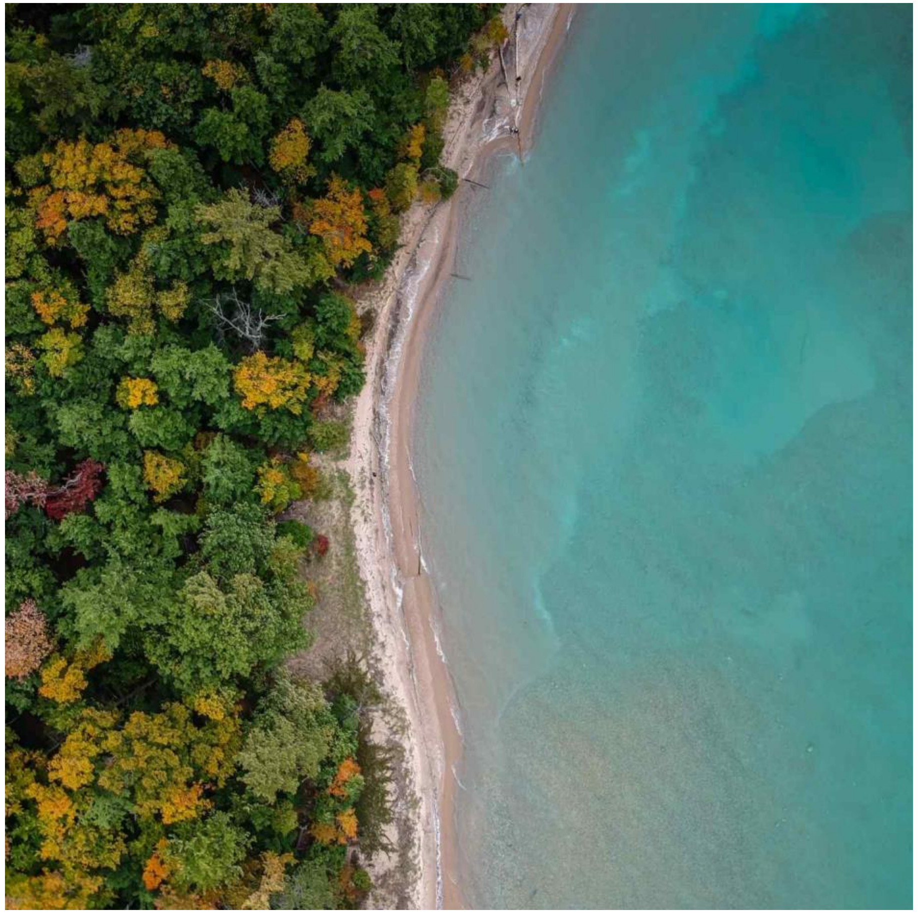
An Article 6 pilot in Morocco’s cooling sector

Daniela Lassmann, Perspectives Climate Research

COP27 Side Event, Sharm el Sheikh

15th November I 16:45 – 18:15



Morocco‘s cooling sector

How does Morocco‘s refrigerator and AC market look like?

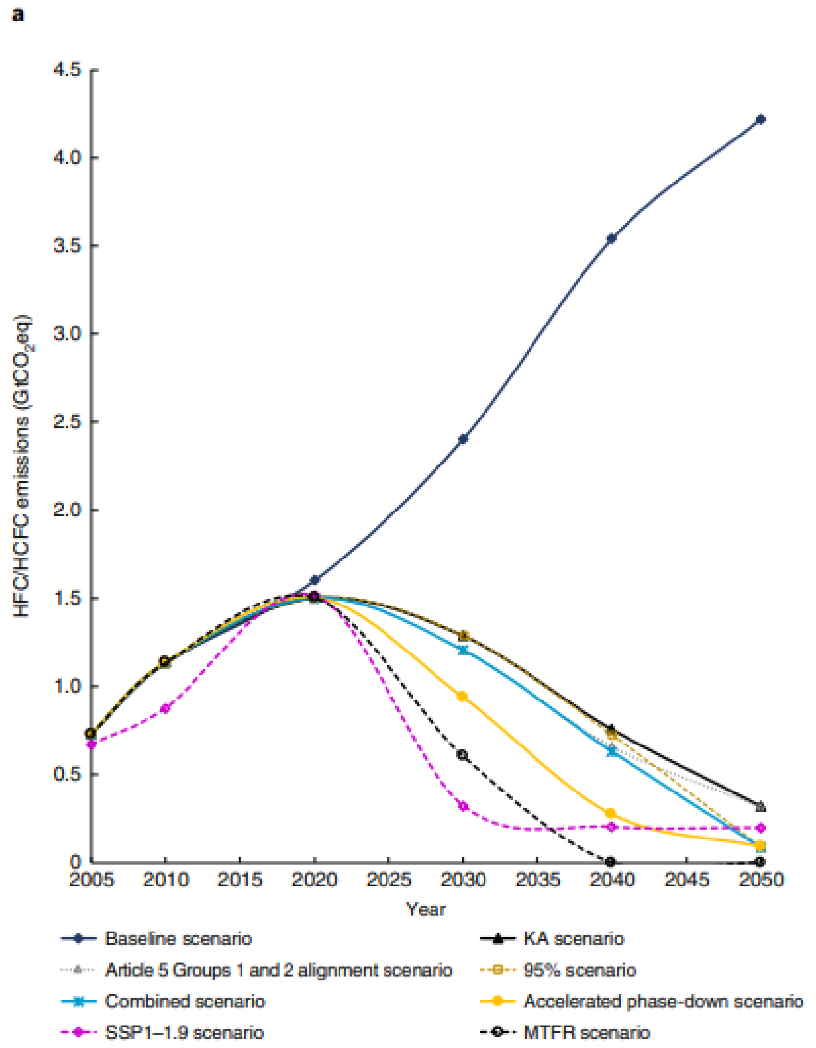
- Building sector contributes by **one third (32%) to final energy consumption** (2019) → the government aims to reduce energy consumption in this sector by 14%
- **Refrigeration accounts** for **45% of the building's electricity consumption** while **air conditioning (AC) accounts for less than 5%**
- Morocco’s residential AC ownership is estimated at around 18% today → IEA estimates that **about 40% of households** could have ACs by 2030
- **Steep increase in imports of HFC refrigerants** from 2015 → in 2019, the quantity of imported HFCs was almost **ten times higher**
- In 2019, approx.
  - **1.3 million air conditioners** (household and commercial) in the market
  - **6.5 million domestic refrigerators** placed in the market
- BAU scenario projects **HFC demand/ consumption to double in the period 2020 – 2030** (up to 2,000 t/a in 2030)

Action beyond the Kigali Amendment

Why to accelerate the HFC phase-down?

- Kigali Amendment obliges to reduce HFC consumption and production in a step-wise manner by 2040s
- The 1.5°C pathway requires global HFC emission reduction of 75-80% relative to 2010, but currently only

<u>BUT</u>: full compliance with Kigali Amendment will only save 56% by 2050 and is not in line with a 1.5°C pathway!

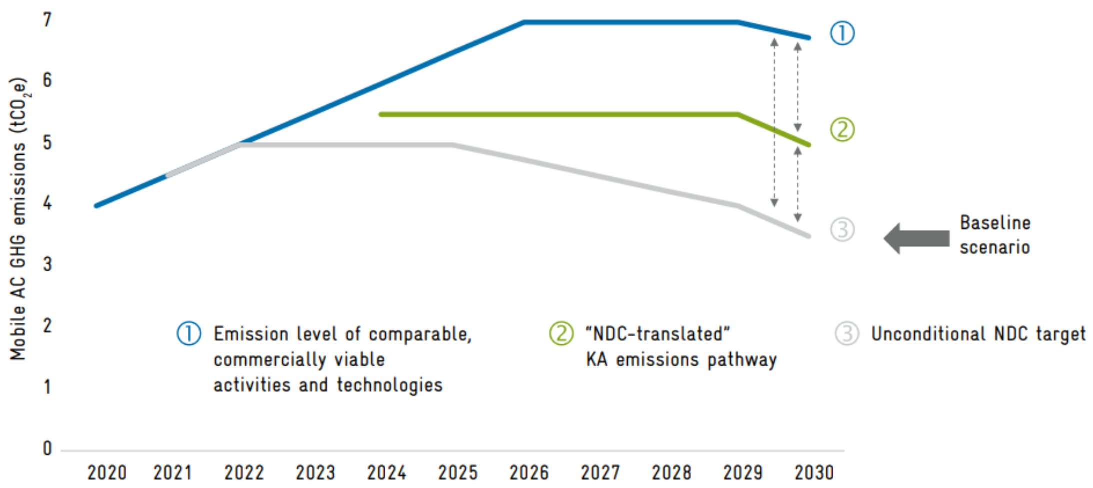


Source: Purohit et al. 2022

Art. 6 activities in the cooling sector

What are crucial aspects when desiging an Art. 6 activity in the RAC sector?

1. **Ratification of the Kigali Amendment**



2. **Inclusion of HFCs and HCFCs in NDCs**
   - HFCs are part of the 'Kyoto basket of gases' and covered by the Paris Agreement
   - Paris Agreement allows for a wide range of targets and related indicators, **inclusion of ODS (HCFCs) is therefore possible and essential** for Article 6 activities in the cooling sector

3. **Synchronized accounting of HFCs and HCFCs**
   - Link to **quantified GHG targets** needs to be clarified to fulfil the general principles for reporting and review under the UNFCCC (**TACCC principles:** Transparency, Accuracy, Completeness, Comparability, Consistency)

Blended finance for Morocco‘s cooling sector (I)

perspectives climate group

Green Air Conditioners and refrigerators

Use refrigerants with negligible climate impact

Highly energy efficient devices

Only for ACs: Trained technicians needed for installation & maintenance to address safety issues of low GWP refrigerants

Higher upfront price

Different cooling capacities available for different applications

Definition of green cooling

Blended finance for Morocco‘s cooling sector (II)

perspectives climate group

Barriers to the adoption of green refrigerators and ACs

Policy and regulatory barriers:

- Energy efficiency: **insufficient labels and enforcement of MEPS**
- Refrigerants: **lack of regulation to control and reduce HFC consumption** and/or regulate import and use of high GWP HFC refrigerants

Financial barriers:

- **High cost of green refrigerators and ACs**

Consumer bahaviour barriers:

- **Lack of awareness** of benefits of green refrigerators and ACs: lower life cycle cost & environmental impact

Technical barriers:

- Lack of skilled workforce due to missing regulation and certification
- **Lack of supply and demand** of alternative technologies with refrigerants below a GWP of 10

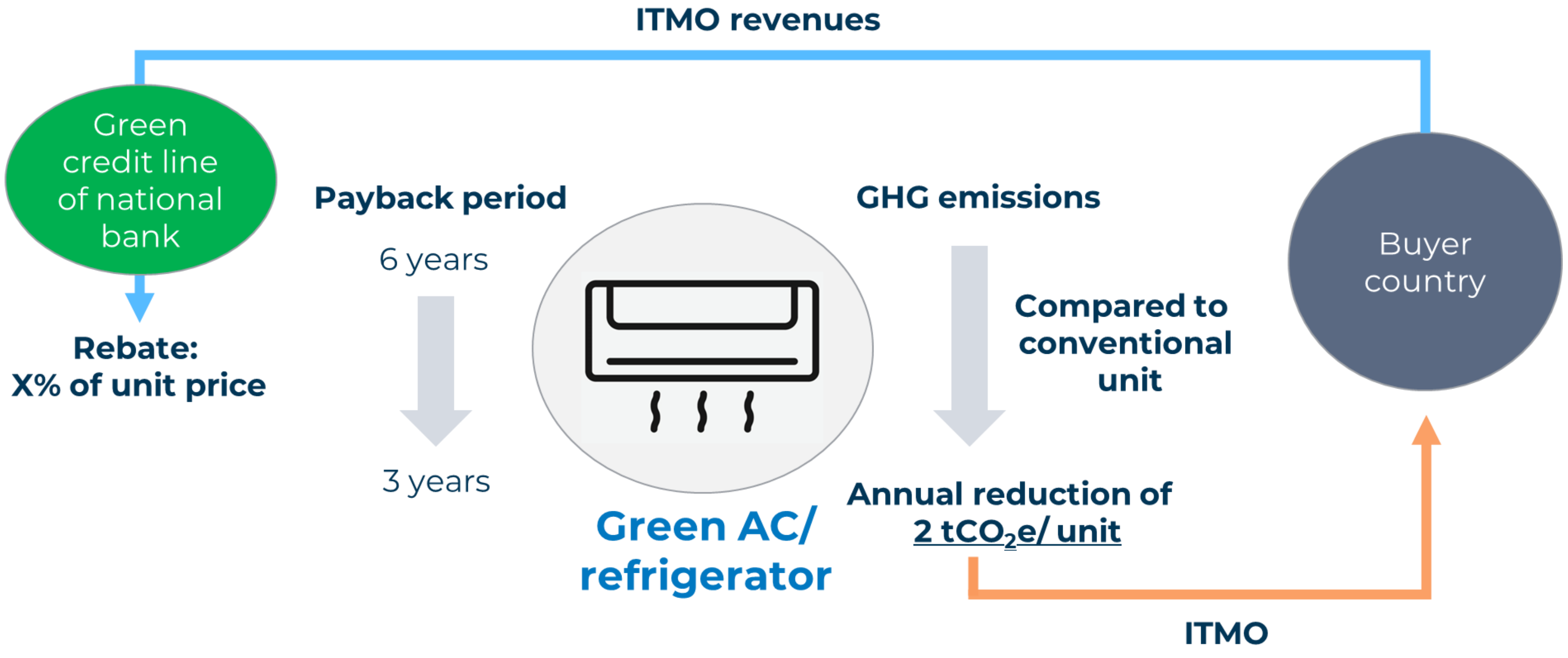
Blended finance for Morocco‘s cooling sector

How could a blended finance approach look like in the Moroccan cooling sector?

Financial incentive mechanism that **adresses novelty and price barriers**

Different **financial and policy instruments** that can be combined, e.g.:

- Rebate scheme in combination with a supporting loan/ green credit programme
- Reduction of import tariffs for green refrigerators and ACs
- Bulk procurement programme



perspectives climate group

Thank you!

Daniela Lassmann
Perspectives Climate Group
lassmann@perspectives.cc