Preserving Resources, Preventing Waste

Prioritizing Your Climate-Waste Activities

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WasteWise partners are very diverse—from their company's function to the number of employees on staff—but all have the desire to decrease their climate change impacts by decreasing the amount of greenhouse gas (GHG) emissions they release. Because every stage of a product's life cycle—manufacturing, transportation, use, and disposal—contributes to global climate change by emitting greenhouse gases, waste prevention and recycling help eliminate the need for raw materials and therefore decrease GHG emissions. The following tables will help WasteWise partners prioritize their waste prevention and recycling efforts based on materials that have the greatest GHG emission reduction potential (listed below in terms of metric tons of carbon equivalent—MTCE).

Waste Prevention vs. Recycling—What's the Difference?

Recycling and waste prevention are both ways to reduce waste and your impact on climate change. It is important to note that emission factors for the same material will differ when comparing waste prevention and recycling opportunities. Typically waste prevention will have a greater impact; but some materials' GHG benefits from recycling are greater than waste prevention for the current mix. This is because recycling is assumed to displace 100 percent virgin inputs, whereas waste prevention is assumed to displace some recycled and some virgin inputs.

Table 1—Materials with Significant Waste Prevention GHG Benefits

Top 10 Material Types	Net Source Waste Prevention Emission Factors[a] (MTCE/ton)
Personal Computers	-15.85
Aluminum	-2.46
Copper Wire	-2.07
Textbooks	-1.93
Office Paper	-1.61
Phonebooks	-1.21
Carpet	-1.13
Coated Paper[b]	-1.11
Newspaper	-0.89
Steel	-0.88

[a] Compared to landfilling
[b] Magazines/3rd Class Mail

To further explain these possible benefits...

Scenario #1

ABC Corporation donated 2 tons of computers to a local school.
-15.85 MTCE per ton x 2 tons = -31.70 MTCE

This reduction in GHG emissions is equivalent to emission savings from not driving 25 cars for one year.

Scenario #2

Organization X did not print its annual magazine, but post it online instead, which elminated its use of 800 pounds of coated paper.
-1.11 x [800 pounds/2000 pounds per ton] = -0.44 MTCE

This reduction in GHG emissions is equivalent to growing 42 tree seedlings for 10 years.

Table 2—Materials with Significant Recycling GHG Benefits

Top 10 Material Types	Net Source Recycling Emission Factors[a] (MTCE/ton)
Aluminum	-4.08
Carpet	-2.02
Copper Wire	-1.40
Textbooks	-1.37
Office Paper	-1.30
Corrugated Cardboard	-0.91
Newspaper	-0.73
Dimensional Phonebooks	-0.69
Personal Computers	-0.68
Coated Paper[b]	-0.68

[a] Compared to landfilling
[b] Magazines/3rd Class Mail

To further explain these possible benefits...

Scenario #1

XY Grocery Store Chain recycled 400 tons of cardboard boxes in one year.
-0.91 MTCE per ton x 400 tons = -364.00 MTCE

This reduction in GHG emissions is equivalent to emission savings from 171 households' annual power consumption.

Scenario #2

ABC School District held a recycling drive and collected 3.25 tons of newspapers.
-0.73 MTCE per ton x 3.25 tons = -2.37 MTCE

This reduction in GHG emissions is equivalent to the carbon dioxide emissions from 990 gallons of gasoline.

Please note that the waste prevention (Table 1) and recycling (Table 2) emission factors presented utilize landfilling as a baseline disposal scenario. Details on the life-cycle assessment methodology utilized to create these emission factors can be found in the EPA's *Solid Waste Management and Greenhouse Gases* report. (U.S. EPA. 2002. *Solid Waste Management and Greenhouse Gases: A Life-Cycle Assessment of Emissions and Sinks.* U.S. Environmental Protection Agency, June 2002. EPA530-R-02-006)