

# Japan's Policy Measures for Controlling Refrigerant

- focusing on Quota system and top-  
runner scheme -

3 July 2023

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# Kigali Amendment to Ozone Layer Protection Law

**Kigali Amendment of the Montreal Protocol was adopted in October 2016.**

- The amendment obliges Parties to reduce (phase-down) production and consumption of HFCs.

**Japan amended the Ozone Layer Protection Law in June 2018** for reflecting the Kigali Amendment.

- Introduced regulatory measures such as controlling manufactures and imports of HFCs.
- **The amended law was enacted in December 2018 and came into force on 1 January 2019.**

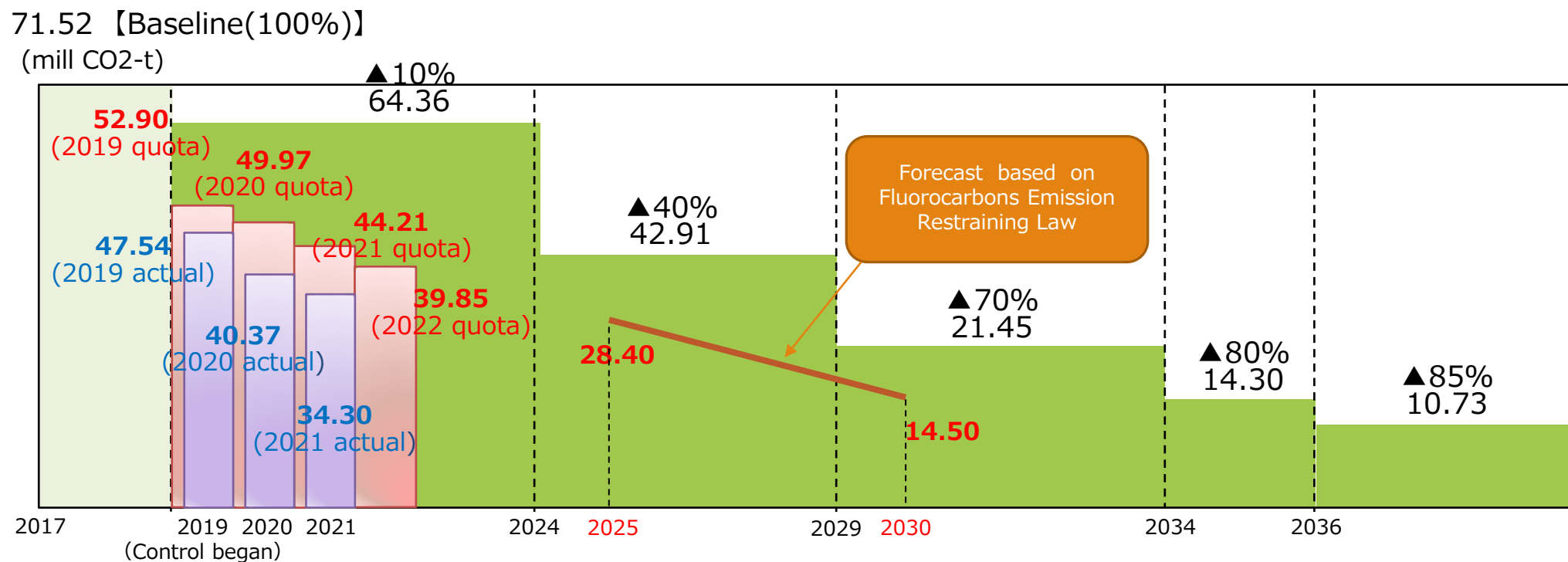
**Japan accepted the Kigali Amendment in December 2018.**

## Details of Introduced Policy Measures

- The Ministry of Economy, Trade and Industry (METI) along with the Ministry of the Environment (MOE) **determines and publishes the limit of production as well as consumption of HFCs** which Japan should comply with in accordance with the Protocol.
- **Manufacturers and importers** of HFCs obliged to **request METI's permission as a quota** for manufacture/import of HFCs.
  - Import is subject to the provisions and procedure of the Foreign Exchange and Foreign Trade Act.
- **HFCs as feedstock** in the manufacture of other chemicals are **exempted from the quota** after the check and confirmation conducted by METI.

# Recent Result of Quota System (Consumption)

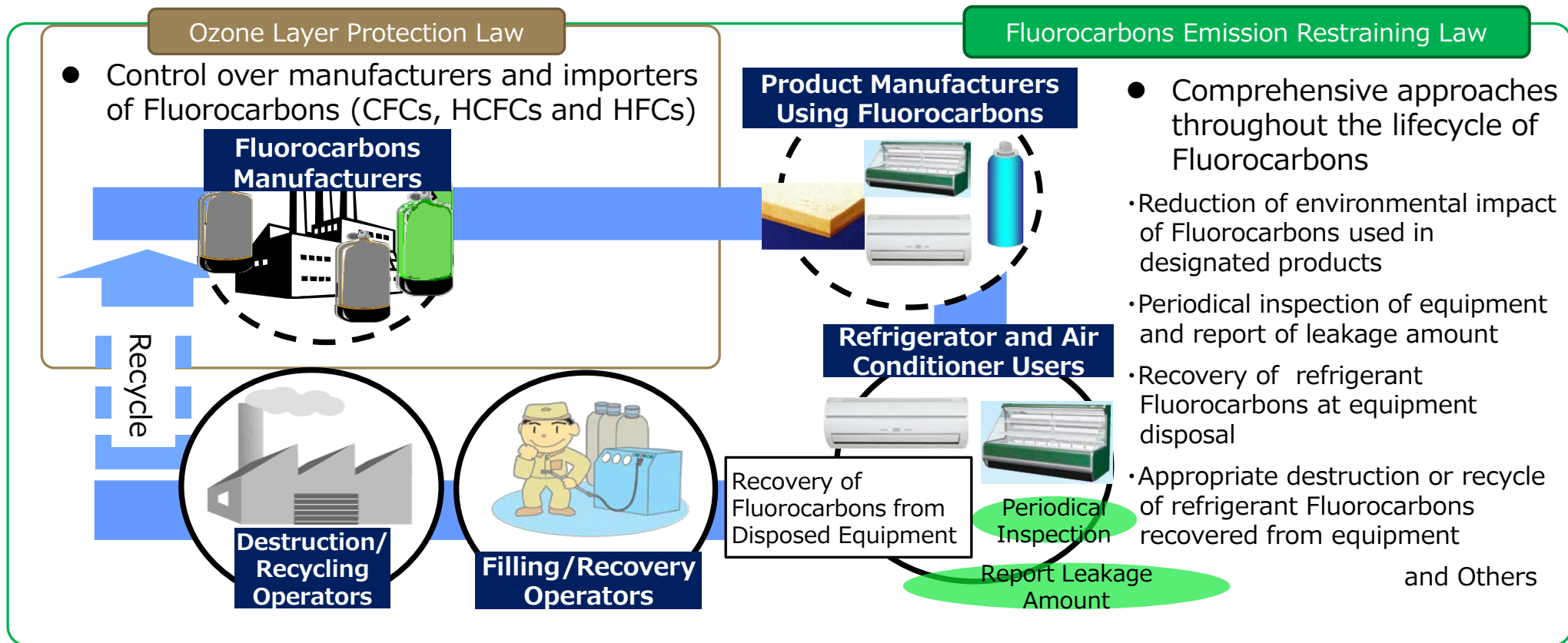
- **2022 quota was allocated enough below the national cap of Kigali Amendment**  
 39.39 million tonnes of CO2 equivalent were allocated to 8 manufacturers and 25 importers for basic uses.  
 450,000 tonnes of CO2 equivalent were allocated to 3 manufacturers and 8 importers for special uses.  
 39.85 million tonnes of CO2 equivalent as total consumption fell well below Japan's national cap.
- **2021 actual consumption fell below the allocated quota**  
 34.30 million tonnes of CO2 equivalent were actually consumed within the allocated quota.



※ Baseline is based on the calculation of averaged volume from 2011 to 2013.

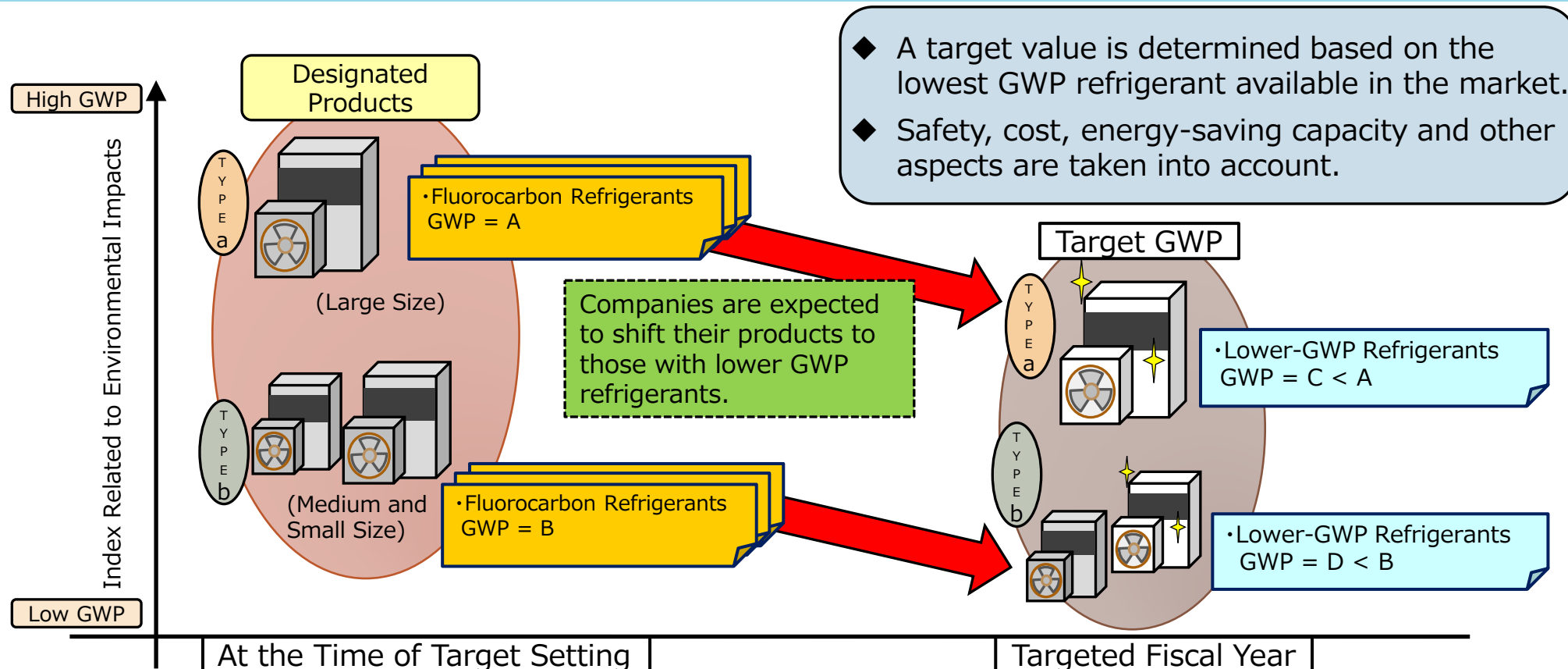
# Two Regulatory Measures for Reducing HFCs Emission

- **Ozone Layer Protection Law** : To comply with the Montreal Protocol, this law aims to control consumption and production of controlled substances by regulating their productions and imports.
- **Fluorocarbons Emission Restraining Law** : This law aims to control emissions over the lifecycle of Fluorocarbons from up-stream to down-stream.



# Promoting Low-GWP Top-runner Products

- **Fluorocarbons Emission Restraining Law** designates product categories, for which lower-GWP refrigerants are available in the market.
- Based on the **best available product (called “top-runner”)**, the **target value (GWP)** is determined in that product category with the **target year** for achieving that target value.
- **Manufacturers and importers** are required to **meet the target GWP value** for their products **by the target year**.



Specified Product Categories	Refrigerant Currently Used (GWPs)	Target GWP	Target Year
Residential Air-conditioners	R410A (2090), R32 (675)	750	2018
Commercial Air-conditioners			
(a) Refrigeration Capacity less than 3 Tonnes (except Floor-types)	R410A (2090), R32 (675)	750	2020
(b) Refrigeration Capacity more than 3 Tonnes (except Floor-types)	R410A(2090)	750	2023
(c) Central Air-conditioners (Centrifugal Chillers)	R134a (1430), R245fa (1030)	100	2025
(d) Multiple-type air-conditioner for building use (those installed in new buildings or those with replacement of all refrigerant piping, excluding those for use of cooling and heating at the same time and those for use in cold district)	R410A (2090)	750	2025
Automotive Air-conditioners - Passenger cars only (except those for 11 or more passengers)	R134a(1430)	150	2023
Condensing Units / Stationary Refrigeration Units (excluding those compressor with rated output of 1.5kW or less)	R404A (3920), R410A (2090), R407C (1770), CO2 (1)	1500	2025
Refrigerator and Freezer using rigid polyurethane foam	HFC-245fa (1030), HFC-365mfc (795)	100	2024
Vending Machine with a Refrigerating or Freezing Function using rigid polyurethane foam		100	2024
Centralised Refrigerators (only for new refrigerated warehouses having effective volume of at least 50,000m <sup>3</sup> )	R404A (3920), Ammonia (1 digit value)	100	2019
Rigid Polyurethane Foam Stock Solution for residential use		100	2020
Rigid Polyurethane Foam Stock Solution for use other than residential use	HFC-245fa (1030), HFC-365mfc (795)	100	2024
Heat Insulating Materials (using rigid polyurethane foam)		100	2024
Aerosol Spray Cans (except those requiring non-flammability)	HFC-134a (1430), HFC-152a (124), CO2 (1), DME (1)	10	2019

# Newly specified product category designated in 2023

- Following five specified categories are designated with “Target value” and “Target year” in 2023

Specified product category	Main refrigerants currently used and GW	Environmental impact target value	Target year
Reciprocating liquid chiller for air conditioning	R410A(2090)	750	2027
Gas engine heat pump air conditioners (those installed in new buildings or those with replacement of all refrigerant piping, excluding those for use of cooling and heating at the same time and those for use in cold district)	R410A(2090)	750	2027
Air conditioners for facilities (those installed in new buildings or those with replacement of all refrigerant piping, excluding those for specific use such as for those computers, those for use at medium temperature range, and all-in-one air conditioners)	R410A(2090)	750	2027
Automotive air conditioners •Automobile air conditioner for buses and trucks (automobiles that carries 11 people or more) and trucks (automobiles used for freight shipment)	R134a(1430)	150	2029
Refrigerate and freeze equipment combined unit for commercial use (those that have refrigerator and freezer within housing) •Commercial refrigerator and freezer for commercial kitchen (Those where the refrigerant evaporates at above -45 degrees Celsius) •Refrigerated display cabinets with incorporated motor compressors (compressor capacity is 750W or less)	R134a(1430) R404A(3920) R410A(2090) R407C(1770) CO2(1)	150	2029

# Achievement of Top-Runners

- All product categories which reached the target year have achieved the target GWP value.
- METI checked the achievement in other product categories in each target year.
- Lower target GWP value will be re-designated for already achieved product categories after newly developed top-runner product becomes available in the market.

Product Categories	Target GWP Value	Target Year	Achievement
Residential Air-conditioners	750	2018	<ul style="list-style-type: none"> <li>• Weighted average GWP value for total category is 685.</li> <li>• All 11 manufacturers have achieved the target value.</li> <li>• Refrigerant has been replaced by HFC-32 (GWP675).</li> </ul>
Centralised Refrigerators	100	2019	<ul style="list-style-type: none"> <li>• Weighted average GWP value for total category is 1.62.</li> <li>• All 4 manufactures have achieved the target value.</li> <li>• Replaced by CO2 (1) or combination of CO2/NH3 (2).</li> </ul>
Aerosol Spray Cans (Dust Blower)	10	2019	<ul style="list-style-type: none"> <li>• Weighted average GWP value for total category is 2.7.</li> <li>• 19 out of 20 manufactures have achieved the target. Remaining one has also achieved after the target year.</li> <li>• Replaced by HFO (GWP1) or DME (GWP1)</li> </ul>
Refrigeration Capacity less than 3 Tonnes	750	2020	<ul style="list-style-type: none"> <li>• Weighted average GWP value for total category is 687.7.</li> <li>• All 6 manufactures have achieved the target value.</li> <li>• Refrigerant has been replaced by HFC-32 (GWP650).</li> </ul>
Rigid Polyurethane Foam Undiluted Liquid in Residential building	100	2020	<ul style="list-style-type: none"> <li>• Weighted average GWP value for total category is 17.3.</li> <li>• 7 out 8 manufactures have achieved the target. Remaining one has also achieved after the target year.</li> <li>• Replaced by HFO (GWP&lt;2) or H2O/CO2 (GWP1).</li> </ul>