geo-thermal systems.

Built Environment

2 years – 10 years

- Continue with LEED rating process for new buildings.
- Continuous commissioning and investigate LEED EB.
- Install LED lighting systems where economical.
- Building level engineered geo-thermal systems.
- Pumping chilled water more efficiently.
- Assess equipment and mechanical systems for efficiency.
- Educate occupants to change behaviors.
- Educate campus clients about energy efficiency Vs upfront costs.
- Exploit low hanging fruit projects (15% ROR - 6 yr payback projects).
- New Campus infrastructure development (Craig Street corridor).

Transportation

Background Information

**Daily faculty, staff and students commuting
**Shuttle buses -campus and escort service
**Campus fleet
**Employee travel
**Students travel

2 years

- Establish a regional daily shuttle bus to Washington DC.
- Misc. partnerships with other companies.
- Air offsets – chargeable and possible match by university.
- Promote video conferencing via travel.
- Continue to use bio-fuels in fleet vehicles.
- Establish Voluntary Renewable Energy Fund.
- Bike Initiative - promote bike commuting to work.
- Bike racks on shuttle and escort buses.
- Shuttle coordination across other schools.
- Revisit shuttle routes for effectiveness and efficiency.

5-10 years

- More use of Bio-fuels for fleet vehicles.
- Neighborhood Electric Vehicles (NEV's), regulations; street legal in PA.
- Unfunded mandates - partial subsidies for new purchase of fleet vehicles.
- EV charging stations on campus.

Outdoor Environment

Background Information
** Carbon Sequestration & Offsets
** Water Treatment and Measurements of Water
** Climate Modification Strategy
** Climate Adaptation Security and Storm Water
** Landscape as a Working Landscape
** Education Opportunities

2 year

- Food, leaf, and tree waste composting.
- Engineers investigating flood issues (project in progress).
- Class project to define values for a landscape strategy.
- Class project to research outdoor lighting on campus.
- Look at developing underdeveloped areas of campus (i.e old Exxon Station).

5-10 year

- Develop a Landscape Strategy (needed to apply for grants).
- RFP to determine metrics, performance measures and benchmark liabilities; (i.e. landscape surface area, water on roofs, soils, civil engineering, what are we watering to keep alive, what is flooding, reuse of water and all living systems on campus.
- Set goals for what we plant for bio-diversity and wildlife.
- Cost ($100-200k).
- Campus Master Plan 2002; Sustainable Design and Development of Campus Ecology (GBA/CCI). Campus Master Plan 1995-96 (Sasaki).

Waste/Recycling/Dining

2 year

- Continue food composting at UC and Resnik Hall, (add MWG location).
- Move towards post-consumer food composting program.
- Increase zero waste events.
- Participate in RecycleMania 2010.
- Goal; 35% recycling rate.
- Housing & Dining to implement 2009 Sustainable Strategic Plan goals.
- Promote Green Teams.

5-10 years

- Biomass to energy.

Purchasing

1. Rebuilding procurement;
   - Create Standardized Processes (green as rule).
   - RFP Process – suppliers support us in our green efforts (content of product and extended footprint).
   - Asking & capturing of data for buying decisions.

2. Understanding our supply chain;
   - IT products
   - Manufacturing
   - Disposal

3. External Vendors;
   - Maximize resources.
   - Competitively bid services and products (include green options).
   - Dispel myth: "that green solutions are more expensive".

4. Supplier Collaboration;
   - Labeled green products shopping list (i.e. Office Depot).
   - Travel agents to calculate air travel CO2 footprint.

5. Connective tissue;
   - Linkage to all campus departments.
   - Knowledge to what everyone is purchasing.
   - Educate and encourage buying decisions.

6. Business processes waste;
   - Reduce paper while keeping full compliance integrity.