COPA 2nd Plenary Meeting
18-19 June 2024
COPA Plenary Day 1 - 18 June 2024
Moderator Ellen Michel, GIZ, Head of COPA Secretariat
GROUND RULES FOR ONLINE SESSIONS

- **Use the chat for your questions.**
- **You can use this feature for reactions or for raising your virtual hand.**
- **If the connection allows it, please turn on your video when you speak.**
- **For best audio quality, please stay muted.**

*Please use **headphones** or **earphones** in order to prevent echoing-effects.*
Session 1
2 pm-3.30 pm (CEST)

Agenda
Steering Committee & Secretariat
COPA Celebrates
TWG Reports
Welcoming: Rachel Pekker, BMWK
Group Photo
### AGENDAS (CEST)

#### Day 1 – 18th June

- **14:00** | Plenary Opening  
(CEST) Welcoming: The Federal Ministry for Economic Affairs and Climate Action  
Steering Committee: 
COPA celebrates with members  
Thematic Working Groups reports: Coordinators of Thematic Working Group

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>15:30</td>
<td>Break</td>
</tr>
</tbody>
</table>
| 15:45  | **COPA Positions** (stay in MS teams link)  
|        | Position Paper “COPA Safeguards” I. Papst (Steering Committee)          |
|        | Position Paper “COPA Position on HFO” A. Bukmanis (Steering Committee)  |
|        | Position Paper “COPA Position on Carbon Credits as financing source for management of ODS / HFC bank management activities” T. Nickson (Steering Committee) |
| 16:45  | Break                                                                    |
| 17:00  | **COPA teams: Best Practice from Grenada and Mexico** (stay in MS teams link)  
|        | How to establish a refrigerant recovery and recycling centre? L. Smith (NOU Grenada) (tbc)  
|        | Country experience: Mexico S. Merino (NOU Mexico)                         |

| 17:45  | Wrap Up & Closing of Day 1                                              |

#### Day 2 – 19th June

- **8:00** | Welcoming  
(CEST)  
Recap Day 1  
Welcoming: The Federal Ministry for Economic Affairs and Climate Action  
COPA celebrates with members

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
</table>
| 8:30   | **COPA teams: Carbon Markets** (stay in MS teams link)  
|        | Experiences, Methodologies and national frameworks H. Salway (Gold Standard)  
|        | G. Kecotse (NOU Botswana)                                                |
| 8:45   | **COPA meets** (switch to this MS teams link)  
|        | Networking Session                                                      |
| 9:45   | **COPA teams: Best Practice from Ghana** (stay in MS teams link)  
|        | Options for ODS and HFC Collection J. Baffoe (NOU Ghana)                 |
|        | Standard Operating Procedures for end-of-life Fridges & Freezers T. Schleicher (Öko Institut) |
| 10:45  | **COPA looks ahead** (switch to this MS teams link)  
|        | How to make COPA a sustainable and lasting Alliance? COPA Steering Committee and Secretariat |
| 11:45  | Wrap Up of 2nd Plenary Meeting & Closing                                |

- **11:45** | Wrap Up of 2nd Plenary Meeting & Closing
2. **Steering Committee & Secretariat**
   Ellen Michel, GIZ, Head of COPA Secretariat
INTRODUCTION OF THE STEERING COMMITTEE
Civil Society (Group C)

Gift Richard Maloya
ICAD
The Initiative for Climate Action and Development
Member since: 2023
Malawi

Tom Nickson
EIA
Member since: 2021
United Kingdom
INTRODUCTION OF THE STEERING COMMITTEE

Public Entity (Group A)

Rachel Pekker

Federal Ministry for Economic Affairs and Climate Action - BMWK
Member since: 2021
Germany
INTRODUCTION OF THE STEERING COMMITTEE

Private Sector (Group B)

Adrian Bukmanis
Veridien
Member since: 2021
Singapore, France

Irene Papst
HEAT
Member since: 2022
Germany
INTRODUCTION OF THE STEERING COMMITTEE
Academia (Group D)

Mustafa Hathal

The Scientific Society of Scientific Studies and Research - Iraq
Member since: November 2022
Iraq
INTRODUCTION OF THE STEERING COMMITTEE

Countries (Group F)

Rómulo Armas Real

Elías Gómez Mesa
THE COPA SECRETARIAT

Ellen Michel
Head of Secretariat

Paola Bustillos Castillo
Advisor

Tizian Pfeiffer
Junior Advisor

Mareike Boll
Advisor

Malin Emmerich
Advisor

Theresa Bruns
Communication Specialist

Juliette Noppe
Advisor

Heidrun Steiner
Admin & Finance

Paul Thielmann
Intern
3. COPA Celebrates Achievements
   Experiences and Highlights
COPA HIGHLIGHTS JUNE 2023 – JUNE 2024

https://youtu.be/3rl3zA3UCo8
4. Thematic Working Group Reports
REPORTING FROM COPA THEMATIC WORKING GROUPS (TWG)

Policy Framework
Developing suitable policy measures for effective management of refrigerants and foams at their end-of-life stage.

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

Financing Mechanism
Developing financial mechanisms for sustainable GHG mitigation measures in ODS and HFC banks

Implementation Models
Putting theory into practice – demonstrating how sustainable refrigerant management can be implemented
COPA TWG POLICY FRAMEWORK

• Launched beginning of 2023

• To bring together interested COPA Members to jointly work on identifying and developing policy interventions suitable for GHG mitigation measures in the ODS and HFC banks sector

• Co-Coordinators

Thank you to ...

Ken Logan
Sustainability Director of A-Gas International

&

Ellen Michel
Head of COPA Secretariat
COPA TWG POLICY FRAMEWORK

- Activities

  5 meetings took place

  - EPR regulations
  - Exchange on practical experiences
  - Export/import regulations and transboundary movement - Basel convention
  - National policies
  - Guidelines
POTENTIAL POLICY FRAMEWORK FOR THE PROMOTION OF SUSTAINABLE ODS/HFC BANKS MANAGEMENT

Deliverable under the Project: “Climate and Ozone Protection Alliance”

Presented to GIZ Proklima by HEAT GmbH
September 2023

COPA Publication Policy Study 23.pdf (copalliance.org)
COPA TWG on Technology Solutions
18th June 2024, Yunrui Zhou, UNIDO & Mareike Boll, GIZ
UNIDO and GIZ launched a Thematic Working Group on ODS and HFC recovery, reclamation and destruction technologies.

- 1st and 2nd TWGM 2021, 2022
- 3rd TWGM 23.11.2023
- 4th TWGM 30.04.2024

- Lifecycle refrigeration management
- Recycling and reclamation of refrigerants, Aohong, China
- Destruction of ODS/HFC in cement kiln
- Technical conceptualization
- Equipment
- Evaluation of OSD destruction facilities
Key deliverables of the Technology Solutions Working Group

Publication: ODS/HFC Reclamation and Destruction Technologies

- Introduction
- Background on ODS/HFC banks
- Reclamation of ODS/HFCFs
- Destruction of ODS/HFCs
  - Cement kiln
  - Municipal Solid waste incineration
  - Rotary kiln incineration
  - Argan Plasma Arc
  - Comparison of the technologies
- Policy framework
- Recommendations and conclusions

Technical webinar on ODS destruction technologies

- Webinar in English took place in Jan 2024
- Webinar in Spanish took place in May 2024

Virtual Study Tour

- “travel” to Regener plant, Chile, 18 March, 2024
- “travel” to company UNACEM, Ecuador, 21 March, 2024
Way forward: Collection of ideas

- In-depth study on business models of reclamation centres and refrigerant life cycle management
- In-depth study on ODS/HFC destruction technologies incl. installation and operational cost
- Review of destruction emissions on various destruction technologies
- PFAS emissions after refrigerant destruction

Upcoming COPA Events

- **OEWG side event**: Accelerating the destruction of ODS waste: an open discussion on the role and lessons-learned of the Climate and Ozone Protection Alliance
  - **Date**: Thursday, 11 July 2024 at 1.00 to 3.00 p.m.
  - **Location**: Room CR-6
COPA TWG on Financing Mechanisms
18th June 2024, Louis Potok
COPA THEMATIC WORKING GROUPS (TWG)

**Policy Framework**
Developing suitable policy measures for effective management of refrigerants and foams at their end-of-life stage.

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

**Financing Mechanism**
Developing financial mechanisms for sustainable GHG mitigation measures in ODS and HFC banks

**Implementation Models**
Putting theory into practice – demonstrating how sustainable refrigerant management can be implemented

Louis Potok, Chair
Adrian Bukmanis, Vicechair

18.06.2024
MATERIALS ONLINE:

• Meetings & documentation; presentations
• Webinar Sessions (video recording)
• Studies, reports, tools
• Workplan
• Overview of the work in 2023
• Contact information
• TWG FM Website link
GOALS

▪ Gather and develop financing options (in use and potential)
▪ Education and shared learning around financing options
▪ Provide options to COPA members, especially country members
▪ Develop COPA financing mechanism
MAJOR ACTIVITIES AND ACCOMPLISHMENTS

- March 2023: Election of Chair and Vice-Chair
- April 2023: Publication of **Review and Concept Note**
  - Summarize mechanisms in use
  - Compare pros and cons
  - Propose a COPA financing mechanism
- May 2023: **UNDP Carbon Market Report**
  - Describe historical use of carbon markets for ODS
  - Detailed look at business model and considerations
  - Includes financial model tool in Excel
- October 2023: **TWG Brainstorm Session**
  - Eergize COPA project submissions
- **Ongoing: Financing Mechanism 101**
  - Accessible introduction to several options
  - April 2024: Carbon Markets (**recording**)
AMBITIONS FOR THE UPCOMING YEAR

- (Speculative)
- Continue 101 Series
- More member participation
- Engage more outside of COPA, eg with potential financial institutions
- Consultation to member countries as needed
- Additional case studies on successful mechanisms, especially outside carbon markets
GET IN TOUCH

We would love to hear from you

✔ Via e-mail: Louis@recoolit.com

✔ How can we be helpful to you? What are you interested in learning more about?
COPA TWG on Implementation
18th June 2024, Paola Bustillos Castillo, GIZ
IMPLEMENTATION WORKING GROUP

✔ First Implementation Working Group Meeting on 20.03.2024

Call for ideas

- Eight ideas were submitted under the Call for Ideas, encompassing diverse proposals such as capacity building initiatives, facility destruction projects in India and Thailand, EPR Schema for Pakistan and Support for the Art.6.

- All submissions underwent rigorous evaluation and were subsequently recommended to the Steering Committee for further backing through COPA.

- These initiatives exemplify COPA's commitment to fostering innovative approaches and promoting international cooperation.

- With COPA's support, these projects aim to significantly contribute to climate protection and the preservation of the ozone layer, enhancing global sustainability efforts.
Welcoming Remarks
Rachel Pekker, German Federal Ministry for Economic Affairs and Climate Action
Break
3.30-3.45 pm (CEST)

to be followed by
Session 2: COPA Position Papers
Parallel Session: COPA Meets - Networking
3.45-4.45 pm (CEST)
Session 2
3.45 pm-4.45 pm (CEST)

Graphic Recording

COPA Positions

COPA Meets “Parallel session”
AGENDAS (CEST)

Day 1 – 18th June

14:00 Plenary Opening
(CEST) Welcoming
The Federal Ministry for Economic Affairs and Climate Action

Steering Committee

COPA celebrates with members

Thematic Working Groups report
Coordinators of Thematic Working Group

15:30 Break

15:45 COPA Positions (stay in MS teams link)
Position Paper “COPA Safeguards”
I. Papst (Steering Committee)

Position Paper “COPA Position on HFO”
A. Bukmanis (Steering Committee)

Position Paper “COPA Position on Carbon Credits as financing source for management of ODS / HFC bank management activities”
T. Nickson (Steering Committee)

COPA meets (switch to this MS teams link)
Networking Session

16:45 Break

17:00 COPA learns: Best Practice from Grenada and Mexico
(stay in MS teams link)
How to establish a refrigerant recovery and recycling centre?
L. Smith (NOU Grenada) (tbc)

Country experience: Mexico
S. Merino (NOU Mexico)

COPA looks ahead
How to make COPA a sustainable and lasting Alliance?
COPA Steering Committee and Secretariat

17:45 Wrap Up & Closing of Day 1

Day 2 – 19th June

8:00 Welcoming
(CEST) Recap Day 1
The Federal Ministry for Economic Affairs and Climate Action

COPA celebrates with members

Parallel sessions

8:30 COPA learns: Carbon Markets (stay in MS teams link)
Experiences, Methodologies and national frameworks

COPA meets (switch to this MS teams link)
Networking Session

9:30 Break

9:45 COPA learns: Best Practice from Ghana (stay in MS teams link)
Options for ODS and HFC Collection

COPA looks ahead (switch to this MS teams link)
How to make COPA a sustainable and lasting Alliance?

COPA Steering Committee and Secretariat

10:30 Break

10:45 COPA Positions (stay in MS teams link)
Position Paper “COPA Safeguards”
I. Papst (Steering Committee)

Position Paper “COPA Position on HFO”
A. Bukmanis (Steering Committee)

Position Paper “COPA Position on Carbon Credits as financing source for management of ODS / HFC bank management activities”
T. Nickson (Steering Committee)

COPA looks ahead
China Energy Efficiency Survey

Country experience: Tunisia
Y. Hammami (NOU Tunisia)

11:45 Wrap Up of 2nd Plenary Meeting & Closing
COPA positions in Main room (here)

- HFO refrigerants
- Safeguards
- Carbon Credits & Carbon Markets (ongoing)

COPA Networking Session in Breakout rooms

- Random exchanges of members in breakout rooms
- Click **MS Team-link in Chat** or in the Agenda to join
1. COPA Position Paper - Safeguards
Irene Papst, COPA Steering Committee (Private Sector)
Why are we taking a position on Safeguards?

- COPA considers wider environmental and social justice impacts of their projects and implements a set of **safeguards to avoid undue effects**.

- Those safeguards are **used as checklist** for any project that receives COPA support during the kick-off, implementation and evaluation.

- COPA aims to collect experience and possibly data to draw **attention to otherwise overlooked issues**.
1. DO NO HARM PRINCIPLE

- Mitigation activities should minimize and, wherever possible, avoid producing any negative environmental, economic, or social effects.
- Any potential environmental and social risks and impacts arising from mitigation activities should be assessed.
- Environmental and social safeguards should be implemented to avoid, minimize, and compensate potential risks and harms.
### 2. POSSIBLE ELEMENTS OF SAFEGUARD LIST

<table>
<thead>
<tr>
<th>Aspect</th>
<th>Specific issues</th>
<th>Safeguards</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Environmental pollution near destruction facilities</strong></td>
<td>Pollutants from the destruction process, such as particulate matter, carbon monoxide, PFAS in combustion by-products</td>
<td>Implement highest internationally recognized environmental standards (e.g. EU Air Quality Standards), conduct regular testing and monitor air and water quality and waste residues around the facilities. Use best-available filtration and scrubbing technologies to minimize emissions.</td>
</tr>
<tr>
<td><strong>Gender balance in project beneficiaries</strong></td>
<td>Varies with project activities</td>
<td>Encourage gender diversity in employment and training programs. Implement policies that support the inclusion and advancement of women in all project roles.</td>
</tr>
<tr>
<td><strong>Effects on informal market</strong></td>
<td>Impact on informal sector workers and businesses</td>
<td>Consider special needs when conducting capacity development measures. Facilitate the transition of informal workers to the formal sector.</td>
</tr>
<tr>
<td><strong>Worker Health and Safety</strong></td>
<td>Occupational hazards associated with handling and destroying ODS, HFC and HFO</td>
<td>Provide comprehensive safety training, personal protective equipment, and health monitoring for workers. Establish emergency response protocols.</td>
</tr>
<tr>
<td><strong>Community Engagement and Impact</strong></td>
<td>Local community concerns about facility operations, health risks, and property values</td>
<td>Engage with local communities through regular meetings and information sessions. Implement community feedback mechanisms and ensure transparency in operations.</td>
</tr>
<tr>
<td><strong>Waste Management and By-Product Disposal</strong></td>
<td>Safe disposal of waste and by-products from the destruction process</td>
<td>Develop and adhere to strict waste management protocols. Explore recycling and safe disposal options for by-products.</td>
</tr>
<tr>
<td><strong>Climate Change Considerations</strong></td>
<td>Contribution of ODS destruction processes to greenhouse gas emissions</td>
<td>Implement strategies to minimize carbon footprint, such as using renewable energy sources and optimizing energy efficiency. (Link to Scope 3 GHG Protocol considerations)</td>
</tr>
</tbody>
</table>
2. COPA Position Paper - HFO
Adrian Bukmanis, COPA Steering Committee (Private Sector)
Why are we taking a position on low-GWP HFO refrigerants?

- Concern over primary and secondary degradation products
- Full lifecycle impacts
- Growing banks (e.g. vehicles)
- Limited awareness
1. POLICY

- Inclusion with similar diligence as ODS / HFCs
- Best practice management
- Raise awareness with policymakers
2. DESTRUCTION

- Development and promotion of suitable technologies
- Evaluation of existing facilities
- Management of PFAS
- Work on financing mechanisms
3. ALTERNATIVES

- Non-fluorinated, natural refrigerants
- Leapfrog to avoid another transition
- All refrigerants need management
4. RESEARCH

- Support further research into atmospheric degradation
- Destruction byproducts
- Full-lifecycle impacts
5. STAKEHOLDER ENGAGEMENT

- Public outreach
- Education and training
- Early intervention to limit banks
What would COPA of 2040 ask of us?
QUESTIONS?

COMMENTS?
COPA Position Paper – Carbon Credits
Tom Nickson, COPA Steering Committee (Civil Society)
Malin Emmerich, COPA Secretariat (TWG FM Coordinator)
Why are we taking a position on Carbon Credits?

- Idea of funding ODS/HFC bank management activities through the generation and sale of carbon credits
- An opportunity worth considering for COPA activities
- Brings both potential risk and benefits
- Position paper is in draft version – overview of discussion today
OVERVIEW OF DRAFT POSITION PAPER

1. Carbon Credits & Carbon Markets
2. Opportunities
3. Risks & concerns
4. Orientation & Guidance; COPA as compass?
1. CARBON CREDITS & CARBON MARKETS

Three core aspects to the carbon markets today:

- **The mandatory or compliance markets**
  trade government issued/permitted emissions allowances within a structured market;

- **Sovereign carbon markets**
  national level for emissions reduction and removal

- **Voluntary carbon markets (VCMs)**
  trade credits based on carbon offsets for emissions avoidance, reduction or removal on a voluntary basis.

**Carbon Credit:**
- emission reductions equivalent of one ton CO2 = CO2eq
- Validated and certified
1. CARBON CREDITS / VALIDATION & CERTIFICATION

- **Quantification**
  Emissions reductions or removals used to generate a credit must be robustly quantifiable

- **Additionality**
  The activity generating the credit would not have occurred in the absence of the incentive created by selling the credits

- **Permanence**
  The activity generating the credit must lead to a permanent reduction or removal of emissions

- **Transparency**
  Comprehensive information is available on methodology employed, monitoring and reporting involved, and all mitigation activities undertaken
2. OPPORTUNITIES

In optimal circumstances carbon markets:

- can *allocate capital* towards low-carbon solutions and emission reductions
- create an *economic incentive* for reducing greenhouse gas (GHG) emissions as cost-effectively as possible
- support increased *involvement of the private sector* in climate mitigation
3. RISKS AND CONCERNS

Broader issues with carbon offset credits:

- Greenwashing & delaying real climate action
- Carbon market integrity cannot be assured
  - Scandals past & present
  - No control over who buys credits
- Carbon credits risk disincentivising the significant investments needed to tackle the climate crisis

Issues specific to ODS & HFC credits:

- Lack of additionality (and permanence)
- Undermining the incentive to legislate
- Risk of creating perverse incentives
- ‘Bringing forward’ emissions
- Not a sustainable model in the long-term
- Potential derogation from Vienna Convention
4. COPA ORIENTATION & GUIDANCE

- Should / Can the COPA position paper function as compass and guidance for members on carbon credits and carbon markets?
- What should be included resp. not included?
- What are COPA members experiences with carbon credits & carbon markets?
QUESTIONS?

COMMENTS?
Welcome Back!!

Question:

How do you stay motivated in the fight for climate/ozone protection?

Please write your answer in the chat.
Break
4.45-5.00 pm (CEST)

to be followed by
Session 3: COPA Learns Best Practice from Mexico
Parallel Session: COPA Looks ahead - Sustainability
5.00-5.45 pm (CEST)
Session 3
5.00 pm-5.45 pm (CEST)

COPA Learns Mexico

COPA Looks ahead
“Parallel session”
**AGENDAS (CEST)**

**Day 1 – 18th June**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>14:00</td>
<td>Plenary Opening</td>
</tr>
<tr>
<td></td>
<td>(CEST) Welcoming</td>
</tr>
<tr>
<td></td>
<td>The Federal Ministry for Economic Affairs and Climate Action</td>
</tr>
<tr>
<td></td>
<td>Steering Committee</td>
</tr>
<tr>
<td></td>
<td>COPA celebrates with members</td>
</tr>
<tr>
<td></td>
<td>Thematic Working Groups reports</td>
</tr>
<tr>
<td></td>
<td>Coordinators of Thematic Working Group</td>
</tr>
<tr>
<td>15:30</td>
<td>Break</td>
</tr>
<tr>
<td>15:45</td>
<td>COPA Positions (stay in MS teams link)</td>
</tr>
<tr>
<td></td>
<td>Position Paper “COPA Safeguards”</td>
</tr>
<tr>
<td></td>
<td>Position Paper “COPA Position on HFO”</td>
</tr>
<tr>
<td></td>
<td>Position Paper “COPA Position on Carbon Credits as financing source</td>
</tr>
<tr>
<td></td>
<td>for management of ODS / HFC bank management activities”</td>
</tr>
<tr>
<td></td>
<td>COPA meets (switch to this MS teams link)</td>
</tr>
<tr>
<td></td>
<td>Networking Session</td>
</tr>
<tr>
<td>16:45</td>
<td>Break</td>
</tr>
<tr>
<td>17:00</td>
<td>COPA learns: Best Practice from Grenada and Mexico (stay in MS teams</td>
</tr>
<tr>
<td></td>
<td>link)</td>
</tr>
<tr>
<td></td>
<td>How to establish a refrigerant recovery and recycling centre?</td>
</tr>
<tr>
<td></td>
<td>Country experience: Mexico</td>
</tr>
<tr>
<td></td>
<td>COPA looks ahead (switch to this MS teams link)</td>
</tr>
<tr>
<td></td>
<td>How to make COPA a sustainable and lasting Alliance?</td>
</tr>
<tr>
<td></td>
<td>COPA Steering Committee and Secretariat</td>
</tr>
<tr>
<td>17:45</td>
<td>Wrap Up &amp; Closing of Day 1</td>
</tr>
</tbody>
</table>

**Day 2 – 19th June**

<table>
<thead>
<tr>
<th>Time</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00</td>
<td>Welcoming</td>
</tr>
<tr>
<td></td>
<td>(CEST) Welcome</td>
</tr>
<tr>
<td></td>
<td>The Federal Ministry for Economic Affairs and Climate Action</td>
</tr>
<tr>
<td></td>
<td>COPA celebrates with members</td>
</tr>
<tr>
<td></td>
<td>Parallel sessions</td>
</tr>
<tr>
<td>8:30</td>
<td>COPA learns: Carbon Markets (stay in MS teams link)</td>
</tr>
<tr>
<td></td>
<td>COPA meets (switch to this MS teams link)</td>
</tr>
<tr>
<td></td>
<td>Experiences, Methodologies and national frameworks</td>
</tr>
<tr>
<td></td>
<td>Networking Session</td>
</tr>
<tr>
<td>9:30</td>
<td>Break</td>
</tr>
<tr>
<td>9:45</td>
<td>COPA learns: Best Practice from Ghana (stay in MS teams link)</td>
</tr>
<tr>
<td></td>
<td>COPA looks ahead (switch to this MS teams link)</td>
</tr>
<tr>
<td></td>
<td>Options for ODS and HFC Collection</td>
</tr>
<tr>
<td></td>
<td>Standard Operating Procedures for end-of-life Fridges &amp; Freezers</td>
</tr>
<tr>
<td></td>
<td>Networking Session</td>
</tr>
<tr>
<td>10:30</td>
<td>Break</td>
</tr>
<tr>
<td>10:45</td>
<td>COPA Positions (stay in MS teams link)</td>
</tr>
<tr>
<td></td>
<td>Position Paper “COPA Safeguards”</td>
</tr>
<tr>
<td></td>
<td>Position Paper “COPA Position on HFO”</td>
</tr>
<tr>
<td></td>
<td>Position Paper “COPA Position on Carbon Credits as financing source</td>
</tr>
<tr>
<td></td>
<td>for management of ODS / HFC bank management activities”</td>
</tr>
<tr>
<td></td>
<td>COPA looks ahead (switch to this MS teams link)</td>
</tr>
<tr>
<td></td>
<td>How to make COPA a sustainable and lasting Alliance?</td>
</tr>
<tr>
<td></td>
<td>COPA Steering Committee and Secretariat</td>
</tr>
<tr>
<td></td>
<td>China Energy Efficiency Survey</td>
</tr>
<tr>
<td></td>
<td>Country experience: Mexico</td>
</tr>
<tr>
<td></td>
<td>COPA learns: Best practices (switch to this MS teams link)</td>
</tr>
<tr>
<td></td>
<td>X. He (UNDP)</td>
</tr>
<tr>
<td></td>
<td>Y. Hammami (NOU Tunisia)</td>
</tr>
<tr>
<td>11:45</td>
<td>Wrap Up of 2nd Plenary Meeting &amp; Closing</td>
</tr>
</tbody>
</table>
COPA Learns – Best Practices in Main room (here)

- Mexico country experience on ODS destruction

COPA Looks ahead in (parallel session)

- A vision session on how COPA can become a sustainable and lasting alliance
- Click **MS Team-link in Chat** or in the Agenda to join
COPA Learns - Mexico
ODS Destruction experiences and future activities in Mexico
Sergio Merino, NOU Mexico
ODS Destruction experiences and future activities in Mexico

Climate and Ozone Protection Alliance
2nd Plenary Meeting
June 18, 2024
“Change your old one for a new one”

RAC equipment replacement Program (2009-2012)

<table>
<thead>
<tr>
<th>Trust</th>
<th>Refrigerators</th>
<th>AC</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>FIDE</td>
<td>952,027</td>
<td>1,193</td>
<td>953,220</td>
<td>50.60</td>
</tr>
<tr>
<td>FIPATERM</td>
<td>730,775</td>
<td>200,134</td>
<td>930,909</td>
<td>49.40</td>
</tr>
<tr>
<td>Total</td>
<td>1,682,802</td>
<td>201,327</td>
<td>1,884,129</td>
<td>100.00</td>
</tr>
</tbody>
</table>
### Waste of RAC equipment by the replacement program

<table>
<thead>
<tr>
<th>Refrigerant</th>
<th>Amount (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-12</td>
<td>14,820.00 Kg</td>
</tr>
<tr>
<td>R-22</td>
<td>32,524.79 Kg</td>
</tr>
<tr>
<td>R-134a</td>
<td>22,433.03 Kg</td>
</tr>
<tr>
<td>Oil</td>
<td>412,641.53 Lt.</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Material</th>
<th>Amount (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Copper</td>
<td>1,690,461.61 Kg</td>
</tr>
<tr>
<td>Aluminium</td>
<td>3,119,180.94 Kg</td>
</tr>
<tr>
<td>Steel</td>
<td>54,619,420.33 Kg</td>
</tr>
<tr>
<td>Other materials</td>
<td>17,690,517.33 Kg</td>
</tr>
<tr>
<td>Foams</td>
<td>5,400,953.34 Kg</td>
</tr>
</tbody>
</table>

CRRR network during RAC replacement program

- 104 CAyD (Collection and Scrapping centers)
- 10 CRRR (Recovery and recycling of refrigerant Centers)
Demonstration project - ODS destruction

1. The project was approved in 2011
2. Preliminary activities were implemented between 2011 and 2013.
3. A relevant aspect which delayed the project implementation was the difficulty to consolidate ODS banks, as HARP centers were not recovering predicted amounts of waste refrigerant.
4. Preliminary activities consisted of:
   • Training and recovery equipment endowment to HARP centers
   • Design of MRV system
   • Organization of awareness workshop
   • Execution of ODS destruction pilot tests
   • Licensing approval for Mexican companies
The implementation of the Demonstration Project began in 2014. It was intended to export the ODS banks to the US for disposal, because there were no authorized facilities in Mexico but the handling and export costs were higher than expected. Only ODS banks were consolidated.

In March 2014, the Mexican company Quimobásicos with the technology of an argon plasma arc obtained approval to destroy ODS. This stage was implemented in autumn 2015 and finished in early 2016. About 74 tons of ODS banks were destroyed in the Argon plasma arc, mitigating the equivalent of 351 thousand tCO2e. Average cost: USD 9.2 per kg of ODS destroyed.

Holcim Mexico acquired a license to co-process ODS at its cement kiln located in Tecomán, Mexico. A second batch of SAO banks was collected and stored. Between 2016 and 2017 Holcim Mexico destroyed around 39 tons of ODS, mitigating an equivalent of 153 thousand tCO2e. Average cost: USD 8.0 per kg of ODS destroyed.
ODS/HFC destruction technologies installed in Mexico

Currently, there are two technologies available for the destruction of ODS/HFCs in Mexico (authorized and complying with national and international legal provisions)

Quimobásicos with 2 PDU units, Monterrey, México

Holcim México with cement kiln technology, Tecomán Colima
Only two technologies have been authorized in Mexico for the final disposal of ODS.

- Argon Plasma Arc Unit
- Clinker rotary kiln

Registration of companies for the management of ODS as hazardous waste
Plasma Arc Destruction Unit

Quimobásicos, S.A. de C.V.

# Authorization 19-VI-43-22
Validity 21.09.2022 – 21.09.2024
Capacity 525.6 mt/yr

Trichlorofluoromethane (CFC-11); dichlorodifluoromethane (CFC-12); chlorotrifluoromethane (CFC-13); chlorodifluoromethane (HCFC-22); trifluoromethane (HCFC-23); difluoromethane (HFC-32); 1,1,2 trichlorotrifluoroethane (CFC-113); 1,2 dichloro-1,1,2,2 tetrafluoroethane (CFC-114); chloro-1,1,2,2,2 pentafluoroethane (CFC-115); hexafluoroethane (HFC-116); 2,2 dichloro 1,1,1 trifluoroethane (HCFC-123); 2,3,3,3 tetrafluoro 1 propene (HFC-123yf); pentfluoroethane (HCFC-125); 2-chloro 1,1,1,2 tetrafluoroethane (HCFC-124); 1,1,1,2 tetrafluoroethane (HCFC-134a); dichlorodifluoroethane (HCFC-141b); chloridefluoroethane (HCFC-142b); 1,1,1 trifluoroethane (HCFC-143a); 1,1 difluoroethane (HCFC-152a); octafluoropropane (HC-218); 1,1,1,2,3,3,3 heptafluoropropane (HFC-227ea); 1,1,1,3,3,3 hexafluoropropane (HFC-236a); 1,1,1,3,3,3 pentafluoropropane (HFC-245fa); propane (HC-290); 1,1,1,3,3 pentafluorobutane (HFC-365mfc); n-butane (HC-600); isobutane (HC-600a); isopentane (HC-601); propylene (HC-1270); including their chemical families.
Clinker rotatory kiln Co-processing

Holcim Mexico Operaciones, S.A. de C.V. (before Cementos Apasco, S.A. de C.V.) (Planta Tecoman)

# Authorization: 06-IV-01-19 (Extension)

Validity: 15.01.2019 – 15.01.2029

Alternative fuel substitution percentage:
80% replacement in clinker oven 1
30% replacement in clinker oven 2

Energy recycling and co-processing of hazardous waste such as formulated or recovery fuels, hazardous waste such as chlorofluorocarbons, hydrochlorofluorocarbons and hydrofluorocarbons, as well as their mixtures; containers with propellant (“loosens everything” in spray) empty and perforated.
Test protocol

To verify the efficiency of the system:

- Compliance with legal provisions*
- Analysis of the substances to be fed
- Control of operating conditions
- Determination of the level of destruction efficiency achieved by the combustion and emissions control systems.
- Continuous emissions monitoring systems: Particles, Nitrogen Oxides (Nox), Sulfur Oxides (Sox), Carbon Monoxide (CO), Total Hydrocarbons (HCT), Hydrochloric Acid (HCl)
- Test methods for other contaminants: dioxinas y furanos, metales pesados, entre otros
- Safe handling procedures for waste and byproducts.*

Critical route

- Large Users
- Small Users
- Concessionaire users
- Technicians
- RRR Centers
- ODS banks
- Recycling and Regeneration
- Release of ODS into the environment

Final disposition
- Plasma arc unit
- Clinker rotary kiln

Manufacturers Importers Dealers
# Results of the demonstration project - ODS destruction

<table>
<thead>
<tr>
<th>Project phases</th>
<th>Technology and destruction Facility</th>
<th>Status</th>
<th>Unwanted ODS destroyed (tonnes)</th>
<th>GHG emission reductions (thousand tCO$_2$e)</th>
<th>Implementation costs (USD/kg ODS)</th>
<th>Cost-effectiveness (USD/tCO$_2$e)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 1A</td>
<td>Export to USA</td>
<td>Not executed</td>
<td>0</td>
<td>0</td>
<td>11.0$^a$</td>
<td>NA</td>
</tr>
<tr>
<td>Stage 1B</td>
<td>Quimobásicos Argon plasma arc</td>
<td>Completed</td>
<td>74</td>
<td>351</td>
<td>9.2</td>
<td>1.9</td>
</tr>
<tr>
<td>Stage 2</td>
<td>Holcim Mexico cement kiln</td>
<td>Completed</td>
<td>39</td>
<td>153</td>
<td>8.0</td>
<td>2.0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td><strong>113</strong></td>
<td><strong>504</strong></td>
<td><strong>9.4$^b$</strong></td>
<td><strong>2.0</strong></td>
</tr>
</tbody>
</table>

$^a$ Intended but not implemented costs

$^b$ Average cost
Recent activities on F-gases recovery/disposal and EOL of RAC equipment

SPODS
- EOL Strategy*
- 4-Best Practices Guidelines*
- Circular Economy - Conceptual Model for Self-contained refrigerators*

KIP-CRRR COMPONENT
- CRRR Assessment
- Project portfolio (CRRR Strengthening)

*No actions implemented
Waste of RAC equipment (yearly generation)

- 3,550 t of refrigerant gases (mainly R-22 and HFC)
- 189,215 t of steel
- 53,600 t of plastics
- 19,650 t of aluminum
- 13,700 t of foams
- 7,220 t of lubricating oils
- 1,500 t of electronic cards and electrical components

● Recovery rate of the F-gases <2%
CRRR network now

- 24 C&DC
- 7 RRRC
What is missing on CRRR and F-gases disposal/destruction?

- Account/characterize banks of HCFCs and HFCs (MLF)
- Strengthen the CRRR network (KIP)
- Increase F-gas recovery rates (COPA?)
- Establish extended/shared producer responsibility programs (COPA?)
- Work on the recovery of F gases from domestic RAC equipment (COPA?)
- Generate technology for the handling/recycling of foams (COPA?)
- Develop circular economy models in the RAC sector (COPA?)
- Reduce costs of destruction of F gases (contaminated, high GWP and remaining ODS) (?)
- Pilot project for destruction of existing F-gases banks (COPA?)
- Be prepared to recover and destroy HCFC-22 (HPMP closure) (MLF)
Proposal: Study on ODS/HFC destruction

1. This project seeks to strengthen the network of destruction technologies, adding another company that has clinker kiln technology, that complies with the destruction test protocol required by current regulations, and that also has with increased ability to remove high GWP refrigerants as well as existing ODS banks.

2. Includes the preparation of a Demonstration Project for ODS/HFC Disposal
   • Detailed description of the destruction facility
   • Monitoring and measurement of emissions, emission values of the destruction technology
   • Develop an ODS/HFC destruction plan
   • Determine destruction costs (including destruction protocol cost, testing cost, capital cost, operational cost, etc.)
   • Environmental mitigation benefits.
Proposal: Study on ODS/HFC destruction Initial activities

1. Review Mexican regulations required for ODS/HFC banks management.
2. Evaluate previous experiences and pilots on ODS destruction in the country, and report on the lessons learned.
3. Analysis and integrated activities with the MLF portfolio and relevant national initiatives, policies, regulations, and standards associated with RAC waste and ODS/HFC management.
4. Coordinate meetings with local authorities or other relevant stakeholders.
5. Detailed description of Refrigerant Recovery and recycling centers (CRRR) operating in Mexico and the national RAC waste managers chain.
6. Identify installed/viable technologies for ODS/HFC destruction in the Country.
7. Estimate actual cost ratio for ODS/HFC destruction by available technologies in the Country.
Co-processing potential in Mexico

Source: CANACEM
Linked actions

• Kigali Implementation Plan: Recovery, Recycling, Reclamation of HFCs (RRR)

• Preparation of national inventories of banks of controlled substances, ODS/HFCs
Thank you!
DO YOU HAVE QUESTIONS?
Welcome Back!!

Let’s get all together for the last session of today!
Session 4
5.45 pm-6.00 pm (CEST)
Wrap-up Day 1
Graphic recording
Thank you for your participation! See you tomorrow 🙂