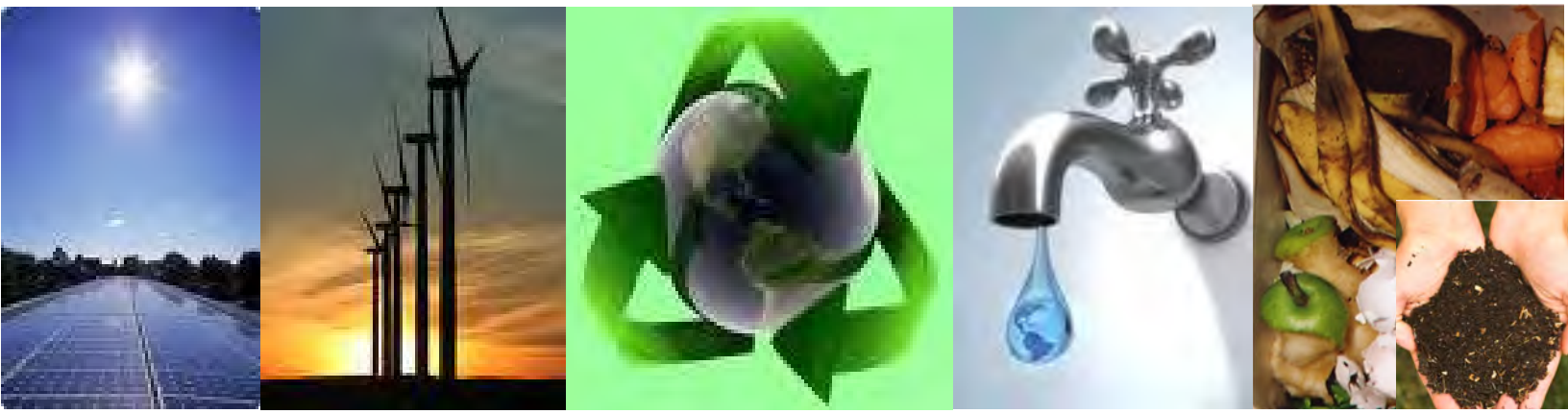
Raritan Valley Community College
Environmental Assessment:
MOU SemiAnnual Report
February 14, 2013



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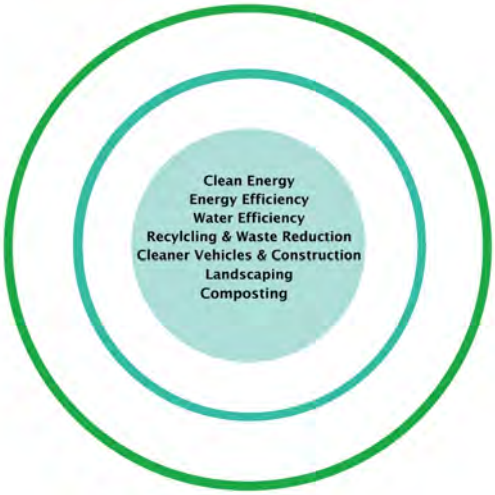
Accomplishments

Reductions of 19,801 MTCO2e



Memorandum of Understanding

On June 16, 2009, Raritan Valley Community College 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 Raritan Valley Community College has resulted in reducing energy, water and solid waste production across campus operations.

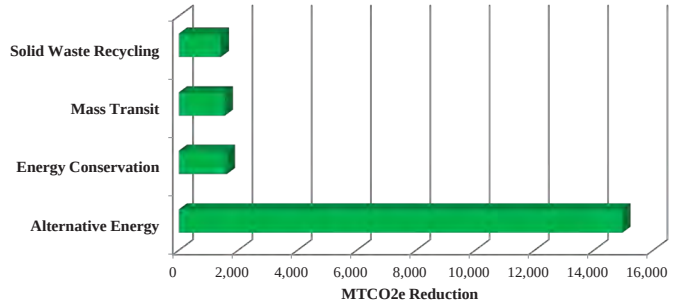
Reduction in Environmental Footprint

In the last few years, Raritan Valley Community College has provided six updates documenting its green initiatives. The EPA has analyzed the submitted information and generated an environmental footprint for the organization. Due to the progressive green efforts of the organization, the college has managed to reduce its carbon footprint by 19,801 MTCO2e* and saved an estimated $3.68 million in operating expenses.

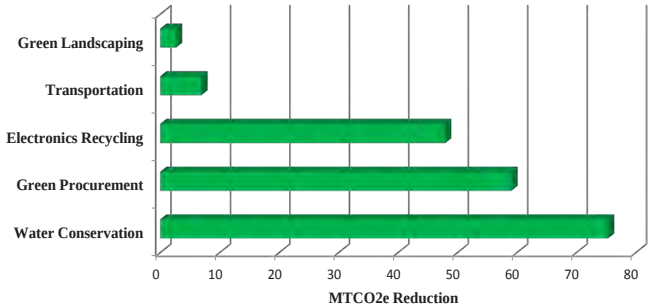
*Metric Ton Carbon Dioxide Equivalent

Environmental Metrics	Total Savings (MTCO2e)
Energy Conservation	1,621.0
Alternative Energy	14,960.5
Water Conservation	75.3
Solid Waste	1,478.5
Green Procurement	59.1
Green Landscaping	2.6
Electronics	47.9
Mass Transit	1,549.7
Transportation	6.9
Total (MTCO2e)	19,801.5

Primary Initiatives



Secondary Initiatives



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 that 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.

Greenhouse Gas Equivalencies

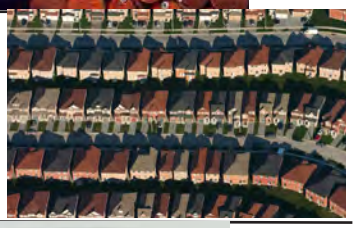
What does the reduction of 19,801 MTCO2e represent ?
The organization's effort is equivalent to any one of the following:

- Annual greenhouse gas emissions from 4,125 vehicles

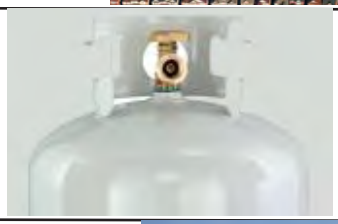
- Carbon dioxide emissions from 2,219,899 gallons of gasoline

- Carbon dioxide emissions from 46,050 barrels of oil consumed

- Carbon dioxide emissions from the energy use of 1,019 homes for one year

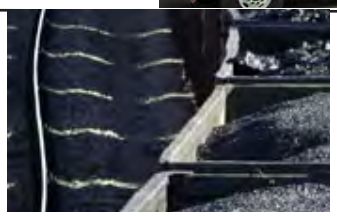


- Carbon dioxide emissions from 825,063 propane tanks used for home barbeques



- Carbon dioxide emissions from gasoline carried by 261 tanker trucks

- Carbon dioxide emissions from burning 85.1 railcars' worth of coal (over 1 1/4 miles long)



Environmental Metrics	June 2009 MOU	March 2010 Update	Nov 2010 Update	Jul 2011 Update	Jan 2012 Update	Jul 2012 Update	Jan 2013 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Energy Conservation / Energy Star									
Total Savings (MTCO2e)		***125.2***	***125.6***	***494.3***	***316.4***	***292.0***	***267.4***	***1,621.0***	***$215,120***
Miscellaneous Energy Conservation		(160,698.5 kwh) 41,900.5 therms	(160,698.5 kwh) 41,900.5 therms	232,048 kwh 56,400 therms	196,000 kwh 28,000 therms	(11,000 kwh) 52,000 therms	326,000 kwh	1,484.7	$197,986
Motors and Transformers									
Lighting Project Fixtures (Bulbs and Ballast)									
High Temp Hot Water Pipe Replacement									
HVAC, Chiller & Electrical									
Replace T12 bulbs with T8 bulbs		25 bulbs	67 bulbs	72 bulbs	92 bulbs	92 bulbs	188 bulbs	4.4	$745
Replace T8 bulbs with T5 bulbs						80 bulbs	80 bulbs	0.6	$100
Bulb Replacement (LEDs)						50 bulbs	100 bulbs	3.6	$611
Gas Savings (pool heat exchanger)		4,000 therms	4,000 therms	4,000 therms	4,000 therms	4,000 therms	4,000 therms	127.7	$15,678
Fuel Oil Savings									
Steam Savings									
Alternative Energy									
Total Savings (MTCO2e)	***1,750.0***	***2,626.5***	***2,334.8***	***2,334.8***	***1,751.5***	***1,955.6***	***2,207.3***	***14,960.5***	***$1,310,063***
On-Site Solar		2,000 kwh	2,000 kwh	2,000 kwh	2,000 kwh	277,000 kwh	216,000 kwh	371.9	$62,775
On-Site Wind / Geothermal									
On-Site Combined Heat and Power (1.4 MW)	2,198 MWh	2,560 MWh	1,354 MWh	2,343 MWh	656 MWh	725 MWh	119 MWh	14,291.7	$1,247,362
Purchase of Green Energy/Green Power							400 MWh	296.9	($74)
Water Conservation / WaterSense									
Total Savings (MTCO2e)	***0.2***	***0.1***	***0.4***	***0.4***	***10.1***	***33.9***	***30.3***	***75.3***	***$62,499***
Miscellaneous Water Conservation					3,988,800 gal	13,683,800 gal	12,241,020 gal	73.3	$60,787
Low Flow/Hands Free Faucets (66)	33,000 gal	24,750 gal	22,000 gal	22,000 gal	16,500 gal	16,500 gal	16,500 gal	0.4	$307
Low Flow Toilets (8)					16,000 gal	16,000 gal	16,000 gal	0.1	$98
Low Flow Shower Heads									
Low Flow Urinals (9)	41,400 gal	31,050 gal	27,600 gal	27,600 gal	20,700 gal	20,700 gal	20,700 gal	0.5	$386
Waterless Urinals (4)			106,667 gal	106,667 gal	80,000 gal	80,000 gal	80,000 gal	1.1	$921
Solid Waste Recycling									
Total Savings (MTCO2e)		***634.6***	***194.8***	***269.3***	***106.9***	***104.1***	***168.2***	***1,478.5***	***$20,844***
Mixed Recyclables (includes Wastewise)		34 tons	14.4 tons	93 tons	9.6 tons	10.4 tons	10.4 tons	493.1	$6,872
Pallets Waste Avoided/Wood Recycled							60 cu yd (approx 25T)	61.5	$1,000
Steel Recycled during Deconstruction									
Concrete / Asphalt recycled									
Ceiling Tiles recycled									
Carpet recycled									
Recycled C & D Waste (Construction Waste)									
Cardboard (construction/non-construction/ sharp containers)		90 tons	23 tons		24 tons	11 tons	11 tons	492.9	$6,360
Mixed Metal (construction/non-construc-tion)									
Paper, Mixed		73 tons	23 tons			11 tons	11 tons	414.2	$4,720
Plastic, Mixed (bottles, construction/non-construction, sharp containers)									

Environmental Metrics	June 2009 MOU	March 2010 Update	Nov 2010 Update	Jul 2011 Update	Jan 2012 Update	Jul 2012 Update	Jan 2013 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Blue Wrap									
Can / Bottle Recycling									
Mixed Organics									
Food Donation (Waste diversion)									
Biosolids & Food Waste Recycling/Com-posting		9 tons	5 tons	10.64 tons	8 tons	2 tons	8 tons	8.5	$1,706
Fluorescent Bulbs			1044 lbs	509 lbs	437 lbs	900 lbs	1045 lbs	0.3	$79
Waste Oil Recycled					110 gal			1.3	$19
Magazines/ThirdClass Mail									
Newspaper									
Office Paper									
Textbooks									
Phonebooks									
Dimensional Lumber									
Fly Ash									
Aluminum Cans									
Glass									
HDPE / LDPE / PET									
Appliances									
Non-Ferrous Metals									
Fats, Oils, Grease Recycled					165 gal		165 gal	4.0	$56
Ballast (mixed metal)			147 lbs	93 lbs		400 lbs	165 lbs	2.2	$16
Water Bottle Filling Stations (plastic saved)							approx 800 lbs	0.6	$16
Green Procurement									
Total Savings (MTCO2e)		***10.9***	***16.3***	***5.6***	***11.1***	***11.6***	***3.6***	***59.1***	***$1,628***
Purchase of Materials with Recycled Content		5600 reams paper 3200 @ 100% PC 2400 @ 30% PC	8400 reams paper 4800 @ 100% PC 3600 @ 30% PC	6800 reams 30% PC	6000 reams 30% PC	4400 reams 30% PC	4400 reams 30% PC	45.0	$1,628
Purchase / Use of Compost Socks									
Purchase of EPEAT Products					115 desktops	150 desktops		14.1	
Use of Recycled Steel / Iron during Construction									
Use of Recycled Plastic/ Aluminum during Construction									
Use of Recycled Concrete / Asphalt during Construction									
Use of Coal Combustion Products									
Green Landscaping									
Total Savings (MTCO2e)		***0.0***	***0.0***	***0.0***	***0.0***	***1.3***	***1.3***	***2.6***	***$20***
Green Roofs						600 sq ft	600 sq ft	2.6	
Porous Pavement									
Grass									
Low/no mow area									
Green Space									
Re-use of Collected Stormwater		2,000 gal	2,000 gal	3,000 gal	1,500 gal	500 gal	1,000 gal	0.0	$20
On-Site Re-use of Compost									
Moisture Sensing Sprinklers									
Number / Acres of Trees									

Environmental Metrics	June 2009 MOU	March 2010 Update	Nov 2010 Update	Jul 2011 Update	Jan 2012 Update	Jul 2012 Update	Jan 2013 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Reflective Roof									
Synthetic Turf									
Native Plants									
Leaves Composted									
Electronics / EPEAT									
Total Savings (MTCO2e)		***14.6***	***5.2***	***7.7***	***5.3***	***5.3***	***9.8***	***47.9***	***$804***
Recycling of Electronics		18,250 lbs (400 units)	5,998 lbs	1,917 lbs	337 lbs	830 lbs	3,000 lbs	24.3	$607
Re-Use/Donation of Used Computers				26 units (208 lbs)			350 units (5645 lbs)	6.6	$117
Toner/Ink Recycling and Use of Recycled Ink				140 cartridges	105 cartridges	105 cartridges	19 cartridges	15.1	$30
Battery Recycling			466 lbs	246 lbs	978 lbs	500 lbs	294 lbs	2.0	$50
Mass Transit									
Total Savings (MTCO2e)			***202.3***	***202.3***	***303.4***	***303.4***	***538.2***	***1,549.7***	***$2,064,130***
Miles Avoided			485,500 mi	485,500 mi	728,250 mi	728,250 mi	1,291,653 mi	1,549.7	$2,064,130
Transportation									
Total Savings (MTCO2e)		***1.5***	***1.3***	***1.3***	***1.0***	***1.0***	***1.0***	***6.9***	***$2,828***
Hybrid Vehicles		1 car (9 mo.)	1 car (8 mo.)	1 car (8 mo.)	1 car (1/2 yr)	1 car (1/2 yr)	1 car (1/2 yr)	6.9	$2,828
Electric Vehicles									
Biodiesel Vehicles									
Clean Construction Vehicles									
LNG Vehicles									
Alternate Fuel Vehicles									
Smartway Transporters									
Bike Racks									
LEED Projects									
Total Savings (MTCO2e)									***$0***
Silver - 10%									
Gold - 17%									
Platinum - 20%									
MTCO2e Savings									
Total (MTCO2e)	***1,750.2***	***3,413.3***	***2,880.6***	***3,315.7***	***2,505.7***	***2,708.2***	***3,227.1***	***19,801.5***	***$3,677,936***
Energy	0.0	125.2	125.6	494.3	316.4	292.0	267.4	1,621.0	$215,120
Alternative Energy	1,750.0	2,626.5	2,334.8	2,334.8	1,751.5	1,955.6	2,207.3	14,960.5	$1,310,063
Water	0.2	0.1	0.4	0.4	10.1	33.9	30.3	75.3	$62,499
Solid Waste	0.0	634.6	194.8	269.3	106.9	104.1	168.2	1,478.5	$20,844
Green Procurement	0.0	10.9	16.3	5.6	11.1	11.6	3.6	59.1	$1,628
Green Landscaping	0.0	0.0	0.0	0.0	0.0	1.3	1.3	2.6	$20
Electronics	0.0	14.6	5.2	7.7	5.3	5.3	9.8	47.9	$804
Mass Transit	0.0	0.0	202.3	202.3	303.4	303.4	538.2	1,549.7	$2,064,130
Transportation	0.0	1.5	1.3	1.3	1.0	1.0	1.0	6.9	$2,828

Raritan Valley Community College Additional Green MOU Accomplishments and Cost Savings

2013

GreenPower Partnership

Raritan Valley Community College is now an EPA GreenPower partner and, as of October 1, started purchasing 10% green power (in addition to the standard power mix). The College is purchasing Green-e certified RECs through Direct Energy Business's Make Me Green™ program. The purchase contract is for 1600 MWh over two years, or roughly 10% of current usage.

WasteWise Partnership and Solid Waste Recycling

RVCC installed three more filtered water bottle filling stations (in the Arts, West, and Phys Ed buildings), for a total of six stations on campus. The stations enable people to fill reusable water bottles with filtered chilled tap water, reducing the cost and waste of disposable water bottles.

RVCC continues to be a WasteWise partner and participates in the New Jersey WasteWise Business Network. RVCC has signed up for WasteWise's Food Recovery Challenge program.

Sustainable Design, Construction, and Operations Practices

Construction continues on the new Student Center, which will be LEED Gold and include a rainwater harvesting system.

The College also intends to pursue LEED Gold certification for the West Building. This is an improvement from previous plans for LEED Silver certification.

GreenScapes

RVCC is working to incorporate its GreenScapes policy into its bidding process. One expected outcome is increased recycling of construction debris.

Following the GreenScapes policy, the College has been recycling wood pallets.

National Clean Diesel Campaign & Clean Construction USA

Construction continues with the campus student center, which is on track to be certified as LEED Gold. The construction vehicles use ultra-low sulfur diesel (ULSD) and the onroad vehicles have diesel particulate filters (DPFs).

Campus and Community Involvement

The RVCC campus has an active student body with over 20 student organizations. Students participate in Social Justice Club, R.E.A.L. (Raritan Environmental Action League) and contribute to sustainability efforts through estuary clean-up projects, Habitat for Humanity and the Outdoor Clubs. There is also a college-wide Environmental Sustainability Committee (composed of faculty, staff and students) that recommends green initiatives.

Green activities on campus are highlighted on RVCC's sustainability web site. The R.E.A.L. club, ecology and environmental studies students, and others have been involved in many campus and service learning projects. Recent activities include continuing to develop the organic garden, campus trash cleanups, and participating in Clean Ocean Action's beach cleanup.