



Svensk Plaståtervinning

**Site Zero: one step closer to circular economy
for plastic packaging from households**

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Vinnare av Dagens Industris
Årets impactbolag 2022

Svensk Plaståtervinning

2018

Established

100+

Number
of employees

2022

Impact-Gazelle
of the year
(Dagens industri)



Headquarter, sorting and
recycling facility in Motala

Owned by

Plastic industry federations (IKEM + SPIF),
FMCG trade association (DLF),
Swedish Commerce,
Swedish Groceries (SvDH)



The Growing Challenges of Household Plastic Packaging



- Increasing amounts of plastic packaging
- Wide range of different plastic types – complex packaging designs
- Consumer behaviours
 - Littering
 - Willingness to source separate
- Lack of infrastructure for advanced sorting and high quality recycling

These challenges contribute to the overall inefficiency in plastic recycling and drive up the levels of plastic incineration and landfill

Site Zero

Sorted
plastic types:

12

fractions

Technology:

+60

digitalized sensors

Capacity:

200,000

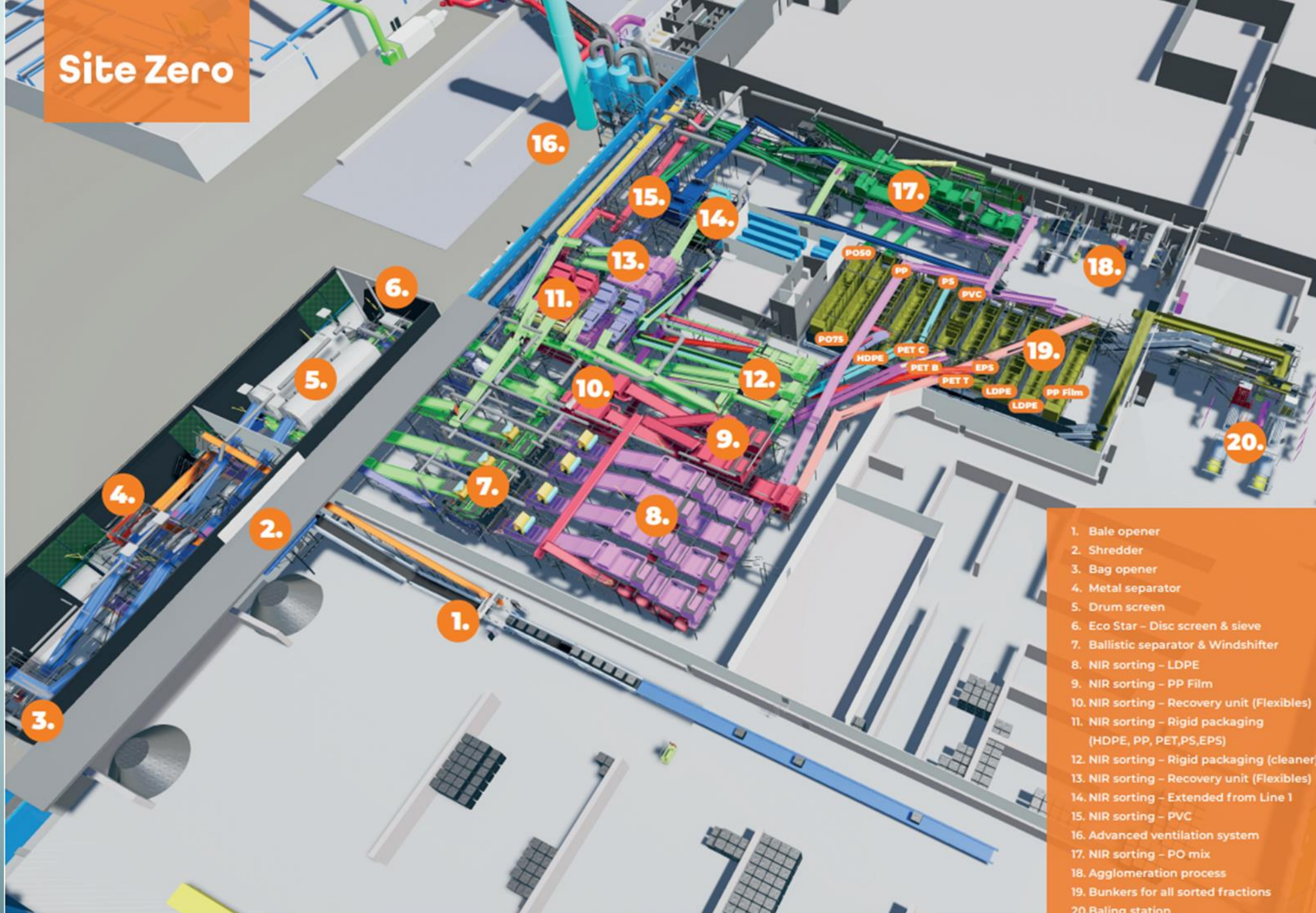
tons

Speed:

1,000

packaging/sek

Site Zero



1. Bale opener
2. Shredder
3. Bag opener
4. Metal separator
5. Drum screen
6. Eco Star - Disc screen & sieve
7. Ballistic separator & Windshifter
8. NIR sorting - LDPE
9. NIR sorting - PP Film
10. NIR sorting - Recovery unit (Flexibles)
11. NIR sorting - Rigid packaging (HDPE, PP, PET,PS,EPS)
12. NIR sorting - Rigid packaging (cleaner)
13. NIR sorting - Recovery unit (Flexibles)
14. NIR sorting - Extended from Line 1
15. NIR sorting - PVC
16. Advanced ventilation system
17. NIR sorting - PO mix
18. Agglomeration process
19. Bunkers for all sorted fractions
20. Baling station

Site Zero

Circular recycling

Phase 1: 2023

Sorting of 12 plastic types:

- Rigid PP
- Rigid HDPE
- Flexible PE
- Flexible PP
- PET-bottles (transp)
- PET-bottles (colored)
- PET-trays (transp)
- PS
- EPS
- PVC

- 2 Polyolefin-mixes, metal and rejects

Agglomeration of Polyolefin-mixes

Phase 2: 2025+

**Washing/
granulation on
site**

**Chemical
recycling of
plastic mixes
and laminates**

**Energy
recovery with
CCS/CCU**

Towards a circular and climate neutral plastic packaging value chain

Mechanical recycling vs Chemical Recycling

Mechanical recycling

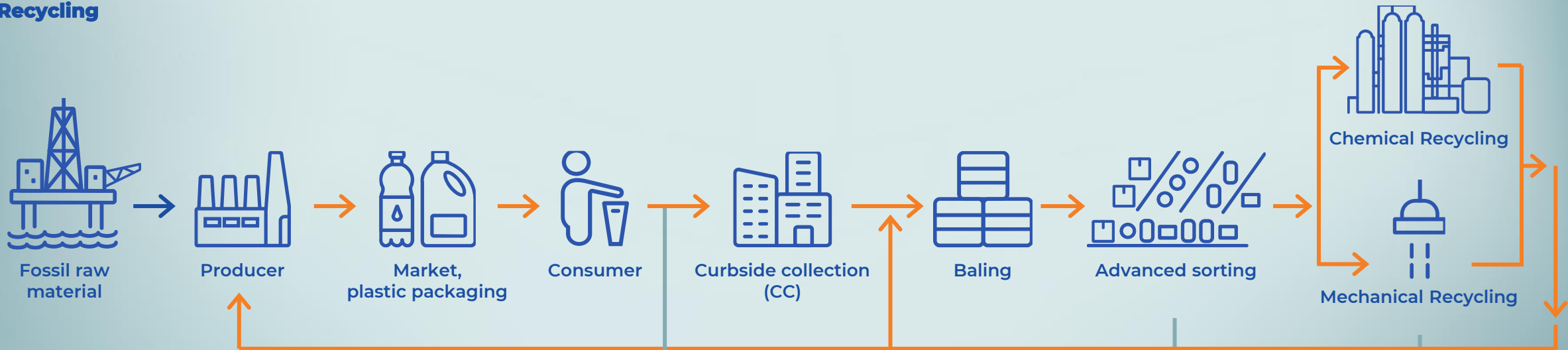
- Process:
 - Involves sorting, washing, and shredding plastics into flakes, which are then melted and reformed.
- Benefits:
 - Lower energy consumption compared to chemical recycling.
 - Well-established technology with existing infrastructure.
- Limitations:
 - Quality of recycled material may degrade over multiple cycles.
 - Limited to certain types of plastics (e.g., PET, HDPE).

Chemical recycling

- Process:
 - Breaks down plastics into their chemical building blocks, enabling the production of virgin-like quality materials.
- Benefits:
 - Capable of recycling complex and multi-layered plastics that mechanical methods cannot handle.
 - Produces higher-quality recycled products suitable for demanding applications.
- Limitations:
 - Higher energy consumption and more complex technology.
 - Currently requires significant investment in new infrastructure.

Our recycling system in a few years from now

Recycling



Energy Recovery



New **EU-legislation (PPWR)** proposed to start 2030



Recyclable
packaging:

100%



Recycling
rate:

55%



Plastic Packaging
with food contact:

10%

recycled
content



Other
packaging:

35%

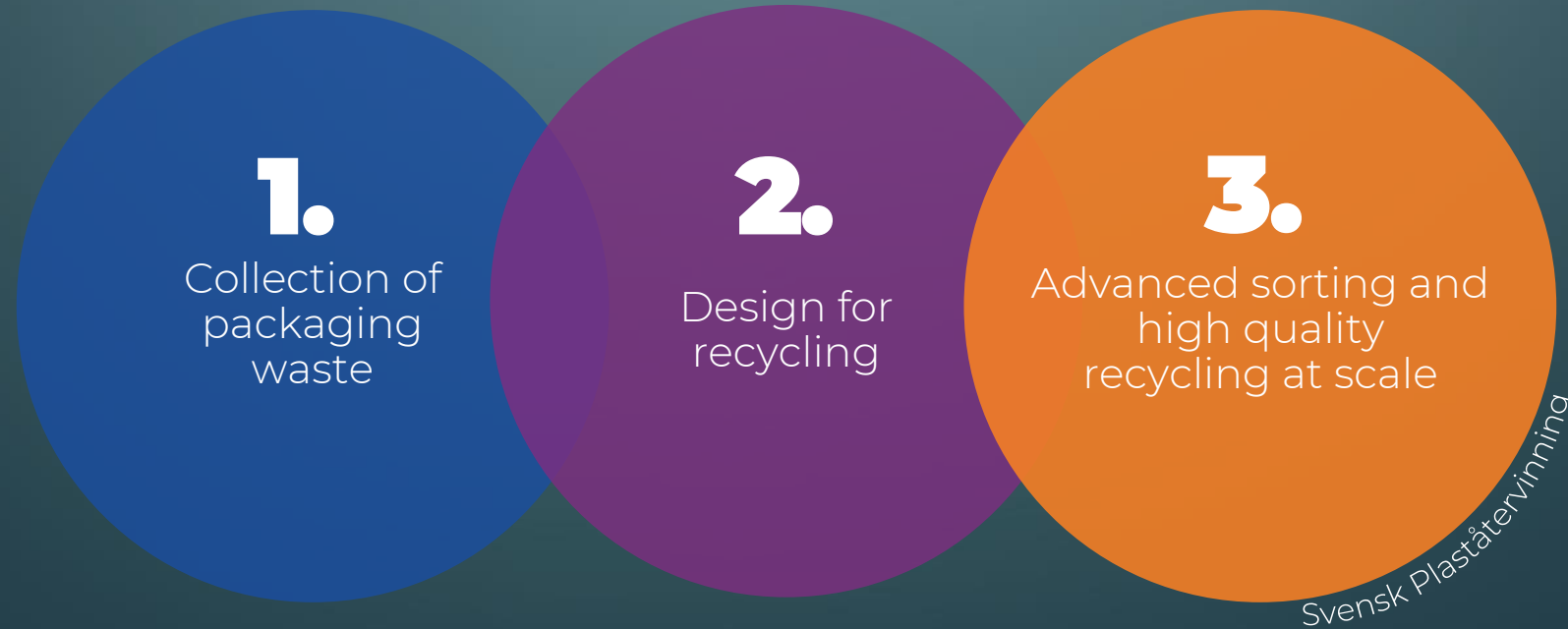
recycled
content

High-quality recycling

As defined in most current PPWR proposal:

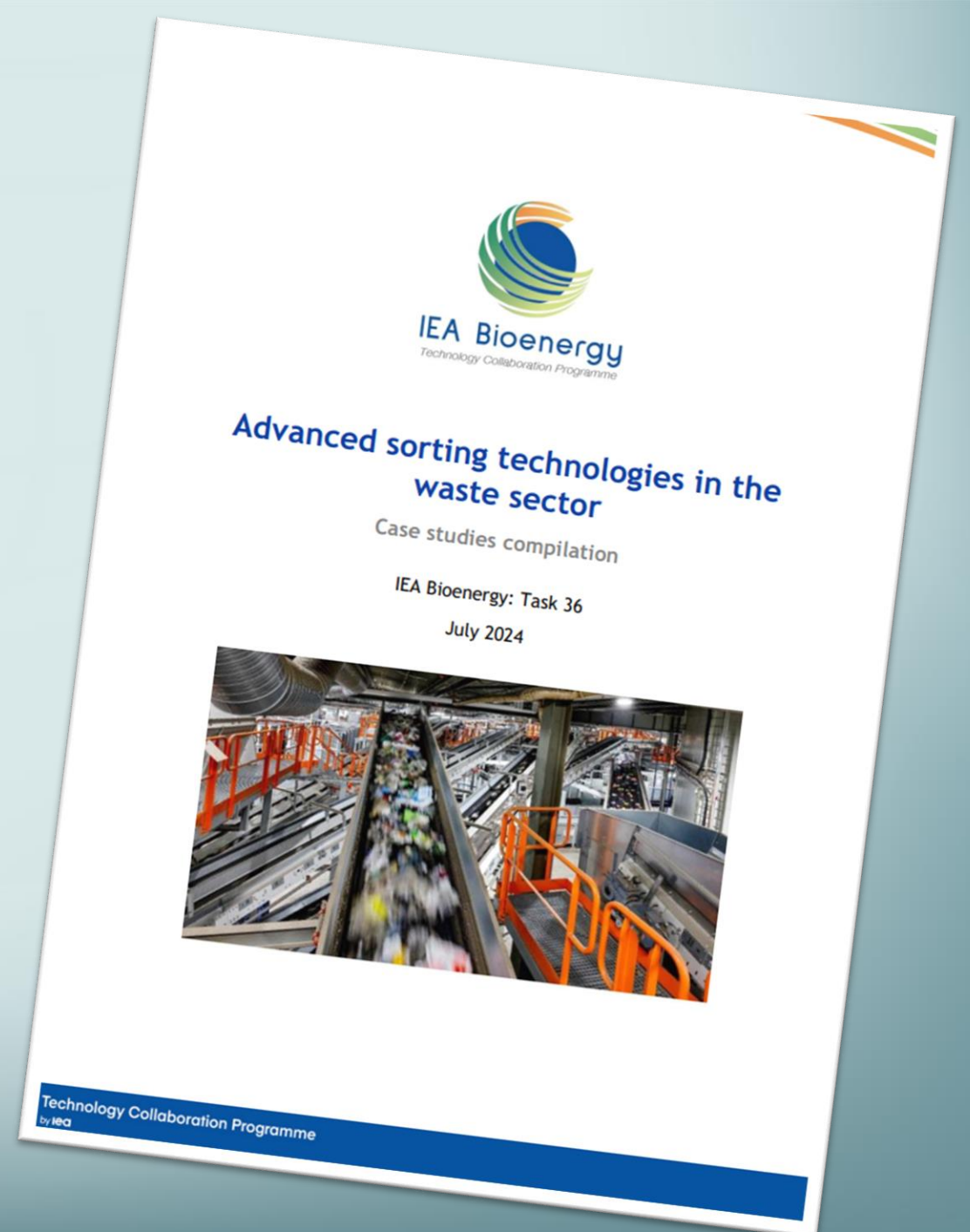
‘high quality recycling’ means any recovery operation /... / that ensures that the **distinct quality** of the waste collected **is preserved or recovered** during that recovery operation, so that it can be subsequently recycled and **used in the same way and for a similar application**, with minimal loss of quantity, quality or function;

How do we make plastic packaging part of the circular economy?



Read more about Site Zero

<https://www.ieabioenergy.com/blog/publications/advanced-sorting-technologies-in-the-waste-sector-case-studies-compilation/>





Questions?