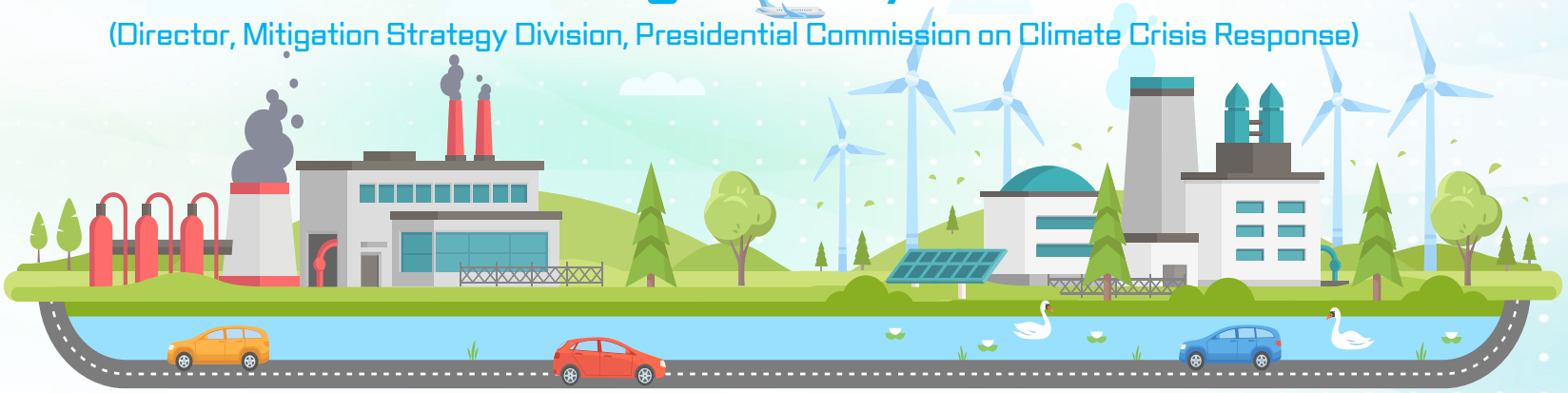
For the Transition to a Decarbonized Green Civilization

Circular Economy 2.0 Policy Directions

2026. 09. 11.

Maeng Hak-Kyun

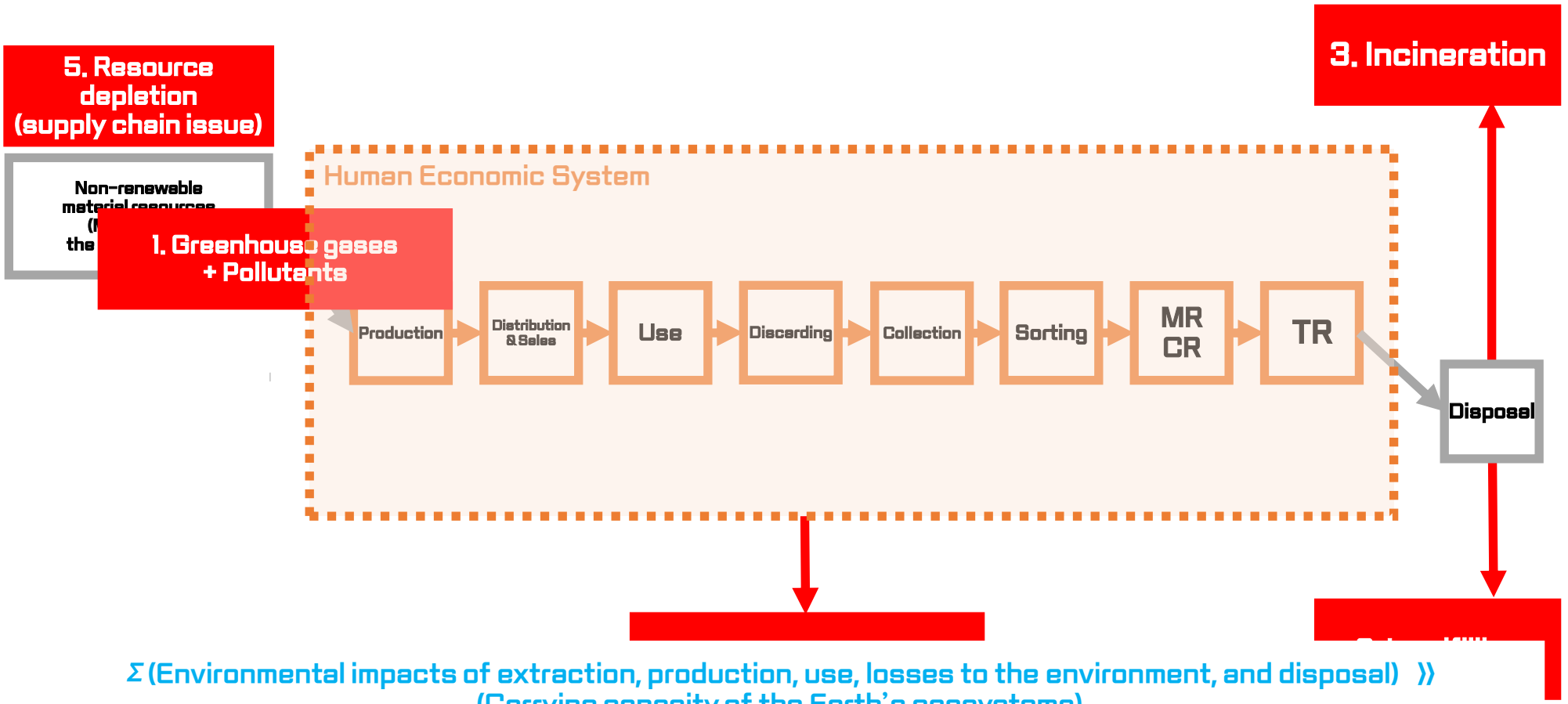
(Director, Mitigation Strategy Division, Presidential Commission on Climate Crisis Response)



The views expressed in this presentation are those of the presenter and do not represent the official position of the presenter's organization.

Part 1
Conceptual Framework for the Circular Economy

Linear Economy and the Sustainability Crisis

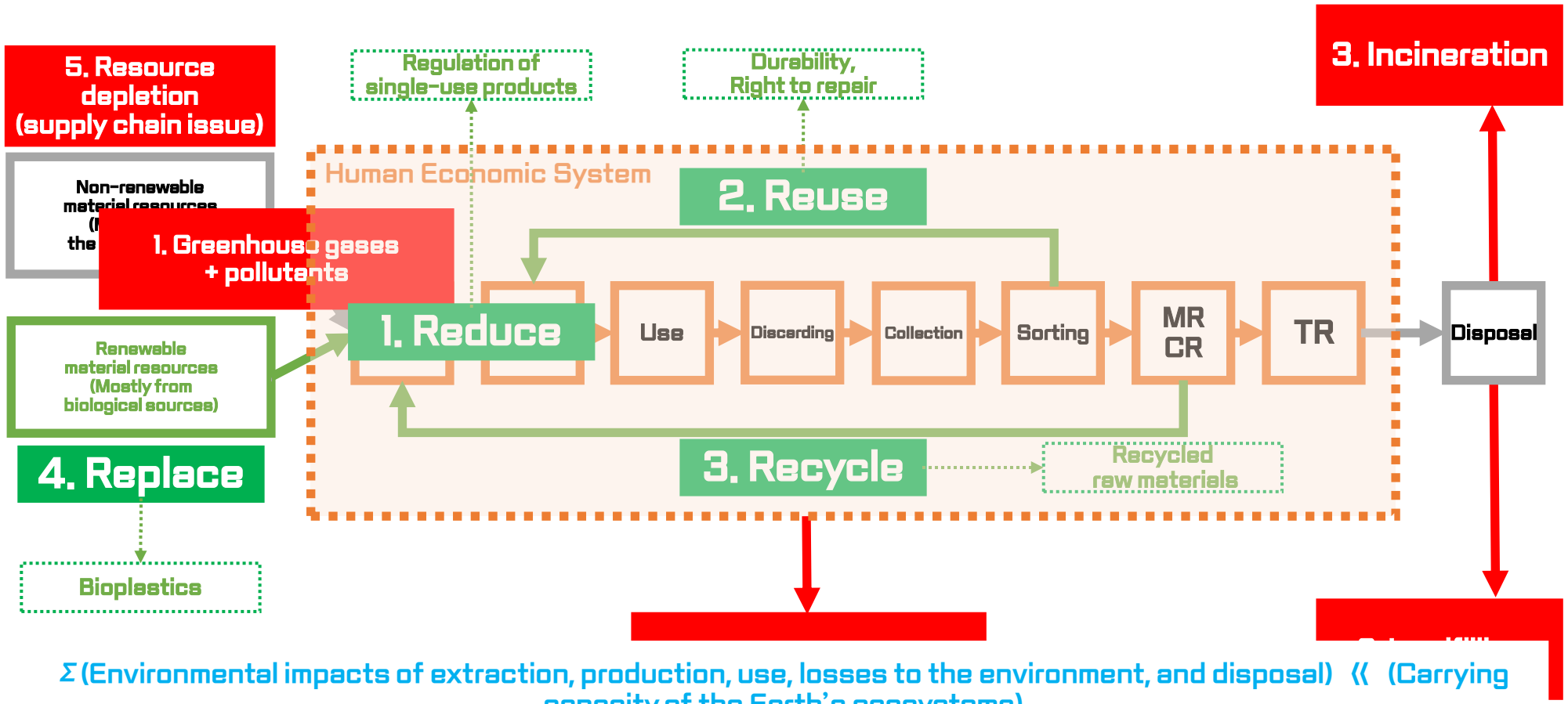


Σ (Environmental impacts of extraction, production, use, losses to the environment, and disposal) ⟩⟩
(Carrying capacity of the Earth's ecosystems)

⇒ An unsustainable material-use paradigm

e.g. microplastics

Conceptual Framework for the Circular Economy



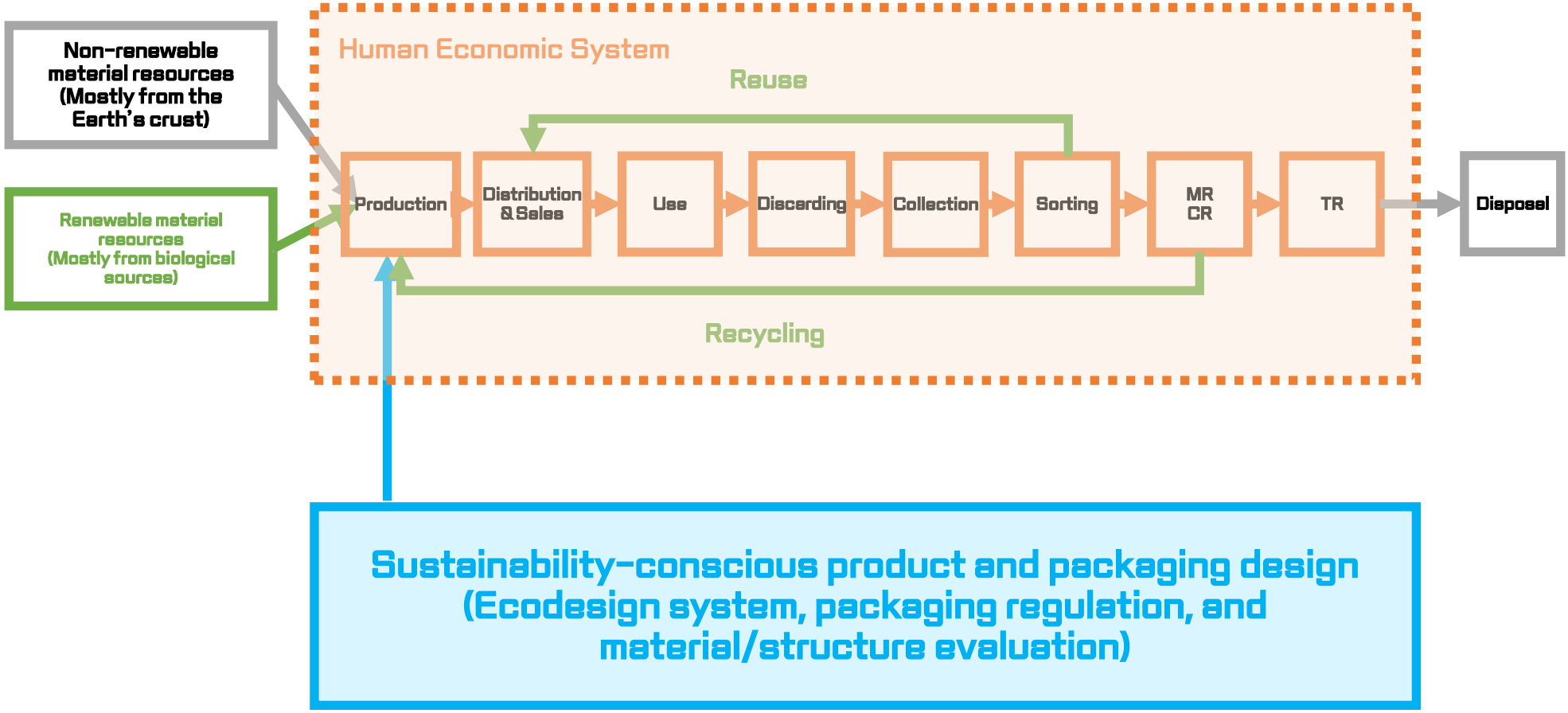
Σ (Environmental impacts of extraction, production, use, losses to the environment, and disposal) ≪ (Carrying capacity of the Earth's ecosystems)

⇒ A sustainable material-use paradigm

Part 2
Key Priorities for the Circular Economy

Circular Economy Priority1

"Up to 80% of products' environmental impacts are determined at the design phase." (European Commission)



EU ESPR 핵심 내용

1. Applicable to all physical product groups placed on the EU market

2025-2030 Working Plan: textiles and apparel, tyres, mattresses, furniture, iron and steel, aluminium, energy-related products ⇒ Additional product groups to be added progressively

2. Requires compliance with up to 16 ecodesign criteria

Environmental footprint (including carbon footprint), recyclability, restrictions on substances of concern (including substances that hinder recycling), resource use and resource efficiency, recycled content, the possibility of the recovery of materials, the possibility of remanufacturing, expected generation of waste, energy use and energy efficiency, water use and water efficiency, durability, reliability, repairability, the possibility of maintenance and refurbishment, upgradability, ...

3. Products failing to meet these requirements may be prohibited from being placed on the EU market

Compliance with ecodesign requirements (Chapter II) ⇒ Declaration of conformity and technical documentation (Chapter IV) ⇒ Implementation of the DPP (Chapter III) ⇒ Strict market surveillance (Chapter XI)

4. Sustainability-related information must be provided electronically through a Digital Product Passport (DPP)

2020 New Circular Economy Action Plan (CEAP): DPP concept formally introduced ⇒ 2023 Battery Regulation: DPP for batteries ⇒ 2024 ESPR: horizontal DPP framework for all product groups
Manufacturers establish and operate DPP servers & DPP service providers maintain backup servers ⇒ Registration in the central Digital Product Passport Registry ⇒ European Commission operates a web portal

5. Destruction of unsold products is prohibited for certain product groups, including apparel

(Chapter VI) Prohibition on the destruction of unsold consumer products ⇒ Annex VII currently lists apparel, clothing accessories, and footwear

6. Directly and uniformly applicable in all EU Member States (Directive X, Regulation O)

(Ecodesign Directive) Assessment focused primarily on energy efficiency for energy-related product groups ⇒ (ESPR) Assessment of all relevant aspects across all product groups

7. Product-specific detailed requirements are being developed through delegated acts (Ecodesign Forum currently in operation)

JRC preparatory study (stakeholder consultation) ⇒ European Commission impact assessment ⇒ Draft delegated act ⇒ Ecodesign Forum ⇒ Circulation to Member States ⇒ European Parliament and Council ⇒ Publication

Promoting the Korean-style Eco-design System (K-ESPR)

Launch of the Ecodesign Forum

- Public-private-academic consultative body for bottom-up implementation
- Institutionalization Forum (launched in Apr. 2026)
- Product-specific Forums (launched in May 2026)

Enactment and Amendment of Legislation (by H1 2027)

Designation of Covered Product Groups (by H1 2027)

- Consideration of EU regulatory developments, domestic circular use conditions, and other relevant factors
- Listed in an annex to the Enforcement Decree

Apparel, Tyres, Electronics, Steel, PV panels, ...

Development of Product-specific Criteria (from H2 2027 onward)

- Research projects conducted for each product group
- Notice of the Ministry of Climate, Energy and Environment (by H2 2027)

Durability, Ease of repair, Recyclability, Carbon footprint, Water efficiency, Hazardous chemicals, Recycled material content, ...

Information requirements (label + DPP)

Development of Relevant Standards (NIER)

Recycled Material Certification (K-eco)

Recycled Material Certification System (MCEE)

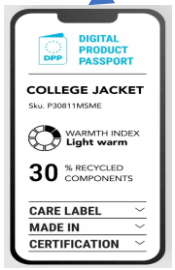
Business Compliance with the System

Compliance with performance requirements

Compliance with information requirements

- Establishment of DPP servers
- Labeling

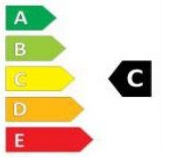
Recyclers | Consumers | Authorities



Central System

System Operation (KEITI)

(Integrated Environmental Performance Rating)



158 $kgCO_2e$

Conformity Verification

General requirements

- **Self-verification of Conformity**
  - Declaration of conformity following in-house or third-party testing and analysis

Key requirements

- **Third-party Conformity Assessment**
  - Certification following assessment by an accredited third-party body

Assessment / Testing and Analysis (Assessment Body)

Designation and Management of Assessment Bodies

(Korea Environmental Industry & Technology Institute) Assistance with the designation, revocation of designation, and supervision of assessment bodies

Market Surveillance

- Verification of whether products on the market comply with the applicable requirements

Market Surveillance Body (KEITI)

Corrective Orders, etc.

Non-compliance with Requirements

↓

Corrective Order

↓

Failure to Comply

↓

Suspension of Sales

Key Features of the EU Packaging and Packaging Waste Regulation (PPWR)

1. Applicable to all packaging placed on the EU market

(Definition) An item used by an economic operator to contain, protect, handle, deliver, or present products to another economic operator or the final user
(Three levels) Sales Packaging (primary) – Grouped Packaging (secondary) – Transport Packaging (tertiary)

2. Assessment of recyclability performance grades. Products below the required threshold may not be placed on the market.

Design for Recycling (Grade C prohibited from being placed on the market from 2030) + Recyclable at Scale (applicable fro[illegible] methodology to be finalized in 2030)

3. Mandatory minimum recycled content requirements

From 2030: single-use plastic beverage bottles (30%), PET contact-sen[illegible]ost-sensitive plastic packaging (10%), other plastic packaging (35%)

4. Prohibition on the use of ha[illegible] and substances that hinder reuse or recyclino

(Current) Hazard[illegible] VI, and PFAS → (Future) Investigation by December 31, 2026 into substances of concern that hi[illegible]

Korea is also expected to introduce packaging regulations equivalent to the PPWR.

[illegible]Single-use plastics for certain uses

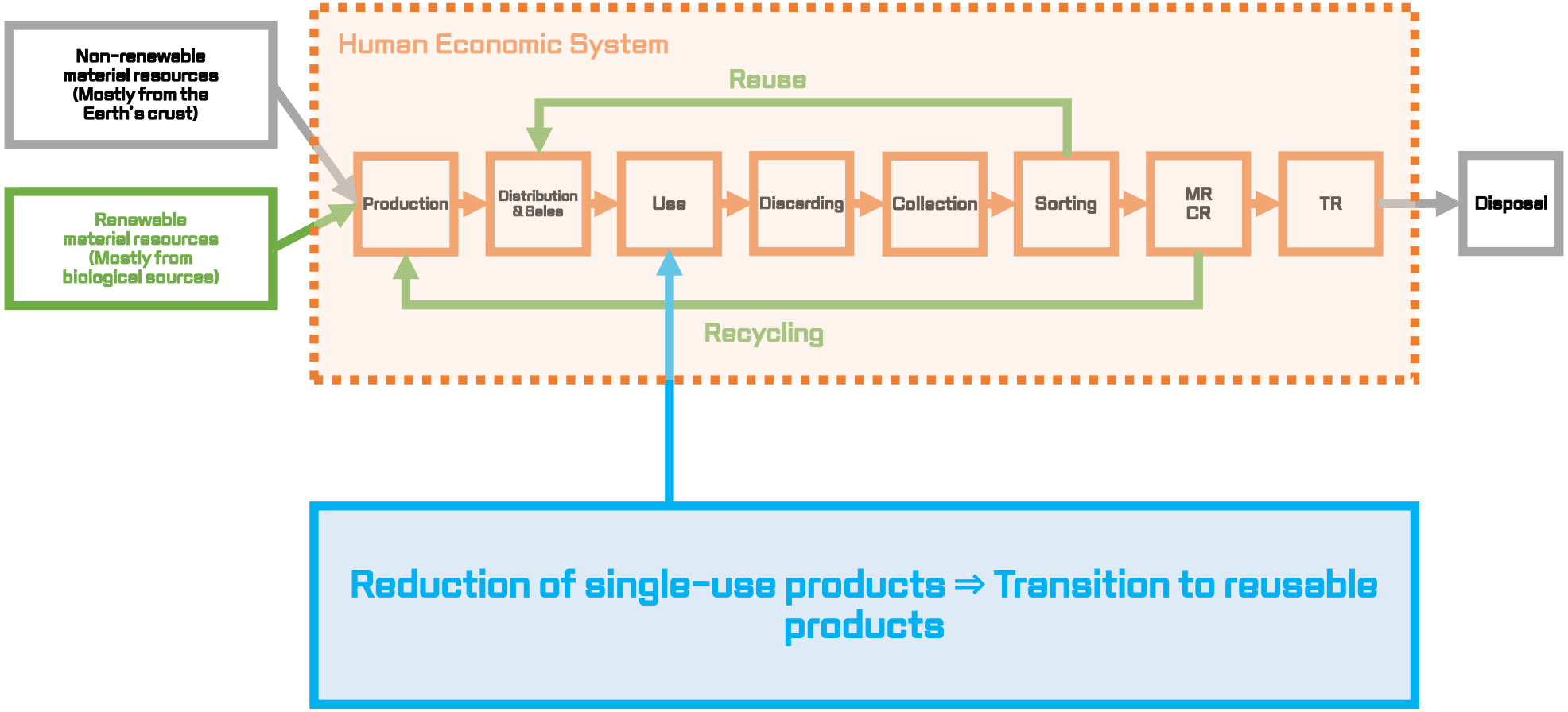
[illegible]ped packaging, packaging for unprocessed fruit and vegetables, single-use packaging for on-premises consumption, single-portion packaging (ketchup, sauces, sugar, etc.), single-use packaging in accommodation establishments, very lightweight plastic carrier bags

6. Design criteria to minimize volume and weight

From 2030, empty space in grouped, transport, and e-commerce packaging must not exceed 50%

7. Mandatory provision of recycling and reuse information

Circular Economy Priority 2

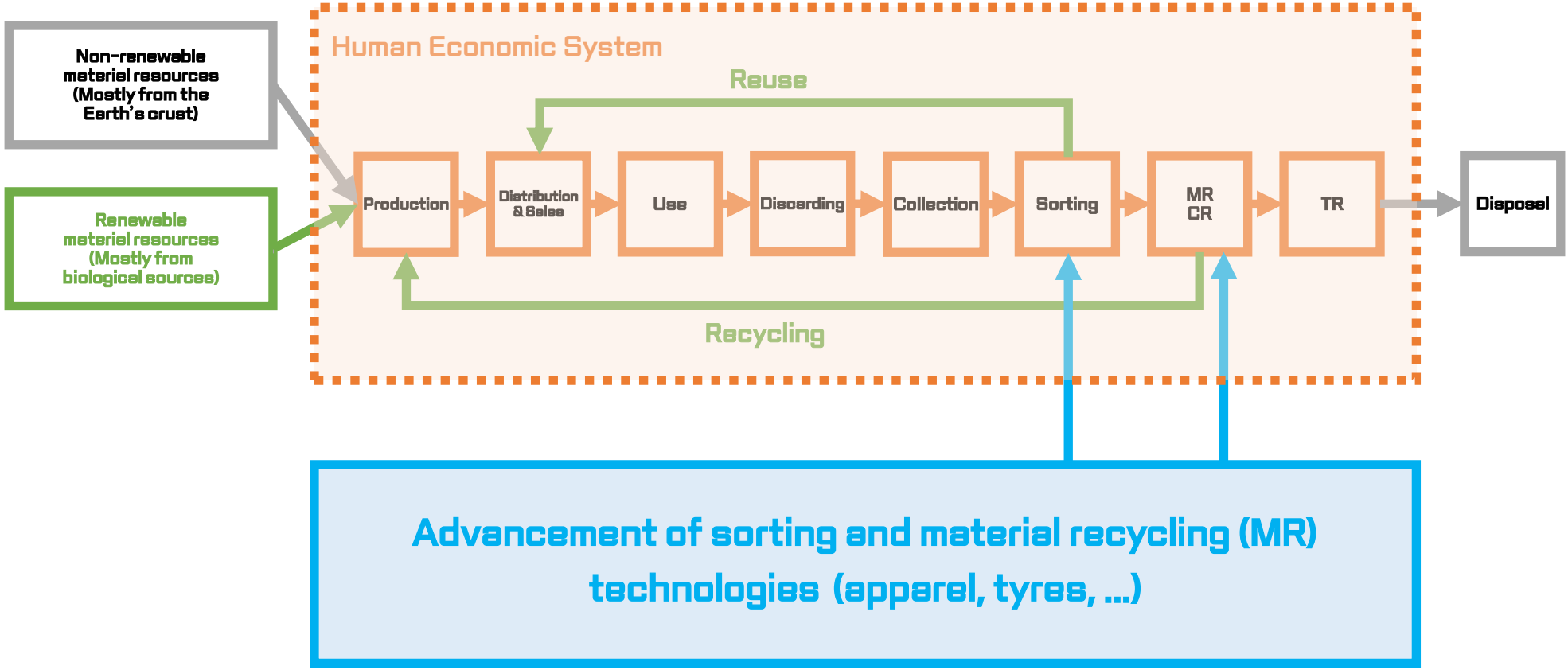


Reduction of Single-Use Products & Transition to Reusable Products



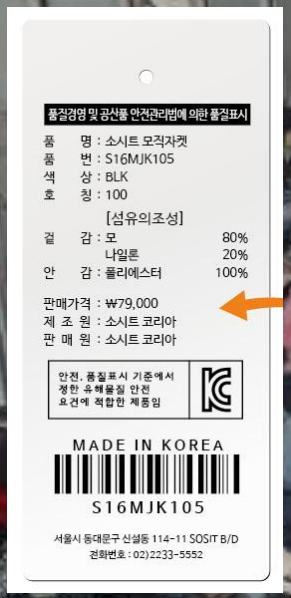


Circular Economy Priority 3



Representative Hard-to-Recycle Items

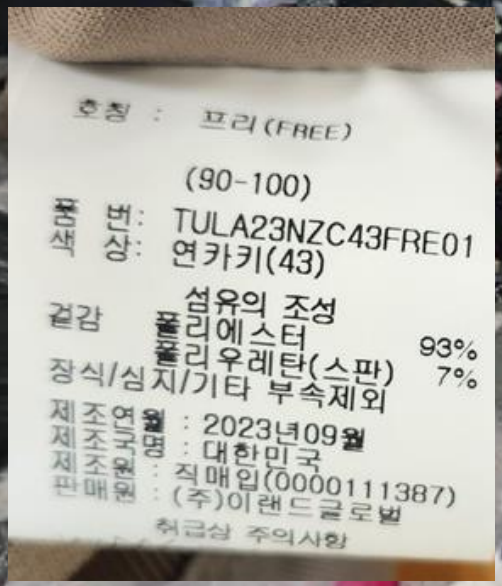




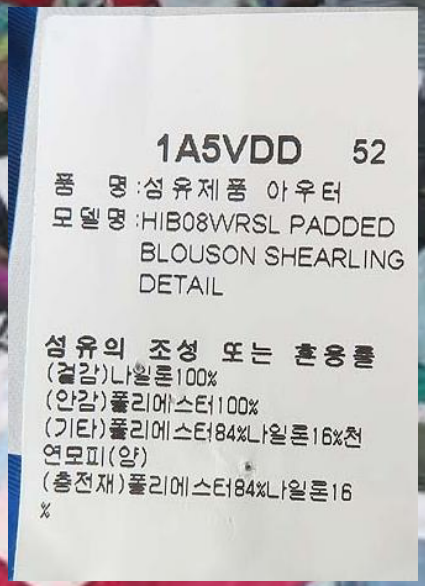


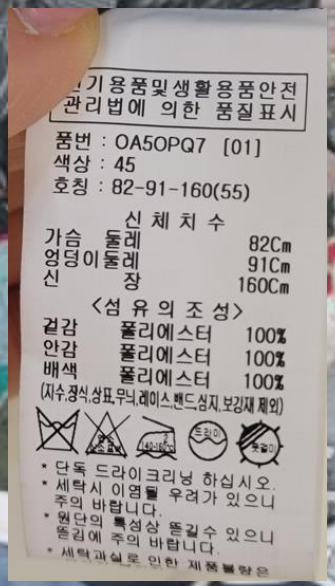


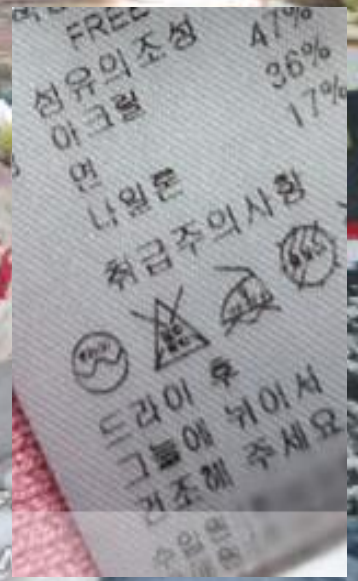










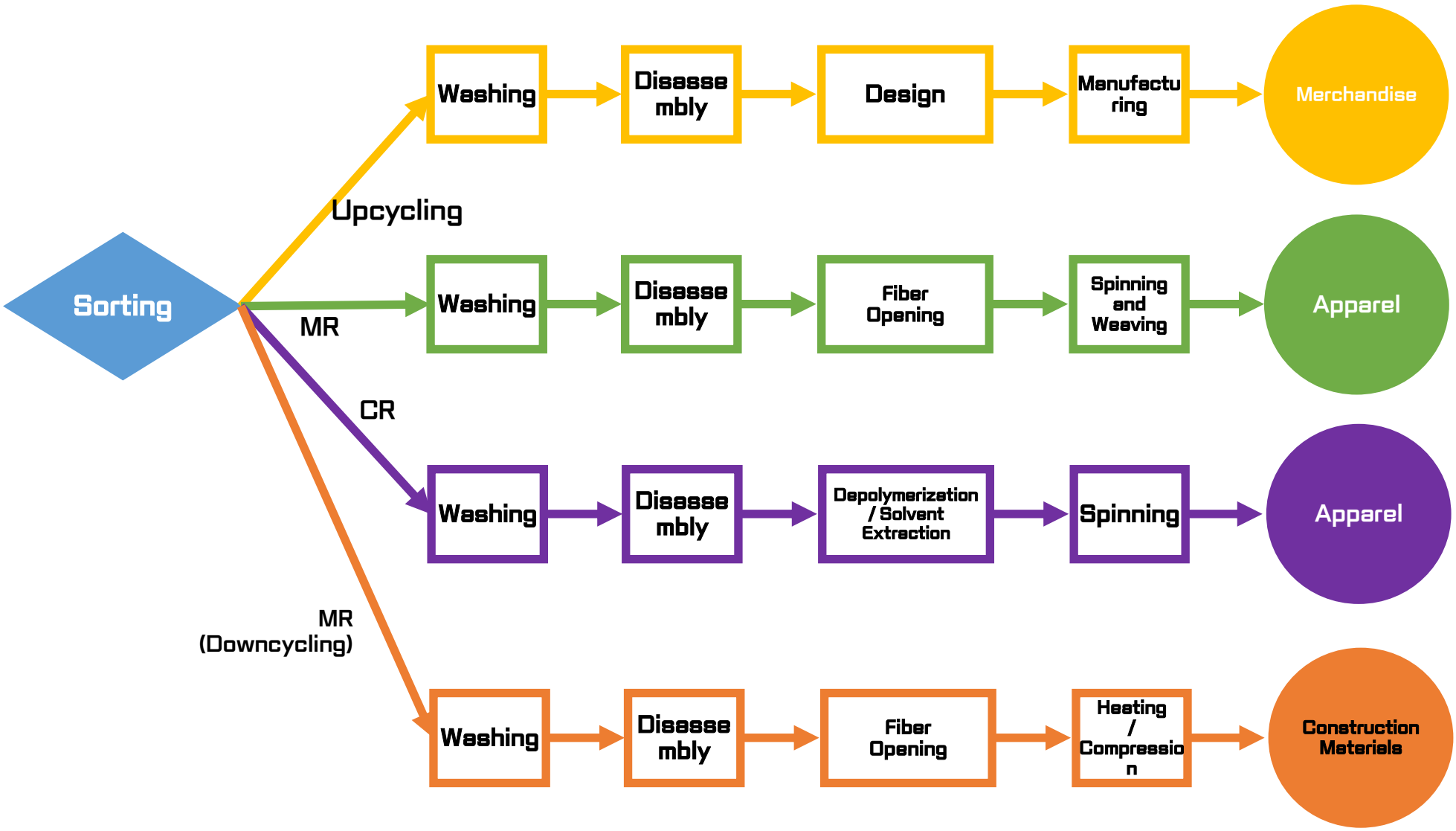


Advancement of Sorting Technologies Is a Prerequisite

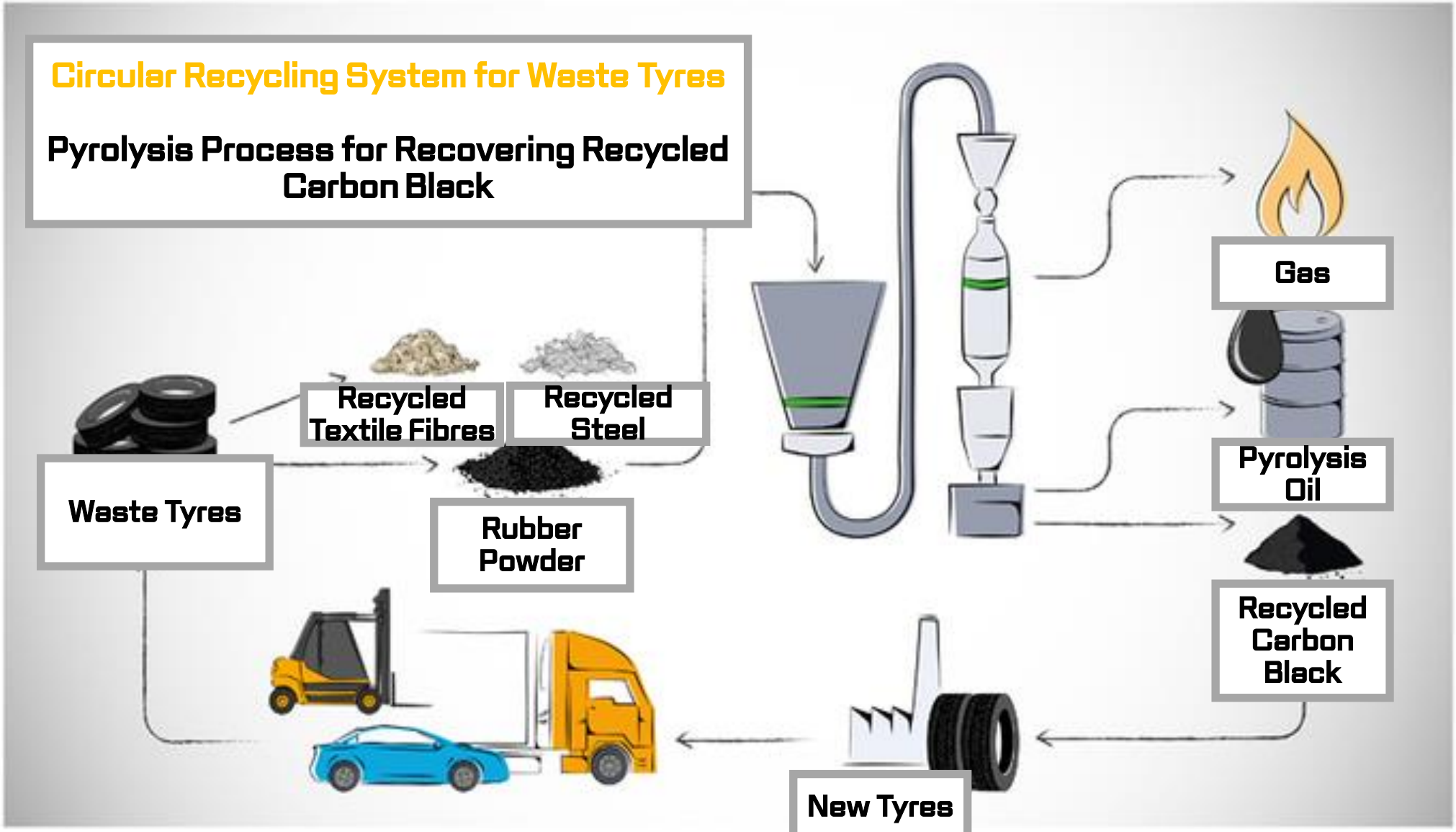


▲ 컨베이어벨트를 이용해 의류폐기물을 이동하고 분류하는 파이버소트 기술. ©Salvation Army Trading Company, 트위터

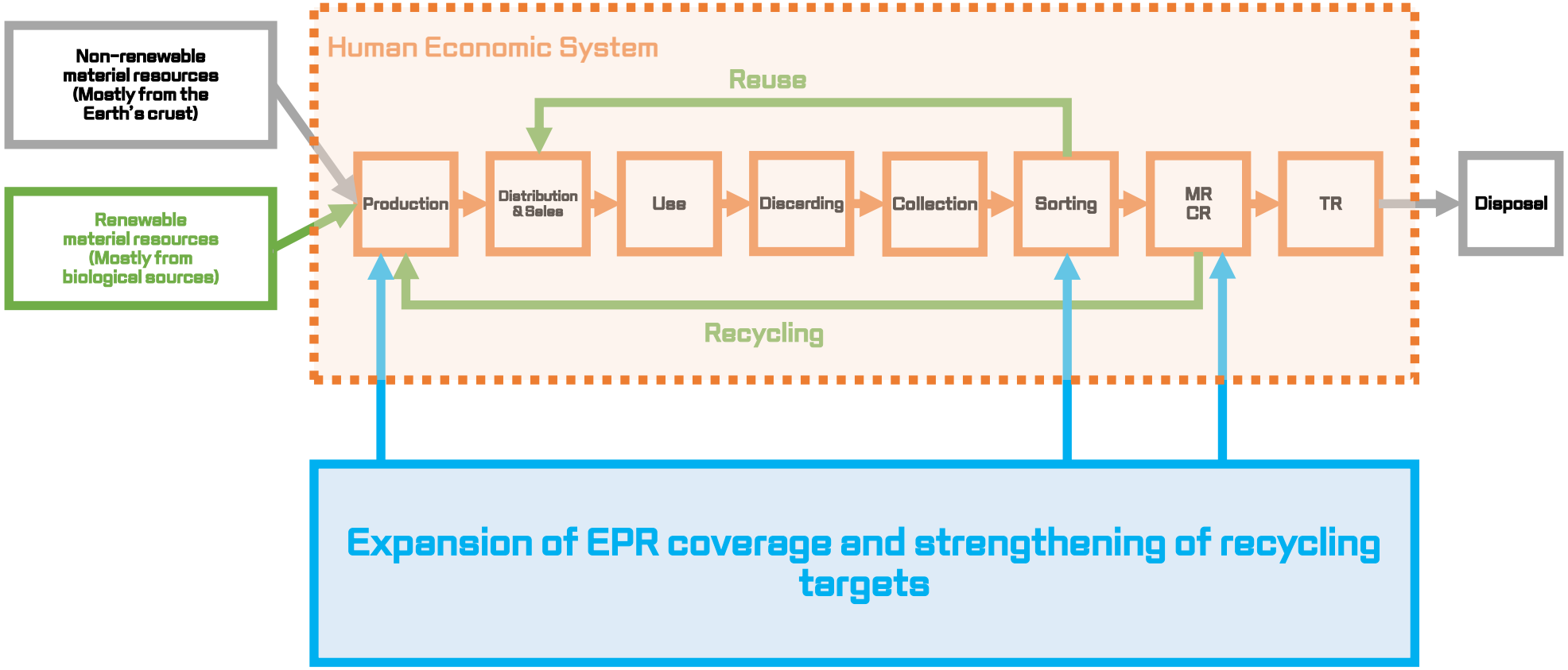
Sorting Technologies Must Meet the Requirements of Downstream Recycling Technologies



Example 2: Development of Tyre Recycling Technologies



Circular Economy Priority 4



Expansion of EPR Coverage

Article 16 (Obligations of Manufacturers to Recycle) of the Act on the Promotion of Saving and Recycling of Resources ① A manufacturer or importer (in cases of packing materials, including sellers of products using packing materials; hereinafter referred to as "producers with recycling obligations") of products and packing materials prescribed by Presidential Decree, the recovery and recycling of which can be facilitated by improving the quality of materials, structure or recovery system in the production stage and distribution stage, or which generate a large volume of wastes after use, shall recover and recycle wastes generated from the products or packing materials he or she has manufactured, imported or sold.





emart

롯데마트

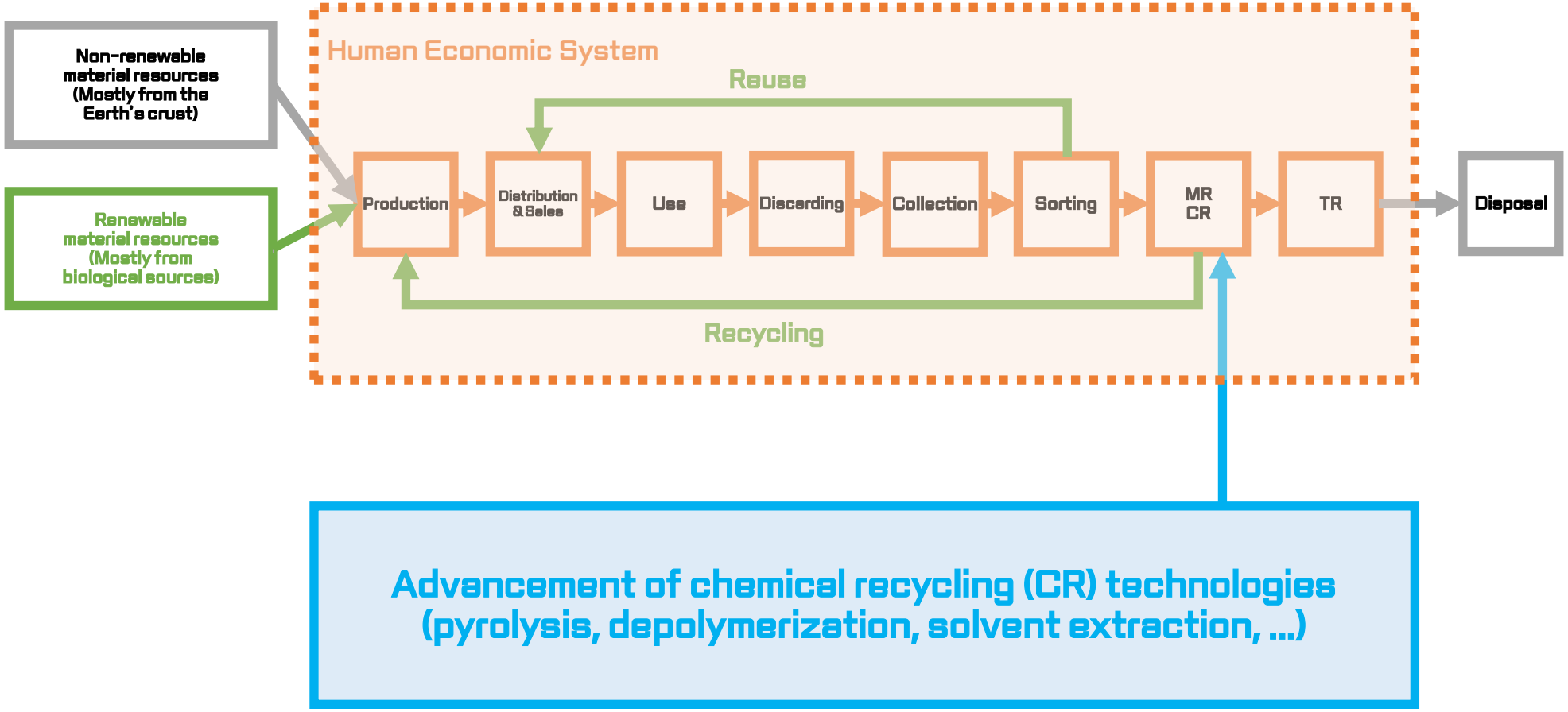
Homeplus

Strengthening Recycling Targets



Item	Shipping Volume (tons)	Recycling Performance (tons)	Recycling Rate
Regular paper cartons	23,214	9,513	41.0%
Aseptic paper cartons	30,600	926	3.0%
Single- and composite- material PVC	4,146	1,878	45.3%
Aquaculture floats	6,629	237	3.6%
Safety nets	6,888	3,204	46.5%
Fishing nets	10,450	5,044	48.3%
Ropes	32,689	9,255	28.3%
Pallets	202,661	46,463	22.9%
Plastic moving boxes	36,943	11,145	30.2%
Window/Door frames	235,642	39,000	16.6%
Flooring	271,260	60,354	22.2%
Construction insulation materials	61,782	6,563	10.6%

Circular Economy Priority 5

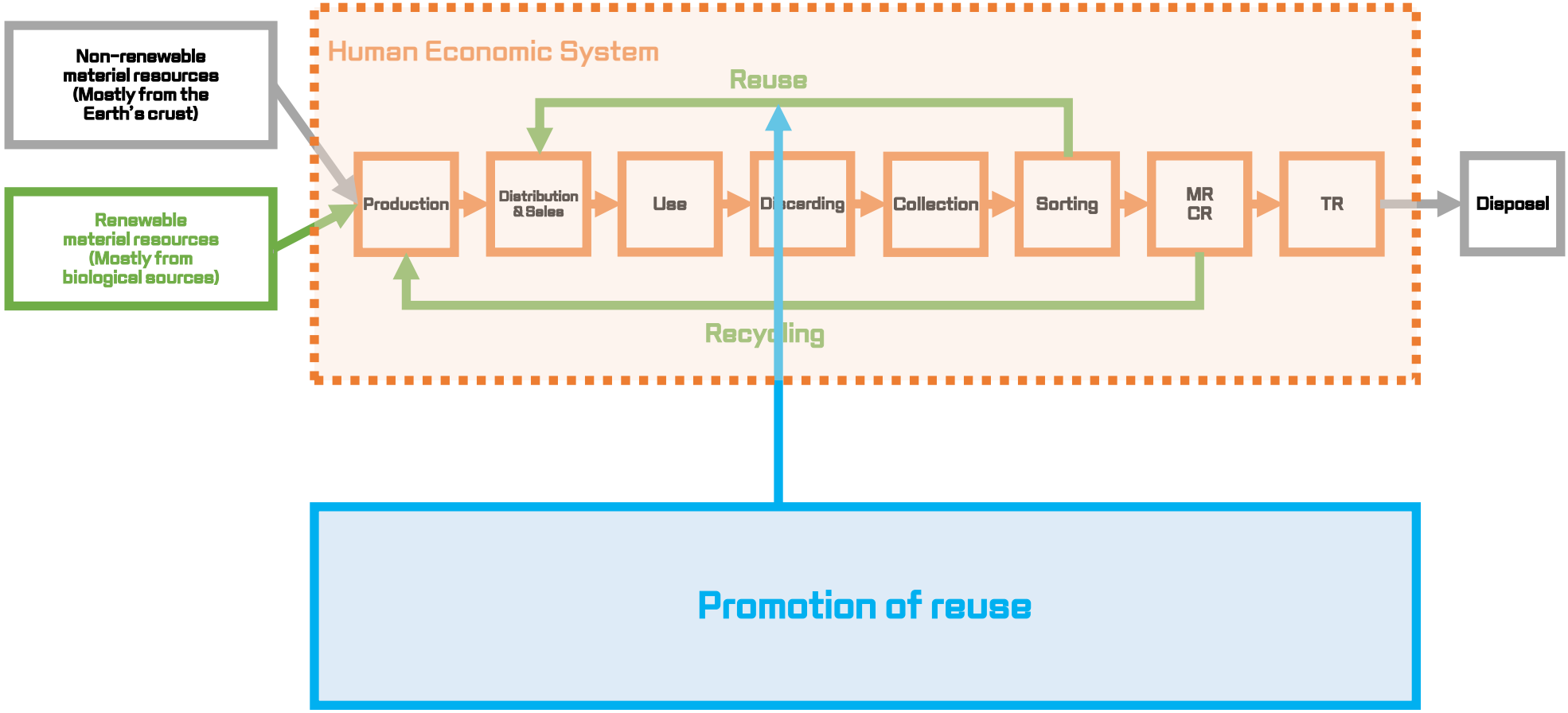


⇒ Gradual policy shift toward excluding heat and energy recovery from recycling

Plastic Waste for Which Material Recycling Is Extremely Difficult



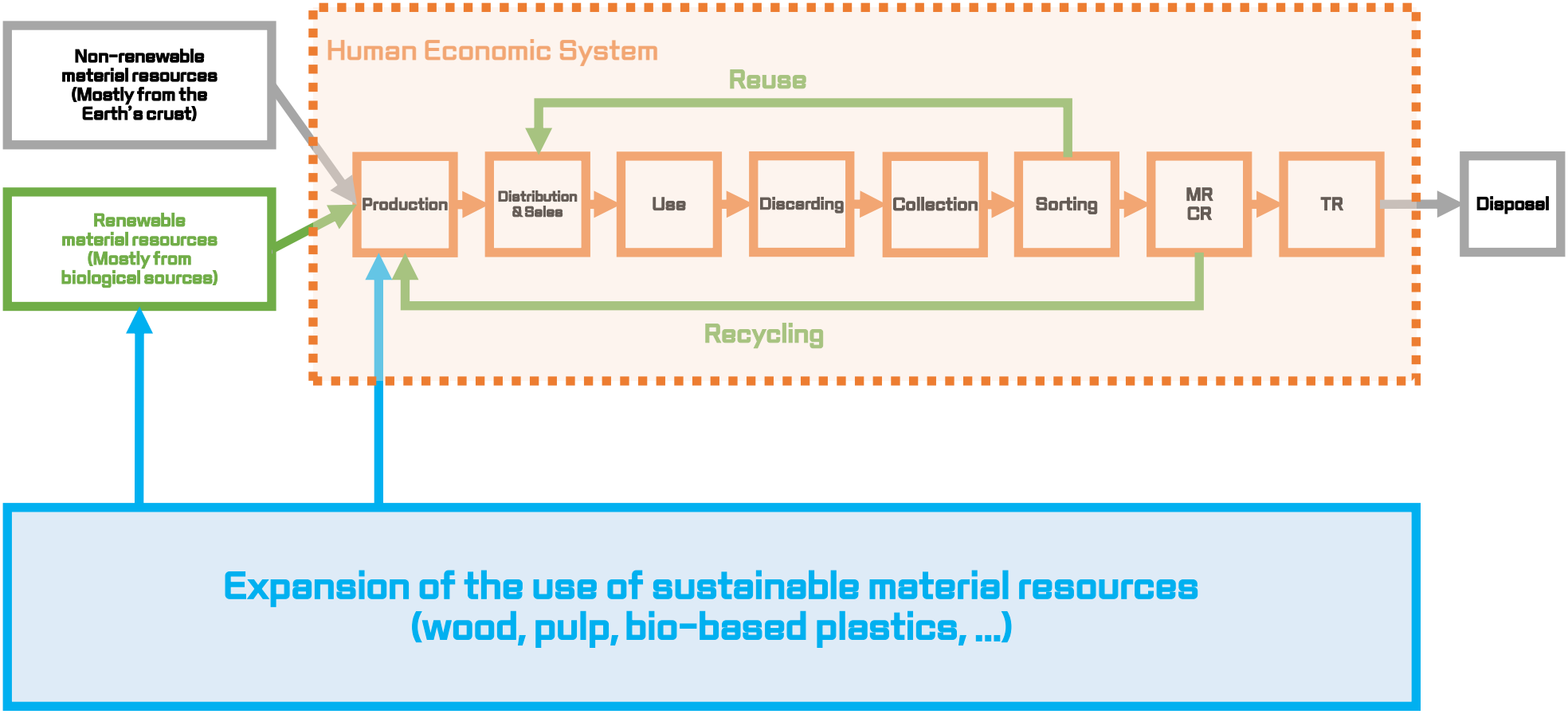
Circular Economy and Society Priority 6



Examples of Promoting Reuse



Circular Economy and Society Priority 7

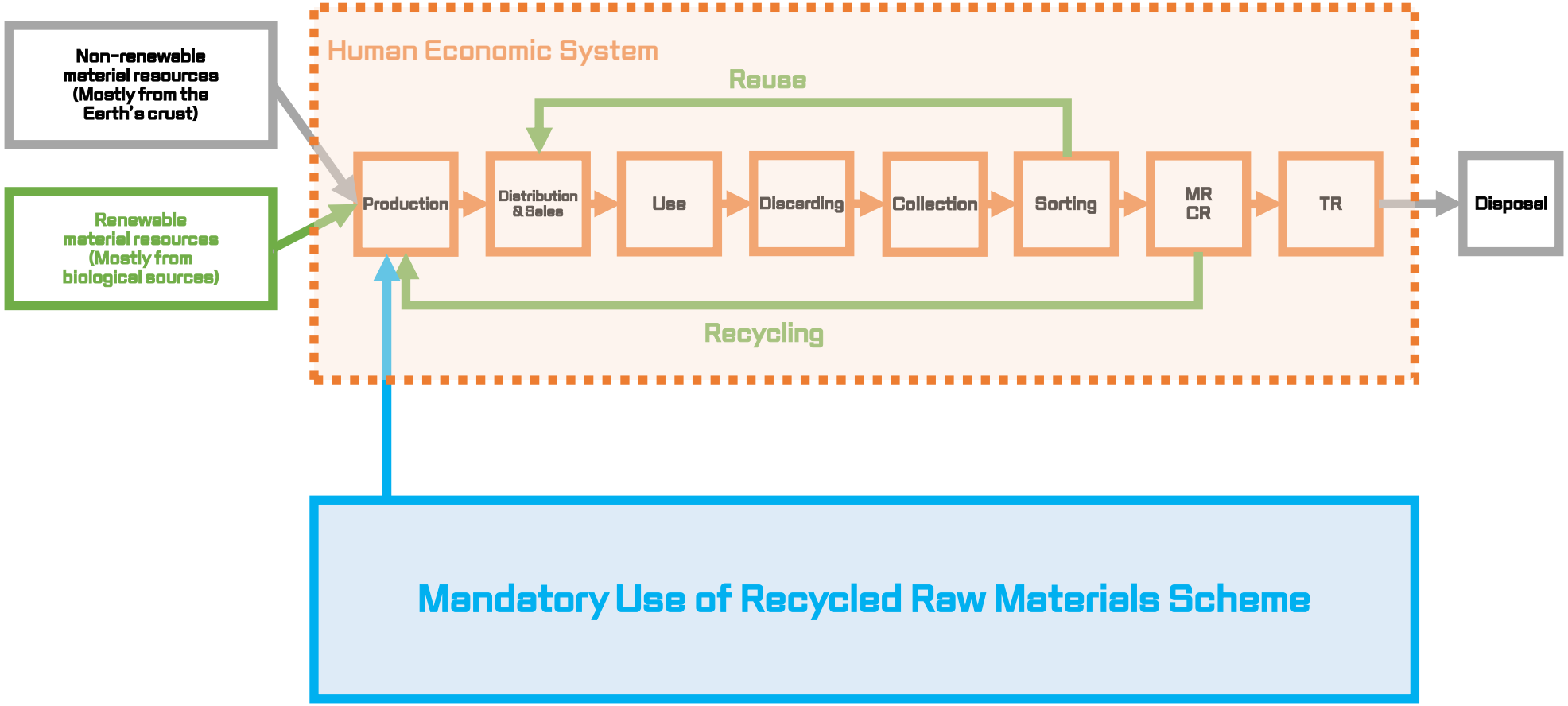


Expanding the Use of Renewable Materials: The Case of Bioplastics



Part 3
Circular Economy and Recycled Raw Materials

The Final Link in the Circular Economy



Current Mandatory Use of Recycled Raw Materials Scheme

Launch of the Mandatory Use of Recycled Raw Materials for PET Bottles (January 1, 2026)

Act on the Promotion of Saving and Recycling of Resources

Obligation imposed on manufacturers of products and containers to use recycled raw materials



Article 33-3 (Mandatory use of recycled plastic materials)

Enforcement Decree of the Act on the Promotion of Saving and Recycling of Resources

Final-product manufacturers of bottled water and beverages using at least 5,000 tons of PET bottles per year



Article 37-2 of the Enforcement Decree of the Act on the Promotion of Saving and Recycling of Resources (Manufacturers, etc. of Products and Containers Subject to Mandatory Use of Recycled Raw Materials)

Notice on the Mandatory Use of Recycled Plastic Materials

10% usage target rate set for 2026

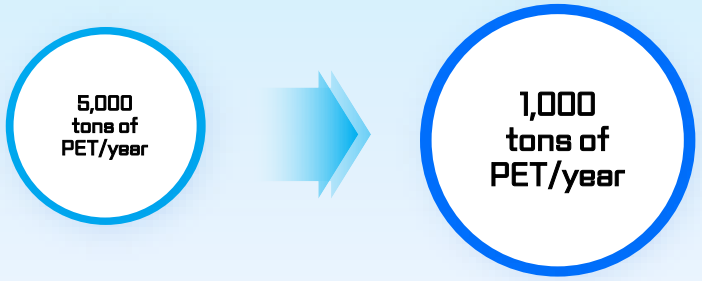


Notice on the Mandatory Use of Recycled Plastic Materials

Expansion of the Mandatory Use of Recycled Raw Materials Scheme

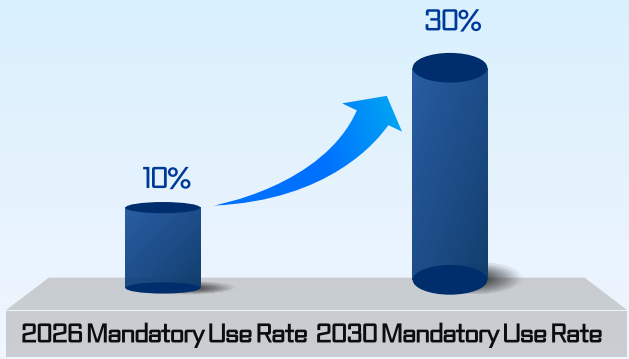
Expansion of the Mandatory Use of Recycled Raw Materials for PET

Expansion of the Scope of Entities Subject to Mandatory Use of Recycled Raw Materials



Current scope: annual PET bottle use of 5,000 tons or more
Expanded scope: coverage expanded to companies using 1,000 tons or more

Gradual Increase in the Mandatory Use Rate



- (As part of the plastic reduction measures) Accelerated expansion schedule: 15% (‘27) ⇒ 20% (‘28) ⇒ 25% (‘29) ⇒ 30% (‘30)

  Accelerated expansion of coverage: 5,000 tons/year (~’27) ⇒ 1,000 tons/year (‘28~)

Foundation for Expanding the Use of Recycled Raw Materials: Recycled Material Certification System

Act on the Promotion of Saving and Recycling of Resources

Article 33-2 (Verification and Labeling of Recycled Material Content Rate)

① Where a manufacturer, etc. intends to label the recycled material content rate for products or containers containing recycled materials at or above a rate prescribed by Ministerial Decree of Environment, he or she shall file an application with the Minister of Environment for verification of the recycled material content rate, as prescribed by Ministerial Decree of Environment.





MOU Signed between Korea Environment Corporation and the ISCC Association (Jan. 24, 2024)

환경공단-ISCC협회, 한국형 재생원료 사용체계 구축 맞손

기사입력 2024-01-24 17:10:18

[대한경제=박흥순 기자]한국환경공단(이사장 안병옥, 이하 공단)은 24일 서울 마포구에서 ISCC(유럽연합의 재생에너지 지침에 부합하는 지속가능성 및 저탄소 제품에 대한 국제인증제도) 협회와 '한국형 재생원료 사용관리체계 구축'을 위한 업무협약을 체결했다.



Support for Promoting the Use of Recycled Raw Materials by Domestic Companies

Information Sharing to Establish the Korean Recycled Material Certification System