



**Women's  
Environmental  
Network**

## Disposable nappies: a case study in waste prevention

### Abstract

In 1995 WEN initiated the Waste Prevention Bill, which became the Waste Minimisation Act 1998. This removed a doubt that local authority work to reduce the generation of waste at source was outside their powers. At the same time we wanted to establish an example of waste prevention that local authorities could try out. We chose nappy waste because of WEN's expertise and history of campaigning on the issue and our related work on Northern forests and paper products. This was a long-term strategy to influence waste policy and strategy towards waste prevention.

Disposable nappies make up 3 - 4% of household waste, including the contents. Councils can make savings if parents use real nappies; parents can save money if they wash at home, and the convenience of a nappy washing service is available at similar cost to that of purchasing disposables. Nappy services and local real nappy agents are sources of local employment and training, especially for women. The influence of hospitals and health professionals is crucial.

We started by asking real nappy businesses to take the report to local authorities. We were using them as our allies: in their own interests and that of waste prevention. Local activists campaigned, supported by the fledgling Real Nappy Association and by WEN. When the Waste Minimisation Act became law, councils such as West Sussex innovated further by offering cash incentives for proven real nappy use. WEN promoted examples such as this and the councils promoted themselves and won awards. As a result, such examples were endorsed by DEFRA and copied widely. Because there were established examples, the Cabinet Office Strategy Unit was able in November 2002 to recommend nappy projects as part of its programme to cut waste growth. WEN's strategy of establishing examples by working in partnership and removing legal barriers has therefore enabled the real nappy example to be part of mainstream waste strategy.

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<sup>1</sup> Disposable Nappies and Baby Wipes, Market Intelligence, April 2002, p15

# Disposable nappies: a case study in waste prevention

## Women's Environmental Network (WEN)

Women's Environmental Network is a national charity, based in London, whose aim is to inform and empower women and men to take action to improve their environment. WEN runs campaigns and projects which relate environmental issues to practical everyday life and health. We work on issues like breast cancer and pollution, which are especially relevant to women, and more mainstream issues, like waste, where we can give a women's perspective. Individuals are welcome to join WEN, and many organisations, including local authorities, are affiliated. There are around 50 local WEN and real nappy groups.

We want to reduce the use of resources and promote solutions. WEN highlights examples of alternatives to waste, from low packaging and composting to refill, reuse and repair schemes.

WEN has successfully campaigned on waste minimisation for the last 10 years. It initiated the Waste Minimisation Act 1998 which enables councils to work on waste prevention as well as recycling. We run the Real Nappy Project, and More From Less, which works in London and nationally to promote local partnerships with communities and businesses to provide a fair choice of alternatives to wasteful products.

## History of our work on waste prevention

WEN's first campaign was for paper made without chlorine bleaching, which gives rise to dioxins in products and industrial effluents. We centred this on sanitary protection and disposable nappies, which was extremely effective in changing consumer attitudes. It influenced the world paper market towards chlorine free paper, and increased awareness about the health effects of dioxins. WEN also produced reports on dioxins, which in the UK come mainly from industry and incineration, because of the use of chlorine in manufacturing.

Soon after this, WEN initiated the first UK campaign for Northern forests which logically demanded a decrease in use of paper. Our 1992 report *Forests in Crisis*<sup>1</sup> outlined how monoculture plantations threatened wildlife, decreased diversity and degraded river systems. New plantations were no substitute for the old-growth forests they were and still are replacing, to feed the demand for paper products in countries like the UK.

Because of our first campaign, nappy laundries were already contacting us, and we started to promote real nappies, as an obvious extension to the forests campaign.

In 1991, two major lifecycle studies of nappies by Lentz<sup>2</sup> and Little<sup>3</sup> had been published, both funded by Procter and Gamble. They concluded that there was very little difference in overall environmental impact between disposable and reusable nappies.

WEN commissioned a critique<sup>4</sup> of the two studies from the Landbank Consultancy which found that while both systems used similar amounts of fossil fuel energy, disposable nappies used far more resources and energy, and produced more solid waste and waste water.

WEN published and publicised the Landbank critique in 1991.

WEN ran promotional events for real nappies in the early 1990s, and encouraged the formation of the Real Nappy Association to represent businesses and local activists.

WEN's other information and research work, on issues as diverse as metal extraction for jewellery and phosphates for washing powders, led us to strongly support the reduction of resource use and hence of waste.

Through our work on incineration and dioxins, we discovered that local authorities seemed to have little interest in stemming the increasing flow of household waste. In 1995 I discovered that local authorities had no power to work on waste prevention: they could make plans to recycle, and they had a duty to collect household waste and dispose of it. I asked an expert to check on this and write a bill to fill the gap. The Bill was launched in late 1995, and it received some Government support, and was backed by the Institute for Wastes Management, Friends of the Earth and several local authorities and other groups. We received Government support initially because there was even a doubt that councils could promote home composting, and because the 1975 EC Framework Directive on Waste puts prevention at the top of the waste hierarchy, yet UK Government legislation had omitted it. It was re-written by DETR to be a new section of the Environment Protection Act 1990, and Michael Meacher changed its name to the Waste Minimisation Act.<sup>5</sup>

At the beginning, we started to promote the Bill in local authority publications, and to list activities it would allow. We imagined new departments and titles given over to waste prevention: what would these people do? Of course, they would promote less wasteful products and packaging, and work in partnership with the suppliers to mutual benefit. Examples could include bottle refill schemes, hire services, repair shops, etc.

Because of WEN's history and expertise, nappies seemed a good example to start with, so we produced a report Preventing Nappy Waste<sup>6</sup> showing the waste amounts and costs, and how local authorities could begin to save money and provide local employment by working in partnership with hospitals and nappy businesses to promote washable nappies. Elements from this report, and updates, follow.

### **Nappies as waste**

Nearly 3 billion nappies are thrown away in the UK every year.<sup>7</sup> The vast majority of these (90%) end up in landfill.<sup>8</sup> We do not know how long it takes for the plastics in disposable nappies to decompose but it could take hundreds of years. In households

with a baby nappies make up about half the volume of the weekly bin.<sup>9</sup> This gives families the opportunity to cut their waste in half by using cloth nappies.<sup>10</sup>

Disposable nappies constitute around 3-4% of household waste in the UK. This is high for a single item used by only a small section of the population, and is comparable with textiles at 3% and metal packaging at 3%. (SU) In 1994, an analysis for DETR gave 4.1%.<sup>11</sup> An analysis done by WRAP for the Strategy Unit report on waste gave 2.4%, but this sample was biased towards boroughs which could afford more than one analysis per year, and metropolitan areas were particularly poorly represented. Individual local authorities and areas have percentages ranging from around 11% to less than one percent. Nappy waste is a relatively small section of the waste stream which is extremely sensitive to demographic effects and to seasonal variations. Inner city areas such as Tower Hamlets tend to have higher levels (5.5%). London was found in 1998 to have 4.1%.

The disposal costs of nappy waste are typically £100,000 to £200,000 for an individual local authority. Bristol City estimated their costs as £500,000 in 2002.<sup>12</sup> Kent and Northamptonshire estimate their costs to top £1 million.

The November 2002 Strategy Unit report gives the following waste amounts:

Household:	25 million tonnes
Industrial	47
Commercial	24
Construction & demolition	89
Agricultural, mining, quarry waste etc:	190
Total	375 million tonnes

78% of household waste goes to landfill, which is problematic because a large amount of it is putrescible. It rots and gives off gases including methane which can cause explosions and adds to global warming. The rotting process releases acids which mobilise metals into the leachate from the landfill. This leachate can pollute groundwater. Putrescible waste smells unpleasant, and until it has rotted and "stabilised", the landfill has to be carefully managed. This process takes decades, and old landfills still cause methane problems. Because of this, the EU Landfill Directive demands that the amount of biodegradable waste be cut to 75% of 1995 levels by 2010. This means a cut from approximately 15 million tonnes to around 11 million tonnes in seven years.<sup>13</sup>

Nappies break down to a varying degree and contribute to these problems. About 25% of the nappy waste is plastic and paper. The rest is urine and faeces. A new figure will emerge from the LCA currently being carried out for the Environment Agency. Some parts of the plastics last indefinitely even if the rest of the nappy rots.

Disposable nappies are an unpleasant component of solid waste. The collection of half a binful of human urine and faeces every week from households with a baby would be unthinkable if it were officially proposed now.

**The environmental impact of disposable versus reusable nappies: lifecycle analysis**

Many people believe that scientific studies have shown there is very little difference between disposable and reusable nappies in overall environmental effects. This is not in fact the case. Early studies by the disposables industry did give this result: others, including independent research by the Canadian Government, do not.

In 1991, two major lifecycle studies of nappies by Lentz<sup>14</sup> and Little<sup>15</sup> had been published, both funded by Procter and Gamble. They concluded that there was very little difference in overall environmental impact between disposable and reusable nappies.

WEN commissioned a critique<sup>16</sup> of the two studies from the Landbank Consultancy. Landbank first considered all the impacts of both nappying systems from the growing or extraction of raw materials to their use and disposal. Landbank found that both Lentz and Little had concentrated on the "use" stage, where reusable nappies have their greatest impacts, to the exclusion of other stages. Landbank used the raw data from the two studies and additional public information on process impacts to recalculate the impacts of the two different systems. The results are shown in the table.

**Impact per infant, per year**

	Cloth	Disposable	Factor
Energy	2532 MJ	8900 MJ	3.5 x
Waste water	12.4 m <sup>3</sup>	28 m <sup>3</sup>	2.3 x
Raw materials: non-regenerable	25 kg	208 kg	8.3 x
Raw materials: renewable	4 kg	361 kg	90 x
Domestic solid waste	4 kg	240 kg	60 x
Land for raw materials (annually, for German infant population)	1,150-6,800 ha	29,500-32,300 ha	4 to 30 x

Thus the Landbank study shows that disposable nappies use 3.5 times as much energy, 8 times as much non-regenerable raw materials and 90 times as much renewable material as reusable nappies. They produce 2.3 times as much waste water and 60 times as much solid waste, and require between 4 and 30 times as much land for growing natural materials as reusable nappies.

Landbank also showed that both systems used similar amounts of fossil fuel energy.

## Renewable energy

Landbank shows that disposable nappies use 3.5 times more energy than reusables. Some of this is fossil fuel energy, roughly equal for both systems: contrary to expectations, reusables do not use more fossil energy than disposables. The extra energy calculated by Landbank to be used by disposable nappies comes mainly from burning wood waste to power the pulping process. Lentz and Little both discount this energy because it comes from trees, a renewable resource. They treat it as a raw material. There are strong arguments against this assumption:

- Renewable energy should be used directly to substitute for essential uses of fossil fuels.
- Treating trees as renewable source of energy or materials neglects a wide range of impacts of this use of land. Worldwide, 16% of wood for paper comes from clearing previously untouched forest.<sup>17</sup> The spread of monoculture plantations damages habitats and threatens endangered species<sup>18</sup>
- The global paper industry is a net emitter of greenhouse gases; young plantation trees do not counteract the greenhouse effect<sup>19</sup>

WEN published and publicised the Landbank critique in 1991. Procter & Gamble did not attempt a legal challenge to WEN.

## ASA uphold WEN's complaints

WEN used the Landbank critique as the basis of a complaint to the Advertising Standards Authority about Procter and Gamble's claim that the environmental impact of disposable nappies is not materially worse than that of cloth nappies. WEN's environmental points were upheld and Procter and Gamble were told that they must include a warning that their claims were "simply one side of an ongoing argument". They ruled that Procter and Gamble "will no longer be able to imply that the studies' conclusions are generally accepted".<sup>20</sup> After that ruling Procter and Gamble stopped using environmental claims to advertise its nappies in the UK, although some of their current statements imply environmental parity.

In 2002, the Absorbent Hygiene Product Manufacturers' Association (AHPMA) complained to the Advertising Standards Authority about statements in WEN's nappy leaflet. At first the claim was upheld, because the ASA cannot judge complex environmental arguments, but this was changed after WEN appealed to the independent adjudicator, and two important statements about the quantity of waste and potential savings to parents of using real nappies were allowed. WEN did not contest the other points in the ruling, partly because the points were not substantive but a matter of subjective interpretation and we did not therefore have sufficient grounds for appeal, and partly because the leaflets had been updated before the complaint was received.

## Other studies

The Canadian Government commissioned a study in 1989 that concluded that reusable nappies were environmentally preferable to disposables. The Canadian Federal Government's Environmental Choice Programme gave an "eco logo" to cloth nappies

and washing services but not to disposable nappies. Then in 1991 they published the Marbek critique<sup>21</sup>, which supported Landbank's conclusions although it was carried out without any contact or mutual awareness.

Marbek considered four environmental balances of reusable and disposable nappies, including Lentz and Little, and concluded that reusables use significantly fewer resources and generate far less waste, but disposables use less water and their effluent contains a lower mass of waste products. However, "waste water effluents from the cloth system are of low toxicity, while small quantities of pollutants released in the production of various inputs into disposable diapers are of greater concern"

Marbek makes the point that sources of information about process emissions for disposables are not clearly stated in the studies. They had mainly been obtained from the industry, and were not independently verified. Unlike Landbank, Marbek did not recalculate the impacts. Marbek confirms other Landbank criticisms of Lentz and Little. It confirms that studies that show reusables use more energy depend mainly on discounting the wood energy.

Another factor Marbek mentioned is that studies which omit transportation tend to favour disposables. Neither Lentz nor Little include it properly. For the UK especially, all the pulp and some finished products come from abroad.<sup>22</sup> Supermarkets sell most of UK disposables<sup>23</sup> and have central distribution points for goods<sup>24</sup>, so nappies are probably moved first to these from the supplier, and then out again to supermarkets all over the UK. Many consumers fetch them by car. Fewer materials have to be transported for reusable nappies, so journeys will be less often. Although nappy services call on their customers, this saves other journeys that might otherwise be made to buy disposable nappies. None of the studies have attempted to quantify transport use for the two systems.

Marbek found that the studies did not point to a clear advantage for either system with respect to energy consumption and air emissions. This critique confirmed that reusables are preferable unless any convincing new evidence emerges.

### **Disposable industry study**

A further life cycle analysis was done for Procter and Gamble in 1993 by the University of British Columbia.<sup>25</sup> This study also treats the energy derived from wood and used to power the pulping process, as raw material use. In spite of this it finds reusable nappies (90% home washed and 10% service laundered) use only 15% more energy than disposables. Moreover, after testing the sensitivity of the various impacts to changes in the assumptions, they concluded that because the energy use was so sensitive to changes in laundry practice, "no significant difference between cloth and disposable nappies could be established". The same applies to air emissions.

The impacts and the significance considered in Vizcarra were:

	Cloth	Disposable	Significant difference?
ENERGY CONSUMPTION	183	158	no
WATER CONSUMPTION	0.882	0.415	yes
RAW MATERIALS	0.525	3.743	yes
ATMOSPHERIC EMISSIONS	0.140	0.135	no
WATER-BORNE WASTES	0.202	0.027	yes
SOLID WASTES	1.876	6.141	yes

On the basis of this study, a switch from disposables to washable nappies makes no significant difference to energy consumption (fossil energy only being considered in this study) or to air omissions. It reduces raw material use by 3.218 kilograms per baby per week, and solid waste by 4.265 kilograms. Waterborne wastes are (apparently) increased, by 0.175 kilograms, and water use by 0.467 cubic metres.

The increase in water-borne wastes is far smaller than the decrease in solid wastes, and the water consumption is domestic water or similar, discharged to the sewerage system, whereas the equivalent from the disposable system is a variety of industrial discharges.

The magnitude and quality of these increases do not outweigh the raw material use and solid wastes generated by the disposable system.

#### **Impact of nappy washing services**

The same study also finds that nappy services use 32% less energy than home washing, and 41% less water. Nappy services use 19% less energy than disposables. Every other impact except waterborne wastes is reported to be lower for nappy services than disposables. However, no transport impacts for any finished product, nappy laundry deliveries or refuse disposal have been included, so this diminishes the value of the study. But it suggests that nappy services are likely to have lower impacts than either home washing or disposables. This is also the opinion of the Marbek study, which says "the diaper service option offers particular advantages." These advantages are increased the more local the service.

#### **Local energy use**

Disposable and reusable nappies use roughly the same amounts of fossil fuel energy, but disposables use far more materials and create far more waste. Nappy services, according to the British Columbia study, have lower impacts than home washing,

including lower energy use. It is imperative that we reduce use of fossil fuels because of the dangers of the greenhouse effect.

Landbank estimates that the total energy consumption, per infant per year is, 2532 MJ or 248 kWh, using a conversion factor of 10.2 which allows for energy wasted in conversion to electrical energy, and assuming a proportion of boil washes and tumble drying. This estimate is generous because boil washes are not necessary for home nappy washing. The Real Nappy Association recommends a 60° C wash as sufficient. Even nappy laundries are required to wash at only 71° C.<sup>26</sup> A weekly wash for a family of four people uses 8-9kWhrs<sup>27</sup>. This assumes that: 4kg of cottons with pre-wash are washed at 90° C for 2 units and 1.8kg synthetics washed at 50°C for under 1 unit. The National Energy Foundation estimates that reducing the temperature from 90° C to 60° C halves the energy consumption for a machine wash.<sup>28</sup> Therefore a 4kg load of nappies washed at 60° C uses approximately 1 unit of energy. If a family has an average of 20 nappies and uses an average of six per day they need to be laundered every 2.5 to 3 days, using a maximum of 2.8 units of energy per week. This also assumes that no nappies are laundered with the family's other laundry which happens quite frequently in reality. A 60 degree wash uses less than one unit of electricity. Thus the annual energy usage from washing is 146 kWhrs. This could be further reduced by using the most efficient washing machines, but tumble drying would increase it.

Thus there are locally controllable ways of reducing the energy impact of washing. Distant, energy intensive manufacturing processes are more difficult to control. The best option is therefore to choose reusables and to minimise the impacts. For example, buying the most energy efficient washing machine and washing at lower temperatures can significantly reduce the impact of home washing, perhaps halving the energy use.

Laundries have advantages of scale over home washing. A report prepared for the Dutch Government in 1992 advocated greater use of laundries rather than home washing for all clothing and household items.<sup>29</sup> At present nappy laundries travel long distances because customers are geographically scattered. This can be improved once there is a more concentrated clientele.

### **Footprinting**

An ecological footprint is a measure of the total environmental impact of an activity. The method was devised by Wackernagel and Rees and applied in the UK by Best Foot Forward. It converts energy and material use to an equivalent area of land, for example to grow wood or cotton for raw materials, to provide wood as a source of renewable energy, or to grow trees to absorb the carbon dioxide produced by fossil fuel use. The method has been used to calculate the footprint of the Isle of Wight, and of London. It can be applied to products and services, and a study was carried out in 1998 on nappies. Best Foot Forward used data from Vizcarra with UK data on energy use and landfill impacts. It concluded that the footprint of disposables is greater than that of washable nappies. The amount of land per baby per year was as follows:

Service laundered 1,600m<sup>3</sup>  
Home laundered 2,300m<sup>3</sup>  
Disposable 4,300m<sup>3</sup>

The study can be accessed via [www.wen.org.uk/nappies](http://www.wen.org.uk/nappies) via a link to [www.bestfootforward.com](http://www.bestfootforward.com)

### **Environment Agency LCA**

The Environment Agency is currently carrying out its own LCA for nappy use in the UK, using consultants ERM, and the report is due in June. It will include the impacts of manufacture, use and disposal for reusable nappies washed at home and by a nappy service, and disposable nappies as used now. There have been some changes in composition of disposables since the earlier studies: for example the proportion of plastic and superabsorbency granules has increased.

### **Environmental conclusions**

The lifecycle analysis studies comparing reusable and disposable nappies and the critiques all have their limitations, but taken together, they are the best guide available. LCAs are only as good as the available data, they use industry averages rather than actual discharges by individual companies, they often omit some complex impacts such as effects on biodiversity, and are more suited to comparing similar products than to very different systems such as washable and disposable nappies.

One conclusion, agreed by several different sources, is that reusables and disposables use similar amounts of fossil fuel energy. Thus there is no fossil fuel energy penalty if reusables are promoted in order to prevent waste.

Although reusable nappies and nappy services are preferable, efforts should still be made to reduce impacts, especially energy, because of increasing concern about the greenhouse effect. Local impacts such as energy and water can be reduced by well understood means.

Further information on environmental impacts will come from the Environment Agency's LCA which will report in June.

### **Promotion of Preventing Nappy Waste report and subsequent campaign**

We started by asking real nappy businesses to take the report to local authorities. We were using them as our allies: in their own interests and that of waste prevention. A few local authorities responded with promotional campaigns, and became the first supporters of Real Nappy Week in 1998. Crawley Borough Council, and then West Sussex County Council were important pioneers. When the Waste Minimisation Act became law, West Sussex started offering cash incentives for real nappy use. These are drawn from the potential savings from the disposal budget and are payable on three occasions:

1. £11 initially to help as part of registration fee for joining a nappy laundering service
2. £9.50 when there is a need to buy a second set of wraps

3. £9.50 when a further set of wraps are needed

This unique method of spreading the payments over a period of time should ensure the continued use of reusable nappies and not simply a one-off payment which would not prove any sustained use. This was particularly important to the County Council as the savings in disposal budget being passed back to the parents depends on continued use and the authority could not in effect pay twice if a shift to disposables occurred.

Parents who wash at home have to send a copy birth certificate which has been certified by an appropriate health care professional that the baby is using cotton nappies and the £11 payment is issued. If further purchases of different sized wraps occur then proof of purchase is supplied and two subsequent payments of £9.50 are made.

This scheme received a Green Apple Award and a Local Government Chronicle Award, and was included in DEFRA Guidance on municipal waste strategies in early 2001. The scheme was so successful that similar projects are now in operation in Kent, Oxfordshire and Norfolk.

West Sussex was an early example of partnership work between the local authority, hospitals and the local nappy business, Cotton Bottoms, which we had proposed in Preventing Nappy Waste in 1996. In 2002, WEN instituted awards for successful real nappy partnerships. The winners were:

- East Sussex and Brighton & Hove Real Nappy Network, which involves seven local authorities, two hospitals, numerous nappy companies, a nursery, a continence advisor and the local NCT in raising awareness through the NHS.
- The Recycling Consortium's Real Nappy Project employs outreach workers to raise awareness working with the NHS in Bristol, South Gloucestershire, Bath and North East Somerset targeting families on low income. It is an example of how the involvement of a wide range of partners can benefit the community. As well as the health professionals the project has involved organisations such as Barnardos and community centres, which have reported increased usage of their facilities. The project doesn't just concentrate on the cities but also provides a service to rural areas. There is also a bid for funds to provide re-usable nappies to low-income families.
- Sustainable Wales Projects Ltd involves government agencies and local organisations, along with representatives from eight local authorities and a national park in promoting real nappies via an educational campaign and through the establishment of a community co-operative laundry service. Midwife training is at the centre of the campaign.
- The Isle of Wight Real Nappy Network Project 2002 is a partnership between the local Real Nappy Network and island services disseminating information on real nappies in the form of nappy kits distributed to health professionals. It is an excellent example of what one committed individual can achieve. Having started on an informal basis three years ago, and driven by enthusiasm which has spread to

local health professionals, the project received funding in 2001 to produce attractive 'nappy kits' for use in informing parents.

The Awards were presented at the House of Commons during Real Nappy Week 2002. For more details of partnerships, visit the partnerships database on [www.wen.org.uk/nappies](http://www.wen.org.uk/nappies)

### **Promotional schemes**

Some schemes rely heavily on the participation of the health service to distribute information. In Gloucester all mothers receive information on cloth nappies in their hospital booking packs, while sample packs are sent to midwives. Coventry City Council Agenda 21 uses a video which is distributed to the health service to enable them to educate parents about cloth nappies.

Others involve more general promotion:

Essex County Council distributed free nappy packs to 3,000 families last April. This was very successful as 43% went on to buy more nappies. Similarly, Cambridgeshire councils worked with Ecobabes to offer a free trial of nappies to parents. In Real Nappy Week, many councils sponsor competitions and put posters on buses and advertising hoardings.

### **Anti-poverty**

Home laundered nappies could save parents up to £500 on the cost of keeping a baby in nappies. A baby can be kitted out on the high street for under £70. This includes all the nappies and waterproof covers a family needs for the whole of a baby's nappy wearing life. The same amount of money would only buy twelve weeks of disposables. For detailed cost comparison, see [www.wen.org.uk/nappies/Nappy\\_costcomparison.htm](http://www.wen.org.uk/nappies/Nappy_costcomparison.htm)

Birmingham City Council ran a Which? style trial in a disadvantaged area. Of the 12 participants, which included two teenage mums, ten continued to use cloth nappies after the trial. Cost savings were the most significant factor in their decision to continue. Birmingham City Council has bought cloth nappies in bulk to provide at low cost and is now investigating setting up a laundry service in a disadvantaged area to provide local employment. St Helen's local authority are working on providing a subsidised service for low-income families. Environappies, a co-operative in Lancashire is offering laundry service at cost.

In Hereford and Worcester discounted trial packs of nappies were distributed by PHP and Hereford and Worcester County Councils. Local Mothercare outlets have responded to the demand for budget nappies by retailing a low cost range. Bristol City Council are looking to provide nappies at cost price to low-income families and to establish community laundries. Shropshire Real Nappy Network is working with Surestart and Fair Share Credit Union to provide loans to fund nappy purchase.

In 2003, Real Nappy Week was backed by over half the UK local authorities (250+) along with 72 MPs and many other organisations to reach a record level of support.

### **Hospitals**

The original report described the case of Seattle where it had been reported that 80% of hospitals used washable nappies, and as a result 70% of parents did. However, we do not know that this pattern is repeated or still the case. The report described an early UK project at Leicester Royal Infirmary, which had mixed success because of the difficulty in contacting and informing midwives. However, the example was very useful to other local authorities and hospitals.

In 1996 we knew of two or three hospitals using washable nappies: in 2003 there are several major hospital schemes, led by hospitals in West Sussex, where washable nappies are used on maternity, paediatric and neonatal wards. Many hospitals around the UK are now offering parents the choice of whether they put their newborn baby in a disposable or a cloth nappy. In some hospitals all babies wear real nappies. Royal Sussex County Hospital uses a local laundry service to provide nappies for 3,000 newborn babies a year. They estimate that this will save them £16,000 on clinical waste disposal annually. In October 2002 the Bedford Hospital Real Nappy Project offered 200 parents the opportunity to trial a nappy laundry service for free. Oldham hospital uses spare capacity in their own laundry to wash nappies thus minimising the environmental impact.

### **Nappy services and other suppliers**

A nappy laundry service collects used washable nappies from households and delivers freshly washed nappies in return. In 1996, there were perhaps 10 small struggling nappy laundries and a similar number of companies selling real nappies by mail order. The number and size has grown considerably. Of the six largest real nappy companies (Bambino Mio, PHP, Cotton Bottoms, Lollipop, Green Baby and Little Green Earthlets) all are mainly mail order, often with local agents. Bambino Mio used to run a nappy laundry, but Cotton Bottoms is the only one still to do so. There are now about 35 nappy laundry services in the UK, mostly listed on [www.changeanappy.co.uk/supplier.htm](http://www.changeanappy.co.uk/supplier.htm) Some serve several different areas. The Real Nappy Association's website [www.realnappy.com](http://www.realnappy.com) lists 23 mail order nappy suppliers and around 270 local agents, including many independent agents offering a range of different nappies and over a thousand shops via the new Nappy Line. Waitrose branches are listed, and other stores including Sainsbury's, John Lewis, Mothercare and Boots all stock real nappies. At the major parent and trade baby products shows there are around six real nappy exhibitors compared with one or two a few years ago.

### **Employment**

From talking to nappy services and from a feasibility study done in Tower Hamlets, we estimated in 1996 that a nappy service with 500 customers would employ three people. We used this as an argument that a waste problem could be transformed into an employment solution.

Local job creation has since been demonstrated. In the first five months of the real nappy partnership operating in Kent, 500 families started using real nappies creating four business opportunities and nine part-time jobs.

The expanding nappy service industry has been primarily developed by women for women. Having used real nappies for their own children, some mothers are so keen to spread the word about this healthy, environmentally friendly and economic option that they have set up their own nappy businesses. Some import and manufacture cloth nappies and waterproof wraps, others run nappy laundry services, even more act as nappy sales agents distributing a wide variety of real nappies for washing at home. Not surprisingly, many nappy industry jobs are family friendly, fitting in and around the demands of parenthood. Part time jobs are commonplace and flexibility is the nature of the profession.

### Government policy

In November 2002, the Cabinet Office Strategy Unit, building on the West Sussex example, said, "Even modest initiatives to replace disposable nappy use with reusable nappies can have a significant waste minimisation impact". They proposed converting 24% of households with children aged three and under, and estimated that this would reduce waste by 200,000 tonnes over three years. This was part of their strategy to reduce waste growth from 3% per year to 2%.

In May 2003, the Government, in its response to the Strategy Unit, appears to have adopted these proposals, as one of four key waste reduction measures with waste reduction at the top of the agenda at last, although it is not clear how they are being funded.

### References

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<sup>6</sup> Preventing Nappy Waste, Ann Link, WEN, 1996

<sup>7</sup> Disposable Nappies and Baby Wipes, Market Intelligence, April 2002

<sup>8</sup> Waste Not Want Not, Cabinet Office Strategy Unit report November 2002

<sup>9</sup> Local Authority Recycling Advisory Committee (LARAC)

<sup>10</sup> LARAC

<sup>11</sup> Data from the National Household Waste Analysis Project (based at AEA Technology). The Technical Aspects of Controlled Waste Management, National Household Waste Analysis Project Phase 2, Volume 1: Report on Composition and Weight Data. (Report No. CWM 082/94.

<sup>12</sup> The Recycling Consortium's Real Nappy Project Application Form for Real Nappy Week 2002 Award 'Celebrating Working Partnerships'

<sup>13</sup> Waste Not Want Not, Cabinet Office Strategy Unit report November 2002

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<sup>14</sup> Lentz, as above

<sup>15</sup> Little, as above

<sup>16</sup> Landbank, as above

<sup>17</sup> A Changing Future for Paper; prepared for the World Business Council for Sustainable Development by International Institute for Environment and Development, May 1996.

<sup>18</sup> Tomorrow's World, FoE, 1998

<sup>19</sup> A Changing Future for Paper, as above

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<sup>21</sup> Marbek; Review and Critique of Four Comparative Product Lifecycle Assessments on the Disposable and Cloth Diaper Systems; May 31 1991; Marbek Resource Consultants for Canadian Government.

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<sup>24</sup> The Food Miles Report; SAFE Alliance, Sept 1994

<sup>25</sup> A T Vizcarra et al: a lifecycle inventory of children's disposable and cloth nappies subject to Canadian conditions; Dept of Bio-Resource Engineering, University of British Columbia, Vancouver, BC.

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<sup>27</sup> Guide to Running Costs, Electricity and You, published by the Electricity Association, 20 Millbank, London SW1P 4RD

<sup>28</sup> Personal communication with Paula Judd -The National Energy Foundation 21st May 1996.

<sup>29</sup> Dutch Sustainable Development Plan, ENDS Report 223, August 1993, p. 19.

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