



Single-use nappies and their alternatives: Recommendations from Life Cycle Assessments

A summary for decision-makers




Single-use nappies are a substantial contributor to plastics waste globally. They have environmental impacts across their entire life cycle and are also a leading cost for local authorities that are most often tasked with their disposal.

In response to the request by Member States at the Fourth session of the UN Environment Assembly in March 2019, this report provides insights from Life Cycle Assessments (LCAs) to inform decisions on single-use (disposable) nappies and their alternatives. This is part of a [wider analysis of single-use plastic items in comparison with their alternatives](#).



Some **33 billion single-use nappies** are estimated to be consumed per year in the EU alone, resulting in around **6.7 million tonnes of waste annually**. These numbers continue to rise, with the global nappy market expected to exceed **US\$ 71 billion by 2022**.

A critical finding of this work is that **“single-use” is more problematic than “plastic”**. Therefore, Member States are encouraged to support, promote and incentivize actions that lead to keeping resources in the economy at their highest value for as long as possible, by replacing single-use plastic products with the most appropriate reusable alternative as part of a circular economy approach. This will require systems change.



A reusable nappy system which **optimises energy and water use** has **lower environmental impacts** than single-use nappies.

The life cycle meta-analysis shows that, in general, **reusable nappies have lower environmental impacts than single use nappies**. Thus, an overarching policy recommendation is that there should be greater advocacy for and incentives to adopt reusable nappy systems.

KEY FINDINGS:

- **Reusable nappies** have **lower environmental impacts** than single-use nappies when washed so as to minimise water use and in an energy-efficient manner.
- **Consumers** using reusable nappies can reduce their environmental impacts by:
 - where washing machines are used, washing **full loads** and choosing **water- and energy-efficient** models;
 - washing **below 60°C**;
 - **line-drying** nappies;
 - using less and more **sustainable soap**; and
 - **reusing nappies** as many times as possible (e.g., by using their nappies for subsequent children; selling/donating nappies after use or purchasing second-hand nappies).
- The greatest reductions in environmental impacts of **single-use nappies** can be achieved through the **design of glue less and lighter products**, since raw materials are the major source of impacts. Using bio-plastics or increased cellulose-based fluff pulp can also result in environmental benefits in some impact categories, if suitable composting infrastructure is in place.
- Novel processes for the **recycling of nappies** show good potential for decreasing the end-of-life impacts of single-use nappies but will need to overcome significant social and economic barriers to become mainstream.
- The report focuses on nappies for babies but many of the general findings are equally relevant to **adult incontinence products**.



A key difference between reusable and single-use nappy systems is that the **consumer has significantly more control over the environmental impacts of reusable nappies** than they do of single-use nappies.

Consumer education is a critical component of any policy aiming to increase the uptake of reusable nappies. To ensure that these environmental benefits are realised, the following **policy actions** could be considered:

- Adequately **educate consumers** on efficient laundering practices.
- **Encourage multiple reuses** of nappies as part of promoting a circular economy.
- Incentivize, support and **promote “nappy service” business models** and service companies.
- Focus efforts on transitioning to **low-carbon electricity** and ensure access to (clean) water.
- Support poorer consumers by developing financing solutions to **help carry the higher upfront costs** of reusable nappies.
- Ensure that **policies** are **responsive to gender** inequalities and norms to avoid putting a higher burden on women.

Hosted by the UN Environment Programme (UNEP), the **Life Cycle Initiative** is a public-private, multi-stakeholder partnership enabling the global use of credible life cycle knowledge by private and public decision makers. **UNEP** is the world's leading environmental authority, providing international leadership and encouraging environmentally sound practices globally.

The Nappy Alliance is a UK-based coalition of independent providers of reusable nappies which exists to promote the economic and environmental benefits of reusable nappies and promotes greater consumer choice for parents.

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