



**SALPA
KIERTO**

EXPERIMENT FOR IMPROVING THE COLLECTION OF BIOWASTE FROM DETACHED HOUSES

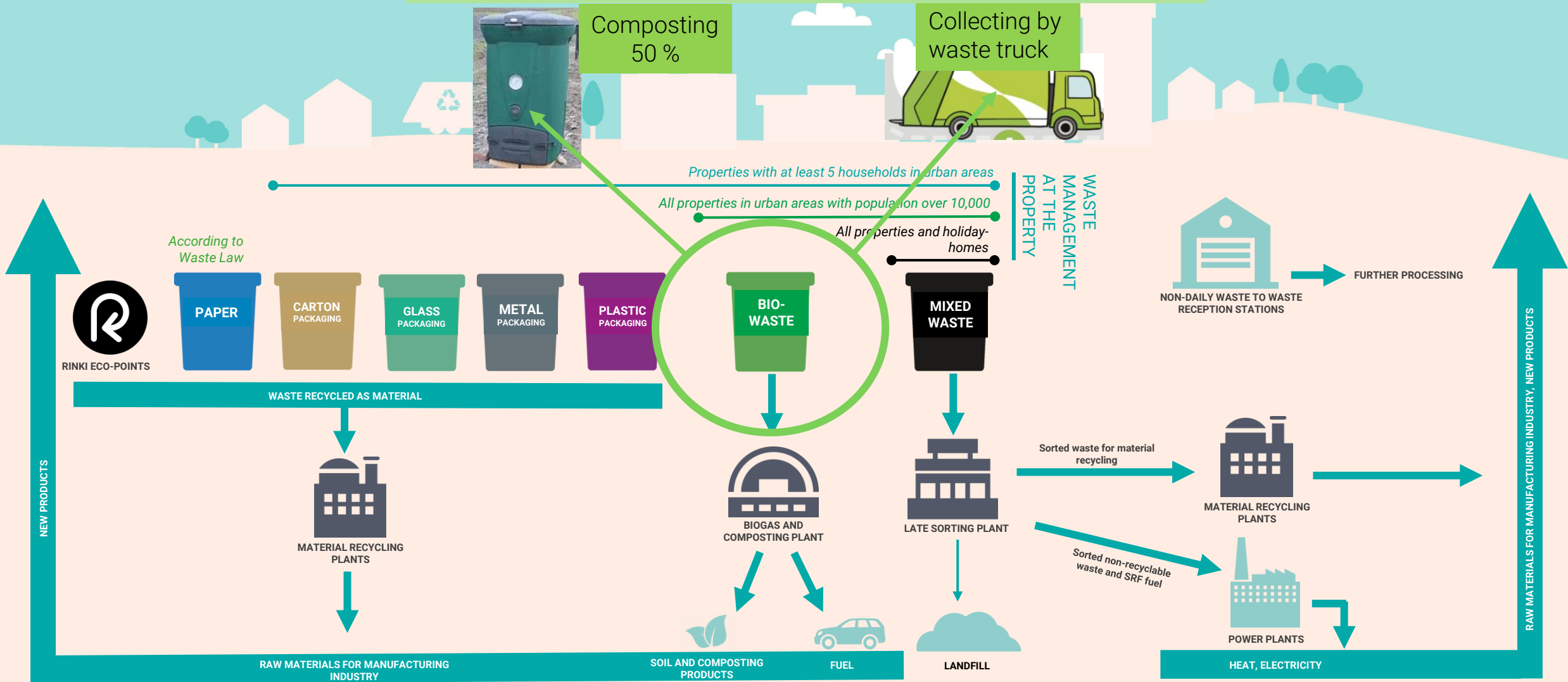
23.4.2024

Kimmo Rinne

PUTTING WASTE TO GOOD USE

Waste management system according to the new waste legislation starting from 2022-2024

Collection of biowaste in detached houses starts 1.7.2024

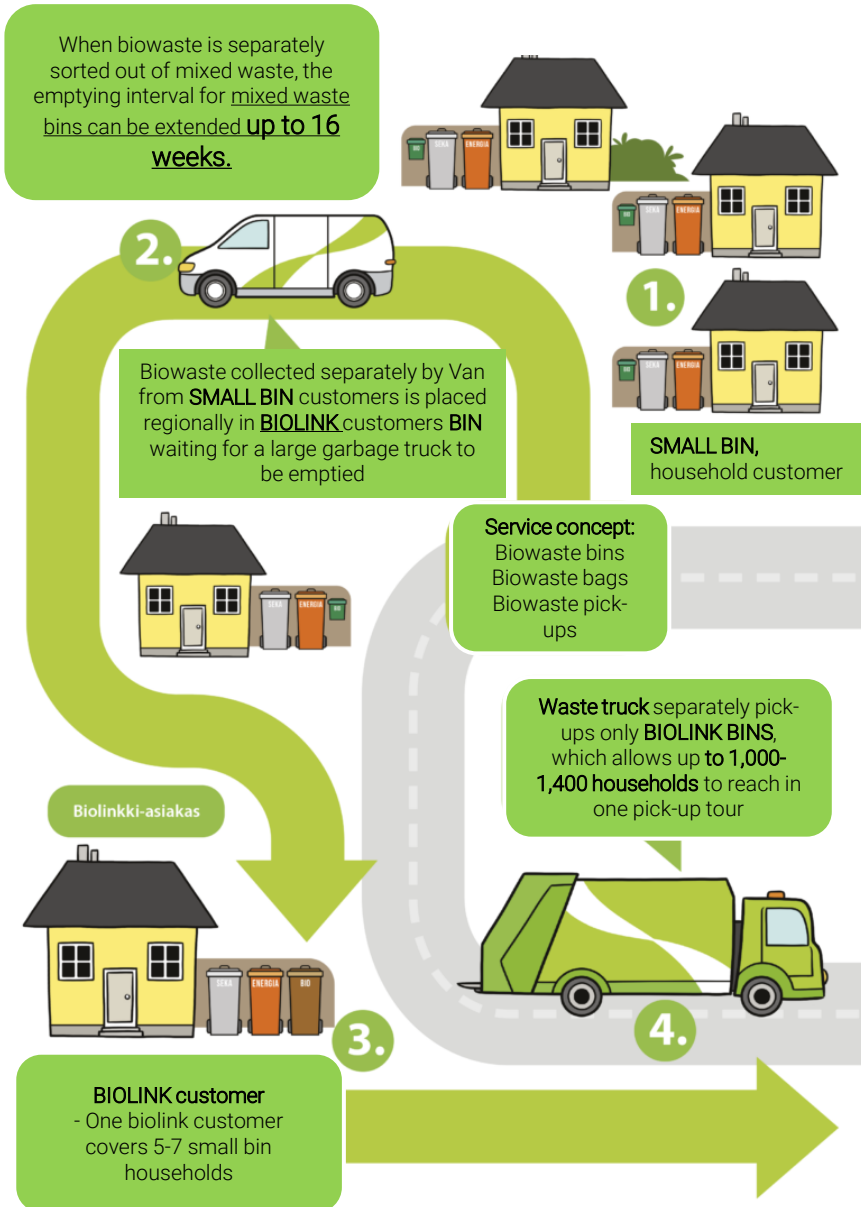


BIONEERI MODEL - PILOT

- Bioneeri was part of the EAKR-funded Biocycle project
- Project duration **one year** (9/2020 – 9/2021)
 - Bioneeri service will continue 6/2024
- **TARGET:** A new way of separate **collection of biowaste from detached house areas**
 - The concept is based on an operating model in which biowaste from households is collected mainly **by van** instead of a waste truck. The cost of emptying waste bins could reach a competitive level.
 - Households have potential to decrease the waste costs by recycling biowaste and extending the emptying interval of mixed waste.
- The service was aimed at **densely populated detached house areas** in Lahti - In the pilot it was tested in 7 areas
- Bioneeri **service payment includes:**
 - Biowaste bags (inner and outer bags)
 - Biowaste bins (inner and outer bins)
 - Biowaste pick-ups (every second week)



BIONEERI MODEL – BIOWASTE COLLECTION



1. SMALL BIN, household customer

- Biowaste is collected "in the kitchen" to indoor bin
- Paper bag + waste rack



2. SMALL BIN, household customer

- Biowaste is collected outside to outdoor bin
- Outdoor bin is collected and emptied in every **TWO WEEKS**
- By a **VAN**



3. BIOLINK, household customer

- Biowaste is collected "in the kitchen" to indoor bin
- BIOLINK customer's outdoor bin is standard 240 l bin
- Small bin customer's outdoor bins are emptied and temporarily stored in BIOLINK's bin



4. BIOLINK BINS are collected by waste truck

- Less heavy traffic in the region
- Biowaste is delivered for industrial processing in Labio Ltd

ORGANIZING THE PILOT

Selection the household customers

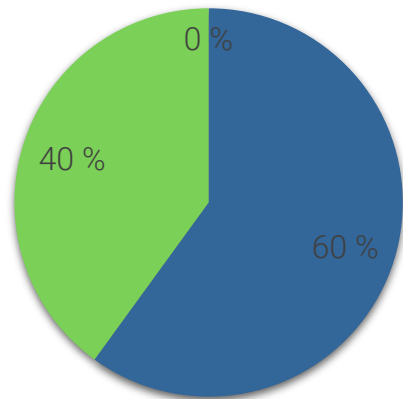
- **Voluntary registration** in selected areas
 - 464 households signed up
- 226 households were selected to Bioneeri
 - 195 Households with **small biowaste bins**
 - 31 **Biolink customers** (households)
- Customers have liked the Bioneeri service model
 - 8 customers that have terminated the service
 - 5 customers replacing terminated households

What was studied during the pilot?

- **Weighing** customer biowaste and reviewing the **filling rate** of the container once a month
- Continuously tracking **customer satisfaction** (Webropol survey)
- **Composition studies** of different waste fractions 4 times
 - Mixed and energy waste and biowaste **two times / type of waste**
- **Collection efficiency** - work power measurements 2 times
 - Project worker involved in the pick-up round
- Bioneer concept **profitability and growth potential** calculations

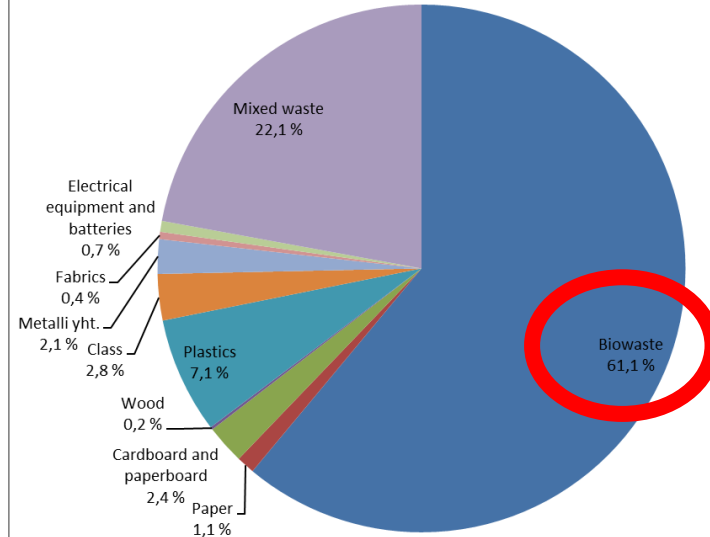
COMPOSTION RESULTS IN THE PILOT

Content of biowaste

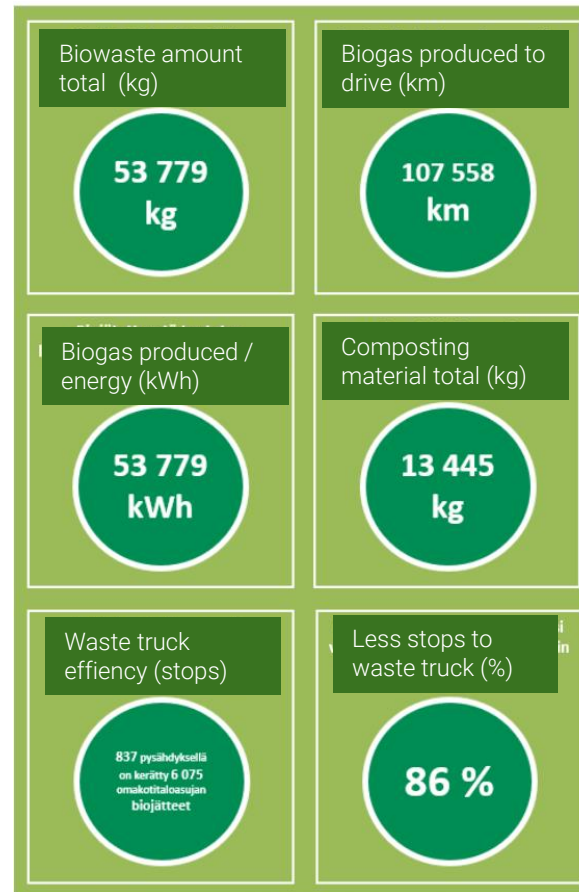
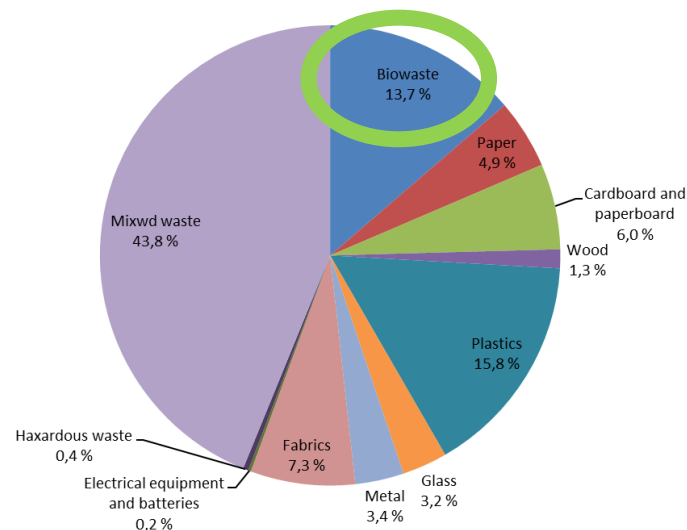


■ Biowaste ■ Wood waste ■ Not included

Content of mixed waste – start of Bioneeri

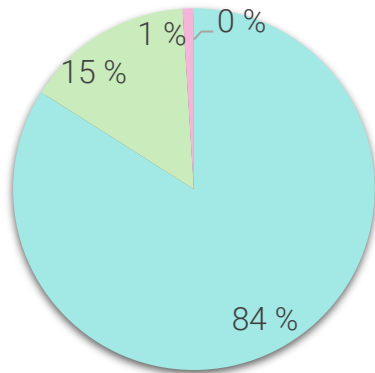


Content of mixed waste - end of Bioneeri



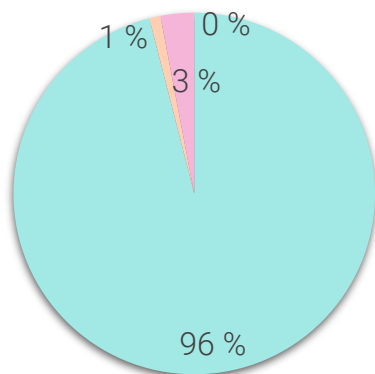
CUSTOMER SATISFACTION

How satisfied you are with the service as a whole



Very satisfied Satisfied Can't say Unsatisfied

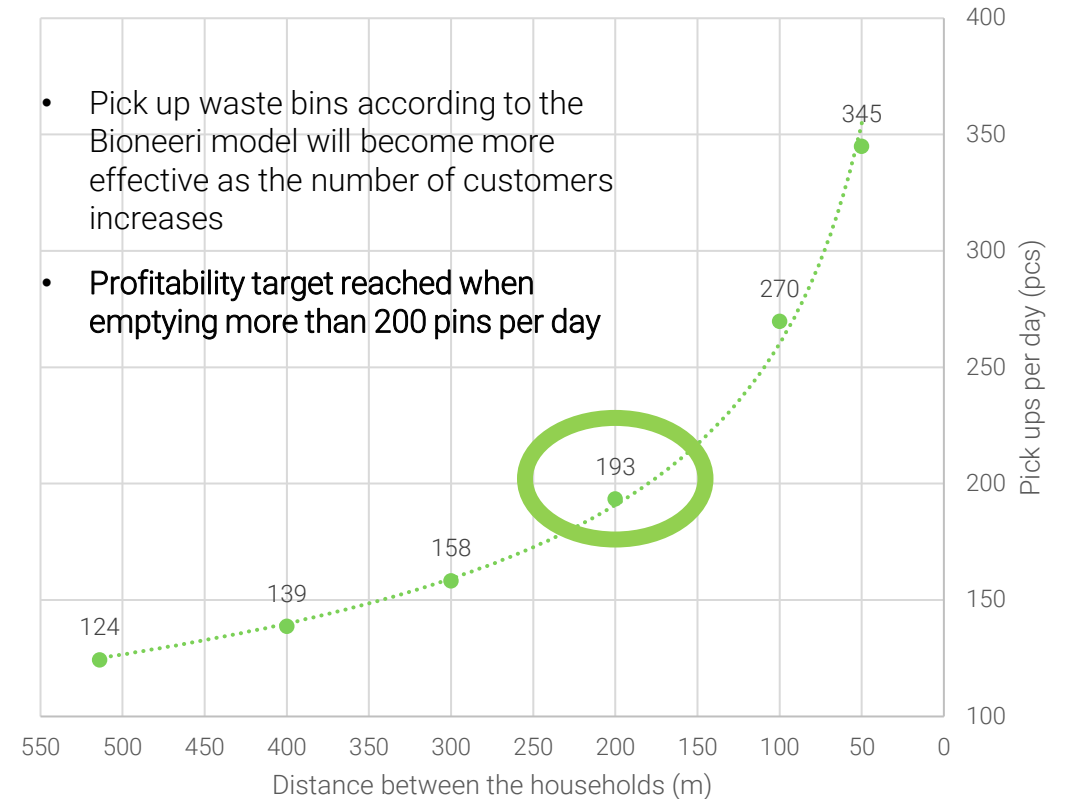
Would you like to continue the Bioneeri model?



Yes No Can't say Unsatisfied

STUDY FOR EFFICIENCY OF THE COLLECTION

Pick-ups per working day



CONCLUSIONS AND LEARNINGS

- **Customers** are/were **very satisfied** with the Bioneeri model service
 - The cost of emptying waste bins was competitive
- **Biowaste bags and internal bins must be provided as part of the service to achieve good results**
 - Biowaste bags and bins are right type for further processing
 - Unifying small waste bins as one size
- **Active training & info** of bio waste sorting for the habitants is very important process
 - Videos, feedback, customer service
- Very useful to **give feedback** to all consumers from the composition test
 - The amount of biowaste in mixed waste reduced significantly
 - Lots of food waste in Biowaste
- **CO2 emissions** of the concept **can be minimized by switching to electric van**
- How to **ensure** a “Biolink customer” in the service model
 - We cannot force household for being a “Biolink customer”
- **Developing ergonomics** for the collection of small waste bins and containers
 - The weight of the smaller bins over 20 kg
- **Background information and “advertising”** is very important when planning service packages
- **How to challenge the traditional way** of collecting biowaste?
 - We were not able to “sell” the idea for
“Waste management system according to the new waste legislation starting from 2022-2024”

THANK YOU!

Salpakierto Ltd
Kimmo Rinne
Development Manager

