

Republic of Korea's EPD and Plan in Response to Global Environmental Policy Changes

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KOREA ENVIRONMENTAL INDUSTRY & TECHNOLOGY INSTITUTE

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Environmental Policy Changes



01

● ● 미래를 여는 환경 솔루션 ●

Overview of EPD in Korea

Environmental Product Declaration

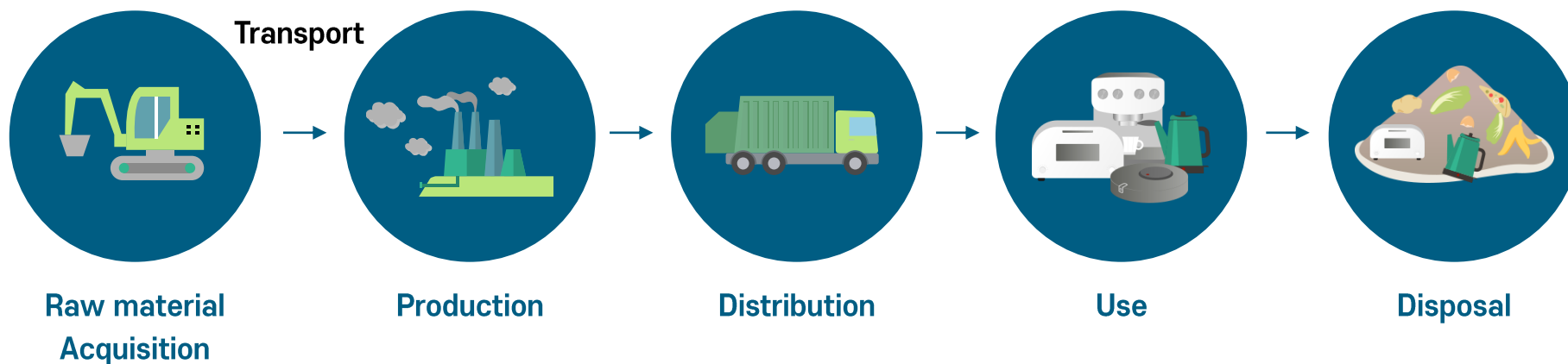
01-1. Overview of EPD

I The concept of EPD

Measuring and displaying information about **environmental impacts** generated during the **lifecycle of a product** (including service)

※ According to ISO 14025

I The lifecycle of products



01-2. Environment impacts

Resource Footprint



Impact on development and consumption such as minerals and fossil fuels

Carbon Footprint



Impact on climate change caused by greenhouse gas emitted into the air

Ozone Depletion



Impact on ozone layer in the stratosphere caused by ozone depleting substances emitted into the air such as Freon gas

Acidification



Impact on human activities and ecosystem caused by acidification material(Nox, Sox) in the air with melting by rainwater

Eutrophication



Impact on eco-system caused by the excessive concentration of organic substances (nitrogen and phosphorous) in air, water and soil

Photochemical smog



Impact on human body and eco-system caused by pollutants on the ground surface generated through active materials from human activities reacting to light

Water Footprint



Impact on water resources, such as water quality and quantity, caused by human's activity like agriculture, industry etc.

Low Carbon Products?

※ Redefined through reference to Guideline for the EPD and overseas impact assessment methodologies, such as CML and ReCiPe

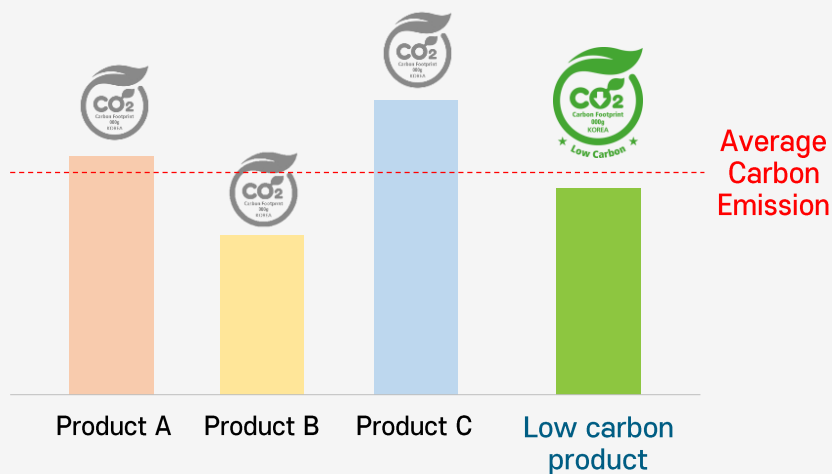
01-3. Certification of Low carbon products

If the products received a carbon emission certification meet **the specified criteria**, these can get the certification of low carbon products.

I Criteria

Base on carbon emission level

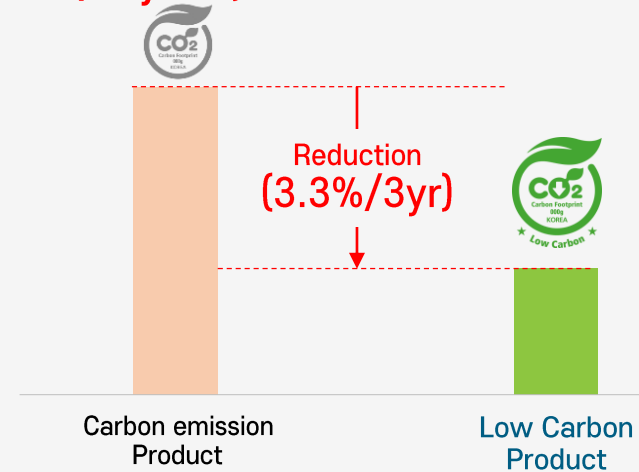
Certification based on average carbon emission from products of the same category



Base on carbon reduction rates

Certification based on the national greenhouse gas reduction goal of government

(3.3% / 3 years)



02

● ● 미래를 여는 환경 솔루션 ●

EPD certification system

Process, Certification Products and so on

02-1. Legal Ground

- **Act** : Environmental Technology and Industry Support Act
- **Presidential Decree** : Enforcement Decree of the Environmental Technology and Industry Support Act
- **Ordinance of Ministry** : Enforcement Rule of the Environmental Technology and Industry Support Act
- **Public notices of Ministry of Environment**
 - Product Category Rules of Environmental Product Declaration
 - EPD Certification Verifier Qualification Criteria
 - EPD Certification Fee

02-2. Product category rules(PCRs)

- **Common PCRs :**

- General rule
- Energy using Product PCR
- Construction materials PCR

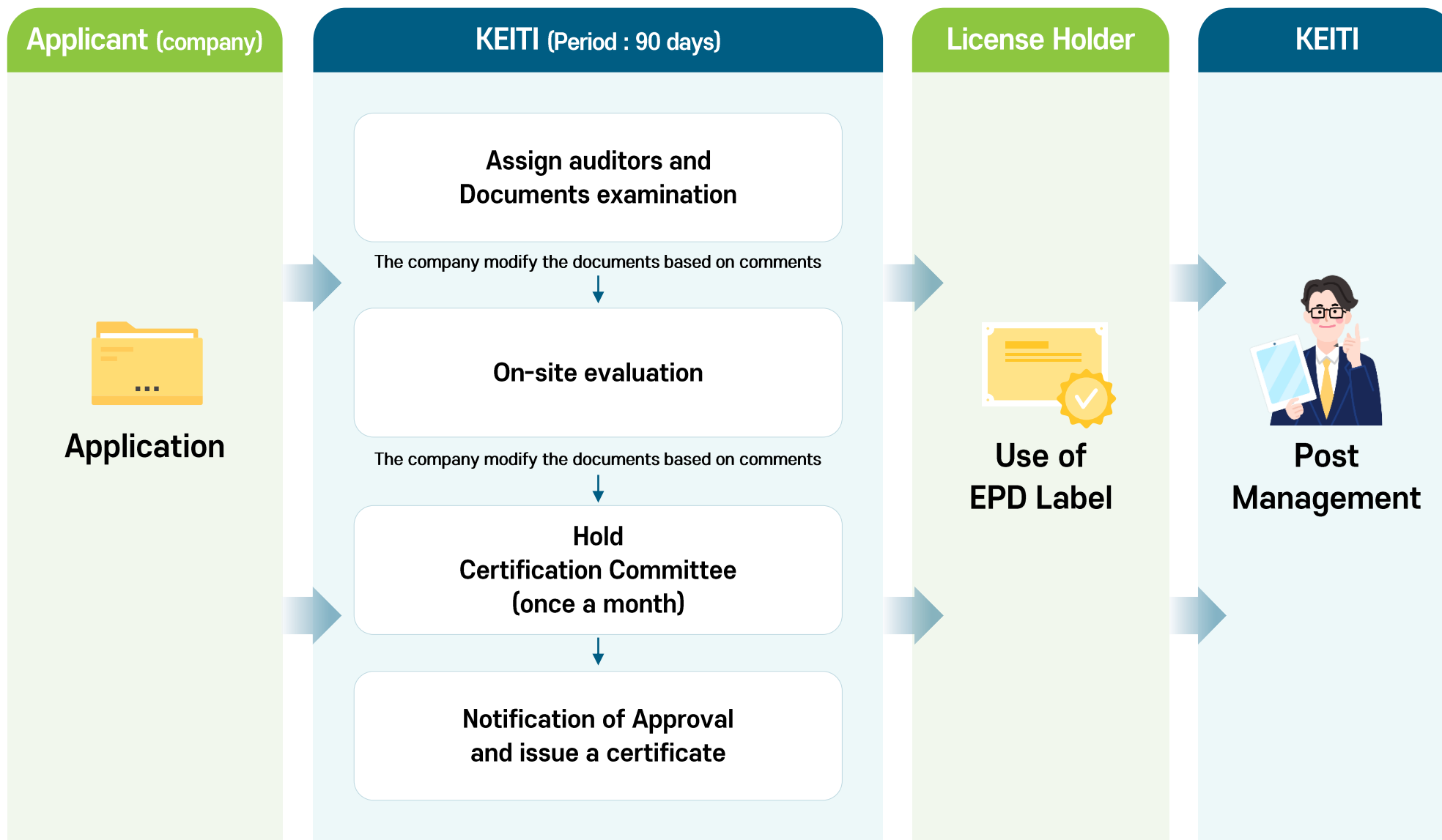
- **Individual PCRs :** PCR that reflects the characteristics of a particular product

- 25 individual PCRs

- **Using stage scenario :** Scenario of use stage of energy use product

- 31 scenarios

02-3. EPD certification System















02-4-1. EPD certification products

| 6,927 products (Cumulative number of certifications, ~2023)

		2017	2018	2019	2020	2021	2022	2023
Products (Cumulative number of cert.)		2,823	3,068	3,504	4,177	4,807	5,733	6,927
EPD (new Certification)		253	245	436	673	630	926	1,194
EPD (Valid Certification)		780	759	923	1,333	1,455	1,867	2,335
	Low Carbon(Step 2)	170	132	139	175	294	492	872

02-4-2. EPD certification products

Daily Supplies				
Food & Beverage				
Electronic Goods				

02-4-3. EPD certification products

Construction Material



Services



03

● ● 미래를 여는 환경 솔루션 ●

Korea's Environmental Product Declaration(EPD) Plan in Response to Domestic and Foreign Policy Changes

03-1. Global Environmental Issues

- **2050 Carbon Neutralization Promotion Strategy (Republic of Korea)**

For the net economy, one of the top 10 tasks, **carbon footprint and resource footprint** are included as indirect indicators when establishing a roadmap of the net economy

- **Buy Clean California Act (The United States)**

In public procurement, **the standard for carbon emissions** in the entire process is set('21 years), and **bidding restrictions** if it is higher than the standard

- **CBAM and Concerning batteries and waste batteries (EU)**

Mandatory to calculate and display **carbon footprint of battery**

03-2. Global Status of PCR and LCI DB

• Global Status of PCR

Country(region)	Certification Institution	PCR(Number)	Major PCR Category
EU	EU PEF	22	Battery, Paint, Detergent, etc
Norway	EPD Norway	42	Furniture, Asphalt, Windows and doors, etc
Sweden	International EPD	128	Cement, Cosmetics, Furniture, Textiles, etc
U.S	UL Environment	39	Ceiling Material, Tire, Hand Dryer, etc
Australia	Global Green Tag(GGT)	29	LED Light, Food Container, Insulation, etc
Japan	SuMPO	213	Steel product, IT equipments, Stationery products, etc

• Global Status of LCI DB

- GLAD(Global LCA Data Access)** : About 93,000 LCI DB (about 3,900 in Japan, 2,500 in China)
- LCDN(Life Cycle Data Network)** : About 3,000 LCI DB

03-3-1. Plan in Response to Global Environmental Policy Changes

I Update and develop Product Category Rules (PCR)

Develop PCR compatible with international standards by setting up a system for calculating carbon emissions of major exports

-Prepare tools for calculating the product-specific Product Environmental Footprint (PEF)

I Update and develop domestic life cycle inventory databases (LCI DBs)

Support application of the latest data to certifying carbon footprints of domestic products, by improving aging LCI DBs to meet international requirements

-Register the developed LCI DBs on international platforms (GLAD, etc.) to gain data reliability

03-3-2. Response Measure (1) - PCR Development

I EPD Plan in Response to Domestic and Foreign Policy Changes (1) - PCR development

- PCR development in Korea: As of 2021, there are two common guidelines and ten individual guidelines as PCR for Korean EPDs (smaller than the figures of the EU, Sweden, and Japan).
- Plan
 - * Develop 130 PCR in phases by 2030
 - * Establish a PCR roadmap for an individual product group that selects target products considering regulations, export scales, greenhouse gas(GHG) emissions, and corporate demand

Target product groups for PCR development and expansion

Category		Year	No. of Cases	Product Group
Phase 1	Securing international compatibility and building the foundation	'21	5	Steel products ^{1),2),3),4)} , building materials ^{1), 4)} , refrigerators, freezers, TVs, air purifiers ^{2),3)}
		'22	12	Batteries ^{1),2),3)} , automobiles ^{2),3)} , cement, paints ^{3),4)} , etc.
Phase2	Making exports meet international requirements	'23	12	Plastic resins and containers ^{2),3),4)} , shampoo and hair conditioner ^{3),5)} , etc.
		'24	12	Petrochemicals ^{2),3)} , monitors ^{2),3)} , printers ²⁾ , etc.
		'25	12	Groceries ⁴⁾ , cosmetics ^{2),4)} , insulation ^{1),4)} , etc.
Phase3	Creating a foundation for international recognition	'26 ~'30	67	67 products including electric and electronic products, household goods, and Carbon Capture Utilization (CCU)

※ Reasons for selection: ¹⁾ Regulations, ²⁾ export, ³⁾ GHG emissions, ⁴⁾ international standards and PCR, ⁵⁾ corporate demand.

03-3-3. Response Measure (2) - Reform of LCI DBs

I EPD Plan in Response to Domestic and Foreign Policy Changes (2) - LCI DB - Plan

- * Develop more than 1,000 LCI DBs by 2030 in the order of development urgency
- * Divide DB sectors into energy, materials, and process, and then prioritize them by reflecting the urgency of policies such as frequent use of exports, carbon regulation, and carbon neutrality

Proposal for items relating to LCI DB development

Category		Year	No. of Cases	Product Group
Phase 1	Securing international compatibility and building the foundation	'22	150	Energy (renewable energy) and fuel (36) ¹⁾ , water (16) ²⁾ , metallic and non-metallic materials (74) ³⁾ , basic chemicals ⁴⁾ (24)
		'23	150	Basic chemicals such as petrochemicals (139) and solvents for carbon capture such as Ksol (5) ⁵⁾ and transport (6)
Phase2	Making exports meet international requirements	'24	150	Plastics (53), chemicals (13), recycling and disposal (45), transport (37), carbon capture and refining (2)
		'25	250	In '22, revise 150 LCI DBs*, raw materials for building materials (76), transport (15), carbonization and bio raw materials, etc. (9)
Phase3	Evaluating means to implement carbon neutrality	'25 ~'30	300	Revise LCI DBs every three years (more than 150). Technology for carbon neutralization (CCU, etc.)

※ Reasons for selection: ¹⁾Energy used in all manufacturing processes such as electricity, ²⁾ process water used in all manufacturing processes such as industrial water, ³⁾ raw materials for steel products, ⁴⁾data necessary for responding to international regulations on battery raw materials, ⁵⁾ raw materials used in KoSol that was developed by KEPCO Research Institute

* To meet international standards, LCI DBs are to be updated with the latest data within 3 years.

Conclusion

**Achieving Sustainable society
through production and consumption
of eco-friendly products!**





KEITI 한국환경산업기술원

THANK YOU.

Office of Life Cycle Assessment
Division of ESG Essentials Support
Tel +82-2-2284-1580 Fax +82-2-2284-1593
Address (03367) 215, Jinheung-ro, Eunpyeong-gu, Seoul, Korea

Communicate with EPD!
Website ecosq.or.kr