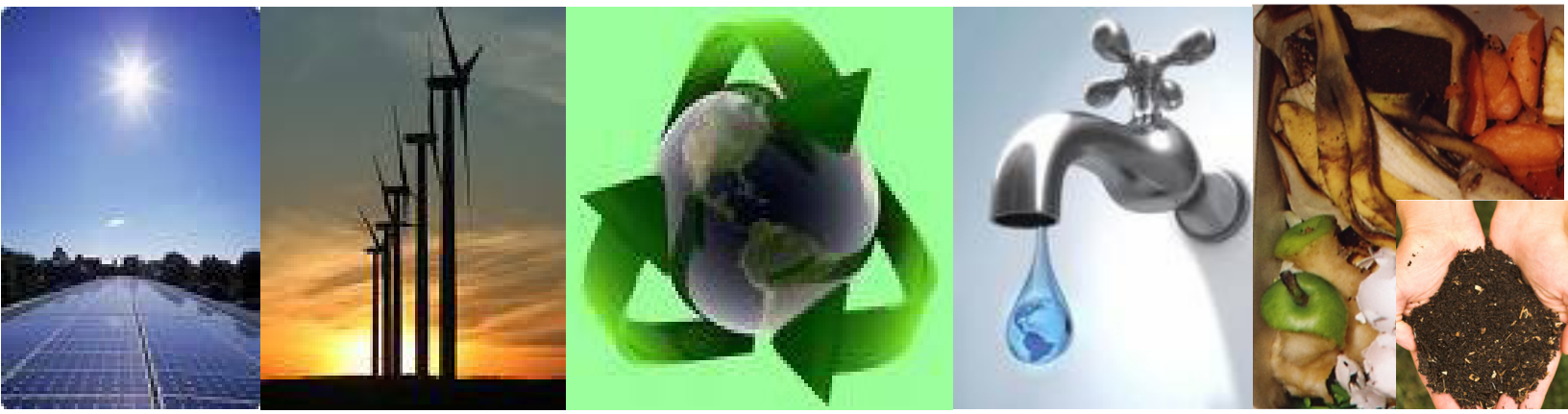
LG Electronics USA
Environmental Assessment:
Initial Green MOU SemiAnnual Report
July 24, 2013



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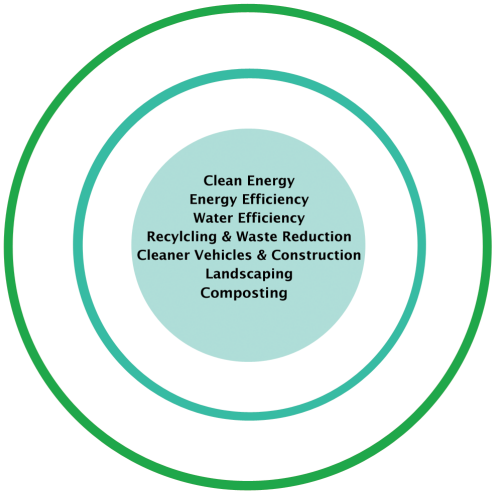
Accomplishments

Reductions of 61,348 MTCO2e



Memorandum of Understanding

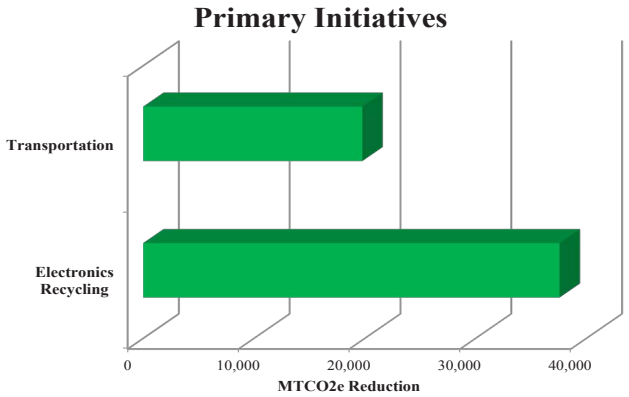
On December 20, 2012, LG Electronics USA signed a broad Memorandum of Understanding (MOU) related to environmental stewardship with the company pledging to implement a number of green initiatives to help reduce its carbon footprint and further improve our planet's environment. This partnership between the United States Environmental Protection Agency (EPA) and LG Electronics USA already has resulted in reducing energy, water and solid waste production across LG's U.S. operations.

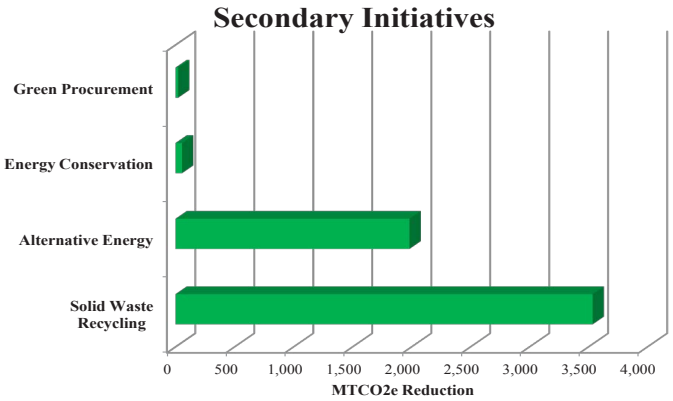
Reduction in Environmental Footprint

This is the first Green MOU update documenting LG Electronics USA's green initiatives. The EPA has analyzed the submitted information and generated an environmental footprint reduction summary. The initial Green MOU results indicate that LG Electronics has managed to reduce its carbon footprint by an incredible 61,348 MTCO2e* and saved an estimated $992,000 in operating expenses. During the six months since the Green MOU signing, LG Electronics 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 (MTCO2e)
Energy Conservation	55.7
Alternative Energy	1,983.5
Solid Waste Recycling	3,536.5
Green Procurement	21.9
Electronics Recycling	37,585.9
Transportation	18,165.1
Total (MTCO2e)	61,348.5





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 61,348 MTCO2e

Greenhouse Gas Equivalencies

What does the reduction of 61,348 MTCO2e represent ?
The organization's effort is equivalent to any one of the following:

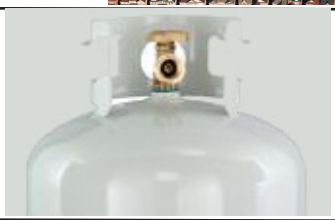
- Annual greenhouse gas emissions from 12,781 vehicles

- Carbon dioxide emissions from 6,877,635 gallons of gasoline

- Carbon dioxide emissions from 142,671 barrels of oil consumed

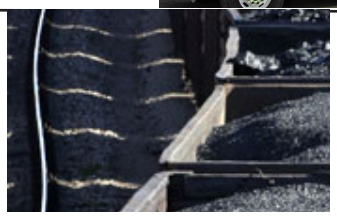
- Carbon dioxide emissions from the energy use of 3,157 homes for one year

- Carbon dioxide emissions from 2,556,188 propane tanks used for home barbeques



- Carbon dioxide emissions from gasoline carried by 809 tanker trucks

- Carbon dioxide emissions from burning 264 railcars' worth of coal (4 miles long)



Environmental Metrics	Dec 2012 MOU	June 2013 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Energy Conservation/Energy Star				
Total Savings (MTCO2e)	***37.1***	***18.6***	***55.7***	***$9,398***
Miscellaneous Energy Conservation	50,000 kwh	25,000 kwh	55.7	$9,398
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)	***1,407.0***	***576.4***	***1,983.5***	***($494)***
On-Site Solar				
On-Site Wind				
On-Site Geothermal				
On-Site Combined Heat and Power				
Purchase of Green Energy/Green Power	1,895,364 kwh	776,456 kwh	1,983.5	($494)
Water Conservation/WaterSense				
Total Savings (MTCO2e)			***0.0***	***$0***
Miscellaneous Water Conservation				
Low Flow/Hands Free Faucets				
Low Flow Toilets				
Low Flow Shower Heads				
Low Flow Urinals				
Waterless Urinals				
Solid Waste Recycling		**thru Apr 2013**		
Total Savings (MTCO2e)	***2771.5***	***765.0***	***3,536.5***	***$43,638***
Mixed Recyclables (includes Wastewise)	50.4 tons	8.7 tons	165.5	$2,364
Pallets Waste Avoided / Wood Recycled	24.2 tons	3.1 tons	67.2	$1,092
Steel Recycled Offsite during Deconstruction				
Concrete / Asphalt Recycled during Deconstruction				
Recycled C&D Waste (construction waste)				
Cardboard (construction/non-construction/sharp containers)	712.5 tons	202.5 tons	2,845.7	$36,600
Mixed Metal (construction/non-construction)	7.6 tons	0.85 tons	33.6	$338
Paper, Mixed				
Plastic, Mixed (bottles,construction/non-construction,sharp containers)	21 tons	4.4 tons	24.9	$1,016
Can / Bottle Recycling				
Mixed Organics				
Food Donation (Waste diversion)				
Biosolids and Food Waste Recycling / Composting				
Fluorescent Bulbs				

Environmental Metrics	Dec 2012 MOU	June 2013 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Ceiling Tiles Recycled				
Carpet Recycled				
Waste Oil Recycled				
Magazines / Third Class Mail				
Newspapers				
Office Paper	11.9 tons	3.9 tons	45.0	$632
Phonebooks				
Textbooks				
Dimensional Lumber				
Fly Ash				
Aluminum Cans / Pallets	30.4 tons	9.5 tons	354.7	$1,596
Glass				
HDPE / LDPE / PET				
Appliances				
Non-Ferrous Metals				
Fats, Oils, Grease				
Instrument Recycling				
Ballast				
Green Procurement				
Total Savings (MTCO2e)	***17.0***	***4.9***	***21.9***	***$786***
Re-Use/Purchase of Materials with Recycled Content (Paper)	29,761 lbs 100%PC 590 lbs 30%PC	8,400 lbs 100%PC 178 lbs 30%PC	21.3	$779
Purchase / Use of Compost Socks				
Purchase of Re-usable Plastic Mugs (savings for waste reduction)	240 lbs	120 lbs	0.6	$7
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)			***0.0***	***$0***
Green Roofs				
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	Dec 2012 MOU	June 2013 Update	Total Conversion (MTCO2e)	Cost Savings (est.)
Electronics/EPEAT				
Total Savings (MTCO2e)	***29,582.2***	***8,003.7***	***37,585.9***	***$939,398***
Recycling of Electronics	36,968,126 lbs	10,000,726 lbs	37,575.1	$939,377
Re-Use/Donation of Used Computers				
Toner/Ink Recycling and Use of Recycled Ink	754 lbs	302 lbs	10.8	$21
Battery Recycling				
Mass Transit				
Total Savings (MTCO2e)			***0.0***	***$0***
Miles Avoided				
Transportation				
Total Savings (MTCO2e)	***14,531.5***	***3,633.6***	***18,165.1***	***$0***
Hybrid Vehicles				
Electric Vehicles				
Biodiesel Vehicles				
Commuter Gas Savings				
Clean Construction Vehicles				
LNG Vehicles				
Alternate Fuel Vehicles (Zipcar)				
Intermodal Transport (40 shippers)	3,499.5 mi	1,256.2 mi	2,927.2	
Smartway Transporters	22,256,845 mi	4,507,631 mi	15,237.9	
Bike Racks				
LEED Projects				
Total Savings (MTCO2e)			***0.0***	***$0***
Silver - 10%				
Gold - 17%				
Platinum - 20%				
Misc. - Further Clarification				
Total Savings (MTCO2e)				
NOX (equipment only)				
NOX (includes vehicles)				
MTCO2e Savings				
Total (MTCO2e)	***48,346.3***	***13,002.2***	***61,348.5***	***$992,726***
Energy Conservation	37.1	18.6	55.7	$9,398
Alternative Energy	1,407.0	576.4	1,983.5	($494)
Water Conservation	0.0	0.0	0.0	$0
Solid Waste Recycling	2,771.5	765.0	3,536.5	$43,638
Green Procurement	17.0	4.9	21.9	$786
Electronics Recycling	29,582.2	8,003.7	37,585.9	$939,398
Transportation	14,531.5	3,633.6	18,165.1	$0
LEED Projects	0.0	0.0	0.0	$0

2013

LG Electronics Additional Green MOU Accomplishments

Overall Commitment to Reducing the Company's Carbon Footprint Across the Entire Business
LG Electronics is pursuing a broad array of sustainability initiatives including:
- energy efficiency and greenhouse gas reductions in manufacturing and the supply chain,
- consumer education aimed at reducing the environmental footprint of product use,
- producer responsibility through consumer take back/recycling programs,
- reduction in the use of hazardous substances,
- deployment and promotion of renewable energy technologies, and
- development of innovative green life cycle product designs.

ENERGY STAR Partner of the Year for the Last Two Years
LG earned the ENERGY STAR Partner of the Year award for 2013 and 2012.

Educating the Public on how to "Go Green"
LG reached U.S. consumers with a public education and community outreach campaign designed to educate consumers on saving energy, tallying more than 1 billion impressions in 2012.
LG has partnered with the EPA and supported "Team ENERGY STAR" Campaign to engage youth in energy-saving ideas, collaborating with PTO Today, serving as a prizing partner, and leveraging LG's Times Square electronics billboard in New York City to showcase ENERGY STAR messaging.

LG Electronics Offices in the US use 100% Renewable Energy
LG has offset 100% of its electricity consumption with renewable energy at two locations in New Jersey, including its headquarters.
In just the first 6 months under the MOU, LG has purchased over 776,000 Kwhs of renewable energy.
LG uses renewable energy certificates certified by Green-e Energy.
LG joined EPA's Green Power Partnership in Feb 2012 and was recognized by EPA for its green-power leadership in June 2013.

LG's National Electronics Consumer Take-Back Program Having a Huge Impact on CO2 Reductions
In just the first 4 months of 2013, LG's Consumer Take-Back Program has avoided over 10,000,000 used electronic equipment from being landfilled.
LG Electronics uses only e-Stewards and R2 certified e-waste recyclers for its U.S. national take-back program.
LG became a member of the Basal Action Network (BAN) Leadership Council, an advisory body for the e-Stewards program.

Solid Waste Recycling
LG joined EPA's Sustainable Materials Management (SMM) –Electronics Challenge in Oct 2012. The company is ramping up efforts to increase recycling even further for the next Green MOU progress report.

Reducing Diesel Emissions and Saving Fuel
100% of LG's outsourced shipping fleet now participates in the EPA's SmartWay Transporter program.

Reducing Greenhouse Gas Emissions through Consumer Product Use
LG ENERGY STAR manufactured products sold in the U.S. reduce CO2 emissions as well as America's energy usage. Reducing CO2 emissions associated with LG Electronics product use is one of the company's low carbon management strategies and goals.
For LG products sold in the U.S. in 2012, annual CO2 savings were 832,211,571 pounds or 377,484.8 metric tons. That is equivalent to the GHG emissions from 78,643 passenger vehicles in one year.