



greendelta

EcoProfiles: public LCA datasets for recycled plastics in Europe

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Agenda

- Introduction
- EcoProfiles: background and new datasets
- Methodology of the Recycled Plastics EcoProfiles
- Showcase
- Outlook
- Q & A

We present ourselves

GreenDELTA



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Max Bringmann

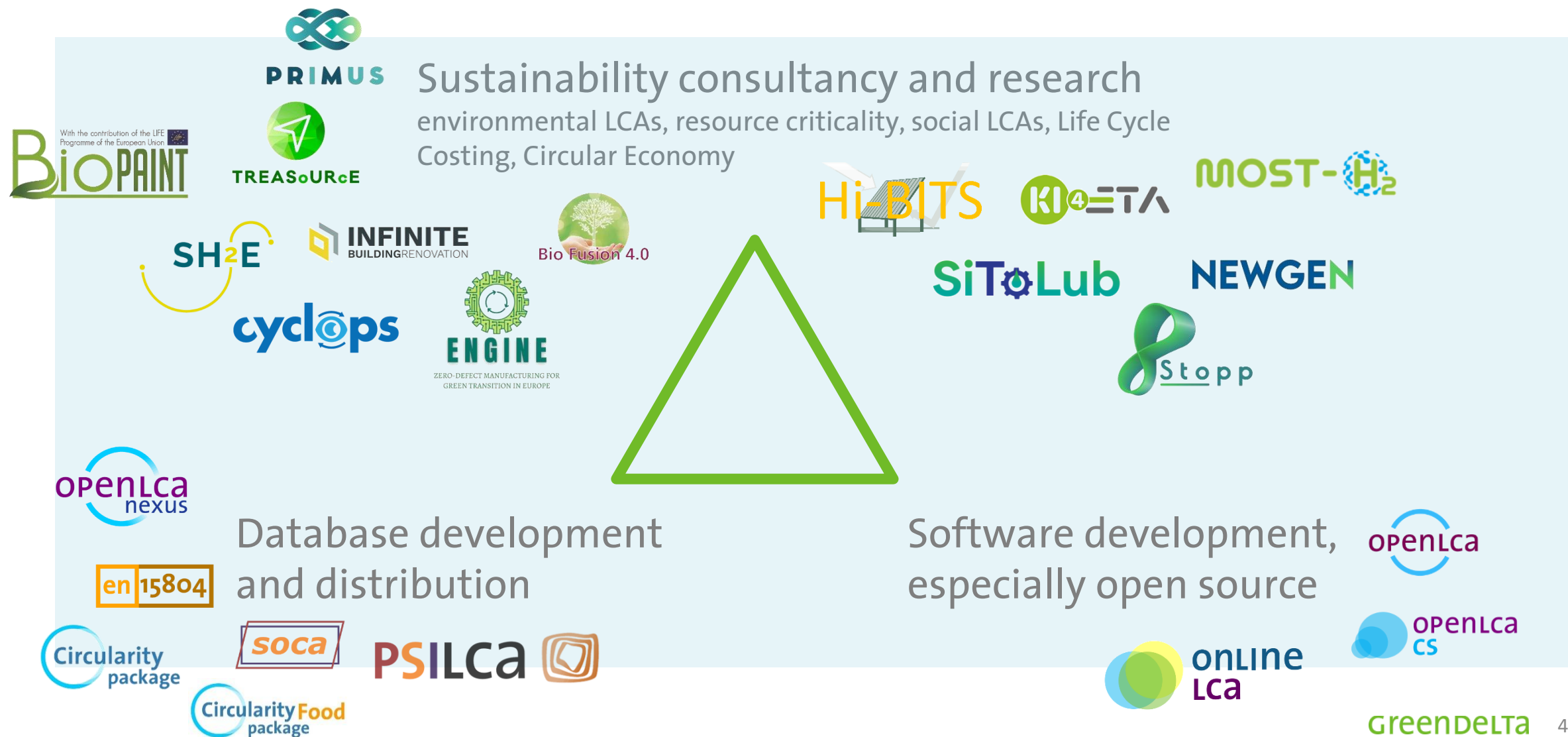
Sustainability
Consultant



Chiara De Grandis

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Consultant &
Communications

Introducing GreenDelta



The background of the slide is a dense, textured pattern of small, cylindrical plastic granules. The granules are primarily a vibrant blue color, but there is a horizontal band across the middle where they are white. This band is semi-transparent, allowing the blue granules underneath to be visible, creating a layered effect.

EcoProfiles

Julia Cilleruelo Palomero

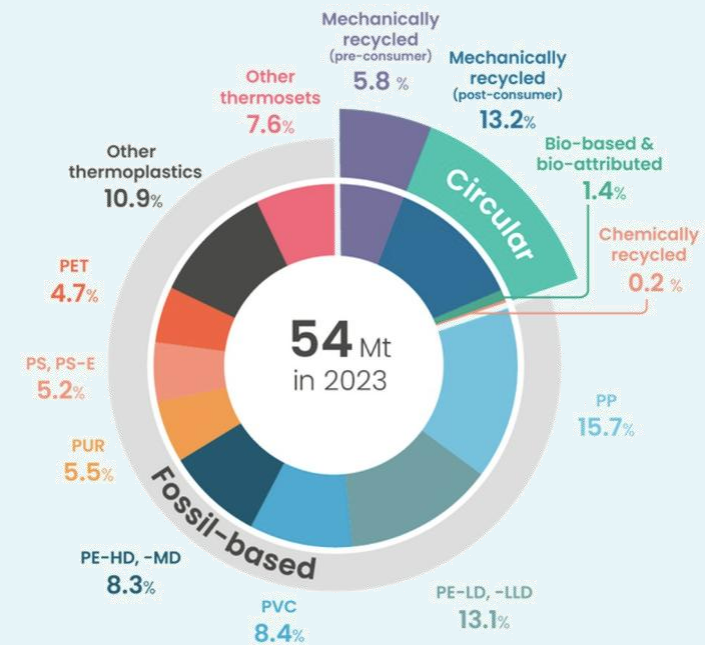
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Background

- By 2060, plastic production is projected to triple
 - contributing to 15% of global greenhouse gas emissions¹
- Performing **Life Cycle Assessments (LCAs)** of plastic products is crucial for understanding their **environmental impacts**
- **EcoProfiles** (PlasticsEurope) focus on **cradle-to-gate** analysis for plastics/chemicals to **provide LCI data (aggregated)**
 - Description of the technology and product
 - Examines all resource inputs and emissions to air and water during the production process
 - Does not include further processing, product use or end-of-life
 - Assesses the environmental impacts using an LCIA method



PlasticsEurope, Plastics – the fast Facts, 2024.

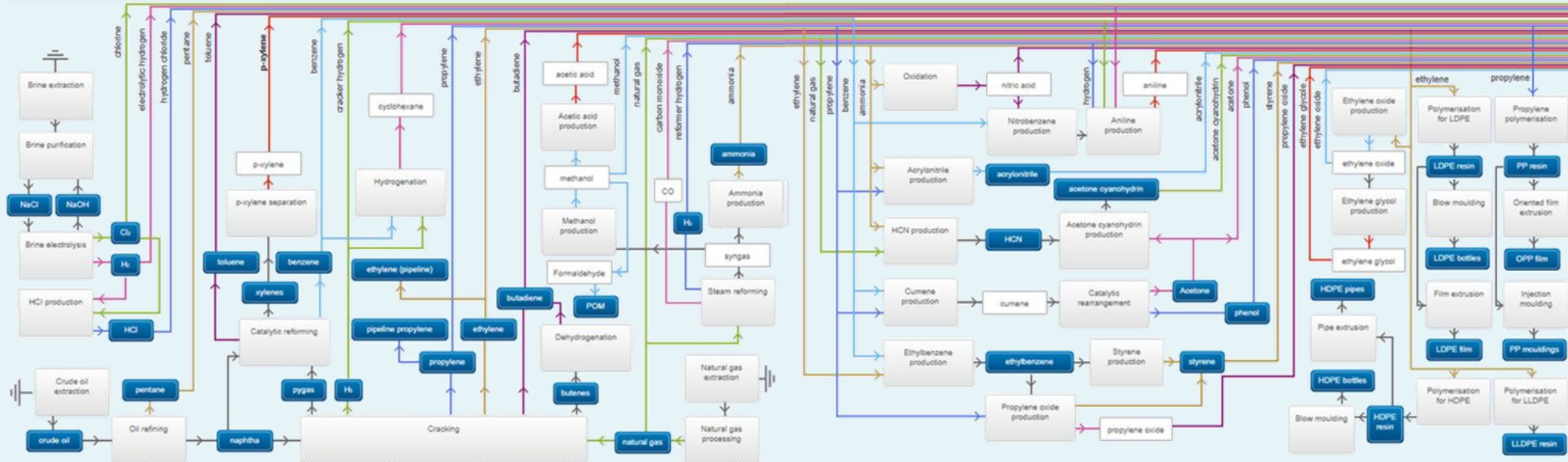
¹ World Economic Forum The New Plastics Economy—Rethinking the Future of Plastics (Ellen MacArthur Foundation, McKinsey & Company, 2016).

Intro to EcoProfiles

- **EcoProfiles** (PlasticsEurope) focus on **cradle-to-gate** analysis for plastics/chemicals. They provide **LCI data (aggregated)**.
 - Examines all resource inputs and emissions to air and water during the production process
 - High representation of industrial production capacity
 - Aggregation for Transparency

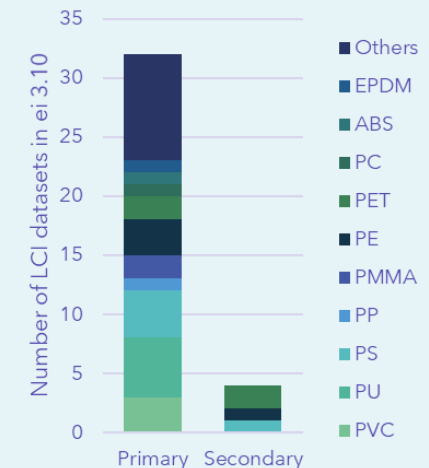
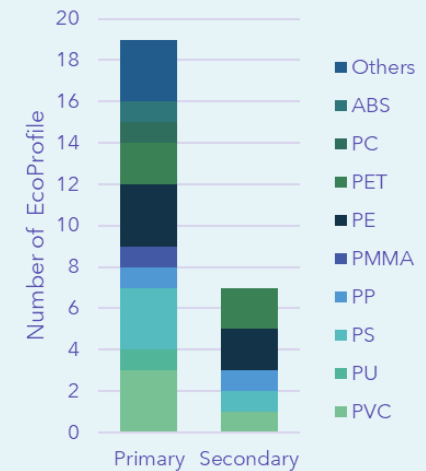
Inputs		
Flow	Amount	Unit
crude oil	41.85834	MJ
natural gas	36.88582	MJ
air	22.95090	kg
Water (rain water)	10.69658	kg
River water, medium scarcity	10.03407	kg
Sea water	6.40114	kg

Outputs		
Flow	Amount	Unit
Acrylonitrile butadiene styrene (ABS)	1.00000	kg
Overburden (deposited)	0.66466	kg
waste heat	0.50073	MJ
hydrogen-3	0.22841	kBq
Water from turbine	0.13959	m3
Water from turbine	0.12472	m3
chloride	0.10374	kg



LCI data for plastic recyclates

- Existing EcoProfiles and LCI datasets focus on primary materials
 - Covering rPVC, rPE and rPET etc. from SRP (upon request)
 - Mostly secondary rPET and rHPDE (ei 3.11, license)
- Current EcoProfiles are aggregated, limiting updates and detailed supply chain analysis
- The PRIMUS project addresses this by creating new EcoProfiles for high-value recyclates (rABS, rHIPS, rPP) using European industry data
 - Data contributes to the circular economy and sustainable development
 - Enables environmental benchmarking against industry averages
 - Supports eco-design by informed decisions in product development



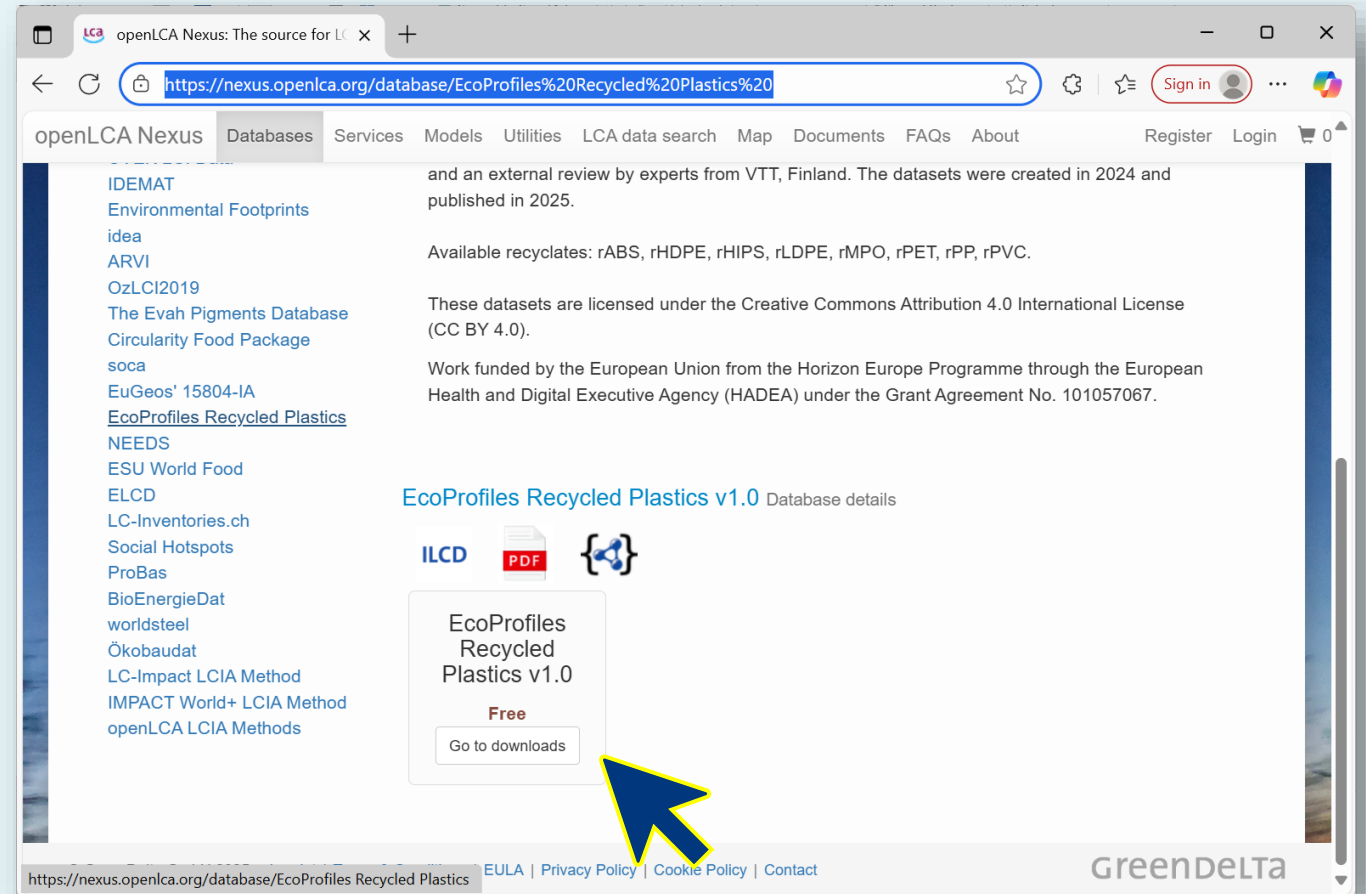
New EcoProfiles for recycled plastics – What do they look like?

Name	Compatability	Filesize	Info
Recycled Plastics EcoProfiles ILCD v1		12.8 MB	Inventory for recycled plastics coming from Europe.
Recycled Plastics EcoProfiles JSON-LD v1		14.4 MB	Inventory for recycled plastics coming from Europe.
Recycled Plastics EcoProfiles PDFs v1		14.0 MB	zip file with all EcoProfile datasets in PDF format

New EcoProfiles for recycled plastics – Where to find them?

- openLCA Nexus

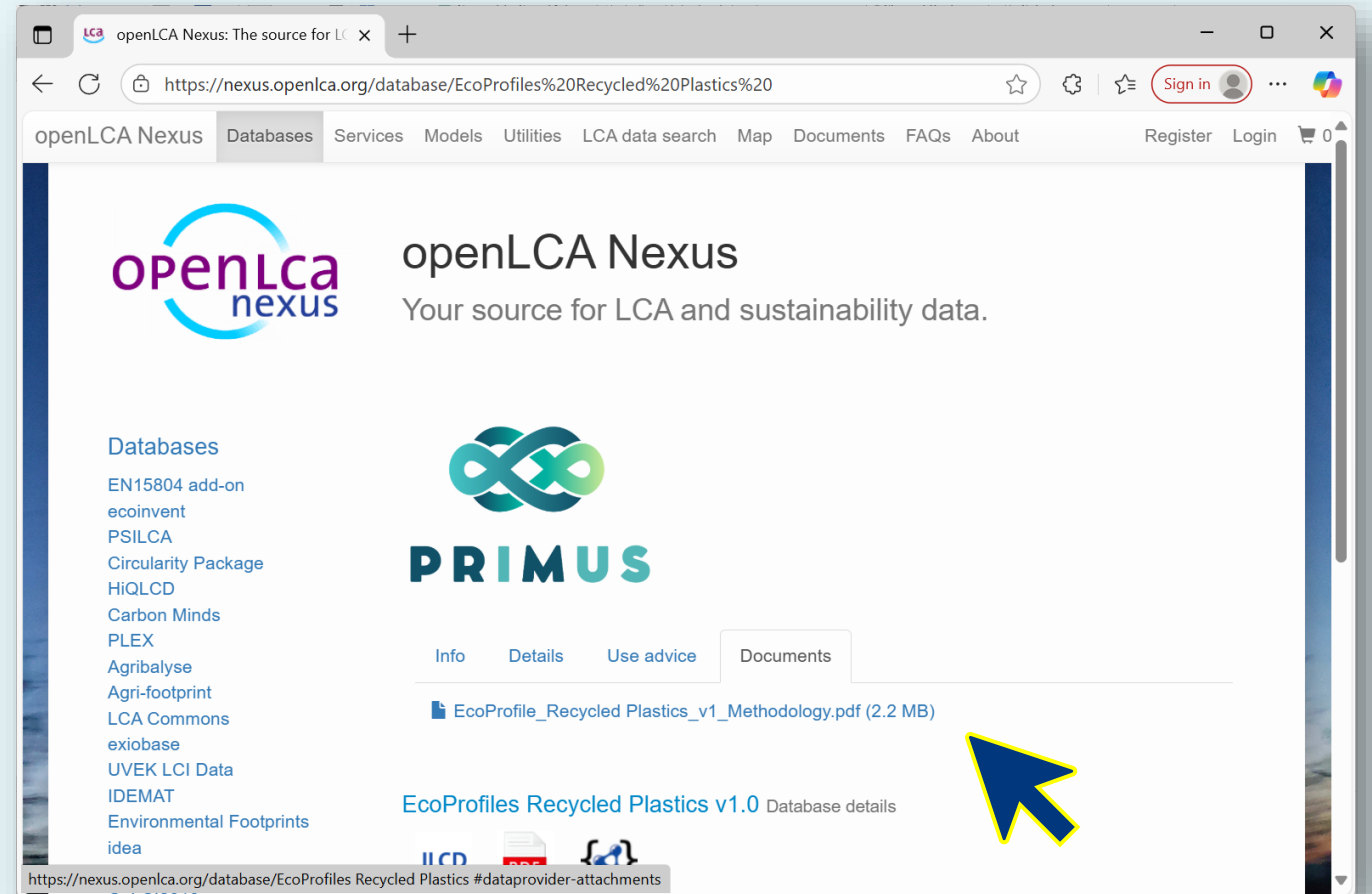
<https://nexus.openlca.org/database/EcoProfiles%20Recycled%20Plastics%20>



New EcoProfiles for recycled plastics – Documentation

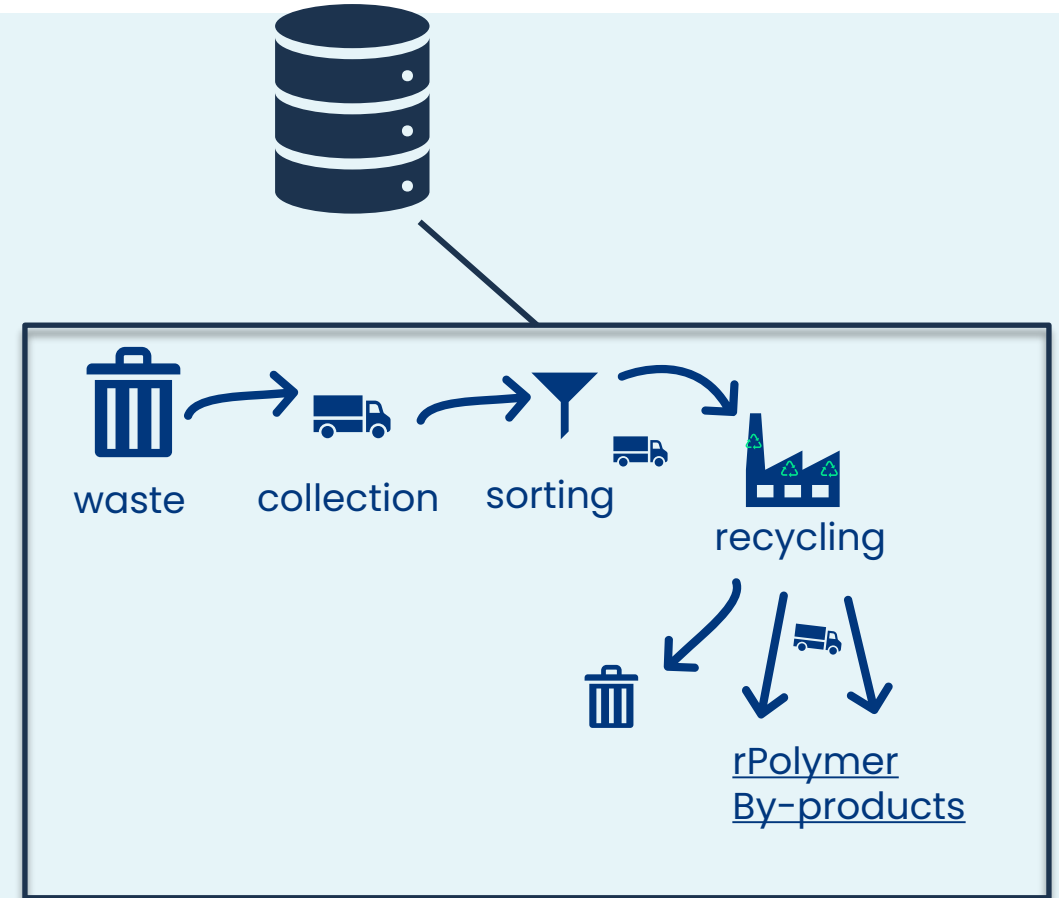
- openLCA Nexus

<https://nexus.openlca.org/database/EcoProfiles%20Recycled%20Plastics%20>



New EcoProfiles for recycled plastics

- Cradle-to-gate & gate-to-gate Datasets for recycled plastics in Europe
- Primary data collected in 2024 by Plastic Recyclers Europe
- Publicly available
- Free



Funding

PRIMUS

PRIMUS is a European project that aimed to improve the plastic recycling industry with new polymer recycling technologies for automotive and home appliances applications.

01 Create quality and safe recyclates

02 Support the use of recycled plastics as safe raw materials

03 Demonstrate application with 4 novel demo cases in automotive and home appliances

04 Support recyclates market with debromination pretreatment and analytics



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Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or HADEA. Neither the European Union nor the granting authority can be held responsible for them.

The background of the slide is a dense, close-up photograph of blue plastic granules, which are small, cylindrical pellets used in the plastic recycling process. A semi-transparent white rectangular box is centered over the image, containing the title and author information.

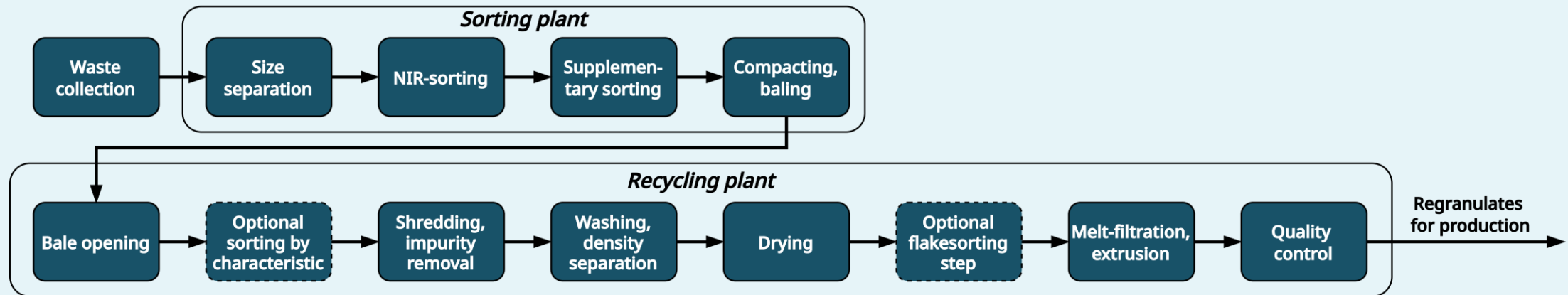
Methodology of the Recycled Plastics EcoProfiles

Max F. Bringmann

Sustainability Consultant

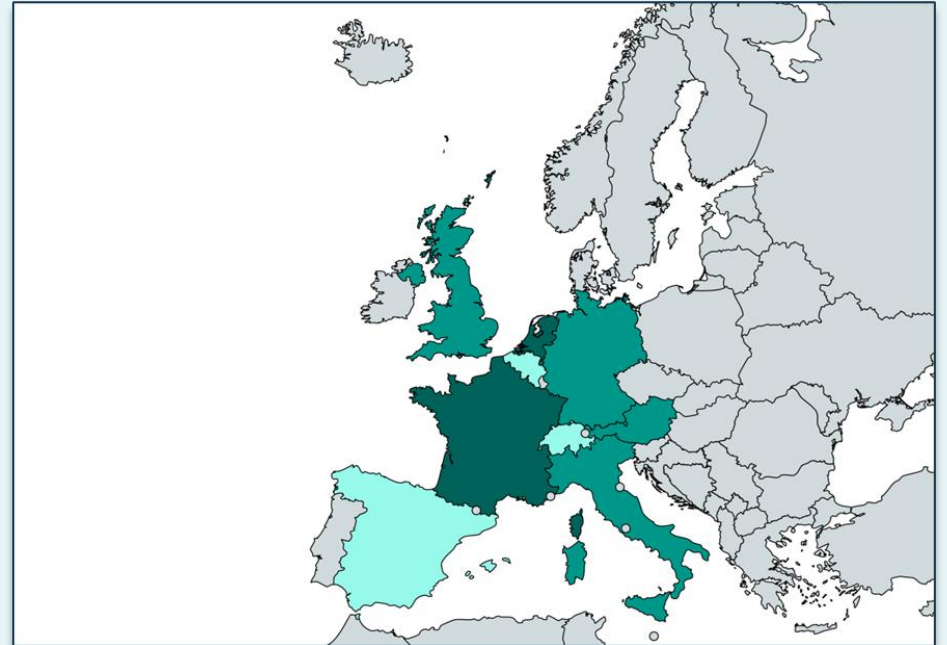
EcoProfiles for Recycled Plastics

- Mechanically recycled plastics produced in Europe
- The full list of polymers is: rABS, rHDPE, rHIPS, rLDPE, rMPO, rPET, rPP and rPVC
- We produced 50 EcoProfiles for recyclates



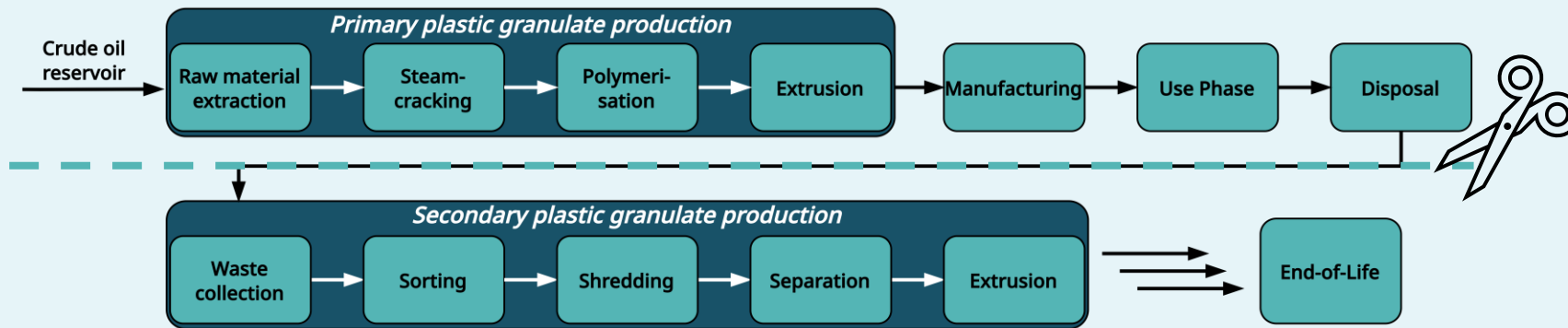
Data Collection

- 22 recycling sites in 9 European countries
- Coverage of 2.8 – 29.6%
- Polymers as **granulates** or **flakes**
 - Waste streams are comprised of **household, industrial, WEEE, ELV, and construction sectors**
 - **No data on quality**
 - **Washing chemicals, flotation, water, energy, transport**
- **Collection and Sorting is not primary data**



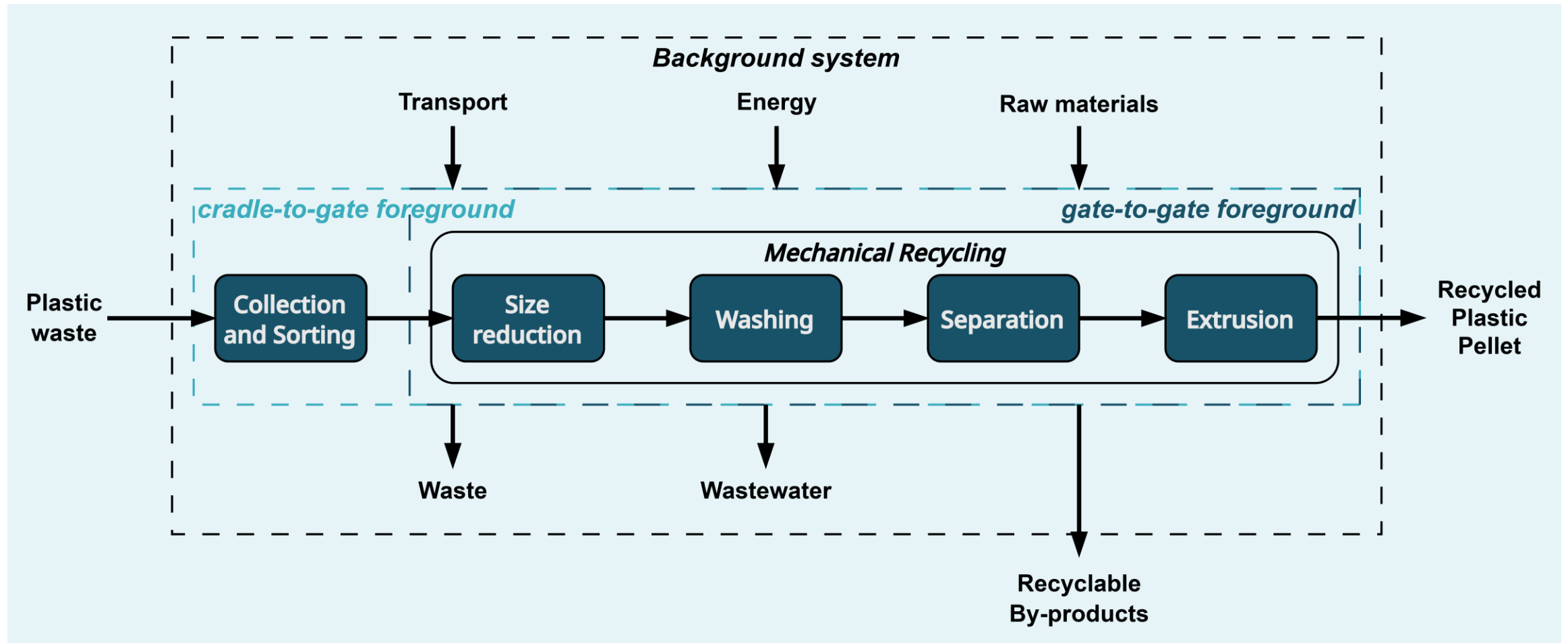
Principal Approach and Assumptions

- Cut-off between first and second life cycle

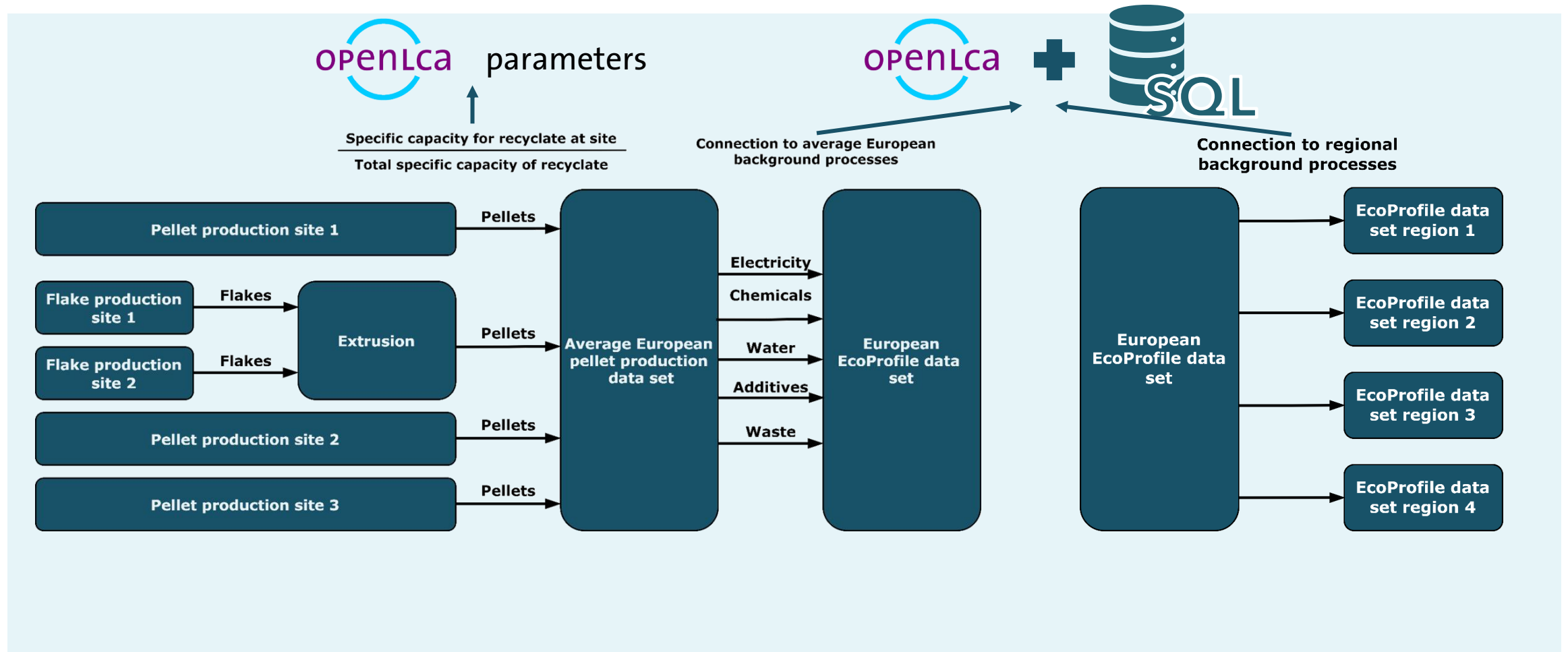


- Multifunctionality: Physical allocation based on mass
- Waste stream information lost because of Confidentiality

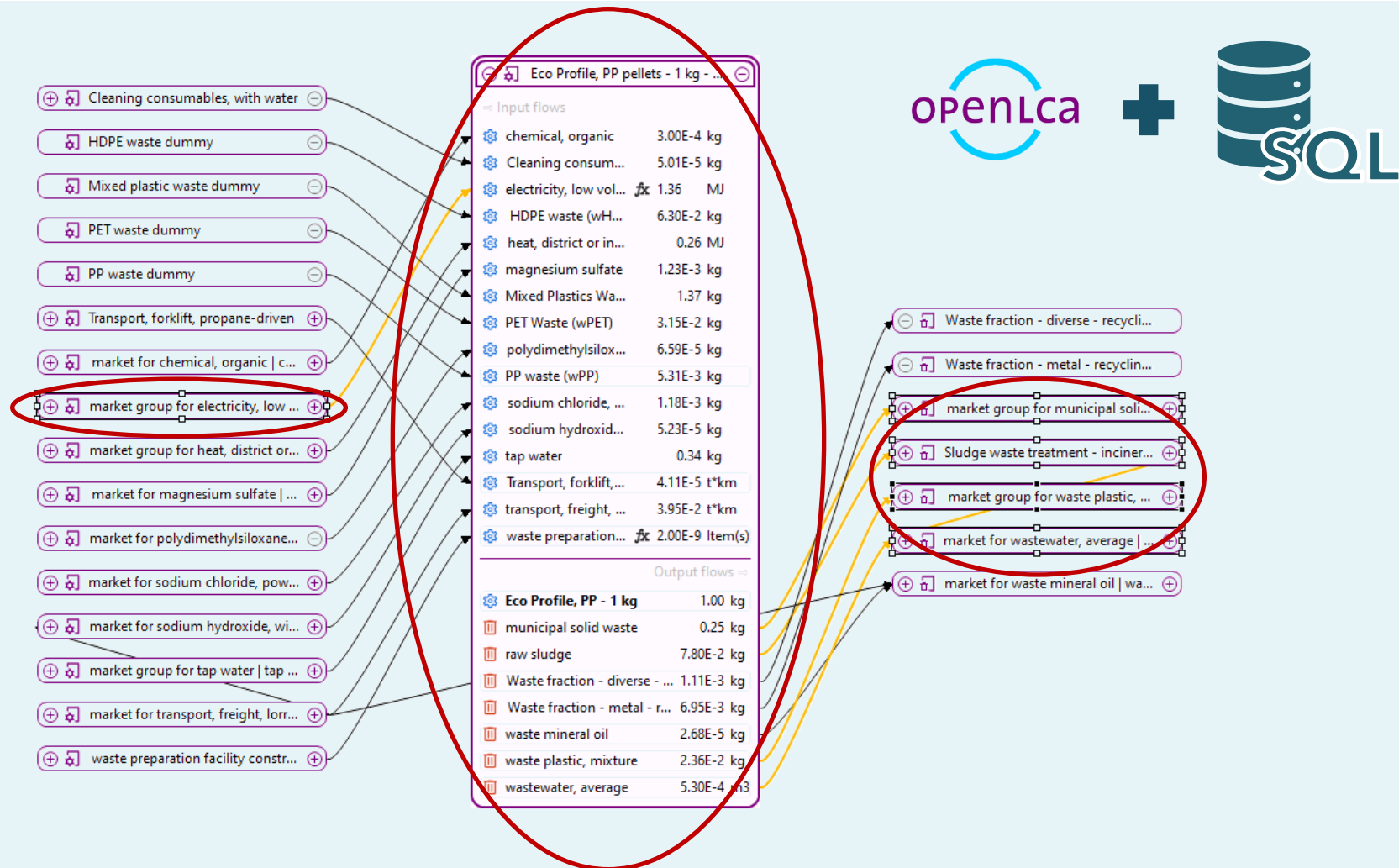
System Boundaries



Aggregation and Regionalisation



Regionalisation in openLCA



Our Approach to Aggregation Issues

- Quality of the produced recyclate not quantified
- Variation of inventory data

Inputs/Outputs - Eco Profile, PP pellets - 1 kg - gtg - disaggregated - EU27+3

Inputs

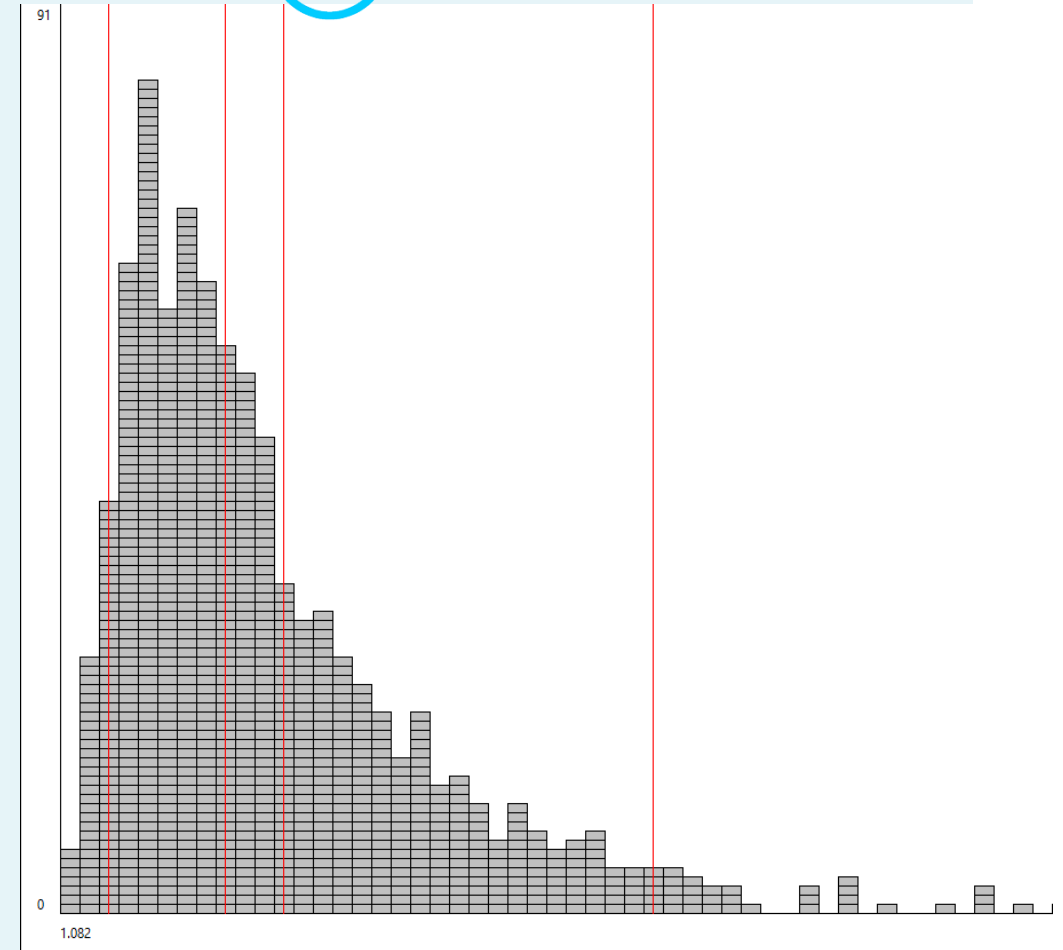
Flow	Category	Amount	Unit	Uncertainty	A. Provider	Data quality	Lo
chemical, organic	C:Manufacturing/20...	0.00030	kg	lognormal: gmean=0.000300000 gsigma=1.10954	marke...	(2; 4; 1; 3; 1)	
sodium chloride, ...	B:Mining and quarryi...	0.00118	kg	lognormal: gmean=0.00118000 gsigma=1.10954	marke...	(2; 4; 1; 3; 1)	
magnesium sulfate	B:Mining and quarryi...	0.00123	kg	lognormal: gmean=0.00123000 gsigma=1.10954	marke...	(2; 4; 1; 3; 1)	
transport, freight, ...	H:Transportation and...	0.03948	t*km	lognormal: gmean=0.0394800 gsigma=1.05433	marke...	(2; 1; 1; 3; 1)	
heat, district or in...	D:Electricity, gas, ste...	0.25844	MJ	lognormal: gmean=0.258440 gsigma=1.07476	marke...	(2; 3; 1; 3; 1)	
tap water	E:Water supply; sewe...	0.33780	kg	lognormal: gmean=0.337800 gsigma=1.05819	marke...	(2; 2; 1; 3; 1)	
electricity, low vol...	D:Electricity, gas, ste...	0.02119+	MJ	lognormal: gmean=1.36234 gsigma=1.10954	marke...	(2; 4; 1; 3; 1)	
Plastic waste, sort...	EcoProfiles/Plastic In...	1.47000	kg	lognormal: gmean=1.47000 gsigma=1.10954	Plasti...	(2; 4; 1; 3; 1)	
waste preparation...	F:Construction/42:Ci...	1.0/5000...	Item(s)	lognormal: gmean=2.00000E-09 gsigma=2.28109	waste...	(5; 5; 5; 5; 5)	
Transport, forklift, ...	EcoProfiles/Other	4.10852E-5	t*km	lognormal: gmean=4.10852E-05 gsigma=1.10954	Transp...	(2; 4; 1; 3; 1)	
Cleaning consuma...	EcoProfiles/Additives	5.00758E-5	kg	lognormal: gmean=5.00758E-05 gsigma=1.10954	Cleani...	(2; 4; 1; 3; 1)	
sodium hydroxide...	C:Manufacturing/20...	5.23439E-5	kg	lognormal: gmean=5.23439E-05 gsigma=1.07476	marke...	(2; 3; 1; 3; 1)	

Outputs

Flow	Category	Amount	Unit	Costs/Re...	Uncertain...	Provider	Data qualit...	Location	Descript
Eco Profile, PP p...	EcoProfiles/Referen...	1.00000	kg		lognorm...		(2; 1; 1; 3; 1)		
municipal solid wa...	E:Water supply; sewe...	0.25487	kg		lognorm...	marke...	(2; 2; 1; 3; 1)		
raw sludge	EcoProfiles/Waste	0.07803	kg		lognorm...	Sludg...	(2; 2; 1; 3; 1)		
Waste fraction - di...	EcoProfiles/Waste	0.00111	kg		lognorm...	Waste...	(2; 4; 1; 3; 1)		
Waste fraction - m...	EcoProfiles/Waste	0.00695	kg		lognorm...	Waste...	(2; 3; 1; 3; 1)		
waste mineral oil	C:Manufacturing/23...	2.68222E-5	kg		lognorm...	marke...	(2; 4; 1; 3; 1)		
waste plastic, mixt...	E:Water supply; sewe...	0.02363	kg		lognorm...	marke...	(2; 3; 1; 3; 1)		
wastewater, avera...	E:Water supply; sewe...	0.00053	m3		lognorm...	marke...	(2; 2; 1; 3; 1)		
plastic litter		0.00126	kg		lognorm...		(5; 5; 5; 5; 5)		



Monte Carlo simulation



Results: 1000 Mean: 2.249 Standard deviation: 1.113 5% percentile: 1.308 95% percentile: 4.062 Median: 1.935

Additional Data – Plastic Littering Risk

- Estimation to close the gap of microplastics emissions and particulate matter
- Application of the logic of the PLEX database on a dataset basis

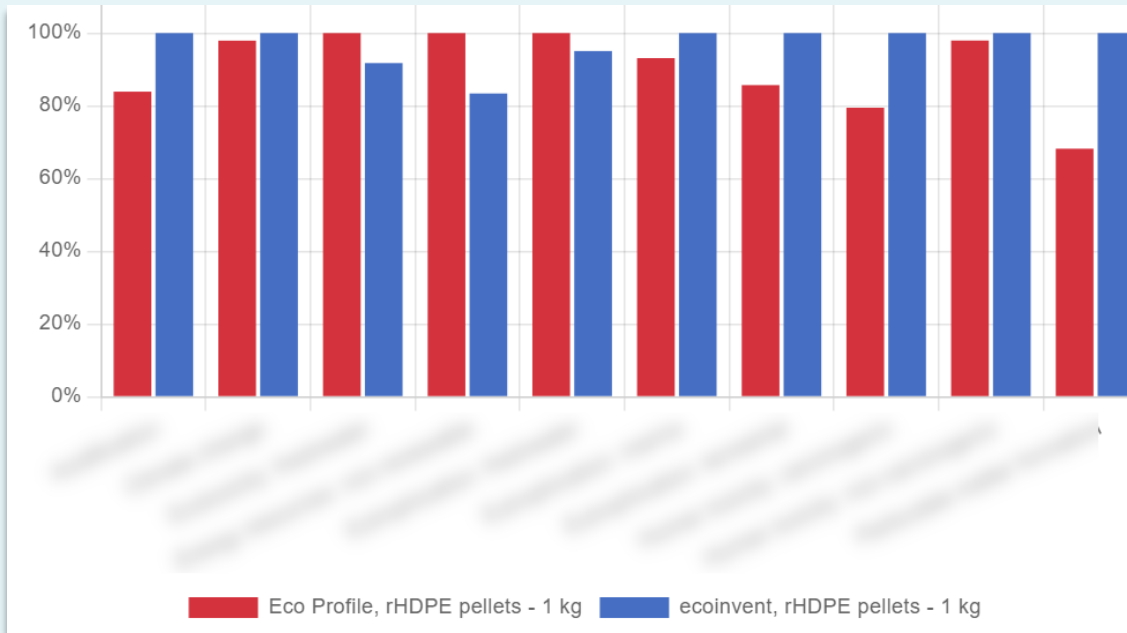


Inputs/Outputs - Eco Profile, PP pellets - 1 kg - gtg - disaggregated - EU27+3

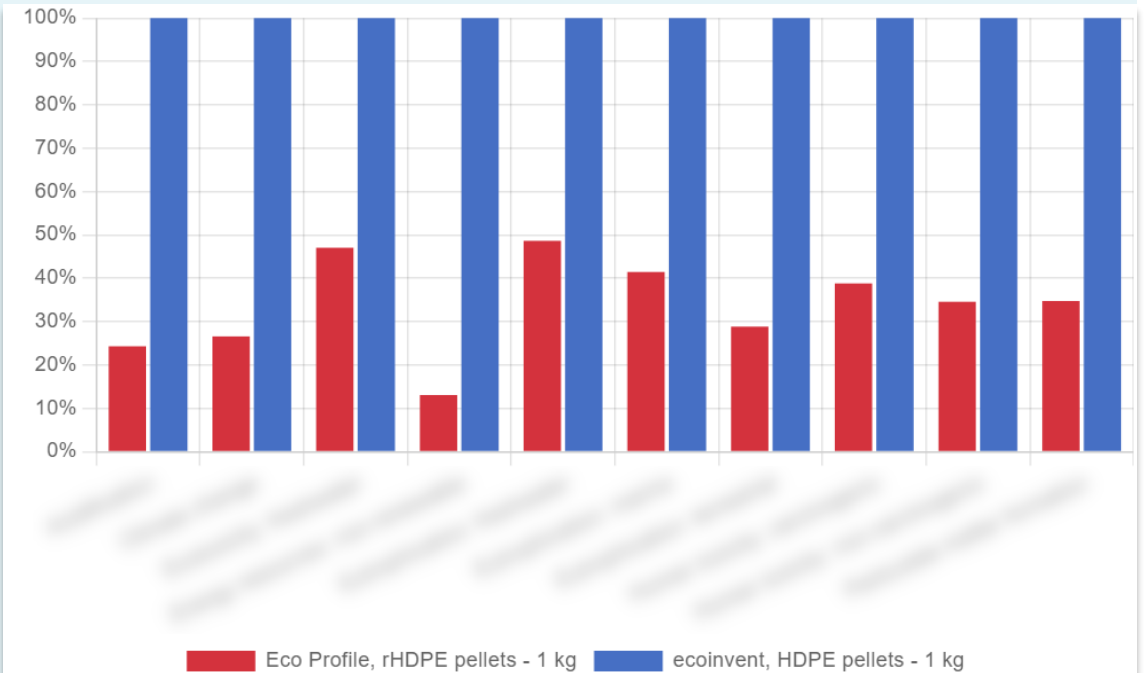
Inputs					
Flow	Category	Amount	Unit	Provider	Data quality entry
chemical, organic	C:Manufacturing/20:Manufacture of ch...	0.00030	kg	market for che...	(2; 4; 1; 3; 1)
Cleaning consumables, with water	EcoProfiles/Additives	5.00758E-5	kg	Cleaning cons...	(2; 4; 1; 3; 1)
electricity, low voltage	D:Electricity, gas, steam and air conditio...	0.02119+ 1.34115	MJ	market group f...	(2; 4; 1; 3; 1)
heat, district or industrial, natural gas	D:Electricity, gas, steam and air conditio...	0.25844	MJ	market group f...	(2; 3; 1; 3; 1)
magnesium sulfate	B:Mining and quarrying/07:Mining of m...	0.00123	kg	market for ma...	(2; 4; 1; 3; 1)
Plastic waste, sorted	EcoProfiles/Plastic Inputs	1.47000	kg	Plastic waste d...	(2; 4; 1; 3; 1)
...	...	...	...	...	...
Outputs					
Flow	Category	Amount	Unit	Provider	Data quality entry
Eco Profile, PP pellets - 1 kg	EcoProfiles/Reference recycled plastics	1.00000	kg		(2; 1; 1; 3; 1)
municipal solid waste	E:Water supply; sewerage, waste manag...	0.25487	kg	market group f...	(2; 2; 1; 3; 1)
raw sludge	EcoProfiles/Waste	0.07803	kg	Sludge waste tr...	(2; 2; 1; 3; 1)
Waste fraction - diverse - recycling cu...	EcoProfiles/Waste	0.00111	kg	Waste fraction ...	(2; 4; 1; 3; 1)
Waste fraction - metal - recycling cut-...	EcoProfiles/Waste	0.00695	kg	Waste fraction ...	(2; 3; 1; 3; 1)
waste mineral oil	C:Manufacturing/23:Manufacture of oth...	2.68222E-5	kg	market for was...	(2; 4; 1; 3; 1)
waste plastic, mixture	E:Water supply; sewerage, waste manag...	0.02363	kg	market group f...	(2; 3; 1; 3; 1)
wastewater, average	E:Water supply; sewerage, waste manag...	0.00053	m3	market for was...	(2; 4; 1; 3; 1)
plastic litter		0.00126	kg		(5; 5; 5; 5; 5)

Validation and Benchmarking using projects

Validation (ecoinvent 3.11):



Benchmarking:



Review

- Review through **independent experts** from VTT
- **Methodology, individual reports** and **exemplary data set**
- Verification of **process inventories** and **LCIA results**
- Confirms the **applicability** of the method for **future dataset production** process

The background of the slide is a dense, close-up photograph of blue plastic granules, likely recycled material, which are small, cylindrical pellets. A semi-transparent white rectangular box is overlaid on the center of the image, containing the title and author information.

Showcase of the EcoProfile Approach

Max F. Bringmann

Sustainability Consultant

What is Available?



EcoProfile Methodology for Plastic Recyclates

Jonas Hoffmann, Max Bringmann, Andreas Ciroth
GreenDelta GmbH
March 2025
Version 1.2

LCA method overview	
Background database	Ecoinvent v3.10
Dataset type	Cut-off, unit processes
Declared unit	'Production of 1 kg of mechanically recycled polymer pellets (or flakes) [...]'
ISO conformity	ISO 14040 and 14044 structure, internal review
LCA method	Environmental Footprint 3.1
Software	openLCA 2.4
System boundary	Cradle-to-gate and gate-to-gate



Funded by the European Union's Horizon Europe Programme under Grant Agreement No. 101057067



1 BACKGROUND INFORMATION

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1 BACKGROUND INFORMATION

- The primary purpose of this document is to present the Eco-profile for recycled polyethylene terephthalate (rPET) granulate as result of the Horizon Project PRIMUS. The project seeks to provide a comprehensive understanding and data of the environmental impacts associated with mechanically recycled plastics.
- Mechanical recycling involves the collection and sorting of post-consumer PET containers, such as bottles and packaging, followed by shredding to give PET flakes, washing, (density separation) and extrusion to produce rPET granulate.
- rPET is a versatile material known for its wide array of applications in packaging, textiles, and beyond. It serves as a key ingredient in the production of new beverage bottles, food containers, and personal care product packaging. The usage of mechanically recycled rPET resin reduces the use of fossil fuels and energy compared to the sourcing and production of chemical recycled and primary PET.
- The herein presented Eco-profile follows the ISO 14040-14044 (SOURCE) standards and was internally reviewed by PlasticRecyclersEurope and experts from the Finnish research company VTT and is intended for LCA practitioners and sustainability researchers, stakeholders in the field of plastic recyclates
- Data sets published with this report represent aggregated data from this collection. Details for the methodology used for this Eco-profile can be found in the accompanying methodology publication.

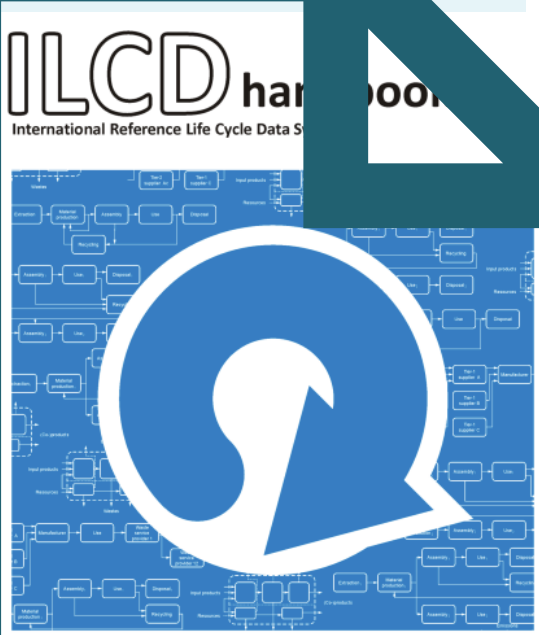
2 MODEL DESCRIPTION

- This Eco-profile represents an average of European industry for mechanical rPET production. Data was collected in 2022 in France, Germany, Italy, Switzerland and Spain, represents the recycling of 100% household wastes, and X% of the European installed mechanical recycling capacity.
- The herein generated Eco-profile represents a life cycle inventory in a 'gate-to-gate' fashion for production of PET plastic recyclate granulate. The product under investigation is recycled PET granulate. The main production steps in mechanical recycling of this granulate included in the system boundaries of the Eco-Profile are visualised in Figure 1.



Figure 1: System description and boundaries. Following the PRE recycling scheme.





ILCD handbook

International Reference Life Cycle Data System

Specific guide for Life Cycle Inventory data sets

Datasets

Methodology Report



EcoProfile Methodology for Plastic Recyclates

Jonas Hoffmann, Max Bringmann, Andreas Ciroth
GreenDelta GmbH
March 2025
Version 1.2

LCA method overview	
Background database	Ecoinvent v3.10
Dataset type	Cut-off, unit processes
Declared unit	Production of 1 kg of mechanically recycled polymer pellets (or flakes) [L]
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3

Individual EcoProfile Reports

EcoProfile of recycled PP EU27+3, gate-to-gate consumer

Jonas Hoffmann, Max Bringmann, Andre
GreenDelta GmbH
May 2025

LCA method overview	
Background database	Ecoinvent
Dataset type	Cut-off, un
Declared unit	'Production PP pellets'
ISO conformity	ISO 14040
LCA method	Environme
Software	openLCA
System boundary	Gate-to-g

1 BACKGROUND INFORMATION

- The primary purpose of this document is to provide (LCI) and impact assessment (LCIA) for mechanical recycling of polypropylene (PP) pellets as result of the Horizon Project PRIMUS, providing a comprehensive understanding of and data associated with mechanically recycled plastics.
- rPP is a widespread material known for its mechanical properties and is commonly used in packaging, automobiles and construction. Mechanically recycled PP reduces the use of virgin plastic in the production of primary PP.
- Mechanical recycling of WEEE plastics involves shredding, sorting to remove non-plastics (e.g., metal, current separation), grinding, cleaning, drying and pelletizing.
- The documentation of the method followed the main principles of the ISO 14040:2006, as reviewed by PlasticRecyclersEurope and experts from the Centre of Finland. It is intended for LCIA practitioners, researchers and stakeholders in the field of plastic recycling.
- Details for the methodology used for this report are provided in the accompanying methodology publication. Data is provided in openLCA Nexus in JSON-LD and ILCD format.

2

2 MODEL DESCRIPTION

- This EcoProfile represents an average of European production. Data was collected from 9 sites in 2022 across Germany, the Netherlands and the United Kingdom, representing a mix of household, industrial and commercial waste streams. The European coverage has been calculated and is displayed in Table 2 of the accompanying methodology publication.
- The herein generated EcoProfile embodies a life cycle assessment (LCA) for the production of PP plastic recycling. The functional unit is 1 kg of recycled PP pellets. The mechanical recycling are included in the system boundary and are visualised in Figure 1.

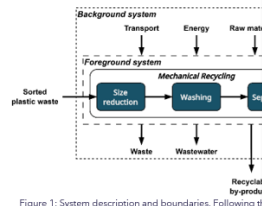


Figure 1: System description and boundaries. Following the

- The functional unit of the rPP EcoProfile is 'Production of 1 kg of recycled PP pellets, obtained from WEEE and other plastic waste, unpackaged, representing 5.58% of European reference flow of the rPP EcoProfile'. The reference flow of the rPP EcoProfile is provided in '1 kg of recycled PP pellets'.
- Generally, a complete LCI was aimed for, though some secondary outputs had to be cut-off. For multi-output allocation was used, as described in our methodology publication.
- The collected primary data was combined with secondary data (energy, chemicals, and water) from the Ecoinvent 3.9 database. Life cycle inventory and impacts were calculated using the openLCA software.

3

3 LCI RESULTS

Table 1. Summary of material and energy in- and outputs of an exemplary recycled PP pellets with a gate-to-gate system boundary.

Incoming Material	
Mixed plastic waste including impurities	
chemical, organic	
Cleaning consumables, with water	
magnesium sulfate	
polydimethylsiloxane	
sodium chloride, powder	
sodium hydroxide, without water, in 50% solution state	
tap water	
electricity, low voltage	
heat, district or industrial, natural gas	
waste preparation facility	
Transport, forklift, propane-driven	
transport, freight, lorry, unspecified	
municipal solid waste	
raw sludge	
waste mineral oil	
waste plastic, mixture	
Waste fraction - diverse - recycling cut-off	
Waste fraction - metal - recycling cut-off	
wastewater, average	
plastic litter	

Table 2. Primary energy demand by carrier using CED method for a process for recycled PP pellets with a gate-to-gate system boundary.

Energy carrier	Total
Uranium	
Gas, natural	
Coal, hard	
Coal, brown	
Oil, crude	
Energy resources: non-renewable	
Energy resources: renewable	
Total	

¹ This value expresses an aggregation of all polymer waste streams collected in the disaggregated input values per-waste stream in the disaggregated

4

4 LCIA RESULTS

Table 3. Life cycle impacts of the gate-to-gate rPP model related to 1 kg of pellets

Impact Category	Impact assessment ²	Unit
Acidification	9.63E-04 ± 1.15E-04	mol H ⁺ -Eq
Climate change	0.450 ± 0.029	kg CO ₂ -Eq
Ecotoxicity: freshwater	2.42 ± 0.20	CTU _h
Energy resources: non-renewable	3.47 ± 0.35	MJ, net calorific value
Eutrophication: freshwater	1.37E-04 ± 1.46E-05	kg P-Eq
Eutrophication: marine	3.69E-04 ± 2.56E-05	kg N-Eq
Eutrophication: terrestrial	1.87E-03 ± 1.93E-04	mol N-Eq
Human toxicity: carcinogenic	7.81E-10 ± 2.44E-10	CTU _h
Human toxicity: non-carcinogenic	4.77E-09 ± 5.82E-10	CTU _h
Ionizing radiation: human health	8.06E-02 ± 9.16E-03	kg U235-Eq
Land use	1.68 ± 1.14	dimensionless
Material resources: metals/minerals	2.18E-06 ± 5.78E-07	kg Sb-Eq
Ozone depletion	7.90E-08 ± 8.17E-09	kg CFC-11-Eq
Particulate matter formation	8.49E-09 ± 8.70E-10	disease incidence
Photochemical oxidant formation: human health	6.33E-04 ± 5.63E-05	kg NMVOC-Eq
Plastic litter	2.14E-02 ± 2.18E-03	kg
Water use	0.101 ± 0.010	m ³ world Eq deprived

² The uncertainty value presented here has been calculated on the foreground data. Details are described in the methodology.

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Datasets

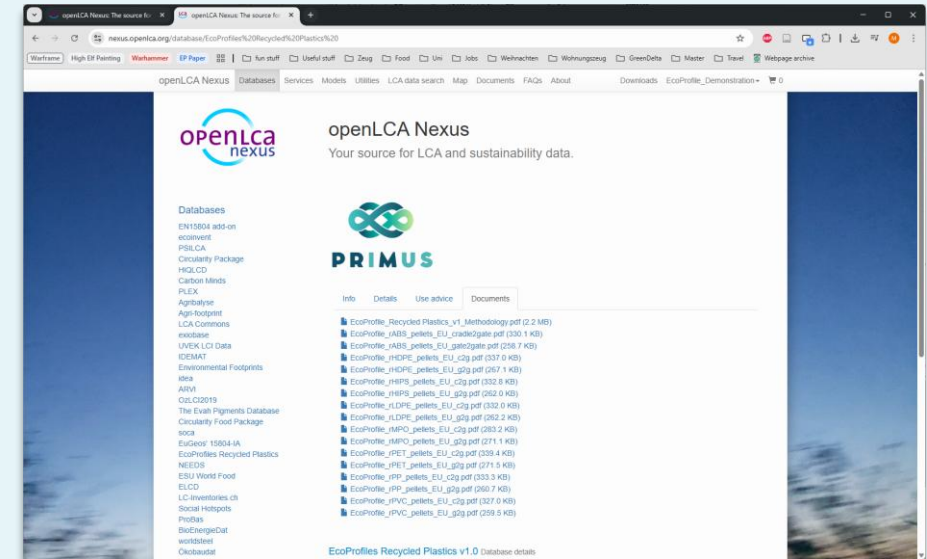
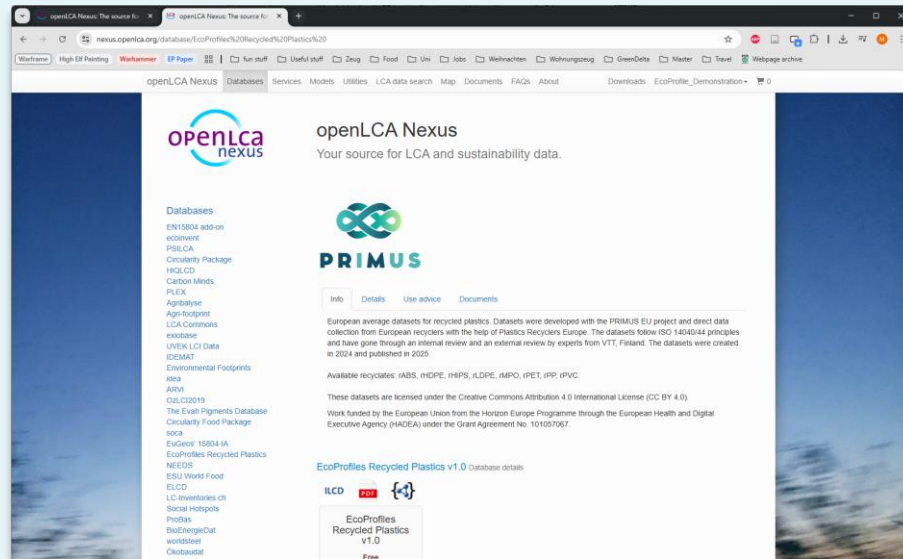
JSON-LD Dataset Showcase in openLCA

Outcomes of the research project summarised

- Methodology for the creation of average LCI data sets
- **50 EcoProfiles** for plastics recyclates
 - Individual **reports**
 - Full **process inventory** breakdown
 - **CED, plastic littering risk** and **EF 3.1** life cycle impacts with **uncertainty**
 - **Datasets** in ILCD format
 - **Aggregated** for direct use (with an ecoinvent license)
 - **Disaggregated** for direct use with ecoinvent 3.10 or use in other databases (free)

Where to find all of this?

- On openLCA Nexus, [EcoProfiles Recycled Plastics entry](#) under Databases



- The datasets can be found in the [downloads section](#)

Recycled Plastics EcoProfiles				
☐	Recycled Plastics EcoProfiles ILCD v1	1	ILCD	Show licence info
☐	Recycled Plastics EcoProfiles JSON-LD v1	1	JSON-LD	Show licence info

The background of the slide is a dense, close-up image of plastic granules. The top half of the image shows dark blue granules, while the bottom half shows white granules. A semi-transparent white rectangular box is centered horizontally and vertically, containing the title and author information.

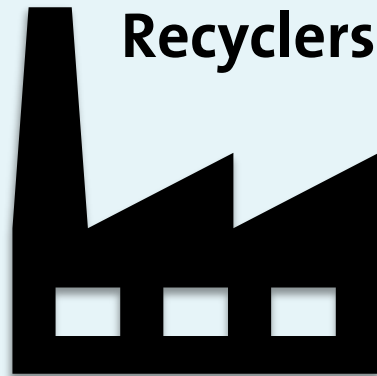
Outlook for Recyclate EcoProfiles

Max F. Bringmann

Sustainability Consultant

Further Development and Update of EcoProfiles

- Continuation in the **STOPP research project**
 - **Data collection** in collaboration with individual recyclers
 - **Deadline: 31.01.2026**
- This will likely result in **adaptations** of the original **methodology**



Survey template LCA GreenDelta_M2_P98_gapata - Excel

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Clipboard Font Paragraph Styles

Household (packaging) / Construction (packaging) / WEEE / ELV / Agriculture / Industrial (packaging) / Other

WASTE COMING IN		Answer / Value	Unit
Parameter	Description		
Collected waste	Amount going into the facility		tons / year
	Pre-consumer		%
Waste Sources	Post-consumer		%
	Mixed		%
Waste Type	Household (packaging) / Construction (packaging) / WEEE / ELV / Agriculture / Industrial (packaging) / Other		
Contamination Level (optional)	%		Estimated contamination (food, ...)

ENERGY CONSUMPTION		Answer / Value	Unit
Energy Carrier	Description		
Electricity grid mix	Please specify if you are using a renewable certified electricity mix, if possible		kWh / year
Electricity Consumption from internal generation	Please specify the source type, e.g. diesel generator, PV panels, etc.		kWh / year
Heat Consumption from internal generation	Please specify the source type, e.g. diesel generator, CHP, etc.		MJ / year
Gas	Please specify whether you are using natural gas, renewable gas or others		MWh / year
Diesel	Please specify		l / year
Others	Please specify the substance used, if possible		kg / year

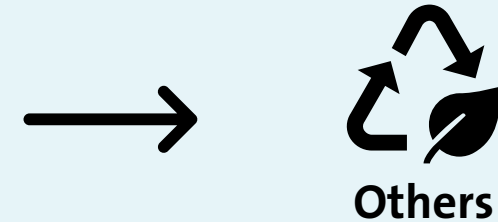
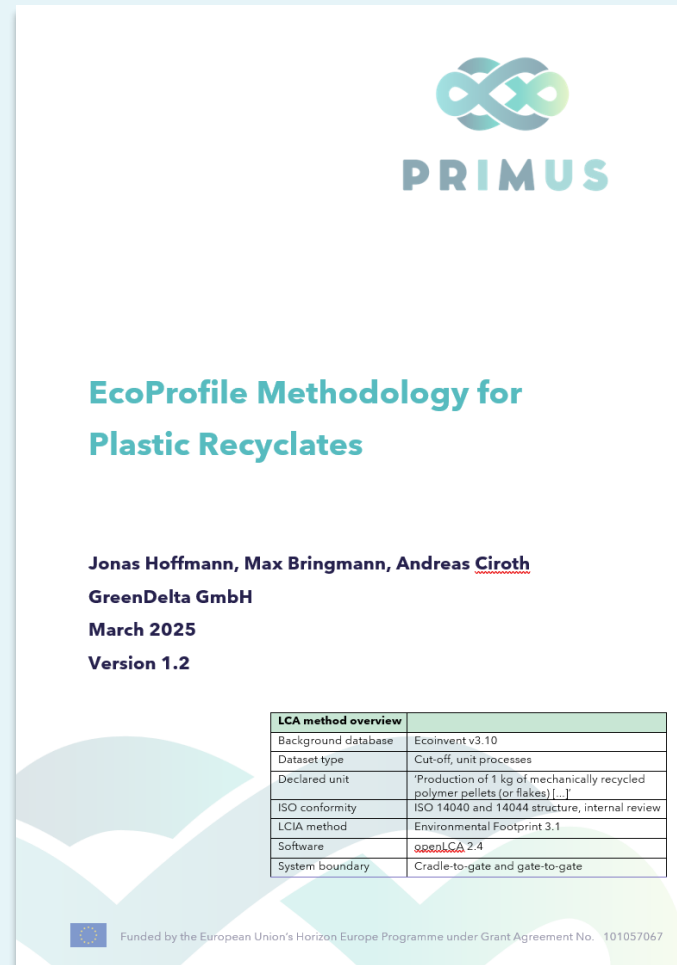
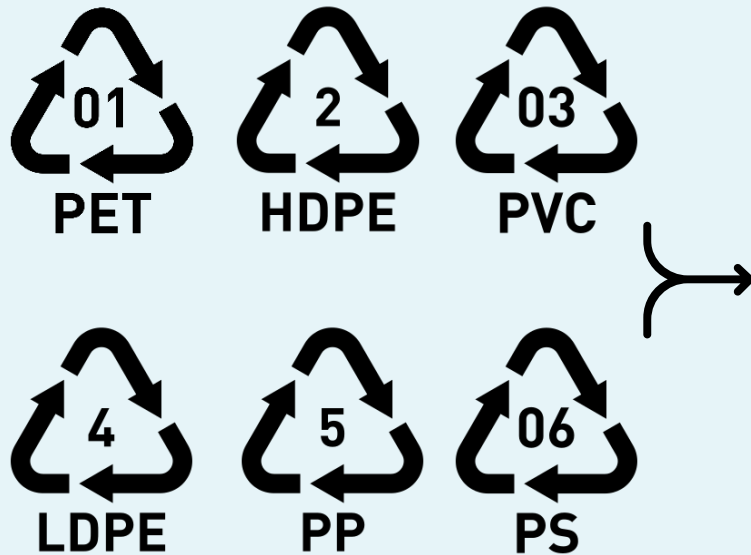
WATER CONSUMPTION		Answer / Value	Unit
Parameter	Description		
	Water network		l / year
	Well		l / year
	Rain water collection		l / year

Participant Information Facility Information **What goes in to the facility** What comes out of the facility Trans ...

Ready Accessibility: Investigate



Potential Application of the Methodological Principles



The background of the slide is a dense, close-up photograph of numerous small, cylindrical plastic granules. The granules are primarily a vibrant blue color, but a horizontal band across the middle of the image is semi-transparent, revealing a layer of white granules underneath. The blue granules have a slightly irregular, textured appearance, while the white ones are more uniform in color.

Questions and Answers