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Breaking Free from Oil Imports: Toward a Sustainable, Plastic-Free Circular Economy

- Ministry of Climate, Energy and Environment reports “Plan to Promote the Transition to a Plastic-Free Circular Economy” to the State Council
- Target to reduce virgin materials by 30% from projected plastic waste generation by 2030
- Reduce unnecessary plastic at the source and circulate unavoidable waste as recycled feedstock

The Ministry of Climate, Energy and Environment (MCEE, Minister Kim Sungwhan) announced that on the morning of April 28, Minister Kim Sungwhan reported the “Plan to Promote the Transition to a Plastic-Free Circular Economy” at a State Council meeting.

This measure was prepared as part of the Lee Jae Myung administration’s key national agenda to establish a sustainable plastic circular economy ecosystem and secure industrial competitiveness, amid unstable supply and demand of petroleum and naphtha, the raw materials for plastics, due to the recent conflict in the Middle East.

The MCEE included comprehensive measures in the plan to fundamentally reduce unnecessary plastic use and replace virgin materials with recycled feedstock made from waste resources, under the goal of cutting newly produced materials derived from naphtha by at least 30% compared to projected plastic waste generation by 2030.*

* (Projection) Waste plastic generated from households and businesses: approximately 7.8 million tons in 2024 → approximately 10 million tons in 2030

(2030 target) Source reduction (1 million tons) and use of recycled feedstock (2 million tons) → 7 million tons of plastic waste generated based on virgin materials

1. Reducing Unnecessary Plastic at the Source

① Material substitution and lightweighting of plastics

Products made of plastic, such as cosmetic containers and plastic bags, will be assessed for reusability and ease of recycling, and those not essential will be steered toward alternatives such as paper.

Delivery containers and similar items will be structurally lightweighted* to reduce material use, and excessive packaging in parcel deliveries will be restricted** to cut down on plastic consumption.

* Reducing product weight by optimizing structural design while maintaining volume and external shape

** Limits on product-to-package volume ratio (50% or less) and on the number of packaging layers (one time)

② Ensure circularity from the production stage

Packaging that is difficult to recycle or that hinders the recycling of other items will be restricted from market entry, primarily through industry agreements. In cooperation with industry, a “Korean-style ecodesign system*” will also be developed so that key products such as clothing and electrical and electronic goods ensure circularity from the design and production stages.

* Establishment of product design standards for recyclability, durability, and ease of repair (EU Ecodesign Regulation enters into force in July 2024)

③ Minimize the use of virgin plastic materials

Measures will be developed to enhance the effectiveness of the waste charge system*, which is a key economic instrument for promoting plastic product lightweighting and the use of alternative materials. Taking into account

differences in product lifespans, such as single-use items and furniture, the charge rates will be differentiated, and incentives for using recycled feedstock will be strengthened** through expanded reductions in the charges.

* (Overview) A system that imposes waste treatment costs on producers of products that are difficult to recycle

(Base rates, since 2012) General: KRW 150/kg; Construction: KRW 75/kg

** (Current) Reductions applied in proportion to the amount of recycled feedstock used → (Improvement) Higher reduction rates applied when usage exceeds a certain threshold

2. Building Recycling Infrastructure and Promoting Circular Use

1 Substitute imported naphtha with recycled feedstock

Target rates for the use of recycled feedstock will be established for packaging materials and products with high plastic usage. For PET bottles, which are already required to contain 10% recycled content starting this year, the target will be strengthened to 30% by 2030. For other items, such as food and cosmetic containers and plastic films made from polyethylene (PE) and polypropylene (PP), target rates will also be set in consultation with industry to enable the use of recycled feedstock in line with international standards*, including those of the European Union (EU).

In particular, starting with standard waste bags, which is one of the key items addressed in response to the recent Middle East conflict, support** will be provided for equipment replacement and the transition to smart manufacturing processes to expand the use of recycled feedstock. Measures to stabilize the market will also be considered in cases where recycled feedstock is more expensive than virgin materials.

* (European Union 2030 targets) Δ Packaging/PET bottles 30%, food and cosmetic containers 10%–30%, others 35%; Δ Products/Automobiles 20%, etc.

** Supplementary budget allocation for recycled feedstock processing facilities (melting and extrusion) (KRW 13.8 billion in national funds) + support for smart manufacturing (digital transformation, DX) in collaboration with the Ministry of SMEs and Startups

② Expand circular use to include plastics that were previously incinerated

A circular use system will be established for items that have so far fallen into recycling blind spots, such as clothing and single-use plastic cups. In cooperation with the Korean National Police Agency, police uniforms that were previously incinerated will be collected to extract recycled polyester or repurposed as filling and insulation materials, with plans to expand the scope to include military uniforms and other items. Single-use cups, currently subject to the waste charge system, will be incorporated into the Extended Producer Responsibility (EPR) scheme, with a management system established so they can be recycled together with containers made of the same material (e.g., PET trays).

In addition, the rollout of preprocessing facilities* for opening and sorting standard waste bags, as well as artificial intelligence (AI)-based and optical sorting equipment** will be expanded to enable more thorough recovery of waste plastics that were previously incinerated or landfilled. For waste plastics such as plastic films, a regional collection system will be established and feedstock diversification promoted to activate the production of recycled naphtha through pyrolysis.

* A facility that recovers recyclable resources by opening, sorting, and washing standard waste bags before incineration or landfill

** Equipment that uses AI and optical sensor technology to sort recyclable materials by material type

③ Create a dynamic market for recycled feedstock

A certification system covering recycled content ratios and quality will be introduced to create a market where products can be purchased with confidence, and public procurement of products using recycled feedstock will be expanded to secure stable demand.

In addition, a special regulatory zone system for the circular economy will

be introduced to allow the free circulation and use of process by-products within industrial complexes, and regulations that have hindered market expansion will be actively removed by revitalizing the regulatory sandbox system for testing new circular economy technologies and services.

Through large-scale R&D investment,^{*} technological innovation will be achieved to enable the mass production of high-quality recycled feedstock, and the market base will be expanded by providing tailored support to leading circular economy companies and industrial complexes.

^{*} K-Circular Economy Reborn Project (2027–2033, total KRW 254 billion): advancement of sorting technologies, continuous pyrolysis oil production, etc.

3. Gradual reduction of single-use plastics

① Shift from single-use to reusable products

The transition to reusable containers will be accelerated at multi-use facilities where single-use items are excessively used.

Funeral halls^{*} will first transition to reusable containers through agreements with facilities operated by public institutions nationwide, with plans to gradually expand to private facilities based on implementation results.

A culture of reusable containers will also be established in on-site cafeterias and cafés at workplaces that do not yet use them, as well as in sports stadiums and cafés near public institutions. In particular, the personal cup discount program currently operated by some coffee chains will be expanded, and agreements will be signed with the food and beverage industry to reduce plastic use, including limiting the use of multi-material packaging.

^{*} Out of 1,075 sites nationwide (78 public, 997 private), 100 sites (30 public, 70 private) are using reusable containers (as of December 2025)

② Promote a leading culture of plastic reduction

To guarantee consumers' right to repair, a cooperative framework will be established with appliance manufacturers, including building systems for providing repair information and expanding repair access points (such as mobile repair buses and repair cafés).

In addition, guidelines for reducing plastic use will be actively promoted among public institutions and the general public, and public-private governance will be established and operated to support the spread of a plastic-free culture from the grassroots level throughout society.

The MCEE plans to expand the source reduction and circular use approach outlined in this measure beyond plastics to all sectors, including future waste streams such as end-of-life electric vehicle batteries and solar panels.

Minister Kim Sungwhan stated, “While the recent Middle East conflict is a crisis, it also serves as an opportunity to address the structural vulnerabilities of a linear economy that depends on imported resources while mass-producing and discarding products.” He added, “We will vigorously and swiftly advance the core tasks of source reduction and circular use to realize a sustainable, plastic-free economy that is resilient to external shocks.” ²⁷