

THE NAPPY CHANGERS

Breaking down the impact of a billion nappies

This year, Australian parents will throw away one billion used disposable nappies, each taking up to 300 years to decompose. With a life cycle that involves considerable environmental impact, it was inevitable that an eco-friendly solution to the global nappy stream would emerge. What's more, it's Australian-led.

Traditional cloth nappies have pretty much become a thing of the past, accounting for only five per cent of today's nappy changes. Disposable nappies, on the other hand, are swelling landfills and other rubbish sites, adding to their life cycle impacts.

Disposable nappies contain oil-derived plastics and so have a 'footprint' associated with crude oil extraction. Their fluff pulp requires the clearing of land for plantation timber (about 1.8 million trees annually) and water for irrigation, and many nappies also contain TBT, or tributyl tin, a pollutant that disrupts the immune and hormonal systems of shellfish. And, in the past, dioxin traces were found in chlorine-bleached disposable nappies,

although most are now oxygen bleached.

Beyond that, rotting waste generates methane gas and leachate, a toxic liquid. In poorly managed landfills, the contents of disposables can leak into the earth and contaminate the groundwater.

Kimberly-Clark is watching the biodegradable nappies closely. 'If consumers demand it, we may go down that path,' Hearne says.

While there are alternatives to long-lived disposables – modern cloth nappies, commercially washed nappies and biodegradable disposables – finding the most environmentally sustainable option is a



Disposable nappies discarded each year by Australian parents form the third largest component of landfills. Eric Isselee

minefield for parents.

Melbourne mum Meagan Siemensma has developed a program with her local council to encourage other mothers to try modern cloth. She says the nappies are shaped like disposables, have Velcro fasteners and are more absorbent.

leakage. The results will be provided to maternal health nurses.

Siemensma says throwing away nappies 'seemed such a wrong thing to do.'

'Families want to make the right choice, but it's not black and white.'

Disposable nappies are also modernising, with the emergence of a new breed of biodegradable nappies.

BabyLove and Planet Ark have produced EcoBots, which are 68 per cent biodegradable. The wood pulp is derived from renewable plantations and has undergone chlorine-free bleaching. The bioplastics are based on modified corn (maize) starch.

And recently the world's first 100 per cent biodegradable

nappy was developed by Perth inventor Charishma Seneviratne in association with CSIRO.

Seneviratne became interested in nappy development after the birth of her daughter in Sri Lanka in 1993. While studying a postgraduate diploma in design at Curtin University in Perth, she developed the Safeties Nature Nappy, pioneering a custom-made fabric from viscose and a natural starch technology to draw liquid away from the skin.

Biodegradable disposal bags assist the nappies in decomposing over just six months.

Nationwide sales for Safeties commenced in March this year.

Meanwhile, Kimberly-Clark, manufacturer of disposable nappies Huggies and Snugglers, says its nappies are about 35 per cent biodegradable.

Spokesman Ross Hearne questions whether fully biodegradable nappies are making a valuable environmental contribution, claiming that 95 per cent of waste does not degrade in a well-managed landfill.

Hearne says the company is concentrating on other ways of improving its environmental credentials, such as halving the bulk of its nappies. It also built a \$3.4 million nappy reclaim unit to recycle manufacturing waste.

However, Kimberly-Clark is watching the biodegradable nappies closely. 'If consumers demand it, we may go down that path,' Hearne says.

Melbourne company MyPlanet began Australia's first disposable-nappy recycling service in 2004. It sanitised used nappies and separated the plastics and wood pulp, which were on-sold for plastics and cardboard manufacture. If the separated materials did not meet the specifications of the recycling industry, they were disposed of.

But the company suspended operations in October 2006, citing technical problems with



A young tot sports Melbourne mum Meagan Siemens's modern cloth nappies. Meagan Siemens

its processing equipment that reduced its recycling capacity. MyPlanet has been working with its Canadian technology partner, Knowaste, to rectify the problems.

Linda Condon, Manager of the National Centre for Sustainability at Swinburne University, advises parents to consider each product's life cycle, referring to a 2005 independent life-cycle analysis study commissioned by the UK Government, which compared disposables, commercially laundered nappies and home-laundered nappies. It concluded that 'overall no system clearly had a better or worse environmental performance'. The most significant impacts for all systems were on resource depletion, acidification and global warming.

However, Condon points out there are ways of using cloth nappies more efficiently.

'A full load in a front washer saves water in comparison to a half load in a top washer. The process of washing differently will impact on the life-cycle analysis.'



Charishma Seneviratne has invented the world's first 100 per cent biodegradable nappy after developing a completely new moisture-efficient fabric in partnership with CSIRO. Thilak Sen / SeNeVens International



Traditional cloth nappies are harder work but allow more life-cycle efficiency. Summer Woodcock

RMIT University's Tim Grant, a product life-cycle analyst, agrees.

'Reusable nappies allow greater variation in control. You can use bleach and a dryer or you can use plain soap and the clothes line.

'With disposables there is no control over the impact. But you can't say one is better or worse as a default.'

The University of Queensland meanwhile will release the results of their Australian study into the life cycle of nappies later this year.

● Sandra Langdon



Seneviratne's Safeties Nature Nappies are rolling out nationally while there is growing interest from overseas markets too.

SeNeVens International

Note: Kimberly-Clark contacted *Ecos* after publication noting that its disposable nappies do not contain tributyl tin or other trialkyl organotin compounds. While *Ecos* was correct in citing concerns about TBT levels in some brands of disposable nappies, readers may, by association, have assumed that this included Kimberly-Clark products. This is not the case.

More information:
www.babyloveecobots.com.au
www.safetiesnaturenappy.com/home
www.myplanet.com.au
www.environment-agency.gov.uk/commodata/acrobat/nappies_1072099.pdf