

<p><b>Signs of Change</b></p> <p>A national e-conference showcasing transition to sustainability</p> <p><b>15-16 November 2010</b></p> <p><b>Christchurch</b></p>	
<b>Paper title:</b>	Product Stewardship: Addressing the economic, environmental and social impacts of composting nappies and sanitary hygiene waste.
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## Abstract for Presentation

The presentation will cover the challenges of the first year of operation; the plant's performance and the lessons learned. The presentation will also report on the business opportunities for taking this model to other regions in New Zealand and overseas and the importance of having commercial support and sponsorship.

## Defining the waste problem

Sanitary hygiene products represent around 3% waste to landfill nationwide which equates to circa 96,000 tonnes nationwide per annum. Between 2002–2004 and 2007–2008, the proportions of nappies and sanitary waste have increased in the New Zealand waste stream because of changing consumption patterns coupled with increasing recyclability of other waste streams.

Based on a per capita share (13% of total population) this means approximately 12,400 tonnes by weight of nappies and sanitary hygiene products are disposed of to landfill in the Canterbury region each year.

An estimated 600,000 New Zealanders nationwide experience incontinence problems which provides a potential market of 78,000 people in the Canterbury region who might use incontinence products.

## Describe the change and the scale of its impact

The Huggies Envirocomp solution opened in August 2009 with one HotRot compost unit. After one year the unit is operating at over 60% capacity and an expansion plan is in place to provide additional capacity to service new contracts with leading hygiene companies and waste service providers.

The plant currently diverts around 912 tonnes of sanitary hygiene waste per annum from landfill and processes a daily intake of 2.5 tonnes of nappies, other sanitary products and green waste product or the equivalent of 15000 nappies. Whilst initially the service was focused on household collections of nappies, the commercial sanitary hygiene sector presents a large market opportunity.

Envirocomp now services over 500 residential households and 50 commercial customers and future growth will provide capacity to offer the service to a combined estimate of 500 pre schools and rest homes in the Canterbury region.

There is also demand from sanitary hygiene companies which collect feminine hygiene, nappies and incontinence products from commercial buildings, shopping malls, Christchurch airport and other public places.

### **How does this change improve sustainability?**

A successful 2007 trial using a prototype HotRot compost unit to compost disposable nappies showed the demand for this service exceeded all expectations and identified a need for a commercial composting facility.

The business model has been recognised as an excellent example of product stewardship bringing together public and private partnerships involving Envirocomp Ltd; HotRot Solutions Ltd; Kimberly-Clark NZ (manufacturer of Huggies nappies and Depend incontinence products);and Waimakari, Hurunui and Kaikoura District Councils.

### **Sustainable Business Model**

Envirocomp Solutions Ltd is a business built around product stewardship and the premise that those who are involved in the manufacture, sale or use of products should take some responsibility for how the product is disposed of.

In 2004 Karen and Karl Upston, established a business selling both disposable and cloth nappies and became very aware of the environmental impacts of both nappy systems.

Whilst life cycle comparisons between cloth and disposable nappies conducted in the UK and elsewhere find that the environmental impact of both types is very similar, it is undeniable that disposable nappies are a visible example of waste because they end up in a landfill.

They decided to trial composting disposable nappies on a commercial scale, and contacted local engineering company HotRot Organic Solutions resulting in the use of their prototype compost machine to run a five month trial involving over 200 families, six pre schools, the local maternity hospital, elderly residents and a Christchurch Branch of the IHC.

### **Leadership in Sustainability**

The business has introduced commercial composting of whole nappies, sanitary and incontinence products diverting them from ultimate disposal into landfills. As the world's first commercial composting plant, Envirocomp's vision is to be the world leader in providing composting solutions for sanitary hygiene.



Envirocomp Solutions Ltd operates a custom built composting facility.

## **Product Stewardship**

The Envirocomp Solution facility at Balcairn, North Canterbury is an example of a **private public partnership** which has been inspired by the vision of Karen and Karl Upston to develop a commercial operation to compost disposable hygiene products such as nappies and incontinence products.

Global manufacturer Kimberly-Clark which sells HUGGIES® nappies, Depend incontinence products and Kotex sanitary hygiene products in New Zealand has agreed a 3 year sponsorship.

The technology for composting and for the specific requirements of composting nappies is designed by local Canterbury company HotRot Organic Solutions.

Hurunui District Council has made the land (formerly a pit) available for the facility and other local councils supply the green waste which is required to “bulk out” the compost.

Local entrepreneurs, farmers and businesses are private investors in the facility.

## **Benefiting the Environment**

The business has been built around finding an alternative solution to land filling sanitary hygiene products.

Nappies and sanitary hygiene products represent approximately 3% of waste to landfill in New Zealand<sup>1</sup>. Life Cycle Analysis by the UK Government which compares disposable nappies with shaped reusable nappies finds that the environmental impacts of using shaped reusable nappies can be higher or lower than using disposables depending on how they are laundered. However it is undeniable that disposable nappies are currently disposed of as waste to landfill.

Whilst arguably there are reusable alternatives to disposable nappies, composting also deals with adult incontinence products. An estimated 600,000 New Zealanders experience incontinence products. Australian research suggests that the market for incontinence products is set to grow to five times its current value. Disposal of adult incontinence products presents a major and growing challenge for councils.

## **Benefiting New Zealanders and society**

Despite subsidies for reusable nappies offered by some councils, mums and dads continue to choose disposable nappies for their baby saying that they prefer them for their skin care, dryness and leakage protection and the convenience for their babies. Medical experts say that the reduced incidence of severe nappy rash over the past 15 years is due to the benefits of disposable nappies in terms of skin care, dryness and leakage protection.

The business is now looking at the huge market which exists from people suffering incontinence and therefore requiring sanitary protection. This market is set to increase as baby boomers become progressively more susceptible to the conditions that commonly cause incontinence - including diabetes, Benign Prostatic Hyperplasia (BPH), prostate cancer, Alzheimer's, hysterectomies, neurologic diseases and other chronic conditions.

## **Good for the economy**

The business provides direct employment and has an impact on indirect employment in the area with new suppliers and distribution networks.

The business operates a “pay for use” system which is consistent with the “user pays” sustainable economic model so that externalities such as end of life considerations are factored into the purchase price of the service.

There is significant interest now globally in the commercialization of this project.

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<sup>1</sup> <http://www.mfe.govt.nz/issues/waste/special/nappies/>