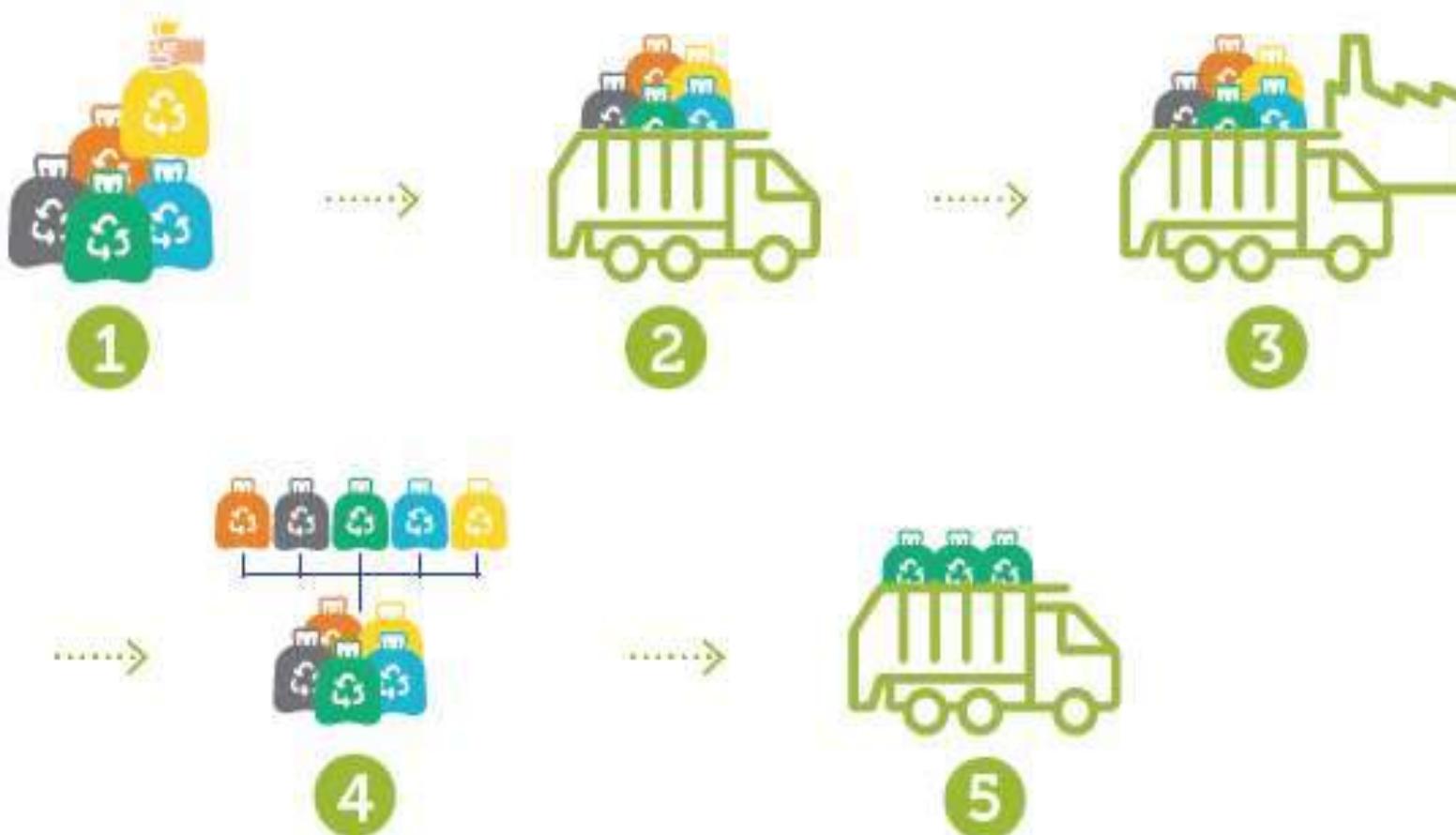


COLLECTION SYSTEM OPTIMO

23rd of november 2022
BESWA
Bionerga Beringen

optimO

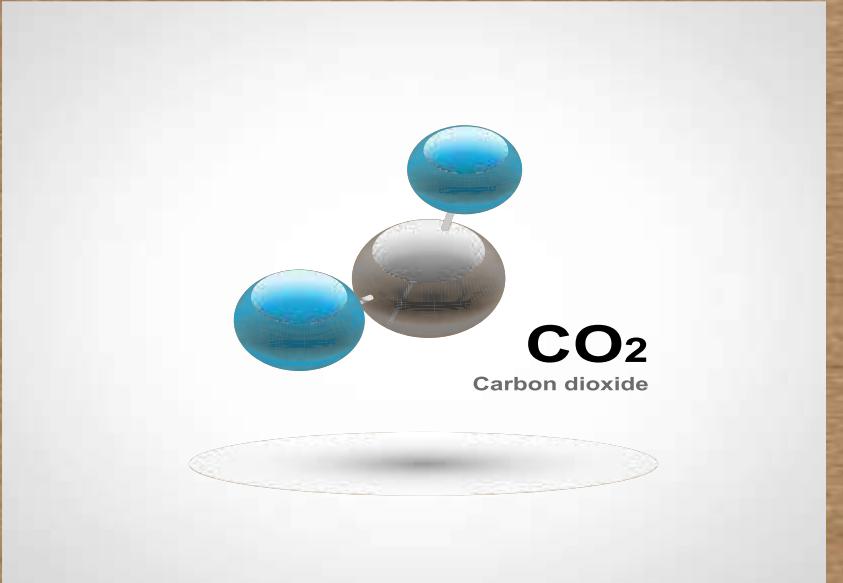
SERVICE



WHY OPTIMO



More selectivity



Less CO₂



More flexibility

ONZE WERKHYPOTHESE



Less
Heavy traffic

LOGISTICS EFFICIENCY

System (and history) determine amount to be collected

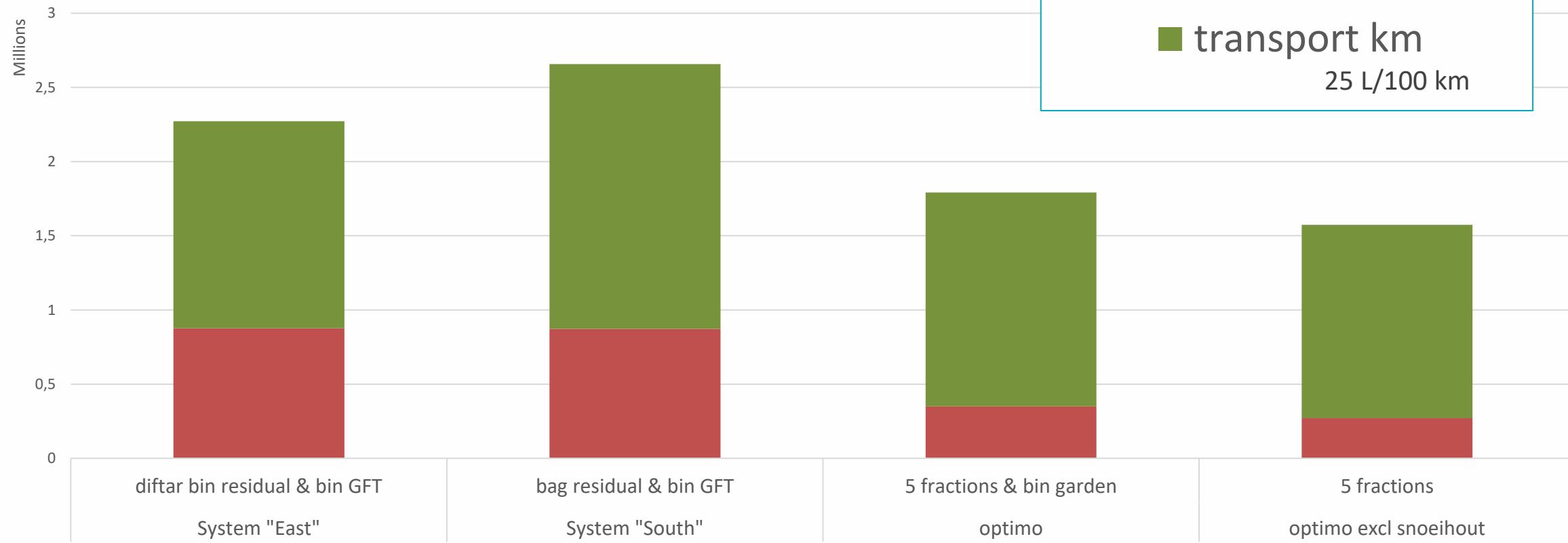
Kg/inhabitant	Residual	PMD	GFT (or kitchen)	Garden	Textiel
Optimo 5 fractions	86	22	10	25	5

South “pay per volume” Bag residual and bin GFT	76	22	103
--	----	----	-----

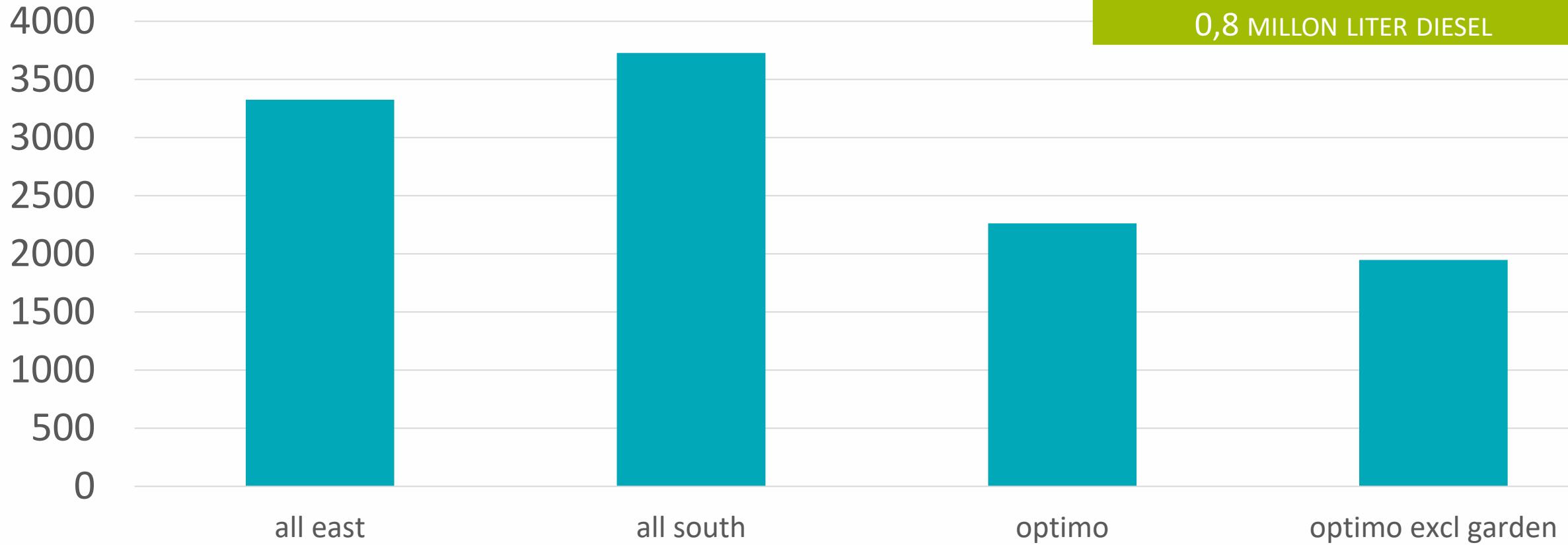
East “pay per kg” Bin residual and bin GFT	104	22	38
---	-----	----	----

Million kilometers per year (Rebel model)

In collection of residual/PMD/GFT



TON CO₂ /year in collection



REFERENCE

1,4 MILLION LITER DIESEL

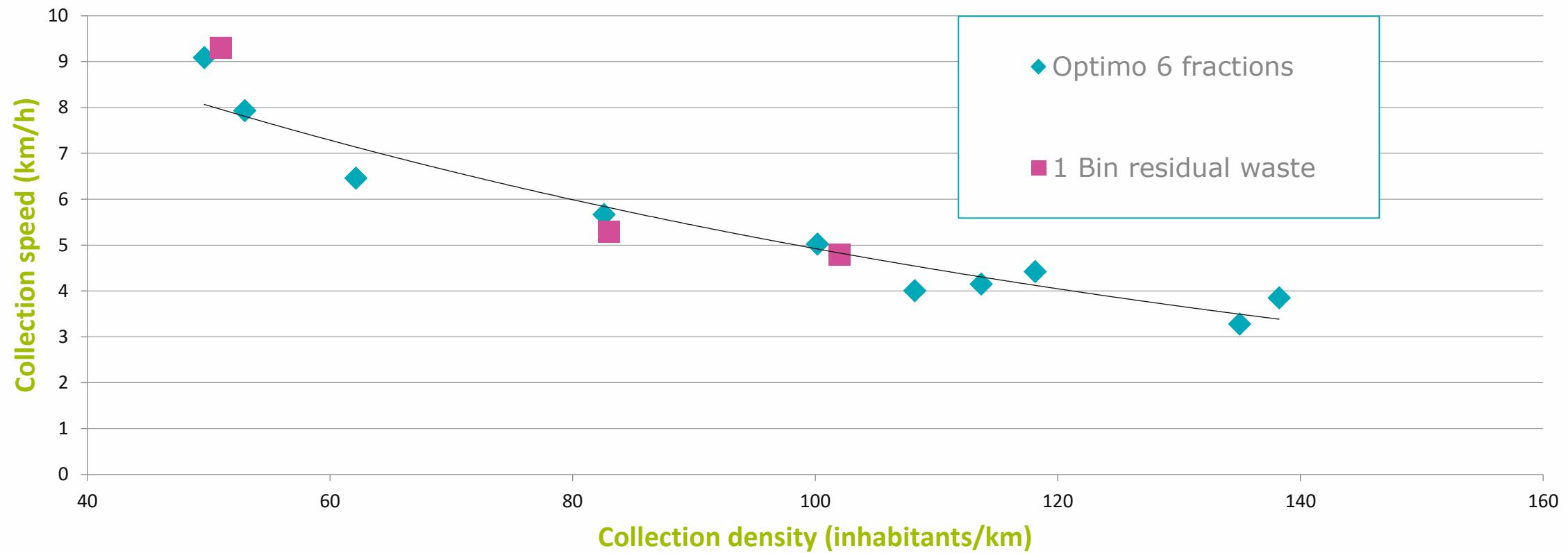


OPTIMO

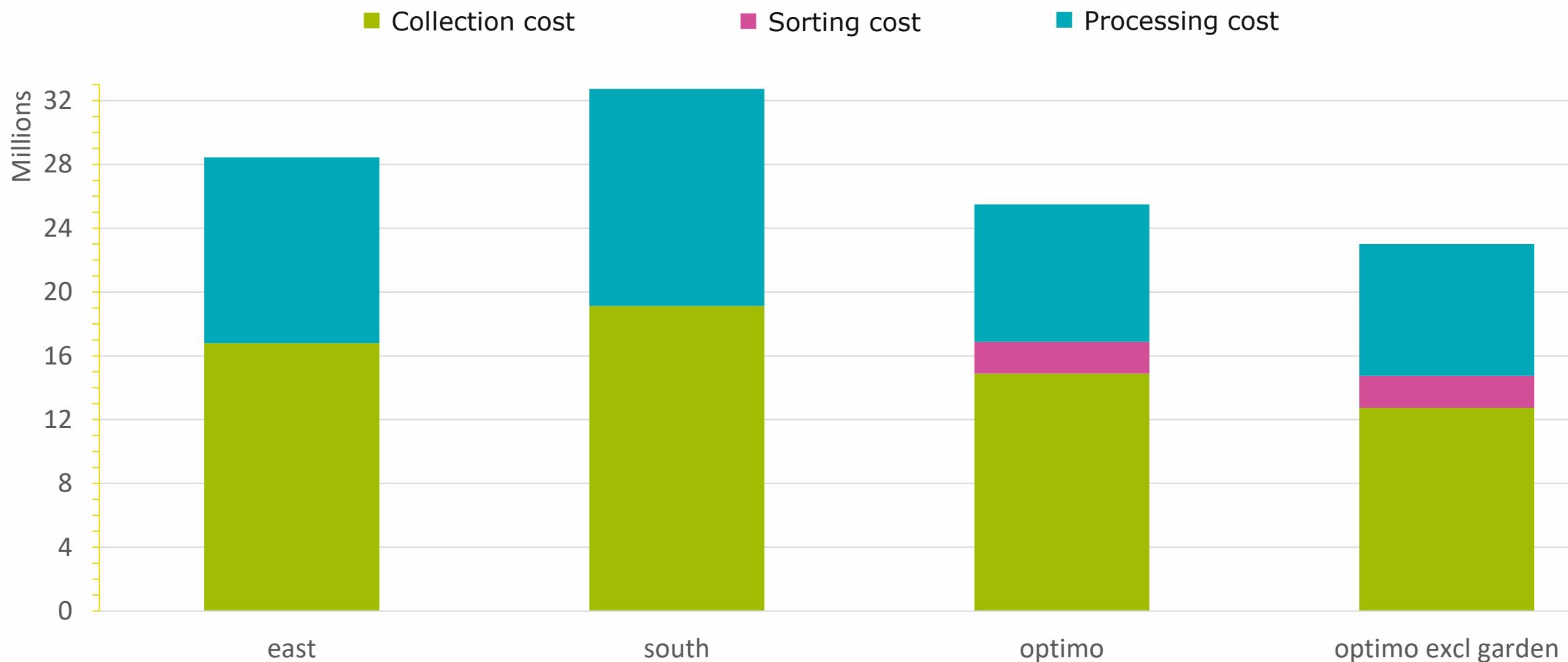
0,8 MILLION LITER DIESEL

A comparison between extremes

Collection speed data



Projected cost (EUR/year ; excl vat)



OPTIMO TODAY



Regio's

- █ Regio Noord-West: Optimo vanaf 1 januari 2022
- █ Regio Zuid: (proefgemeenten): Optimo vanaf 1 januari 2022
- █ Regio Zuid: Optimo met gft-bak vanaf 1 januari 2022
- █ Optimo reeds ingevoerd
- █ Regio Oost: behoud huidig systeem

Regio NW + profgem. = 182.865 gezinnen
 Regio Zuid = 125.309 gezinnen
 Regio Oost = 78.223 gezinnen

FIRST ANALYSIS

Optimo = private collectors (Renewi & Veolia)

No data on km and hours, but prices reflect modelled cost

Bvb collection round Genk: 49 vehicles per 2 weeks (17 residual, 13 PMD, 19 GFT)

-20% rounds: 33 vehicles Optimo + 6 vehicles garden bin per two weeks

Optimo light (residual & PMD & textiles) = inhouse collection

-13% rounds (work hours)

status quo kilometers (800.000 km/y)

-16% lower fuel consumption (42 L/100km → 35 L/100km)

MORE FRACTIONS?

GFT – where is the challenge?



GFT= Kitchen and garden waste

THE CHALLENGE

42.000 ton

€ ±85/ton

= comparable to incineration

+

Difficult to market compost

+

Home alternatives

Splitting up into GF (kitchen) and T (garden)

Better selectivity down the process chain



- **20%** kitchen waste has a continuously high biogas production
- **80%** can be composted in open air at lower cost, with higher quality compost products as an end product

POLLUTION IN THE BIOLOGIC CYCLE

Pollution depends on fraction and collection system:

- Garden waste at recycling park <1%
- Garden waste bag around 1%
- GFT-bin 2-7% in growing season (higher in winter)
- Kitchen waste bag 5-10%

Splitting up into GF (kitchen) and T (garden)

Isolating the “polluting” kitchen waste --> better selectivity in investment in techniques to purify (bvb. washing of non-organic part and water with organic load is useful for digestion)



- **20% of GFT is kitchen waste**
(5-10% verontreinigung!)
- **80% of GFT is garden waste**
(<1% verontreinigung)

OTHER FRACTIONS

Textiles in door-to-door collection

Diapers?

...

HOW DOES THE INHABITANT RESPOND TO THE SYSTEM?

Principles

Basic service

5 fractions
(3+2)



Every 2 weeks



All fractions together in one
go



Standard for everybody

Choice at full cost



Garden waste bin
240 liter

- 60 EURO / year
- monthly

+ garden cutting

- On demand
- monthly

.....
Option for those who want extra service

SURVEYS

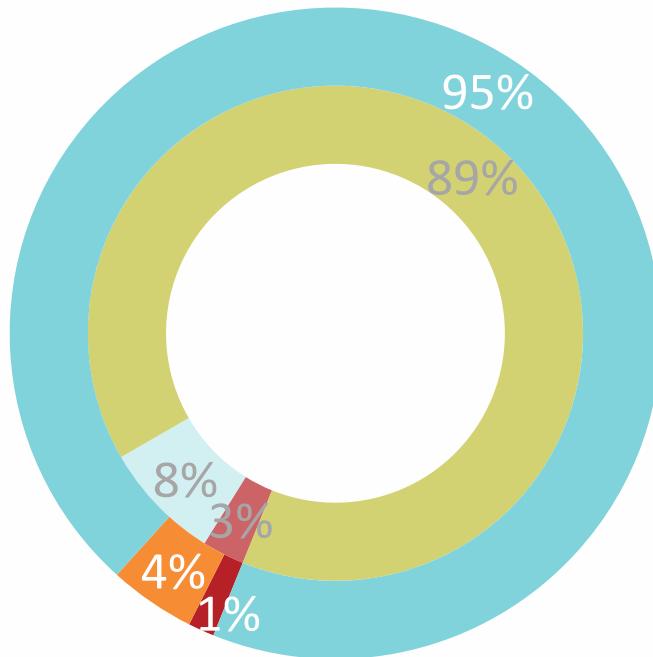
Limburg.net organizes large scale surveys on the new system

- “Before” late 2021
- 1st wave summer 2022
- 2nd wave early 2023

...

IN PILOT LOMMEL (2015-2020)

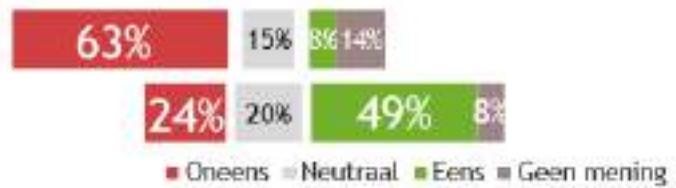
High approval **8,8/10**



- Ik zou liever het oude systeem terug hebben
- Het maakt mij niet uit
- Ik wil liever het nieuwe systeem blijven gebruiken

Er zijn nog veel verbeteringen mogelijk aan het afvalstelsel zoals dat nu loopt in Lommel.

Nulmeting



■ Oneens ■ Neutraal ■ Eens ■ Geen mening

IN PILOTS TONGEREN OUDSBERGEN (2018)

Lower **5/10** but different motives

Tongeren (South)



Oudsbergen (East)



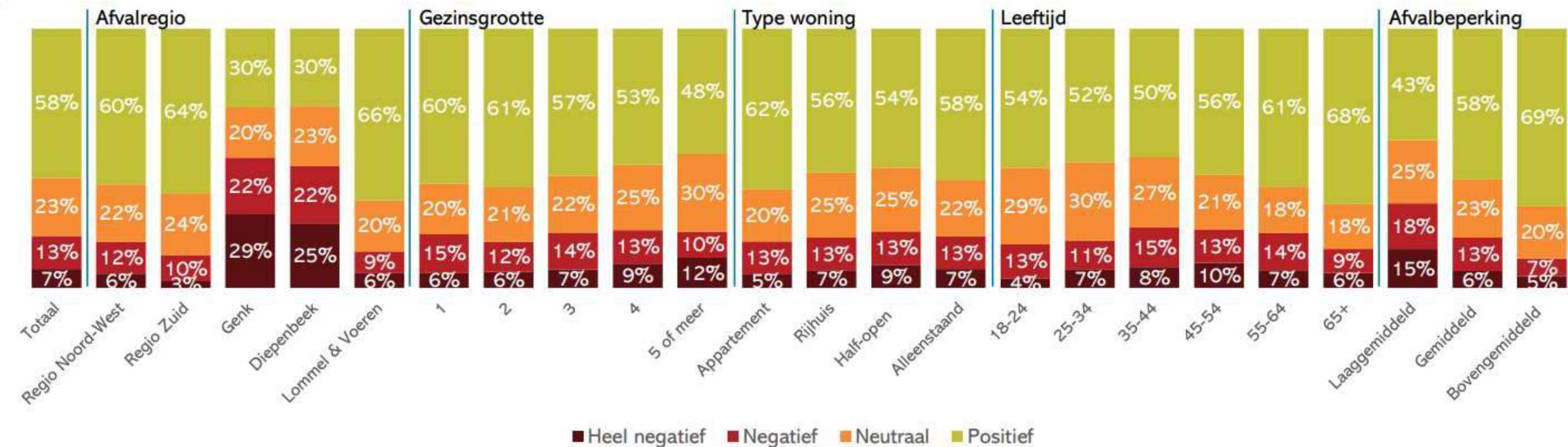
FIRST WAVE (SUMMER 22)

General: 7,2/10

50/50 in Genk and Diepenbeek

Perception is more negative in households that implement less waste-preventing measures

Evaluatie Optimo

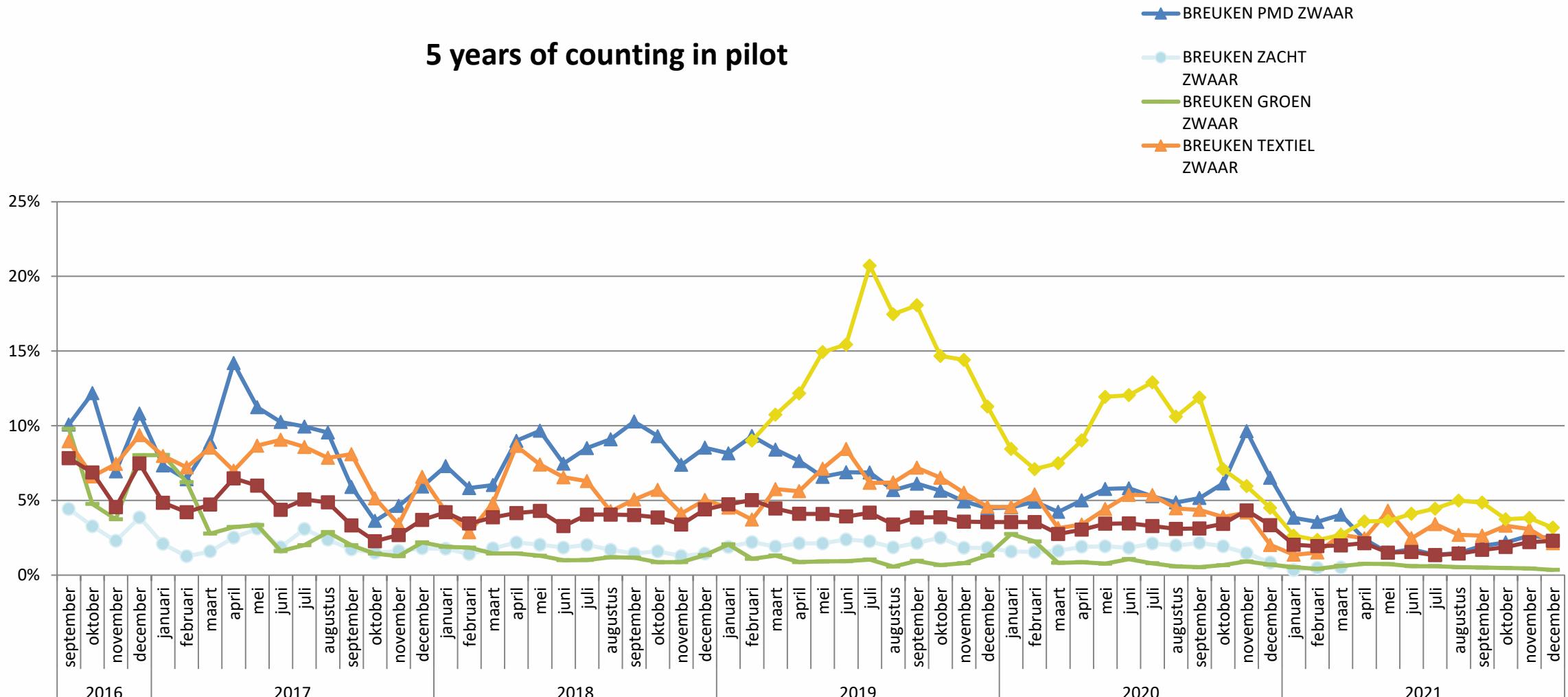


In totaal is 58% positief en 23% neutraal ten opzichte van het systeem. Voornamelijk in Genk en Diepenbeek zijn substantieel negatieve scores te vinden. Alleenwonenden of tweepersoonsgezinnen staan positiever tegenover Optimo dan grotere gezinnen. De tevredenheid is het laagst bij de 35- tot 44-jarigen. Wie in een appartement woont of in een alleenstaande woning, is positiever dan wie in een rijhuis of halfopen bebouwing of rijhuis woont. De evaluatie van het Optimo-systeem hangt ook samen met de mate waarin men afvalbeperkende maatregelen neemt; naarmate men meer afvalbeperkende neemt, is men ook positiever over het systeem.

SYSTEM CHALLENGES

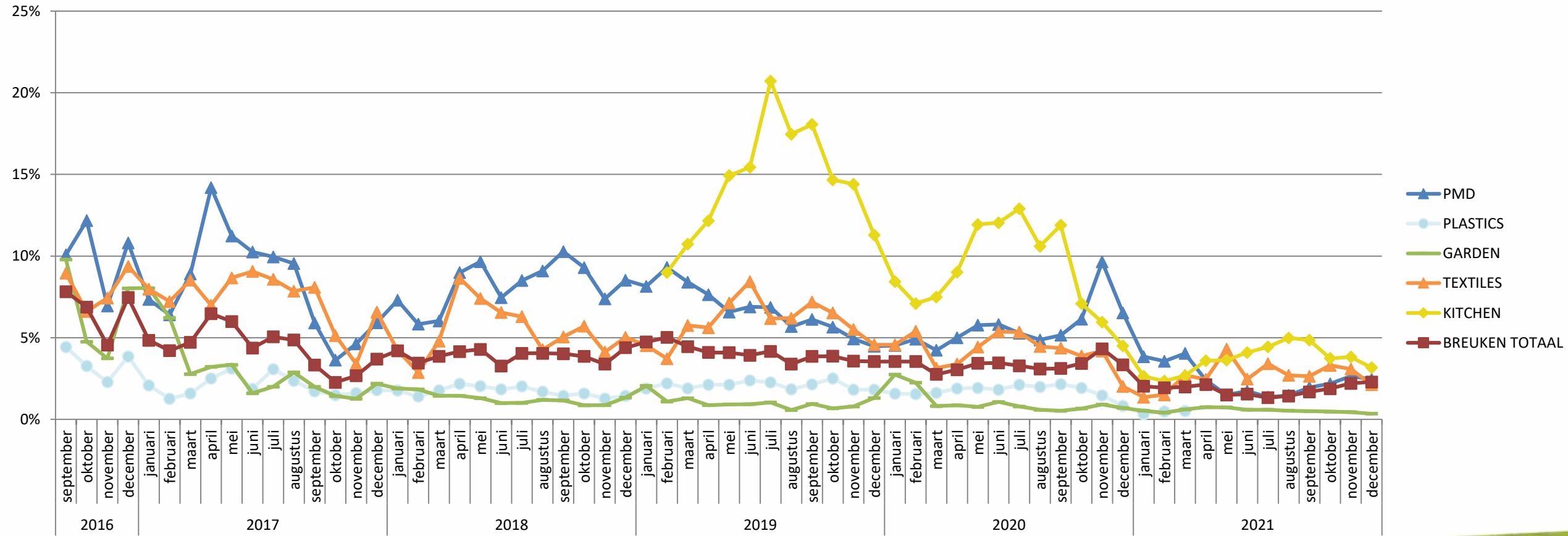
BAG RUPTURES?

5 years of counting in pilot



BAG RUPTURES?

% bag loss in Lommel



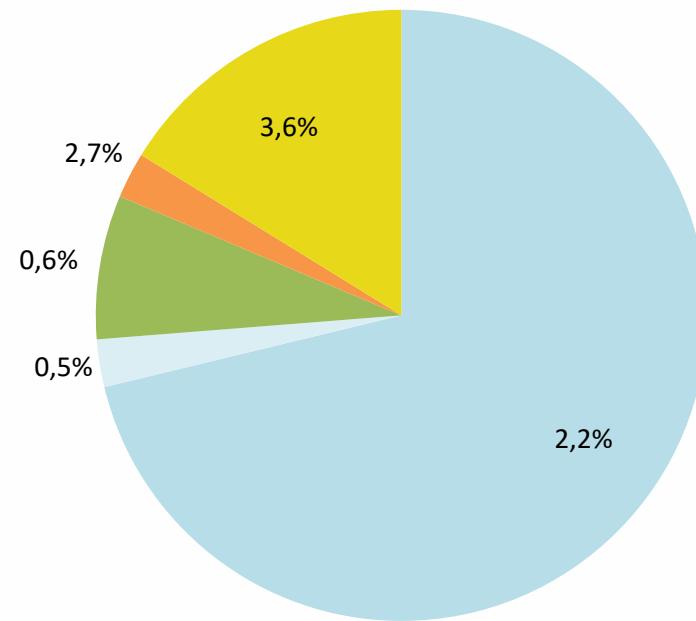
GOAL

Max 2% bag loss per fraction

Risk bags:

- 1) Kitchen
- 2) PMD

LOSS% Lommel 2021
1,8% of all bags



COUNTER MEASURES

- Load weights: Full Optimo 6 tons, Optimo light 5 tons (fines on excesses)
- Truck development
- Bag production with >90% recyclates and a high focus on quality control
- Public campaigns on correct closing of bags



WASTE PRODUCTION?

TOTAL IN OPTIMO AREA

residual kg	2021	2022	delta		kg/inhabitant
jan	5.484.100	5.818.930	334.830	6,11%	0,47
feb	5.164.930	5.040.200	-124.730	-2,41%	-0,17
maart	6.026.200	5.573.820	-452.380	-7,51%	-0,63
TOTAL	16.675.230	16.432.950	-242.280	-1,45%	-0,34

- Cold start installation
- Effects (Covid '21, new PMD,...)
- Local differentiation

EXPECTATIONS

- Status quo in Genk and Diepenbeek (South)
- Reduction in West (effect introduction kitchen waste)

Numbers are difficult today per municipality (because of joint sorting)

COUNTING BAGS WITH IMAGE DETECTION

