

Cool NDCs: Integrating the Refrigeration and Air Conditioning Sector into Nationally Determined Contributions

COP28 side event

Saturday, 2nd December 2023, 09:30 – 10:30 am (GST/UTC+4)
Ozone to Cool Zone (Montreal Protocol Pavilion)

OZONE

▶ COOL

*** ZONE**

30 Nov–12 Dec
COP28 UAE



Implemented by



Our Speakers

Moderator: Ellen Michel, GIZ Proklima



**Irene
Papst**

HEAT GmbH



**Leslie
Smith**

NOU Grenada



**Albert
Magalang**

DENR Philippines



**Etienne
Gonin**

UNDP

Agenda

Welcome Remarks	BMUV/IKI, tbc
Introduction: Cool Contributions fighting Climate Change II project	Ellen Michel, GIZ Proklima
How to integrate the cooling sector in the Nationally Determined Contributions (NDC)?	Irene Papst, HEAT GmbH
Roundtable: Experiences, targets and strategies of countries with including the RAC sector into NDCs	Leslie Smith, National Ozone Unit Grenada Albert Magalang, DENR Philippines Etienne Gonin, UNDP
Q & A	Everyone
Conclusion and Closing Remarks	Ellen Michel, GIZ Proklima



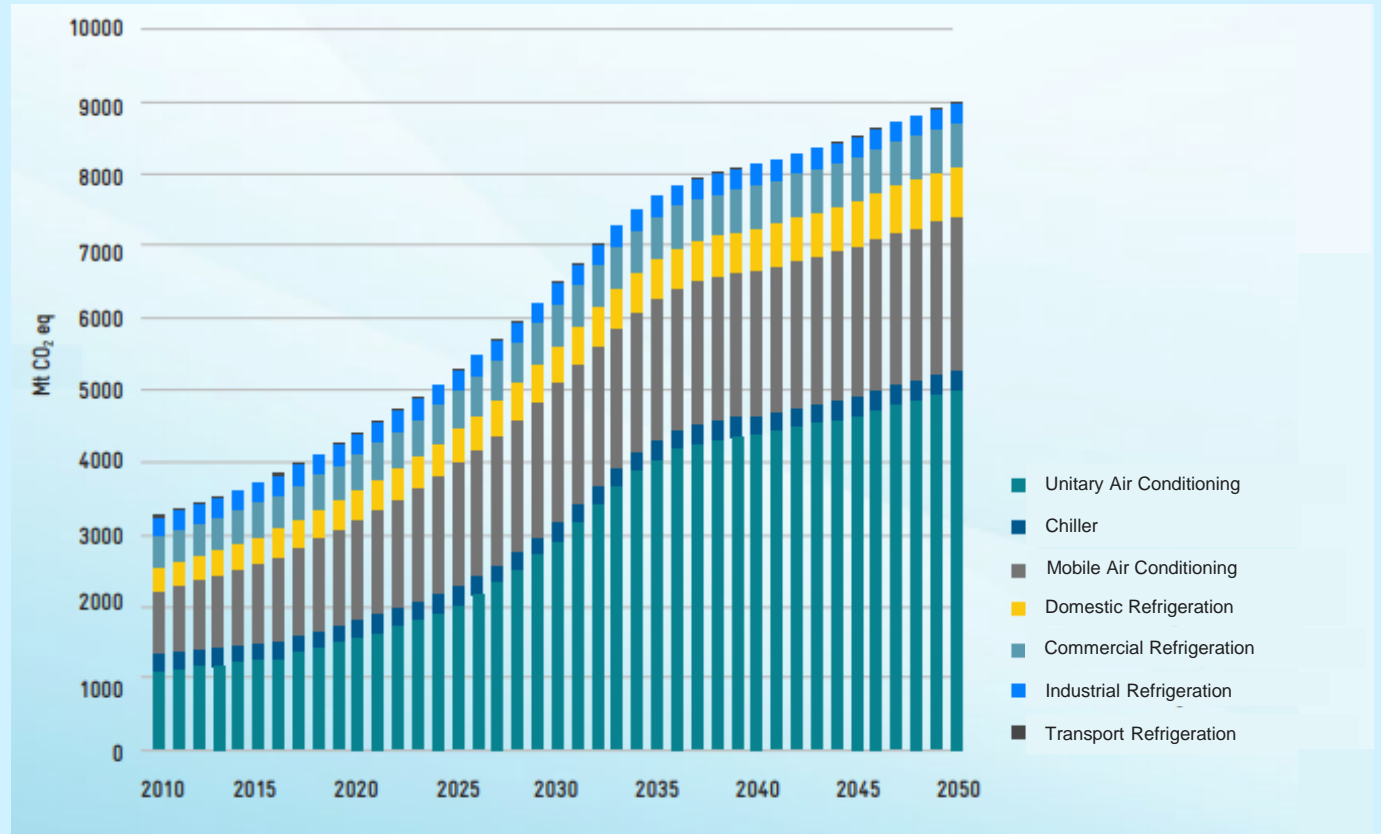
Introduction: Cool Contributions fighting Climate Change II project



Why cooling concerns us all

- Cooling accounts for **more than 10%** of global GHG emissions ([CAIT/GCI, 2016](#)).
- The number of air conditioners worldwide is expected to increase from **1.6 billion** in 2016 to **5.5 billion** by 2050 ([IEA, 2018](#)).
- Globally, more than **1.2 billion** people are at high-risk of heat-related threats to their lives and welfare ([SEforALL, 2022](#)).

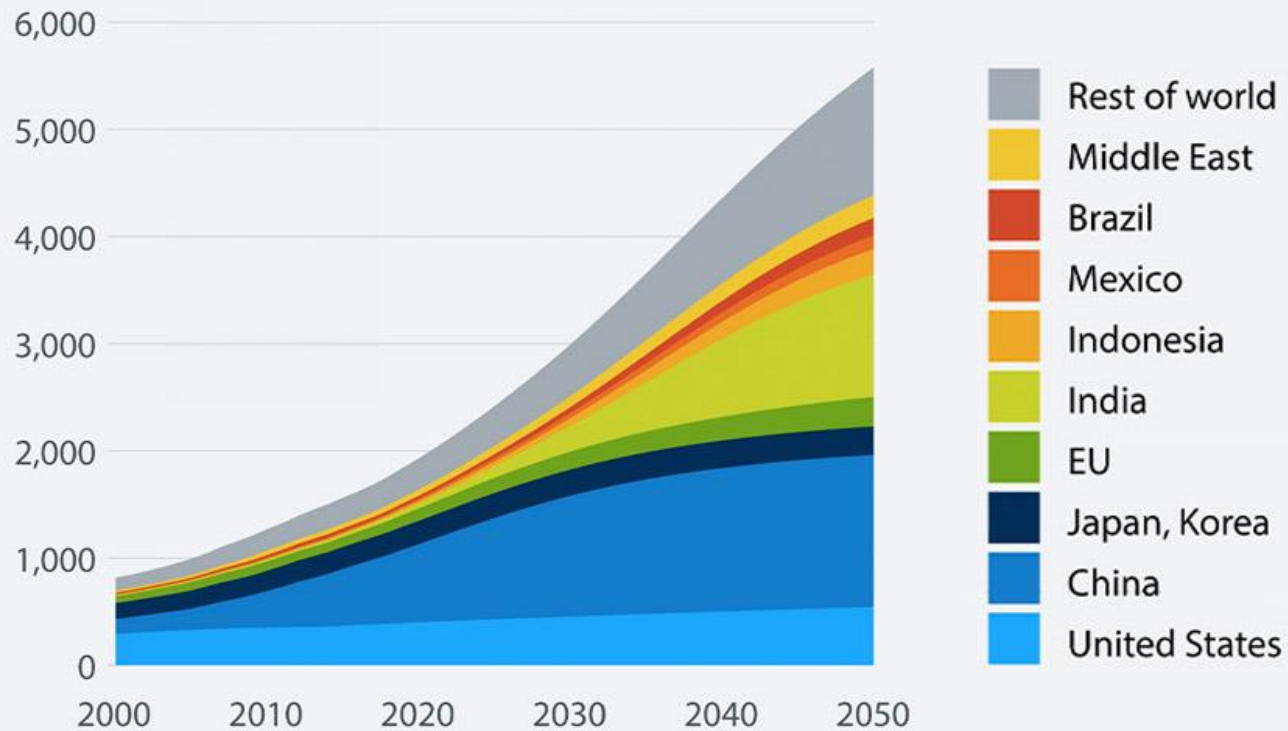
Projected GHG emissions from RAC subsectors (2010-2050)



Why cooling concerns us all

Growing global demand for cooling

Projected number of air conditioning units in use worldwide (in millions)



Source: International Energy Agency

- **10 new air conditioners** will be sold **every second** in the **next 30 years** ([IEA 2018](#))
- The IPCC predicts that global energy demand from residential AC will grow **33-fold** between 2000 to 2100, mostly from developing countries ([EIU, 2019](#))
- Without action to address energy efficiency, energy demand for ACs will **more than triple by 2050** – consuming as much electricity as all of **China and India today**. ([IEA 2018](#))

Cool Contributions fighting Climate Change II (C4 II)

Commissioned by: German Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection (BMUV) within the International Climate Initiative (IKI)

Partner Countries: Grenada, Costa Rica, Philippines

Project Budget: 2,900,000 EUR

Project Duration: 07/2021 – 01/2025

- Support to the three partner countries in improving national structures for the implementation of NDC strategies in the RAC sector
- Supporting further countries in the application of best practices and methods in the development of NDC measures for the RAC sector
- Development of concepts, strategic approaches and publications in cooperation with relevant institutions



NDC4 Webinar Series

Accelerating climate action with cooling sector-related NDCs

- Webinar series to **illustrate tools, methods and best practice examples for designing and implementing more ambitious NDCs in the cooling sector**
- Previous webinars:
 - #5: Financing Green Cooling – Opportunities for Financial Institutions
 - #3 & 4: Cool MRV: Combining emissions reporting with enforcement of standards and labelling for cooling products in the Philippines & Latin America and the Caribbeans
 - #2: Benchmarking the level of ambition of cooling sector-related measures included in NDCs
 - #1: NDC4 Call for Proposals: Raising ambition in NDCs with Green Cooling
- Recordings & more information: [NDC4 Webinars - Green Cooling Initiative \(green-cooling-initiative.org\)](https://www.green-cooling-initiative.org)



NDC Helpdesk for the cooling sector

- **Objective:** Answer questions on designing and implementing more ambitious Nationally Determined Contributions (NDCs) in the cooling sector
- **Content:**
 - **Contact form** to provide assistance on green cooling tools and methods
 - Answers to **frequently asked questions**
 - **NDC Publications** and **support tools**
- **More information:** [NDC Helpdesk - Green Cooling Initiative \(green-cooling-initiative.org\)](https://green-cooling-initiative.org)



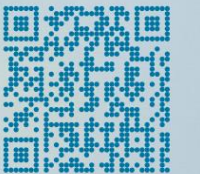
NDC Helpdesk for the cooling sector

The NDC Helpdesk is your resource for expert guidance in the field of Green Cooling. Our mission is to assist policymakers in designing and implementing ambitious Nationally Determined Contributions (NDCs) in the cooling sector.

Areas of Support

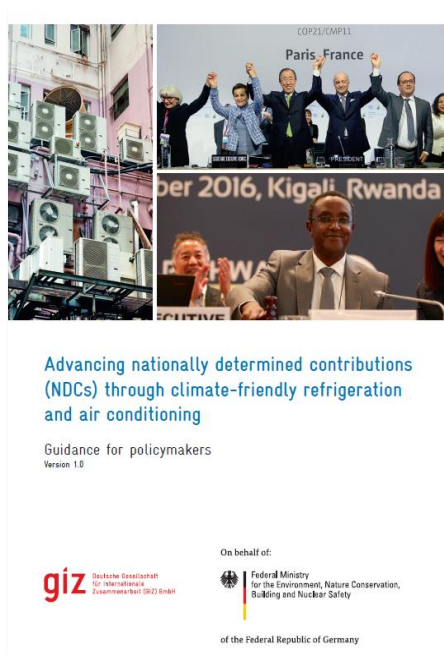
- Development and implementation of National Cooling Action Plans
- NDC cooling sector integration and formulation of trackable mitigation targets
- HFC emission calculation and reporting under the UNFCCC (Tier 1 and Tier 2)
- GHG Inventories in the cooling sector
- Development of a Monitoring, Reporting and Verification (MRV) system in the cooling sector
- Any question concerning our provided tools and guidelines

Request our support here:



Contact: ndc4@giz.de

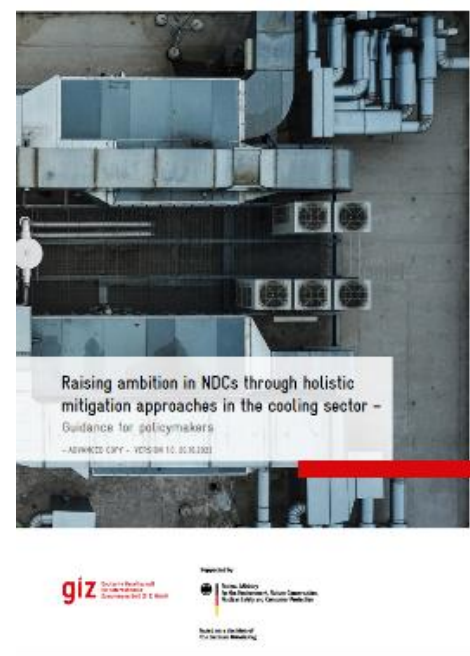
Advancing NDCs with Green Cooling – Read our publications!



Advancing nationally determined contributions (NDCs) through climate-friendly refrigeration and air conditioning



Green Cooling in updated NDCs – Are we embarking on an ambitious path or a journey into a cooling crisis?



Raising ambition in NDCs through holistic Mitigation approaches in the cooling sector

The screenshot shows a table with columns for 'Type of policy instrument', 'Group A', and 'Ambition level'. The rows are numbered 1 to 10. The 'Ambition level' column has color-coded cells: red for 'Low', yellow for 'Medium', and green for 'High'.

	A	B	C
	Type of policy instrument	Group A	Ambition level
1	Reference to legal framework, no further detail or sub-targets	Reference to legal framework, no further detail or sub-targets	Low
2	Reference to legal framework, no further detail or sub-targets	Reference to legal framework, no further detail or sub-targets	Low
3	Overall economy-wide absolute IFC consumption reduction target	Overall targets to reduce IFC consumption by 20% every 5 years starting in 2020 with the tracking of +25% absolute reduction in 2030	Medium
4	Overall economy-wide absolute IFC consumption reduction target	Overall targets to reduce IFC consumption by 20% every 5 years starting in 2020 with the tracking of +25% absolute reduction in 2030	High
5	Overall economy-wide absolute IFC consumption reduction target	Overall targets to reduce IFC consumption by 20% every 5 years starting in 2020 with the tracking of +25% absolute reduction in 2030	High
6	Overall economy-wide absolute IFC consumption reduction target	Overall targets to reduce IFC consumption by 20% every 5 years starting in 2020 with the tracking of +25% absolute reduction in 2030	Medium
7	Financial instruments to reduce IFC consumption	Overall targets to reduce IFC consumption by 20% every 5 years starting in 2020 with the tracking of +25% absolute reduction in 2030	Medium
8	Financial instruments to reduce IFC consumption	Overall targets to reduce IFC consumption by 20% every 5 years starting in 2020 with the tracking of +25% absolute reduction in 2030	High
9	Financial instruments to reduce IFC consumption	Overall targets to reduce IFC consumption by 20% every 5 years starting in 2020 with the tracking of +25% absolute reduction in 2030	High
10	Financial instruments to reduce IFC consumption	Overall targets to reduce IFC consumption by 20% every 5 years starting in 2020 with the tracking of +25% absolute reduction in 2030	High

Excel based RAC sector NDC benchmarking tool & Quick self-analysis to evaluate cooling sector-related targets and measures included in NDCs

How to integrate the cooling sector in the Nationally Determined Contributions (NDC)?



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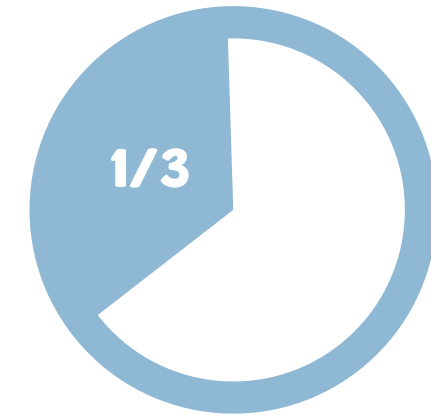
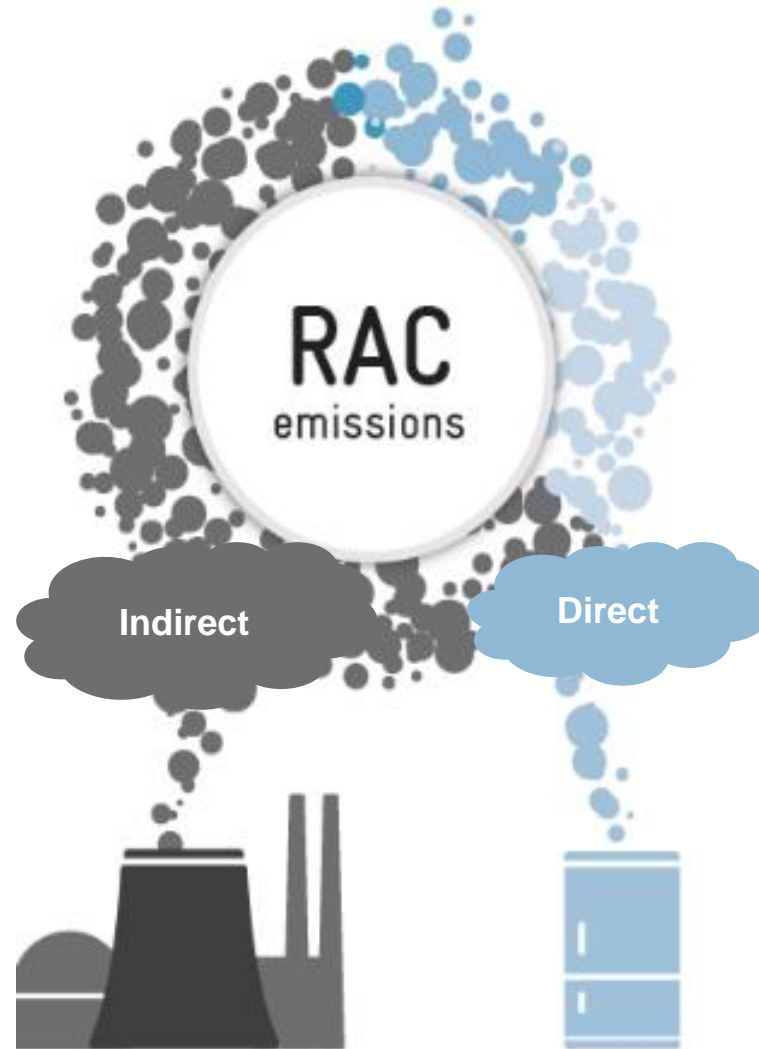
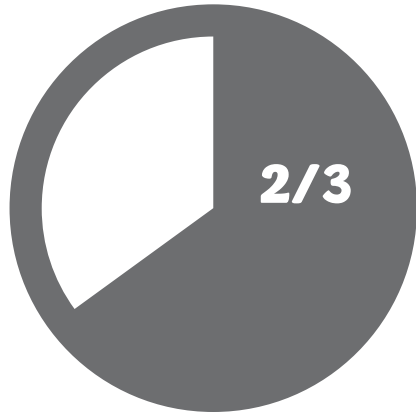


Irene Papst

HEAT GmbH

- How to integrate the cooling sector in the Nationally Determined Contributions (NDCs)?

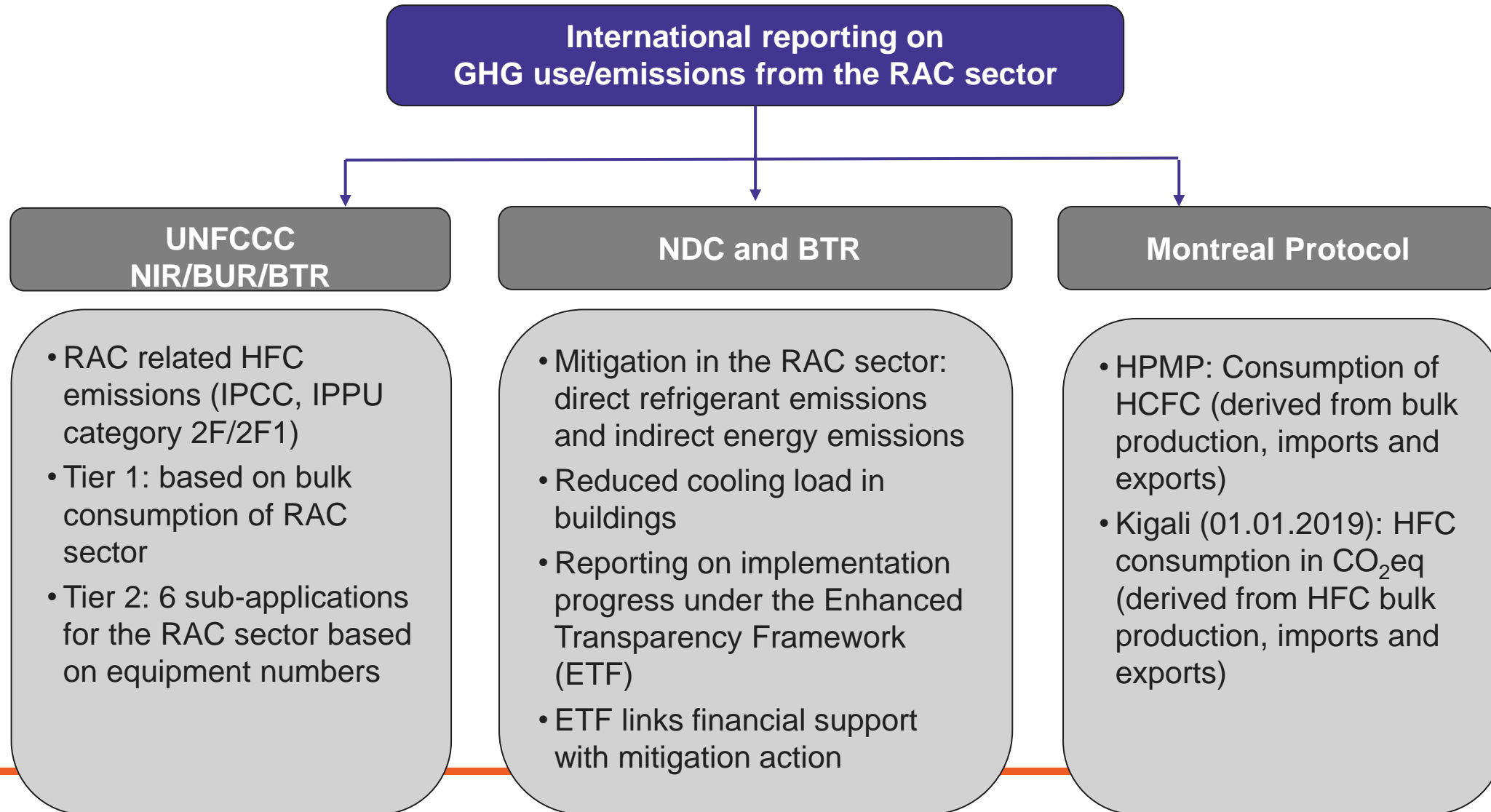
Emission from cooling affect different emission reporting categories



Indirect emissions are related to the energy consumption of cooling appliances. → Part of Energy Cat 1A1a

Direct emissions arise when refrigerants are released. → IPPU Cat 2F1

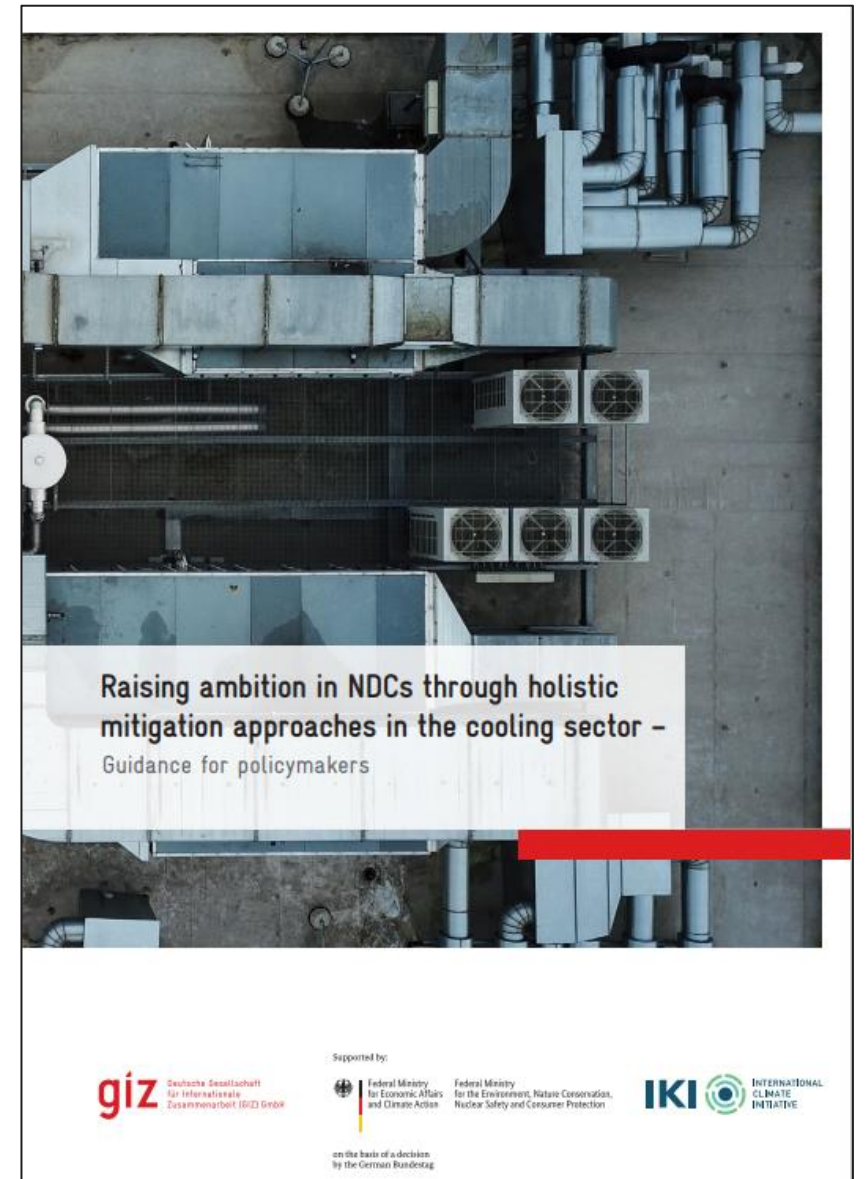
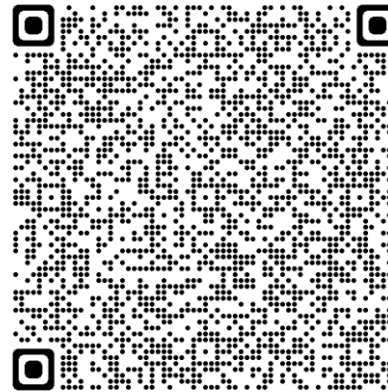
HFCs are reporting within several multilateral agreements



How to get started

Guideline for policy makers

- 5 – Step approach to integrate cooling sector targets into the NDCs
 - Extensive list of possible measures
 - Benchmarking tool
 - Links to background information
-
- [Publicaton: Raising ambition in NDCs through holistic mitigation approaches in the cooling sector – Guidance for policymakers](#)



Five-Step Approach towards ambitious RAC sector NDC components

Guideline for policy makers

STEP 1

- **Solid data base**, ideally in the form of a detailed RAC sector GHG inventory.

STEP 2

- **Comprehensive cooling sector mitigation approach** including long-term strategies and implementation plans that build on the HFC reduction obligations mandated by the KA and at the same time consider emissions generated by energy use.

STEP 3

- **Anchoring of the cooling sector** in the NDC update process by highlighting its relevance in terms of mitigation potential and joint decision making by all key stakeholders to determine the best position of the sector in the respective NDC. This needs to be based on **specific NDC** components developed by cooling sector representatives.

STEP 4

- **Linkage of cooling sector-related mitigation measures and plans** with other relevant sectors and targets set for them, especially the building sector and demand side energy efficiency, including the consideration of institutional structures and **coordination with the respective (governmental) actors**

STEP 5

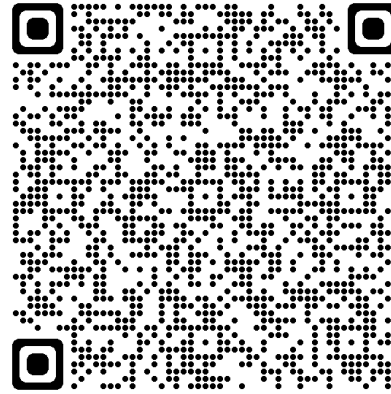
- Development of a **tracking and MRV systems for HFC emissions** that is in line with the requirements of both agreements, the Montreal Protocol and the Paris Agreement.

Step 1: A solid data base / Baseline setting

Check out your current NDC

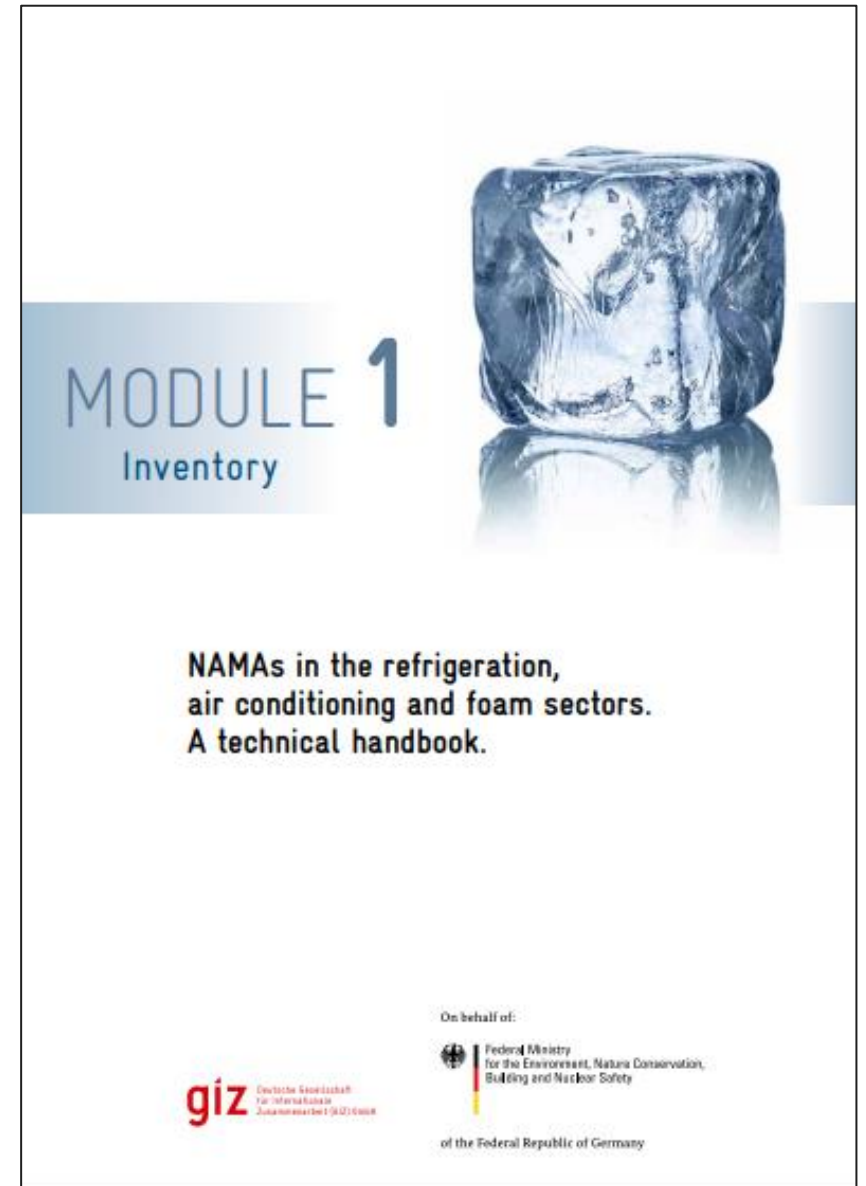
Is there a comprehensive data set on cooling sector equipment and emissions?

- E.g. as part of a Kigali Implementation Plan or a National Cooling Action Plan
- An equipment-based approach, covering refrigerant emissions and energy use is recommended
- [Publication: RAC sector inventory guideline](#)



Define status quo

- Are HFCs included in the baseline?
 - Are HFCs reported in the last National Inventory Report?
- If not, liaise with National Ozone Unit about data available for Tier 1 HFC emission reporting



Step 2: Develop a comprehensive mitigation strategy for cooling

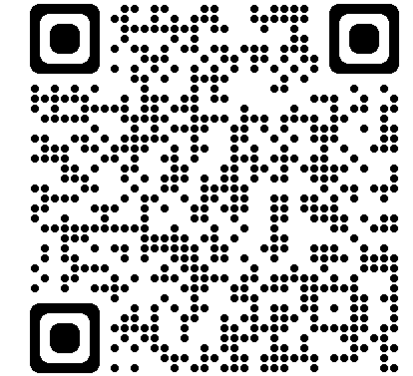
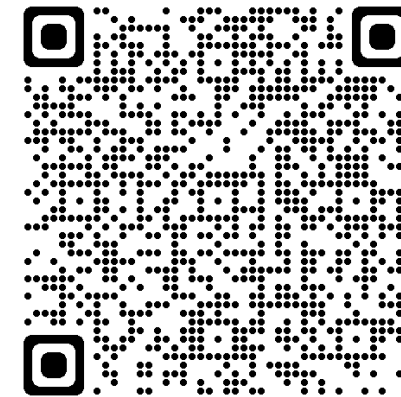
Bring stakeholders together

- Advance a shared vision and long-term strategies
 - Consider the relevance for adaptation and access to cooling for all citizens
 - Build on the HFC reduction obligations mandated by the KA
 - Consider emissions generated by energy use
- Final document could be a National Cooling Action Plan

- [CCAC: National Cooling Action Plan Methodology](#)
- [Example: National Cooling Action Plan for Grenada](#)



HOLISTIC METHODOLOGY FOR DEVELOPING A NATIONAL COOLING ACTION PLAN

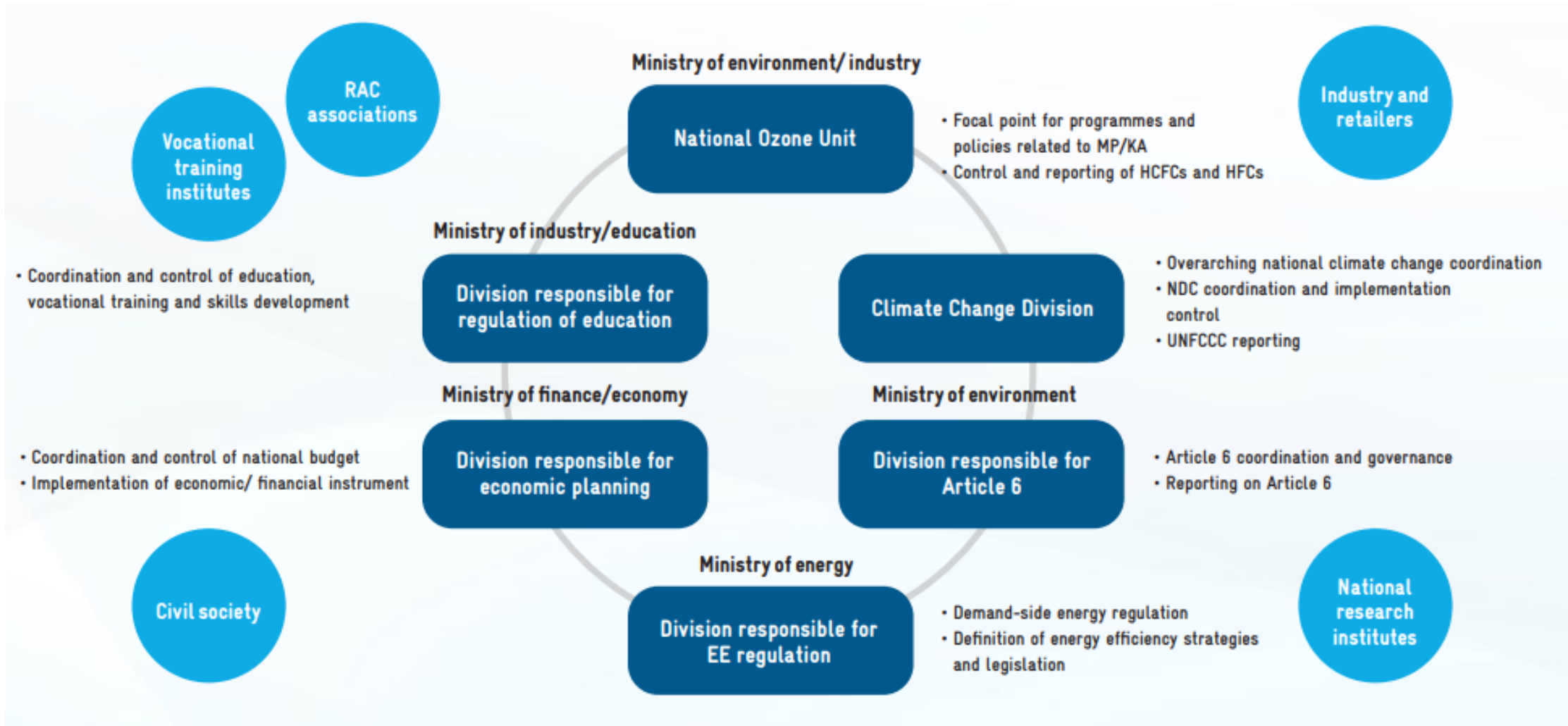


National Cooling Action Plan for Grenada

A sector mitigation strategy in contribution to Grenada's Nationally Determined Contribution (NDC)

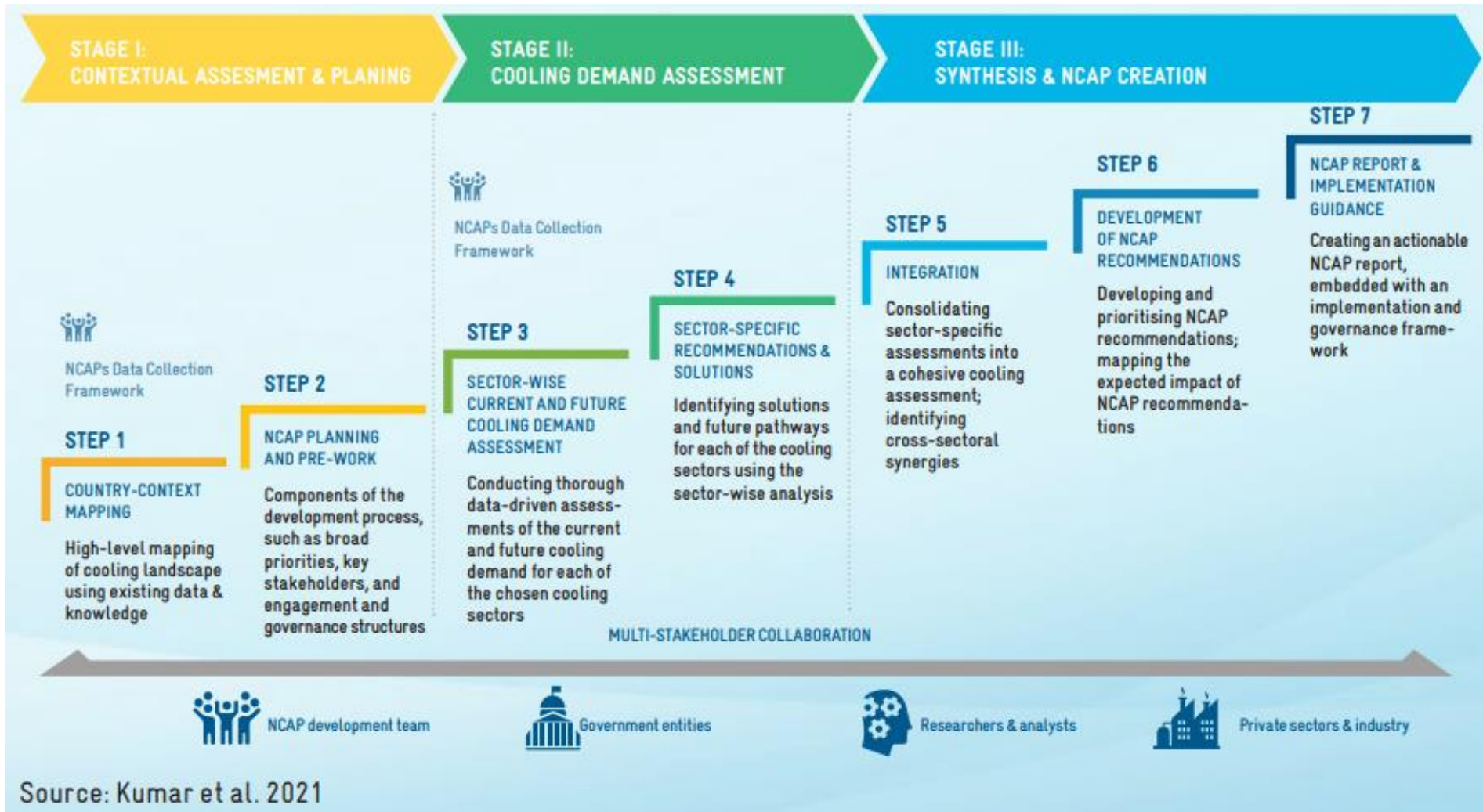
Step 2: Develop a comprehensive mitigation strategy for cooling

Bring stakeholders together



Step 2: Develop a comprehensive mitigation strategy for cooling

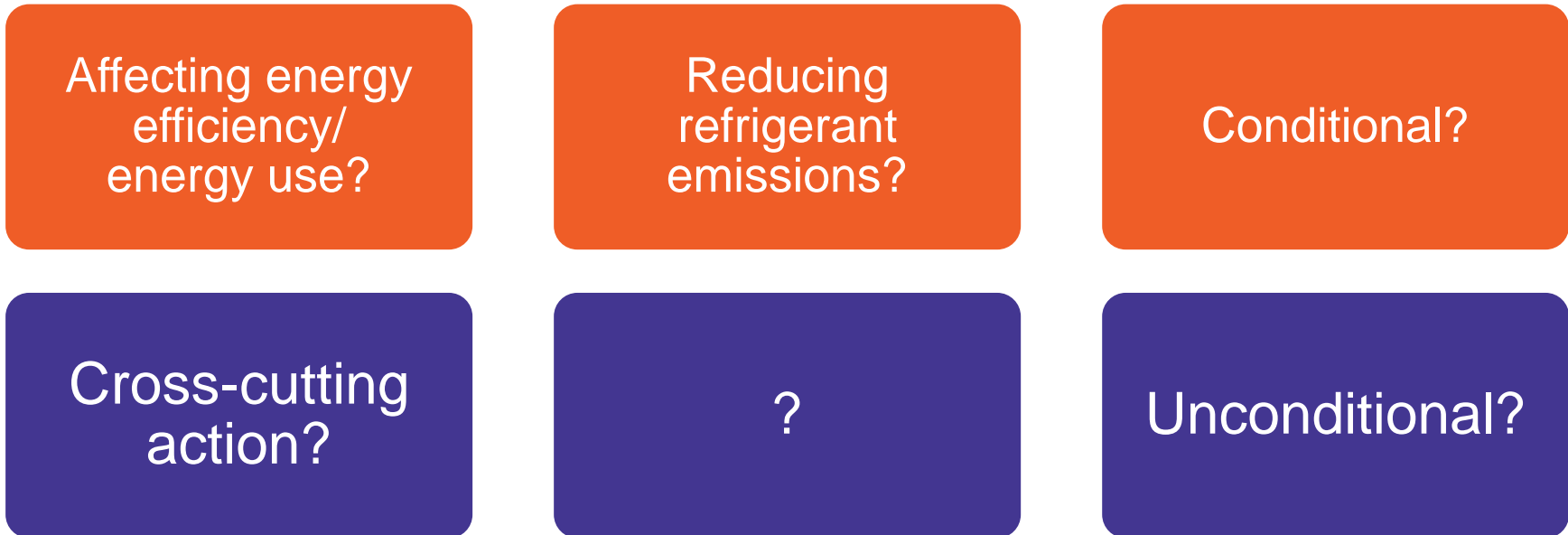
Bring stakeholders together



Step 3: Anchoring in the NDC update process

- Define and frame mitigation measures
 - Based on sector plans (Kigali implementation plan), National cooling action plan, energy efficiency strategy, etc
- Describe mitigation potential
- Joint decision making by all key stakeholders to determine the best position of the sector in the respective NDC

• Relevant questions:



Step 4: Linking cooling sector goals with other sectors

Maximize the benefit

- The linkage of cooling sector-related mitigation measures and plans with other relevant sectors and targets set for them, especially the building sector and demand side energy efficiency, including the consideration of institutional structures and coordination with the respective (governmental) actors.
- Establish links e.g. to

Power sector

- Decarbonisation
- Energy efficiency

Housing policies

- Insulation requirements for efficient cooling
- City planning to avoid heat island effects
- Promotion of natural ventilation

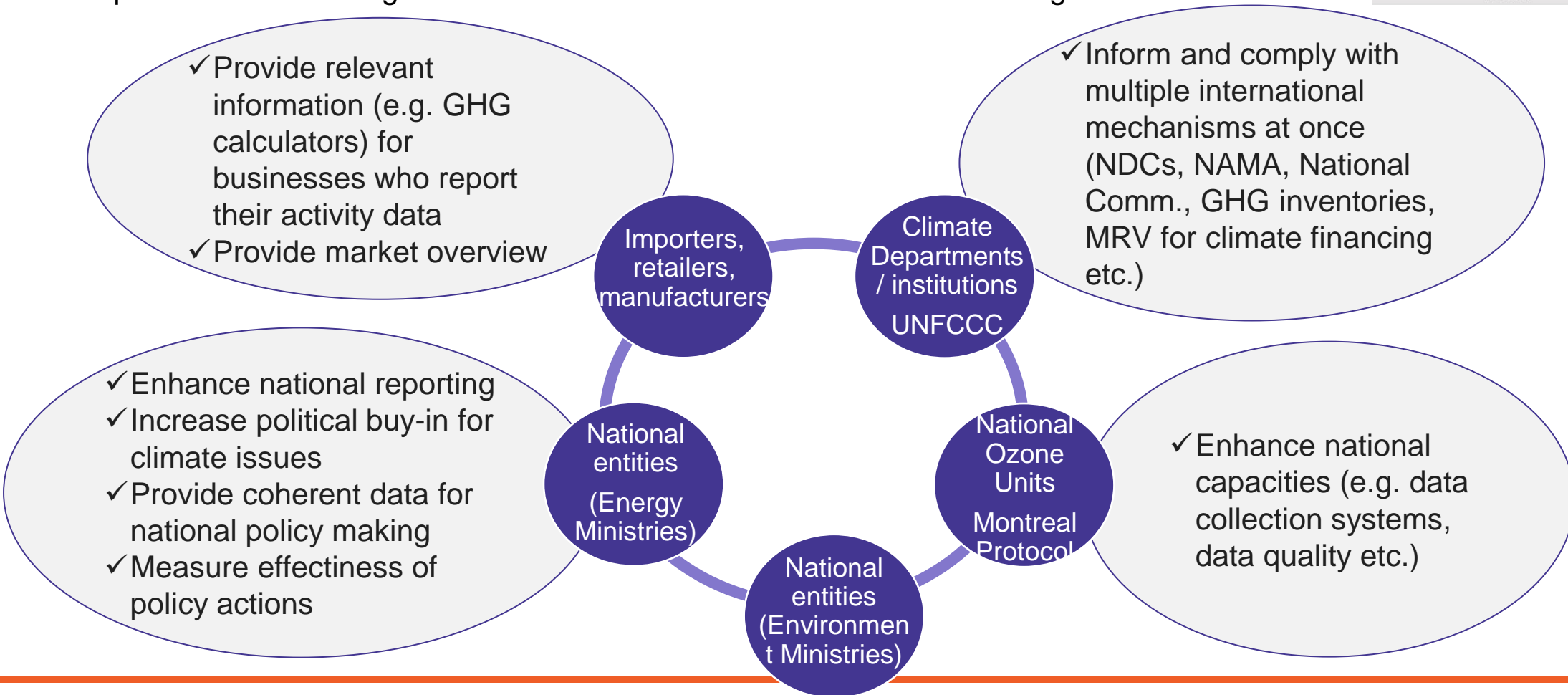
Adaptation

- Reduce food losses due to improved cold chain
- Protect health during heat-waves
- Increase productivity by improving thermal comfort

Tracking progress

Multiple benefits of an MRV system

- Development of tracking and MRV systems for HFC emissions that is in line with the requirements of both agreements: the Montreal Protocol and the Paris Agreement.



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● **MONTREAL PROTOCOL**

▶ **ADVANCING**

* **CLIMATE ACTION**

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Thank you for listening!