

Management of Fluorocarbon in the Developing Countries

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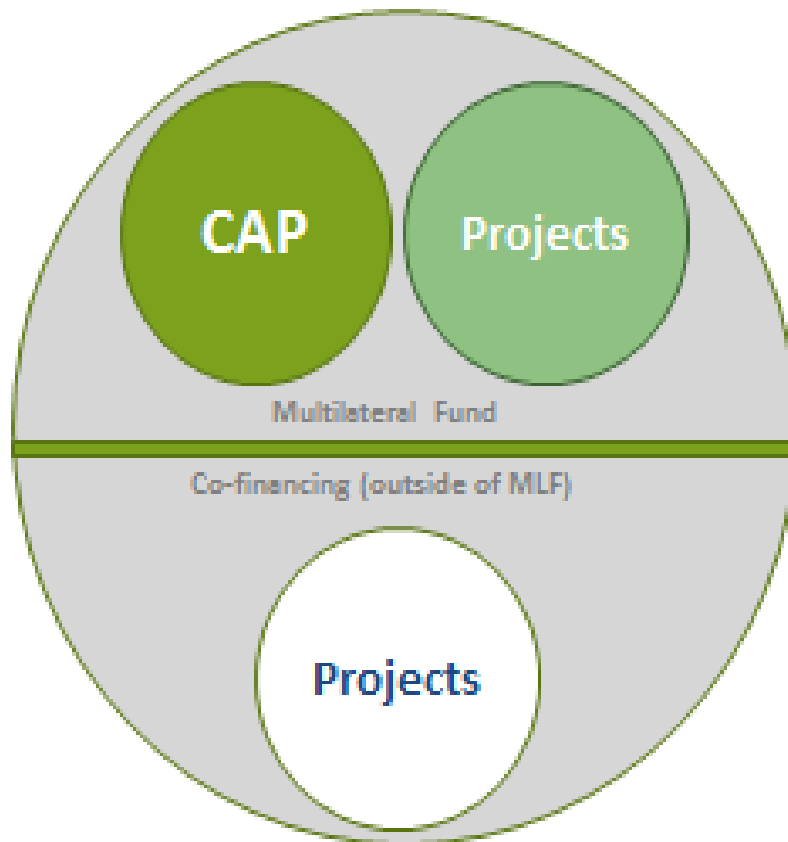
**Symposium on Commemorate 30th Anniversary of the Montreal Protocol and
Ratification of the Kigali Amendment**

Tokyo, Japan

17 June 2017



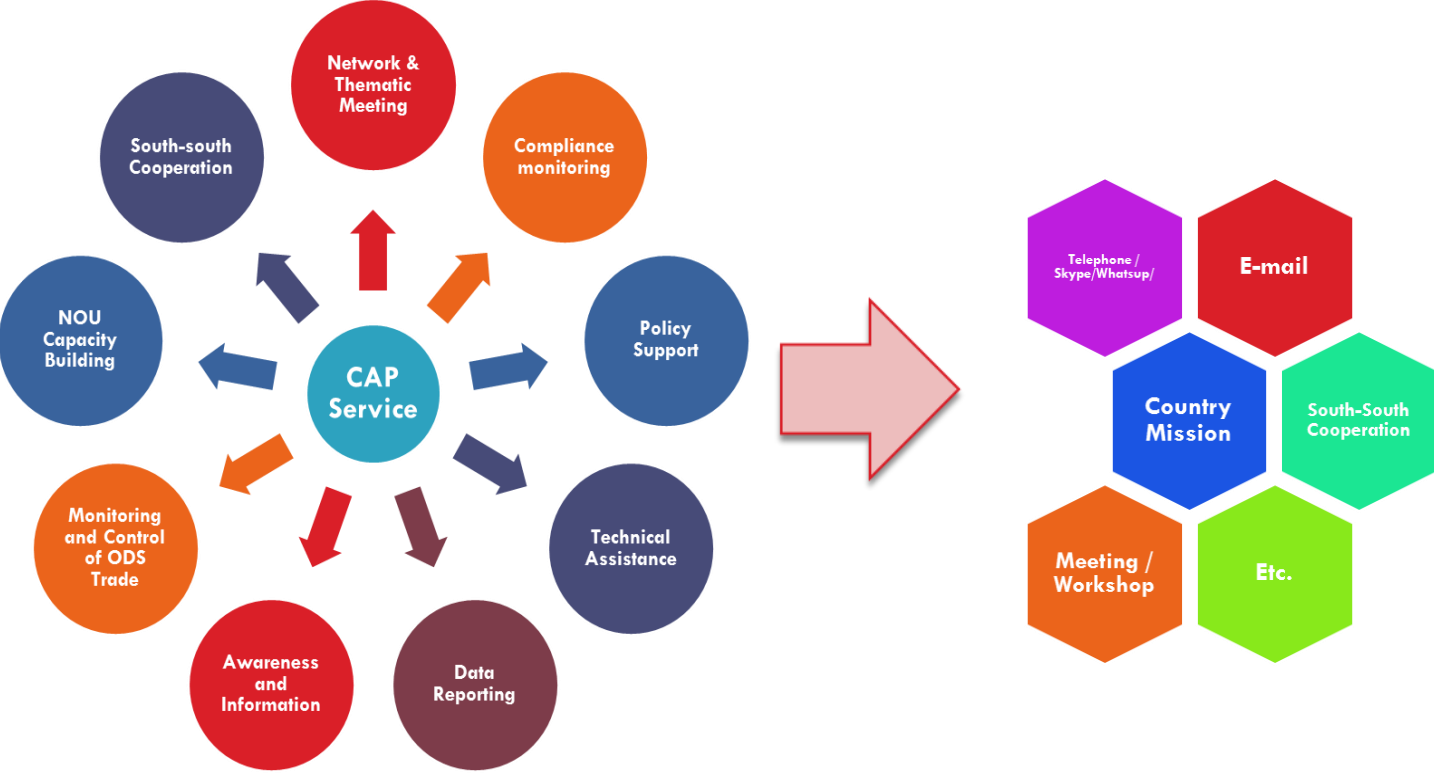
OzonAction Branch



- Regional Networks
 Information Clearinghouse
 Capacity building
 Technical & policy advice
 South-South Cooperation
- Institutional Strengthening
 HPMP preparation
 HPMP implementation
 Technical assistance
 Support for bilateral projects
- CCAC low GWP EE alternatives
 USEPA Regional Project HCFC/EE
 UNEP-China Trust Fund
 ...

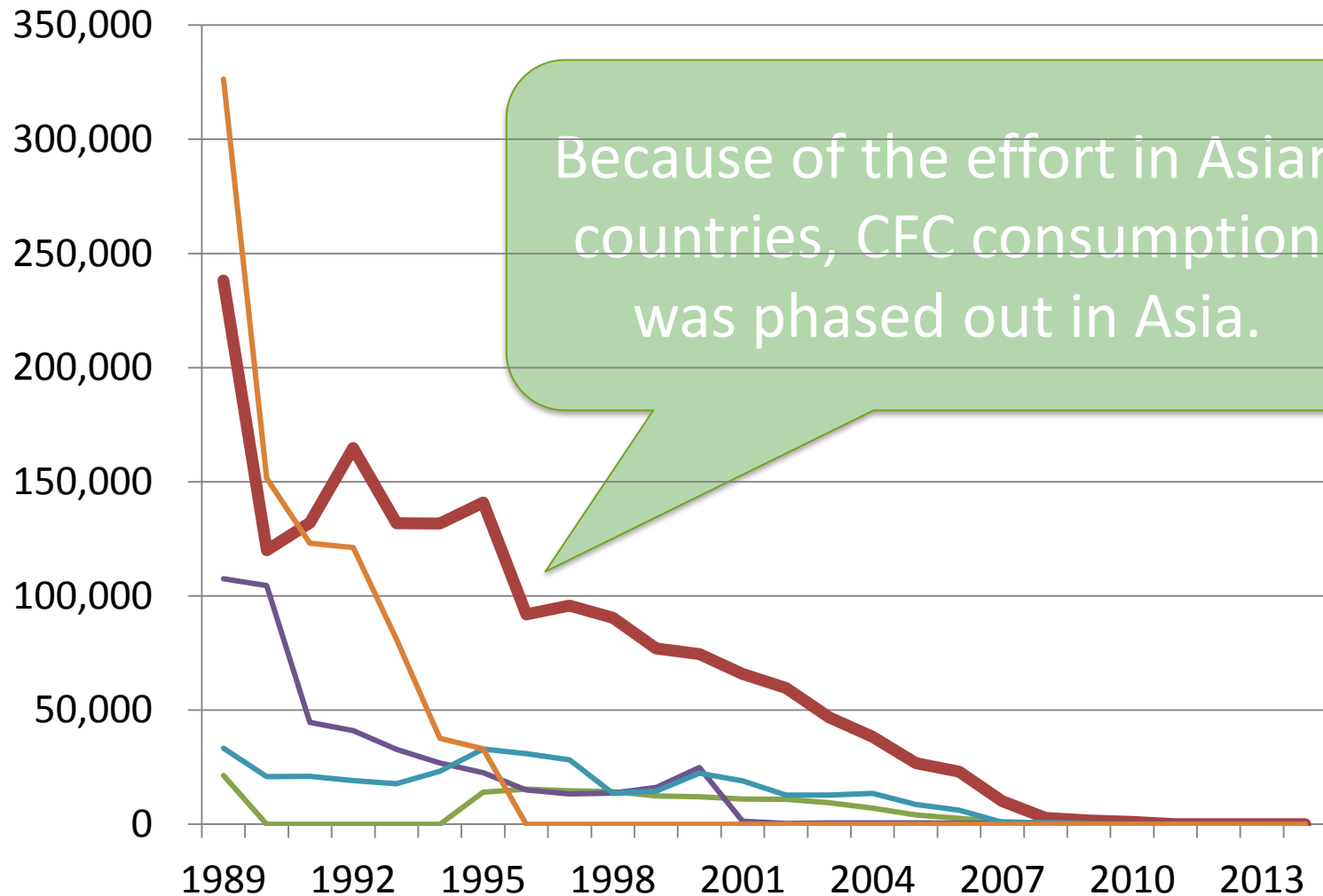


Compliance Assistance Programme (CAP)



CFC Consumption

(ODP Tonnes)



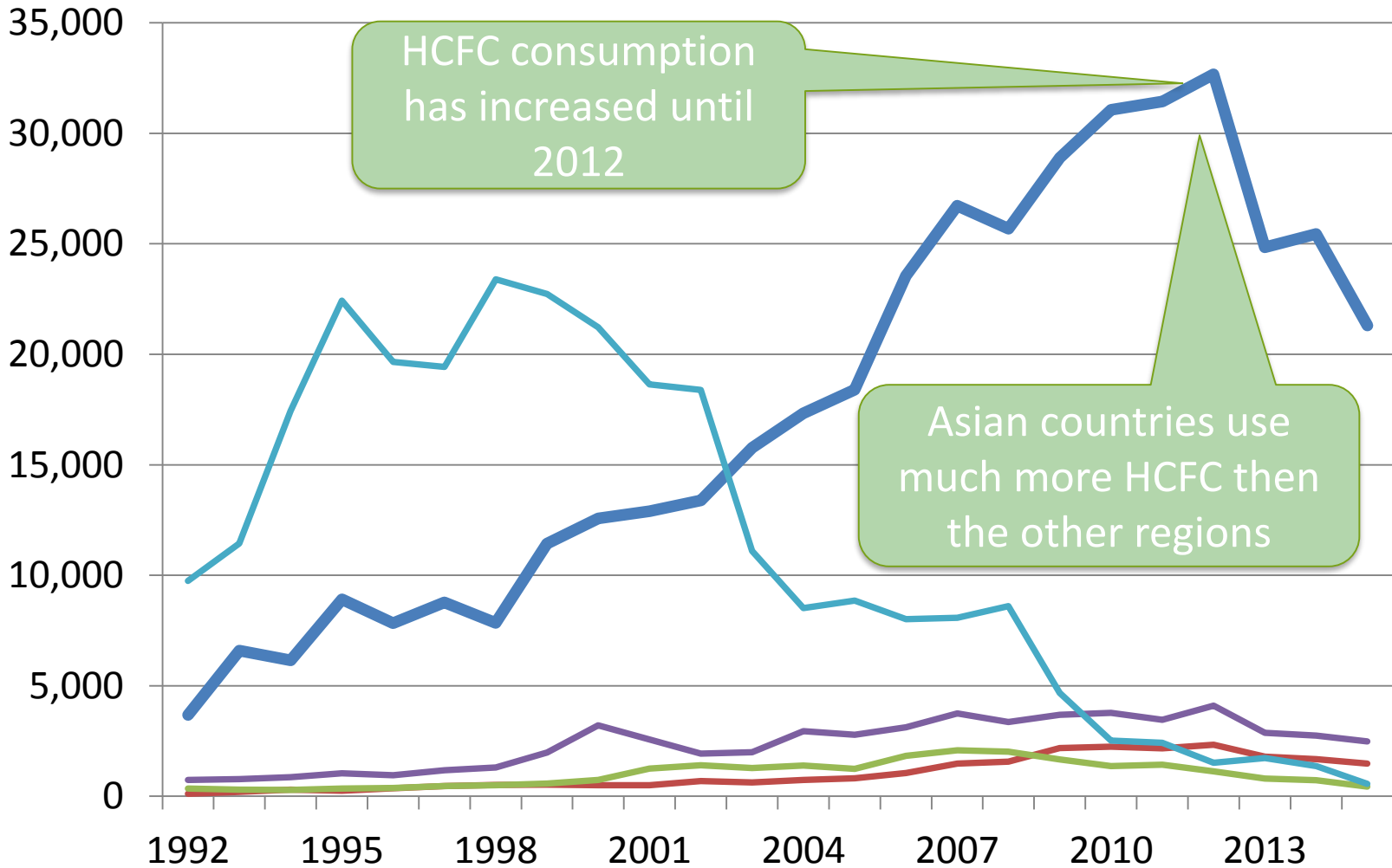
— Asia + Pacific — Africa — Eastern Europe — Latin America + Caribbean — Western Europe and others

(Source: United Nations Environment Programme "UNEP/GEO Core Indicators")



HCFC Consumption

(ODP Tonnes)

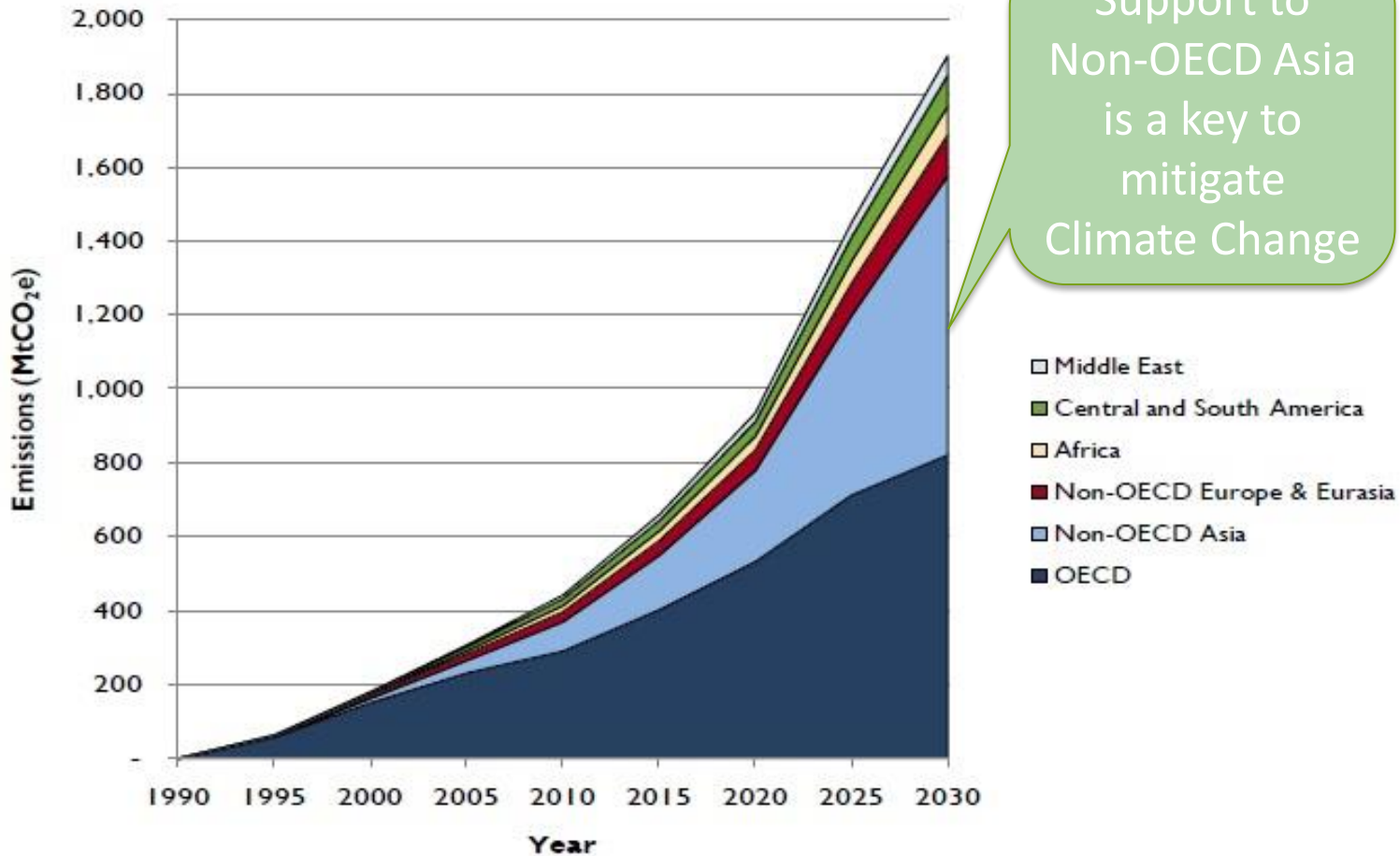


— Asia + Pacific — Africa — Eastern Europe — Latin America + Caribbean — Western Europe and others

(Source: United Nations Environment Programme "UNEP/GEO Core Indicators")



HFC Emissions from Use of Substitutes for Ozone-Depleting Substances 1990 – 2030 by Region (MtCO₂e)

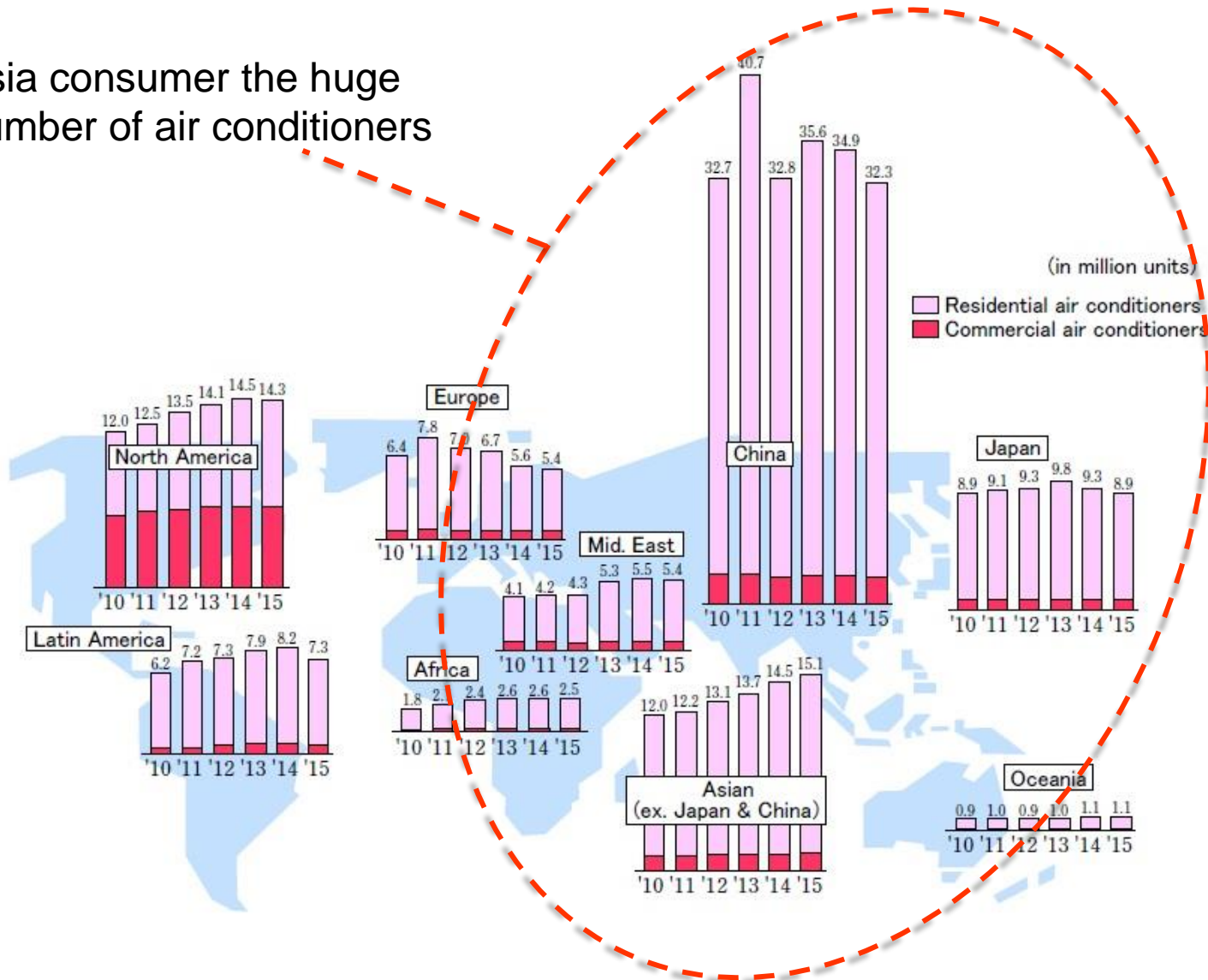


(Source: US EPA "Global Anthropogenic Non-CO₂ Greenhouse Gas Emissions: 1990 – 2030" Revised December 2012)



RAC and PAC demand by region

Asia consumer the huge number of air conditioners



(Source: The Japan Refrigeration and Air Conditioning Industry Association "World Air Conditioner Demand by Region": Apr. 2017)



Ozone Depleting Substance (ODS) Control Strategy of Developing Countries

ODS Production and
Consumption Control
under the Montreal
Protocol

Control ODS Supply
and Reduce Demand –
General Strategy



Controlling ODS Supply

- Registration of importer/exporter/distributor
- Import/export licensing and quota system for ODS and their blends

- Licensing fee for import/export
- Levy/tax on ODS (per unit)

- Licensing for storage, handling, retailing
- Licensing for technicians



Reducing ODS Demand

- Ban import and/or installation of ODS -based equipment
- Ban manufacturing of equipment/products using ODS
- Convert manufacturing facilities to ODS free technologies

- Ban on intentional venting
- Certification system for trained technicians and workshops
- Good practice / Code of practice

- Replacement
- Retrofitting
- Recovery and recycling



Use and Emission Control

Use Control

- Only few countries control sale/use of ODS, Fiji/China
- Only manufacturer who received Multilateral Fund for conversion of production line

Emission Control

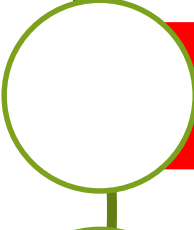
- Being promoted, but as voluntary requirement
- Recovery/recycling are also promoted with support of Multilateral Fund to some extent
- ODS destruction: demo projects under Multilateral Fund
- No economic incentive



Challenges



The international legal obligation: Kigali Amendment is still controlling the production and consumption of HFCs, not emission



The cost and benefit for recovery/disposal: for example, recovery cost could be 2USD/kg, disposal cost could be 4-6 USD/kg, but the market price of R22 is about 3 USD/Kg.



The difficulty for the enforcement of the emission control regulations



The weak infrastructure of the servicing sector in most developing countries



Opportunities

Phasedown of HFC

- 15-20 % of HFC production and consumption will be allowed forever. This might promote the government to establish a holistic management system.

Servicing Sector infrastructure

- The R/AC industry noted the importance of the servicing sector in terms of the safety, energy efficiency, and is promoting responsible use of refrigerant
- The government is making effort due to safety and energy efficiency concerns
- The Multilateral Fund is expected to provide more support to the servicing sector as guided by MOP .

Paris Agreement

- It is expected some financial mechanism could be developed for the handling HFCs disposal
- The government of the developing countries might take unilateral movement on the holistic approach for the management of the fluorocarbons.

Financial Support

- The Meeting of Parties requested the Multilateral to consider funding the disposal activities, but no guideline has yet made.



Thank you

