Green technologies: enablers of sustainable & circular economy

5th WCO Symposium on Greening the HS

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Main objectives:

- Promotion of materials recycling and recyclability
- Facilitation of free and fair trade in recyclables and secondary raw materials
- Protection of the environment
- Sourcing of information for members and industry worldwide
- Representation of the recycling sector in the International fora
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Ferrous metals

Non-ferrous metals

Paper

Textiles

Stainless Steel & Alloys

Plastics

Tyres & Rubber

E-Scrap
BIR Proposal on Environmental Goods Agreement

BIR proposal to **consider recycled materials** and machinery & equipment used in the recycling industry as **Environmental Goods**

**Recycled materials** contribute to resource efficiency, minimising the pressure on natural resources, enabling carbon emission savings, and promoting a more sustainable and circular economy.

The machinery and equipment **used in the recycling process** are also listed in the proposal as they are essential to **optimising the sorting and processing of waste** into quality-controlled recycled raw materials, improving resource efficiency and achieving a circular economy.
The environmental credentials of technology - can we identify the green status of equipment?

What is meant by green technology?

“Green technology is an umbrella term that describes the use of technology & science to reduce human impacts on the natural environment.”
Machinery & equipment in the recycling sector

- For collection (870590)
- For sorting & separation (8474, 8479, 8505)
- For size reduction (8462, 8479)
- For material handling (4010, 8479, 8426, 8427, 842951)
- For safety (9030)
870590: Special purpose motor vehicles, other than those principally designed for the transport of persons or goods (for example, breakdown lorries, crane lorries, fire fighting vehicles, concrete-mixer lorries, road sweeper lorries, spraying lorries, mobile workshops, mobile radiological units):

Trucks for collecting and compacting separated curb-side recyclables
Reverse vending machines for collecting plastic, aluminium, glass containers (deposit refund / EPR)
Sorting & separation machinery (8479)

- Trommels
- Sink & float plant

used in the recycling process to separate and sort materials enabling the recovery and recycling of valuable resources for a circular economy.
Sorting & separation machinery (8474)

- Wind sifters
- Sensor based and optical sorting technologies

used in the recycling process to separate and sort materials, enabling the recovery and recycling of valuable resources for a circular economy.
Sorting & separation (9027)

9027: Instruments and apparatus for physical or chemical analysis (for example, polarimeters, refractometers, spectrometers, gas or smoke analysis apparatus); instruments and apparatus for measuring or checking viscosity, porosity, expansion, surface tension or the like; instruments and apparatus for measuring or checking quantities of heat, sound or light (including exposure meters); microtomes

Handheld analyser: To get fast and accurate analysis for hand sorting metal alloys, improving resource efficiency & sustainability
Wire stripers used by recyclers to strip the insulation material from the wire and enable recycling of both metals and plastic fractions.

Wire granulators used by recyclers to reduce wire and cables into granules & separate metals from non-metals to meet recycled raw materials specifications.
Sorting & separation machinery (8505)

- **Magnetic separator**: Magnetic drum for separating ferrous metals from other waste and scrap, enabling the recovery and recycling of valuable resources for a circular economy.

- **Eddy current sorters**: Electromagnetic separator used to separate non-ferrous metals from an input waste stream, enabling the recovery and recycling of valuable resources for a circular economy.
Size reduction machinery & equipment (8462)

8462: Machine tools (including presses) for working metal by forging, hammering or die-stamping; machine tools (including presses) for working metal by bending, folding, straightening, flattening, shearing, punching or notching; presses for working metal or metal carbides, not specified above.

Shears come in a range of sizes and capacities and are used by recyclers to shear and cut materials.
Shredders come in a range of sizes and capacities.

Recyclers use the largest shredders to shred end of life goods into fist-sized pieces such as:

- auto bodies
- home appliances

Smaller shredders are used to shred end of life goods & materials such as:

- paper
- plastics
- electrical & electronic equipment
Material handling equipment

Used in the recycling process for material handling, moving, and loading end-of-life goods for recycling & recycled materials

Cranes

Fork-lifts

Front-end shovel loaders

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Balers come in a range of sizes & capacities and are used by recyclers to compress materials into bales for ease of handling and usage.

Briquetting press: briquetted swarf has higher scrap value. Cutting fluid is removed in compliance with environmental laws. Briquettes are easily transported and requires less storage space.
Material handling equipment (4010)

4010: Conveyor or transmission belts or belting, of vulcanised rubber

Conveyors and parts: used throughout the recycling process to carry recyclable materials & raw materials from recycling.
9030: Instruments & apparatus for measuring or detecting ionising radiation

Radiation monitoring equipment & Radiation Detection Portal

Radiation detection portals and hand held monitors are used by recyclers to monitor & detect any radioactive materials inadvertently incorporated in recyclables and recycled materials.
The recycling industries are very innovative. Companies continuously seek better equipment for improving recycling processes from collection… to delivery of recycled materials to customers.

The recycling industries benefit from innovation of machinery & equipment through

- **Higher efficiency**: increasing recycling rates & improving quality
- **Digitalisation**: Transparency & improving data collection
- **Safety**: improving safety of industrial processes for workers & the environment
Recommendations

- Distinguishing machinery & equipment used for recycling from that used for other purposes
- Customs codes to encompass innovation in machinery & equipment (e.g. sorting, sensors…)
- Improve clarity and minimise ambiguity
No tariffs and no non-tariff barriers on both recycled commodities and on machinery and equipment used by the recycling industry will

- improve the market for secondary resources
- Promote circular economy
- Benefit the environment by minimising waste and reducing dependency on natural raw materials.
Any Questions?

Thank you

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