



Prudential
Environmental Assessment:
Initial Green MOU Annual Report
March 6, 2014



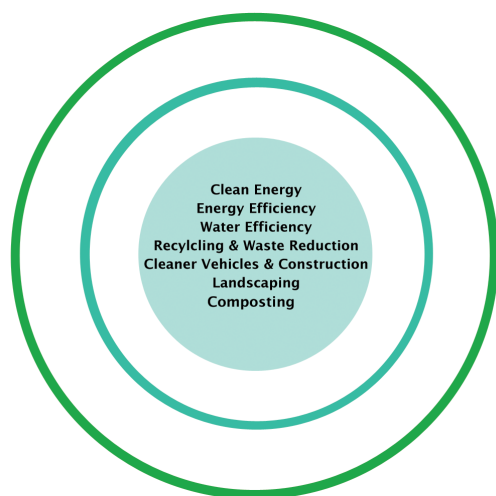
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Accomplishments

Reductions of 27,867 MTCO₂e



Memorandum of Understanding

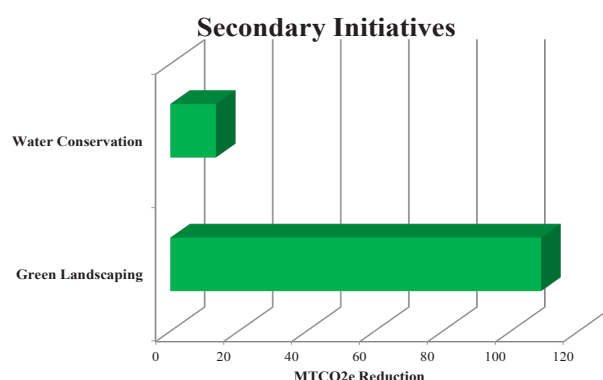
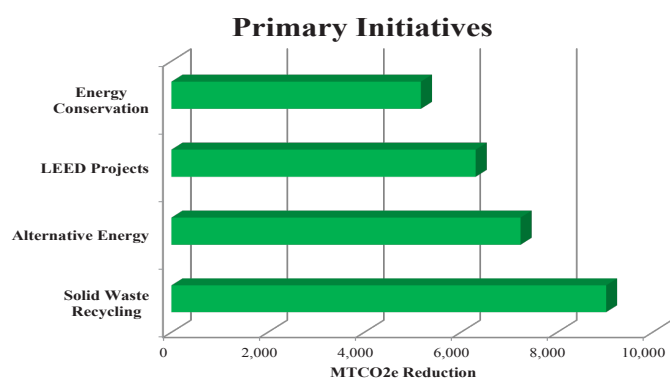
On February 25, 2013, Prudential signed a broad Memorandum of Understanding (MOU) related to environmental stewardship with the company pledging to implement a number of green initiatives to help reduce its carbon footprint and further improve our planet's environment. This partnership between the United States Environmental Protection Agency (EPA) and Prudential already has resulted in reducing energy, water and solid waste production across Prudential's operations.

Reduction in Environmental Footprint

This is the first Green MOU update documenting Prudential's green initiatives. The EPA has analyzed the submitted information and generated an environmental footprint reduction summary. The initial Green MOU results indicate that Prudential has managed to reduce its carbon footprint by an incredible 27,867 MTCO₂e* and saved an estimated \$3.4 million in operating expenses. During the year since the Green MOU signing, Prudential has implemented a number of significant sustainable and green projects. These green practices are discussed in the narrative of this report and will provide additional significant carbon footprint reduction during the subsequent periods of the Green MOU.

*Metric Ton Carbon Dioxide Equivalent

Environmental Metrics	Total Sector (MTCO ₂ e)
Energy Conservation	5,172.6
Alternative Energy	7,239.0
Water Conservtaaion	13.4
Solid Waste Recycling	9,024.4
Green Landscaping	109.0
LEED Projects	6,308.7
Total (MTCO ₂ e)	27,867.0



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 27,867 MTCO₂e



Greenhouse Gas Equivalencies

What does the reduction of 27,867 MTCO₂e represent ?
The organization's effort is equivalent to any one of the following:

- Annual greenhouse gas emissions from 5,806 vehicles



- Carbon dioxide emissions from 3,124,103 gallons of gasoline



- Carbon dioxide emissions from 64,807 barrels of oil consumed



- Carbon dioxide emissions from the energy use of 1,392 homes for one year



- Carbon dioxide emissions from 1,161,125 propane tanks used for home barbeques



- Carbon dioxide emissions from gasoline carried by 368 tanker trucks



- Carbon dioxide emissions from burning 120 railcars' worth of coal (over 1.8 miles long)



Environmental Metrics	Feb 2013 MOU	Feb 2014 Update	Total Conversion (MTCO ₂ e)	Cost Savings (est.)
Energy Conservation/Energy Star				
Total Savings (MTCO₂e)		5,172.6	5,172.6	\$910,288
Miscellaneous Energy Conservation		7,264,872 kwh	5,172.6	\$910,288
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)				
Bulb Replacement (LEDs)				
Gas Savings				
Fuel Oil Savings				
Steam Savings				
Alternative Energy				
Total Savings (MTCO₂e)	2,353.0	4,886.0	7,239.0	\$1,273,951
On-Site Solar	3,304,789 kwh	6,862,417 kwh	7,239.0	\$1,273,951
On-Site Wind				
On-Site Geothermal				
On-Site Combined Heat and Power				
Purchase of Green Energy/Green Power				
Water Conservation/WaterSense				
Total Savings (MTCO₂e)		13.4	13.4	\$11,587
Miscellaneous Water Conservation		5,701,881 gal	13.4	\$11,587
Low Flow/Hands Free Faucets				
Low Flow Toilets				
Low Flow Shower Heads				
Low Flow Urinals				
Waterless Urinals				
Solid Waste Recycling				
Total Savings (MTCO₂e)	4508.0	4516.4	9,024.4	\$128,920
Mixed Recyclables (includes Wastewise)	1610 tons	1613 tons	9,024.4	\$128,920
Pallets Waste Avoided / Wood Recycled				
Steel Recycled Offsite during Deconstruction				
Concrete / Asphalt Recycled during Deconstruction				
Recycled C&D Waste (construction waste)				
Cardboard (construction/non-construction/sharp containers)				
Mixed Metal (construction/non-construction)				
Paper, Mixed				
Plastic, Mixed (bottles,construction/non-construction,sharp containers)				
Can / Bottle Recycling				
Mixed Organics				
Food Donation (Waste diversion)				
Biosolids and Food Waste Recycling / Composting				
Fluorescent Bulbs				
Ceiling Tiles Recycled				

Environmental Metrics	Feb 2013 MOU	Feb 2014 Update	Total Conversion (MTCO ₂ e)	Cost Savings (est.)
Carpet Recycled				
Waste Oil Recycled				
Magazines / Third Class Mail				
Newspapers				
Office Paper				
Phonebooks				
Textbooks				
Dimensional Lumber				
Fly Ash				
Aluminum Cans / Pallets				
Glass				
HDPE				
LDPE				
PET				
Appliances				
Non-Ferrous Metals				
Fats, Oils, Grease				
Instrument Recycling				
Ballast				
Green Procurement				
Total Savings (MTCO₂e)			0.0	\$0
Re-Use/Purchase of Materials with Recycled Content (Paper)				
Purchase / Use of Compost Socks				
Purchase of EPEAT Products (Energy Star photocopiers)				
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)		109.0	109.0	\$0
Green Roofs		50,000 sq ft	109.0	
Porous Pavement				
Grass				
Low / No Mow Area				
Green Space				
Re-use of Collected Stormwater				
On-Site Use of Compost / Mulch				
Moisture Sensing Sprinklers				
Number / Acres of Trees				
Reflective Roof				
Synthetic Turf				
Native Plants				
Leaves Composted				

Environmental Metrics	Feb 2013 MOU	Feb 2014 Update	Total Conversion (MTCO ₂ e)	Cost Savings (est.)
Electronics Recycling				
Total Savings (MTCO₂e)			0.0	\$0
Recycling of Electronics				
Re-Use/Donation of Used Computers				
Toner/Ink Recycling and Use of Recycled Ink				
Battery Recycling				
Mass Transit				
Total Savings (MTCO₂e)			0.0	\$0
Miles Avoided				
Transportation				
Total Savings (MTCO₂e)			0.0	\$0
Hybrid Vehicles				
Electric Vehicles				
Biodiesel Vehicles				
Commuter Gas Savings				
Clean Construction Vehicles				
LNG Vehicles				
Alternate Fuel Vehicles (Zipcar)				
Smartway Transporters				
Bike Racks				
LEED Projects				
Total Savings (MTCO₂e)		6,308.7	6,308.7	\$1,110,229
Silver - 30%				
Gold - 40% (640,000 sq ft)		7,592,652 kwh	5,405.9	\$951,359
Platinum - 45% (95,000 sq ft)		1,267,913 kwh	902.8	\$158,870
Misc. - Further Clarification				
Total Savings (MTCO₂e)				
NOX (equipment only)				
NOX (includes vehicles)				
MTCO₂e Savings				
Total (MTCO₂e)	6,861.0	21,006.0	27,867.0	\$3,434,975
Energy Conservation	0.0	5,172.6	5,172.6	\$910,288
Alternative Energy	2,353.0	4,886.0	7,239.0	\$1,273,951
Water Conservation	0.0	13.4	13.4	\$11,587
Solid Waste Recycling	4,508.0	4,516.4	9,024.4	\$128,920
Green Procurement	0.0	0.0	0.0	\$0
Green Landscaping	0.0	109.0	109.0	\$0
Electronics Recycling	0.0	0.0	0.0	\$0
Transportation	0.0	0.0	0.0	\$0
LEED Projects	0.0	6,308.7	6,308.7	\$1,110,229



2014

Prudential Additional Green MOU Accomplishments

Specific energy saving initiatives that were completed in 2013

Premium efficient motors and variable speed drive upgrades to main air handling systems installed at the high rise home office property: 250,000 kwh electrical savings.
Interior lighting upgrade installed at the high rise home office property: 175,000 kwh electrical savings.
1,945 kw-ac Solar PV installation, at the NJ home office property: the anticipated annual solar generation is 2,894,000 kwh
Electric vehicle car chargers installed at various home office properties for use by associates who drive electric vehicles to the office.
Low flow faucet aerators were installed in all bathroom facilities in both high rise corporate home office facilities in Newark, NJ.
Prudential's energy reduction, environmental education and corporate outreach efforts have been officially recognized through the NJ governor's environmental excellence award program.

Greening Initiatives for new construction / new space

Prudential real estate investors, Madison, NJ (new leased space):

- LEED platinum
- Leased space 95,000 sq ft
- LED lighting fixtures, 34 watt fixtures installed throughout office space
- Daylight sensors along perimeter of space that dim lighting when there is sufficient daylight in space
- Prudential purchased renewable energy certificates to cover 50% of the offices anticipated electricity usage for 2 years
- All new mechanical equipment is energy efficient and non-cfc (chlorofluorocarbons), environmentally friendly
- 98% of all the demolition and construction materials were recycled
- Low VOC materials, paints, adhesives, furniture, flooring and composite woods were utilized
- Daylight and views to the exterior are available from 93% of the work stations, conference rooms and meeting rooms
- FSC certified woods (forest stewardship council) for wood product furniture and most building materials

Prudential new tower, Newark, NJ (new construction):

- LEED gold
- Home office owned property
- 640,000 sq ft total building, not including garage areas
- 50,000 sq ft of green roof terrace
- All LED lighting throughout
- Water efficient plumbing fixtures throughout
- Plate & frame heat exchanger for wintertime free cooling
- Rain water retention system for site irrigation and cooling tower make up
- Energy efficient HVAC equipment
- Underfloor plenum air distribution system for cooling (allowed for smaller air handling equipment)
- Energy efficient motors and variable speed drives on all air handlers, pumps, and cooling towers
- Air side heat recovery system
- Modular hot water boilers for domestic hot water and space heating

Future 2014 energy saving initiatives

Exterior lighting upgrade to LED anticipated energy savings: 75,000 kwh
High efficiency modular boilers, including premium efficient motors and variable speed drives on all hot water pumping. Anticipated energy savings 80,000 kwh electrical and 2,000,000 MBh (thousand BTUs per hour) savings in heating.
Prudential continuously reviews energy saving opportunities and initiatives that will reduce their overall carbon footprint.