**Meeting Minutes**

**Energy and Water Working Group-CEST**

**Thursday, January 21st 10:00 am**

**Attendees:**

Paul McConocha- Energy Manager, Energy Management
Maurice York- Head of Information Technology for the Libraries
Jesse Henderson- Research Assistant, Forestry and Environmental Resources
George Smith- Building Maintenance and Operations
Ron Bradley- Classroom Technology Manager, OIT
Jude Davis- Information and News, OIT
David Dean- Outreach Coordinator for Sustainability and Energy
Ellen Buckner- Environmental Specialist, EHS
Tony Lawrence- Data Center Manager
Mahomet Accilien- Energy Program Coordinator
Bill Davis- Energy Program Coordinator

Lindsay Batchelor- Program Coordinator, University Sustainability Office
Tracy Dixon- Director of University Sustainability Office
Jeff Hightower- Director of Utilities Infrastructure
John Carter- Project Manager, Affiliated Engineers, Inc.
Rob McKenna- Energy Strategies

**Agenda**

* Welcome and Introductions- Paul McConocha
* Where We Are/Where We Are Going- Lindsay Batchelor
* GHG Inventory and CAP Overview- Lindsay Batchelor
* Approach and Goals of the CAP Project- John Carter, AEI
* GHG Estimates for Focus Area- John Carter, AEI
* List Development- All
* Next Steps- Lindsay

**5-Year Strategies**

* Achieve a 20% reduction in building energy consumption by 2015 (target reduction to 137,510 BTUs/GSF), with a stretch goal of achieving a 30% reduction (target reduction to 120,322 BTUs/GSF), compared to the 2002-2003 baseline (171,888 BTUs/GSF)
* Achieve a 45% reduction in building water consumption through 2015 (target reduction to 0.0363 CCF/GSF), with a stretch goal of achieving a 50% reduction (target reduction to 0.033 CCF/GSF), compared to the 2001-2002 baseline (0.066 CCF/GSF).
* Improve energy data management capability to make data-driven energy decisions
* Ensure a cost-effective and stable energy supply by developing business scenario hedge strategies
* Reduce energy and water use in all facilities
	+ Use return on investment calculations to help prioritize and guide energy conservation projects (“energy smart” repairs)
	+ Further develop Energy Performance Contracting as a means to achieve energy savings
* Integrate energy conservation as a core business value of NC State
	+ Adopt an aggressive energy and water conservation policy
	+ Enhance energy awareness program and align with other outreach programs
	+ Create buy in with Facilities staff and building end-users to properly operate building systems in an energy efficient manner
	+ Evaluate utility billing options that creative incentives for saving energy

**Discussion/Ideas**

* Green IT
	+ Server storage (virtual desktops)
	+ Changing 3000 machines = $2.5MM savings and 300,000 MTCDE over 8 years
	+ Automatic computer/projector shutdown on weekends
	+ Materials purchasing standards
* Labs
	+ Efficient (low flow) fume hoods
	+ Fume hood reduction(?)
	+ Retro-commissioning already in progress
* Scheduling – needs to be building-specific
* Heat capture/reuse (e.g., computing facilities)
* Building occupancy sensors
* Lighting retrofits (LED) – indoor and outdoor
* Results monitoring/tracking (provide feedback on progress)
* Plug load management
* Building envelope upgrades (primarily addressed during major renovations)
* Establish temperature policy/set points
* Building control
	+ Currently in 70% of buildings
	+ 25% have “high tech” capability to make quick, easy changes to building operation
	+ Need a centralized repository of building information and control
* Campus-wide energy audits
	+ Focus on energy hogs
	+ Currently only have capacity to complete 3-5 buildings per year
	+ Increase staffing to expedite audits (?)
* Renewable energy
	+ Solar PV at Keystone
	+ Solar PV at Flex Lab
	+ Solar thermal at Carmichael