



SUSTAINABILITY IN BUSINESS

LCM Conference Zurich 2007 – Simplified Methods

**'Slimline LCA' for use at the Swiss retailer Coop –  
LCA reduced to the max**

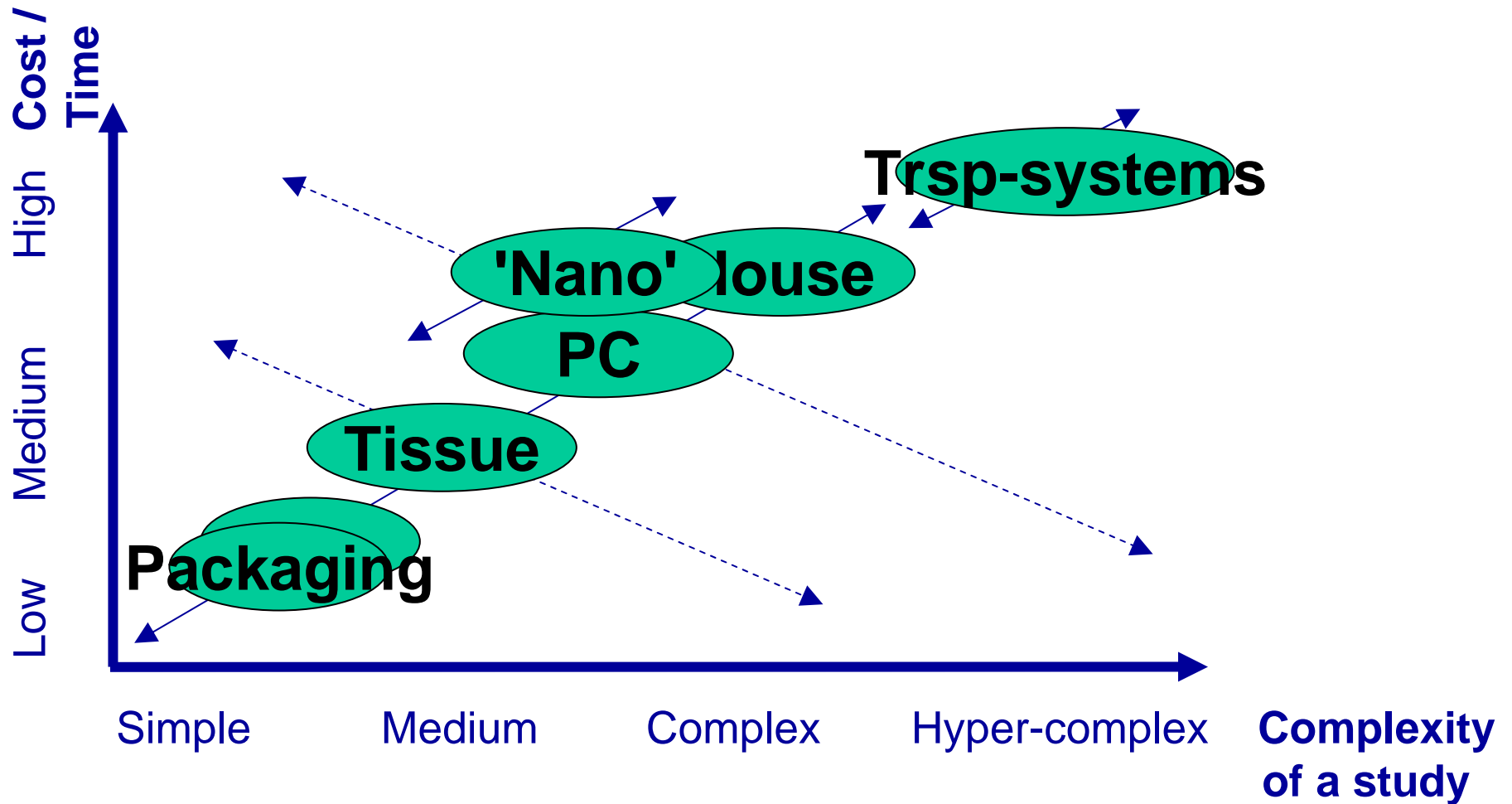
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**E2 Management Consulting Inc.**

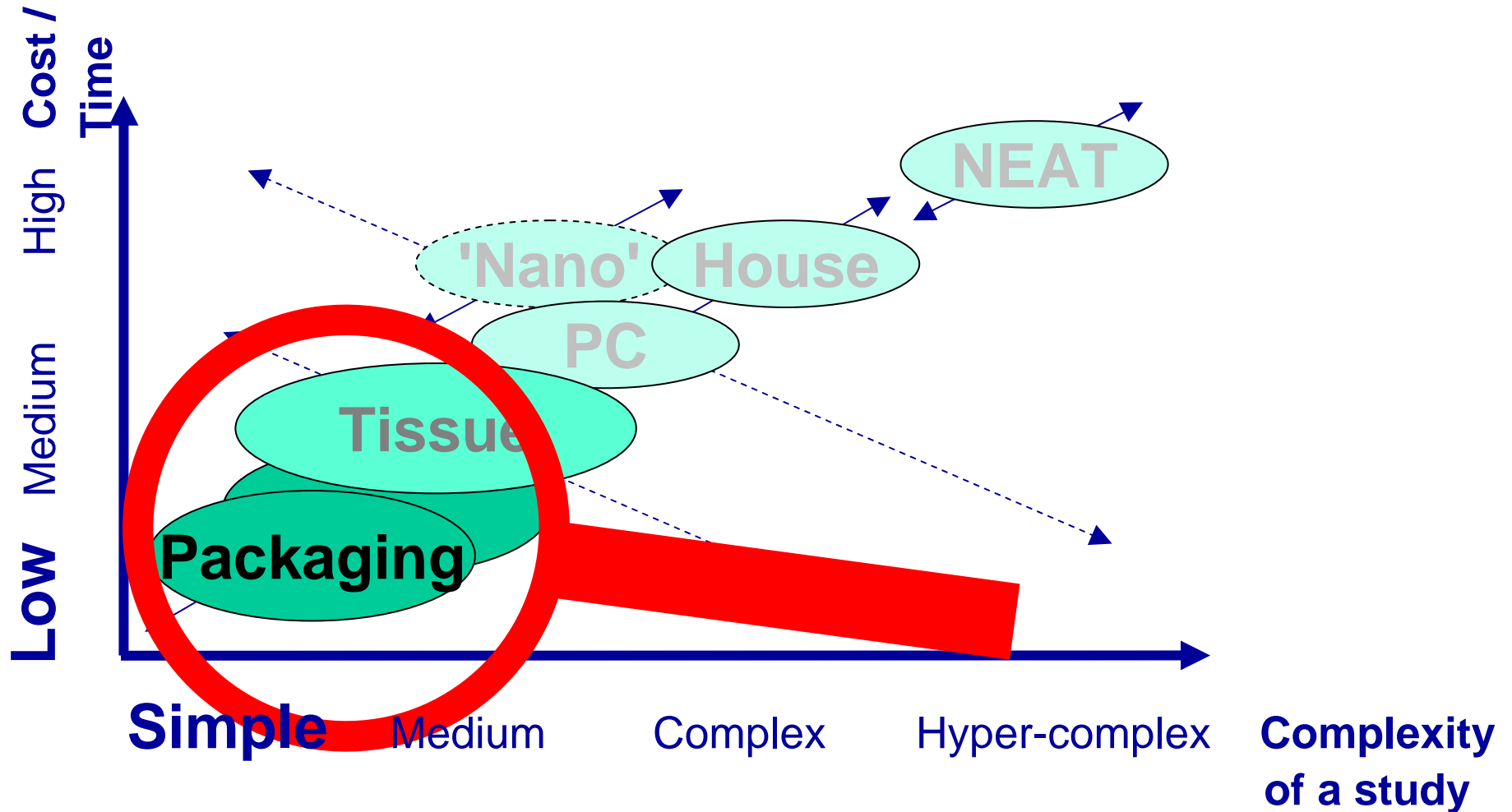
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LCA should be applicable for all project sizes – small, medium & large!



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- **Coop**: a major retailers in Switzerland, uses – sometimes – LCA for its **packaging and product** selection.
- LCA for packaging is a 20 yr. old issue – LCA-wise often a **straightforward** analysis.
- But packaging keeps changing, and the environmental assessment should be **easily available** when necessary.
- Coop and E2 developed a **slimline LCA process**, using all standard elements available for inventory and impact assessment including interpretation.
- This allows **LCA for standard comparisons of packaging and similar products at low cost**, of less than €2000 per analysis.
- Such slimline LCA processes reduces the cost barrier and **allows LCA application in everyday business situations**.

- 1) Coop decides to order an LCA**
- 2) Coop fills in form sheets**
  - functional unit,
  - type and amount of material,
  - transport information,
  - waste treatment
- 3) E2 calculates the LCA,**
  - using standardized inventory data (ecoinvent) and impact assessment methods (UBP'97 and EI'95 / EI'99)
  - and produces a short, standardized report
- 4) E2 submits the report, possibly followed by a short review by phone**
- 5) Cost of 1500 €– 6000 €**

# Example: A typical result format

**Coop:**  
**Ökobilanz Aroma schutzkaffee (Teekaufhaus)**

1. Auflage  
1. Auflage

1. Auflage  
1. Auflage

1

**Grundlagen**

1.1 Zielsetzung

1.2 Produktbeschreibung

1.3 Systemgrenzen

1.4 Datenquellen

Lebenszyklusphase	Prozess	PP	PP	PVC	Andere
Produktion	...	...	...	...	...
Transport	...	...	...	...	...
Verpackung	...	...	...	...	...

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**Resultate (1/2)**

1.1 Umweltwirkungen

1.2 Umweltwirkungen

3

**Resultate (2/2)**

1.1 Umweltwirkungen

1.2 Umweltwirkungen

1.3 Umweltwirkungen

1.4 Umweltwirkungen

4

**Daten Aroma schutzkaffee**

Prozess	PP	PP	PVC	Andere
Produktion	...	...	...	...
Transport	...	...	...	...
Verpackung	...	...	...	...

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**Daten übrige Verpackungen und Jahresumsatz**

Verpackung	Umsatz	...
...	...	...
...	...	...

6

**Report = 5 – 6 pp.**

- Funct. Unit & Scope (1 – 2 p.)
- Result (1 p.)
- Interpretation (1 p.)
- Data annex (2 p.)

## Question: Which cover material?

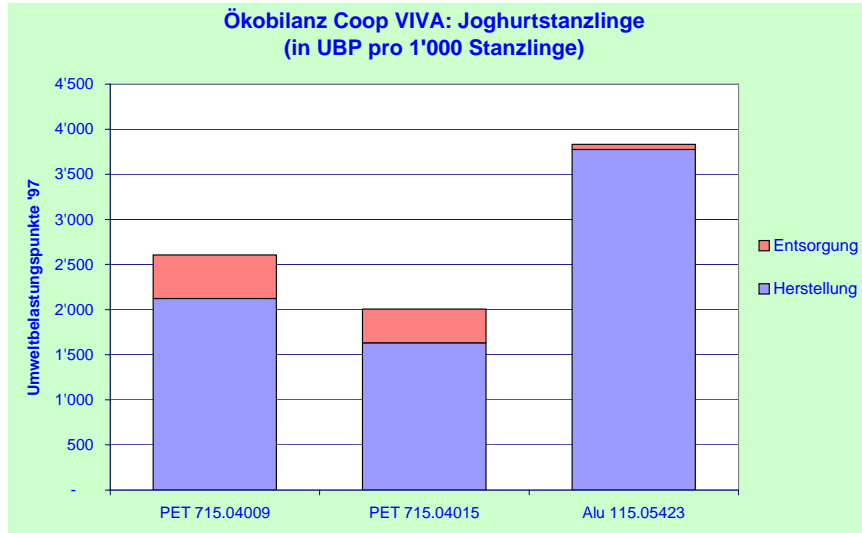
Alternatives (1000 pcs)	Materials (*)	Waste type
PET type 1	0,38 kg	incineration (PE)
PET type 2	0,30 kg	incineration (PE)
Aluminium foil	0,43 kg	incineration (Alu)

(\*) = data partially changed

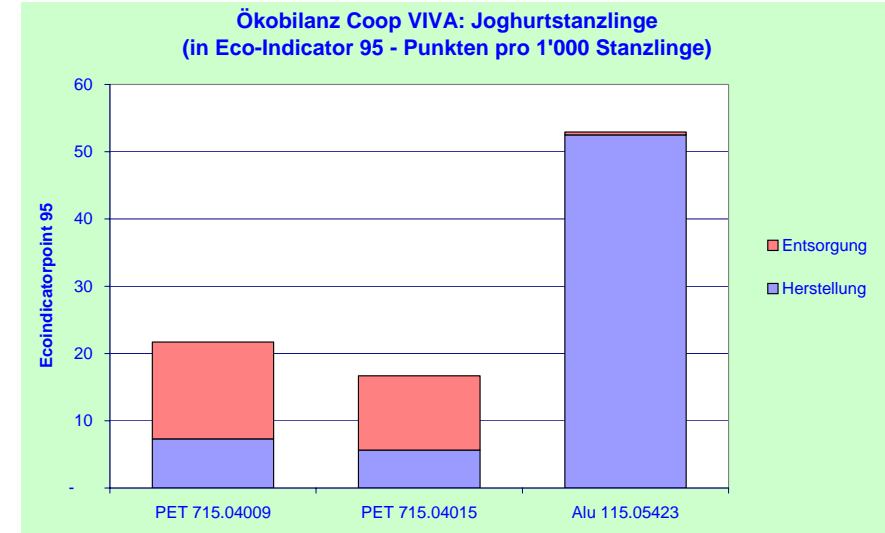
## Scope and Data used:

- PET foil supply chain BUWAL 250
- Aluminium foil supply chain BUWAL 250
- Waste treatment of PE / Alu BUWAL 250

## Result in UBP'97



## Result in Eco-indicator pts



... from waste treatment



... from production of material

- PET alternatives are environmentally slightly superior
- Annual use = some mio pcs.; the difference would lead to an environmental impact equivalent to 43'000 car kms.



## Question: Old or new packaging?

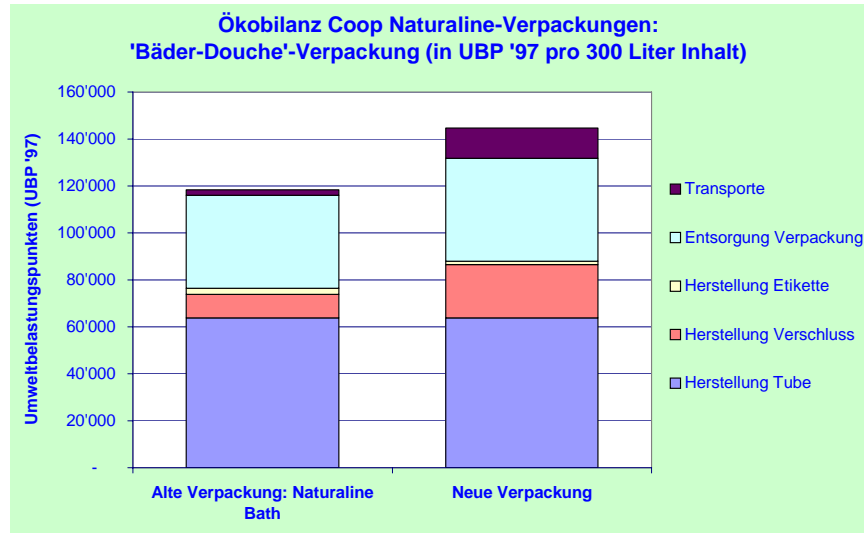
material per 1000 items (*):	Old	New
Tube	29 kg PP	27 kg PP
Cover	5 kg PE	11 kg PP
Label	1,2 kg PE	0,7 kg PE
Transport	4 tkm	19 tkm

(\*) = data partially changed

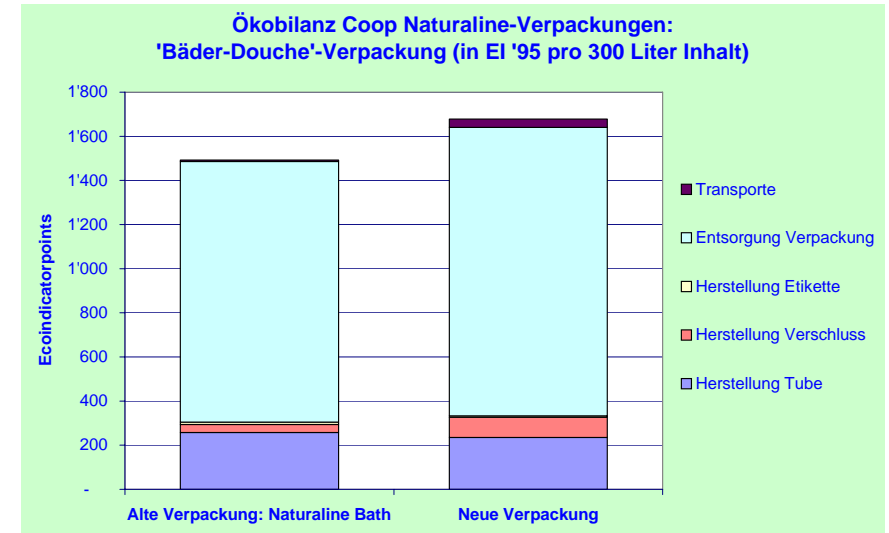
## Scope and Data used:

- PE, PP                                      BUWAL 250 / ecoinvent
- Waste treatment material              BUWAL 250 / ecoinvent
- Transport                                    BUWAL 250 / Ökoinventare für Verkehr  
(infrastructure, fuel precombustion, fuel use)

## Result in UBP'97



## Result in Eco-indicator pts



- ... from truck transports
- ... from waste treatment
- ... from production of tube / cover / label material

- Differences are minor
- Material change, weights and transport distances are almost offsetting each other.

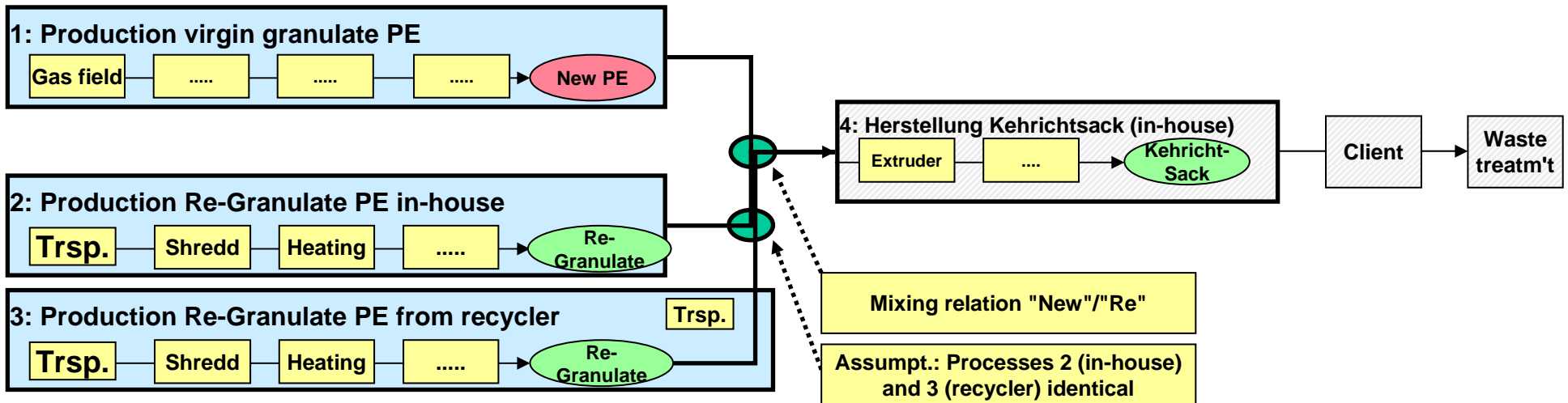
# Example 3: PE Waste Bag Improvement

## Question: Increase recycling content?

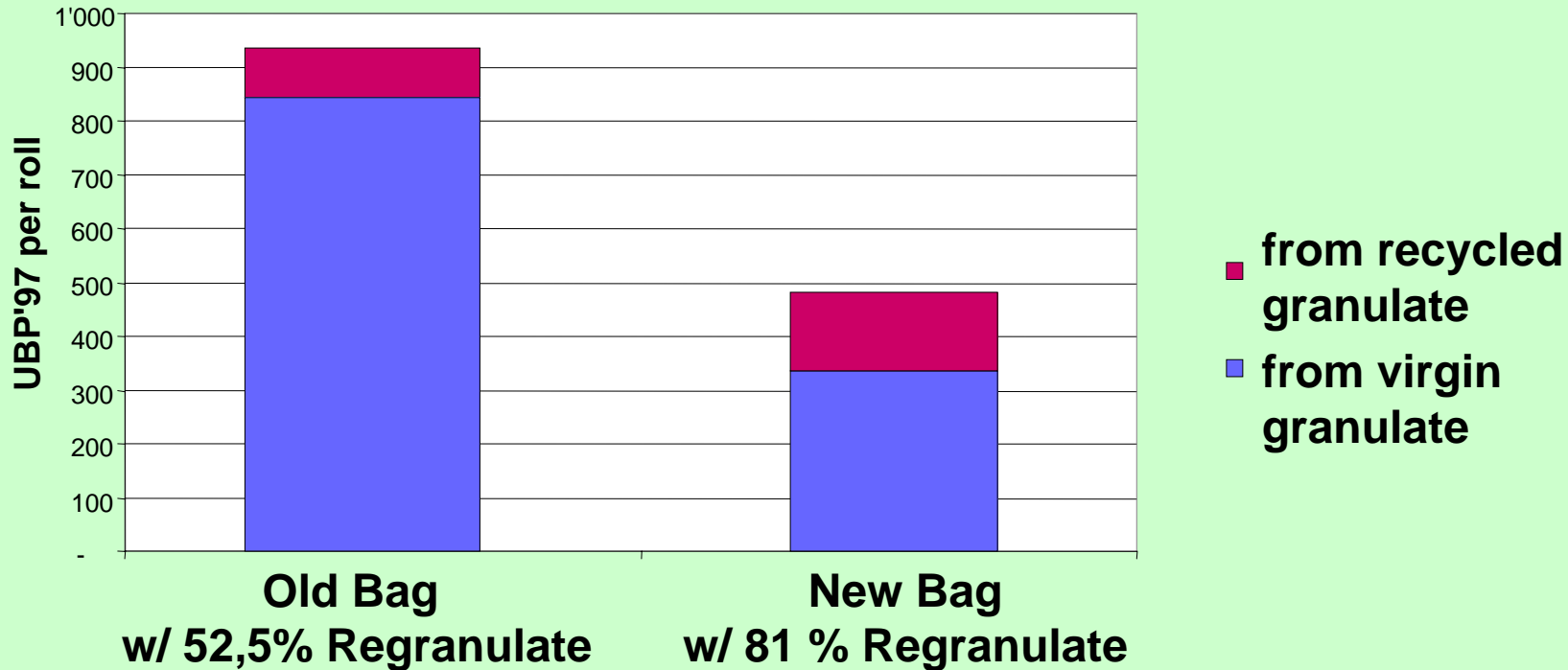
Alternatives	Materials (*)		Weight
	Virgin	Recycled	
Existing bags	47.5 %	52,5 %	725 g / roll
New bags	19 %	81 %	725 g / roll

(\*) = data partially changed

## Scope overview (yellow = included)



## LCA-Comparison per roll of 35-l-waste bags (in Eco-points / UBP'97 )



- Sensitivity Analysis on recycled content
- New Bag is environmentally superior
- Today, new bag is available at Coop. LCA was one key argument to increase recycled content

here: 1 of 11 pp.  
(more complex than  
the other LCAs)

- **Standardized Process: Form sheets, standard calculation, standard interface between commissioner and practitioner work well.**
- **11 LCAs from 2002 – 2004.** (After 2005, Carbotech produced LCAs based on their standardized 'BasicLCA' and 'AdvancedLCA' approaches.)
- **Even a very simplified form needs explanation! One person at the company should be responsible for the LCA contact.**
- **To be applied, Slimline LCA must be integrated into internal processes**
- **Slimline LCA prepares environmental input for decision making.**
- **Absolute comparison of relevance helpful: The LCAs resulted in equivalences of 20'000 to a few mio car-km.**
- **If a study does not give clear results: look further (for improvements) or accept that environmental issues are not very relevant in this decision.**

- **Complexity of an LCA approach should fit the complexity of the question at stake.**
- **There is a market for 'slimline LCA', done with a budget of < 2'000 €**
- **In addition to detailed LCA studies, 'Slimline LCA' offers an alternative approach to strengthen life cycle thinking in decision making**
- **Therefore, 'Slimline LCA' has its place and can be used for wider application.**