



The difficulty of finding circularity in solid waste accounts

18 March 2024

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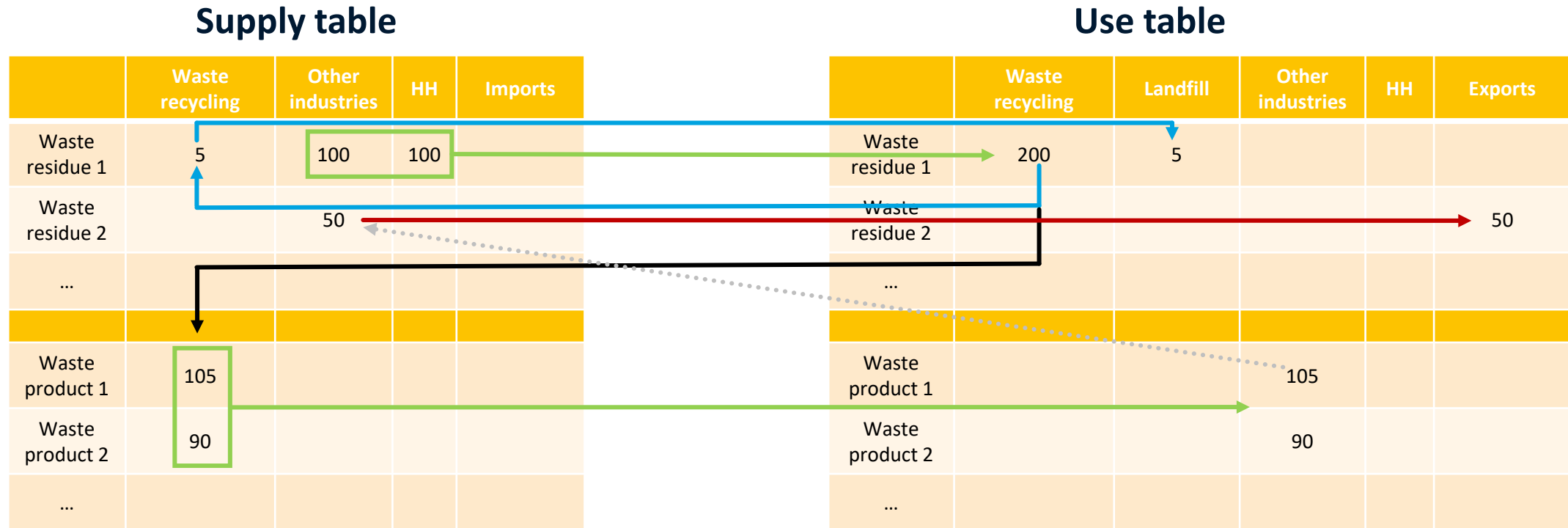
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Agenda

- 1 General principles
- 2 Challenge on classification
- 3 Challenge on own recycling
- 4 Challenge of following circularity
- 5 Indicators
- 6 NAMEA-Lux

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Solid Waste accounts – general principles



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Solid Waste accounts – many surveys

Supply table

	Waste recycling	Other industries	HH	Imports
Waste residue 1	5	100	100	
Waste residue 2		50		
...				
Waste product 1	105			
Waste product 2	90			
...				

Use table

	Waste recycling	Landfill	Other industries	HH	Exports
Waste residue 1	200	5			
Waste residue 2					50
...					
Waste product 1			105		
Waste product 2			90		
...					

Various surveys needed : - survey on waste residue generation

- survey on waste residue recycling and on waste product generation

- survey on waste product use

- survey on waste trade

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Challenge on classification

		Waste management disaggregation ?			ISIC disaggregation ?			
		Waste recycling	Landfill	Other industries	Construction	Services	HH	Exports
European classification on waste	Waste residue 1	200	5					
	Waste residue 2							
	...							
??	Waste product 1			105				
	Waste product 2			90				
	...							

Challenge on classification - explanation

Waste

Waste residue => European classification on waste statistics

Waste products => ??



free
≠
sold

Activities

ISIC branches => which disaggregation ?

for aggregated tables : other industries, construction, services

Disaggregation of Waste management (isic 38)

=> SEEA-CF recommendation:

landfill, incineration (of with energy recovery), recycling and reuse*, other treatments

** Second hand activities aren't included*

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Challenge on own recycling

Supply table

	Waste recycling	Other industries	HH	Imports
Waste residue 1		5		
Waste residue 2		4		
...				
Waste product 1				
Waste product 2				
...				

Use table

	Waste recycling	Landfill	Other industries	HH	Exports
Waste residue 1			5		
Waste residue 2					4
...					
Waste product 1					
Waste product 2					
...					

Only register “Waste residue” produced at company level

Challenge on own recycling - explanation

Story:

A plant 1 produces waste residues that is recycled in a plant 2 of the same company. This plant 2 produces a waste residue and sends it back for free to plant 1.

Should this recycling operation be entered in the accounts even though it takes place within the same company and involves no monetary transaction?

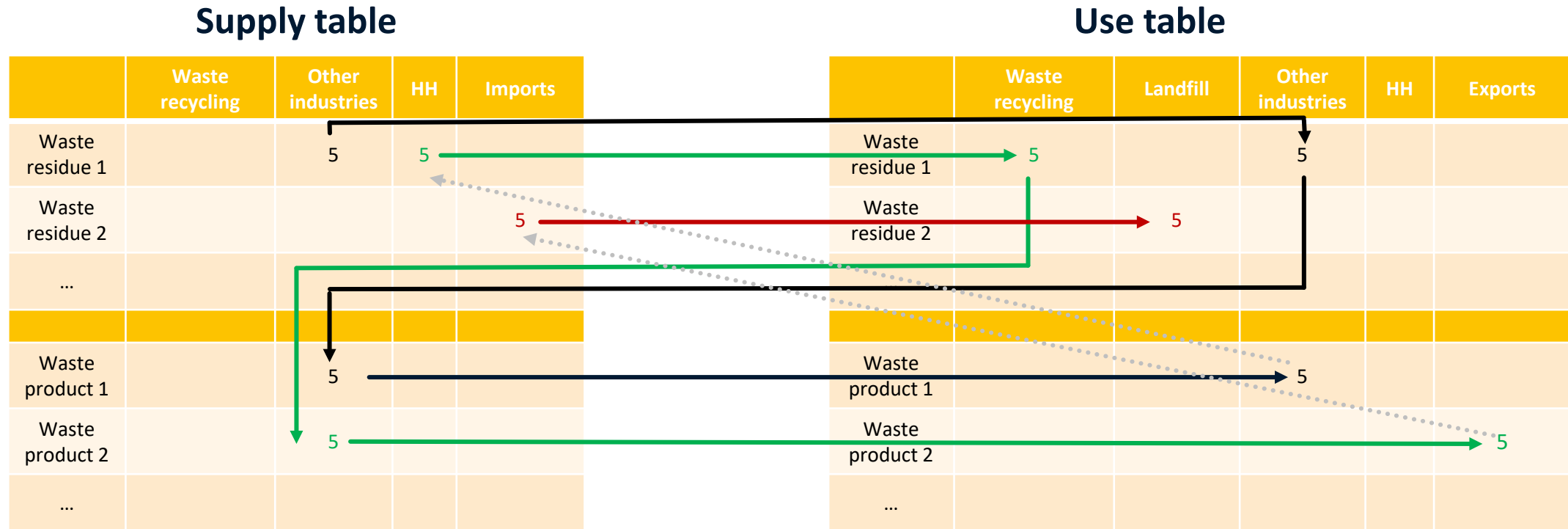
If so, it should be entered in the “waste residue” rows.

But isn't it an overestimation the amount of waste produced ?

Harmonized rule is needed.

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Challenge of following circularity



Multiple loops: first loop, second loop, third loop

Challenge of following circularity- explanation

Story:

Loop 1

A company 1 produces waste residues that is transferred for free and recycled in a company 2.

This company 2 produces a waste product and sells it to another company 3.

With this waste product, the company 3 will produce a new product which is consumed by Households

Loop 2

Households, after consuming this new product, generate a waste residue which collected and recycled in a waste management company.

The waste management company produces, from this waste residue, a waste product which will be exported.

Loop 3

The use of the waste product abroad will generate a waste residue that will be imported
And will landfill

How calculate a circularity rate index correctly ?

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Solid waste accounts - Indicators

Waste recycling rate

A measure of the amount of waste that is returned to the production cycle after being collected and processed.

= Waste products generated / waste residue use

Recycled waste rate

A measure of the amount of waste that is recycled.

= Waste residue use in recycling industries / waste residue generated

Waste circularity rate

A measure of the quantity of waste circulating in a defined economic system, for a given period, compared with the total quantity of waste generated in this system.

= waste products use on the territory / waste residue generated on the territory

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Main use in Luxembourg : NAMEA-Lux

	Economy - Outputs - IC - GVA - Jobs	Energy - Coal - Gas - Electricity - Oil - Renewables - TOTAL	GHG emissions - CO2 - Biomass CO2 - CH4 - N2O - HFC, SF6 - GHG TOTAL	Air pollutants - SOx - NOx - NMVOC - NH3 - CO - PM10 - PM2.5	Env. taxes - Energy - Transport - Resources - TOTAL	Waste - Hazardous - Non hazardous - TOTAL
ISIC A						
ISIC B						
ISIC C						
...						
Total ISIC						
Total HH						
Total non-residents on territory						

Key messages

- **Waste accounts requests multiple surveys**
- **Waste products classification is needed**
- **Columns and rows cannot be summed**
- **Indicators complement each other**

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