

Revised F-Gas Law in Japan [1]

Target GWP for ‘designated products’

Unlike EU F-Gas Regulation and other regulations, the Japanese law sets GWP targets per product group, which each manufacturer needs to reach by a certain target year instead of imposing restrictions on the use of high GWP refrigerants in certain applications.

The GWP targets are set for the sectors of highest environmental impact where it has been proven that non-fluorinated refrigerants or other low-GWP substances are commercially available and energy efficient. Weighted average GWP values of entire production and imports are taken into account to measure compliance by manufacturers.

Designated products	Present refrigerant (GWP)	Target value (GWP)	Target value
Room air conditioning	R410a (2090) R32 (675)	750	2018
Commercial air conditioning (offices & stores)	R410a (2090)	750	2020
Condensing units and refrigeration units (> 1.5kW)	R404a (3920) R410a (2090) R407c (1774) CO ₂ (1)	1500	2025
Cold storage warehouse (> 50.000m ³)	R404a (3920) NH ₃ (0)	100	2019
Mobile air conditioning	R134a (1430)	150	2023
Urethane foam (household construction material)	HFC245fa (1030) HFC365mfc (795)	100	2020
Dust blowers	HFC134a (1430) HFC152a (124) CO ₂ (1), DME (1)	10	2019

New policy measures were introduced by the revised F-Gas Law that entered into force in April 2015 in Japan. The policy limits the use of fluorinated refrigerants at each step of the manufacturing and use of fluorocarbons in any application. The Japanese government expanded the scope of f-gas measures from the previous focus on the recovery and destruction to the whole life cycle, including f-gas manufacturing, maintenance and leak checking, promotion of low-GWP / non-fluorocarbon refrigerants in designated products, as well as destruction and recycling.

The regulatory measures encourage entities involved in each process of the life cycle of F-gas to carry out the following:

1. **Entities that manufacture and import fluorocarbons:** to reduce environmental impact through technology development and manufacturing of fluorocarbons with lower global warming impact, and the recycling of set amounts of used fluorocarbons.

2. **Entities that manufacture and import products using fluorocarbons**(for so-called ‘designated products’ – see further below): to change from products using fluorocarbons, such as freezer showcases, to either fluorocarbon-free products or products using fluorocarbons with low global warming impact, by certain target years depending on the product category.
3. **Users that manage commercial air conditioning and refrigeration units:**to properly manage such units in order to prevent the leakage of fluorocarbons through proper installation and inspection, as well as the repair of damaged units. Moreover, certain users are required to submit an annual report on the amount of fluorocarbons leaked, and the data is compiled and disclosed by the Government of Japan.
4. **Proper filling of air conditioning and refrigeration units with fluorocarbons and proper recycling of used fluorocarbons:** The revised Law introduced a registration system for entities that fill commercial air conditioning and refrigeration units with fluorocarbons, as well as a permission system for entities that recycle fluorocarbons.

Japan’s ongoing effort for the future [2]



Japan's On-Going Efforts for the Future

It is the policy of the Ministry of the Environment of Japan to ensure the compliance with the Montreal Protocol by phasing out ozone depleting substances according to the Montreal Protocol schedule and at the same time to make sure that the most environmentally sound alternatives and technologies are selected in the process, taking into consideration climate impact, energy efficiency, and safety.

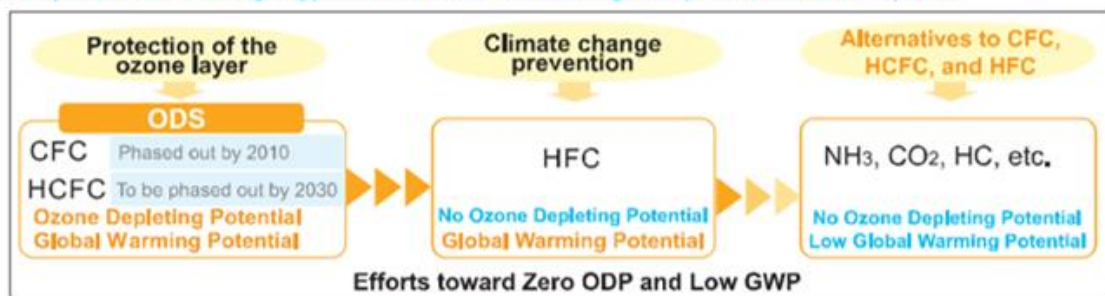
Japan promotes development and use of zero ODP and low GWP technologies. Such technologies with ammonia, hydrocarbons, and so on, are gradually spreading in some uses.

Although there are some uses that are said to be difficult to replace with non-fluorinated gases, substances with lower impact on climate are being developed and used.

The national government and other government organizations of Japan are required by the "Green Procurement Law" of Japan to choose products using alternative gases whose GWP is lower than 140 whenever such products are available and private companies and individuals are also encouraged to do the same.

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.

(<http://www.env.go.jp/en/earth/ozone/goodpractice/full.pdf>)



Japan's new measures to manage HFCs and promote low-GWP alternatives
- "Act on Rational Use and Proper Management of Fluorocarbons" -

In 2013, the government of Japan has decided to amend the "Act Concerning the Recovery and Destruction of Fluorocarbons" to implement comprehensive measures throughout the life cycle of fluorocarbons.

The amended act has come into force on **1 April 2015** as the "Act on Rational Use and Proper Management of Fluorocarbons".

Outline of New Measures

In addition to the requirement of the recovery and destruction of CFCs/HCFCs/HFCs from commercial refrigerators and air-conditioners at the time of maintenance and disposal by registered collectors and approved destructors, the government of Japan has decided to introduce new policy measures as follows.

New Measure ① Promotion of low-GWP/non-fluorocarbons for designated products

Manufacturers and importers of the designated products are required to replace high-GWP products with products using low-GWP or non-fluorocarbon alternatives in order to reduce climate impact. The target GWP value is set based on the lowest GWP (weighted average by volume (actual shipment)) among the designated products in the market in Japan and also in consideration of safety, energy efficiency, affordability, etc.

Designated products *	Refrigerant currently in use (GWP)	Target value (GWP)	Target year
Room air-conditioning	HFC-410A (2090) HFC-32 (675)	750	2018
Commercial air-conditioning (for offices and stores)	HFC-410A (2090)	750	2020
Condensing unit and refrigerating unit (for separate type showcases etc.)	HFC-404A (3920) HFC-410A (2090) HFC-407C (1774) CO ₂ (1)	1500	2025
Cold storage warehouse (for more than 50,000 m ³)	HFC-404A (3920) Ammonia (lower than 10)	100	2019
Mobile air-conditioning	R134a (1430)	150	2023
Urethane foam (house building materials)	HFC-245fa (1030) HFC-365mfc (795)	100	2020
Dust blowers	HFC-134a (1430) HFC-152a (124) CO ₂ (1), DME (1)	10	2019

* Exceptions may be accepted.

The designated products are determined based on the availability of technically proven products and in consideration of other factors including safety in use at this time. Other types of product will be added to the designated products, depending on the availability of alternatives.

Target GWP value and target year by category of designated products

New Measure ② HFCs phase-down

Producers and importers of fluorocarbon gases are required to develop plans to phase down HFCs through the development and production of alternative gases of lower GWP also in consideration of safety, energy efficiency, affordability, etc.

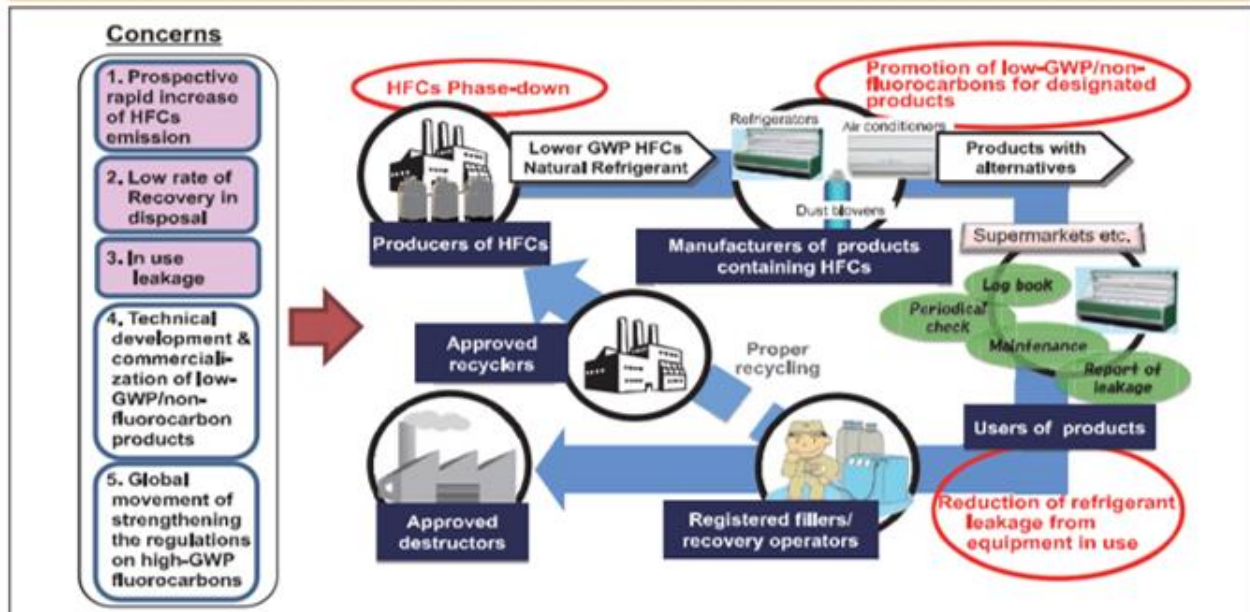
New Measure ③ Reduction of refrigerant leakage from equipment in use (by ensuring periodical leakage check, repair before recharging, etc.)

Users are required to conduct periodical check of refrigerant leakage, to call service engineers to undertake repair before recharging as soon as leakage is found, and to keep records of maintenance, so that maintenance operators etc. can refer to them, as necessary.

When leakage and/or equipment failure is found, refilling the equipment with the refrigerant is prohibited in principle until the confirmation of no leakage is made.

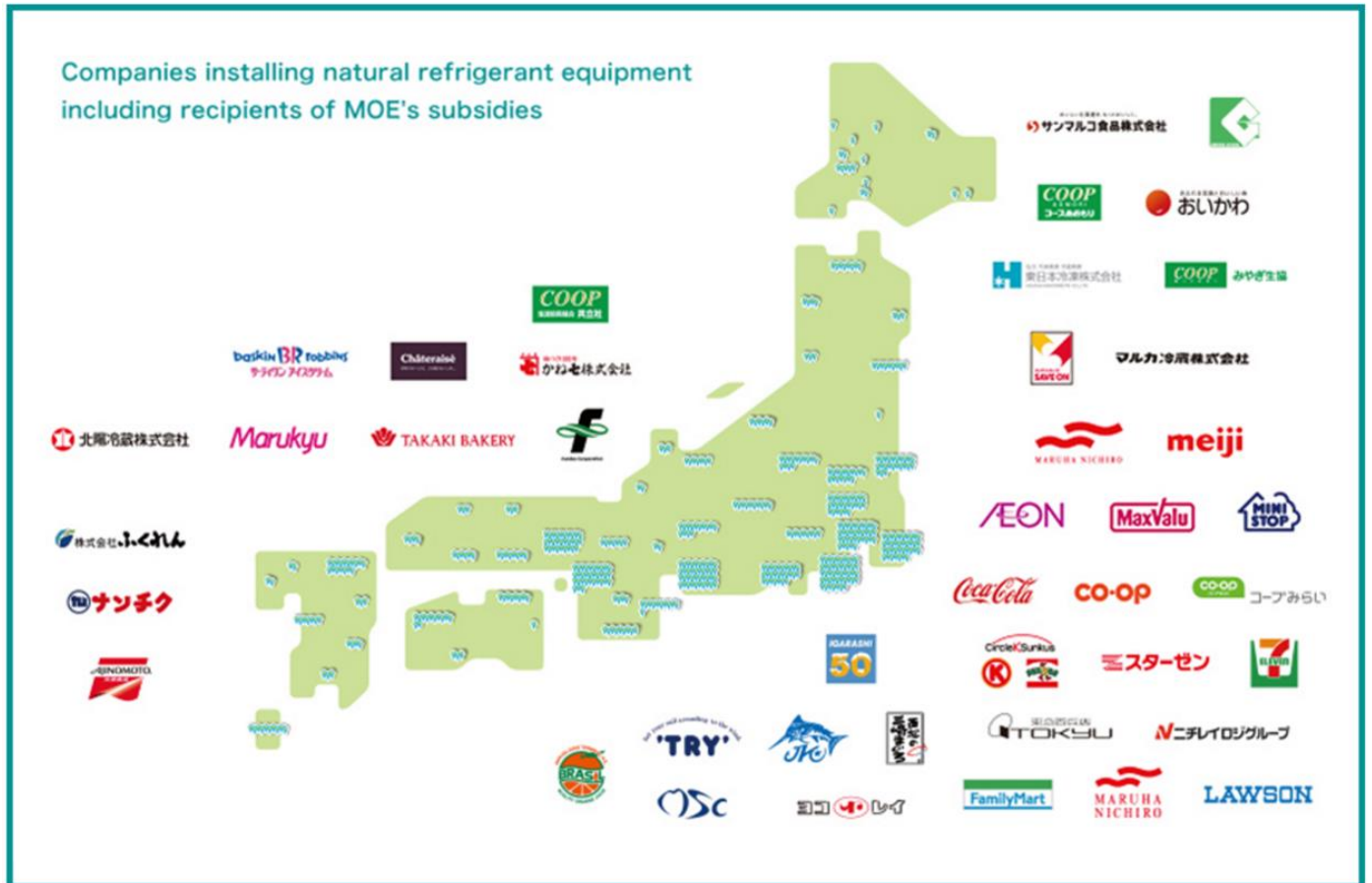
Users are required to report the amount of refrigerant leakage to the national government, if the amount of leakage exceeds 1,000 CO₂-tonne/year.

The amount of charged and recovered refrigerants must be certified in writing by registered operators.



Check here to read the complete and original file: www.env.go.jp/en/earth/ozone/leaf2015/full.pdf

Growing of Natural Refrigerant Equipment in Japan



Number of subsidies in FY2014 : 446 (58 companies)

[3]

Subsidy for Natural Refrigerant Equipment

FY 2015 (Budget) : JPY 6.2 billion
 FY 2016 (Requested) : JPY 7.3 billion

Technology of adopting natural refrigerants, instead of F-gases, has been improved in efficiency and safety.

This high technology can bring 3 good reductions; of energy use, of CO2 emissions and of F-gas emissions leaking from equipment.

But in Japanese market it has not yet spread widely, mainly because of a high initial cost.

Then MOE sets the stage by supporting financially so that the market become acceptable and autonomous.

Coverage				Numbers of subsidies (as of Nov. '15)
Sector	Equipment	Fees	Max Ratio	
Cold storage warehouse	Freezers / refrigerators	machinery and construction fees for replacements and/or newly installations	1/2 of fees	53 (53 companies)
Food manufacturing process	Freezers / refrigerators		1/3 of fees	
Food retailing	display refrigerators		1/3 of fees	
+				
Chemical manufacturing process	Freezers / refrigerators	Same as upper	1/3 of fees	In FY2016 covered sectors may be 5 in total (2 sectors added).
Ice skate rink	Freezers		1/3 of fees	

[4]

Sources:

- Ministry of the Environment, Government of Japan website (<http://www.env.go.jp/>)
- [1] “Revised F-Gas Law in Japan” (Ministry of the Environment Government, of Japan website)(www.env.go.jp/earth/ozone/hiyasu-waza/eng/revised_f-gas_law_in_japan.html)(available in Sept. 14,2016)
- [2] “Let’s protect the Environment” (Ministry of the Environment Government, of Japan website)(www.env.go.jp/en/earth/ozone/leaf2015/full.pdf)(available in Sept. 14,2016)
- [3] “Growing of Natural Refrigerant Equipment in Japan” (Ministry of the Environment Government, of Japan website)(www.env.go.jp/earth/ozone/hiyasu-waza/eng/growing.html)(available in Sept. 14,2016)
- [4] “Subsidy for Natural Refrigerant Equipment” (Ministry of the Environment Government, of Japan website)(www.env.go.jp/earth/ozone/hiyasu-waza/eng/pdf/support_by_government.pdf)(available in Sept. 14,2016)

Japan Refrigerant Policies and Regulations

- [Act on Rational Use and Proper Management of Fluorocarbons – 2016](#)
- [Revised Fluorocarbons Recovery and Destruction Law](#)
- [Laws and Regulation for Fluorocarbons in Japan](#)
- [Strategic Promotion of Recovery and Destruction of Fluorocarbons – 2015](#)
- [CFC Management Strategy of Japan – 2011](#)
- [Revised F-Gas Law in Japan](#)