

ECOLOGICAL PROFILE COMPARISON : REUSABLE NONWOVEN PP(PLASTIC) BAGS Vs PAPER BAGS Vs NATURAL FIBRE BAGS

© NZBAGIT	NONWOVEN POLYPROPYLENE	PAPER	NATURAL FIBRE (COTTON, JUTE, HEMP)
SUSTAINABILITY OF SOURCE MATERIAL	All plastics are created from the 4% derivatives produced refining crude oil. They are an efficient use of a resource that when unused is burnt off at source.	Mostly coniferous trees which regrow, over 20– 30 years. A renewable resource, but in heavy demand for other uses.	All fibre crops are in heavy demand, for textiles, and now for biofuels also, and this all uses arable land, needed for food crops.
ENERGY CONSUMPTION	Relatively low inputs of power resulting from simplicity of process.	Intensive industrialisation required to log trees, transport, refine pulp, then make paper.	Straightforward once the base fabric is created. Often a substantial manual component.
ECOLOGICAL FOOTPRINT OF PRODUCTION PROCESS	Relatively low, due to simplicity of process, and low levels of waste. Electricity and feedstock in, bags out. Printing uses biodegradeable non-toxic inks .	Substantial ecological impacts exist. Paper production uses large amounts of fresh water. High end paper bags use a wide range of chemicals, coatings etc to achieve their final look and feel.	Huge variation, dependent on source. Can be low, but requires enlightened company practice, and adds to unit cost.
DEMAND/PRICING RATIO	Transition of resource use from single-use bags to reusable bags means oil derivatives remain cost-competitive. Nonwoven PP delivers extremely cost-competitive bags.	Paper is not in short supply, but demand remains high. Simple bags are relatively cheap, but do not produce a reusable product. Good reusable Paper Bags can approach nonwoven prices.	Raw fabric demands keep prices high, particularly for high quality finished fabrics. Even more so for Hemp. Demand for fibre creates competition with food and biofuels for use of land.
ALTERNATIVE USES OF RESOURCE	Nonwoven PP is an alternative use of this resource. A better use than making single-use plastic bags.	Trees have many other uses, including staying in the ground absorbing more carbon. Paper bags – particularly to try and make a reusable bag - are one of the least efficient uses of this resource.	Fibres used for Textiles; there are thousands of other uses for every kind of fibre. Reducing the use of fibre for bags may help reduce pressure on the environments used in their creation.
HUMAN AND SOCIAL RESPONSIBILITY	As the production of nonwoven PP bags is a relatively new industry, factories are modern and follow enlightened HR practices (by each country's standards).	Wide variation depending on region of production. While paper producers in developed countries are regulated, production continues to effect local environments.	The hand-made free-trade organic approach is as good as it gets, in this respect.. However most fabric production is energy intensive and produces considerable waste.
DISPOSAL OF USED PRODUCT	Nonwoven pp can be 100% recycled – over and over. The key is the recycling system in the community of use.	Paper can be recycled. But inks and many other finishing laminates have to be separated from the pulp, usually chemically. High end paper products in landfills can take as long to break down as plastic bags.	Provided non toxic inks or dyes have been used most fabric bags can go straight in the compost.
FLEXIBILITY AND SUITABILITY OF USE	Nonwoven PP bags are designed for this use. Wonderful soft fabric feel, strong & washable, very printable, yet ultimately recyclable and degradeable.	Can be ideal for some applications: eg. Unbleached single-use food bags. Less adaptable as a long term reusable bag: Less flexible, can't be washed, tend to break open on fold lines, so have shorter useful life.	Limitless, depending on the fabric, and your budget. Possibly too expensive for a value-add giveaway or fundraising bag.
RECYCLEABLE ?	100%	95% (allowing for inks and other coatings)	0 – 100% dependent on structure and materials

SUMMARY:

Nonwoven PP bags are made out of oil – but other than this initial position, they are a very sustainable choice for the modern retailer. They promote reuse, they use a resource that exists as a result of other production (i.e. derivatives – the 4% of world crude oil left over after fuel production), and provided they are reused and recycled they have an extremely low impact on the environment.

Paper bags that can claim to be reusable actually have a comparatively short usable lifespan as they cannot be washed, and tend to get holes on fold lines when stored. All paper products require substantial industrialised processes to produce, and there are increasing pressures on the pulp & paper industry from other users, including using the source material as a carbon sink.

Fabric bags are a more practical solution than paper bags, but the source materials are in even greater demand than pulp & paper, making them relatively expensive. Other than in the organic sector, production techniques continue to have a high environmental impact – and demand for the organic product is even higher than for common fabric products.

Bio-Degradable Plastic Bags must have potential. However, biodegradable plastics are new to the market and are untested in use for extruded film (the classic plastic bag) or nonwoven bag production. There is also a logical disconnect in having a re-useable bag that degrades too quickly ... we expect such a bag would have to be non-washable, at the least.

Fully Recycled PET – A USA company makes a nonwoven substrate purely from recycled PET bottles, but the NZ market is considerably smaller making this uneconomic here. It should be possible to source bags from them, but early approaches have not generated a strong response. We believe they are likely to be struggling to meet their domestic demand.