

# MOEJ Projects to Promote the Introduction of Energy-Efficient Refrigeration Technologies that Use Natural Refrigerants



**Ministry of the Environment**

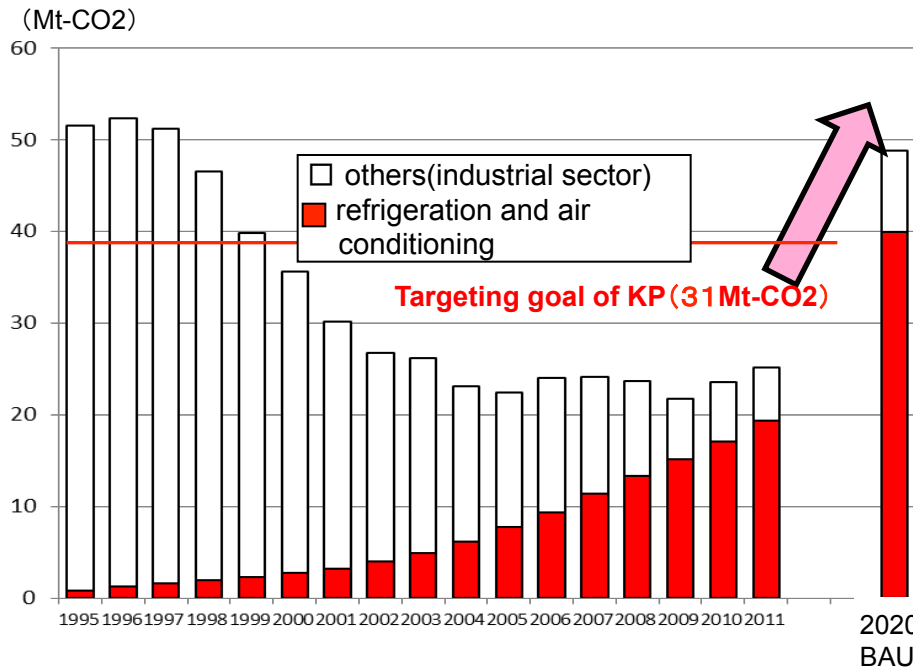
# Expected Increasing of amount of emissions of Fluorocarbons

Total amount of emissions of fluorocarbons, especially in industrial sector, has been reduced drastically and stayed below the targeting goal of Kyoto Protocol since 2001. It will be, however, increasing rapidly especially in refrigeration and air conditioning sector.

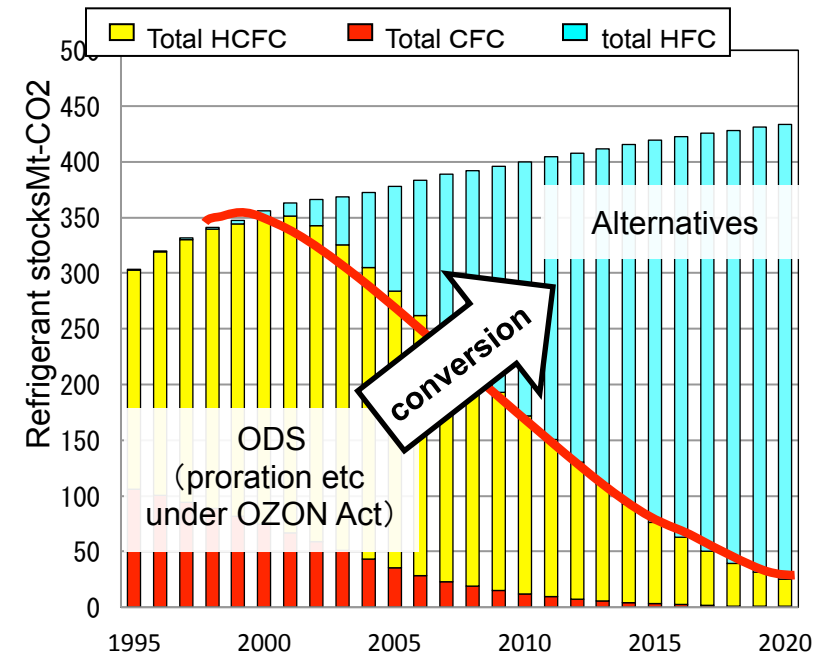
※ On a total amount of emissions of GHG, CFC will be doubled to about 4 % in 2020 since 2011.  
 Regarding solely office and residential sector, the figure rises up really to 11%, almost 5% in 2011.

89% reduction, comparing to the base year 1995, was achieved in industrial sector, but increased 24-fold in refrigeration and air conditioning sector in 2011.

Transition of amounts of emissions of alternatives

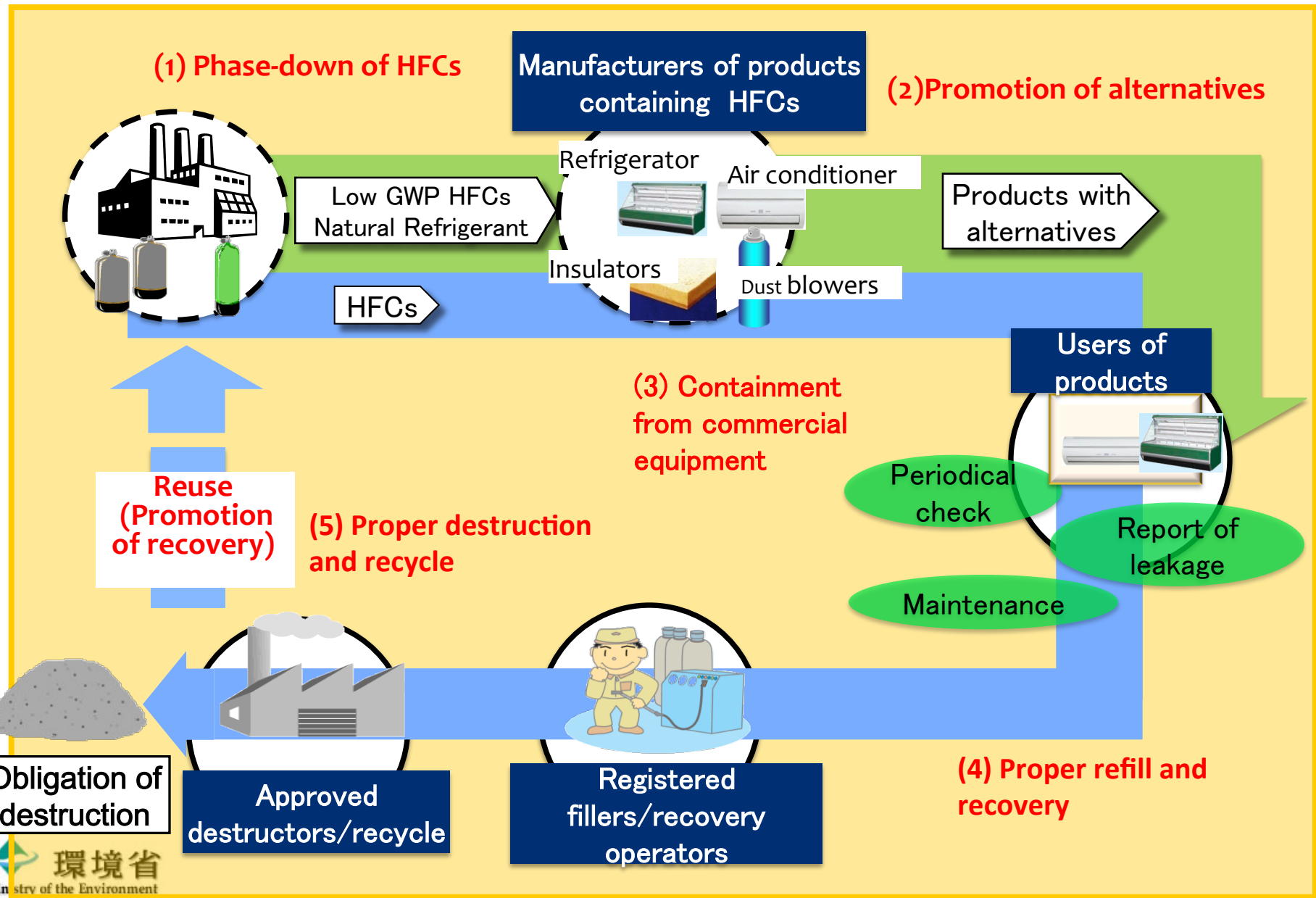


Refrigerant stocks (BAU) (CO2 equivalent)



(BAU: Business As Usual ※estimated figure under continuing of present situation)

# The act covers the whole lifecycle of refrigerants. It will come into operation in 2015.





# Projects to Promote the Introduction of Energy-Efficient Refrigeration Technologies that Use Natural Refrigerants (partially in cooperation with MLIT and METI)

2014FY Budget  
5,046 million JPY (New Budget)

## Background

- HFCs are used in our daily life.
- The Ministry of the Environment of Japan provides a subsidy to private companies in Japan to cover a part of the cost when they purchase commercial and industrial refrigeration equipment that is highly energy efficient and based on natural refrigerants.
- On June 5, 2013, the Diet approved the Act on Rational Use and Proper Management of Fluorocarbons.

## Scheme for the Project

- (1) Eligible applicants for subsidy : Private companies  
Project Year : FY2014 to FY ~ FY2016
  - (2) Projects eligible for subsidy: :
    - ① entities for auxiliary projects (Japan Refrigerants and Environment Conservation Organization, JRECO, was selected)
    - ② entities installing warehouses and showcases which are highly energy efficient and based on natural refrigerants through ①
- Subsidization Ratio :
- ① from Government of Japan to entities for auxiliary projects ; fixed sum
  - ② from entities for auxiliary to installing organizations; 1/2 or 1/3 of body price and installing fee

## Outline

- (1) Public awareness related to energy-saving natural refrigerant equipment (METI cooperation) (050 million yen)  
Development of energy-saving natural refrigerant equipment installation manual, briefings
- (2) Aid for energy-saving natural refrigerant equipment spread using advanced technology (5 billion yen)  
Introduction of auxiliary equipment the possibility to act as the designated product in the revised fluorocarbons method is high and the effect can be expected by this project
  - Refrigerated warehouse (Ministry of Land, Infrastructure and Transport cooperation)
  - Showcases

## Effect

- ✓ The promotion of efficiency and low cost of production due to an increase in the number of manufacturing equipment and public awareness to the operators, to promote the dissemination of energy-saving natural refrigerant equipment further.
- ✓ MOE promotes the rational use of fluorocarbons refrigerants high greenhouse effect.

## Exemplary Projects (Super Low Temperature Refrigerated Warehouse)



Warehouse

Air-Based Freezing System

«Energy-saving»  
Energy consumption reduction : 1,115,063 kWh/year (34% compared to the former level)

«CO2 emission reduction»  
559ton -CO2/year  
(Breakdown)

- Energy-source CO2 reduction : 380 ton/year  
\*Electricity 0.341kg CO2 reduction/kWh 0.3 4 1 kg- CO2 /kWh
- Refrigerant leakage CO2 reduction: 179ton CO2/year

# Subsidiary Rules

## 1 Project eligible for subsidy

Projects to introduce energy efficient refrigeration and Air Conditioning equipment based on National Refrigerants that uses natural refrigerants or similar equipment (It does not matter updating or newly installing of equipment.)

## 2 Subsidization Ratio

(1) A maximum of a half of the price (including installation fee) of freezing and refrigeration equipment used in warehouse business

(2) A maximum of one third of the price of showcases (including installation fee) in the food retailing business



# Schedule for Public Offering

31 <sup>st</sup> March	Selecting Entities for Auxiliary Projects (JRECO was selected)
April ~ March	Public Offering for Auxiliary Projects Briefings
May	Review and Adoption for Auxiliary Project
June	Unofficial Adoption for Projects Submitting a grant application
Early July	Receiving a notice of determination issued Conducting business after due date

# Establishment of special measures of tax base of real property tax related to installing non-fluorocarbons products (certain freezing and refrigeration equipment using natural refrigerants )

Amount of tax base might be written down on certain freezing and refrigeration equipment applying natural refrigerants like NH<sub>4</sub>, air, CO<sub>2</sub> or water that would be installed between 1<sup>st</sup> Apr. 2014 and 31<sup>st</sup> Mar. 2017: amount of the first 3 years tax base × ratio under municipal regulation (between 2/3 and 5/6, 3/4 is consideration figure)

Act on Rational Use and Proper Management of Fluorocarbons  
(The Act shall come into force on 1<sup>st</sup> day April, 2015)

- **Comprehensive measures to cover whole life cycle from production to destruction of CFCs/HCFCs/HFCs**
- **To urge emission reductions in accordance with the judgment guidelines at each stage**

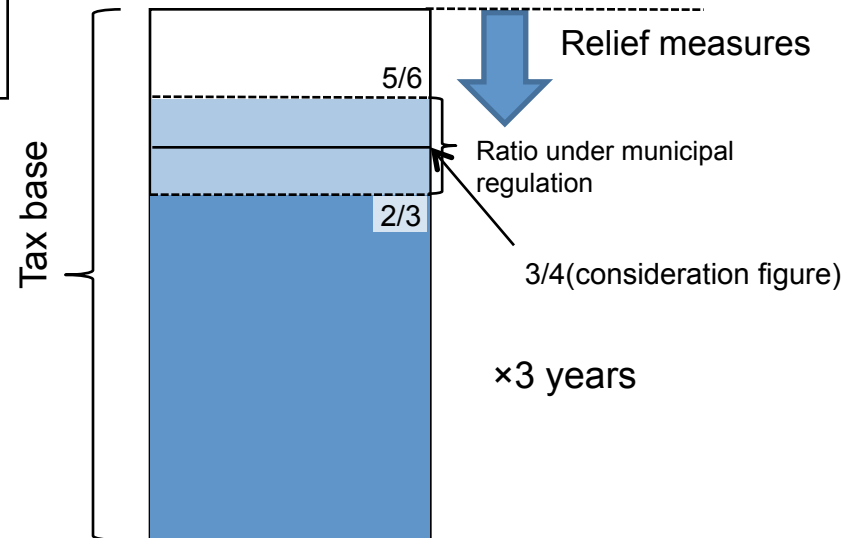
## <Examples>



CO<sub>2</sub>-based Showcased



Air-Based Freezing System



Office of Fluorocarbons Control Policy  
Global Environment Bureau  
Ministry of the Environment

**TEL:** 03-3581-3351 (Ext.6751)

**Email :** [furon@env.jp](mailto:furon@env.jp)