

Nestlé's approach to end of life of packaging materials

LCA discussion forum 46

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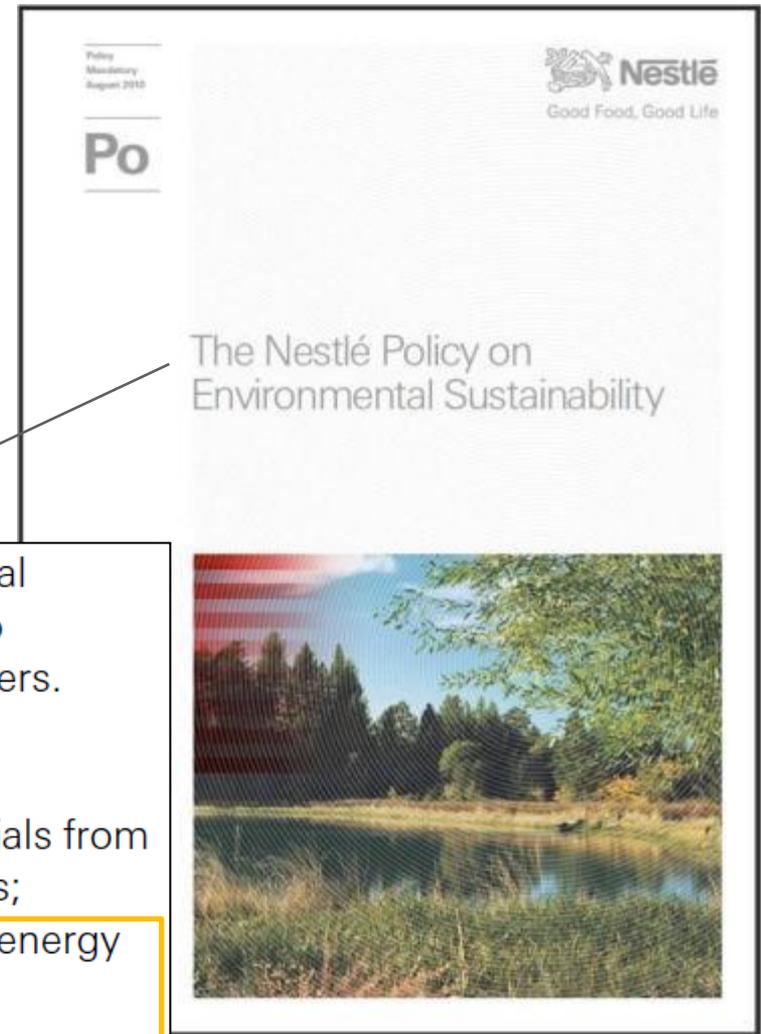
2011-12-06



- Background
- Our activities
 - LCA research assessing impacts of available EOL options
 - Use of ecodesign to evaluate impacts of EOL options
 - Design packaging optimised for EOL technologies
 - Programs to encourage and enable recycling / appropriate disposal
- Challenges
 - Allocation of recycling impacts
 - Data availability on average EOL statistics
- Conclusion

(EOL = End of Life)

- Producer responsibility legislation obliges manufacturers to ensure that any packaging item placed on the market can be reused or recovered
- Packaging waste is a big concern for consumers



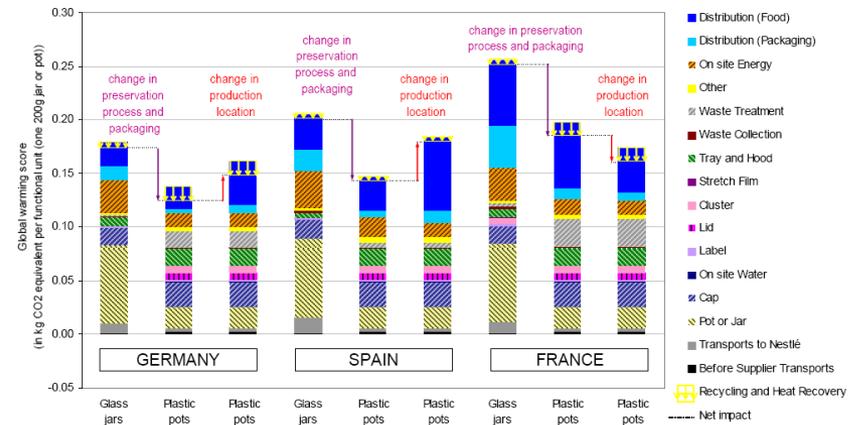
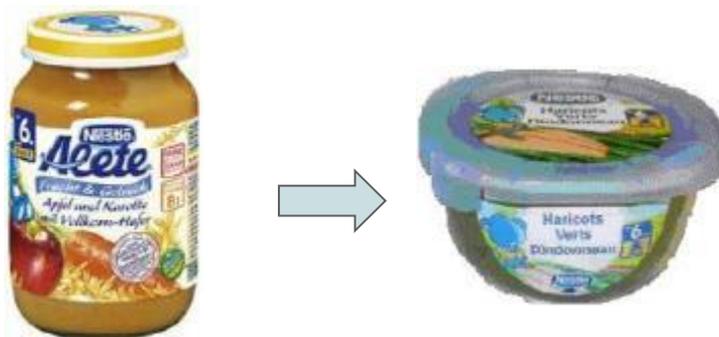
The **packaging** of our products is critical to guarantee our high quality standards, to prevent food waste and to inform consumers.

We strive to:

- reduce weight and volume of materials;
- lead the development and use of materials from sustainably-managed renewable resources;
- support initiatives to recycle or recover energy from used packaging;
- use recycled materials.

We use LCA to evaluate end of life options and communicate to consumers

- Consumers see recyclable materials very positively
- LCA for NaturNes baby food packaging*
 - Move from recyclable glass to non-recyclable plastic + new preservation process
 - Allows claim of lower CO₂ emissions and energy consumption



Un bol pratique respectant l'environnement

• La gamme NaturNes s'inscrit dans une démarche globale et volontariste de la part de Nestlé de réduire les émissions de CO₂ tout au long du cycle de vie de ses produits.

• L'utilisation de ce bol en plastique permet de réduire de 25% les émissions de CO₂ et la consommation d'énergie par rapport au pot en verre dans la chaîne de production et de transport*.

• Le bol est valorisable énergétiquement.

*Source : 2007 Institut indépendant Ecokeys

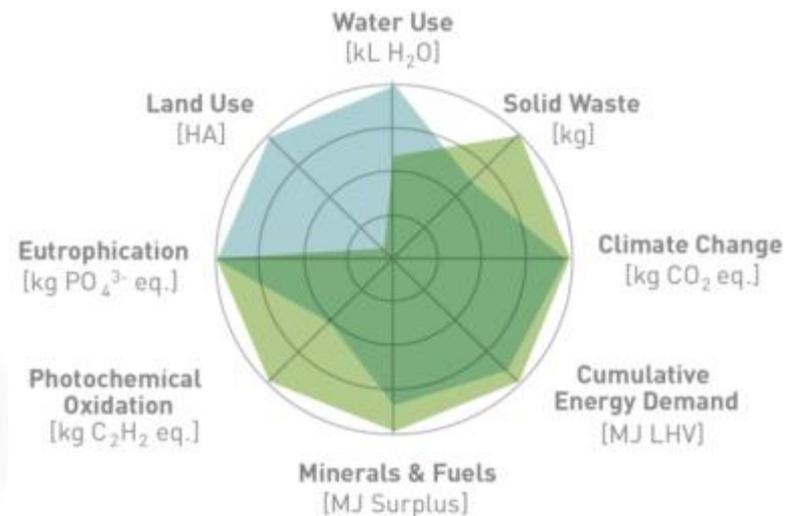
* Humbert *et al.*, 2009, Int J LCA 14, 95-106



PIQET allows streamlined LCA on every packaging innovation & renovation project

- Web-based interface to SimaPro
- Adapted to food and beverage packaging development
- Further information:
 - <http://www.sustainablepack.org/>

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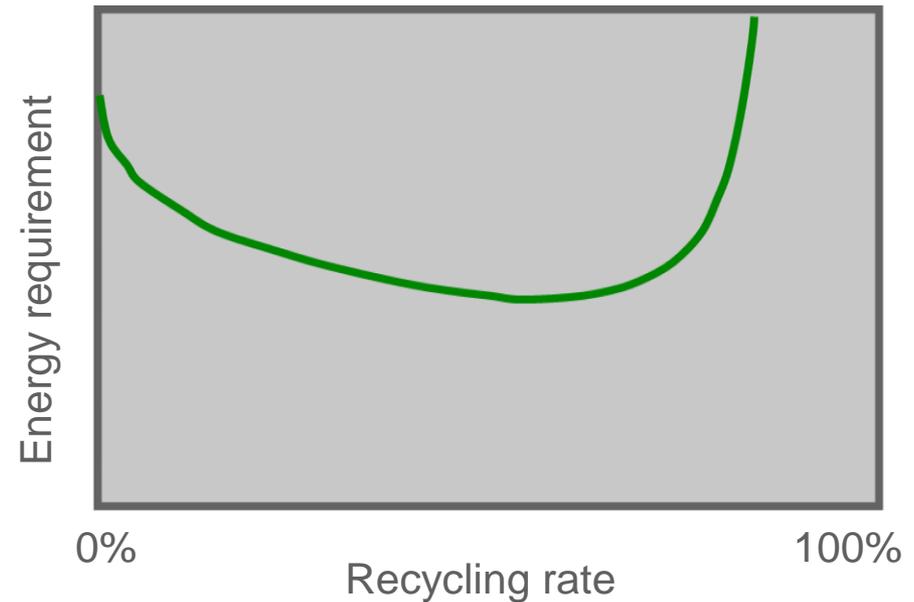
PIQET includes the impacts of end of life options for packaging



Commercial in confidence

Several factors impact the performance of the different end of life options for packaging materials

- Design
 - Format (rigid, flexible)
 - Multi-material components
 - Laminates
 - Adhesives
 - Inks
 - Coatings
 - Colour
- Contamination
- Location
- Technology
 - Sorting
 - Cleaning efforts
- Infrastructure



* Edwards & Schelling, Trans ICHemE, 77, Part B, 1999

Nescafé Short Black:

- Tinting on glass jar rejected during sorting as “ceramic”
- Worked with recycler to develop a lighter tint that resulted in less rejects



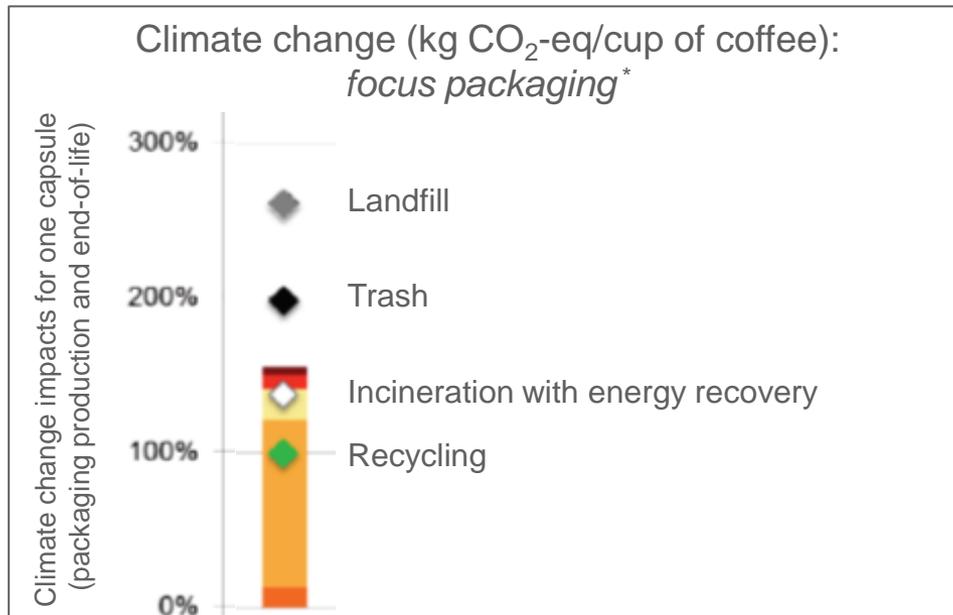
Purina Yesterday's News:

- Product is cat litter made from recycled paper
- Paper bag packaging was modified by changing the adhesive and the type of lacquer to improve the acceptance of the re-pulped bags in the paper recycling process



We support programs to encourage and allow appropriate recovery and disposal of our packaging

- Nespresso has had capsule collection systems in place in Switzerland since 1991
 - Increasing capacity to collect used capsules (75% by 2013)
 - Support new technology solutions that make capsule collection as easy as possible

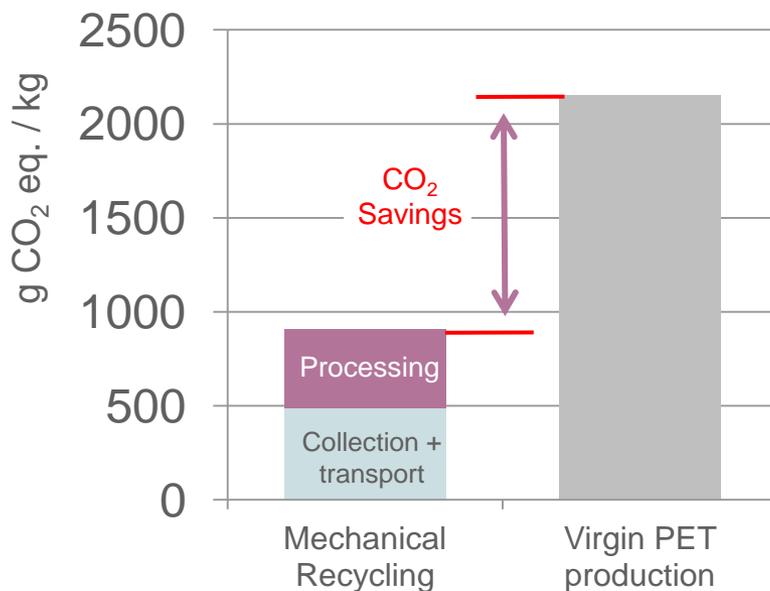


*http://www.nespresso.com/ecolaboration//medias_dyn/articles/83/article/attachment-2.pdf

We support programs to encourage and allow appropriate recovery and disposal of our packaging

- Today's recycling rate for PET beverage bottles in the U.S. is only around 30%.
- Nestlé Waters North America is advancing the goal of a minimum 50% recycling rate by 2018 through partnerships, coalition-building, consumer education, improved kerbside recycling programmes and policy initiatives
 - E.g. Re-source water bottles with recycled content and bring back recycling system

PET vs rPET: CO₂ emissions balance*



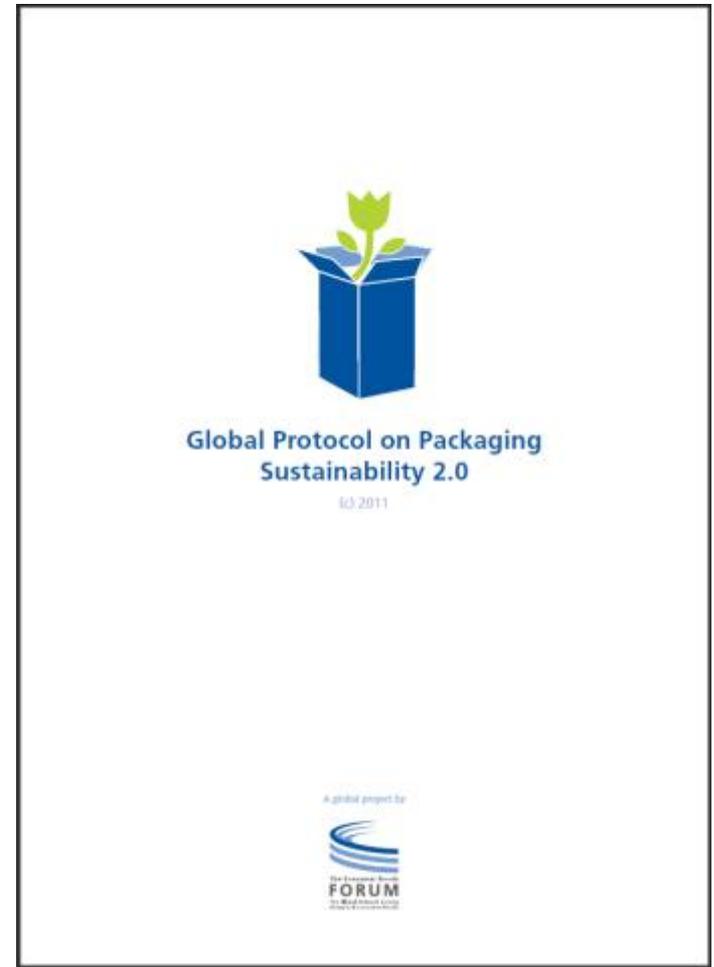
* Based on 2010 PET LCI data by Plastics Europe

We provide guidance on responsible disposal to our consumers

- 123Recycle app in Singapore helps consumers to sort their packaging waste
 - Developed by Nestlé Singapore with the Nanyang Polytechnic School of Information Technology and officially supported by the Singaporean Government's National Environment Agency
 - Launched June 2011



- GPPS 2.0*:
 - “In particular for recycling and recycled content various material sectors have suggested allocation rules for particular material categories ... **There is currently no scientific consensus on a single allocation rule** so it is of utmost importance to be clear and transparent on the allocation rules used.”
- A set of allocation rules, accepted by all stakeholders, is missing.
- At Nestlé we use 50:50 allocation as a proxy as long as there is no generally accepted guidance.



* The Consumer Goods Forum, 2011, pp. 35
http://globalpackaging.mycgforum.com/allfiles/GPPS_2.pdf

- No uniform database exists for collecting statistics on packaging end of life
 - Eurostat is the most advanced
- Waste statistics are presented in different ways
 - US: managed at state level
 - Europe: generally countrywide
 - Developing countries: large informal sector
- Technical knowledge of whether the statistics are applicable for a certain packaging format is required

Commercial in confidence

- We strive to ensure the lowest environmental impact of our packaging throughout the life cycle, including EOL
- To reduce environmental impacts of packaging in the EOL phase, a number of approaches can be successful:
 - Identify available recovery options with the lowest environmental impact
 - Design packaging to be recoverable
 - Communicate and support programs to encourage consumers
- To assist in decision making and be accepted, we need to ensure that the LCA data and methodology for the end of life phase is reliable, transparent and widely accepted