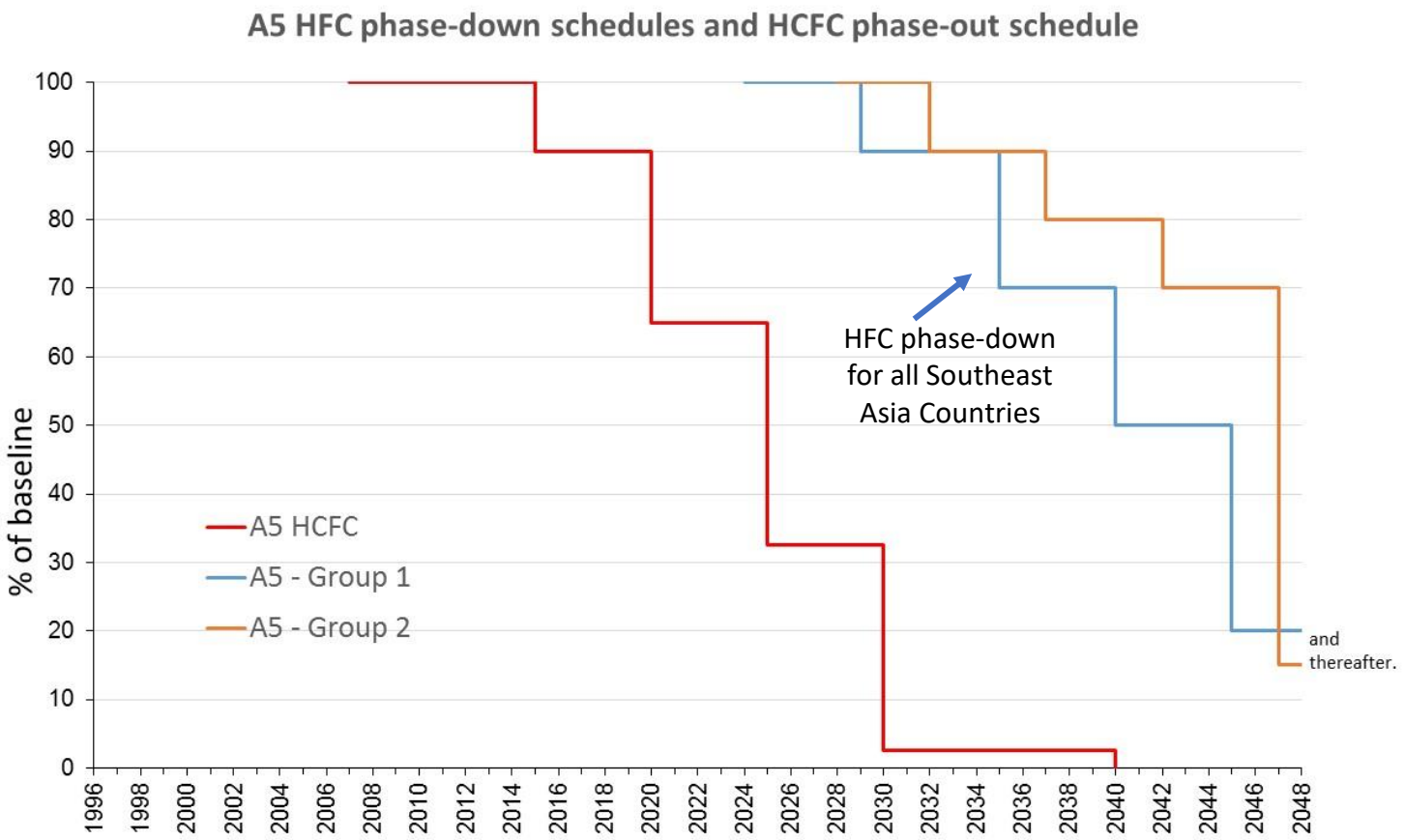
Welcome Remarks

The Montreal Protocol on Substances that Deplete the Ozone Layer

Consumption = Import – Export + Production



Montreal Protocol

- Established on 16 September 1987 in Montreal Canada to **phase-out consumption** of controlled substances including **CFCs** (completed) and **HCFCs** (on-going).
- Recently to **phase-down consumption** of **HFCs** under the Kigali Amendment.

Other key obligations

- **Article 4B – Licensing System**: Establish and implement a system for licensing the import and export of new, used, recycled and reclaimed controlled substances
- **Article 7 – Data Reporting**: Data on production, imports and exports of each of the controlled substances on annual basis

HFCs/blends controlled under the Kigali Amendment

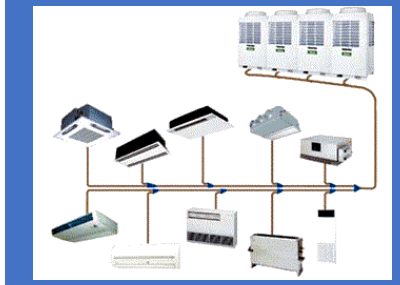
R-410A

Group I		100-year Global Warming Potential
CHF_2CHF_2	HFC-134	1,100
CH_2FCF_3	HFC-134a	1,430
CH_2FCHF_2	HFC-143	353
$CHF_2CH_2CF_3$	HFC-245fa	1,030
$CF_3CH_2CF_2CH_3$	HFC-365mfc	794
CF_3CHFCF_3	HFC-227ea	3,220
$CH_2FCF_2CF_3$	HFC-236cb	1,340
CHF_2CHFCF_3	HFC-236ea	1,370
$CF_3CH_2CF_3$	HFC-236fa	9,810
$CH_2FCF_2CHF_2$	HFC-245ca	693
$CF_3CHFCHFCF_2CF_3$	HFC-43-10mee	1,640
CH_2F_2	HFC-32	675
CHF_2CF_3	HFC-125	3,500
CH_3CF_3	HFC-143a	4,470
CH_3F	HFC-41	92
CH_2FCH_2F	HFC-152	53
CH_3CHF_2	HFC-152a	124
Group II		**100-year Global Warming Potential**
[CHF3	HFC-23	14,800]”

Linkage between energy efficiency and HCFC Phase-out/HFC Phase-down

The Montreal Protocol on Substances that Deplete the Ozone Layer VS Refrigeration and Air-conditioning (RAC) Equipment

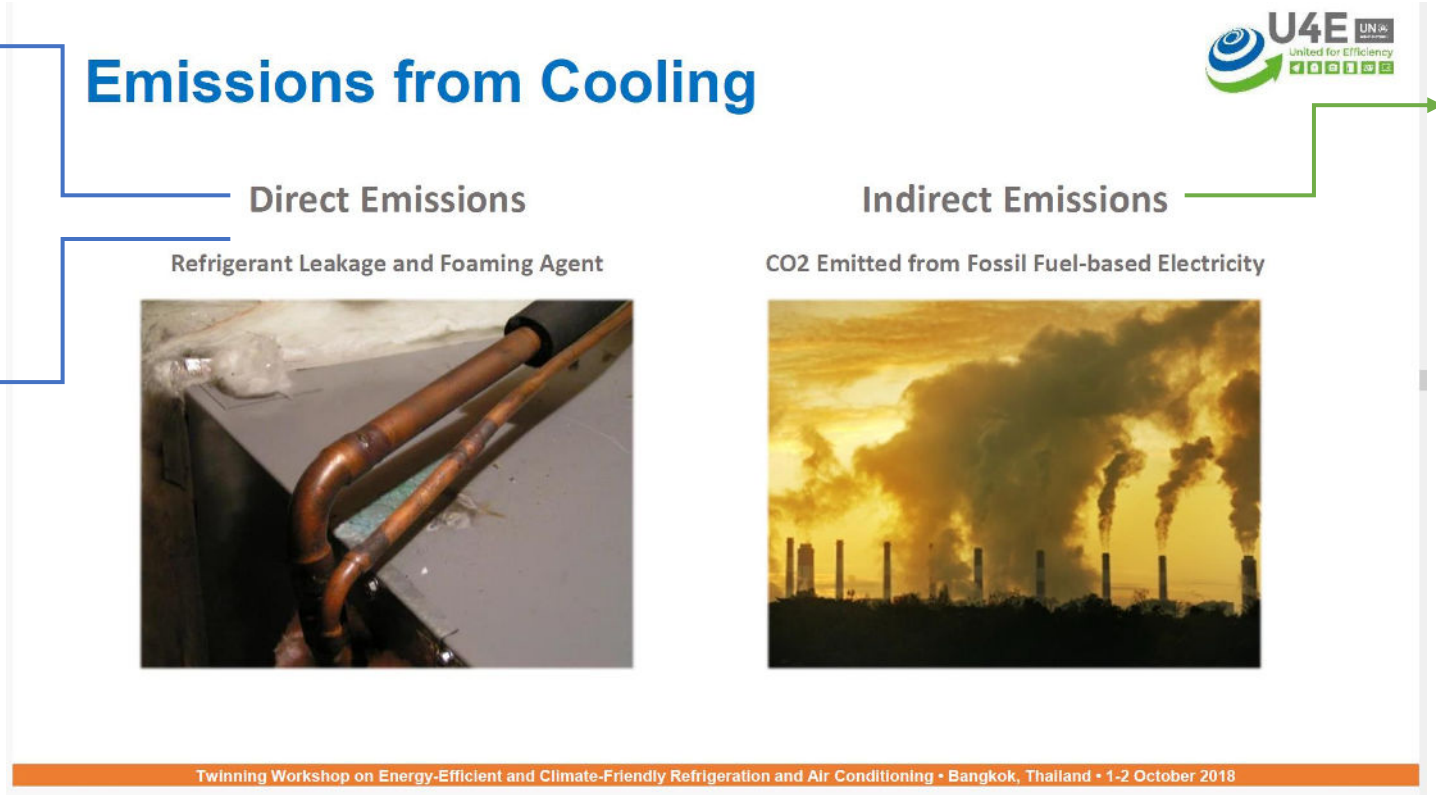





- HCFC/HFC contained in imported refrigeration and air-conditioning equipment is not counted as consumption under the Montreal Protocol
- However, actions on refrigeration and air-conditioning (RAC) equipment has played an important role to the success and sustainability of the Montreal Protocol
  - Prevent new demand of HCFCs/HFCs for installation/ servicing
  - Reduce demand of HCFCs/ HFCs to service existing RAC equipment
- More perspectives under the Kigali Amendment
  - Safety in handling lower GWP refrigerant
  - Energy efficiency

Market transformation to Lower GWP

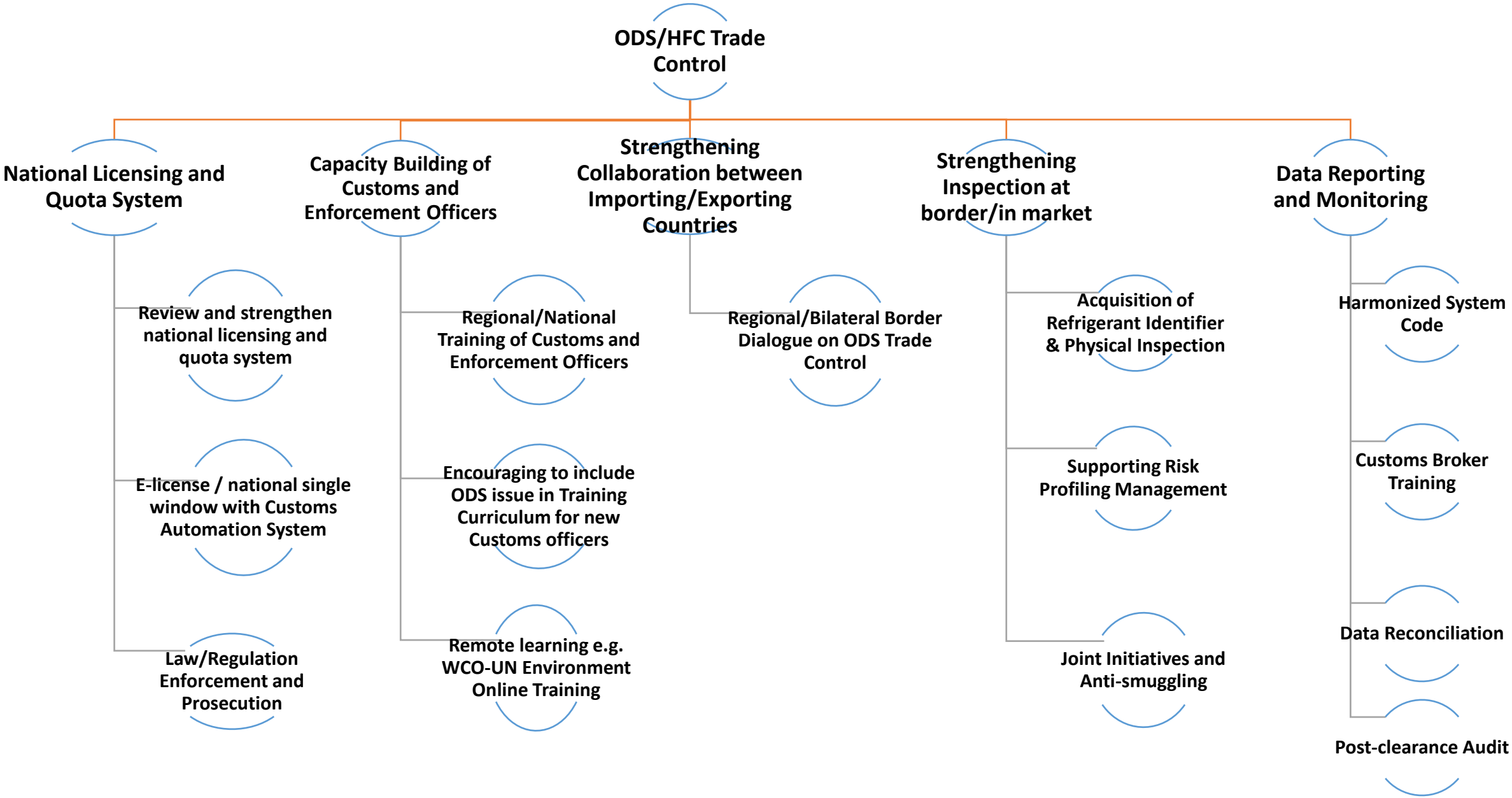
Good servicing practices to minimize the leakage



Energy efficient operations of the RAC equipment would result in lower indirect emissions from energy generation.

Actions to maintain and/or enhance energy efficiency while phasing out HCFC / phasing down HFCs

Integrated Approach for ODS/HFC Trade Control



Confiscated HCFC-based products that are banned by regulations

Tonga Customs confiscated 110 units of R-22 air conditioning in March 2016

RAC Sector Intervention