JCCI International Seminar 2026

Circular Economy
Japan's Experiences

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Tokai University

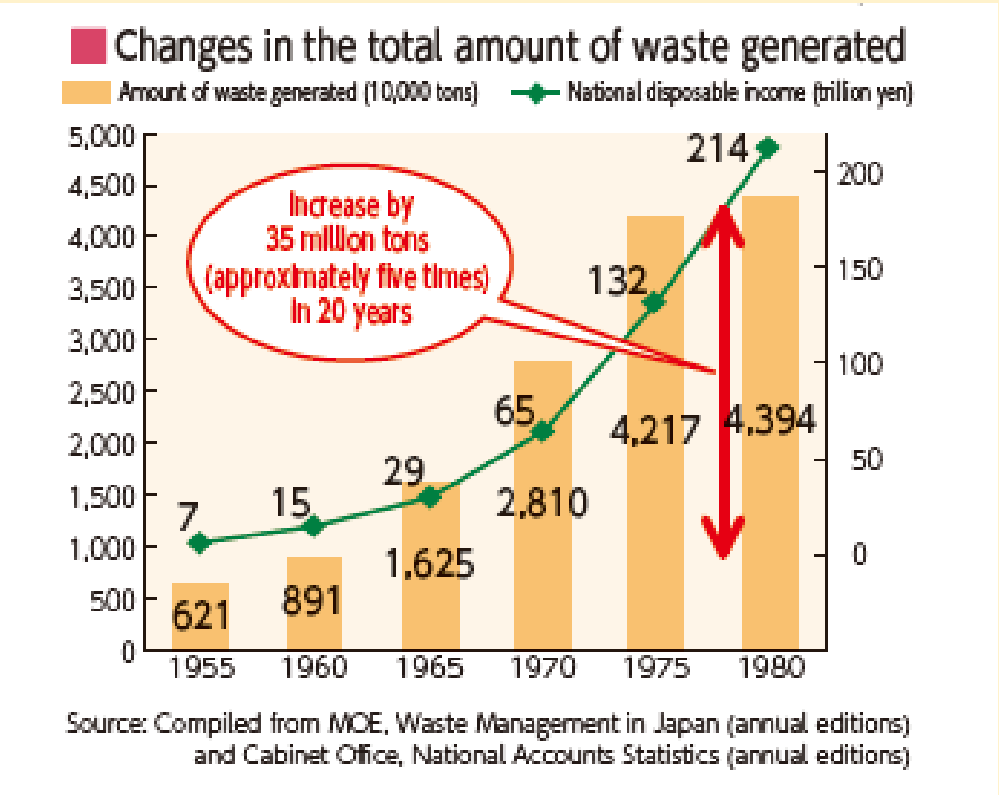
Eiji HOSODA

1. A brief historical survey

Rapid economic growth period

- Japan experienced **rapid economic growth** for more than 15 years from 1955.
- Almost all Japanese considered that only **growth of consumption and GDP** mattered, and ignored the problems which waste generation created, at that time.
- Then, they faced **shortage of landfill**, and were at a loss how to deal with the waste problem.
- It was partly solved by construction of **incineration plants**.

Total amount of municipal solid waste(MSW) in the rapid economic growth period



Source: Ministry of Environment, Japan (2014) *History and Current State of Waste Management in Japan* (https://www.env.go.jp/content/900453392.pdf)

Topic: Tokyo Garbage War (1971)

Incineration plant construction opposition movement (photograph: for Tokyo Metropolitan Government Waste management 100 years in the history)

Waste import check (photograph: for Tokyo Metropolitan Government Waste management 100 years in the history) of Koto-ku

Source: Clean Authority of Tokyo, http://www.union.tokyo23-seisou.lg.jp.e.de.hp.transer.com/shiro/nakattara/03.html

Low economic growth period

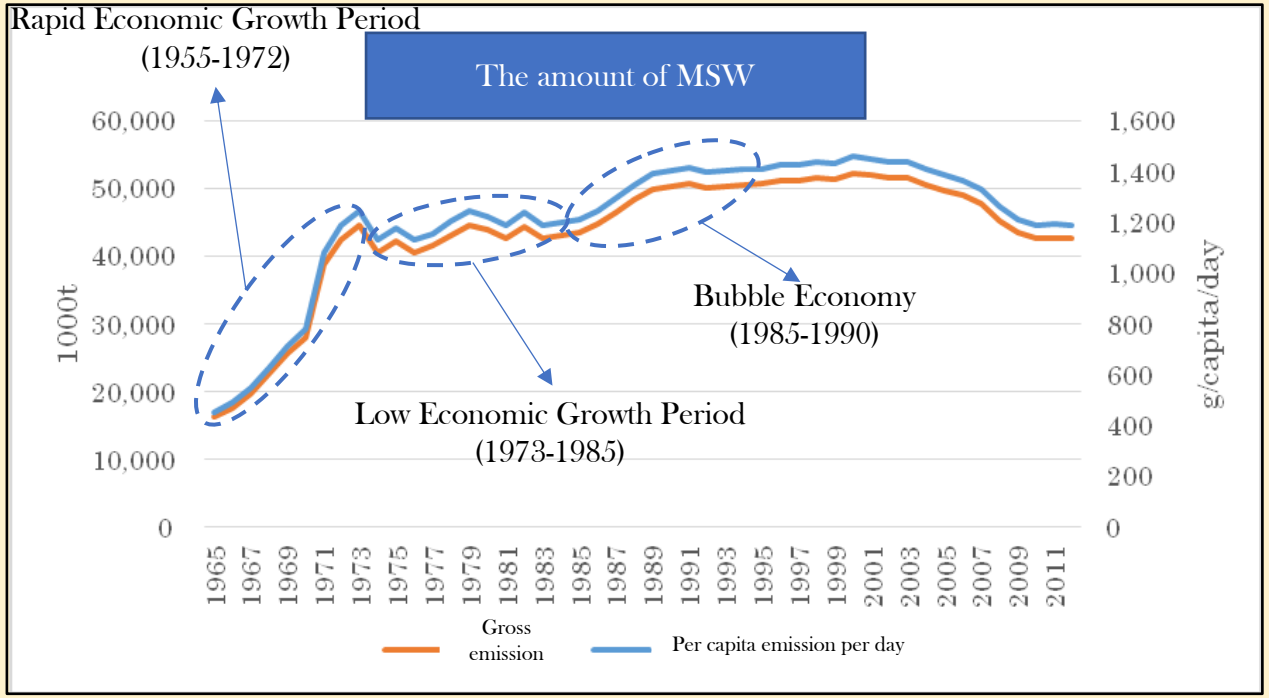
- After the rapid economic growth period, economic growth rate declined, and Japan experienced **low growth of economy** for a while (1973-1985).
- Yet, soon after that, Japan came to be intoxicated with a **bubble economy** (1986-1990).
- Japanese life-style changed, and became wasteful.
- **Various types of containers and packages** appeared in the economy, and most of them were single use.

New waste problems

- Wasteful life-style created **new waste problems**.
- Municipalities found difficulty in treating various types of **containers and packages**.
- Other **end-of-use products** (eg. end-of-life vehicles, electric appliances and so on) also created waste problems, since some of them were **illegally dumped** in the natural environment.

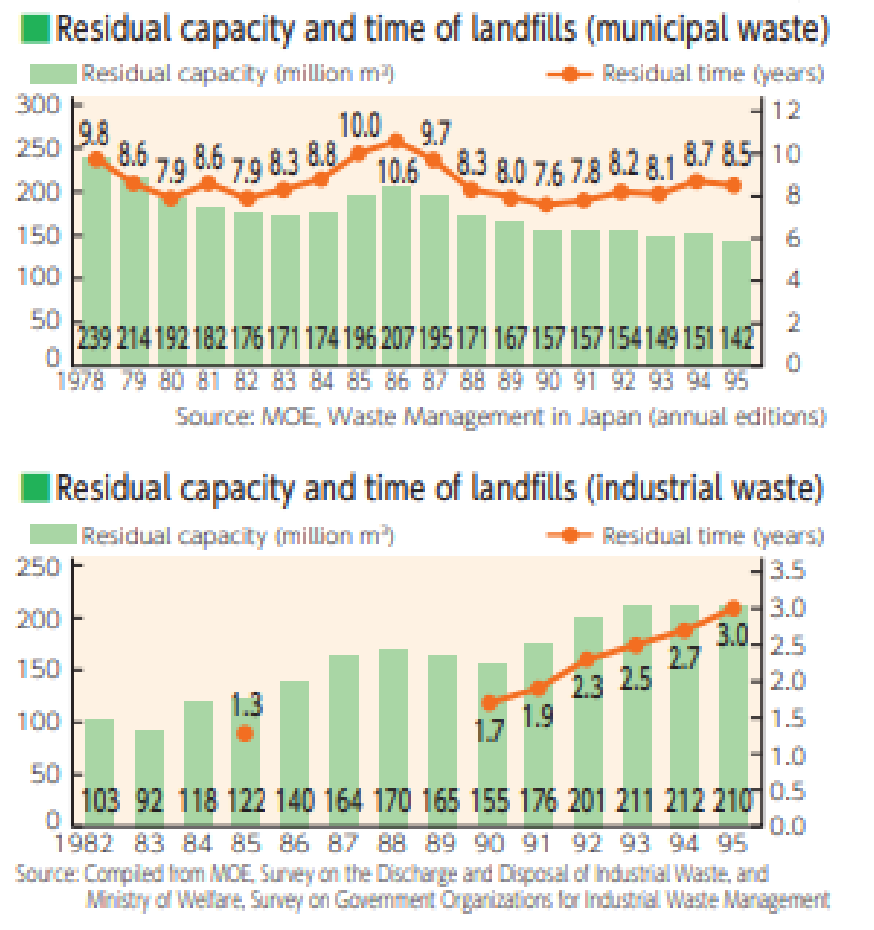
Trend of the amount of MSW

The amount of MSW grew rapidly during the rapid economic growth period. Although it decreased just after the first oil shock, it again came to increase gradually.



Sources: Population; *Statistics of Population*, National Institute of Population and Social Security Research, Waste; *Long-time Series Data of Japan*, Statistics Bureau of Japan and *Circumstances of Discharge and Disposal of Municipal Solid Waste*, Ministry of Environment

Shortage of landfill



Source: Ministry of Environment, Japan (2014) *History and Current State of Waste Management in Japan* (https://www.env.go.jp/content/900453392.pdf)

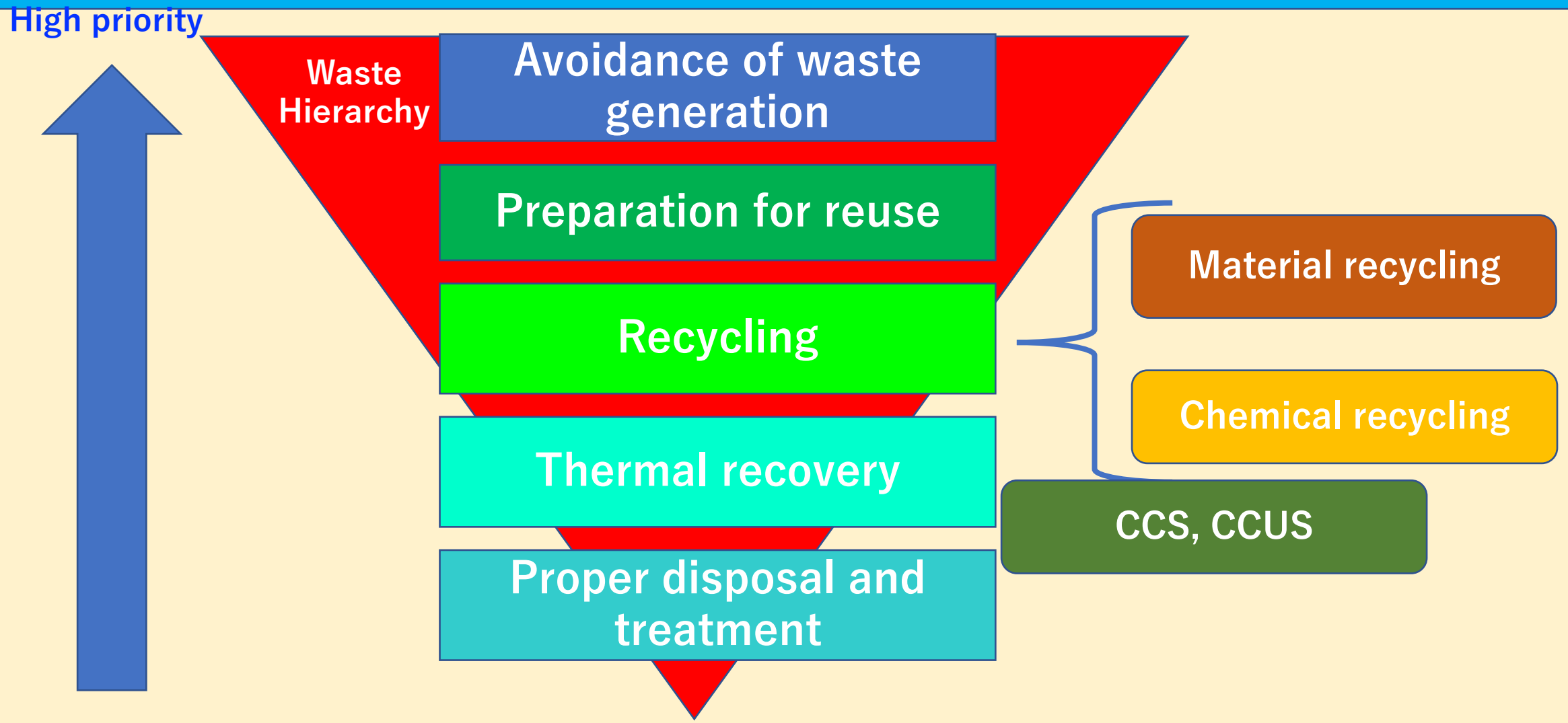
2. 3R’s and Circular Economy

3R’s policy

- So called **3R’s (reduce, reuse, recycle) policy** was initiated around the middle of1990s in Japan.
- The 3R’s movement gradually spread many municipalities in Japan.
- Former prime minister Koizumi proposed the 3R’s initiative in **2004** in **G8 summit in Sea Island of Georgia** in USA.
- Since then, the concept of 3R’s gradually spread around the world, although the idea is considered to be first proposed in USA in 1970s.

Topic: Waste Hierarchy

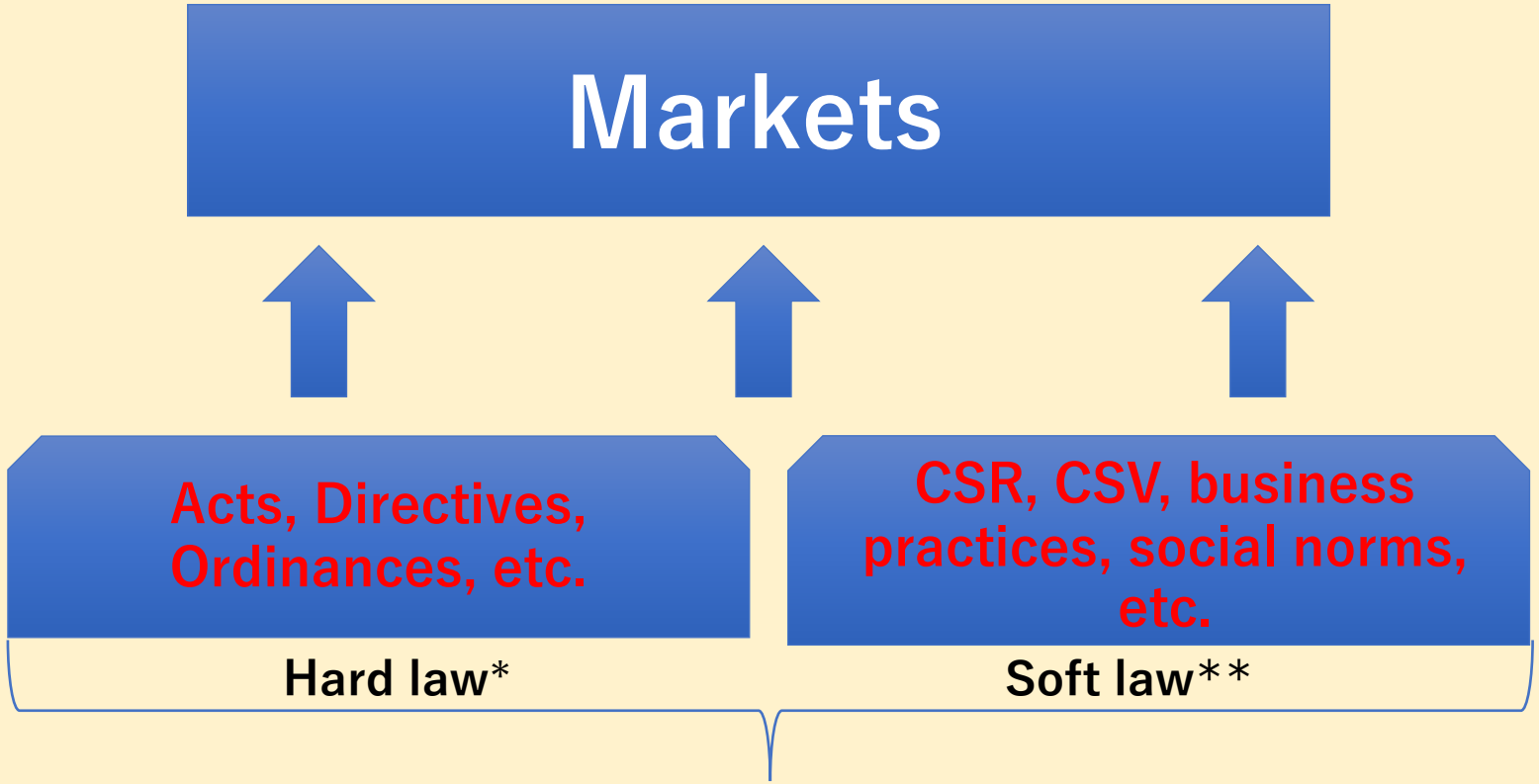
Priority of waste treatment



Legal support for 3R's policy

- It is *not* possible to promote 3R's by utilizing only market mechanism.
- **Institutional infrastructure (hard law and soft low)** is indispensable to implement the 3R's policy in an effective manner.
- Thus, Japan introduced **various types of acts (hard law)** for supporting the 3R's policy.

Institutional infrastructure to support 3R



* *Hard law* refers to legal standards enforced by governments.
** *Soft law* in contrast refers to non-legal standards including CSR, CSV, social norms, moral codes and business practices.

Legal System to establish a Sound Material-Cycle Society

The Basic Environment Law

Basic Environment Plan

Basic Act on Establishing a Sound Material-Cycle Society (the Basic Framework Law)

Securing material circulation in society
Reducing natural resource consumption
Reducing environmental loads

Fundamental Plan for Establishing a Sound Material-Cycle Society:
bases for central government's other plans

<Proper treatment of wastes>

Law for Enhancement of Resource Circulation Business

<Promotion of regeneration>

Waste Management and Public Cleansing Law

Law for Promotion of Effective Utilization of Resources

Regulation according to the character of individual products

Law for Promotion of Sorted Collection and Recycling of Containers and Packaging

Law for Recycling of Specified Kinds of Home Appliances

Law on Recycling Food Wastes

Law Concerning Recycling of Materials for Construction Works

End-of-Life Vehicles Recycling Law

Law for Recycling of Small Electric & Electronic Appliances

Law for promotion of circulative use of plastic resources

Law Concerning the Promotion of Procurement of Eco-Friendly Goods and Services by the State and Other Entities (the central government taking initiatives in procurement of recycled products)

3R’s and Circular Economy

- One could say that **Circular Economy (CE) originates from 3R’s**.
- However, there is a **slight difference between 3R’s and CE**.
- **An economic aspect is given more weight in CE** than 3R’s.
- The **main target of CE** is the **triple win of economy, environment and resources**.

One more difference

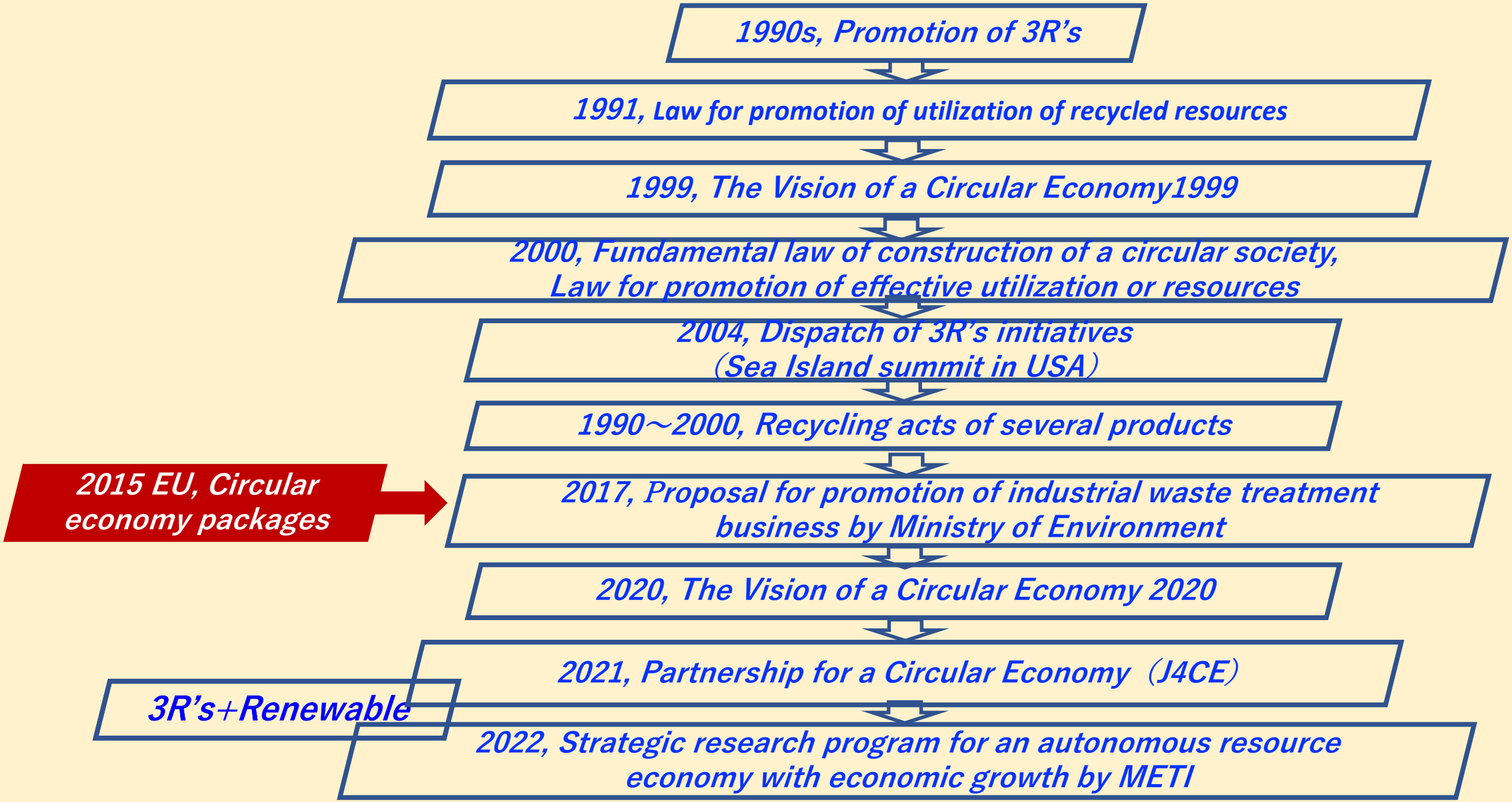
- **The producers' role for circulative use of resources** is given more weight in the CE policy than in the 3R's.
- **Extended producer responsibility (EPR)** is indispensable in a circular economy, whether it is compulsory (hard law) or voluntary (soft law).
- **Design-for-environment (DfE) by EPR** is a key concept for constructing a circular economy.

Circular Economy Vision 1999

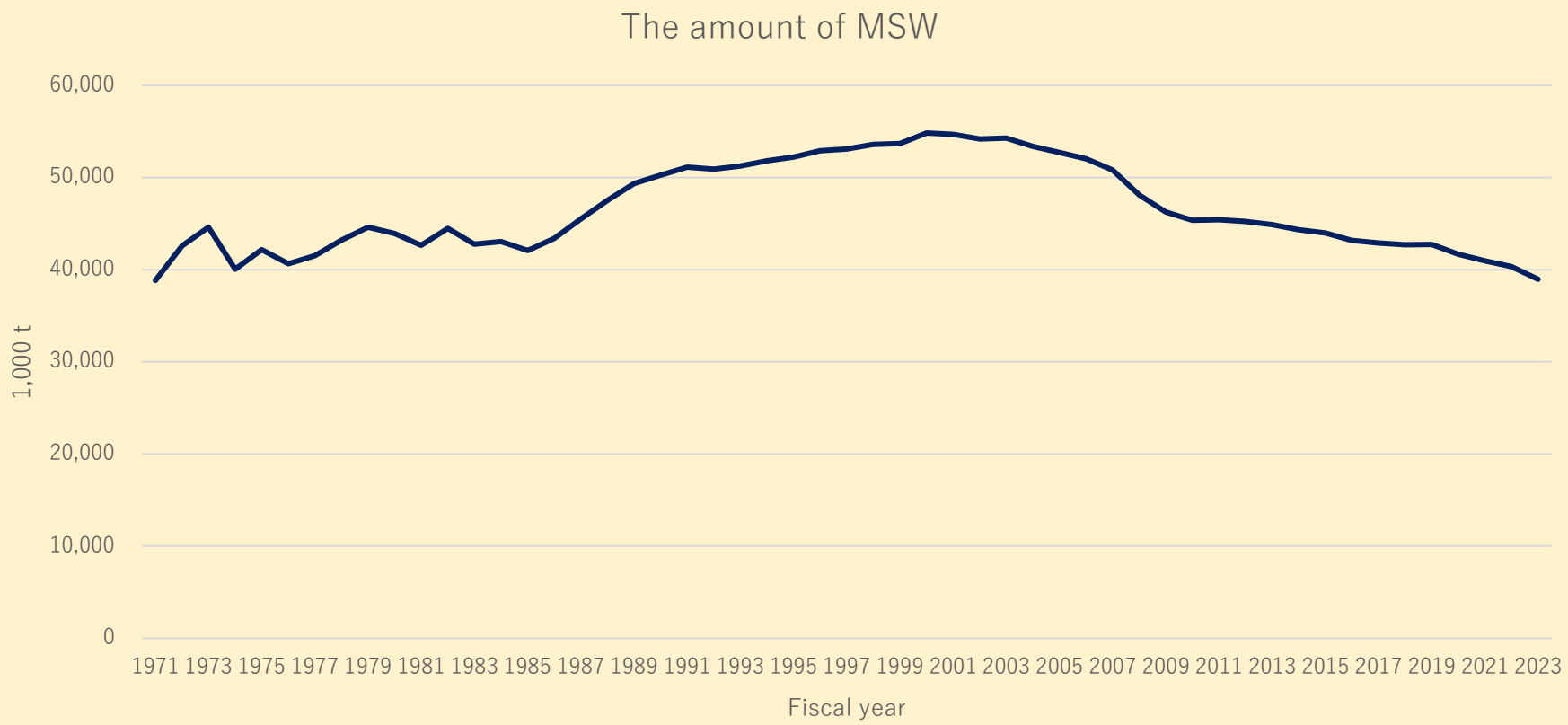
- Japan addressed ***The Vision of Circular Economy 1999***, followed by EU's circular economy package.
- It emphasized that the **triple win among economy, environment and resources** should be made in a new framework of socio-economy called a circular economy.
- ***The Vision of Circular Economy 2020*** appeared in 2020, upgrading the 1999 version.

EU's Circular Economy

- EU proposed the ***Circular Economy Package*** in 2015.
- The idea came after the long discussion on **resource efficiency**.
- It had been expected that **indices of resource efficiency** would be made and announced by EU.
- Yet, instead of resource efficiency, the idea of CE was first conceptualized and proposed.

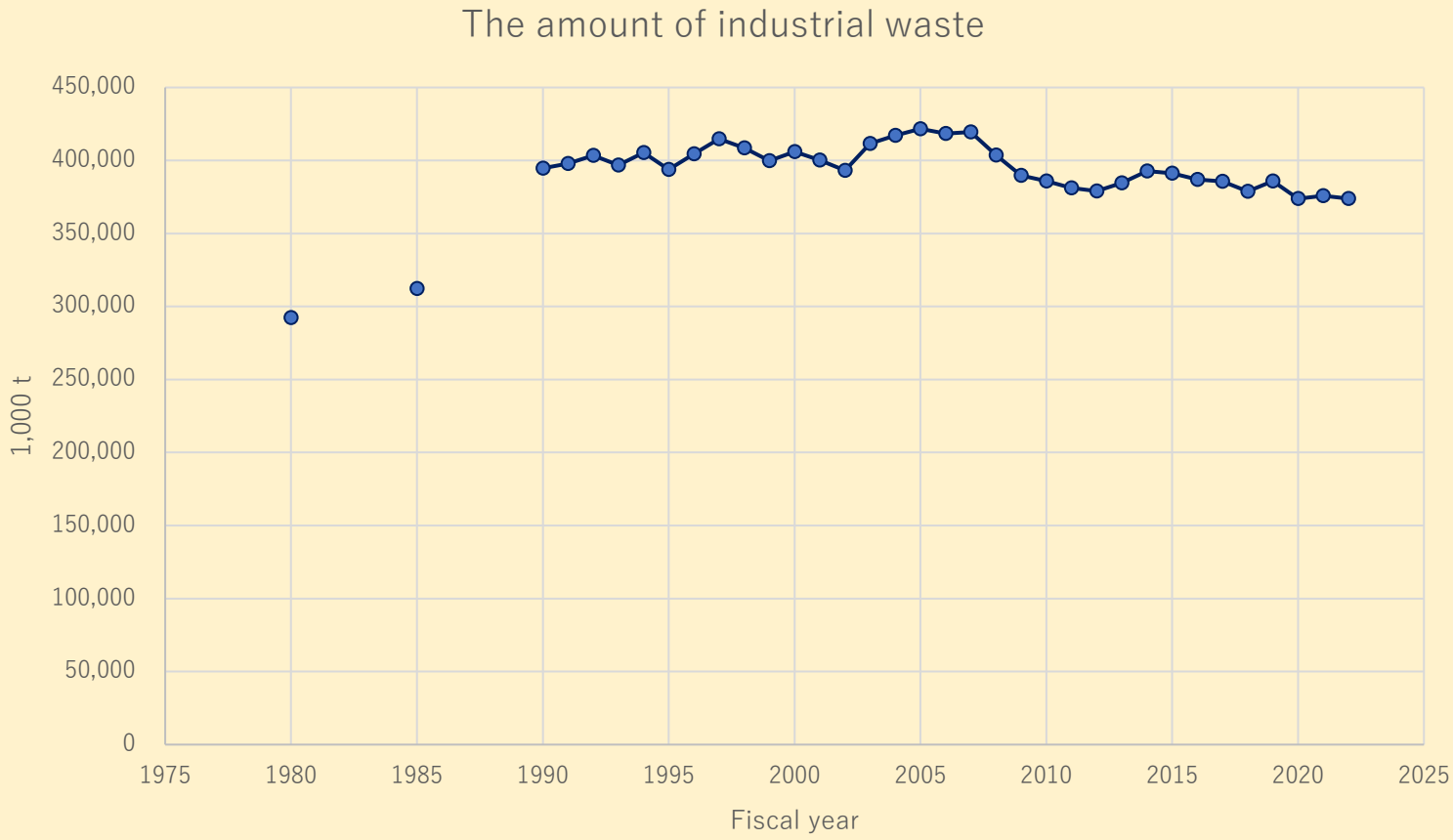

1990s, Promotion of 3R's
1991, Law for promotion of utilization of recycled resources
1999, The Vision of a Circular Economy1999
2000, Fundamental law of construction of a circular society,
Law for promotion of effective utilization or resources
2004, Dispatch of 3R's initiatives
(Sea Island summit in USA)
1990～2000, Recycling acts of several products
2015 EU, Circular economy packages
2017, Proposal for promotion of industrial waste treatment business by Ministry of Environment
2020, The Vision of a Circular Economy 2020
2021, Partnership for a Circular Economy (J4CE)
3R's+Renewable
2022, Strategic research program for an autonomous resource economy with economic growth by METI

Results of 3R's Policy and Circular Economy (1)
Trend of the amount of MSW



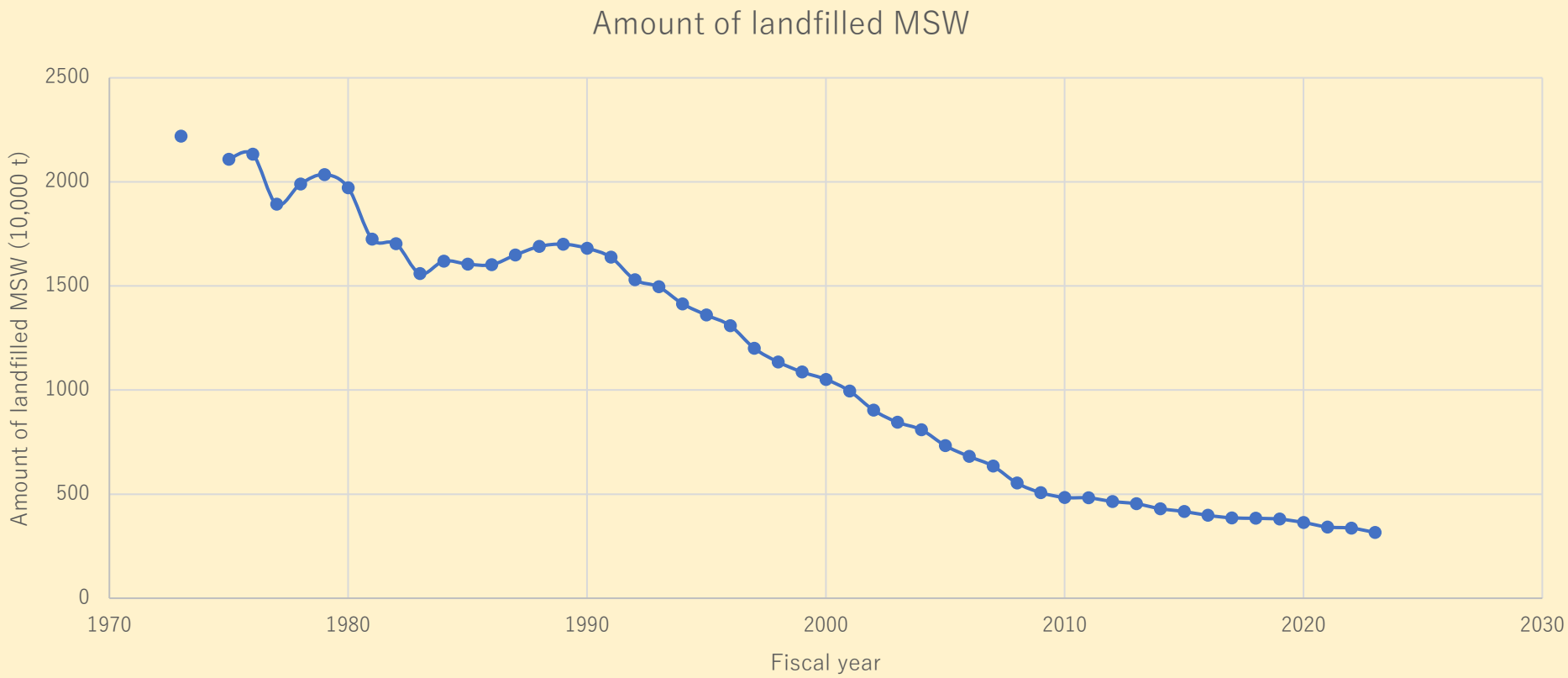
Data source: Ministry of Environment

Results of 3R's Policy and Circular Economy (2)
Trend of the amount of industrial waste



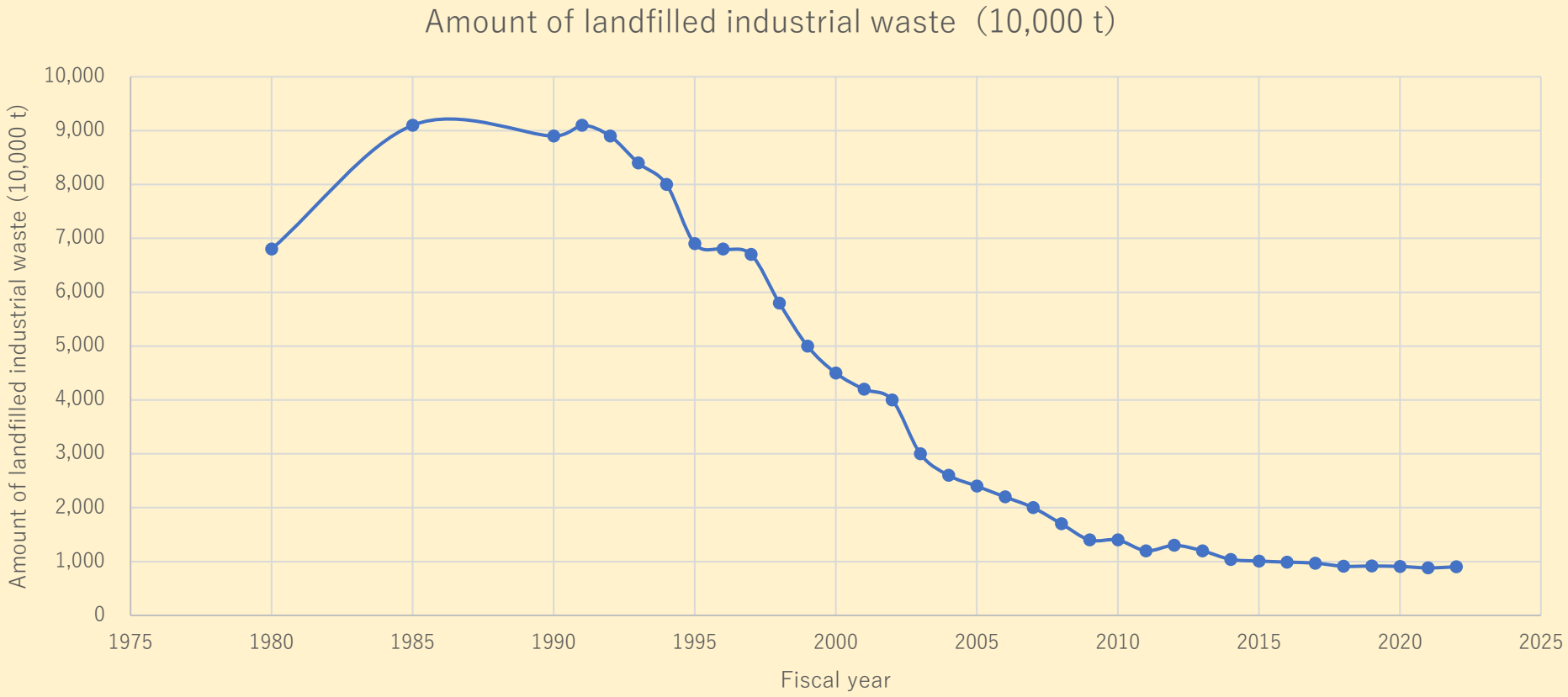
Data source: Ministry of Environment

Results of 3R's Policy and Circular Economy (3)
Trend of the amount of landfilled MSW



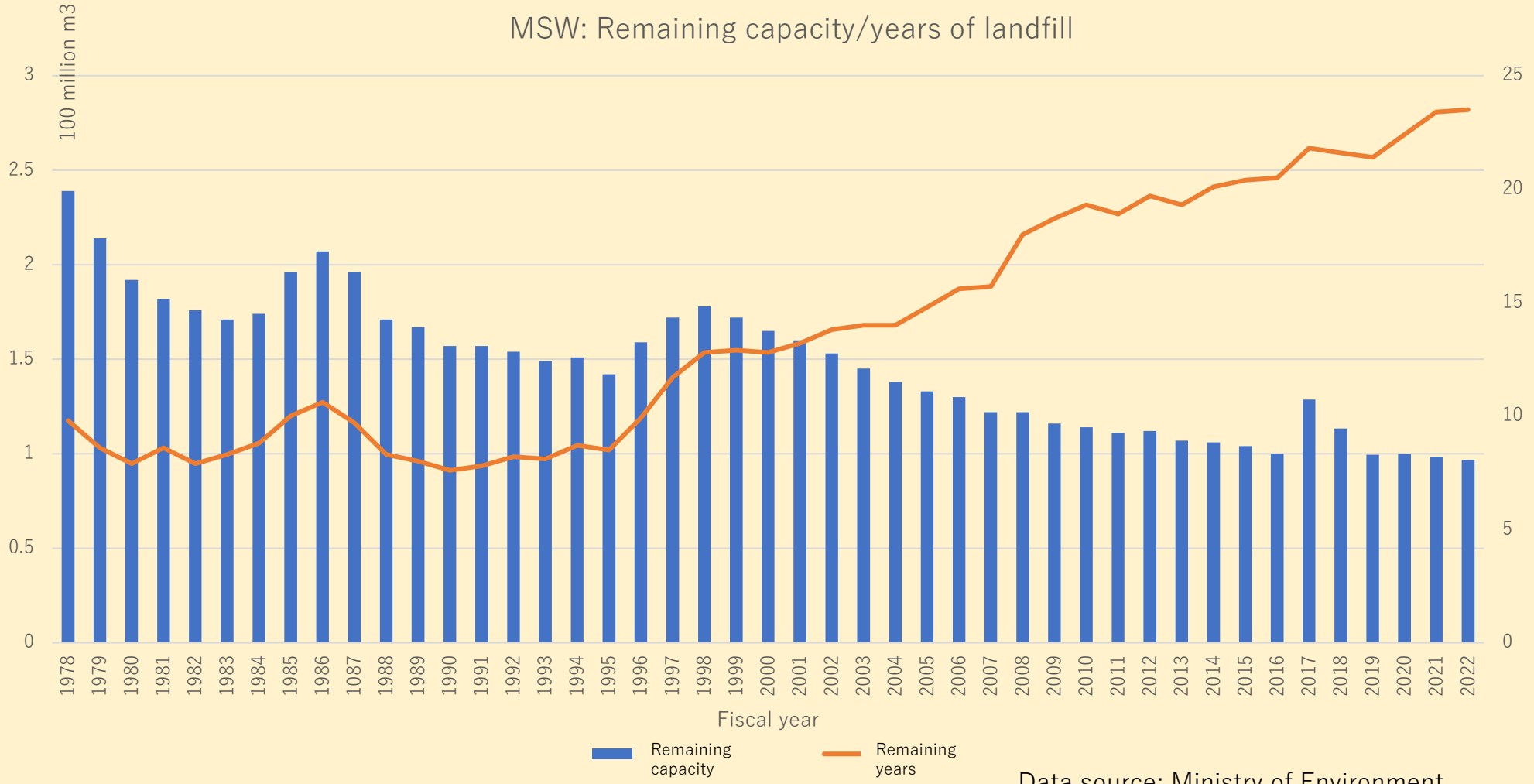
Data source: Ministry of Environment

Results of 3R's Policy and Circular Economy (4)
Trend of the amount of landfilled industrial waste



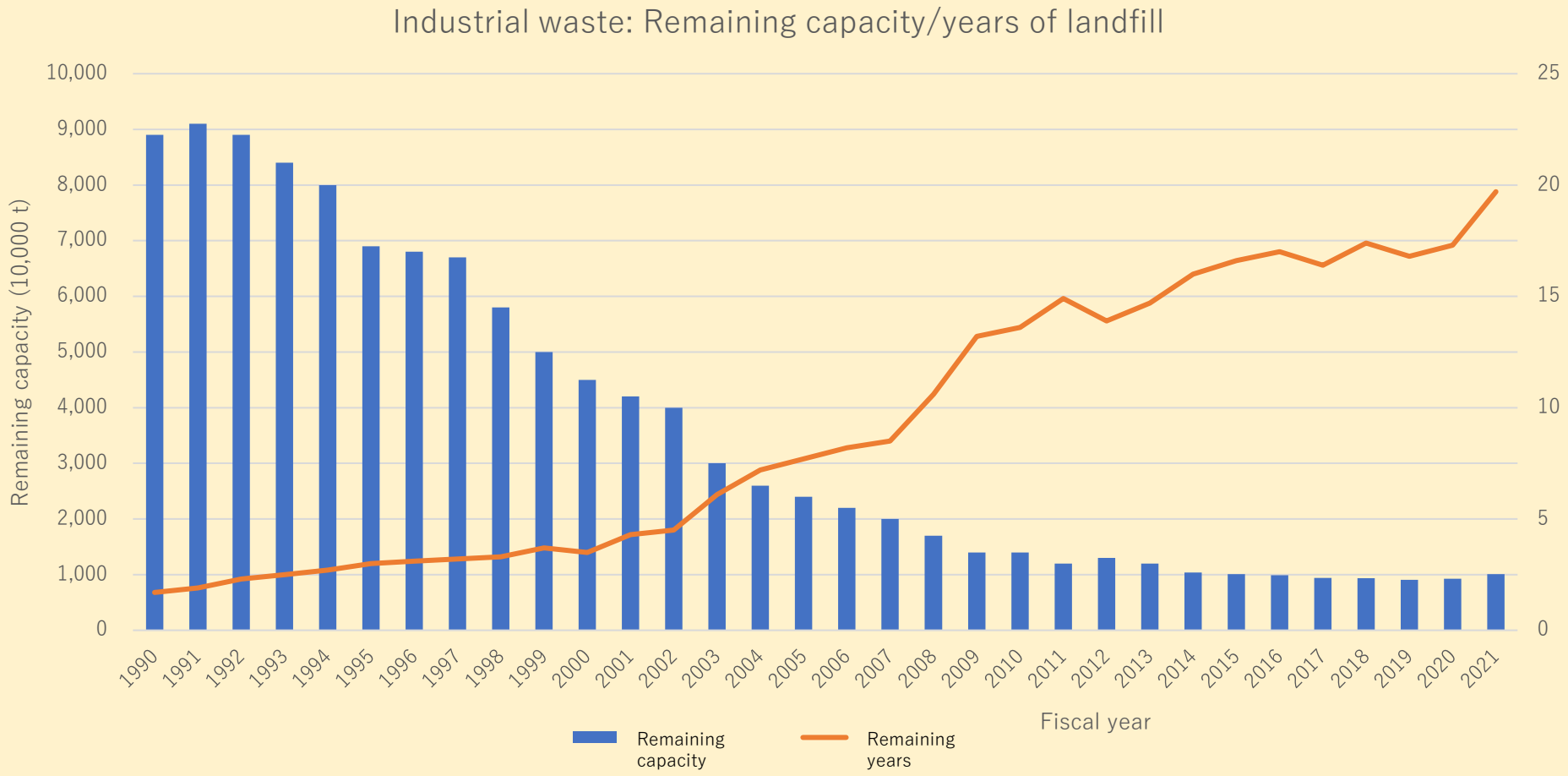
Data source: Ministry of Environment

Results of 3R's Policy and Circular Economy (5) MSW; Remaining capacity and years of landfill



Data source: Ministry of Environment

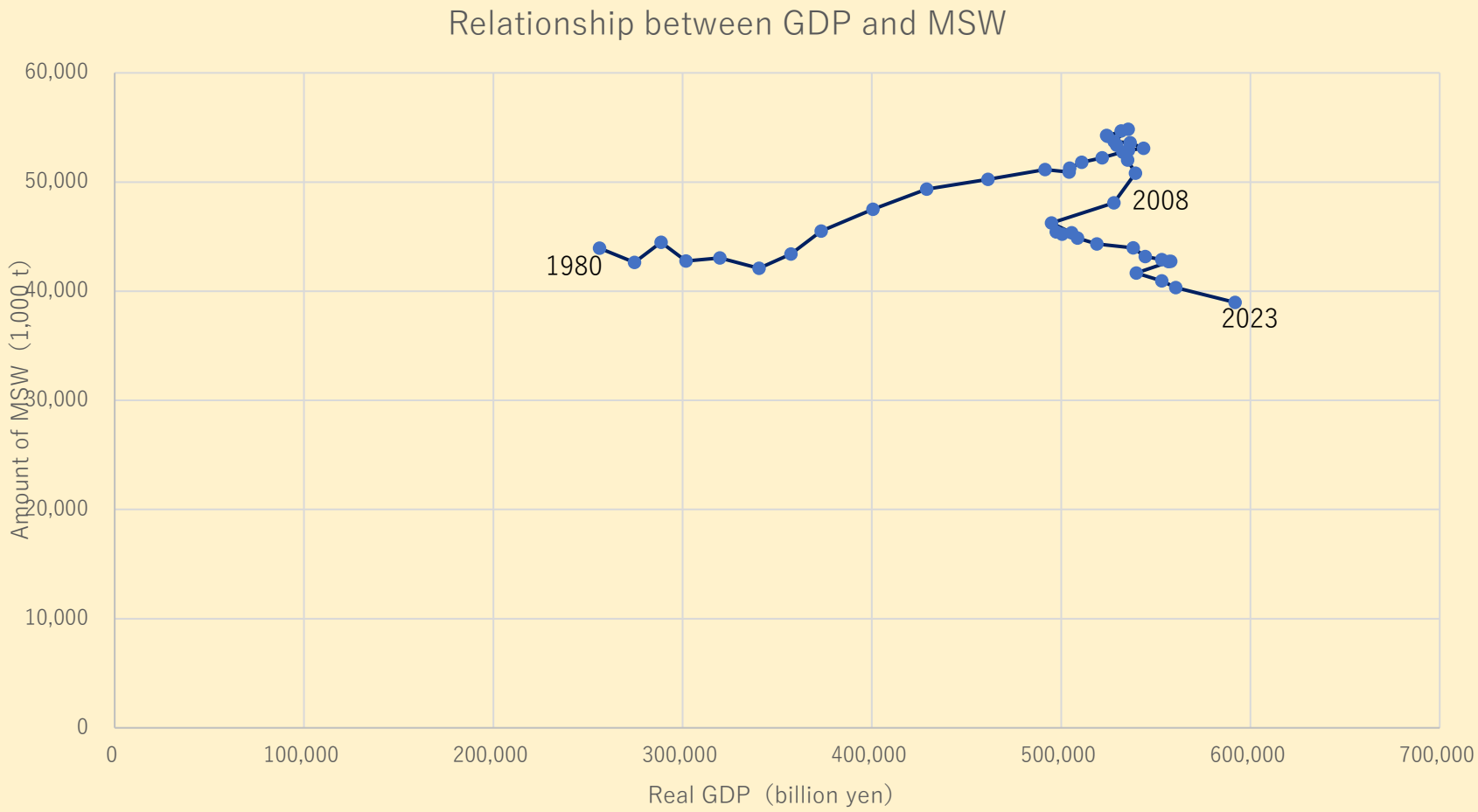
Results of 3R's Policy and Circular Economy (6) IW; Remaining capacity and years of landfill



Data source: Ministry of Environment

Results of 3R's Policy and Circular Economy (7)
Relationship between GDP and the amount of MSW

After 2000, Japan was successful in decoupling of waste generation and economic growth.



Data source: Ministry of Environment

Results of 3R's Policy and Circular Economy (8)
Relationship between GDP and the amount of IW

Data source: Ministry of Environment

3. Circular Economy and EPR

Extended Producer Responsibility (Conventional EPR)

- **Extended Producer Responsibility (EPR)** plays a crucial role in a circular economy.
- **EPR** is the responsibility of producers for waste-disposal/recycling, ***either*** **by paying for waste-disposal/recycling *or* by handling waste by themselves**.
- Conventionally, **EPR is applied to brand-owners or producers** who are near to consumers on the product chain.

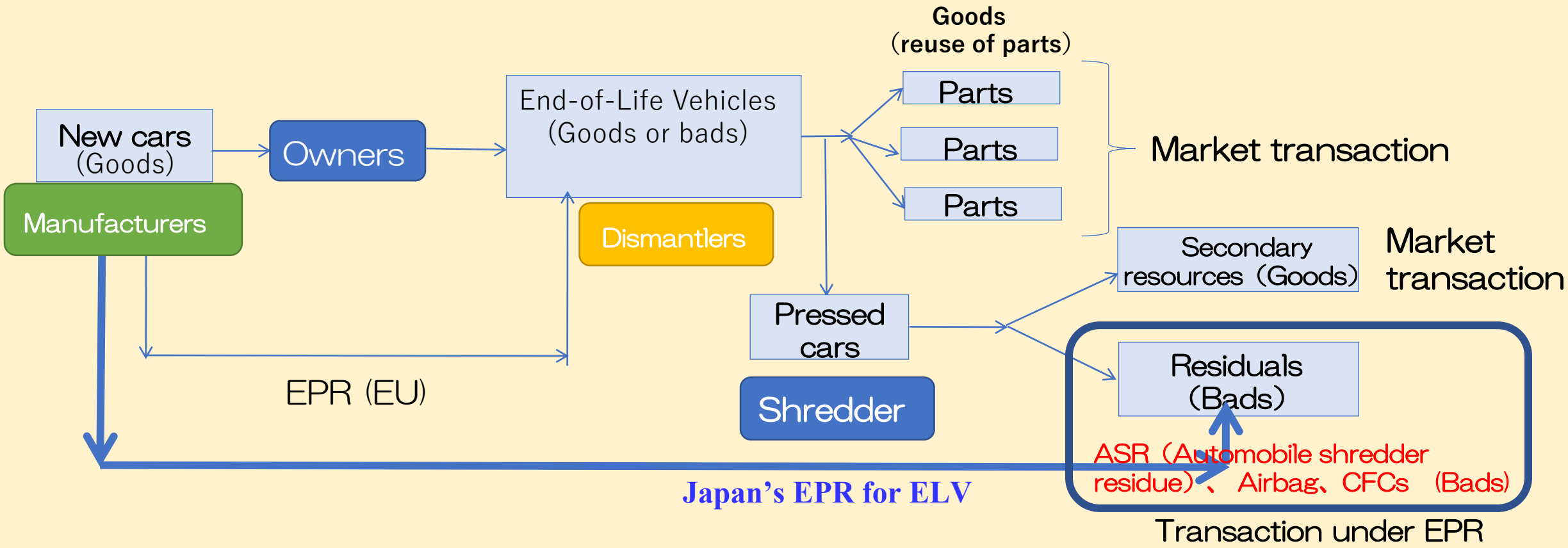
Two types of EPR

- **Physical responsibility (physical or organizational EPR)**: The producer for the products that it produces, *either* directly manages and recycles the post-consumer product *or* organizes a system for managing and recycling the post-consumer product; the private sector is responsible for appropriate management and recycling in physical responsibility EPR.
- **Financial responsibility (financial EPR)**: The producer for the products that it produces is responsible for paying the cost of management and recycling of the post-consumer product in financial responsibility EPR.

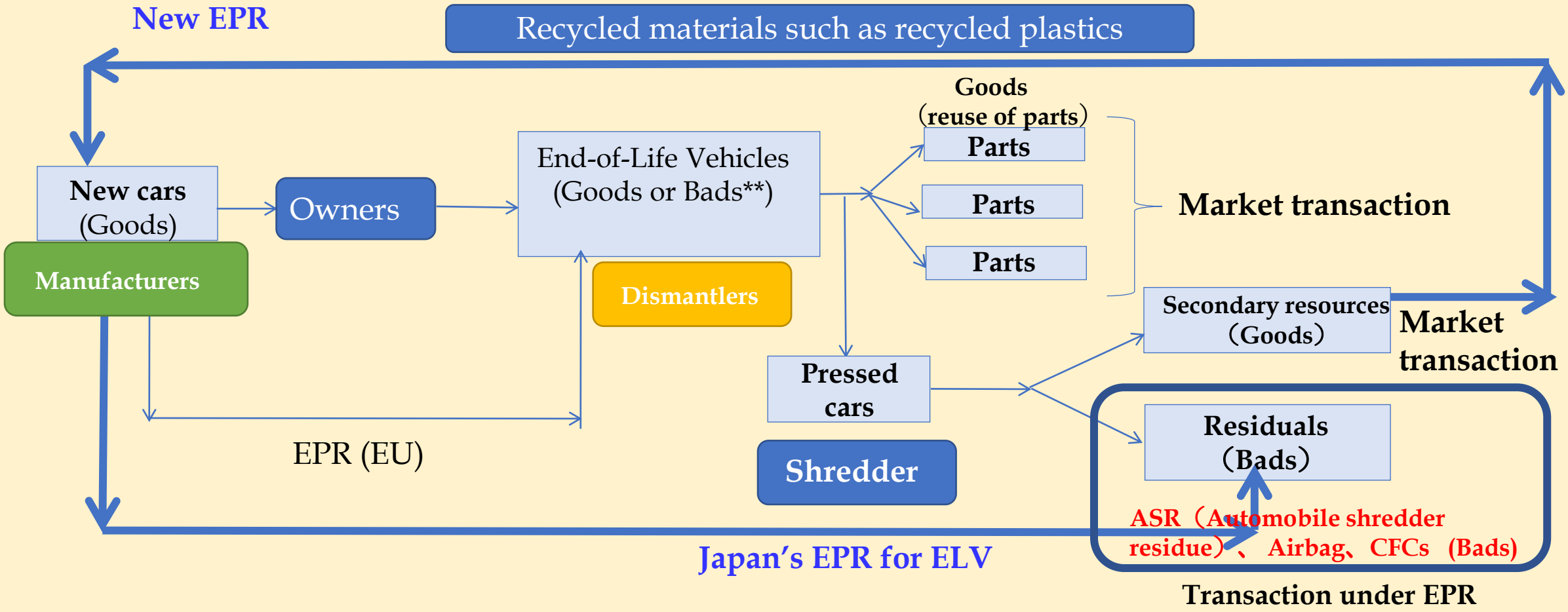
Extended Producer Responsibility (New EPR)

- It is now argued that **a new type of producer responsibility** should be introduced for implementing a circular economy.
- Nowadays, producers are considered to be responsible for *using* more **secondary (recycled) resources** as inputs, instead of natural resources.
- Otherwise, circulative use of resources could not be completed.

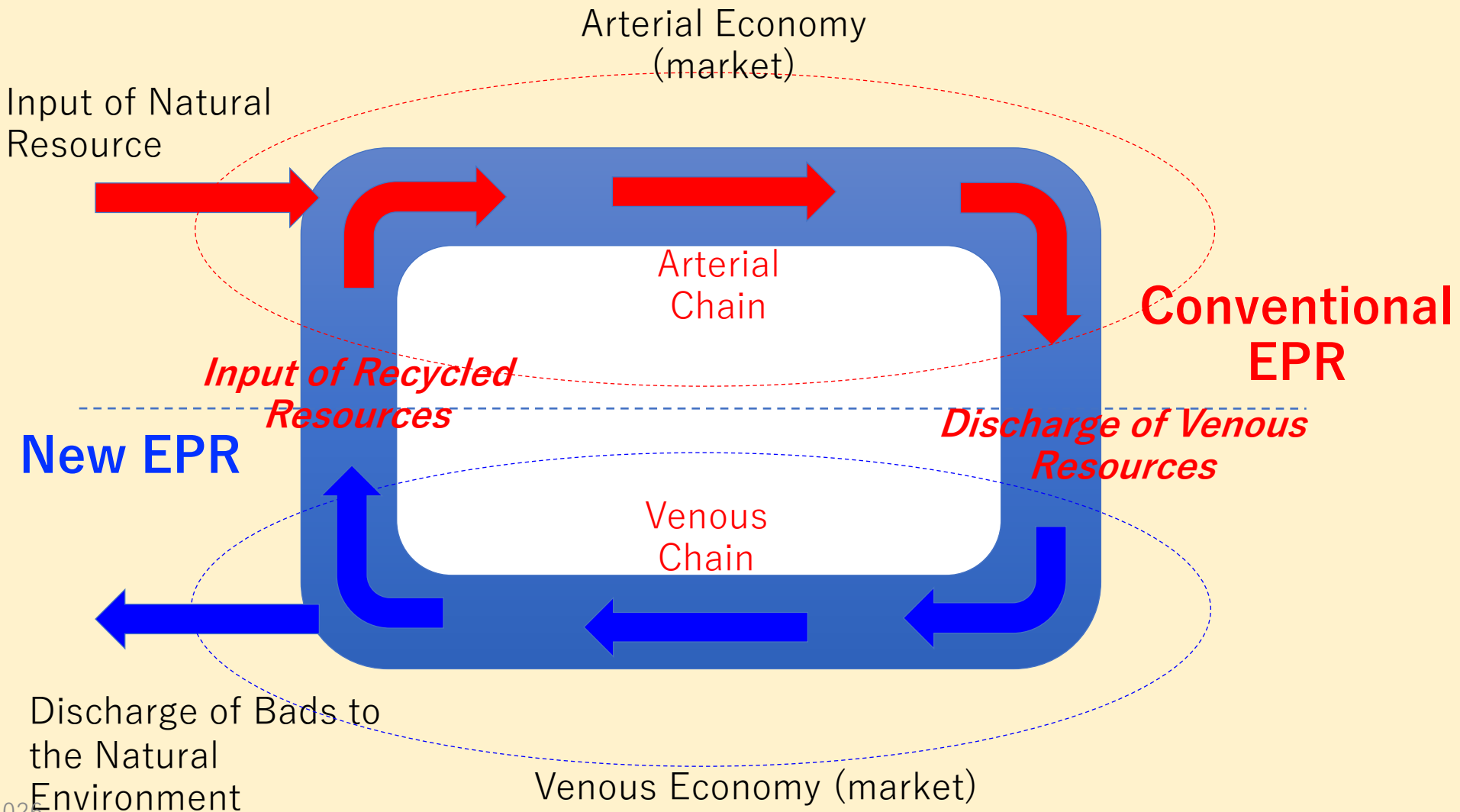
Example of EPR; End-of-Life Vehicle



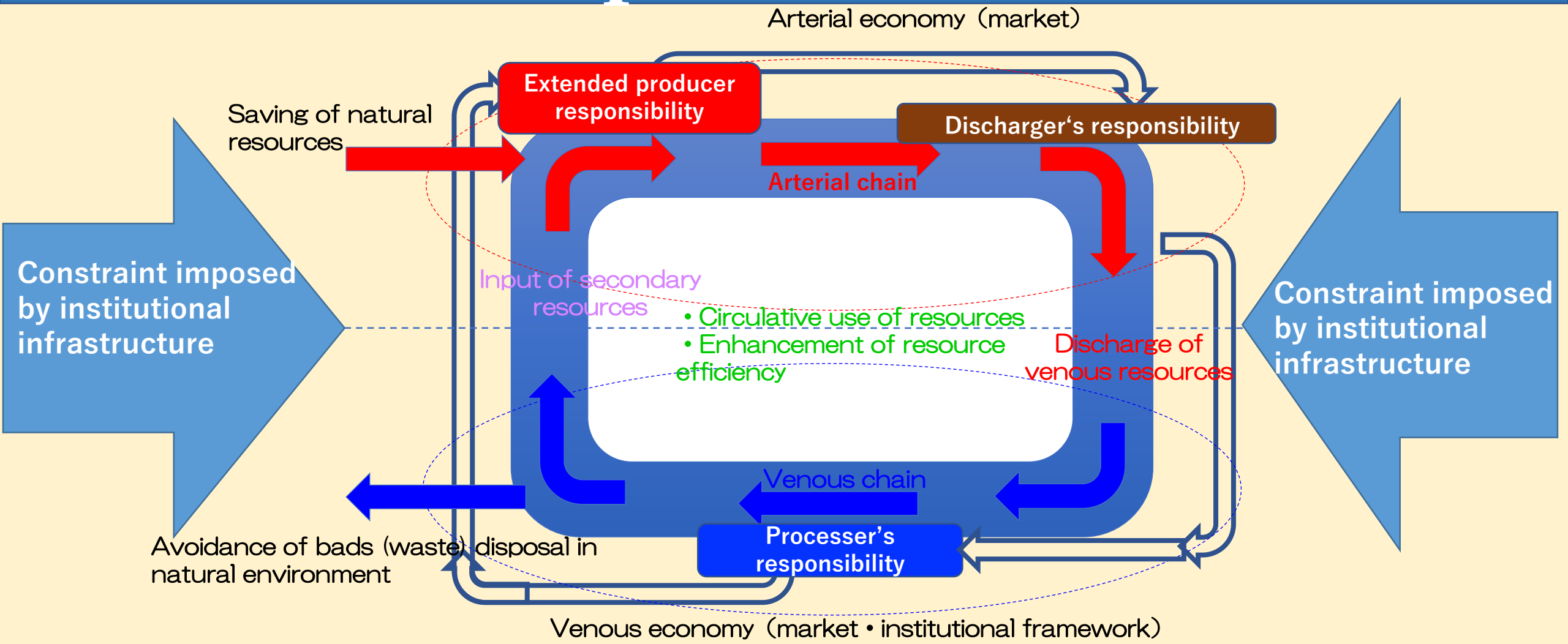
Example of New EPR; End-of-Life Vehicle (not yet implemented)



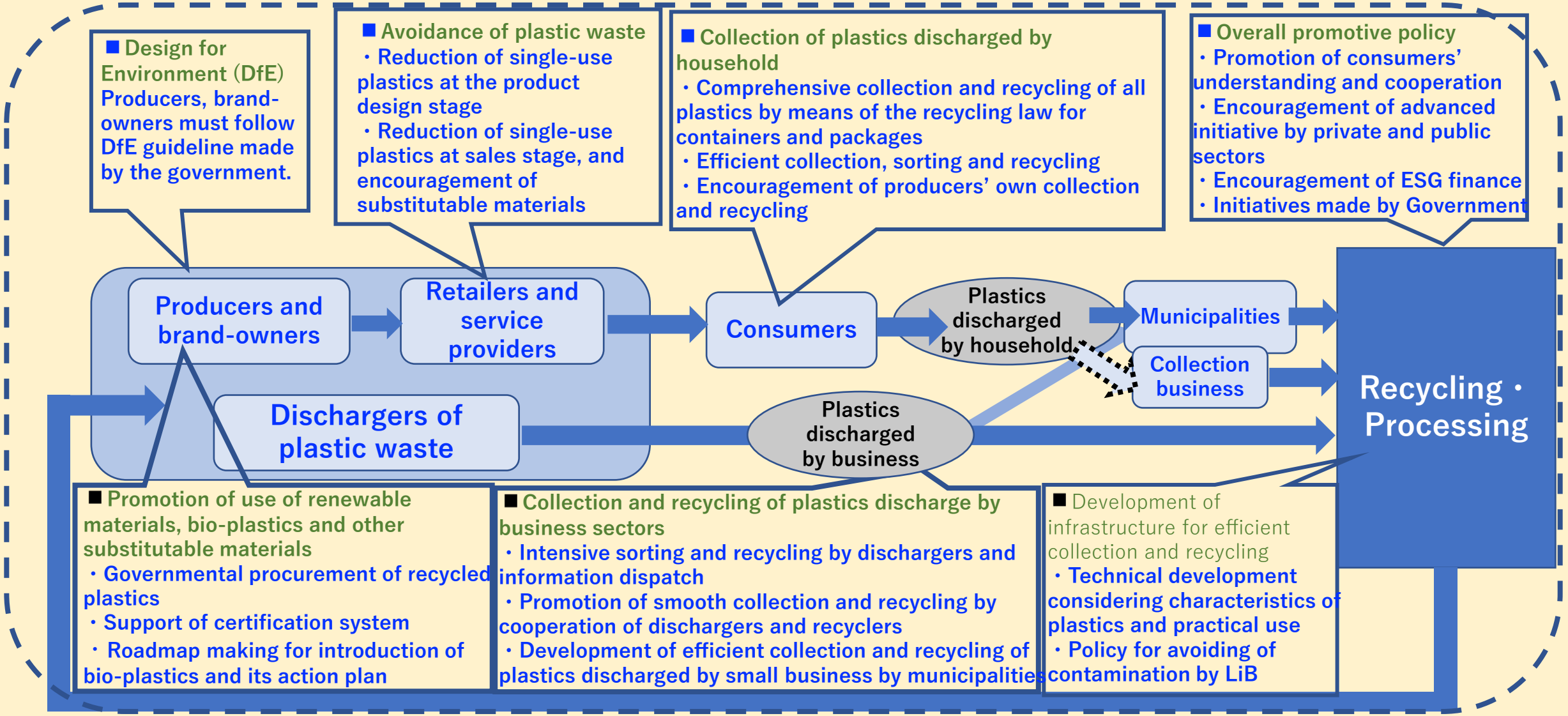
CE and EPR


Arterial Economy
(market)
Input of Natural
Resource
Arterial
Chain
Conventional
EPR
Input of Recycled
Resources
Discharge of Venous
Resources
New EPR
Venous
Chain
Discharge of Bads to
the Natural
Environment
Venous Economy (market)

Three responsibilities are connected on a product chain



An example of PCC; The law for promotion of circulative use of plastic resources



5. Concluding remarks

Concluding remarks (1)

- Japan had difficulties in treating municipal solid waste and industrial waste which increased rapidly during the rapid economic growth period.
- Garbage war of MSW broke out, and illegal dumping of industrial waste frequently occurred.
- A number of incineration plants were constructed for treating MSW.
- The so-called 3R's policy was adopted and spread among quite a few actors such as municipalities, schools, business circles and so on.

Concluding remarks (2)

- Recycling acts for individual items such as electric/electronic appliances, automobile, containers/packages and so on were passed and enacted one after another.
- According to those policies, Japan was successful in realizing the de-coupling of MSW and GDP.
- The amount of industrial waste seems to decline in the long-run, although the further empirical analysis should be made.
- Japanese government has promoted a circular economy policy, following the successful story of 3R's.

Concluding remarks (3)

- The legal system for implementing a circular economy has been constructed.
- The institutional infrastructure has also been well coordinated, so that voluntary actions of private sectors can be more effective.
- Yet, it is not easy to realize both carbon neutral society and circular economy soon.

Thank you so much for your attention!

Today is the first day of the rest of your life.

(By Charles Dederich)