MOP38
2–6 NOVEMBER 2026 | KIGALI, RWANDA

OzonAction COMPLIANCE ASSISTANCE PROGRAMME

UN environment programme

Illegal trade in substances controlled under the Montreal Protocol: trends over the past decade and policy, national experiences, and enforcement responses

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MOP 38 Side Event

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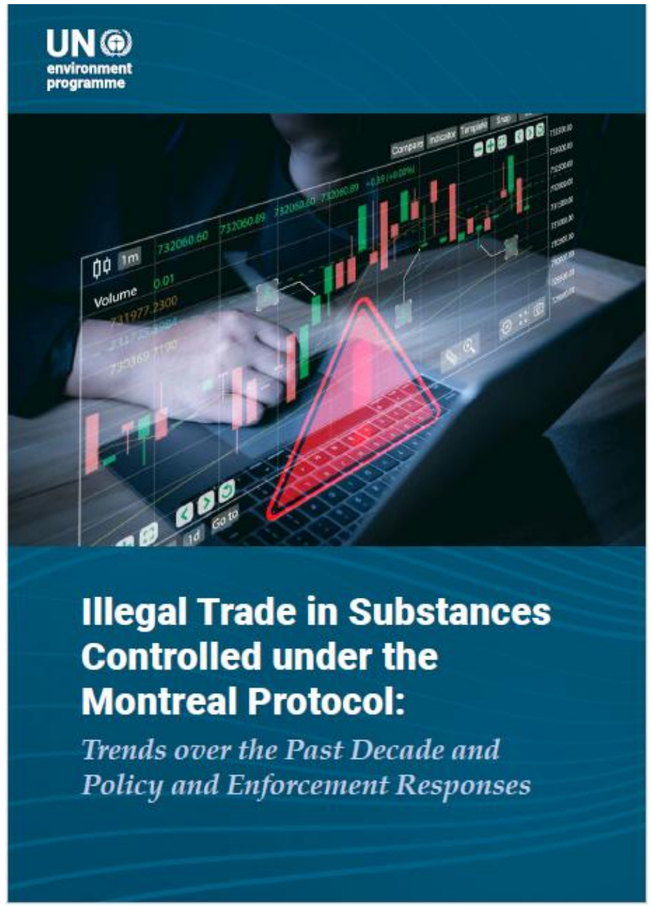
Key contributors and partners

- United Nations Office on Drugs and Crime (UNODC)
- World Customs Organization (WCO)
- Ozone Secretariat
- European Union Agency for Law Enforcement Cooperation (Europol)
- European Anti-Fraud Office (OLAF)
- EU Administrative Cooperation Groups (AdCo)
- Environmental Investigation Agency UK (EIA UK)
- National Ozone Units, customs administrations, environmental authorities and other relevant enforcement agencies

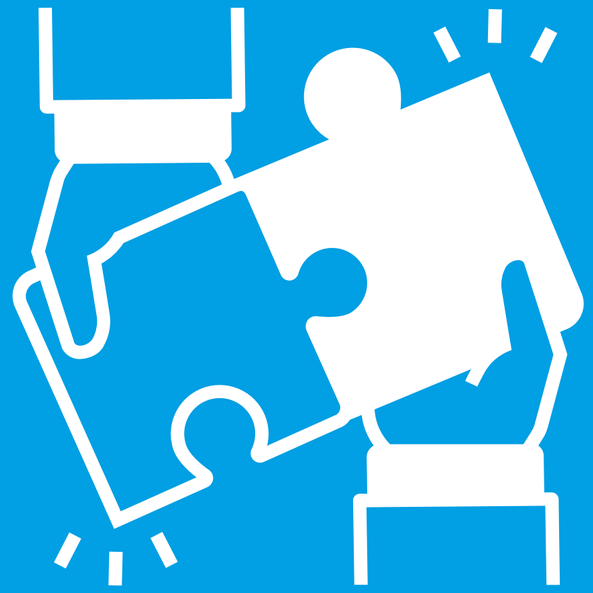


The Word version is currently available on the website. The laid-out version will be available shortly.

Content

- **Setting the scene**
- **Key findings and emerging trends**
  - Drivers
  - Actors and networks
  - Trafficking routes and flows
  - Modus operandi
- **Cases from the field**
- **Implications and the way forward**

Part I. Setting the scene



Setting the scene I: why this report, why now?

- Continued illegal trade in ODS, alongside emerging HFC-related enforcement risks.
- Ten years since the adoption of the Kigali Amendment in 2016.
- Continued attention by parties to illegal trade and effective enforcement.
- UNEP OzonAction's mandate and response to its 2026 CAP work programme.

Setting the scene II: about the report

Purpose

- To strengthen the evidence base for preventing, detecting and combating illegal trade in substances controlled under the Montreal Protocol.

Scope

- Period: 2016–2026
- Focus: HCFCs and HFCs, particularly refrigerants
- Coverage: drivers, actors, routes, methods, impacts and policy responses

Audience

- National Ozone Units or equivalent authorities, customs administrations, environmental authorities and other enforcement agencies.

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Setting the scene III: evidence Base and limitations

Sources

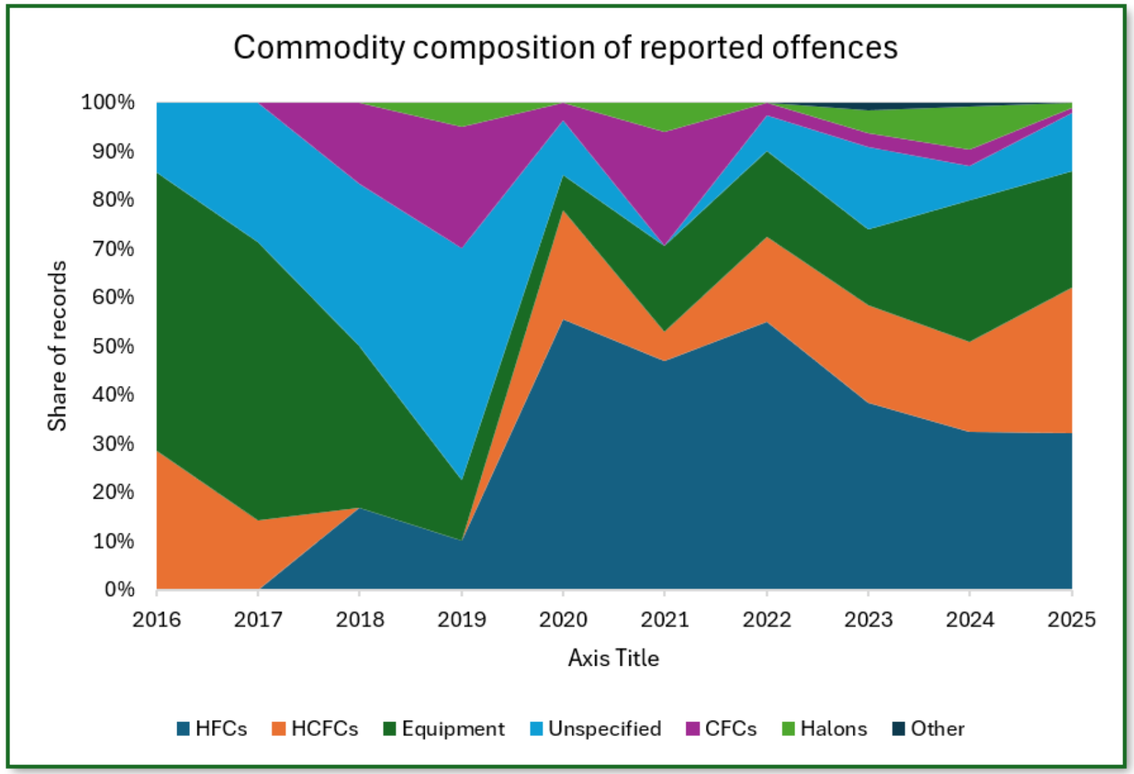
- Montreal Protocol meeting and information documents
- Decisions of the Meetings of the Parties to the MP
- WCO enforcement data
- Information from the iPIC mechanism and UN Comtrade data
- Ozone Secretariat’s database of illegal trade cases reported by parties
- 2026 UNEP–UNODC questionnaire responses
- Investigative publications and academic literature
- Case studies and contributions from national authorities and partner organizations

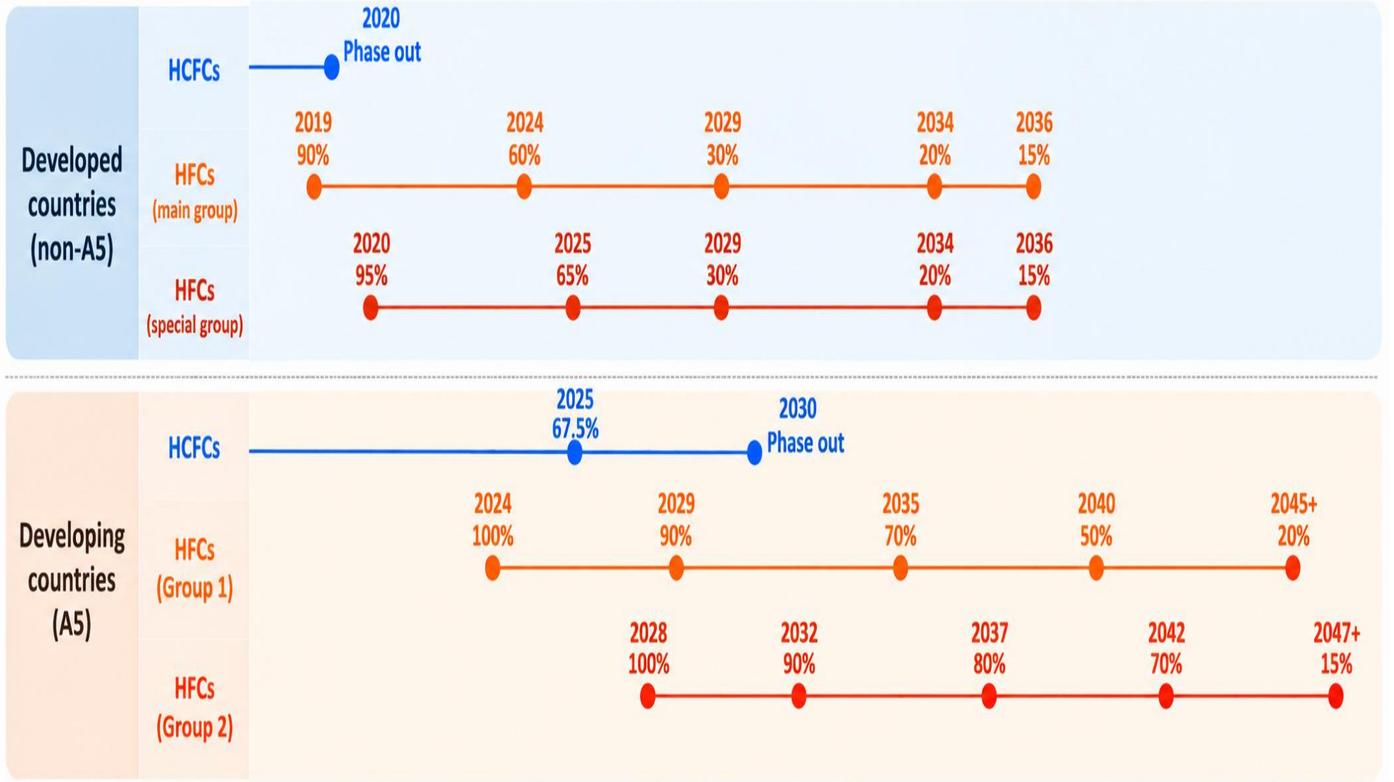
Limitations

- Illegal trade is inherently difficult to detect.
- Available evidence is geographically uneven.
- Reported cases do not represent the global scale or geographical distribution of illegal trade.

Part II. Key findings and emerging trends







According to WCO data, **HCFC seizures increased sharply in 2025 and exceeded HFC seizures**, suggesting that HCFCs remain a major enforcement concern despite approaching phase-out.

A. Overlapping and evolving enforcement challenges

B. Economic and regulatory drivers create opportunities for illegal trade

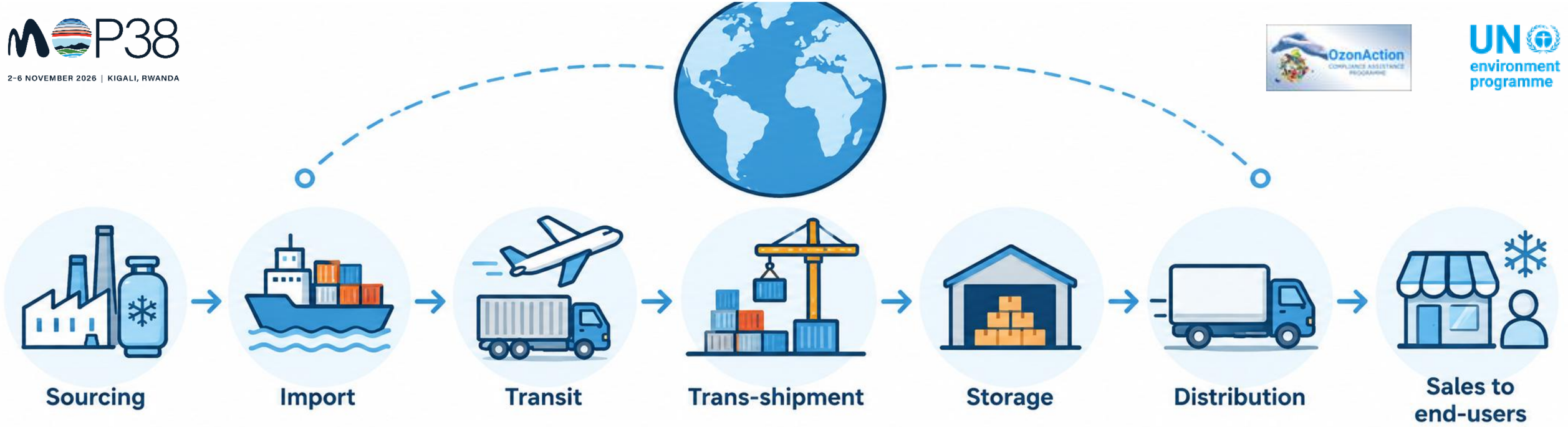
Market demand, price differences and regulatory transitions can create incentives for illegal trade

- Continued demand for servicing existing equipment
- Growing demand for cooling
- Price differences and uneven access to affordable alternatives
- Regulatory and enforcement vulnerabilities that may facilitate unauthorized trade



In the EU prices of **R134a and R410A in 2025 remained 3.3 to 10.9 times higher than in 2014**.

HFC prices rose from **less than EUR 2 per tonne CO_2-equivalent in 2014 to EUR 7-23 by 2018**.



C. Illegal trade operates across complex supply chains

Illegal trade extends beyond border smuggling

- Multiple actors and interconnected supply chains
- Complex trafficking routes, including transit and trans-shipment
- Diverse modus operandi, including:
  - Misdeclaration and false labelling
  - non-compliant cylinders;
  - Circumvention of licensing and quota requirements
  - Online commerce and parcel delivery

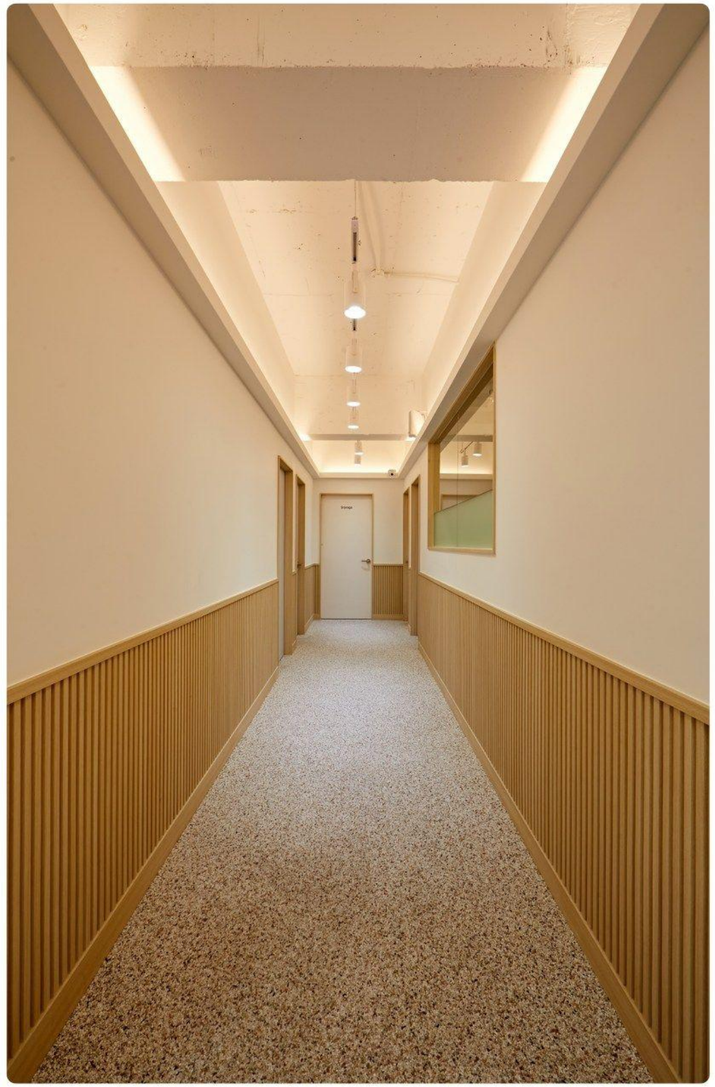
25% of WCO records were reported by a country other than the shipment's stated destination

Major corridors

- Illegal trade increasingly exploits regional transit corridors and intermediary countries rather than direct source-to-destination routes.

- **Geographical patterns**
  - Maritime movements from East Asia to Europe
  - Cross-border vehicle movements from Mexico to the United States
  - Selected routes across the Mediterranean and Central Asia
  - Movements through the Balkan region

- 433 offences recorded in the WCO CEN database (2016-2025):
  - 40% involved shipments from non-EU countries into the EU
  - 8 % cases involved movements entirely within the EU



D. Enforcement challenges extend beyond customs controls

- Challenges in licensing and quota verification
- Challenges in identifying refrigerants and blends
- Differences in national legal frameworks and enforcement approaches
- Potential links to fraud, corruption and other offences, where supported by evidence
- Need for complementary administrative and criminal enforcement responses

Information exchange is one of the most effective prevention tools

UNEP OzonAction iPIC

INFORM
PREVENT
INTERDICT
COOPERATE

A global information exchange mechanism to prevent and combat illegal trade in ODS and related controlled substances.

Statistics for 2023–2024

5,800+ consultations conducted

250,000 metric tonnes of controlled substances covered

These consultations detected:

- Quota exceedances
- Company mismatches
- Absent licences
- Falsified permits

Timely information helps stop illegal shipments before they take place.

Enforcement remains overwhelmingly administrative, not criminal

Total illegal trade cases reported up to April 2026:

1,107 cases

636	involved seizure or confiscation	**57%**
265	involved fines	**24%**
215	involved re-export or denial of entry	**19%**
63	involved criminal charges	**6%**

Enforcement action predominantly relies on administrative measures, while criminal prosecution remains limited.

Part III. Illustrative cases: evidence from the field



Bulgaria: Concealment and Cross-border Movement

Concealment and cross-border movements

- 18 cases reported by Bulgarian Customs (2019–2026)
- Refrigerants concealed among legitimate commercial cargo
- Multiple routes and transport arrangements involving Türkiye and European destinations

Key lesson: Effective detection requires attention to cargo documentation, physical inspections and transit arrangements.





Spain: Operation Gasmot



- Investigation initiated following suspected irregular online sales
- Alleged distribution outside the applicable EU quota system
- Suspected environmental, customs, tax and financial offences

10
Arrests

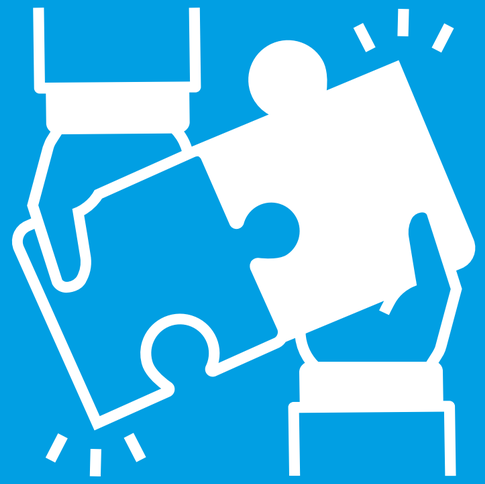
17
Additional persons investigated

~2.5 t
F-gases seized

Key lesson:

- Illegal trade spans international supply chains, online distribution and commercial end-users, and may involve financial offences.
- **An effective response requires coordinated environmental, customs, tax and criminal investigations.**

Part IV. Implications and the way forward



From Evidence to Action

- **Strengthen national legal and regulatory controls**
  - Periodically review national regulatory frameworks
  - Proportionate administrative and, where appropriate, criminal sanctions

- **Strengthen customs control**
  - Access to up-to-date information and identification or testing tools
  - Risk profiling with multiple indicators



- **Address online commerce and engage relevant private-sector actors**
  - Address online channels alongside conventional commercial trade
  - Engage with intermediaries

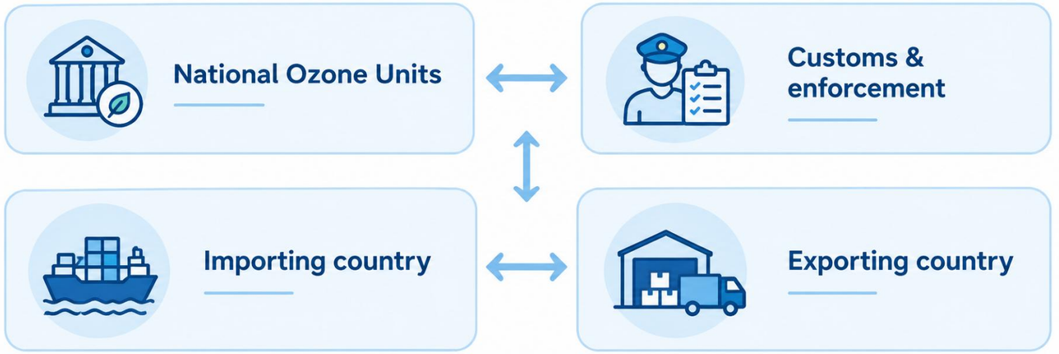
From Evidence to Action (cont.)

- **Address corruption and associated financial crime where relevant**
  - Consider risks of corruption or abuse of official procedures in licensing, customs and inspection processes and apply appropriate integrity safeguards
  - Consider whether constitute offences under other areas of national law.

- **Strengthen capacity and improve data collection**
  - Targeted and institutionalize capacity building
  - More consistent information collection

- **Consider lifecycle refrigerant management and waste management**
  - Consider recovered and recycled refrigerants and end-of-life refrigeration and air-conditioning equipment
  - Licensing systems should effectively cover used, recycled and reclaimed controlled substances





From Evidence to Action (cont.)

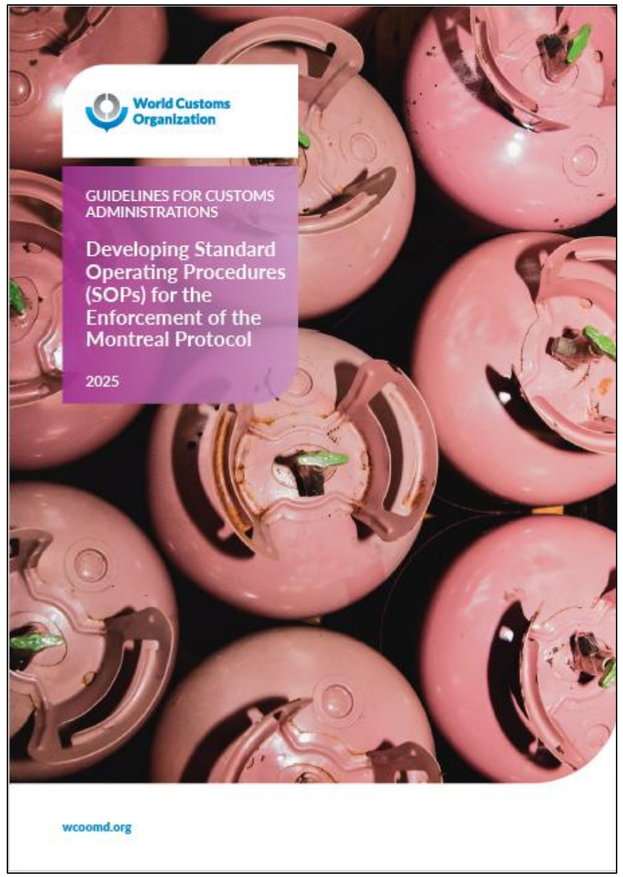
Strengthen information exchange, coordination and cooperation at the national, regional and global levels

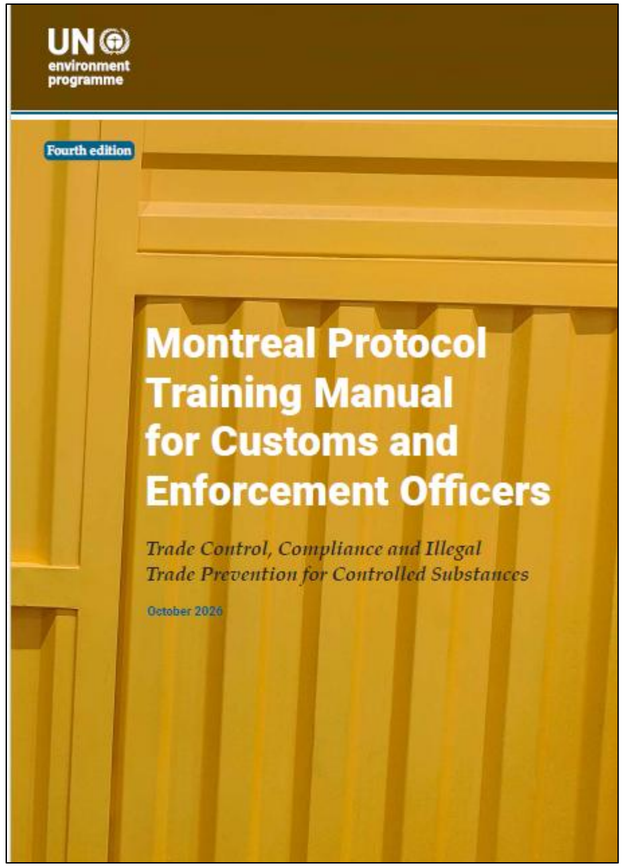
- Establish clear standard operating procedures (SOPs).
- Facilitate timely information exchange.
- Strengthen coordination among customs, police and other competent authorities.
- Leverage regional and international cooperation platforms.

Closing: Protecting the Achievements of the Montreal Protocol



Important publications for your customs-related activities:





The Path from Kigali: HFC Phase-Down Timeline



2047
HFC phase-down completed
Final step of the Article 5 Phase-down (Group 2).



2033
Ban on HFC trade with non-Parties
Trade (import or export of HFCs) with Parties that have not ratified the Amendment will be banned from 1 January 2033.[2]



2020
Eligible capacity cut-off: Group 1
The cut-off date for eligible capacity[3] is 1 January 2020 for Article 5 Group 1 Parties.



2019
HFC licencing systems in place
Import and export licencing systems for HFCs must be in place by 1 January 2019.[1] Applies to both Article 5 and non-Article 5 countries.



2024
Eligible capacity cut-off: Group 2
The cut-off date for eligible capacity[3] is 1 January 2024 for Article 5 Group 2 Parties.



2019
Entry into force
The Kigali Amendment will enter into force on 1 January 2019.[1]

2018
Guidelines developed
The Executive Committee was requested to develop, within two years, guidelines for financing the phase-down of HFCs.



2016
Kigali Amendment adopted
Agreement at the 28th Meeting of the Parties in Kigali, Rwanda to include the phase-down of hydrofluorocarbons (HFCs) under the Protocol.

Photo: IISD/ENB | Kiara Worth

2047 2046 2045 2044 2043 2042 2041 2040 2039 2038 2037 2036 2035 2034 2033 2032 2031 2030 2029 2028 2027 2026 2025 2024 2023 2022 2021 2020 2019 2018 2017 2016 2015 2014 2013 2012 2011

2028 - 2047
2024 - 2045
2024 - 2026
2020 - 2036
2019 - 2036
2020 - 2022
2013 - 2030
2011 - 2013

Legend

- 2020 - 2022 Article 5 Group 1 Baseline years
- 2024 - 2026 Article 5 Group 2 Baseline years
- 2024 - 2045 Article 5 Group 1 Freeze & Phase-down
- 2028 - 2047 Article 5 Group 2 Freeze & Phase-down
- 2011- 2013 Non-Article 5 Baseline years
- 2019 - 2036 Non-Article 5 Phase-down (earlier start)
- 2020 - 2036 Non-Article 5 Phase-down (later start)
- 2013 - 2030 HCFC Freeze & Phase-Out: Article 5
- 1996 - 2020 HCFC Freeze & Phase-Out: non- Article 5 (not shown)

UN environment
United Nations Environment Programme

OzonAction
UN ENVIRONMENT

...is an Implementing Agency of the Montreal Protocol's Multilateral Fund. OzonAction is working with 147 developing countries providing interconnected and mutually-supporting Compliance Assistance Services and project support to assist them meeting their current commitments under the Protocol. OzonAction is now working with these countires to jointly attain the ambitious achievements in climate protection promised by the Kigali Amendment. To find out more about OzonAction and to access our materials, tools and publications, including those on the Kigali Amendment and related issues, please visit our website: **www.unep.org/ozonaction** or contact us at: **ozonaction@unep.org**

Kigali Amendment

The Parties to the *Montreal Protocol on Substances that Deplete the Ozone Layer* reached agreement at their 28th Meeting of the Parties in October 2016 in Kigali, Rwanda to include the phase-down of hydrofluorocarbons under the Protocol.

Hydrofluorocarbons (HFCs)

...are commonly-used alternatives to ozone depleting substances (ODS). While not ozone depleting, HFCs are greenhouse gases which can have high or very high global warming potentials.

Country Groups

The Montreal Protocol Parties are split into four Kigali Amendment groups:

Article 5, Group 1:	The majority of Article 5 Parties.
Article 5, Group 2:	Bahrain, India, Iran, Iraq, Kuwait, Oman, Pakistan, Qatar, Saudi Arabia, United Arab Emirates
Non-Article 5, earlier start:	Most non-Article 5 countries
Non-Article 5, later start:	Belarus, the Russian Federation, Kazakhstan, Tajikistan, and Uzbekistan

1) The Kigali Amendment has reached the minimum number of ratifications required to enter into force on 1 January 2019.

2) ...or when Article 4 of the Protocol has been ratified by 70 countries - whichever is later.

3) The date after which any new manufacturing capacity producing or consuming HFCs is not eligible for funding under Multilateral Fund.

N.B. HFC baseline calculations also include a percentage of HCFC baseline production/consumption

Thank you !

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