How to Integrate the Refrigeration and Air Conditioning (RAC) Sector into the Nationally Determined Contributions (NDC)?

GIZ Proklima I 27 October 2021

Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

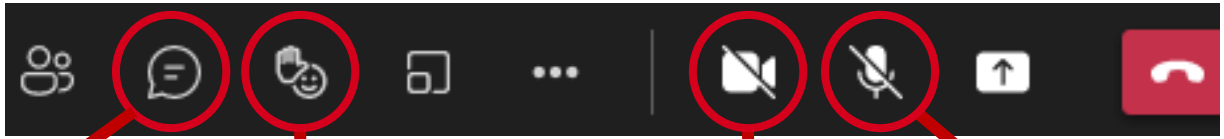
PROKLIMA NATURALLY COOL

On behalf of

Federal Ministry for Economic Cooperation and Development

Federal Ministry for the Environment, Nature Conservation and Nuclear Safety

Ground Rules for Online Sessions



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Agenda

Time [CET]	Topic	Speaker
17:00 – 17:10	**Welcome Remarks**	**Elisabeth Munzert**, German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
17:10 – 17:20	**Why to Integrate the RAC Sector into the NDC?**	**Philipp Denzinger**, GIZ Proklima
17:20 – 17:30	**The RAC Sector in NDCs: Overview of the Current Status and Developments**	**Daniela Laßmann**, Perspectives Climate Group
17:30 – 17:40	**Country example: Namibia**	**Amalia Nangolo**, Ozone Officer Namibia
17:40 – 17:55	**Discussion**	All participants
17:55 – 18:00	**Conclusion and Closing Words**	**Bernhard Siegele**, GIZ Proklima

Why to Integrate the RAC Sector into the NDCs and What are the Success Factors?

Philipp Denzinger | GIZ Proklima

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Bloomberg Opinion • Analysis

Air Conditioning Is the World's Next Big Threat

Washington Post, 2019

8 facts that prove Europe's record heatwave is the new normal

Wired, 2019

Warming climate to nearly double demand for cooling appliances

Researchers predict energy use for air conditioners and refrigeration to jump 90% on 2017 levels

The Guardian, 2018

Why air con is ruining our environment

The Independent UK, 2006

The long read

The air conditioning trap: how cold air is heating the world

The Guardian, 2019

The World Wants Air-Conditioning. That Could Warm the World.

New York Times, 2018

The cost of cool

Air-conditioners do great good, but at a high environmental cost

The rapid growth in their use makes it urgent to limit the damage

The Economist, 2018

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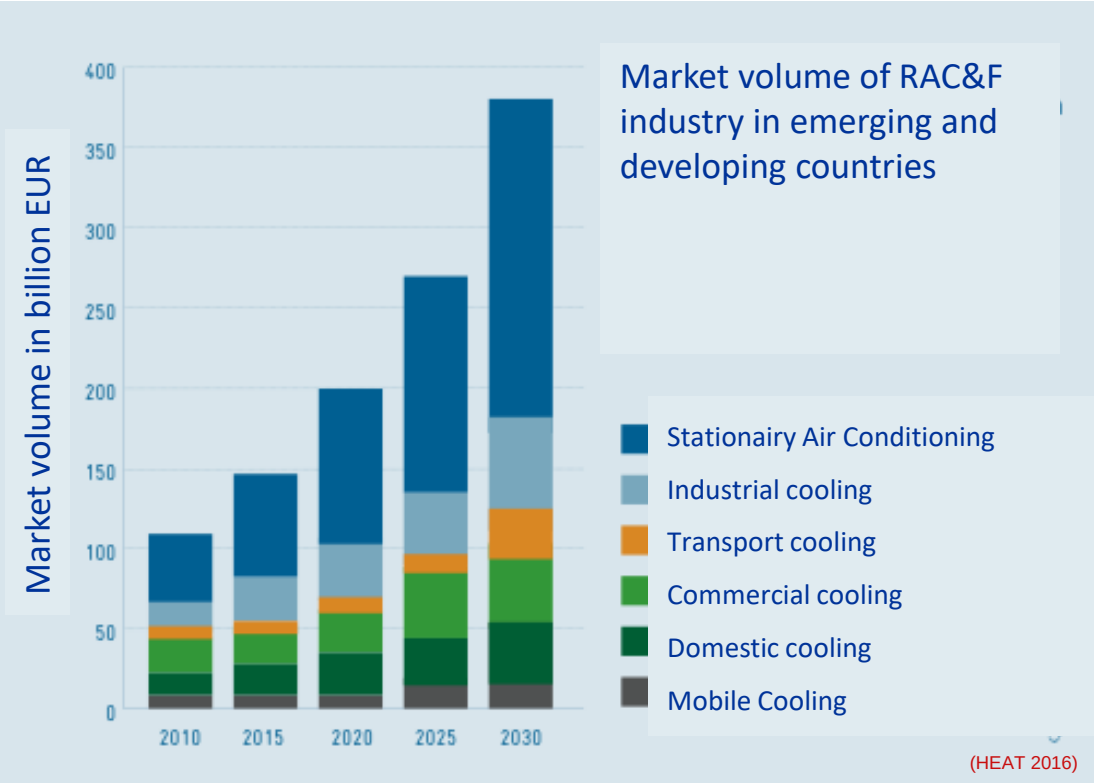
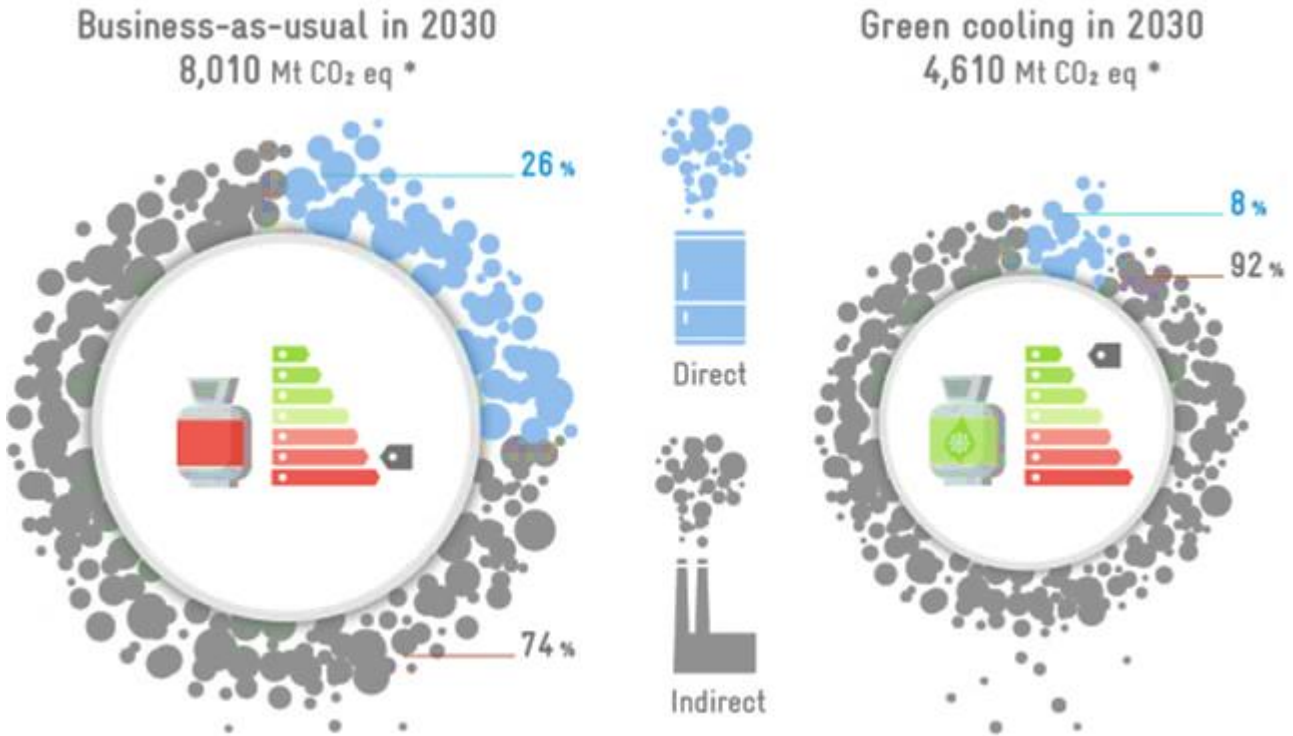
Why cooling concerns us all



- The RAC sector is responsible for over **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)
- HFC emissions could cause a global temperature increase of **0.35 to 0.5°** Celsius. (Velders et al. 2015, Xu et al. 2013)

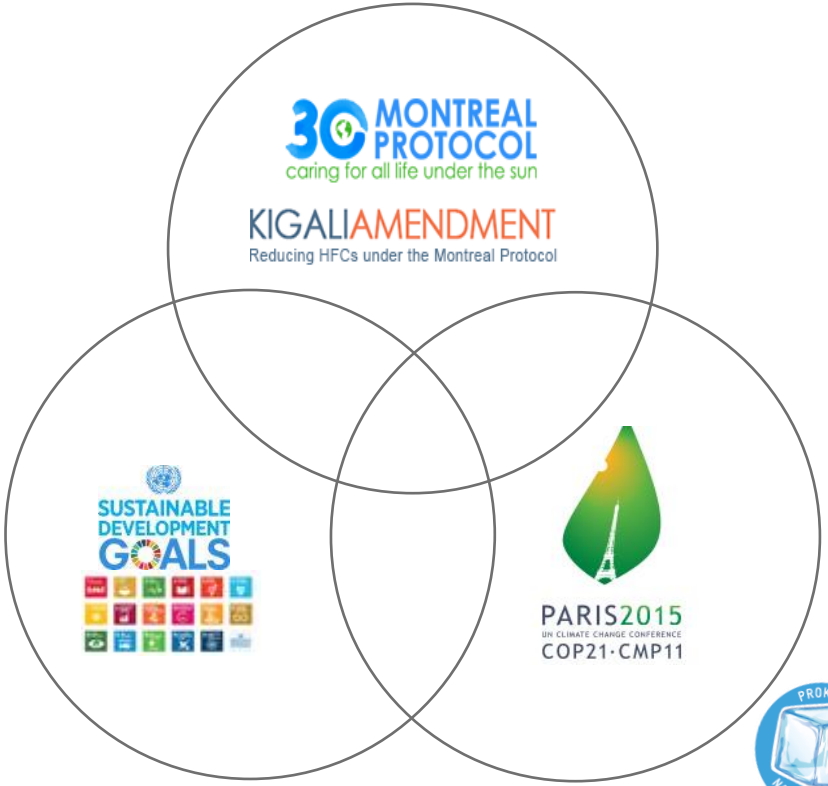
The mitigation potential of the RAC sector



(GIZ Proklima, 2017)

Integrated Green Cooling approach

- Addressing the rising demand for RAC applications in a sustainable manner requires climate-friendly and energy-efficient solutions.
- Through an integrated technology approach, coordinated and coherent policy-making and comprehensive financial planning a sustainable transformation of the RAC sector is possible.
- This does not only reduce GHG emissions significantly, it also contributes to achieving many of the SDGs – a perfect match for countries' Nationally Determined Contributions (NDCs).



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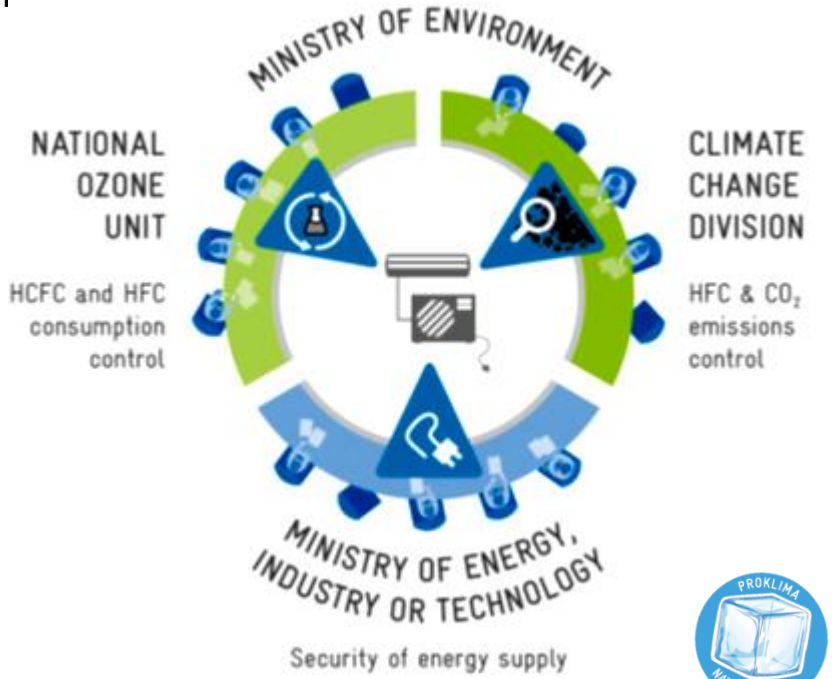
Joining forces: key actors need to cooperate

- Pooling competences and coordinating closely amon climate, energy efficiency and ozone policymakers.
- Ensuring a coherent approach in designing and implementing national mitigation strategies.
- The reduction of direct (HFC) and indirect (CO_2) emissions should go hand in hand in hand to optimise the use of resources and to maximise climate benefits.

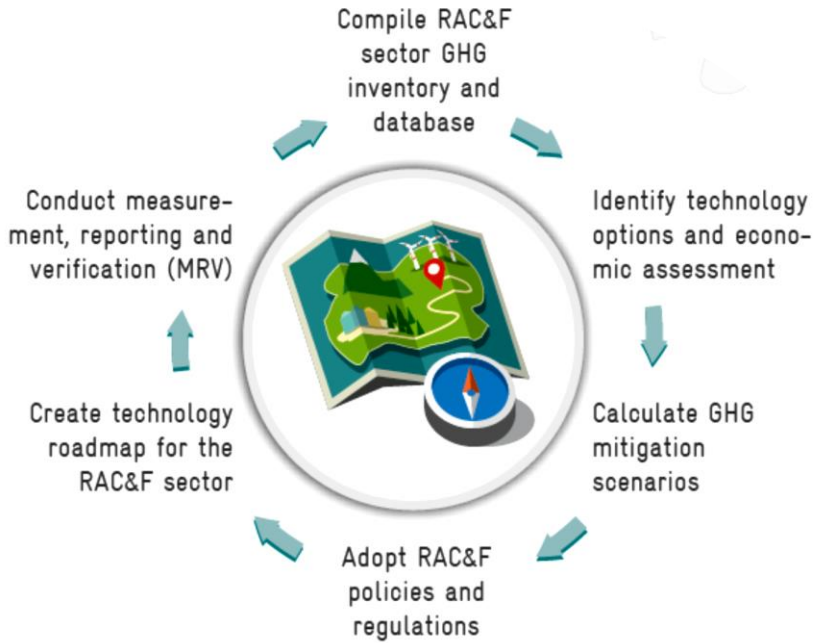


(GIZ Proklima, 2017)

The key government institutions need to closely interact with non-state actors such as:

- Private sector (RAC industry)
- Training institutions and facilities
- Research and academic institutions
- Standards committees
- Operators of equipment
- Non-governmental organisations

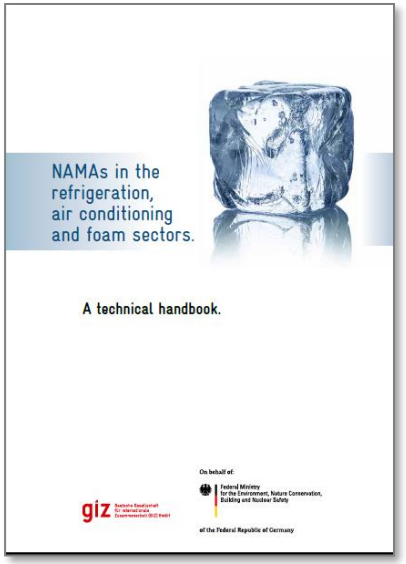
RAC sector mitigation strategy development



(GIZ Proklima, 2017)

‘A technical handbook’ with 10 relevant modules is available *online.*

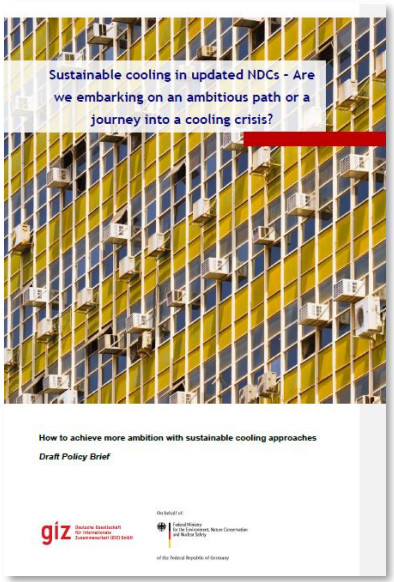
- Inventory
- Cooling needs assessment
- Technical options
- Economic assessment
- Mitigation scenarios
- Technology roadmap
- MRV
- Policy and financial options framework
- Implementation plan
- Co-benefits



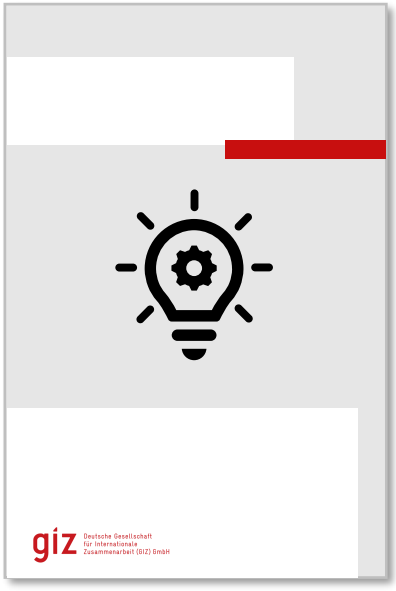
Accessing climate mitigation financing for the RAC sector

- A comprehensive understanding of the national RAC sector, its GHG emissions, and potential barriers to introducing mitigation actions is fundamental for accessing climate finance.
- Analysing the needs in the context of available domestic sources, capabilities and sustainability helps to attract the interest of financial supporters.
- **Access to international climate finance is only given, if the RAC sector is explicitly mentioned in the NDCs (combine energy efficiency and refrigerants related activities) and specific mitigation targets are defined.**
- **The NDC should be aligned with the defined schedules of the Kigali Amendment and relevant RAC sector strategies and policies.**

Guideance for policymakers on Advancing NDCs through climate friendly RAC (Download)



Current assessment on integration of the RAC sector into the NDCs will be published soon



Guidelines on how to integrate the RAC sector into the NDCs are currently being developed

Thank you for your attention!

Contact

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The RAC Sector in NDCs: Overview of the Current Status and Developments

Daniela Laßmann I Perspectives Climate Group

Agenda

- **Current status of the integration of the cooling sector in (updated) NDCs**
  - Methodology and approach
  - Key results and observations
- **HFC mitigation measures in updated NDCs**
- **Energy efficiency measures in updated NDCs**
- **Conclusions**
- **Recommendations**

Current status of the integration of the cooling sector in (updated) NDCs

Methodology and approach

Comparative analysis

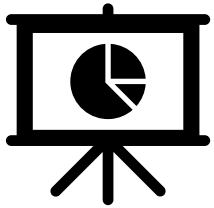
Screening of all NDC documents (INDCs, first NDCs and updated NDCs) submitted to and published by the UNFCCC focusing on the following criteria

- **HFCs are covered**
- **RAC sector is included in**
  - **i) separate chapter**
  - **ii) under IPPU sector**
  - **iii) under energy sector**
  - **iv) in IPPU sector and energy sector, or v) elsewhere**
- **Specific energy and/or HFC measures are included**
- **Baseline has changed and the Kigali baseline is considered in the updated NDC**

Current status of the integration of the cooling sector in (updated) NDCs

Key results and observations

→ **INDCs/ first NDCs: 192**
→ **Updated NDCs: 120 (until 13 October 2021)**



- **Significant trend upwards in the coverage of HFCs in the scope of the updated NDCs**
  - Approx. ***three quarters*** of the submitted updated NDCs include HFCs in the scope of gases covered
- **Stronger tendency to address the RAC sector in different ways in updated NDCs**
  - Out of the 120 analysed updated NDCs, about ***two thirds*** mention the RAC sector in different forms in their national targets
- **Various approaches to integrate RAC sector in NDCs**
  - ***No clear trend*** with regard to the anchoring of the cooling sector under specific sector

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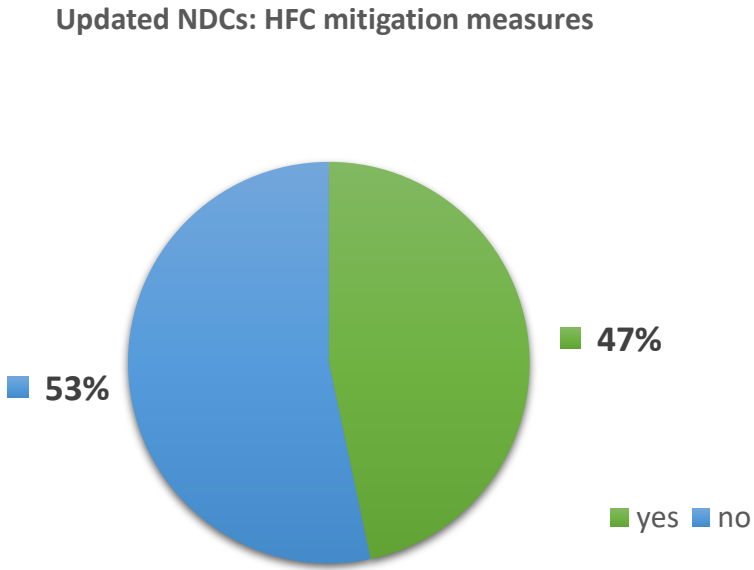
HFC mitigation measures in updated NDCs

Examples:

- HFC mitigation according to the provisions of the **Montreal Protocol/ Kigali Amendment**
- **(National) Cooling Action Plan/ Strategy**
- **Policy instruments** to restrict the import and consumption of high GWP refrigerants, respectively promote the use of alternative solutions
- **Enhancement of skills and capacities** for transition to (natural) low GWP refrigerants
- **Development of value chain** for alternative low GWP refrigerants
- **Replacement and collection** of old and inefficient RAC equipment
- **Management of ODS and HFC banks**

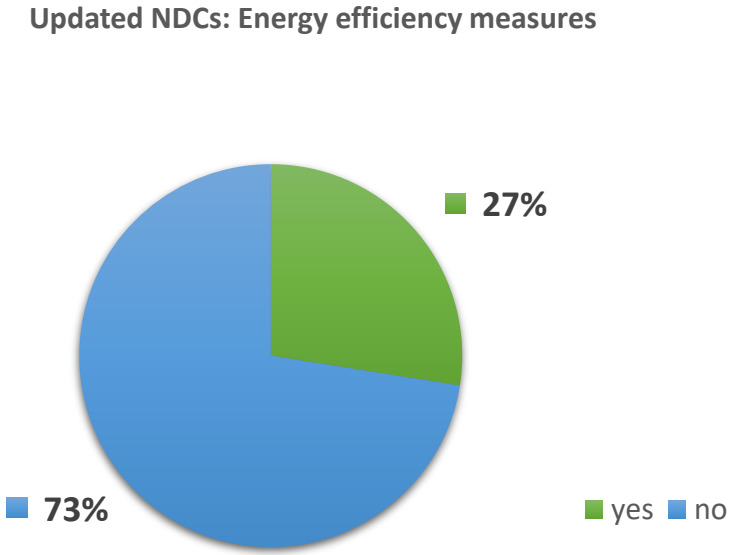


Source: GIZ 2021

Energy efficiency measures in updated NDCs

Examples:

- **(National) Cooling Action Plan/ Strategy**
- **Policy instruments and regulatory measures** to promote the transition to energy efficient cooling such as
  - Building codes/ standards (incl. passive cooling)
  - Minimum Energy Performance Standards (MEPS) and
  - Labelling for RAC equipment
- Promote the **use of renewable energy sources** for cooling through **demonstration projects and upscaling approaches**, e.g., small-scale solar-powered refrigeration to increase milk storage facilities
- **Replacement and collection** of old and inefficient RAC equipment
- **Awareness-raising measures**



Source: GIZ 2021

Conclusions

Where do we stand?

1. Many countries have recognised the **importance of HFCs and the cooling sector** in the context of their climate targets.
2. **More than half of the enhanced NDCs** submitted to date **mention the cooling sector** somehow.
3. Still **few countries present detailed plans and measures** including holistic approaches in their climate targets.
4. There are **several good practice examples** that can be used as role models.
5. The **alignment of mitigation targets under the Paris Agreement and the Kigali Amendment is (still) not addressed** by most countries in their NDCs.

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Recommendations

Establishment of data base

- For example a ***detailed RAC sector GHG inventory***
- Can serve as starting point for the cooling sector approaches and strategies

Development of long-term strategies

- Which consider the ***obligations under the Kigali Amendment*** and ideally enhance ambition
- That ideally ***combine*** energy-related and refrigerant-related actions
- That ***harness carbon markets*** and international climate finance

Identification of sectoral linkages

- Helps to develop ***joint solutions***, such as for instance with the energy sector
- Facilitates the ***positioning*** of the sector during the NDC update process

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Thank you!

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Questions & Answers

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The members of the

Green Cooling Network

are all committed to energy-efficient and climate-friendly refrigeration & air conditioning.

Join the network and become part of the Green Cooling community today!

www.green-cooling-initiative.org/network

Thank you for your participation!

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