

## Life Cycle Analysis Comparison Chart

The information below is from “Plastic Shopping Bags—Analysis of Levies and Environmental Impacts” commissioned by Environment Australia, a department of the Government of Australia in 2002.<sup>1</sup>

The following **Life Cycle Analysis Chart** documents the life cycle impact of different kinds of bags. It looks the impact of each kind of bag used over one year, assuming an average of 70 grocery items per week, or the equivalent load of 10 plastic bags per week.

Bag Type	Life Span	Bags per Year	Material Consumed in production (lbs per year)	Greenhouse emissions (kg/CO <sup>2</sup> equivalent) <sup>*2</sup> in production	Primary Energy Use (MJ <sup>3</sup> ) in production	Litter (oz per year)	Litter (cubic feet per year)	Pounds of waste per year
Traditional Plastic (HDPE)	1 trip	520	6.87	6.08	210	.55	5.08	6.86
Recycled Plastic (HDPE)	1 trip	520	6.87	4.79	117	.55	5.08	6.86
Boutique plastic (LDPE)	1 trip	650	25.94	29.8	957	2.07	6.88	25.9
Paper Bag	1 trip	520	48.83	11.8	721	3.91	5.51	28.8
Canvas bag <sup>4</sup>	52 trips	9.1	2.51	2.52	160	.20	.14	2.5
PP fiber bag	104 trips	4.15	1.05	1.96	46.3	.08	.066	1.05

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<sup>1</sup> Plastic Shopping Bags—Analysis of Levies and Environmental Impacts” for Environment Australia, 2002. <http://www.deh.gov.au/settlements/publications/waste/plastic-bags/analysis.html>. The information is from the Usage Chart p. 35, and LCA chart p 36.

<sup>2</sup> kg/CO<sup>2</sup> equivalent is a standard measure for emissions. It measures the weight of greenhouse gasses in kilograms expressed as the equivalent weight of CO<sup>2</sup> emissions per kilogram of base oil.

<sup>3</sup> MJ stands for megajoule, a standard measure of energy. One megajoule is equal to the amount of energy it takes to heat 3 liters of water to boiling. Three liters is enough to make 12 cups of coffee or tea.

<sup>4</sup> The Australian government report noted that analysis of cotton bags should consider that “10% of the worlds pesticides and 25% of the worlds insecticides are used to grow cotton.” The report also noted that these bags require the frequent washing, therefore water and energy for drying the bags should be added to the overall impact. The difficulty of recycling cotton was another factor considered.