COPA Session:
New COPA Publication - Global inventory of ODS and HFC banks

6th May. 2025, Moderator: Malin Emmerich, Experts: Manuel Prieto García & Irene Papst

MEETING ETIQUETTE

- A recording of the session will be uploaded on COPAs website. Participation mean you agree.
- Mute yourself.
- Raise a digital hand to get the word or write your questions in the chat.
- Unmute and turn on your camera when you speak.
- Have fun!

AGENDA

1. COPA Welcome & Agenda	Malin Emmerich (GIZ Proklima)
2. COPA Publication: Global Banks of ODS and HFC banks, a country-level estimate 2024	
1. Methodology • Data sources • Issues and assumptions • Global ODS/HFC Banks model	Manuel Prieto García & Irene Papst (HEAT)
2. Results & Call for action	
3. Discussion and exchange	All
4. End of Session	

COPA - CLIMATE AND OZONE PROTECTION ALLIANCE

- **COPA works jointly with partner countries and members** across private and public sectors to advance the holistic solutions needed to reduce ODS and HFC banks and ultimately complete the shift in the cooling sector to sustainable refrigerant management.
- Currently **80 members** in total, of which **26 countries** (May 2025)
- **Membership is free of cost;** members are invited to **actively contribute through working groups**.
- **Website:** https://www.copalliance.org
- **COPA Secretariat Mail:** contact@copalliance.org

Implemented by:

giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

In cooperation with:

UNIDO UNITED NATIONS INDUSTRIAL DEVELOPMENT ORGANIZATION

UNDP

Supported by:

Federal Ministry for Economic Affairs and Climate Action

IKI INTERNATIONAL CLIMATE INITIATIVE

on the basis of a decision by the German Bundestag

CLIMATE AND OZONE PROTECTION ALLIANCE (COPA)
Thematic Working Groups (TWG)

Together with partners and members from **academia, the private sector, civil society, finance institutions and policy makers**, we are working on the following topics

Policy Framework

For an effective managemenof refrigerants and foams at end-of-life, **suitable policy measures are required** like venting bans or mandatory recovery

Technology Solutions

Working towards the **best technical solutions** for ODS and HFC recovery, reclamation and destruction

Financing Mechanism

The infrastructure for and operation of a collection scheme and the destruction or reclamation of ODS and HFCs needs to be based on a **sustainable financing mechanism**

Implementation Models

Putting theory into practice and demonstrating how sustainable refrigerant management can be implemented

WHO IS HERE TODAY?

- In the chat there will be different options posted
- Make a heart or thumb-up for the option or options that are true for you
- Let's start with what organisation you represent!
- Have you conducted an ODS and /or HFC Bank inventory already?

MATERIALS ONLINE: WWW.COPALLIANCE.ORG

- **Todays' session is recorded and will be uploaded on the COPAs website with the new publication.**
- There are already cool and informative materials available on the COPA website. No need to be bored! For example:
- Webinar Sessions **(video recording) from Working Groups meetings**
- **COPA studies and Reports, Guidelines** – e.g. on ODS/HFC banks Inventory
- The **Virtual Study Tour on Reclamation & Destruction Technology** (live-session-series)

JOIN NEXT COPA SESSION - THURSDAY 8TH MAY

Two new COPA Carbon Markets Resources will be presented and introduced:

1. “Get ready with me (GRWM) for Paris Agreement Article 6 in 5 steps”

- This guide is especially targeting NOUs in developing countries (Art. 5 countries). It was commissioned by UNDP and at the session, the author will walk through the five steps of the guide, supported by Mathatela, the NOU from Lesotho, who contributed his expertise during its development.

2. "Cool Carbon Solutions" - The new free online COPA course on the Atingi Platform

- This course introduces carbon markets and the Paris Agreement Article 6 instrument and is available in English, French and Spanish languages. Developed by COPA member, Energy Changes, together with Kommunal Kredit Public Consulting, the course combines technical insights on Article 6 participation and voluntary carbon markets with practical tools for implementing refrigerant-related projects. Participants who complete the course will receive a certificate.

HEAT

GLOBAL ODS/HFC BANKS METHODOLOGY AND RESULTS

Manuel Prieto García & Irene Papst

06.05.2025

01

METHODOLOGY

DATA SOURCES

Methodology

1. DATA REPORTED UNDER ARTICLE 7 OF THE MONTREAL PROTOCOL FROM ALL COUNTIES

- **Refrigerant data:** import virgin, export virgin, production for all uses, destruction, feedstock use, process agent use, QPS use, Lab use, essential and critical uses, import recycled/recovered/reclaimed, export recycled/recovered/reclaimed.

2. SECTORAL DISTRIBUTION OF THE ODS/HFCS

- With the aim of allocating the consumption to the different sectors for proper modelling
- Categories: manufacturing RAC, servicing RAC, foam and other uses.

3. UN COMTRADE DATABASE USED TO EXTRACT IMPORTS AND EXPORTS

- Data for import/export of refrigerators and air conditioners
- Used to correct the consumption of large manufacturers (e.g., China) that export the refrigerant in pre-charged equipment (e.g., Split ACs)

DATA REPORTED UNDER ARTICLE 7 OF THE MP

ODS and HFCs used

	Refrigerant types	Available time series
CFC	R11, R12	1989-2009
HCFC	R22, R141b, R142b	1989-2022
HFC	R125, R134a, R143a, R152a, R227ea, R245fa, R32, R365mfc	2011-2013, 2019-2022

COMPOSITION OF MOST COMMON BLENDS

Methodology

	HFC-404A	HFC-407C	HFC-410A	HFC-507A
HFC-125	44%	25%	50%	50%
HFC-134a	4%	52%	0%	0%
HFC-143a	52%	0%	0%	50%
HFC-152a	0%	0%	0%	0%
HFC-32	0%	23%	50%	0%

ARTICLE 7 DATA – ISSUES AND ASSUMPTIONS

Methodology

1 Missing Article 7 data from large consumers

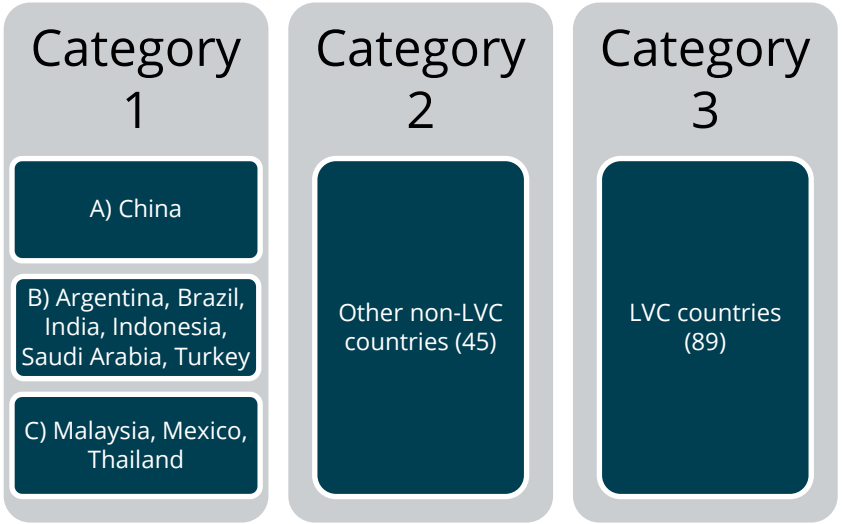
- No HFC data for Algeria, DPR Korea, Egypt, Iran, Iraq, Kuwait, Libya, Saudi Arabia, Thailand, Yemen.
- Data taken from CCAC, 2022: A study on the Impacts of HFC Consumption Trends In Article 5 Countries.

2 HFC Article 7 data reported intermittently overtime

- Non-Article 5 countries have reported data in 2011, 2012, 2013 and again since 2019
- Article 5 countries have reported data only since 2019.
- For the period 2000-2010 and 2014-2018 there is no data
- Interpolation to the past using a year of introduction for each refrigerant

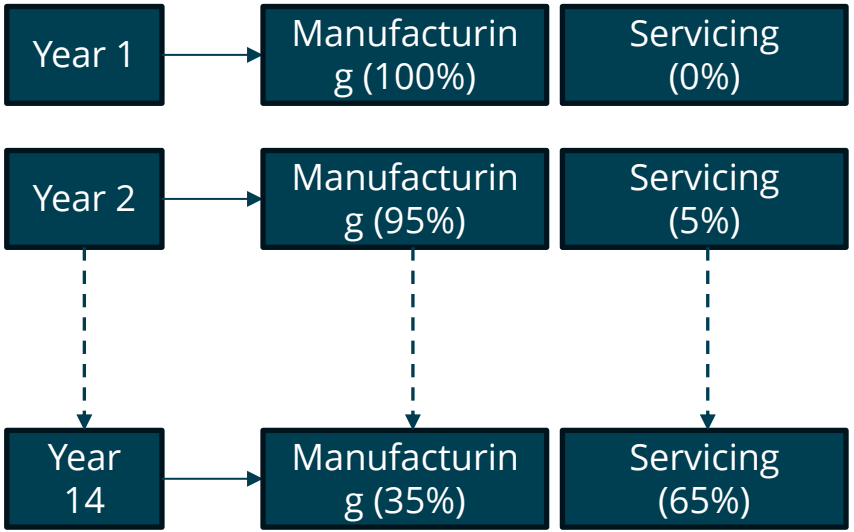
SECTORAL DISTRIBUTION OF HFCS

For Article 5 countries distribution used from a CCAC report.



For Non-Article 5, the IPCC guidelines were used.

Sectoral Distribution of a refrigerant overtime



Sources: CCAC,2022: A study on the Impacts of HFC Consumption Trends In Article 5 Countries.

IPCC, 2006: Guidelines for National Greenhouse Gas Inventories, Intergovernmental Panel on Climate Change, Switzerland.

SECTORAL DISTRIBUTION OF HFCS

Substance	Non-A5 countries		
	RAC	Foam	Other
HFC-125	100%	0%	0%
HFC-134a	94%	5%	1%
HFC-143a	100%	0%	0%
HFC-152a	5%	15%	80%
HFC-227ea	0%	100%	0%
HFC-245fa	0%	100%	0%
HFC-32	100%	0%	0%
HFC-365mfc	0%	100%	0%

SECTORAL DISTRIBUTION OF HFCS

Substance	A5 countries Category 1			A5 countries Category 2			A5 countries Category 3		
	RAC	Foam	Other	RAC	Foam	Other	RAC	Foam	Other
HFC-125	100%	0%	0%	100%	0%	0%	100%	0%	0%
HFC-134a	99%	0%	1%	100%	0%	0%	100%	0%	0%
HFC-143a	100%	0%	0%	100%	0%	0%	100%	0%	0%
HFC-152a	10%	15%	75%	5%	15%	80%	5%	15%	80%
HFC-227ea	0%	0%	100%	0%	0%	100%	0%	0%	100%
HFC-245fa	0%	100%	0%	0%	100%	0%	0%	100%	0%
HFC-32	100%	0%	0%	100%	0%	0%	100%	0%	0%
HFC-365mfc	0%	100%	0%	0%	100%	0%	0%	100%	0%

UN COMTRADE DATA

Methodology

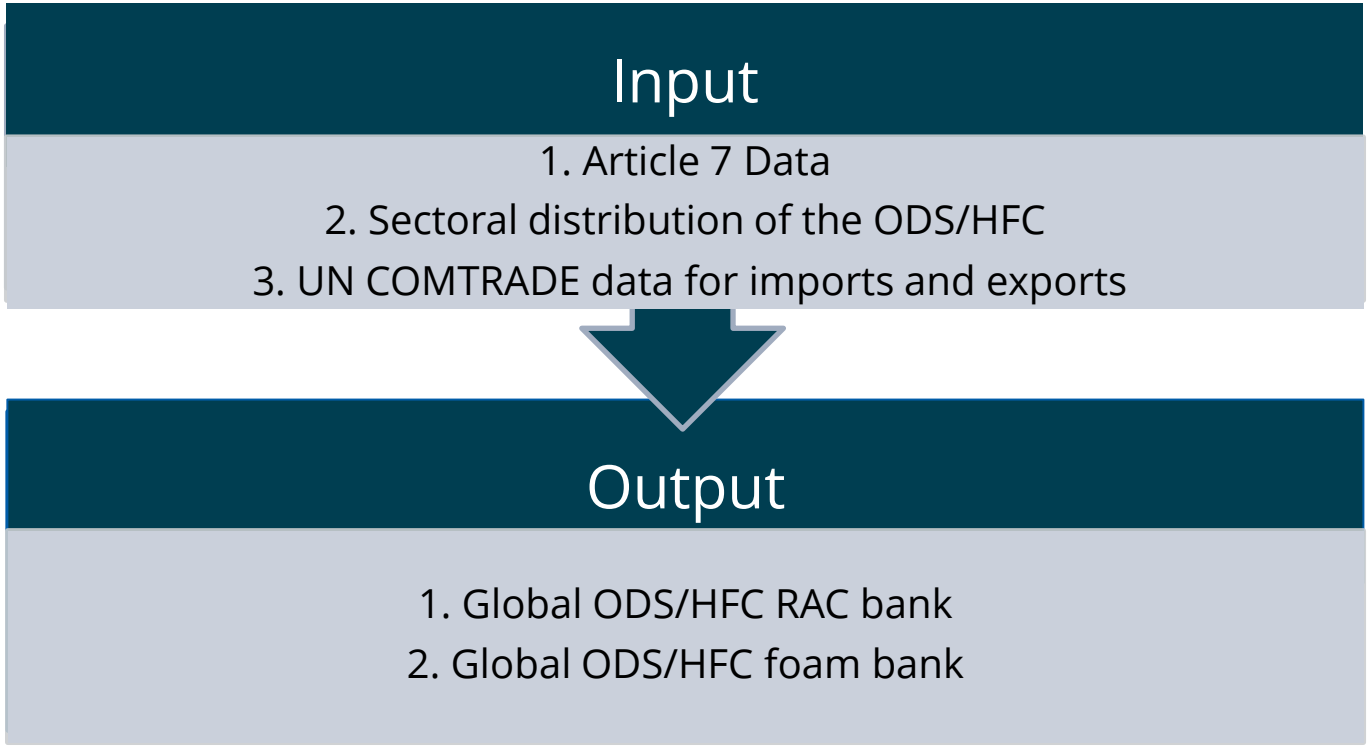
Fridge Product

Product Code	Product Description
841810	Combined refrigerator-freezers
841821	Refrigerators, household type
841829	Refrigerators, household type
841830	Freezers of the chest type,
841840	Freezers of the upright type, not e
841850	Other refrigerating or freezing chest
841861	Compression type refrigerating
841869	Refrigerating or freezing equipment

ACProduct

ProductCode	ProductDescription
841510	Air conditioning machines window or wall types
841581	Air cond. machines incl. a ref unit and a valve
841582	Air cond. machines, incl. a refrigerating unit

GLOBAL ODS/HFC BANKS MODEL



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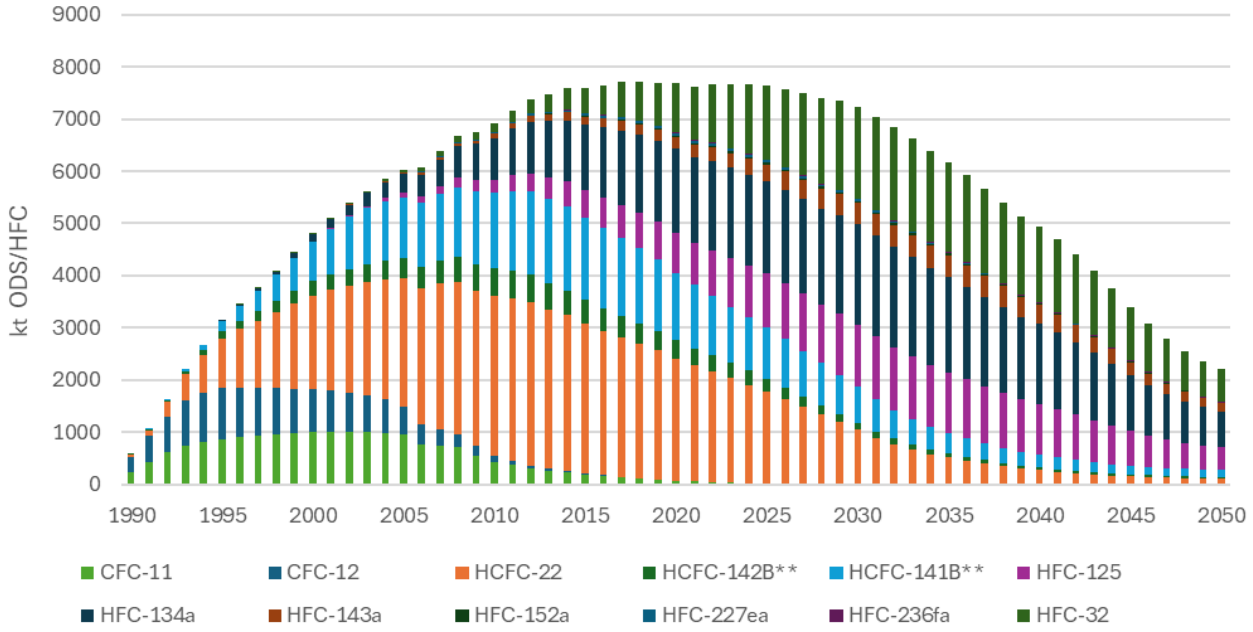
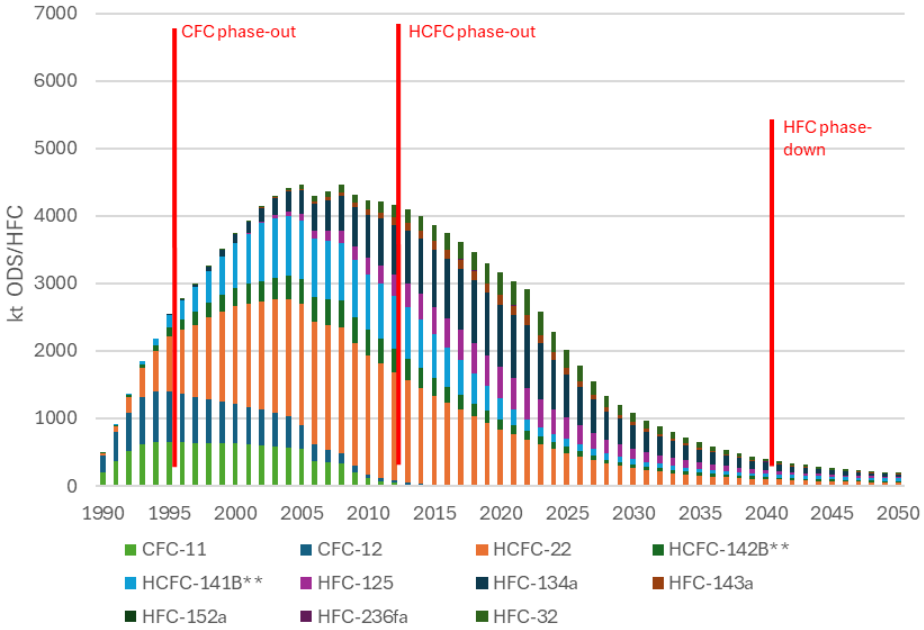
RESULTS

RESULTS – BANKS (METRIC TONNES)

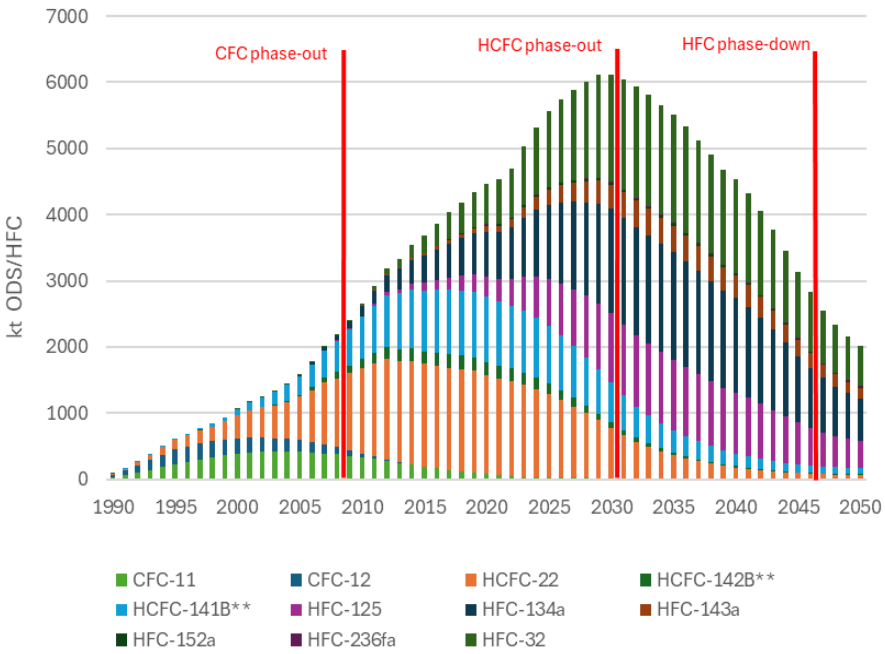


RESULTS – BANKS (METRIC TONNES)

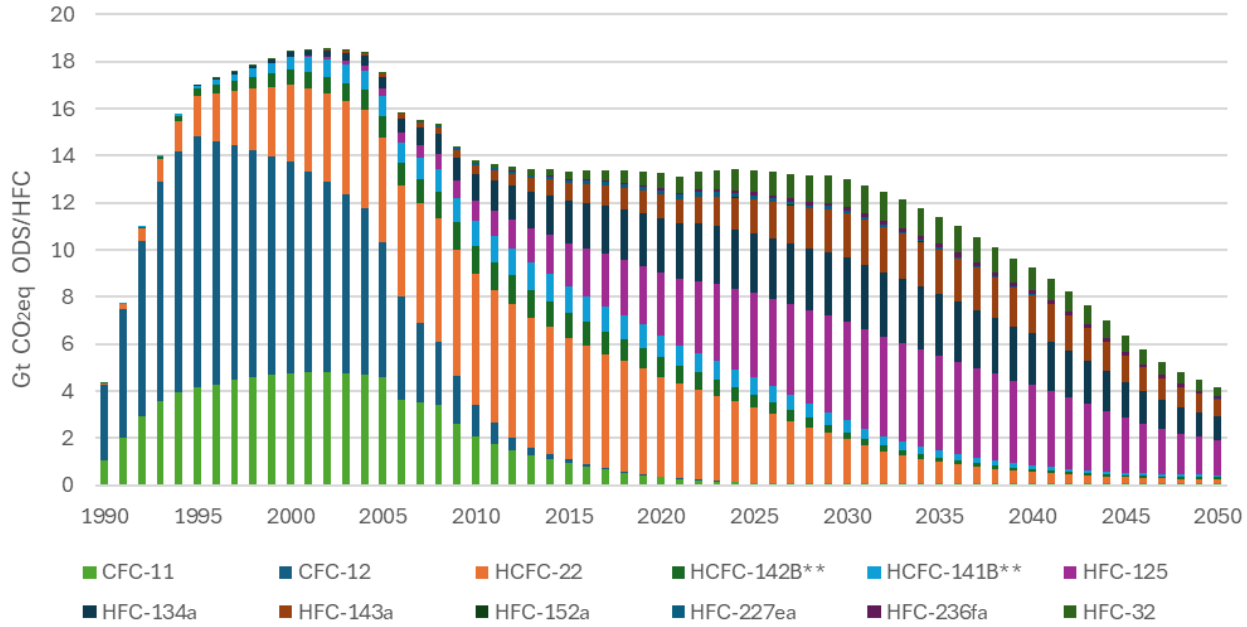
Non-Article 5 Countries



Article 5 Countries

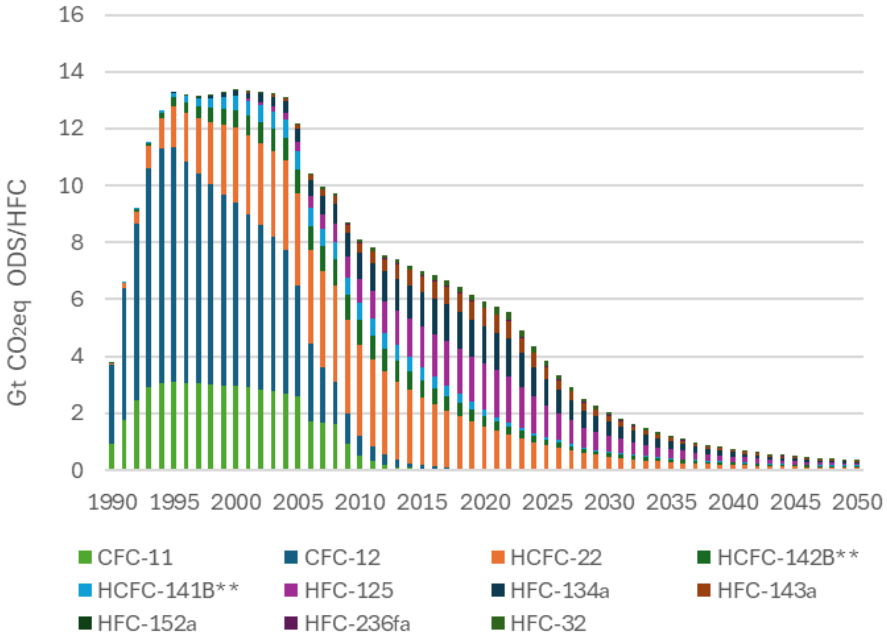


RESULTS – BANKS (CO_2eq)

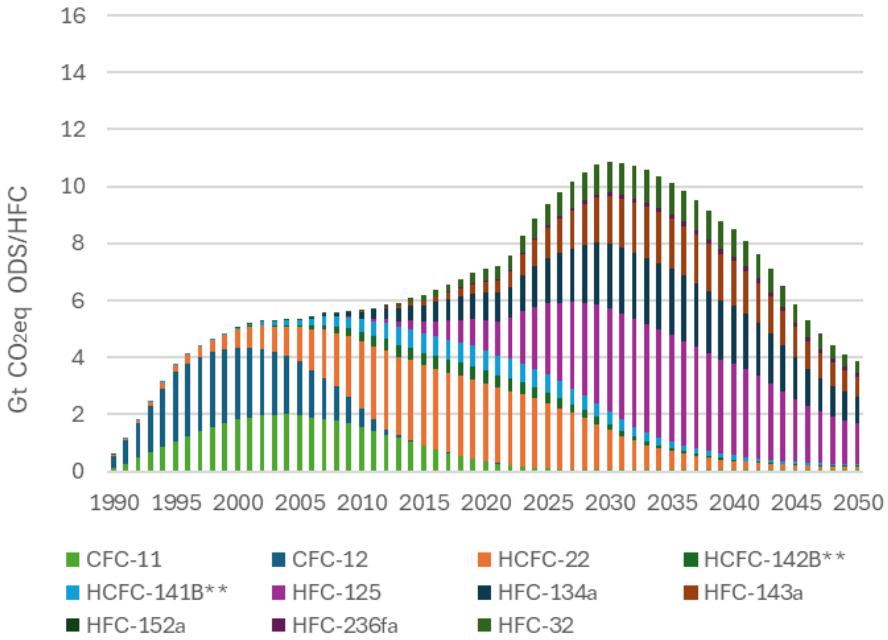


RESULTS – BANKS (CO_2eq)

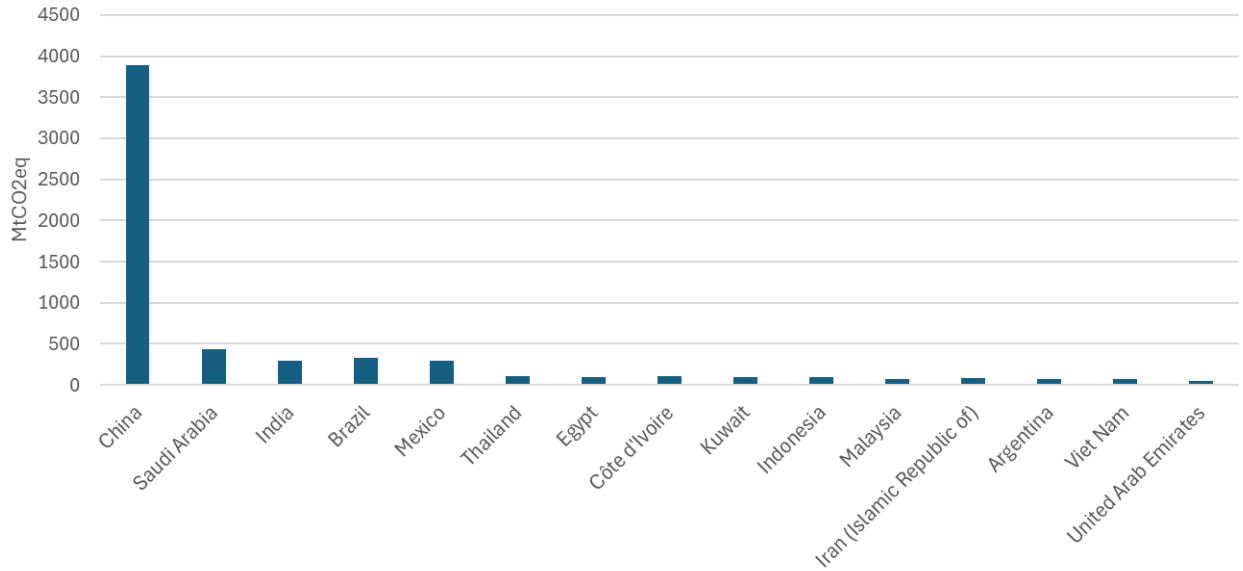
Non-Article 5 Countries



Article 5 Countries

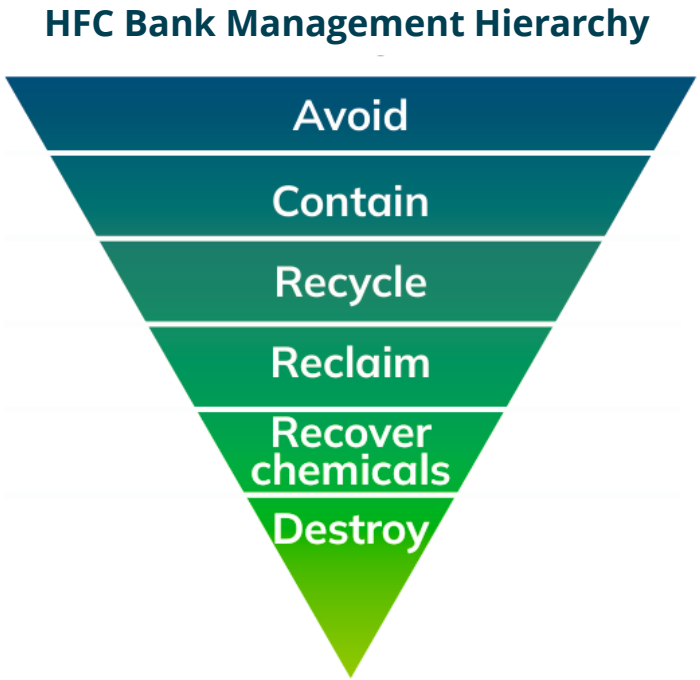


RESULTS - LARGEST BANKS



CALL FOR ACTION

- ODS and HFC banks are as high as never before – with an all-time high of potential emissions
- Banks will decline – either due to emissions or as a result of lifecycle refrigerant policies along the policy hierarchy
- Concerted Action is required to recover, recycle and reclaim/destroy ODS and HFC
- A global registry of banks would aid policy making and financing
- Efforts to support Art. 5 countries to undertake inventories and develop action plans are ongoing
- More efforts are needed to include the supply chain – including producers and manufacturers into finding sustainable solutions



THANKS

HEAT

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QUESTIONS?

ACCESS PUBLICATION AT
COPA WEBSITE

COPA
Cutting refrigerant emissions

THANK YOU FOR YOUR PARTICIPATION