Kick-off Session: Accelerating Green Cooling – Market Demand in Kenya

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REPUBLIC OF KENYA

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Status Quo - Kenya

- R22 was fully phased out in January 2026, and the majority of air conditioners currently sold on the Kenyan market are fixed-speed units operating on R410A refrigerant.
- Refrigerant leakage from split air-conditioning systems is estimated to generate approximately 5.1 million tonnes of CO_2 equivalent emissions between 2020 and 2030, highlighting the significant climate impact associated with the sector.
- Air-conditioning systems account for nearly 50% of total emissions from the refrigeration and air-conditioning (RAC) sector, making them one of the largest contributors to sectoral greenhouse gas emissions.
- By 2030, air conditioners are projected to consume between 1,035 and 2,170 GWh of electricity annually, representing approximately 4–6% of Kenya's projected national electricity demand.

Source: Kenya RAC Inventory (2022) and (NCAP 2022)

Status Quo - Kenya

- In addition, indirect emissions from electricity consumption by air conditioners are expected to reach approximately 0.677–1.1 megatonnes of CO_2 equivalent in 2030.

- Despite the environmental and energy-efficiency advantages of R290 technology, R290 air conditioners still account for only a very small share of the Kenyan market.
- Nevertheless, through the partnership with GIZ, three containers of R290 air conditioners have already been imported into Kenya, with an additional shipment currently underway, demonstrating growing momentum toward the adoption of low-GWP cooling technologies.

Status Quo – Kenya Cont.

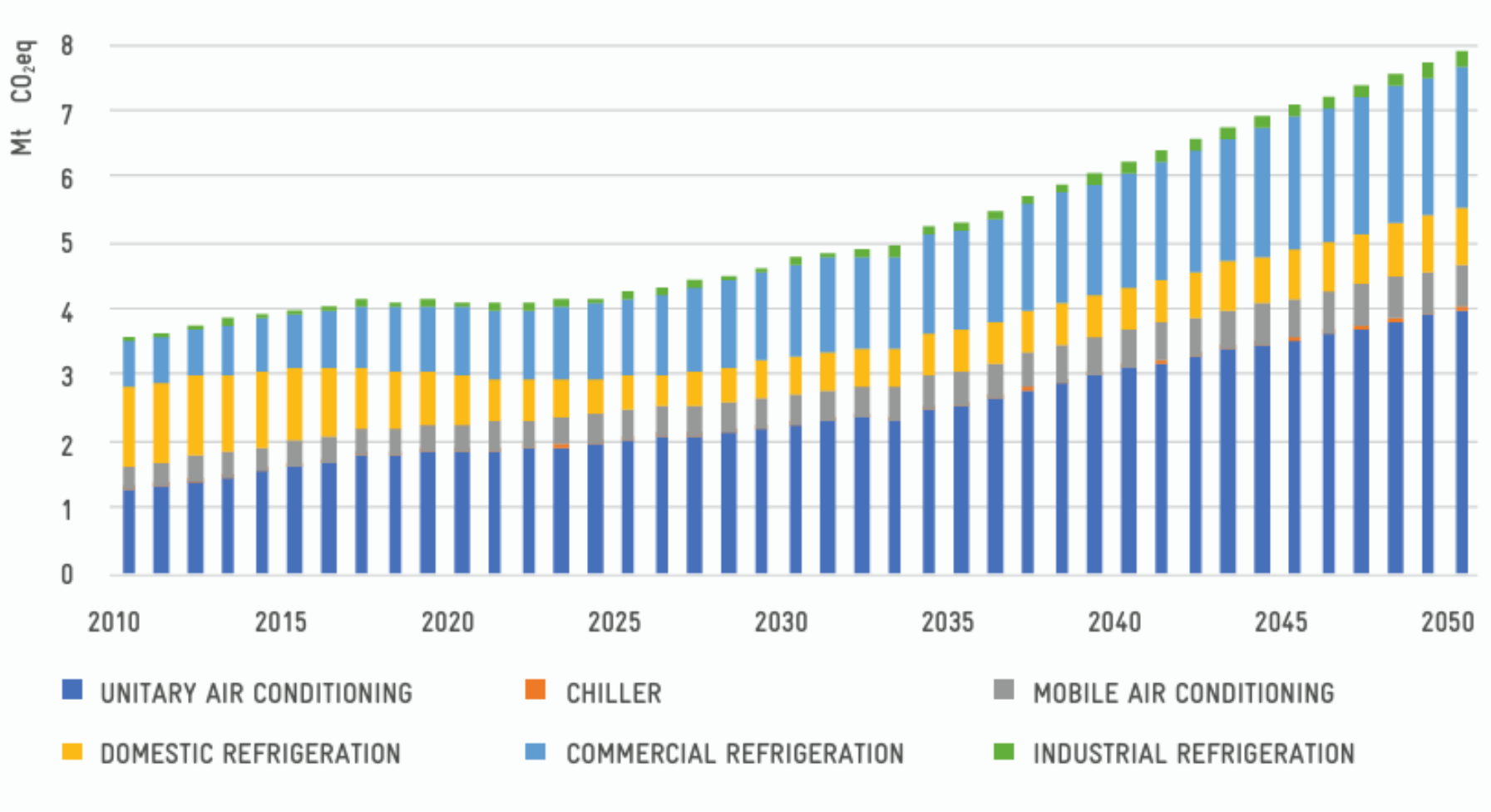


FIGURE 2: PROJECTED GHG EMISSIONS FOR THE RAC INDUSTRY IN KENYA FROM 2010 TO 2050

Status Quo – Kenya..Cont..

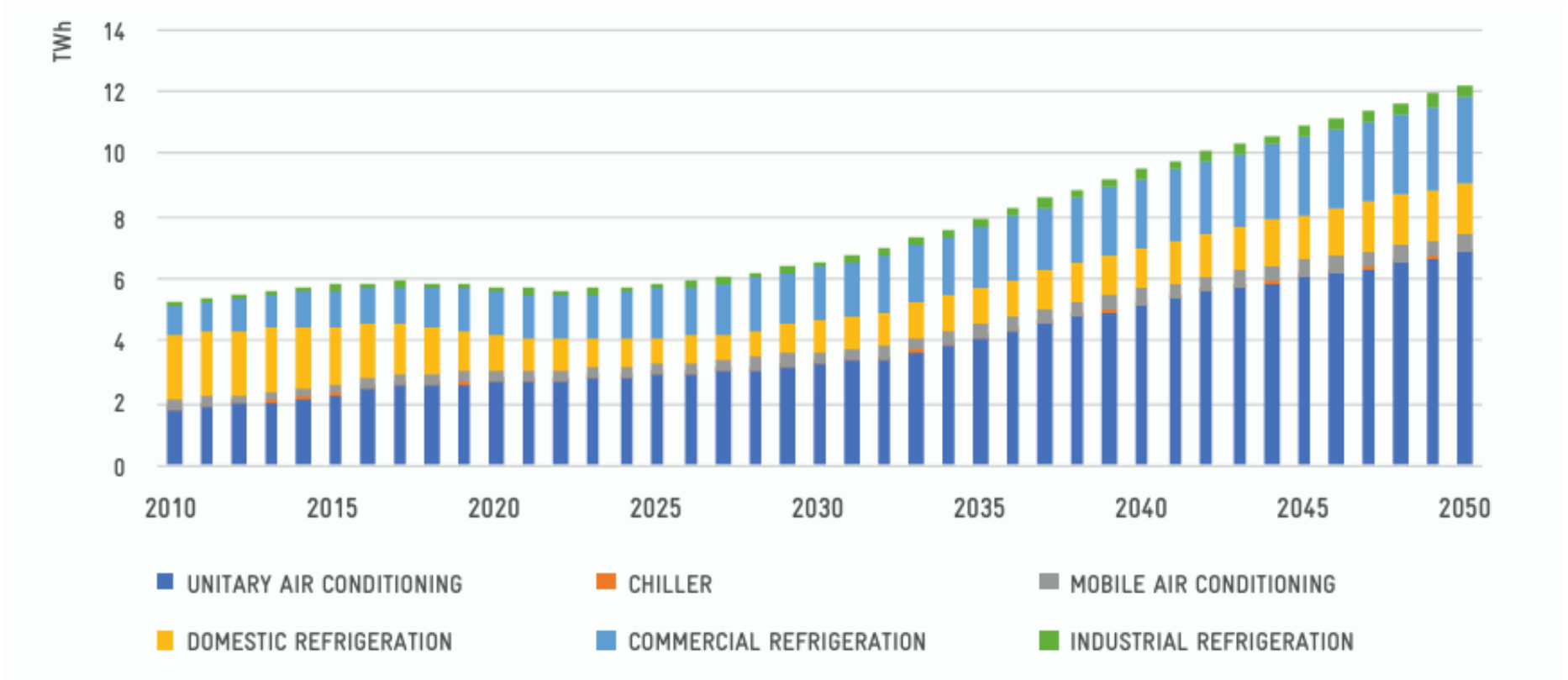


FIGURE 20: CURRENT AND PROJECTED ENERGY USE OF ANALYSED SUBSECTORS

Leapfrogging to R290 AC in Kenya

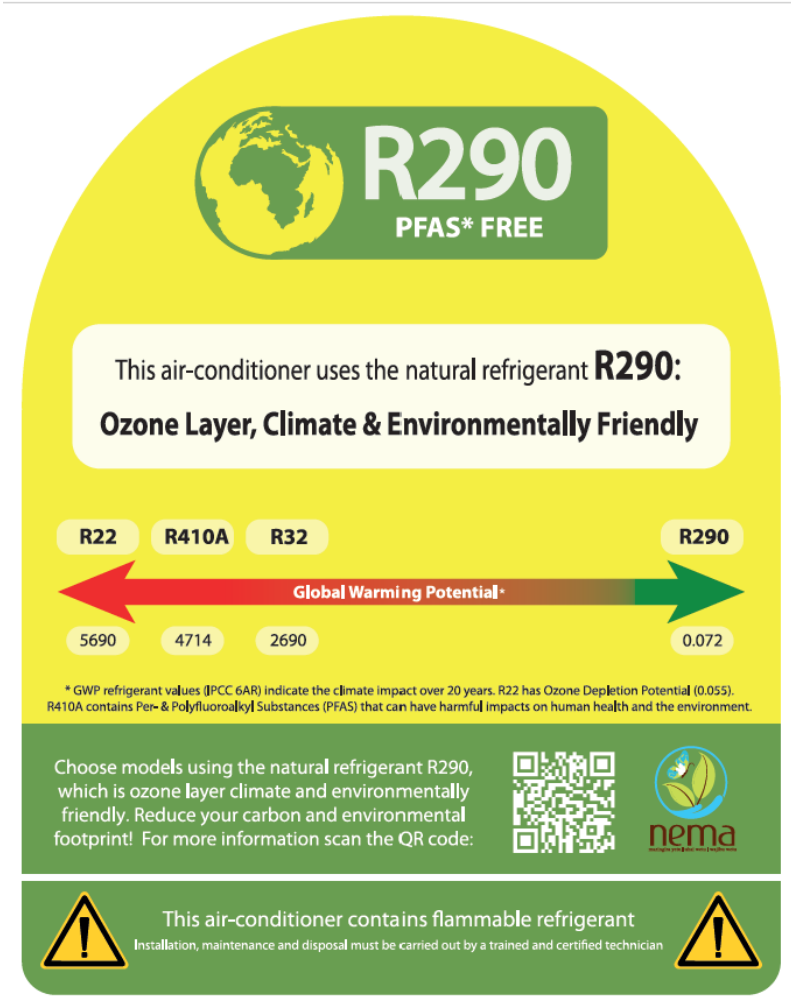
- Kenya has been working with GIZ with support from the MLF through the German Government (BMZ and BMUKN) and the French Government (AFD) for over 30 years on introducing natural refrigerants, Qualification Certification Registration (QCR) of trainers and technicians, RAC inventory, Development of National Cooling Action Plan, etc.
- Under the HPMP (AFD) and the International Climate Initiative (BMUKN) funded Green Cooling Initiative, and the Green Room AC (GRACE) Project, Kenya is establishing and incentivizing R290 AC supply chains and demonstration projects as well as equipped 28 training centers with R290 ACs and is training hundreds of technicians on R290 ACs.
- Kenya is actively promoting natural refrigerants and aims a high market share of R290 ACs under the (NCAP 2022) & Kigali Implementation Plan.
- Kenya included RAC as a priority mitigation action in the Technical Analysis Report for the updated NDC 2025
- Introducing only R290 and R32 ACs can lead to an emission reduction potential of up to 290 Kt CO2eq by 2030 and can mitigate up to 3.1 Mt CO2eq (direct emissions) until 2050 annually (RAC inventory 2022).

Challenges

- Kenya phased out R22 in January 2026, meaning that many air-conditioning units using R22 can no longer be serviced. This underscores the need to address the management and disposal of end-of-life refrigerants and obsolete AC equipment.
- Kenya is required to reduce its HFC consumption under the Kigali Implementation Plan, which calls for increased market uptake and adoption of R290 air-conditioning units.
- The main challenge in introducing R290 air conditioners into the market is their higher cost compared to conventional AC units.
- In addition, there is a need to strengthen R290 AC supply chains, including the availability of units with larger cooling capacities.
- Although more than 100 trainers and technicians have been trained on R290 ACs, Kenya still needs to build the capacity of thousands more technicians to support wider adoption.

Opportunities

- Under the HPMP and GRACE Project, R290 air conditioners are being incentivized to help reduce unit costs, raise awareness, expand the pool of trained trainers and technicians, and address end-of-life management aspects.
- Kenya, through National Environment Management Authority (NEMA), has also developed a refrigerant label highlighting the advantages of R290 ACs.
- In addition, Regional Minimum Energy Performance Standards adopted in 2025 have ranked R290 ACs among the highest in energy efficiency.
- Twenty-eight training institutions have been equipped with R290 AC units to support the training of students and technicians.
- Furthermore, under a CCAC-funded project, the management of end-of-life RAC equipment and the destruction of ozone-depleting substances (ODS) will be addressed.



Conclusion

- The availability of R290 split air conditioners in Kenya remains limited due to several factors, including high prices, limited model variety and cooling capacity options, low awareness levels, and an insufficient number of trained technicians.

- There is a need to increase the market share of R290 air conditioners in the near future to support compliance with HFC reduction targets under the Kigali Implementation Plan.

- In addition, the management and end-of-life handling of old R22 air conditioners and remaining R22 refrigerants still require further attention and additional support.

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