



Paper Bags Are Better Than Plastic, Right? The Answer Is "Absolutely NO" (see the below evidence)

If plastic bags are banned, stores and consumers will simply switch to paper bags. That has already happened in San Francisco. How would that affect global warming? It will make it worse. Paper bags result in up to 3.3 times more greenhouse gas emissions over their life cycle than plastic bags based on the same carrying capacity. There are numerous studies confirming that paper bags are significantly worse for the environment than plastic bags, including the [Scottish report](#) and the [Boustead report](#).

INDICATOR OF ENVIRONMENTAL IMPACT	Plastic bag HDPE lightweight	Paper bag
Consumption of nonrenewable primary energy	1.0	1.1
Consumption of water	1.0	4.0
Climate change (emission of greenhouse gases)	1.0	3.3
Acid rain (atmospheric acidification)	1.0	1.9
Air quality (ground level ozone formation)	1.0	1.3
Eutrophication of water bodies *	1.0	14.0
Solid waste production	1.0	2.7
Risk of litter	1.0	0.2

* Eutrophication means the process by which a body of water becomes rich in dissolved nutrients, thereby encouraging the growth and decomposition of oxygen-depleting plant life and resulting in harm to other organisms.

Issue 1: Energy and natural resources

It takes more than four times as much energy to manufacture a paper bag as it does to manufacture a plastic bag.

ENERGY TO PRODUCE BAG ORIGINALLY (BTUs)
Safeway Plastic Bags: 594 BTUs

Safeway Paper Bags: 2511 BTUs
(Source: 1989 Plastic Recycling Directory, Society of Plastics Industry.)

Of course, most paper comes from tree pulp, so the impact of paper bag production on forests is enormous. In 1999, 14 million trees were cut to produce the 10 billion paper grocery bags used by Americans that year alone. Paper bag production delivers a global warming double-whammy forests (major absorbers of greenhouse gases) have to be cut down, and then the subsequent manufacturing of bags produces greenhouse gases.

Issue 2: Pollution

The majority of kraft paper is made by heating wood chips under pressure at high temperatures in a chemical solution. As evidenced by the unmistakable stench commonly associated with paper mills, the use of these toxic chemicals contributes to both air pollution, such as acid rain, and water pollution. Millions of gallons of these chemicals pour into our waterways each year; the toxicity of the chemicals is long-term and settles into the sediments, working its way through the food chain. Further toxicity is generated as both plastic and paper bags degrade.

POLLUTANTS PAPER V.S. PLASTIC

Paper sacks generate 70% more air and 50 times more water pollutants than plastic bags.

Source: "Comparison of the Effects on the Environment of Polyethylene and Paper Carrier Bags," Federal Office of the Environment, August 1988

Issue 3: Recycling

It takes 91% less energy to recycle a pound of plastic than it takes to recycle a pound of paper. But recycling rates of either type of disposable bag are extremely low, with only 10 to 15% of paper bags and 1 to 3% of plastic bags being recycled, according to the Wall Street Journal.

ENERGY TO RECYCLE PACKAGE ONCE (BTUs)

Safeway Plastic Bags: 17 BTUs

Safeway Paper Bags: 1444 BTUs

Source: 1989 Plastic Recycling Directory, Society of Plastics Industry.

Although paper bags have a higher recycling rate than plastic, each new paper grocery bag you use is made from mostly virgin pulp for better strength and elasticity.

Issue 4: Degradability

Current research demonstrates that paper in today's landfills does not degrade or break down at a substantially faster rate than plastic does. In fact, nothing completely degrades in modern landfills because of the lack of water, light, oxygen and other important elements that are necessary for the degradation process to be completed. A paper bags takes up more space than a plastic bag in a landfill, but because paper is recycled at a higher rate, saving space in landfills is less of an issue.

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GREENHOUSE GAS EMISSIONS WILL INCREASE MASSIVELY IF LOS ANGELES COUNTY BANS PLASTIC BAGS AND PERMITS FREE PAPER BAGS

If Los Angeles County bans plastic bags and allows free paper bags, there will be a dramatic increase in greenhouse gas emissions. Based on the [Scottish report](#) and the [Boustead report](#), **the annual increase would be equivalent to the CO₂ emissions emitted by adding between 27,753 and 63,832 passenger vehicles.**

Statewide plastic bag bans would result in the annual CO₂ equivalent of adding between 91,584 and 210,645 passenger vehicles.

Truthful and responsible environmentalists should be warning the County Board of Supervisors and the public of this fact, not *concealing* it.



A pulp and paper mill

Environmentalists and politicians should stop *pretending* that the public will switch to reusable bags rather than taking paper bags. The [hard evidence](#) is that consumers will *not* switch to reusable bags as long as paper bags continue to be available.

The County says that 6 billion plastic carryout bags are used in the County each year and that 20 billion plastic carryout bags are used statewide. Replacing 6 billion plastic bags with 4

billion paper bags in the County (i.e. 1500 plastic = 1,000 paper) would have the following results.

Based on a 2.0 times worse greenhouse gas (GHG) impact (i.e. the best case least environmentally damaging scenario in the Boustead report):

- Increase in GHG per 1,000 paper bags = 0.04 CO₂ equivalent tons (per [Boustead report](#) at page 4)
- 4 billion paper bags in LA County divided by 1,000 = 4 million
- 4 million x 0.04 = 160,000 added CO₂ equivalent tons

According to the U.S. Environmental Protection Agency, that is equivalent to:

- Annual CO₂ emissions from 27,753 passenger vehicles
- Annual CO₂ emissions from 16,327,284 gallons of gasoline consumed
- Annual CO₂ emissions from 337,557 barrels of oil consumed
- Annual CO₂ emissions from 1,938 tanker truck's worth of gasoline
- Annual CO₂ emissions from the *total electricity* use of 18,851 homes
- Annual CO₂ emissions from the *total energy* use of 12,948 homes

www.epa.gov/RDEE/energy-resources/calculator.html

Based on a 3.3 times worse greenhouse gas (GHG) impact (i.e. the scenario in the Scottish report):

- Increase in GHG per 1,000 paper bags = 0.092 CO₂ equivalent tons
- 4 billion paper bags in LA County divided by 1,000 = 4 million
- 4 million x 0.092 = 368,000 added CO₂ equivalent tons

According to the U.S. Environmental Protection Agency, that is equivalent to:

- Annual CO₂ emissions from 63,832 passenger vehicles
- Annual CO₂ emissions from 37,552,752 gallons of gasoline consumed
- Annual CO₂ emissions from 776,381 barrels of oil consumed
- Annual CO₂ emissions from 4,458 tanker truck's worth of gasoline
- Annual CO₂ emissions from the *total electricity* use of 43,356 homes
- Annual CO₂ emissions from the *total energy* use of 29,781 homes

www.epa.gov/RDEE/energy-resources/calculator.html

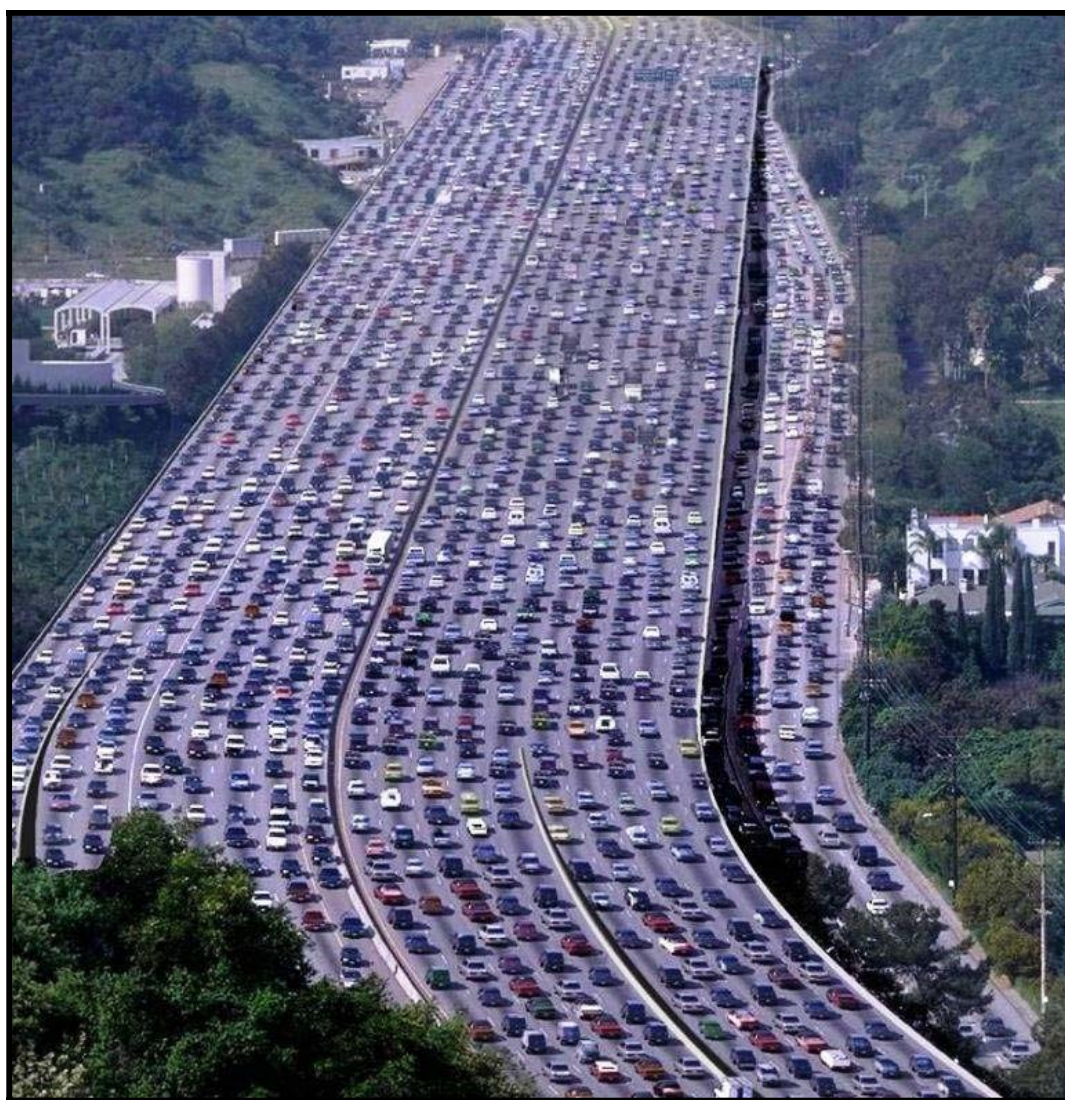
The fact that plastic bags do not degrade in landfills "for a thousand years" is an environmental benefit. Why? *Because the carbon is trapped in the bags.* The U.S. Government is trying to find ways to trap carbon. Plastic does it automatically. When paper decomposes in a landfill, it emits methane which is a greenhouse gas with 23 times the global warming power of

CO₂. http://en.wikipedia.org/wiki/Carbon_sequestration

CO₂ emissions have a major impact on ocean acidification and marine life. The County will do far more harm than good to marine life by banning plastic bags. <http://news.bbc.co.uk/2/hi/science/nature/8411135.stm>.

The County cannot take action that would increase greenhouse gas emissions to such a massive degree without advising and *strongly warning* the voters in the clearest possible terms in its prospective Environmental Impact Report.

Responsible environmentalists complain bitterly that business interests show a lack of concern about greenhouse gas emissions. Now the shoe is on the other foot.



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