



WOODLY LCA PUBLIC SUMMARY

May 2019



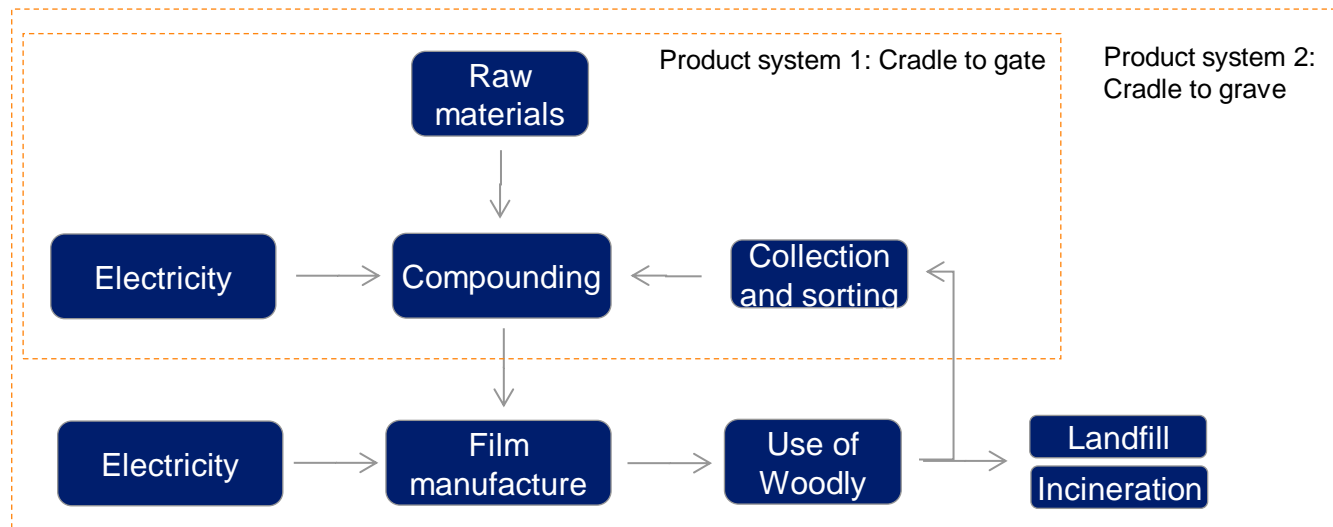
GOAL AND SCOPE

This LCA study follows the regulations and guidelines of ISO 14040 and ISO 14044 standards for Life Cycle Assessment (LCA)

- *The reason for carrying out this LCA study* is to provide a well-reasoned, defensible, fact-based evaluation of the environmental burden of the Woodyly® material. *The intended audience* of the results is the key stakeholders. *The intended application of this study* is to support Woodyly in its communication of the environmental performance of Woodyly® and to help identify the key points for further development of the product. Impacts of possible development actions are assessed by forming three scenarios: current, short to mid-term and longer-term development
- *The functional unit* of the study is 1 kg of Woodyly® granulate. Two different product systems are included in the study: cradle-to-gate and cradle-to-grave. *System boundaries* of the cradle-to-gate system cover the following processes:
 - Upstream raw material manufacture from the cradle
 - Granulation
 - Energy production
 - TransportsIn the cradle-to-grave system 1 kg of Woodyly® granulate is processed further into film utilised as packaging and finally recycled, incinerated or landfilled. Concerning *cut-off criteria*, expert opinion is used to exclude insignificant flows
- In the study, robust data from 2016-2019 is used. It is modelled, measured and literature-based. Data completeness and consistency are analysed
- In this study, mainly the *life cycle impact assessment method* CML 2001 (April 2015) is used. In some impact categories, also other methods have been applied. All of the main *impact types* are included. However, the results for some impact categories are be more reliable than for the others; this has been explained in the report.

DATA INVENTORY

- The LCA models have been done using GaBi software. Four main data sources for the inventory analysis were used in this study:
 - Pöyry databases and knowhow
 - Data provided by raw material suppliers of Woodyly®
 - Data based on Woodyly's pilot runs with collaborating companies
 - GaBi Professional datasets
- Completeness of the data inventory can be considered good. It should be noted in consistency of the data inventory, that some of the cradle-to-gate datasets for main raw materials are company-based data and some of them are theoretical
- Data is collected according to the following model:



RESULTS

Environmental impact in current situation, cradle-to-gate

Impact category	Current situation	Unit
Cradle-to-gate		
Global warming potential (including CO2 uptake)	-0,084	kg of CO2 eqv.
Ozone depletion potential	2,0E-08	kg R11 eqv.
Photochemical ozone creation potential	3,41	g ethene eqv.
Eutrophication potential	2,09	g phosphate eqv.
Acidification potential	9,04	g SO ₂ eqv.
Marine aquatic ecotoxicity potential	688	kg DCB eqv.
Human toxicity potential	0,74	kg DCB eqv.
Abiotic depletion, fossil	53,5	MJ
Particulate matter formation	4,9	g PM10 eqv.