



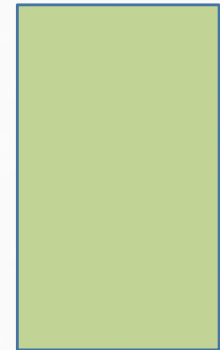
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Business Case for
Natural Refrigerants

04/09/2018 – Singapore

HCFC PHASE OUT AND KIGALI AMENDMENT IN MALAYSIA

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STRATEGY TO PHASE OUT HCFC

YEAR	PLANNED REGULATORY ACTION
2012	Establishment of Approved Permit (AP) import quota system based on HCFC Baseline (515.8 ODPT - average consumption for 2009/2010)
	Amend existing regulations for controlling use, imports, manufacturing, assembly and installation of products containing HCFCs
2013	Licensing re-export of HCFCs
	Enforcement of Approved Permit (AP) quota system
	Prohibition of establishment and expansion of new HCFC-based manufacturing capacities
	Establish incentive system for promoting use of alternatives to HCFCs
	Certification of technicians for handling HCFCs
2015	Prohibition of manufacturing, assembly and import of HCFC-based air conditioners (2.5 HP and lower) for use in Malaysia
	Prohibit imports of polyols pre-blended with HCFCs
	Include HCFCs in the list of restricted gases

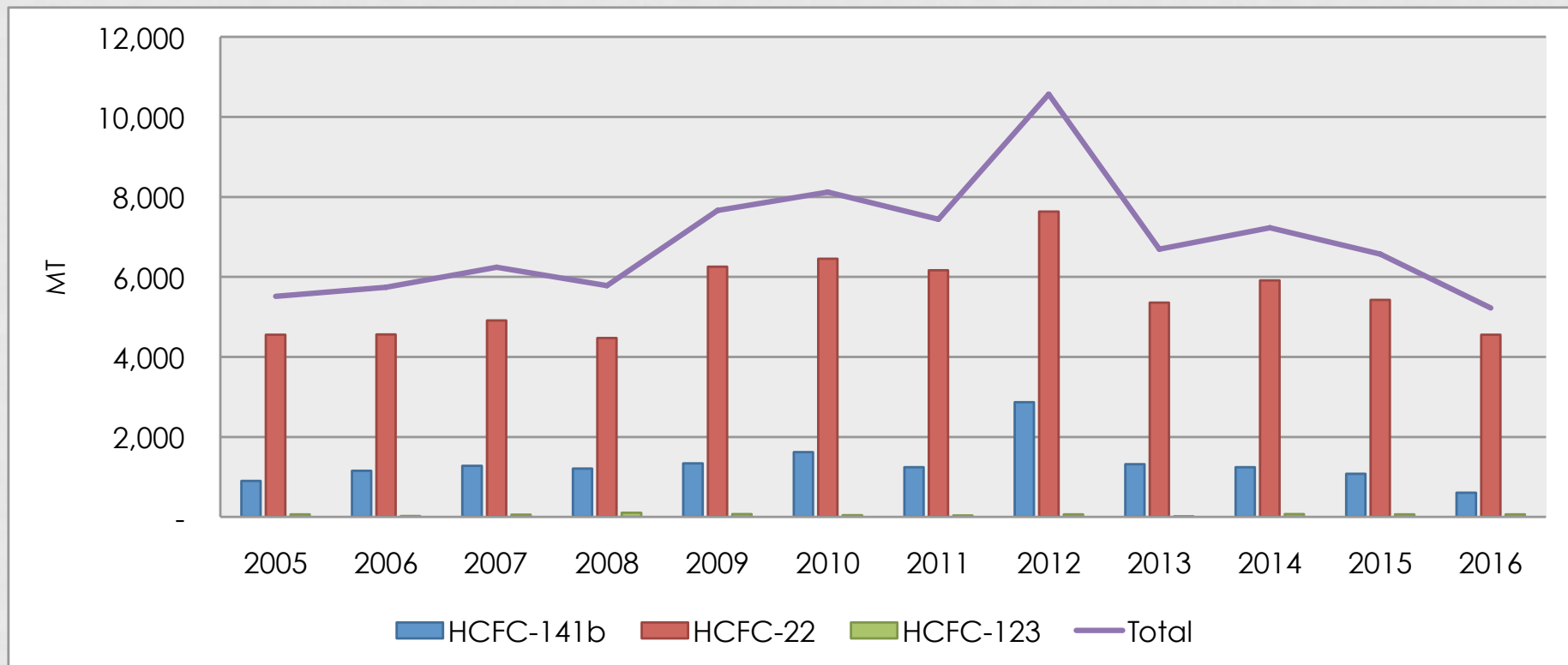
STRATEGY TO PHASE OUT HCFC

YEAR	PLANNED REGULATORY ACTION
2020	Prohibit the manufacture, assembly and import of all products and equipment using HCFC (except for essential use)
	Prohibit HCFC 141b as blowing agent
	Prohibit the use of HCFC in the manufacturing and installation of new fire extinguishing systems
2025	No more installation of new products and equipment using HCFCs
2030	AP limited to 2.5% of baseline for servicing use only
2040	Total ban on the import and use of HCFCs

REFRIGERATION AND AIR- CONDITIONING SECTOR

- Focused on servicing sector to control the growth of HCFC consumption by:
 - Providing technical assistance, training and awareness actions to support the sustainability of the HCFC reduction proposed;
 - Established 51 Authorized Training Centers (ATCs) to train service technician on the best practices in handling refrigerants;
 - Provided ATCs with training manual, basic tools and R&R machines to conduct the trainings.
- Technical Assistance (TA) to Refrigeration and Air-Conditioning (RAC) manufacturing enterprises to completely phase-out the use of HCFC-22
- By 1st January 2020, the import, manufacturing and new installation of refrigeration and air-conditioning equipment operated with HCFCs will be banned.

MALAYSIA HCFC CONSUMPTION (MT)



NATURAL REFRIGERANTS IN MALAYSIA

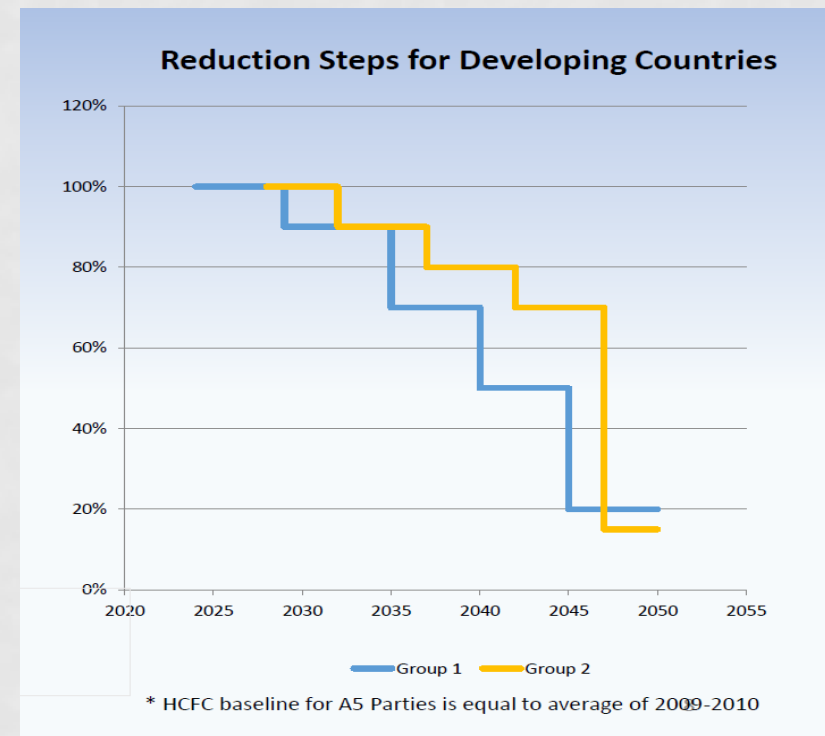
- Malaysia has been pushing the industries to turn to non-ODS, low GWP alternatives.
- Major drawbacks of natural refrigerants (hydrocarbons) are they are highly combustible with lower flammability limit.
- The use of HC refrigerants in AC sectors is at the minimal as there is no equipment manufactured or imported are suited for use in Malaysia.
- Developed a standard on Flammable Refrigerant System – Code of Practice MS 2678:2017.
- CO₂ demonstration project under the HPMP Stage I, conversion to CO₂-based condensing unit for the display cases in one of the supermarkets, shows up to 50% reduction in CO₂ emission and more than 10% reduction in energy consumption.

NATURAL REFRIGERANTS IN MALAYSIA

- Moving on:
 - Technical assistance for enterprises in manufacturing of refrigeration and air-conditioning equipment on conversion to low-GWP based alternative technology.
 - Centers of excellence for training technicians on handling flammable refrigerants.
 - Promote awareness among the industries player on the best practices in handling refrigerants including flammable refrigerants.

KIGALI AMENDMENT

- Malaysia is Article 5 (Group1) country
- HFC consumption will be freeze at baseline on 1st January 2024
- Malaysia recognized the importance to phase down HFC and is in the preparation of the strategies:
 - National survey on non-ODS alternatives
 - Review of existing policies & regulations
 - Capacity building and awareness program





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Thank you for listening!

