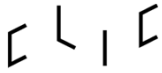




# Facilitating Sustainable Growth

Standardibrunssi  
Pirjo Kaivos  
CLIC Innovation  
1.4.2022

CLIC



# Presentation outline

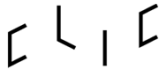
- CLIC Innovation
- Facilitating ecosystems – 4Recycling ecosystem
- Building RDI projects – PLASTin project



Facilitating sustainable growth

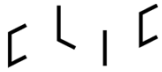
CLIC Innovation Ltd

CLIC



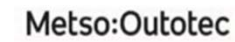
# CLIC Innovation – open innovation cluster

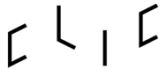




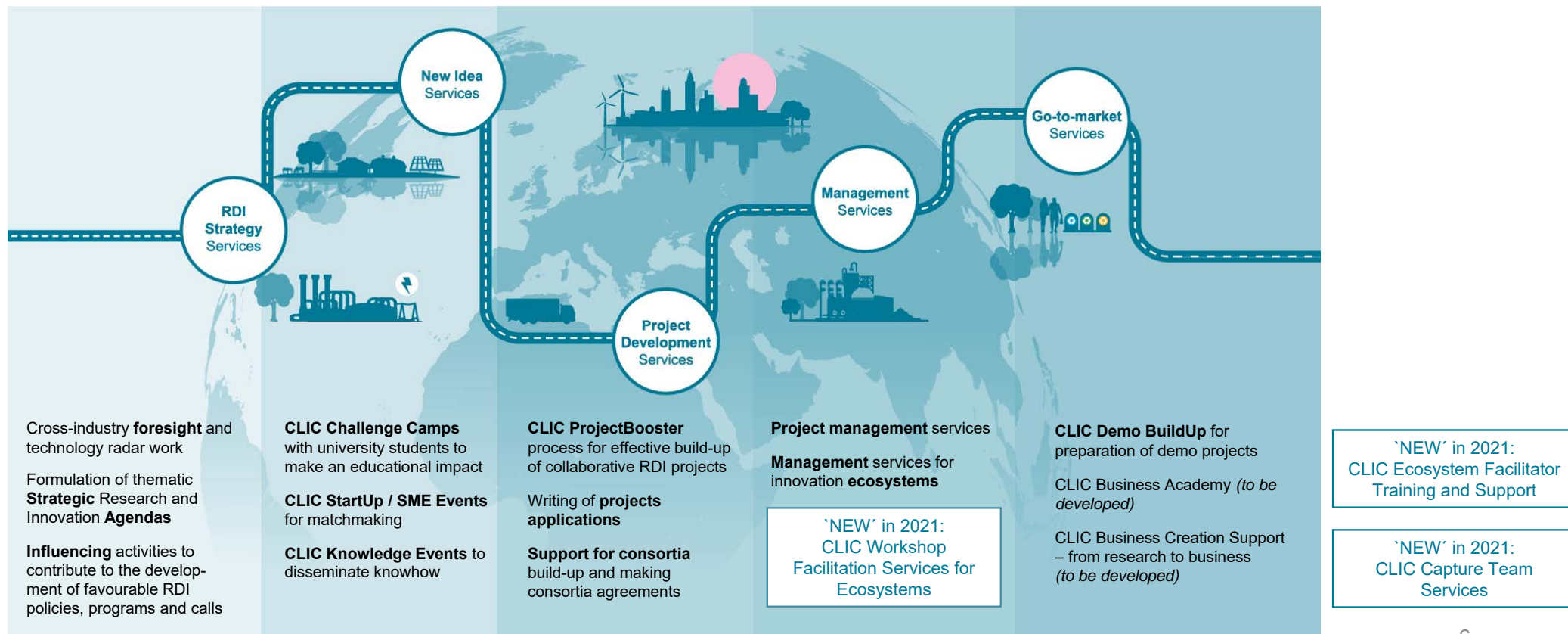
Facilitating sustainable growth

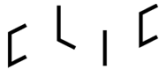
# Shareholders and partners





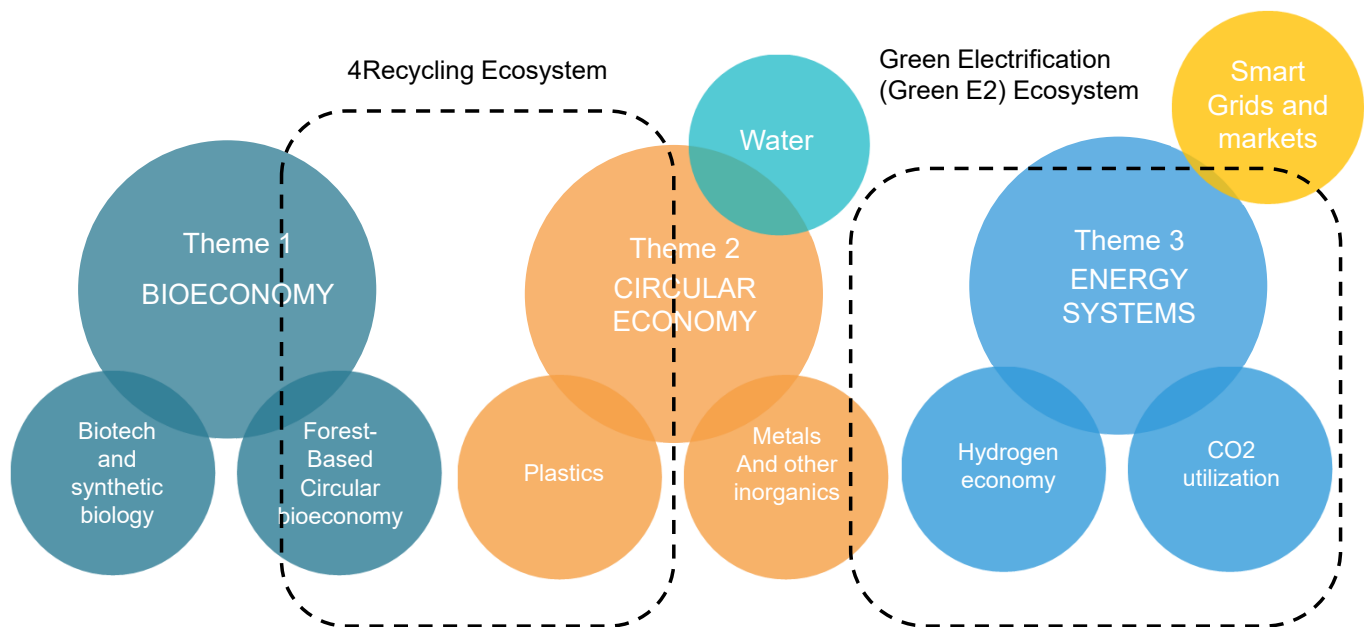
# Our basic service portfolio



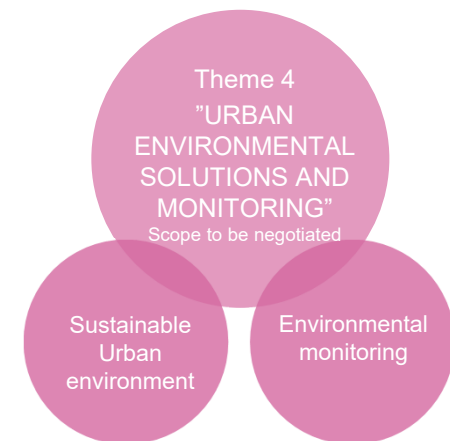


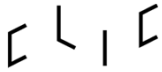
# Our current thematic groups and ecosystems

## Our current themes, sub-topics and innovation ecosystems



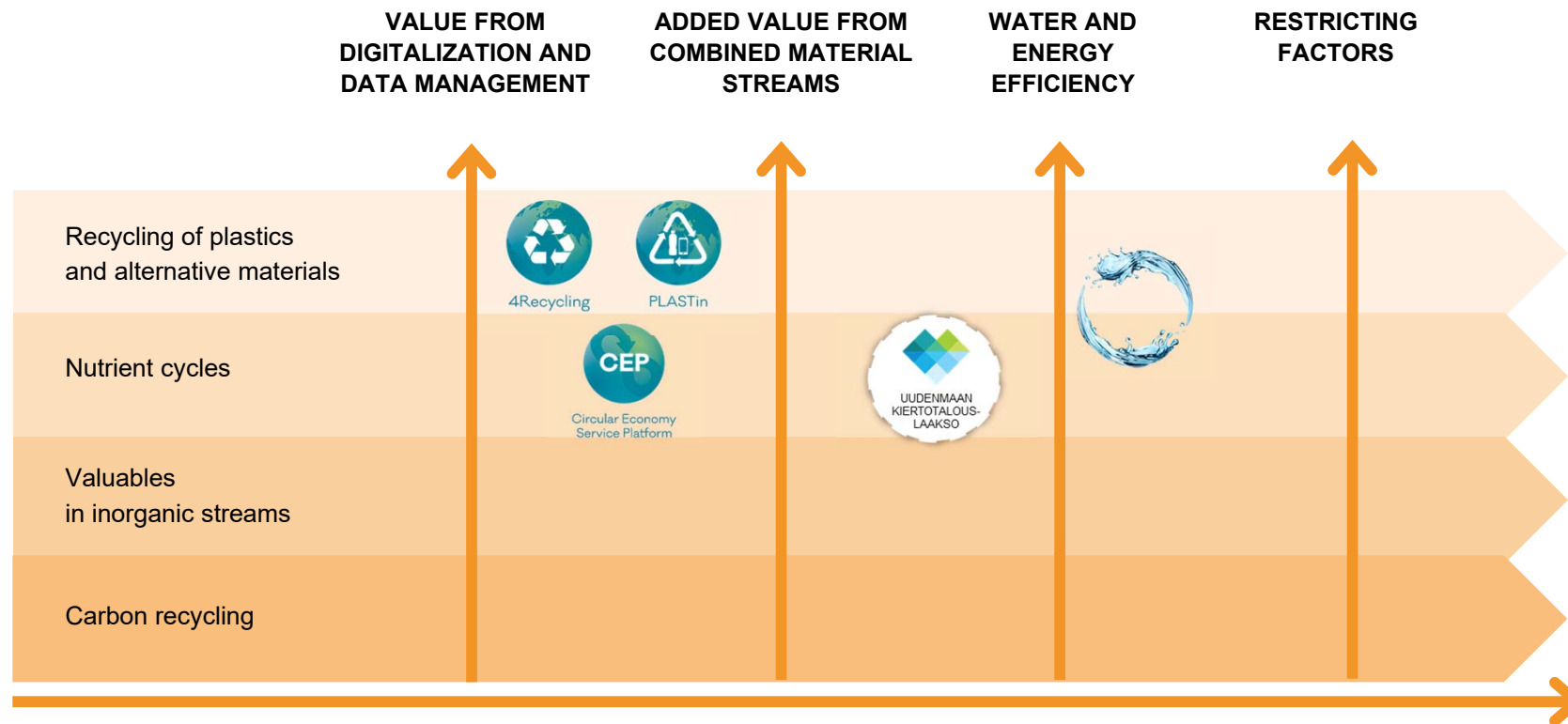
## `NEW' in 2021:



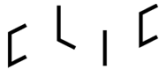


Facilitating sustainable growth

# CIRCULAR ECONOMY – Strategic research and innovation agenda







# International co-operation

## **Bioeconomy**

- Member in the new European PPP Circular Bio-based Europe ((future [BB!](#)) for circular bioeconomy
- European RDI project co-operation (ongoing BIOSWITCH and FRACTION projects)
- Continuation of supporting Finland-Sweden country-level RDI collaboration in the theme of bioeconomy

## **Circular economy**

- Member in the new European Partnership Process for Planet (future [SPIRE](#)) to influence on the topics of future EU RDI financing for circular economy and material&energy efficiency

## **Energy**

- Building a new Nordic partner network for CLIC to boost Nordic co-operation in European calls during 2021
- Acting actively in European Clean Hydrogen Alliance and Hydrogen Europe, and objective to become a member in Process for Planet (future [SPIRE](#))
- Building the new European Partnership Clean Energy Transition (CETP) in co-operation with the Ministry of Economic Affairs and Employment of Finland and Business Finland



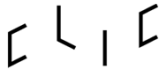
## Case: Tackling the Plastics Challenge



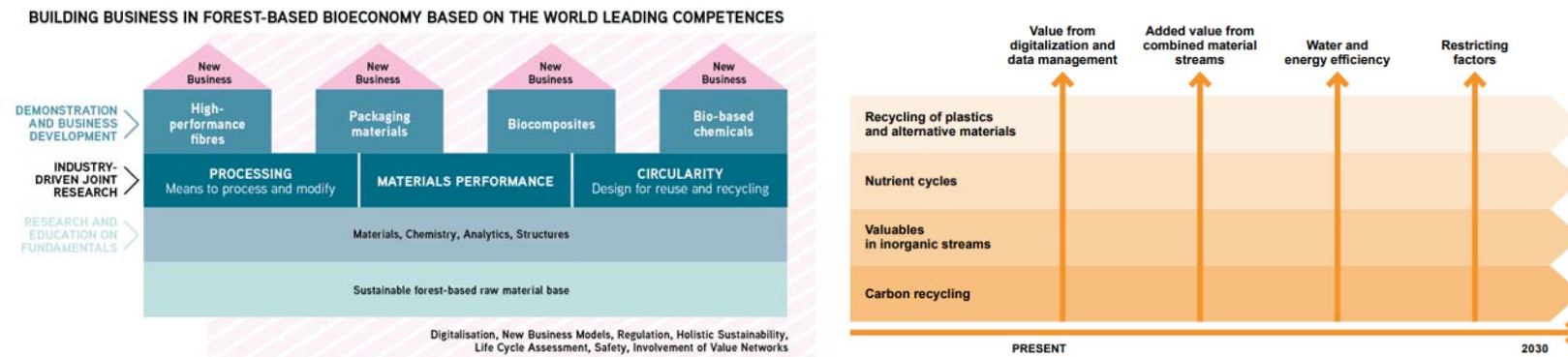
# 4Recycling ecosystem

- ✓ Creates a common Vision and Roadmap to tackle the challenges and to capture the opportunities in plastics' recycling and bio-based material business.
- ✓ Facilitates cross-sectoral co-operation to jointly carry out market shaping activities for better operational environment
- ✓ Identifies knowledge gaps and prepare needed collaborative RDI projects to fill the gaps.
- ✓ Connects with selected international actors and collaborators
- ✓ Collects information on public projects and relevant actors in Europe

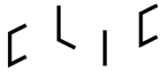




# Strategy basis



[SRIA Forest-based Circular Bioeconomy](#)  
[SRIA Circular Economy](#)

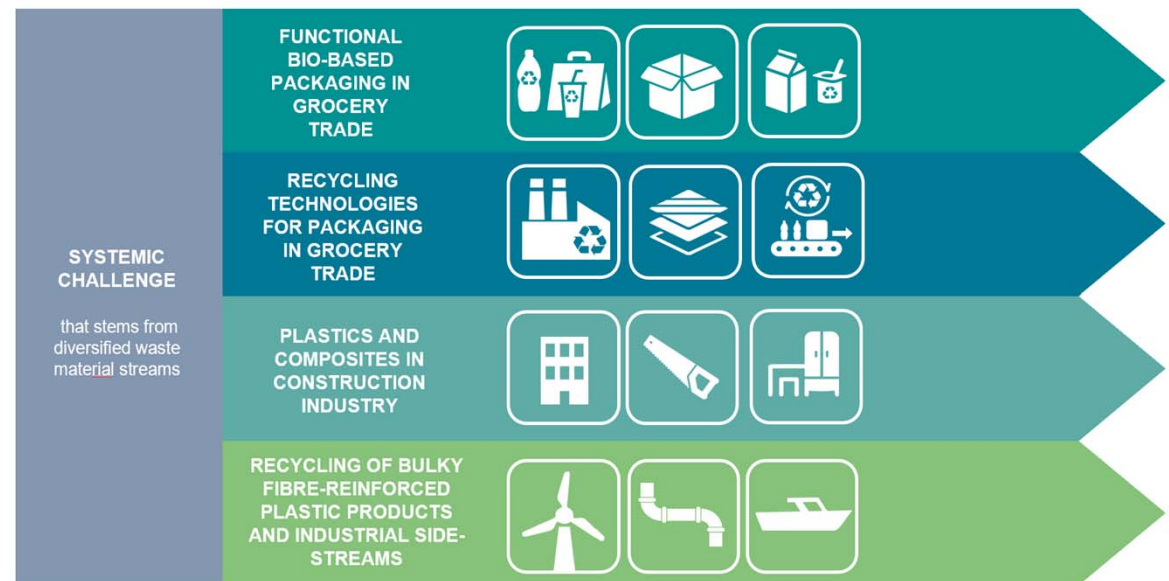


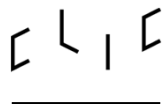
# 4Recycling ecosystem tackling Plastics challenge

*We are building a pioneer community to develop new biobased alternatives to plastics and new plastics recycling technology and solutions.*

*Together we can boost positive development towards a World without waste plastics found in the nature.*

**Goal:** Create system-solutions to introduce a profitable but sustainable market for plastics recycling and for substitutive biobased materials.





Facilitating sustainable

## Ecosystem collaboration

### Projects

### Supporting companies

### Steering group

EXPANDFIBRE  
fortum Metsä

One project  
in GAP-  
procedure  
(02/2022)



BUSINESS  
FINLAND

KEMIANTEOLLISUUS



NESTE



Pending for  
approval of  
European  
partnership  
(2/2022)





PLASTin

# ALL-IN for Plastics Recycling - PLASTin

# Background and justification of PLASTin

- In Europe, around 27 million tonnes of consumer plastic waste is generated annually
- Environmental concerns
- Tightening regulation
- Large share of plastics mixed with other waste
- Demand for recycled plastics is not well developed
- Vast need for improvement
- Potential for new business
- Research and development needed especially for challenging plastic materials





# PLASTin

- Business Finland funded co-innovation project
- 2,81M€, 2020 – 2022

## Objectives

- Helping the plastics industry actors to develop
  - systemic and
  - environmentally optimized
  - recycling concepts
- Focus on the recycling of
  - difficult plastics and
  - turn the challenges into new business opportunities

# PLASTin Partners



## CORE PARTNERS



PLASTin

## RESEARCH PARTNERS



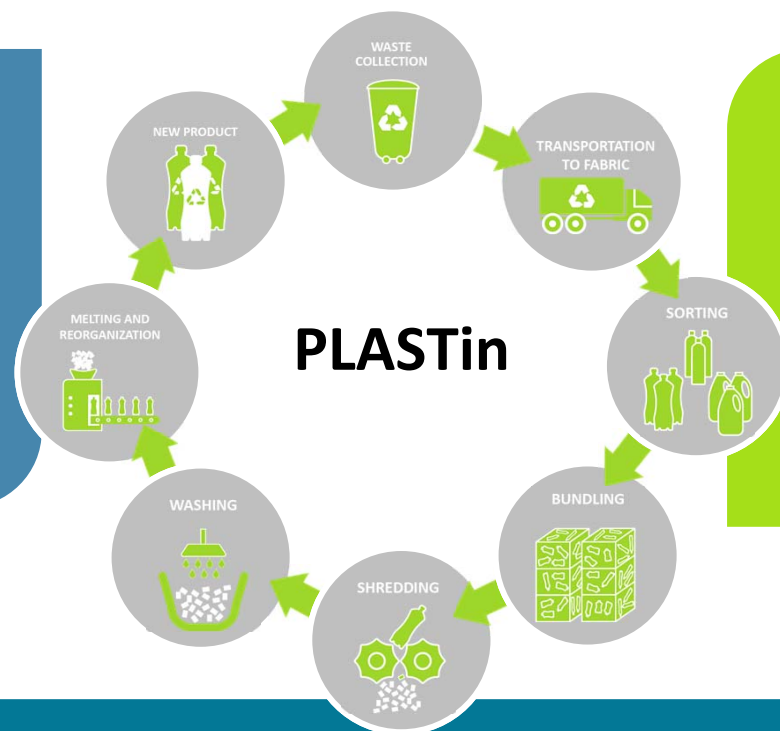
## COLLABORATIVE PARTNERS



# Work structure and content

## MARKET SYSTEM AND SHAPING

- Analysis of future material flows for municipal plastic waste in EU
- Systemic sustainability now and in the future
- Potential, acceptance and demand for the future recycled plastics
- Regulatory aspects



## RECYCLING TOMORROW

- Optimal collection and pretreatment system for scalable plastics recycling
- Environmentally optimized case systems for plastics recycling
- Enabling technologies
- Industrial acceptance of recycled material

## RECYCLING OF CHALLENGING PLASTIC FRACTIONS

### Waste from Electrical and Electronic Equipment (WEEE)

- Improved management of harmful additives used in WEEE plastics

### Liquid board packaging (LBP)

- Improved utilization of plastic used in coating of liquid board packaging

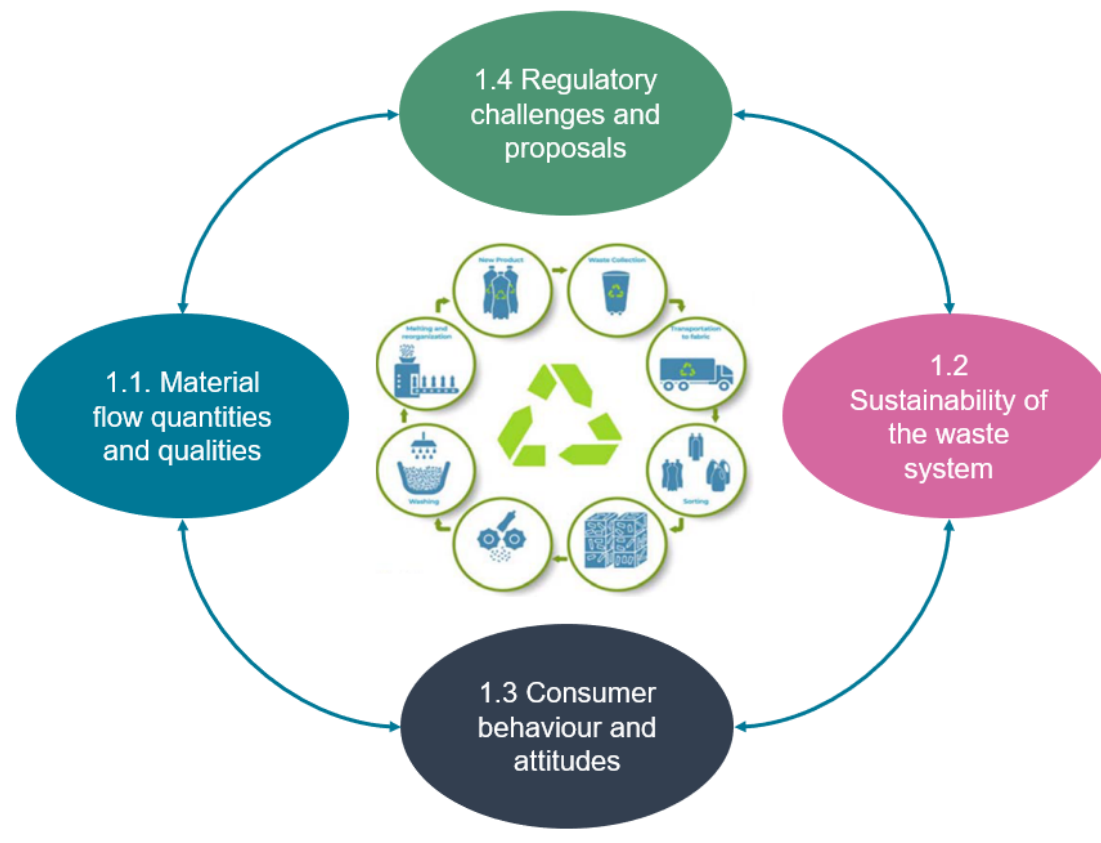


PLASTin

# PLASTin Results

## Market system and shaping

# Theme structure

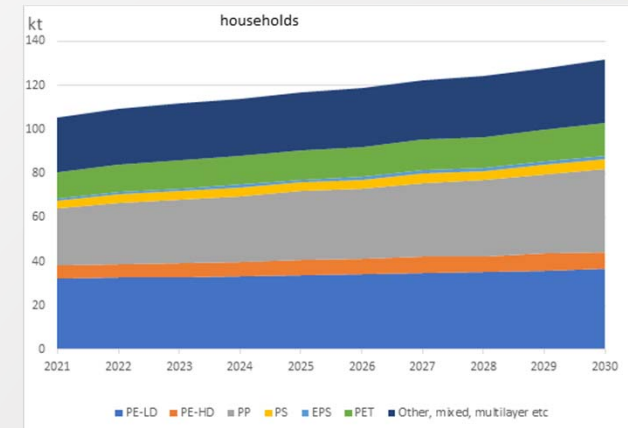


## Task 1.1 Analysis of future material flows for municipal plastic waste in EU



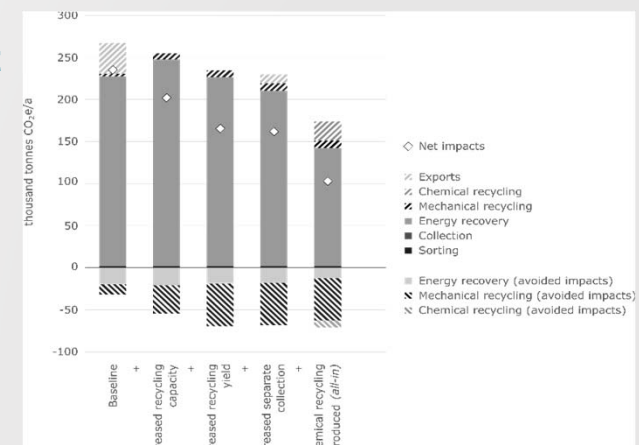
PLASTin

- **Polyethene** and **polypropylene** most used polymers
- Plastic packaging waste generated in Finnish households was estimated to increase **ca 35 % by 2030**.
- Packages are getting **lighter and thinner**. Package design is driven by functionality and cost, and to an increasing extent **sustainability**.



## Task 1.2 Systemic sustainability now and in the future

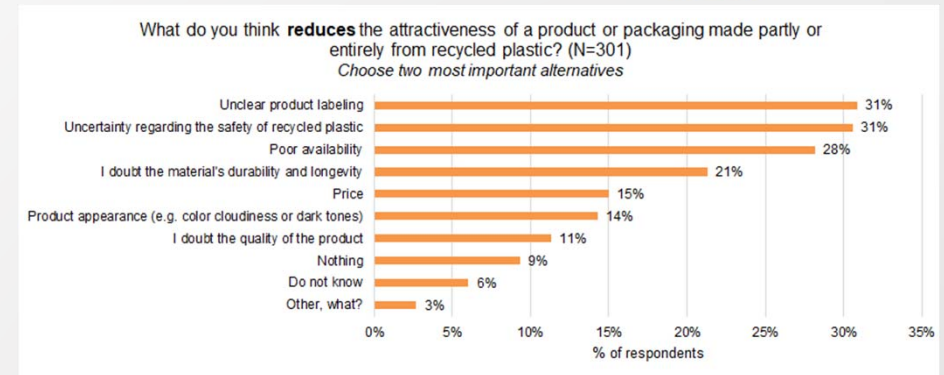
- The current climate impacts of plastic packaging waste system are **230kt CO2e per year** (excl. exports)
- The impacts of **various changes** are studied (incr. recycling capacity, incr. recycling yield, incr. collection, chemical recycling)
- **Combination most efficient:** In total, a 56% reduction in climate impacts can be reached if all above mentioned changes are implemented consecutively.



## Task 1.3 Potential, acceptance and demand for the future recycled plastics



- Consumer preferences for recycled plastic products **positive** in Finland.
- E.g., the respondents are **actively** recycling plastics, **satisfied** with acquired products but stating that there are **too few products available** from recycled plastics.
- More attention paid on **availability**, product selection, **safety** aspects, **labelling** and information on recycled plastics.



## Task 1.4 Regulatory aspects

- The regulatory framework in the area is **rapidly changing** and will continue to do so, creating uncertainty and making it a **less attractive** target for investments.
- **Keeping up** with rapidly changing requirements, utilizing possibilities to **influence** the forthcoming requirements, **promoting** recyclability and **building up product data** transfer are mentioned as recommendations for industry actors.

### General recommendations **for industry actors**:

1. Attention should be paid to keeping up with rapidly changing requirements.
2. Regulatory change opens possibilities to influence the forthcoming requirements.
3. Recyclability is likely to be promoted, design for it will presumably be profitable.
4. There will be increasing demand for data transfer on plastic products composition, origin, previous use, recycling information and identification of substances in differences matrixes.





# Kiitos!

Pirjo Kaivos

[pirjo.kaivos@clcinnovation.fi](mailto:pirjo.kaivos@clcinnovation.fi)

CLIC