Tree CO2 Calculations

Note: The initial statistic, 23.2 pounds of carbon per tree, accounts for many trees not surviving the full ten years; it assumes that 68% of trees survive five years, and 59% survive ten years.

Source: [http://www.epa.gov/cleanenergy/energy-resources/refs.html#seedlings](http://www.epa.gov/cleanenergy/energy-resources/refs.html%23seedlings)

Water Bottle CO2 Calculations

Source: <http://www.epa.gov/climatechange/wycd/waste/calculators/Warm_Form.html>

CFL Bulb Calculations

**Sources:**

Wattage of bulbs can be found at <http://www.duke-energy.com/pdfs/Duke_CFLflyer_406_generic.pdf>.

Carbon dioxide emissions due to electricity use can be found at <http://oaspub.epa.gov/powpro/ept_pack.charts>.

Estimates for lifetime of CFL bulbs found at <http://www.energystar.gov/index.cfm?c=cfls.pr_cfls_savings>.

Shopping Bag Calculations

|  |  |  |
| --- | --- | --- |
| **Information** | **Number** | **Source or calculation** |
| Avg. # of paper bags per week, per person | 2 bags | Source 1 |
| Avg. # of plastic bags per week, per person | 7 bags | Source 1 |
| Greenhouse Gas Emissions (CO2 Equiv. Tons) to manufacture 1000 paper shopping bags | 0.08 tons | Source 2 |
| Greenhouse Gas Emissions (CO2 Equiv. Tons) to manufacture 1000 plastic shopping bags | 0.04 tons | Source 2 |
| Greenhouse Gas Emissions (CO2 Equiv. lbs) to manufacture 1 paper shopping bag | 0.16 lbs |  |
| Greenhouse Gas Emissions (CO2 Equiv. lbs) to manufacture 1 plastic shopping bag | 0.08 lbs |  |
| Avg. # of paper bags per year, per person | 104 bags |  |
| Avg. # of plastic bags per year, per person | 364 bags |  |
| Avg. lbs CO2 from manufacture of paper bags used per year, per person | 16.64 lbs |  |
| Avg. lbs CO2 from manufacture of plastic bags used per year, per person | 29.12 lbs |  |
| Net average lbs CO2 from manufacture of paper and plastic bags used per year, per person | 45.76 lbs | 16.64 lbs + 29.12 lbs = 45.76 lbs |

Source 1: <http://www.carbonrally.com/challenges/5-reusable-grocery-bags>

Source 2: <http://www.savetheplasticbag.com/UploadedFiles/2007%20Boustead%20report.pdf>, page 4

Alternative Transportation Calculations

**Sources:**

<http://www.epa.gov/cleanenergy/energy-resources/refs.html>

<http://www.gasbuddy.com/GB_Price_List.aspx>

Showerhead Calculations

**Sources:**

<http://www.westernresourceadvocates.org/water/CWCBe-wstudy.pdf>

<http://data.bls.gov/search/query/results?cx=013738036195919377644%3A6ih0hfrgl50&q=average+energy+prices>