HOW TO IMPROVE CIRCULARITY VIA THE LATEST SORTING TECHNOLOGIES?

PET CORE WEBINAR

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ZOOM Webinar

19.03.2024

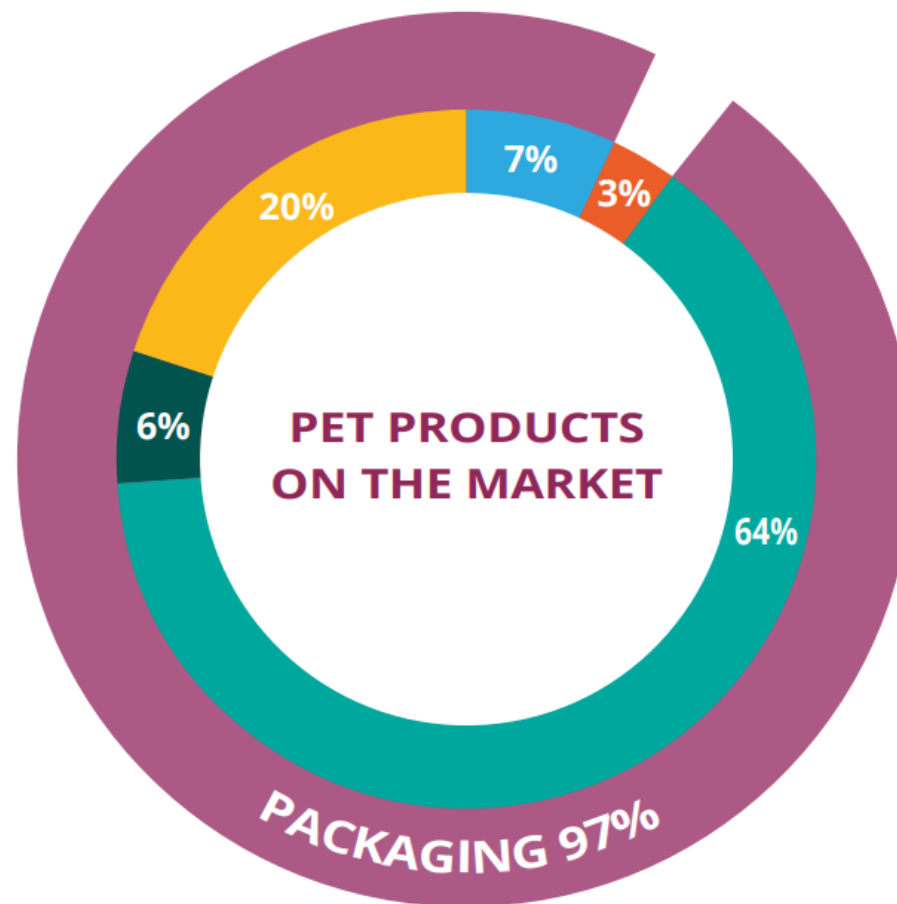In 2020 approx. **3.6 Mt of PET bottles** and **1 Mt of PET trays** were placed on market in the EU27+UK.*

Compared to 2018, this is an increase of **6% for PET bottles** and **11% for PET trays**.*

The main application is packaging with approx. **70%** on **bottles** and **20%** on **trays**.*

2040 forecast:
- 4.2 Mt PET bottles POM
- 1.7 Mt PET trays POM

*excluding fibre (polyester) and monofilament.

PET PRODUCTS ON THE MARKET

PACKAGING 97%

7%   3%   64%   6%   20%

- Bottles (beverage)
- Bottles (non-beverage)
- Trays
- Flexible Packaging
- Other

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Legislation push towards higher recycled content

EU Single-Use Plastics Directive targets for plastic bottles

Collection targets for plastic bottles

2025 — 77%
2029 — 90%

■ Collected containers   ■ Unrecovered containers

Targets for recycled content in plastic bottles

2025 — 25%
2030 — 30%

■ rPET   ■ Virgin plastic

Brand owner commitments towards sustainability targets

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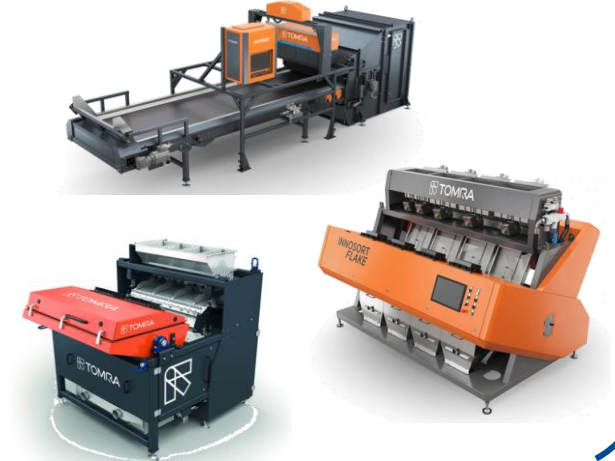# The waste to value process in PET – schematic view

Collection

Recovery

Recycling

Collected through DRS*
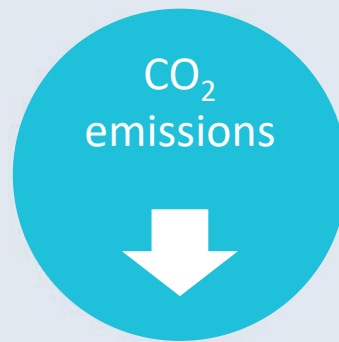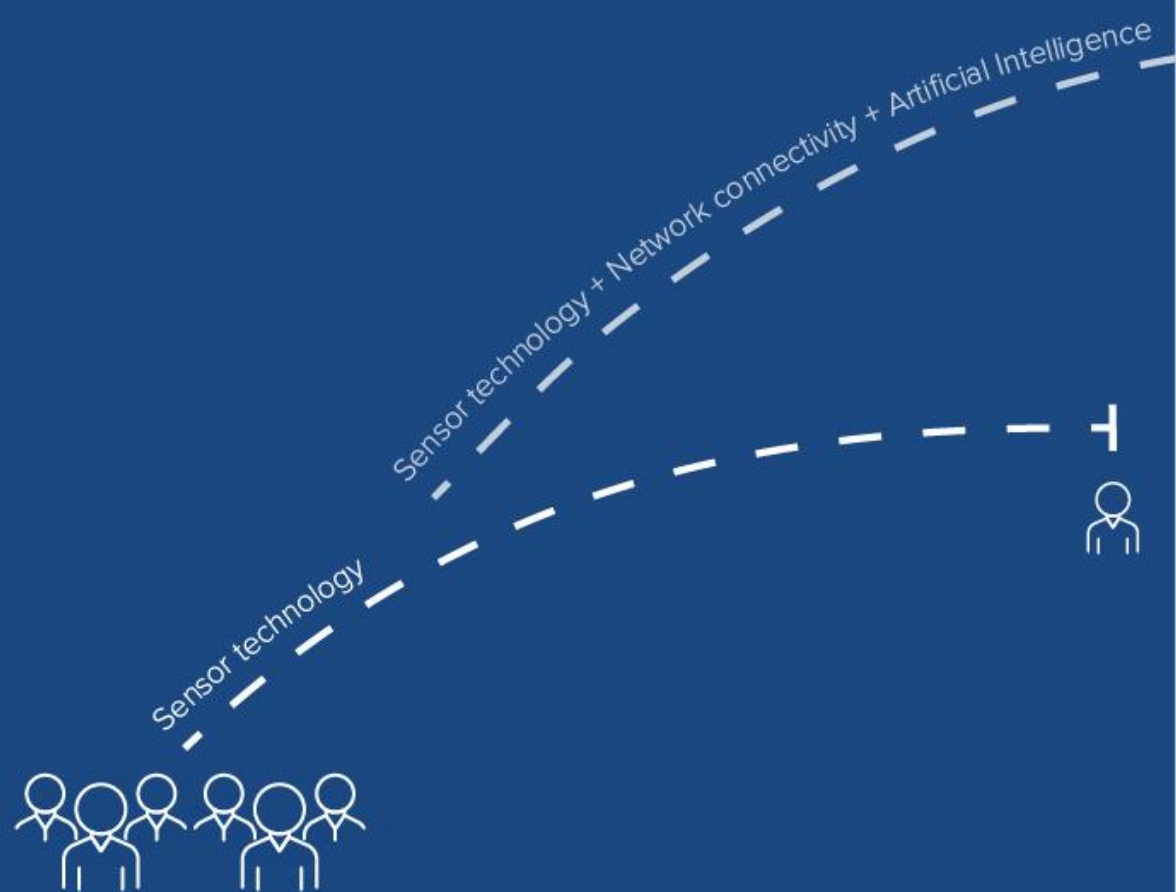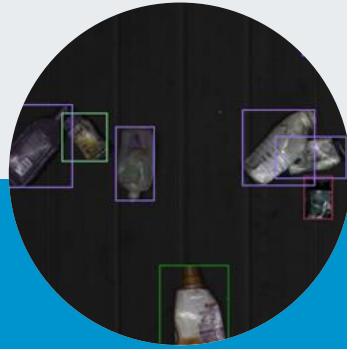
*DRS = Deposit Return Scheme/System

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MOVING TO THE NEXT LEVEL

Sensor technology

Sensor technology + Network connectivity + Artificial Intelligence

Sorting performance

CO_2 emissions

Advanced sensor-based solutions in the waste to value process of PET

State-of-the-art NIR-VIS technology (**AUTOSORT**) e.g. for PET color sorting or **PET bottles vs. trays**

GAINnext using **AI/Deep Learning** for advanced sorting tasks e.g. **PET food vs. non-food or** advanced PET cleaning (textiles, opaque bottles etc.)

AUTOSORT *FLAKE* and **INNOSORT** *FLAKE* for PET/PO flake purifying e.g. <10ppm PVC or <100ppm color contamination
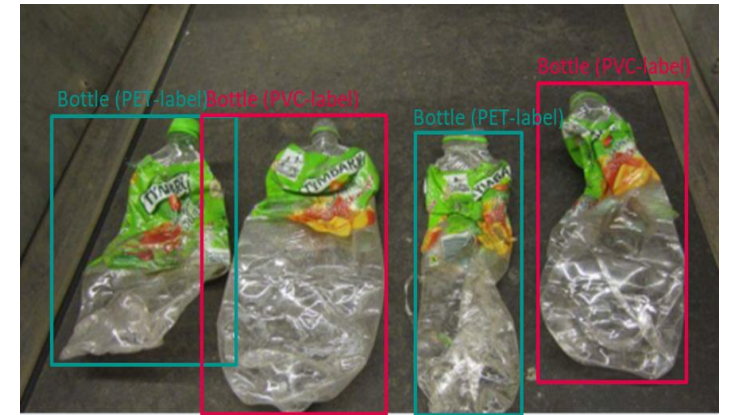
Digital solutions like **TOMRA Insight** or QC systems of our partner Polyperception to monitor the process in recovery and recycling facilities (**process analysis, online quality control**)

AI/Deep Learning for Sensor-Based Sorting

Combination with state-of-the-art NIR-VIS technology

Boosting circularity with new applications:

- **PET food vs. non-food**

- **PET Cleaner (ejecting Opaque white, textiles, films, full sleeves)**

Flake sorting/purifying solutions

Built for maximum precision and yield

Reliably detects all unwanted polymers

Dedicated metal sensor

Dedicated full-color cameras for precise color grading

High-yield and minimal losses thanks to software and mechanical design advancements

Integrated label and light-fraction separator*

Advanced onboard statistics and TOMRA Insight integration for cloud-based data analysis

Reliable, easy to operate and maintain.
Working temperature up to +40°C without additional cooling.

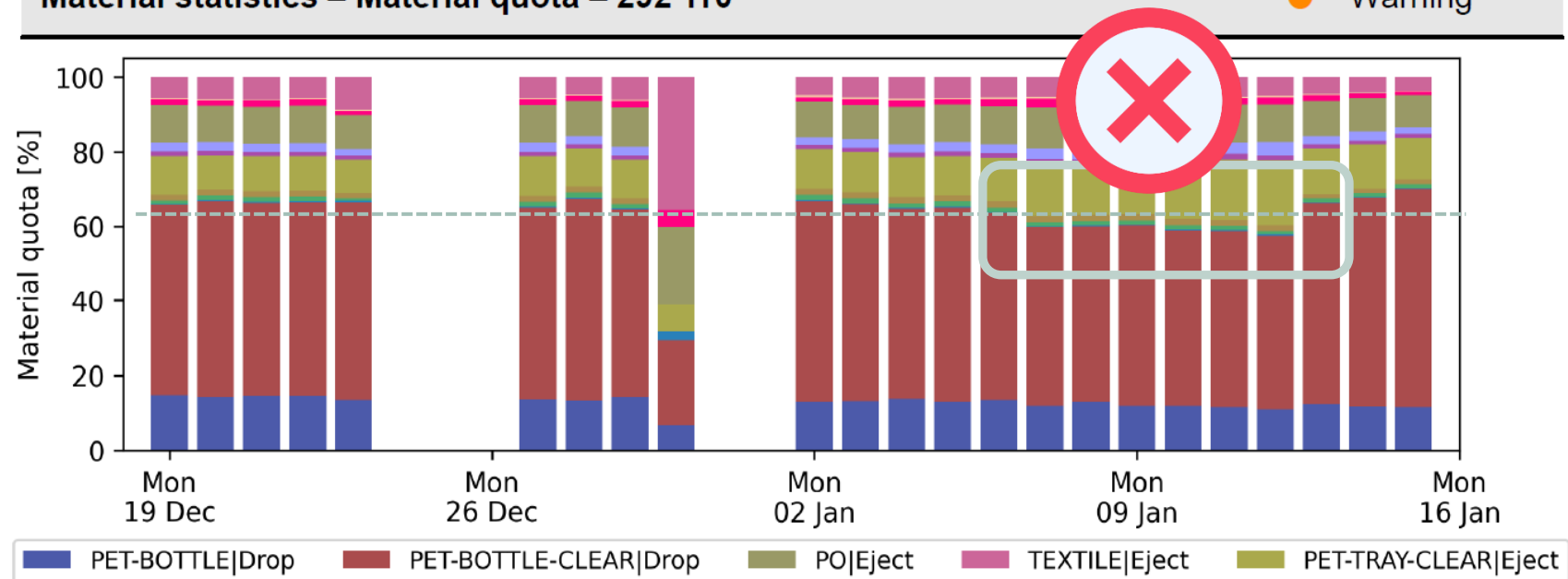TOMRA

Svensk Plaståtervinning

Automated monitoring of…

- ✓ machine heath parameters
- ✓ material throughput per machine
- ✓ incoming materials composition per machine

… enable early detection of machine sorting deviations with saved costs of up to 8000€ per incident

Material statistics – Material quota – 292 Tr0   ● Warning

Material quota [%]

Mon 19 Dec   Mon 26 Dec   Mon 02 Jan   Mon 09 Jan   Mon 16 Jan

■ PET-BOTTLE|Drop   ■ PET-BOTTLE-CLEAR|Drop   ■ PO|Eject   ■ TEXTILE|Eject   ■ PET-TRAY-CLEAR|Eject
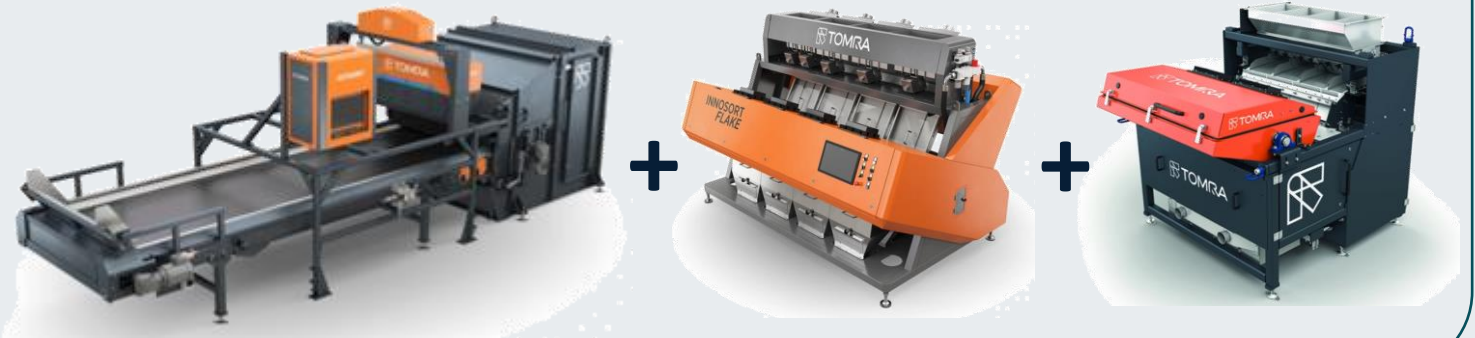
Holistic sensor-based sorting solution in PET recycling for maximum value

Recovery

Recycling

TOMRA Insight for process control

THANK YOU VERY MUCH FOR YOUR ATTENTION