

# Case: Building Closed plastic circle in the Helsinki Metropolitan area

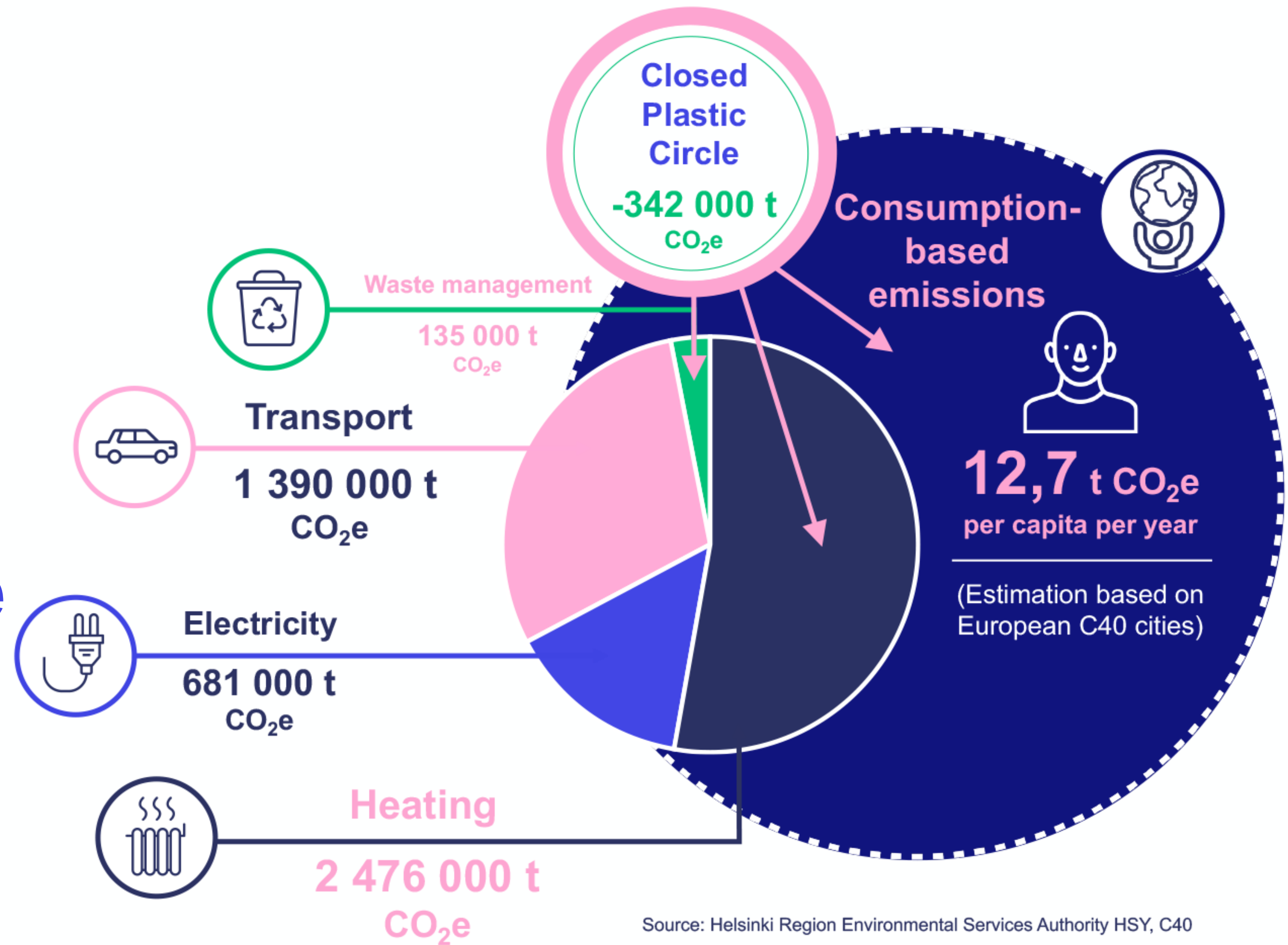
Circular Economy in Amsterdam and Helsinki  
11.11.2020



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# Closed Plastic Circle is a concrete example of circular economy and systemic climate solution



# Closed Plastic Circle

- 1.How to build an ecosystem and make it work
- 2.How to create data driven impact

# Why is it difficult to circulate plastic?




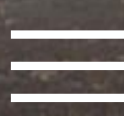
- Consumers are used to single-use culture
- Hard plastic (non-packaging plastic) are not collected
- Plastic is a heterogeneous material (PP, HDPE, LDPE, PET, PVC) and different grades require different recycle processes
- Mechanical recycling requires good quality material. Chemical recycling is not yet viable technology.
- Fossil based virgin material is cheaper to use
- Recycled materials can not be used in food packaging

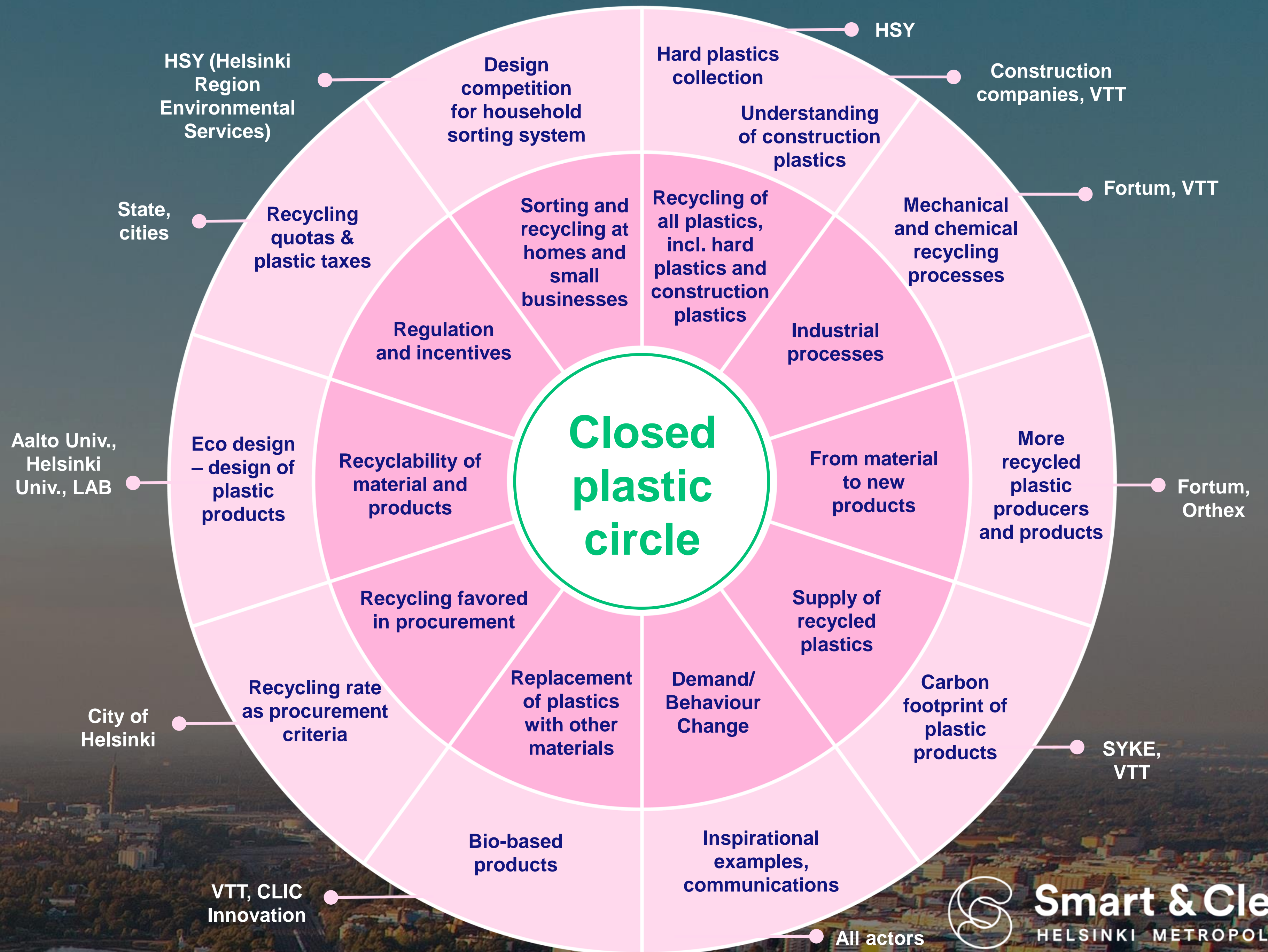




# Steps of building the ecosystem

## How to read this image

-  **Center:** the main goal of the project
-  **Inner circle:** Systemic solutions needed for achieving the target
-  **Outer circle:** Actions contributing to each solution
-  **Outside the circle:** Involved actors



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# Task force leads the actions

## City of Helsinki

**Anni Sinnemäki;**  
Deputy Mayor, Urban  
Environment

**Rikhard Manninen;**  
Head of Urban Planning

## City of Espoo

**Jukka Mäkelä;**  
Mayor

**Pasi Laitala;**  
Director, Sustainable  
Development

## HSY

**Raimo Inkinen;**  
Executive Director

**Marjut Mäntynen;**  
Operations Manager

## VTT

**Jussi Manninen;**  
Executive Vice President

**Inka Orko;**  
Co-Creation Manager,  
Circular Economy

## Fortum

**Kalle Saarimaa;**  
Vice President, Recycling &  
Waste Solutions

**Kirsi Rantala;**  
Product Sales Manager

## Lassila & Tikanoja

**Jorma Mikkonen;**  
Director, Corp. Relations  
and Responsibility

**Sanna Peltola;**  
Business Manager

## Siemens Oy

**Janne Öhman;**  
CEO

**Lars Maura;**  
Head of Business  
Development

## The Orchestrator

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Foundation

Jaana Pelkonen

# Partners implement concrete actions

## Examples of activities:

- Plastic sorting & collection pilots in schools (**City of Espoo**)
- Service design for plastic collection in small-house areas (**City of Espoo, HSY**)
- Collection of non-packaging plastic and LCA of processing options (**HSY**)
- Plastic recycling pilot at Vuosaari harbour (**VTT, Port of Helsinki Ltd**)
- Piloting of construction site plastic circulation & Surveys of plastic volumes (**City of Espoo, City of Helsinki**)
- Guidelines for plastic circulation in demolition guidelines (**City of Helsinki**)
- Development of procurement criteria for recycled products including LCA and CO2-intensity criteria (**City of Helsinki**)
- Planning of City-Refinery plant in Vuosaari for gasification of difficult-to-recycle grades (**L&T, VTT, Helen**)
- Technology development projects focusing in chemical recycling and difficult-to-recycle grades; e.g. Plast2Recycle, PLASTin, NonTox, Kelmuvex (**VTT, several partners**)
- New products from Fortum Circo® recycled material, e.g. Fiskars hands free handle and ISKU school chair (**Fortum Waste Solutions**)
- Closed cycle circulation pilot of cut flower buckets into flower pots (**L&T, K-Group, Orthex**)



# Closed Plastic Circle is Lead with Impact

The orchestrator creates leadership platform with data and information

Closed Plastic Circle

Measurable targets



Impactful actions



Monitoring the impact



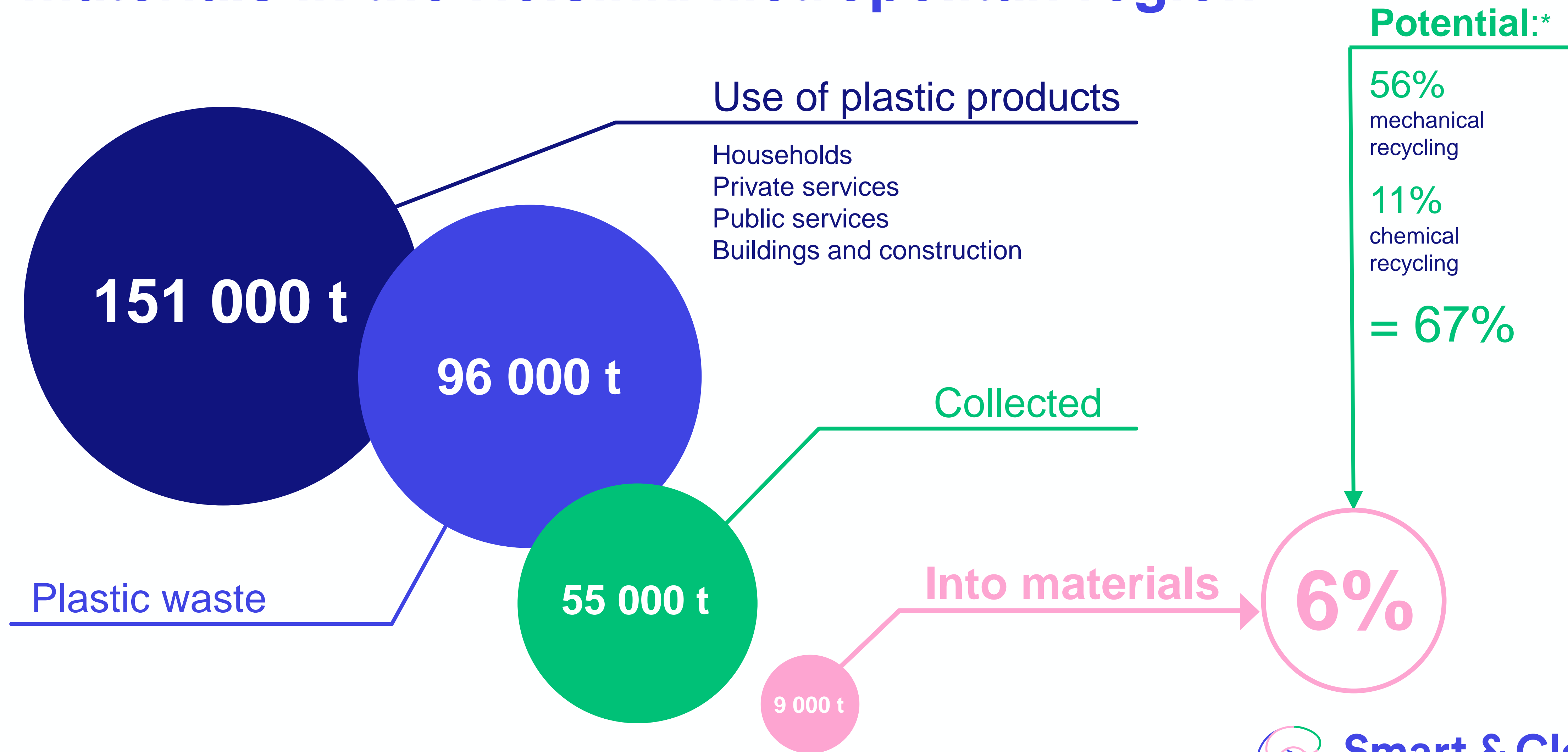
Continuous development & step change



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# Currently only 6% of virgin plastics is recycled to materials in the Helsinki Metropolitan region



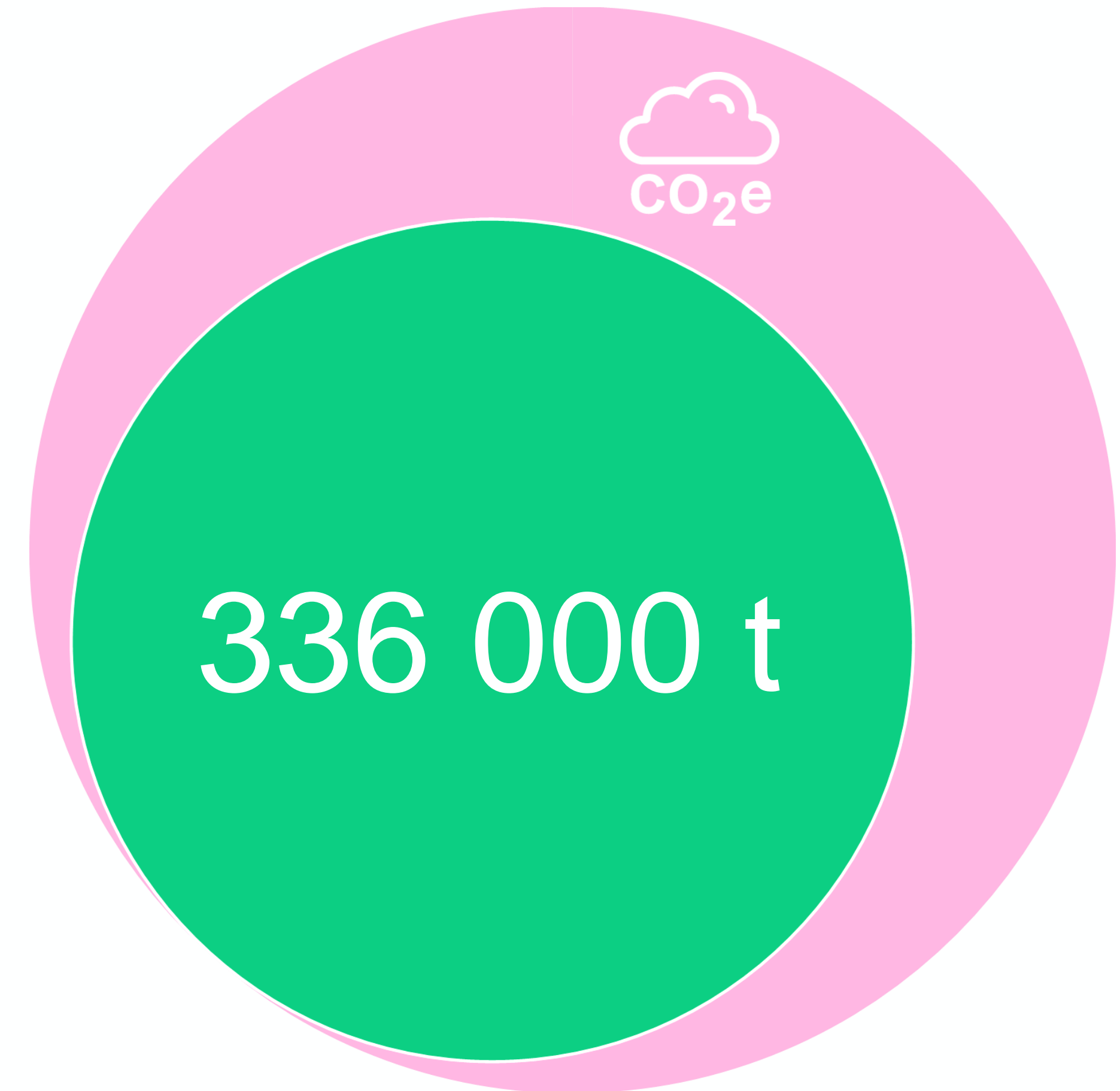
\*Source: Material Economics (2018)



If 70% of plastics is recycled to materials instead of the current 6%, CO<sub>2</sub>e emissions in the Helsinki Region will be reduced by **60 %.**

Equals annual CO<sub>2</sub>e emission reduction of **336 000 tonnes.**

- That equals yearly emissions of approx. **80 000** residents of the Metropolitan region.  
(2017 emission level)\*

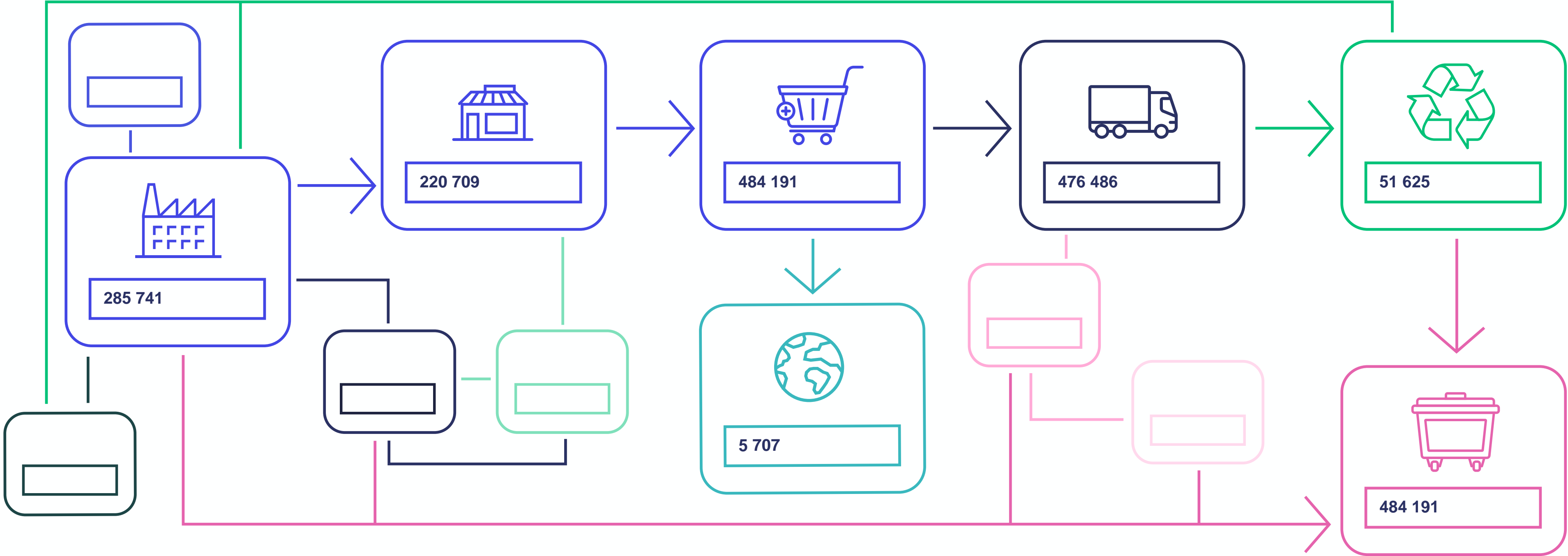




# Data and cycle modelling helps to choose actions with the largest impact

AREA	FINLAND
YEAR	2018
PLASTIC CATEGORY	PACKAGING PLASTIC
QUANTITY	TONS

RECYCLING RATE %: 22,0 %



Graphic simplification of the actual data model. Data model © 2019 Taival Advisory Oy



# Measurable targets for Closed Plastic Circle

## ”Green Deal” for 1st phase by 2025

- 20 % of all plastics circulated into material
- 50% of packaging plastics circulated into material

### Growth in collection of all plastics

- Household plastics 40 000 t
- Hard plastics 7 000 t
- Construction plastics 3 000 t

### Increase in circulation capacity

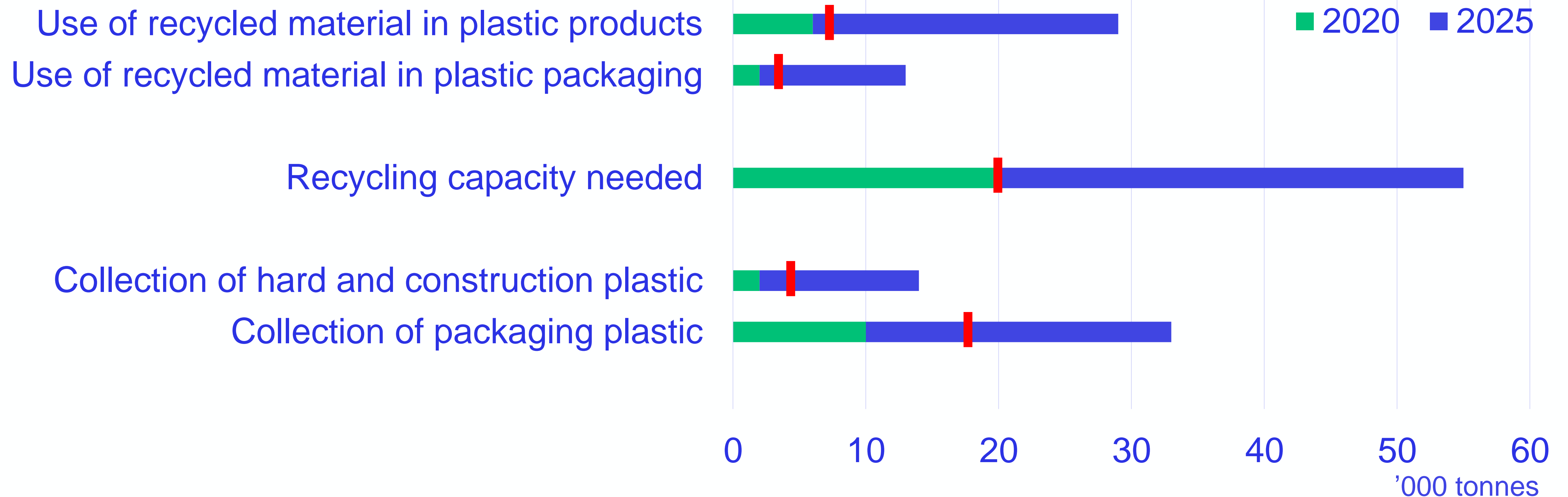
- New circulation capacity needed 35 000 t (capacity demand in Finland 100 000 t)
- 50 000 t reduction in energy use

### Increase of demand for recycled plastic products

- Increase of recycled material in packaging plastics 11 000 t
- Increase of recycled material in other plastic products 23 000 t



# Impact is monitored against the required scale of progress





# Smart & Clean Solutions for 1,5°C World.

# Thank you!

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