



Cushman & Wakefield
Environmental Assessment:
MOU Annual Report
April 10, 2013



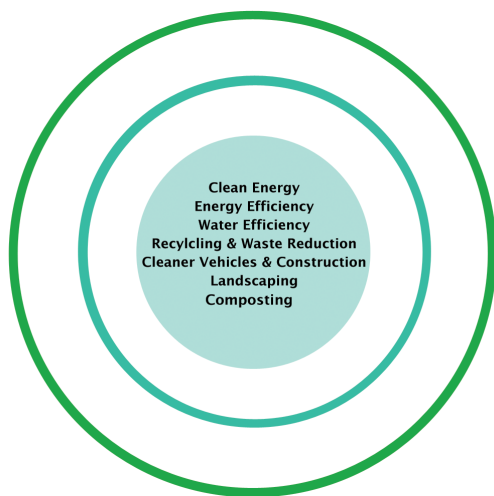
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Accomplishments

Reductions of 192,964 MTCO₂e



Memorandum of Understanding

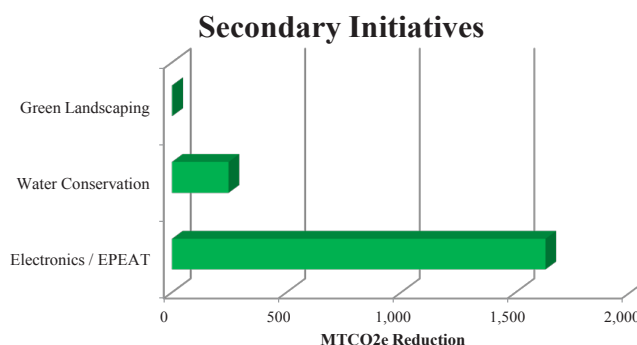
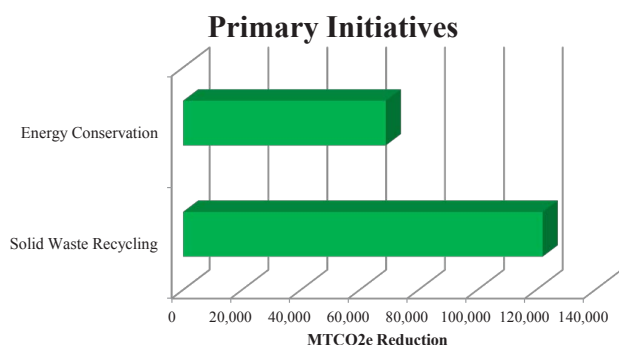
On December 12, 2008, Cushman & Wakefield signed a Memorandum of Understanding (MOU) pledging to become an environmental steward by implementing a number of green initiatives that would reduce its carbon footprint and further improve our planet's environment. This partnership with the United States Environmental Protection Agency (EPA) and Cushman & Wakefield has resulted in reducing energy, water and solid waste production across their entire operations.

Reduction in Environmental Footprint

In the last four years, Cushman & Wakefield has provided several updates documenting their green initiatives. The EPA has analyzed the submitted information and generated an environmental footprint for the organization. Due to their progressive green efforts, the organization has managed to reduce its carbon footprint by 192,964 MTCO₂e* and saved an estimated \$20.1 million in operating expenses.

*Metric Ton Carbon Dioxide Equivalent

| Environmental Metrics | Total Sector (MTCO ₂ e) | Cost Savings (est.) |
|-----------------------|------------------------------------|---------------------|
| Energy Conservation | 68,880.7 | \$18,105,328 |
| Water Conservation | 254.6 | \$328,018 |
| Solid Waste | 122,196.9 | \$1,644,519 |
| Green Landscaping | 1.7 | \$332 |
| Electronics / EPEAT | 1,630.4 | \$26,785 |
| Total | 192,964.1 | \$20,104,982 |



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.

Accomplishments

Reductions of 192,964 MTCO₂e



Greenhouse Gas Equivalencies

What does the reduction of 192,964 MTCO₂e represent ?
The organization's effort is equivalent to any one of the following:

- Annual greenhouse gas emissions from 40,201 vehicles



- Carbon dioxide emissions from 21,632,747 gallons of gasoline



- Carbon dioxide emissions from 448,754 barrels of oil consumed



- Carbon dioxide emissions from the energy use of 9,931 homes for one year



- Carbon dioxide emissions from 8,040,171 propane tanks used for home barbeques



- Carbon dioxide emissions from gasoline carried by 2,545 tanker trucks



- Carbon dioxide emissions from burning 829 railcars' worth of coal (over 12 1/2 miles long)



| Environmental Metrics | Dec 2008 MOU | Dec 2009 Update | Dec 2010 Update (reported Mar 2011) | Dec 2011 Update (reported Mar 2012) | Dec 2012 Update (reported Mar 2013) | Total Conversion (MTCO2e) | Cost Savings (Est.) |
|--|--------------|------------------|-------------------------------------|-------------------------------------|-------------------------------------|---------------------------|---------------------|
| Energy Conservation/Energy Star | | | | | | | |
| Total Saving (MTCO2e) | | 24,319.4 | 14,485.0 | 13,720.0 | 16,356.3 | 68,880.7 | \$18,105,328 |
| Miscellaneous Energy Conservation (146 properties) | | 180,474,473 kbtu | 107,493,412.4 kbtu | 180,467,094.2 kbtu | 153,047,696.5 kbtu | 68,880.7 | \$18,105,328 |
| 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 | | | | | | | |
| | | | | | | | |
| Alternative Energy | | | | | | | |
| Total Savings (MTCO2e) | | | | | | | |
| On-Site Solar | | | | | | | |
| On-Site Wind | | | | | | | |
| On-Site Geothermal | | | | | | | |
| On-Site Combined Heat and Power | | | | | | | |
| Purchase of Green Energy/Green Power | | | | | | | |
| | | | | | | | |
| Water Conservation/WaterSense | | | | | | | |
| Total Savings (MTCO2e) | | 294.2 | (17.9) | 7.3 | (29.1) | 254.6 | \$328,018 |
| Miscellaneous Water Conservation (79 properties) | | 125,822 kgal | (7,638 kgal) | 3,137 kgal | (12,462 kgal) | 254.6 | \$328,018 |
| Low Flow/Hands Free Faucets | | | | | | | |
| Low Flow Toilets | | | | | | | |
| Low Flow Shower Heads | | | | | | | |
| Low Flow Urinals | | | | | | | |
| Waterless Urinals | | | | | | | |
| | | | | | | | |
| Solid Waste Recycling | | | | | | | |
| Total Savings (MTCO2e) | | 33,250.8 | 47,218.6 | 28,719.5 | 13,008.0 | 122,196.9 | \$1,644,519 |
| Mixed Recyclables (includes WasteWise) | | 4,102.3 tons | 4,462.8 tons | 1,688.3 tons | 1,970.466 tons | 35,844.9 | \$488,955 |
| Pallets Waste Avoided / Wood Recycled | | | | | | | |
| Steel Recycled Offsite during Deconstruction | | | | | | | |
| Concrete Recycled | | 61.5 tons | 705.5 tons | 87.63 tons | 719.535 tons | 49.9 | \$62,967 |
| Asphalt Recycled | | | | | | | |
| Ceiling Tiles Recycled | | | | | | | |
| Carpet Recycled | | | 3.31 tons | 2.08 tons | | 39.2 | \$216 |
| Recycled C & D Waste (Construction Waste) | | | | | | | |
| Cardboard (construction/non-construction/sharp containers) | | 797.8 tons | 796.85 tons | 457.68 tons | 360.63 tons | 9,232.4 | \$96,518 |
| Mixed Metal (construction/non-construction) | | 38.6 tons | 77.7 tons | 43.26 tons | 30.375 tons | 948.0 | \$7,597 |
| Mixed Paper | | 4,039.4 tons | 6,598.6 tons | 5,515.83 tons | 1,805.297 tons | 65,806.2 | \$718,365 |
| Mixed Plastic | | 8.5 tons | 30.32 tons | 25.6 tons | 0.951 tons | 100.5 | \$2,615 |
| Blue Wrap | | | | | | | |
| Mixed Organics | | | 68.5 tons | 265.04 tons | 487.59 tons | 209.5 | \$32,845 |
| Food Donation (Waste diversion) | | | | | | | |
| Biosolids and Food Waste Recycling / Composting | | 1,303.5 tons | 1,730.17 tons | | 1,284.565 tons | 2,926.5 | \$172,729 |

| Environmental Metrics | Dec 2008 MOU | Dec 2009 Update | Dec 2010 Update (reported Mar 2011) | Dec 2011 Update (reported Mar 2012) | Dec 2012 Update (reported Mar 2013) | Total Conversion (MTCO ₂ e) | Cost Savings (Est.) |
|--|--------------|-----------------|-------------------------------------|-------------------------------------|-------------------------------------|--|---------------------|
| Fluorescent Bulbs | | 16.4 tons | 11.8 tons | 7.0 tons | 13.136 tons | 102.9 | \$1,933 |
| Waste Oil Recycled | | | | | | | |
| Magazines / Third Class Mail | | | | 1.31 tons | | 10.9 | \$53 |
| Newspapers | | | | | 0.93 tons | 2.6 | \$37 |
| Office Paper | | 132.4 tons | 506.28 tons | 82.43 tons | 98.62 tons | 4,271.7 | \$32,789 |
| Textbooks | | | | | | | |
| Phonebooks | | 0.1 tons | 0.1 tons | 0.19 tons | 0.305 tons | 1.5 | \$28 |
| Dimensional Lumber | | 0.6 tons | 11.08 tons | 4.0 tons | 18.97 tons | 74.6 | \$1,386 |
| Fly Ash | | | | | | | |
| Aluminum Cans | | 3.6 tons | 8.45 tons | 12.35 tons | 78.322 tons | 1,030.1 | \$4,109 |
| Glass | | 3.6 tons | 4.9 tons | 8.67 tons | 10.377 tons | 11.5 | \$1,102 |
| HDPE | | | | | | | |
| LDPE | | | 10.7 tons | | | 18.7 | \$428 |
| PET | | 0.9 tons | 4.05 tons | 0.14 tons | 0.034 tons | 8.2 | \$205 |
| Copper Wire | | | 1.43 tons | | 0.122 tons | 10.1 | \$62 |
| Appliances | | | 0.35 tons | 0.48 tons | 0.1 tons | 3.5 | \$37 |
| Non-Ferrous Metals | | 2.3 tons | 3.04 tons | 2.54 tons | 0.369 tons | 77.2 | \$330 |
| Fats, Oils, Grease | | 223.4 tons | 131.0 tons | 8.0 tons | 97.0 tons | 1,378.2 | \$18,376 |
| Steel Cans | | | | 8.55 tons | 12.361 tons | 37.9 | \$836 |
| Tires | | | | 0.03 tons | | 0.1 | \$1 |
| | | | | | | | |
| 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) | | 0.7 | 0.2 | | 0.7 | 1.7 | \$332 |
| Green Roofs | | | | | | | |
| Porous Pavement | | | | | | | |
| Grass | | | | | | | |
| Low / No Mow Area | | | | | | | |
| Re-use of Collected Stormwater | | | | | | | |
| On-Site Re-use of Compost / Mulch | | | | | | | |
| Moisture Sensing Sprinklers | | | | | | | |
| Number / Acres of Trees | | | | | | | |
| Reflective Roof | | | | | | | |
| Synthetic Turf | | | | | | | |
| Native Plants | | | | | | | |
| Leaves Composted | | 3.7 tons | 0.9 tons | | 3.688 tons | 1.7 | \$332 |

| Environmental Metrics | Dec 2008 MOU | Dec 2009 Update | Dec 2010 Update (reported Mar 2011) | Dec 2011 Update (reported Mar 2012) | Dec 2012 Update (reported Mar 2013) | Total Conversion (MTCO ₂ e) | Cost Savings (Est.) |
|---|--------------|-----------------|-------------------------------------|-------------------------------------|-------------------------------------|--|---------------------|
| Electronics/EPEAT | | | | | | | |
| Total Savings (MTCO₂e) | | 277.1 | 671.1 | 438.9 | 243.3 | 1,630.4 | \$26,785 |
| Recycling of Electronics | | 140.9 tons | 147.8 tons | 27.0 tons | 23.2 tons | 542.2 | \$13,556 |
| Re-Use/Donation of Used Computers | | 0.4 tons | 53.55 tons | 59.9 tons | 20.77 tons | 311.9 | \$5,385 |
| Toner/Ink Recycling and Use of Recycled Ink | | | 12.0 tons | 12.4 tons | 0.2 tons | 501.8 | \$984 |
| Battery Recycling | | 31.7 tons | 41.3 tons | 2.7 tons | 95.8 tons | 274.4 | \$6,860 |
| Mass Transit | | | | | | | |
| Total Savings (MTCO₂e) | | | | | | | |
| Miles Avoided | | | | | | | |
| Transportation | | | | | | | |
| Total Savings (MTCO₂e) | | | | | | | |
| Hybrid Vehicles | | | | | | | |
| Electric Vehicles | | | | | | | |
| Biodiesel Vehicles | | | | | | | |
| Clean Construction Vehicles | | | | | | | |
| LNG Vehicles | | | | | | | |
| Smartway Transporters | | | | | | | |
| Bike Racks | | | | | | | |
| LEED Projects | | | | | | | |
| Total Savings (MTCO₂e) | | | | | | | |
| Silver - 10% | | | | | | | |
| Gold - 17% | | | | | | | |
| Platinum - 20% | | | | | | | |
| Misc. - Further Clarification | | | | | | | |
| Total Savings (MTCO₂e) | | | | | | | |
| NOX (equipment only) | | | | | | | |
| NOX (includes vehicles) | | | | | | | |
| MTCO₂e Savings | | | | | | | |
| Total (MTCO₂e) | | 58,142.2 | 62,357.0 | 42,885.8 | 29,579.2 | 192,964.1 | \$20,104,982 |
| Energy | | 24,319.4 | 14,485.0 | 13,720.0 | 16,356.3 | 68,880.7 | \$18,105,328 |
| Water | | 294.2 | (17.9) | 7.3 | (29.1) | 254.6 | \$328,018 |
| Solid Waste | | 33,250.8 | 47,218.6 | 28,719.5 | 13,008.0 | 122,196.9 | \$1,644,519 |
| Green Landscaping | | 0.7 | 0.2 | 0.0 | 0.7 | 1.7 | \$332 |
| Electronics / EPEAT | | 277.1 | 671.1 | 438.9 | 243.3 | 1,630.4 | \$26,785 |



2013

Cushman & Wakefield Additional Green MOU Accomplishments and Cost Savings

As of this report, 509 properties under management shared their individual building Portfolio Manager account information with the C&W Corporate Master Account. Properties in the Master Account represent 116.8 million sq.ft. of commercial real estate, with an average property size of 229,507 sq.ft.

For the energy performance and emissions report, the data set was narrowed to include only properties with 24 consecutive months of data (i.e., those properties for which a complete year-over-year comparison could be performed).

For the water use report, the data set was also narrowed to include only properties with 24 consecutive months of data. Further, two properties showing abnormally high water consumption relative to the entire data set were removed. Accordingly, the final data set used for analysis of water consumption is based on reporting from 97 properties.

Energy Use & Emissions (based on data from 176 properties)

Through December 2011, these 176 buildings were collectively performing 25.58% better than the national average. Through December 2012, this same group of buildings was performing 27.03% better than the national average - an increase of 1.45 percentage points.

Between December 2011 and December 2012, the average ENERGY STAR rating for these 147 properties increased by 1.39 points, representing a 1.79% increase in energy efficiency.

As of December 2012, 24% of the properties analyzed within the Portfolio have earned the ENERGY STAR label or have a label application in process, while another 31% of the buildings are eligible to apply for the label.

WasteWise

C&W became a WasteWise Partner in September 2009. As of this report, 205 properties under management are registered as reporting locations under C&W's account in Re-TRAC.

Food Waste Composting

C&W re-launched its food waste composting program and succeeded in composting over 1,280 tons of food waste and 97 tons of fats, oils and grease during the recent reporting period.