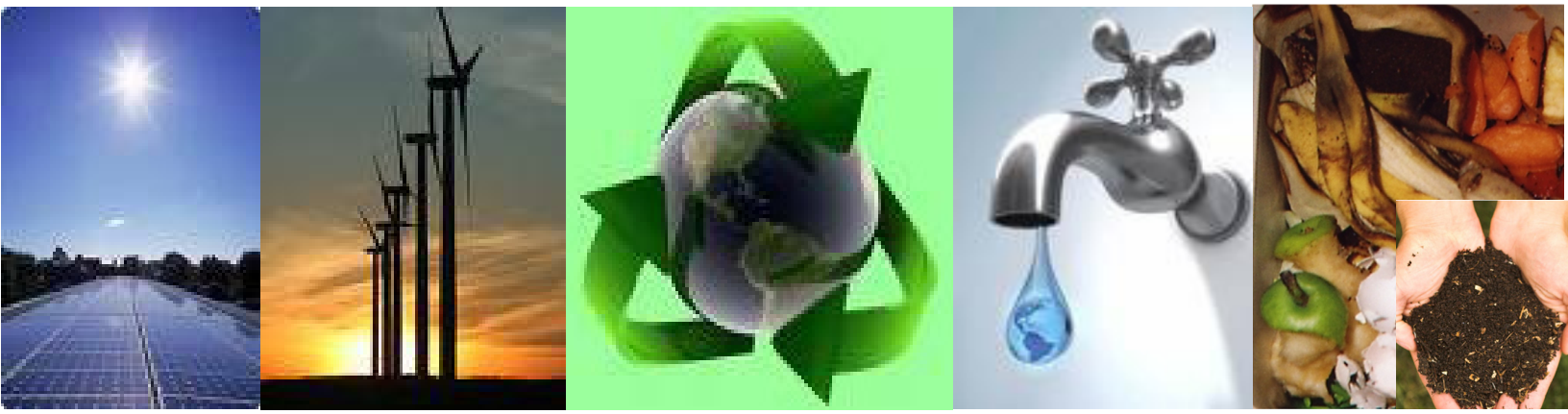
Georgian Court University
Environmental Assessment:
Green MOU SemiAnnual Report
October 28, 2013



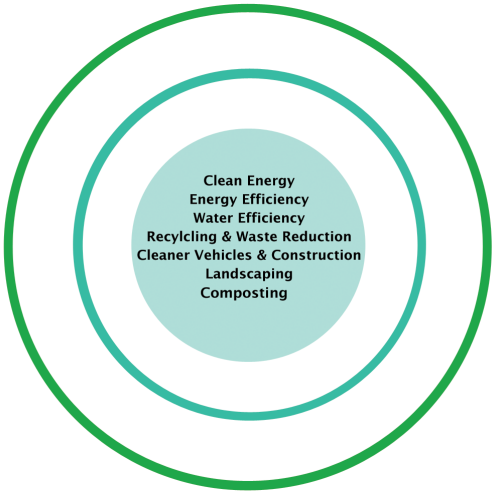
Environmental Protection Agency
Region 2

Andrew Bellina, PE
Senior Policy Advisor
212-637-4126

Jose Pillich
Michael Wanser
Research Analysts

Accomplishments

Reductions of 11,222 MTCO2e



Memorandum of Understanding

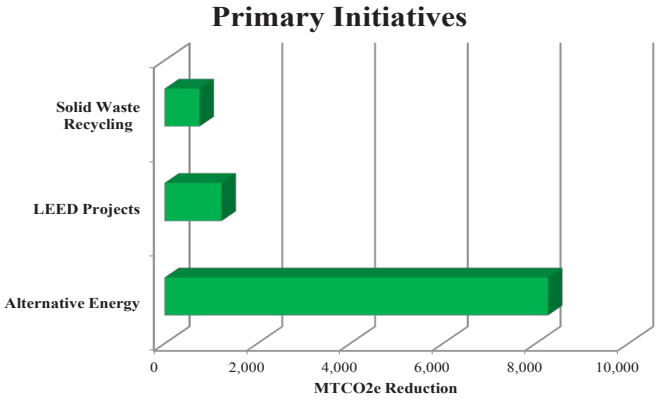
On March 12, 2012, Georgian Court University signed a Memorandum of Understanding (MOU) pledging to become an environmental steward by implementing a number of green initiatives that would reduce its carbon footprint and further improve our planet's environment. This partnership with the United States Environmental Protection Agency (EPA) and Georgian Court University has resulted in reducing energy, water and solid waste production across their entire operations.

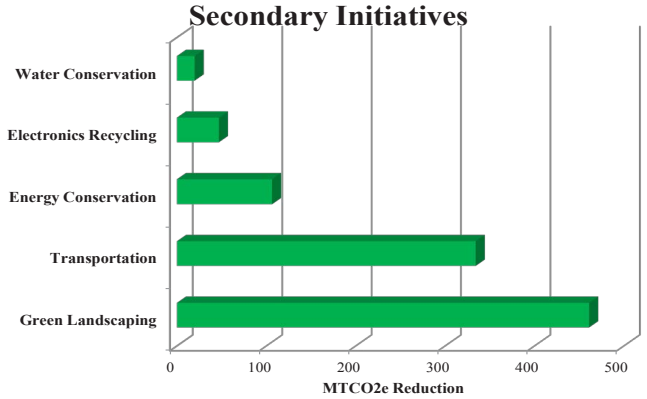
Reduction in Environmental Footprint

This is the third update Georgian Court University has provided documenting its green initiatives. The EPA has analyzed the submitted information and generated an environmental footprint. Due to the progressive green efforts of the organization, Georgian Court University has managed to reduce its carbon footprint by 11,222 MTCO2e* and saved an estimated $429,800 in operating expenses.

*Metric Ton Carbon Dioxide Equivalent

Environmental Metrics	Total Sector (MTCO2e)
Energy Conservation	106.5
Alternative Energy	8,269.7
Water Conservation	19.8
Solid Waste Recycling	754.4
Green Landscaping	461.2
Electronics Recycling	47.0
Transportation	334.4
LEED Projects	1,229.2
Total (MTCO2e)	11,222.1





Measurement and Continuous Improvements

EPA uses these environmental conversion models to calculate metric tons of carbon dioxide equivalents:

Greenhouse Gas Equivalencies (GHG) Calculator converts GHG reductions into scenarios that can be easily communicated to the public.

eGRID Version 1.1 (2007) and the EPA Pollution Prevention (P2) GHG Conversion Tool which convert standard metrics for electricity, green energy, fuel use, chemical use, water use, and sustainable materials management into MTCO2e.

The EPA WARM Model which helps calculate GHG emission reductions from several different waste management practices, including source reduction, recycling, combustion, composting and landfilling.

The EPA Pollution Prevention (P2) Cost Calculator estimates cost savings associated with GHG reductions.

Certain environmental data points cannot be converted to MTCO2e because scientific models do not currently exist. As methodologies improve, environmental assessments will be updated to include any new GHG reduction estimates.

Accomplishments

Reductions of 11,222 MTCO2e

Greenhouse Gas Equivalencies

What does the reduction of 11,222 MTCO2e represent ?
The organization's effort is equivalent to any one of the following:

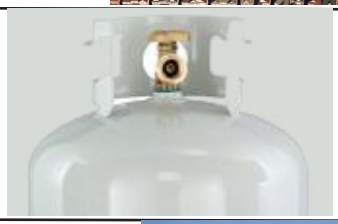
- Annual greenhouse gas emissions from 2,338 vehicles

- Carbon dioxide emissions from 1,258,083 gallons of gasoline

- Carbon dioxide emissions from 26,098 barrels of oil consumed

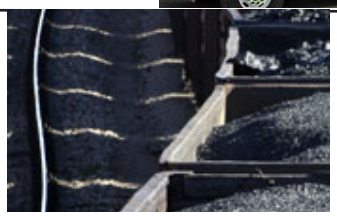
- Carbon dioxide emissions from the energy use of 561 homes for one year

- Carbon dioxide emissions from 467,588 propane tanks used for home barbeques



- Carbon dioxide emissions from gasoline carried by 148 tanker trucks

- Carbon dioxide emissions from burning 48.2 railcars' worth of coal (nearly 3/4 mile long)



Environmental Metrics	Mar 2012 MOU	Sep 2012 Update	Mar 2013 Update	Sep 2013 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Energy Conservation/Energy Star						
Total Savings (MTCO2e)	***25.9***	***25.9***	***27.3***	***27.5***	***106.5***	***$25,130***
Miscellaneous Energy Conservation						
Web Based Energy Competition						
Motors and Transformers						
Lighting Project Fixtures (bulbs and ballast)						
High Temp Hot Water Pipe Replacement						
HVAC, Chiller & Electrical						
Bulb Replacement (CFLs)	200 bulbs	200 bulbs	260 bulbs	260 bulbs	17.1	$2,882
Bulb Replacement (LEDs)	600 bulbs	600 bulbs	612 bulbs	622 bulbs	58.7	$9,912
Gas Savings						
Fuel Oil Savings	750 gal	750 gal	750 gal	750 gal	30.7	$12,336
Steam Savings						
Alternative Energy						
Total Savings (MTCO2e)	***2146.5***	***2041.1***	***2041.1***	***2041.1***	***8,269.7***	***($1,847)***
On-Site Solar (855 KW)	427.5 kwh	427.5 kwh	427.5 kwh	427.5 kwh	1.3	$214
On-Site Wind						
On-Site Geothermal						
On-Site Combined Heat and Power						
Purchase of Green Energy/Green Power	2,891,000 kwh	2,749,000 kwh	2,749,000 kwh	2,749,000 kwh	8,268.4	($2,061)
Water Conservation/WaterSense						
Total Savings (MTCO2e)	***3.4***	***3.4***	***3.4***	***9.7***	***19.8***	***$4,167***
Miscellaneous Water Conservation						
Low Flow/Hands Free Faucets						
Low Flow Toilets (30)	60,000 gal	60,000 gal	60,000 gal	60,000 gal	0.6	$488
Low Flow Shower Heads (83) new total Sept 2013	32,200 gal + 4200 kwh	32,200 gal + 4200 kwh	32,200 gal + 4200 kwh	95,450 gal + 12,450 kwh	19.1	$3,529
Low Flow Urinals (8)	18,400 gal	18,400 gal	18,400 gal	18,400 gal	0.2	$150
Waterless Urinals						
Solid Waste Recycling						
Total Savings (MTCO2e)	***83.2***	***155.7***	***203.5***	***312.0***	***754.4***	***$11,572***
Mixed Recyclables (includes Wastewise)						
Pallets Waste Avoided / Wood Recycled		125 lbs	125 lbs	85 tons	209.4	$3,405
Steel Recycled Offsite during Deconstruction				16 tons	28.8	$640
Concrete / Asphalt Recycled during Deconstruction		12.5 tons	12.5 tons		13.1	$1,000
Recycled C&D Waste (construction waste)				9 tons	2.2	$360
Cardboard (construction/non-construction/sharp containers)	5.7 tons	5.7 tons	10.45 tons	5.5 tons	85.1	$1,094
Mixed Metal (construction/non-construction)		15 tons	15 tons		119.1	$1,200
Paper, Mixed	15.24 tons	15.24 tons	27.9 tons	12.75 tons	250.4	$2,845
Plastic, Mixed (bottles,construction/non-construction,sharp containers)		2.2 tons	2.2 tons		4.3	$176
Can / Bottle Recycling	2.4 tons	2.4 tons		2 tons	33.6	$272
Blue Wrap Waste Reduction						
Mixed Organics		5.626 tons	5.626 tons		2.3	$450
Food Donation (Waste diversion)						
Biosolids and Food Waste Recycling / Composting						

Environmental Metrics	Mar 2012 MOU	Sep 2012 Update	Mar 2013 Update	Sep 2013 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Fluorescent Bulbs		881 lbs	930 lbs		0.1	$36
Ceiling Tiles Recycled						
Carpet Recycled		1 ton	1 ton		4.7	$80
Waste Oil Recycled						
Magazines / Third Class Mail						
Newspapers						
Office Paper						
Phonebooks						
Textbooks						
Dimensional Lumber						
Fly Ash						
Aluminum Cans						
Glass						
HDPE / LDPE / PET						
Appliances						
Non-Ferrous Metals						
Fats, Oils, Grease						
Instrument Recycling						
Ballast		285 lbs	395 lbs		1.4	$14
Green Procurement						
Total Savings (MTCO2e)					***0.0***	***$0***
Re-Use/Purchase of Materials with Recycled Content						
Purchase / Use of Compost Socks						
Purchase of EPEAT Products						
Use of Recycled Steel during Construction						
Use of Recycled Iron during Construction						
Use of Recycled Plastic during Construction						
Use of Recycled Aluminum during Construction						
Use of Recycled Concrete / Asphalt during Construction						
Use of Coal Combustion Products						
Green Landscaping						
Total Savings (MTCO2e)	***111.2***	***119.2***	***117.9***	***113.0***	***461.2***	***$45,034***
Green Roofs	2,450 sq ft	2,450 sq ft	2,450 sq ft	2,450 sq ft	21.4	
Porous Pavement						
Grass						
Low / No Mow Area	272,000 sq ft	272,000 sq ft	272,000 sq ft	272,000 sq ft	112.4	$30,000
Green Space						
Re-use of Collected Stormwater	200 gal	200 gal	200 gal	200 gal	0.0	$2
On-Site Use of Compost / Mulch		20 tons	11 tons		6.2	$1,240
Moisture Sensing Sprinklers (covers 232,000 sq ft)	1,500,000 gal	1,500,000 gal	1,500,000 gal	1,500,000 gal	14.7	$12,192
Number / Acres of Trees	20 trees	20 trees	34 trees	64 trees	5.8	
Reflective Roof	97,590 sq ft	97,590 sq ft	97,590 sq ft	97,590 sq ft	292.8	
Synthetic Turf						
Native Plants						
Leaves Composted		20 tons	20 tons		8.0	$1,600

Environmental Metrics	Mar 2012 MOU	Sep 2012 Update	Mar 2013 Update	Sep 2013 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Electronics/EPEAT						
Total Savings (MTCO2e)		***26.3***	***20.7***		***47.0***	***$262***
Recycling of Electronics		14 tv's, 75 printers, 3 scanners, 6 phone switches, 2 shredders,	48 printers; 5 scanners; 2 TVs		2.7	$67
Re-Use/Donation of Used Computers		51 crt's, 21 lcd's, 19 laptops, 3 desktops, 72 towers, 23 boxes of cords, 15 keyboards	54 PCs; LCD/CRT 51; 23 laptops		5.9	$105
Toner/Ink Recycling and Use of Recycled Ink		500 cartridges	425 cartridges		37.7	$74
Battery Recycling		335 lbs	489 lbs		0.7	$16
Mass Transit						
Total Savings (MTCO2e)						
Miles Avoided						
Transportation						
Total Savings (MTCO2e)	***75.8***	***83.8***	***86.7***	***88.1***	***334.4***	***$138,022***
Hybrid Vehicles		1	1	1	2.9	$2,250
Electric Vehicles		5	7	8	28.2	$16,500
Biodiesel Vehicles						
Commuter Gas Savings	8500 gal	8500 gal	8500 gal	8500 gal	303.3	$119,272
Clean Construction Vehicles						
LNG Vehicles						
Alternate Fuel Vehicles (Zipcar)						
Smartway Transporters						
Bike Racks		3	3	3		
LEED Projects						
Total Savings (MTCO2e)	***307.3***	***307.3***	***307.3***	***307.3***	***1,229.2***	***$207,470***
Silver - 30%						
Gold - 40% (Wellness Center 69,510 sq ft)	413,946 kwh	413,946 kwh	413,946 kwh	413,946 kwh	1,229.2	$207,470
Platinum - 45%						
Misc. - Further Clarification						
Total Savings (MTCO2e)						
NOX (equipment only)						
NOX (includes vehicles)						
MTCO2e Savings						
Total (MTCO2e)	***2,753.2***	***2,762.6***	***2,807.8***	***2,898.6***	***11,222.1***	***$429,810***
Energy Conservation	25.9	25.9	27.3	27.5	106.5	$25,130
Alternative Energy	2,146.5	2,041.1	2,041.1	2,041.1	8,269.7	($1,847)
Water Conservation	3.4	3.4	3.4	9.7	19.8	$4,167
Solid Waste	83.2	155.7	203.5	312.0	754.4	$11,572
Green Landscaping	111.2	119.2	117.9	113.0	461.2	$45,034
Electronics	0.0	26.3	20.7	0.0	47.0	$262
Transportation	75.8	83.8	86.7	88.1	334.4	$138,022
LEED Projects	307.3	307.3	307.3	307.3	1,229.2	$207,470

2013

Georgian Court University Additional Green MOU Accomplishments

- Georgian Court University continues to offset all of their electrical power use with Green e-certified Renewable Energy Certificates (RECs). They are also continuing participation in Recyclemania, and their weekly sustainability newsletter, as well as working to restore turf health through the use of low impact management strategies (e.g. low mow, no mow areas). GCU's new gravel rain garden is achieving 95% reduction in nitrogen compounds (nitrate, nitrite, ammonia, organic nitrogen).

- GCU replaced an additional gasoline powered vehicle with an electric only service vehicle.

- GCU again held 4 day work weeks throughout the summer in order to reduce the cooling demand by having three day weekends.

- GCU is working to assess effectiveness of energy saving ceramic window films in A+S. They are also in the process of collecting data on this summer's energy use to compare to previous years.

- Construction of experimental gravel wetlands continues to be delayed but GCU hopes to start work on those by the end of the calendar year.

- Construction of an approx. 7000 sq feet community garden is underway. This garden will be used to provide demonstrations of organic vegetable cultivation, sustainable turf management, perennial and pollinator plantings, a meditation area and an outdoor classroom. Vegetables produced in the garden will be donated to needy families through the catholic charities network.

- Regular shower heads were replaced with low flow units throughout the dormitory facilities this summer.

- Letters were sent to nearly 400 incoming residents on 2 occasions, one in the summer and one in the fall. The first introduced the idea of sustainability and encouraged purchase of energy star appliances and power bars that automatically shut off power to electronics in sleep mode. The second encouraged sustainable use of thermostats and window cooling units and discussed strategies to avoid unnecessary waste of water and power (turning lights out when leaving room, reporting dripping taps etc).

- Thermometers were placed into each room in the dorm so that students can visually get reinforcement of the temperature in their rooms. They then reminded them of desired targets (no less than 67 in summer no more than 72 in winter).

- A sustainability workshop was offered to all incoming students during orientation week. More than 100 students attended the 1 hour workshop that informed them about the various sustainability initiatives going on at GCU.

- Reusable water bottles and totes were provided to all students as part of their welcome package during orientation.

- GCU was successful in its application for grants from the Funds for Higher Education made available through the State Bond initiative to upgrade and renovate several spaces on campus. In that project are a number of upgrades to boilers and lighting and electrical systems which will allow GCU to further improve energy efficiency of their campus infrastructure. Those monies have not yet been released but GCU hopes to start work on those improvements in 2014.

- In honor of the one year anniversary of Superstorm Sandy, GCU will be hosting a 1 week series of lectures with the theme of "Resilience: The environment through the lens of Sandy" from Oct 27 to Nov 1.

- GCU is hosting a campus-wide wellness fair in November. As well as personal wellness, themes such as pollution free workspaces, eating organic and energy and water stewardship will be addressed.