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المركز الإقليمي للطاقة المتجددة وكفاءة الطاقة



Mitigation Enabling Energy Transition in the MEDiterranean region

# Session 1 – Cooling buildings and the planet in the Cool Up programme

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11 May 2023

Marrakech

# The Cool Up programme: Upscaling Sustainable Cooling

Our approach is based on four pillars:

1. **Reducing cooling demand;**
2. Supporting the **phase-down of hydrofluorocarbons (HFCs);**
3. **Replacing and safely disposing inefficient cooling appliances and refrigerants;**
4. Improving **cooling appliance operation, training, and awareness.**

Our approach is supplemented by setting up implementation-focused industry partnerships and building hands-on capacity to enable local and regional stakeholders. Findings of replicable demonstration projects will be used to disseminate knowledge.



Supported by:



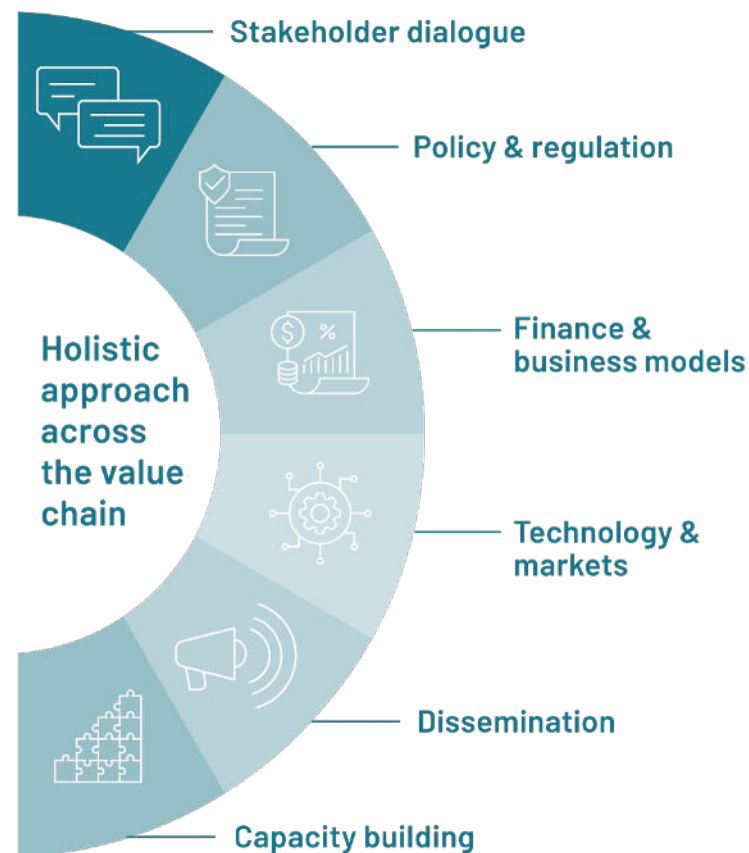
Federal Ministry  
for the Environment, Nature Conservation,  
Nuclear Safety and Consumer Protection



based on a decision of  
the German Bundestag

## The multi-level approach of Cool Up

- Political: Support implementation of **Paris Agreement** (through NDCs) and **Kigali Amendment** objectives
- Financial: Develop financial models to boost **sustainable cooling**
- Technical: Enable **natural refrigerants** and **energy efficient solutions** to mitigate the rising cooling demand



# The relevance of cooling globally and its importance in the Middle East and North Africa (MENA) region

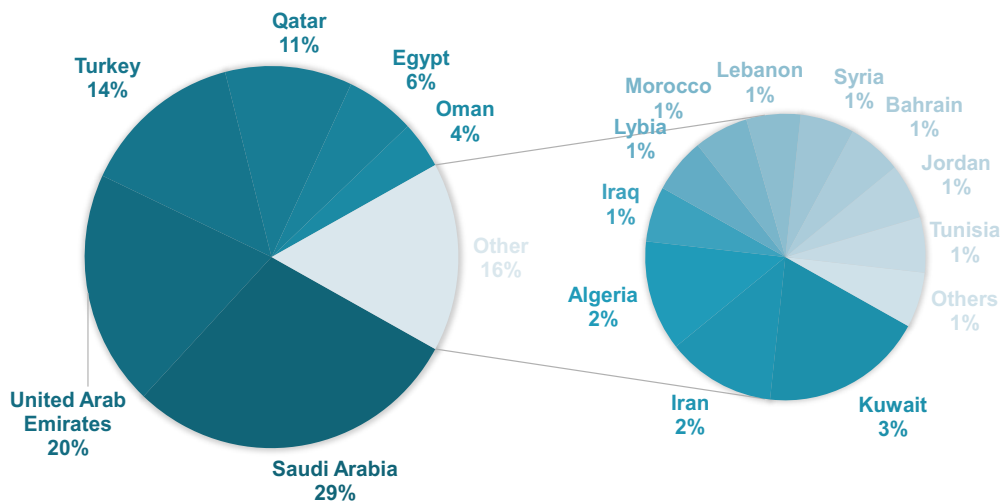
## Globally:

- Space cooling may account for more than 15% of the building sector's electricity consumption globally (IEA, 2021).
- The global refrigeration and air conditioning (RAC) market volume reached nearly EUR 125 billion in 2018 (Economist Intelligence, 2019).

## MENA region and Türkiye:

- The total market size of RAC technologies in the MENA region is estimated to have been around EUR 8 billion in 2018 with an expected annual growth rate of 5% until 2024 (RCREEE, 2021).

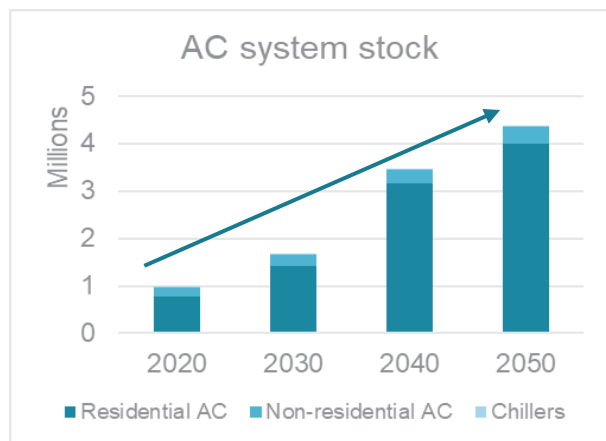
RAC market size breakdown by country



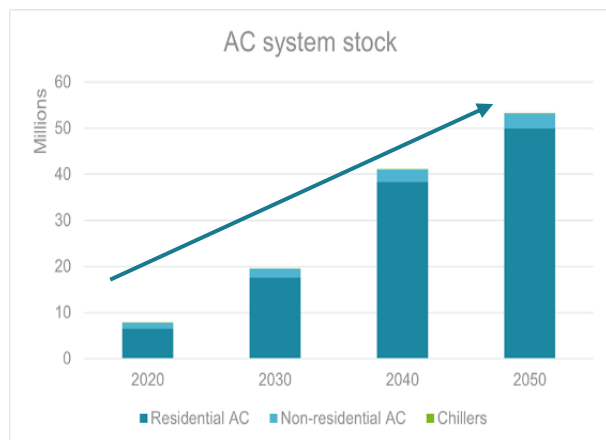
# High growth of the RAC market represents challenges and opportunities for the market in MENA countries



## Strong growing (AC) market



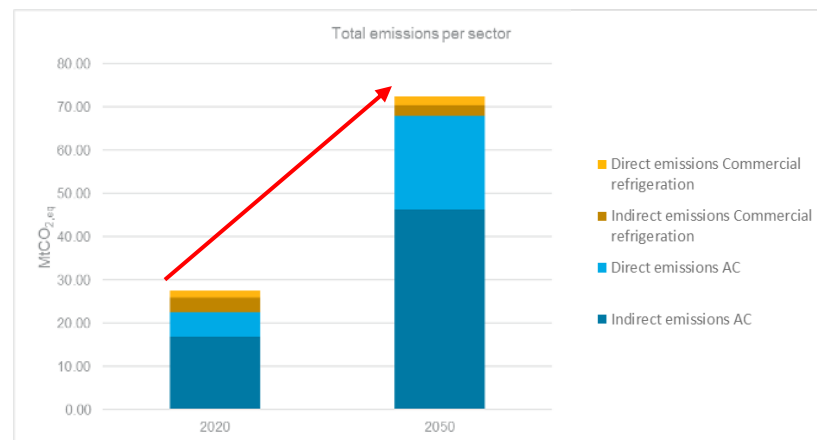
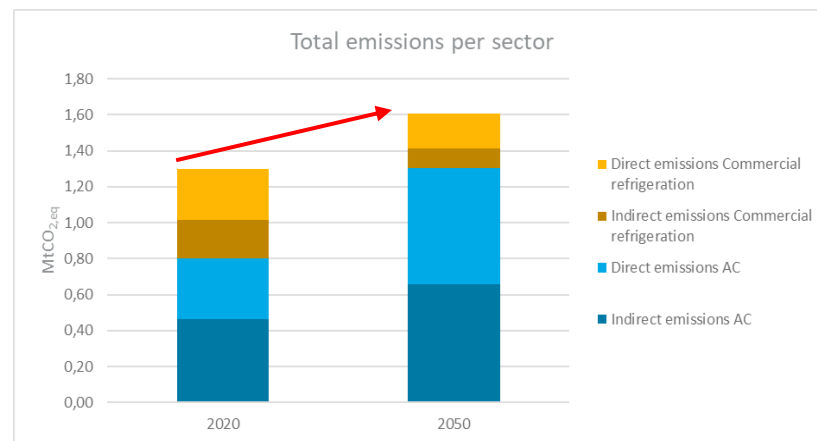
Jordan:



Egypt:

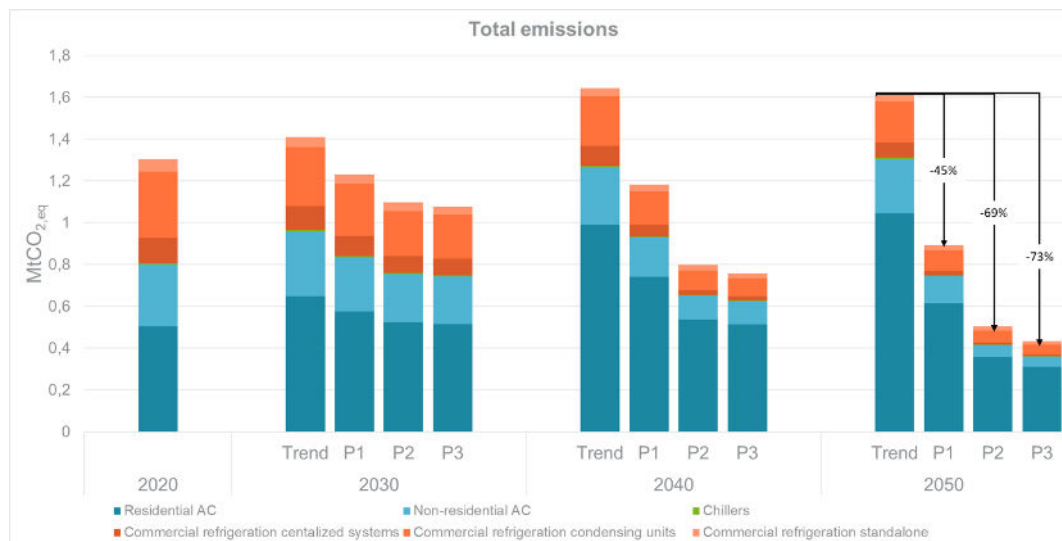


## Increasing emissions

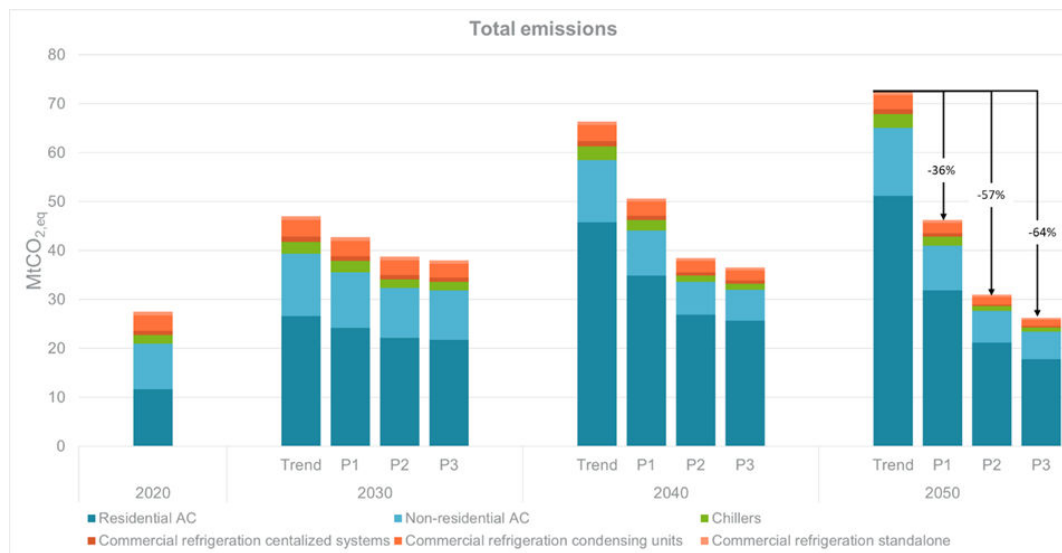


# Significant emission reduction and reversing the upward trend is possible by ambitious and timely measures

Jordan:

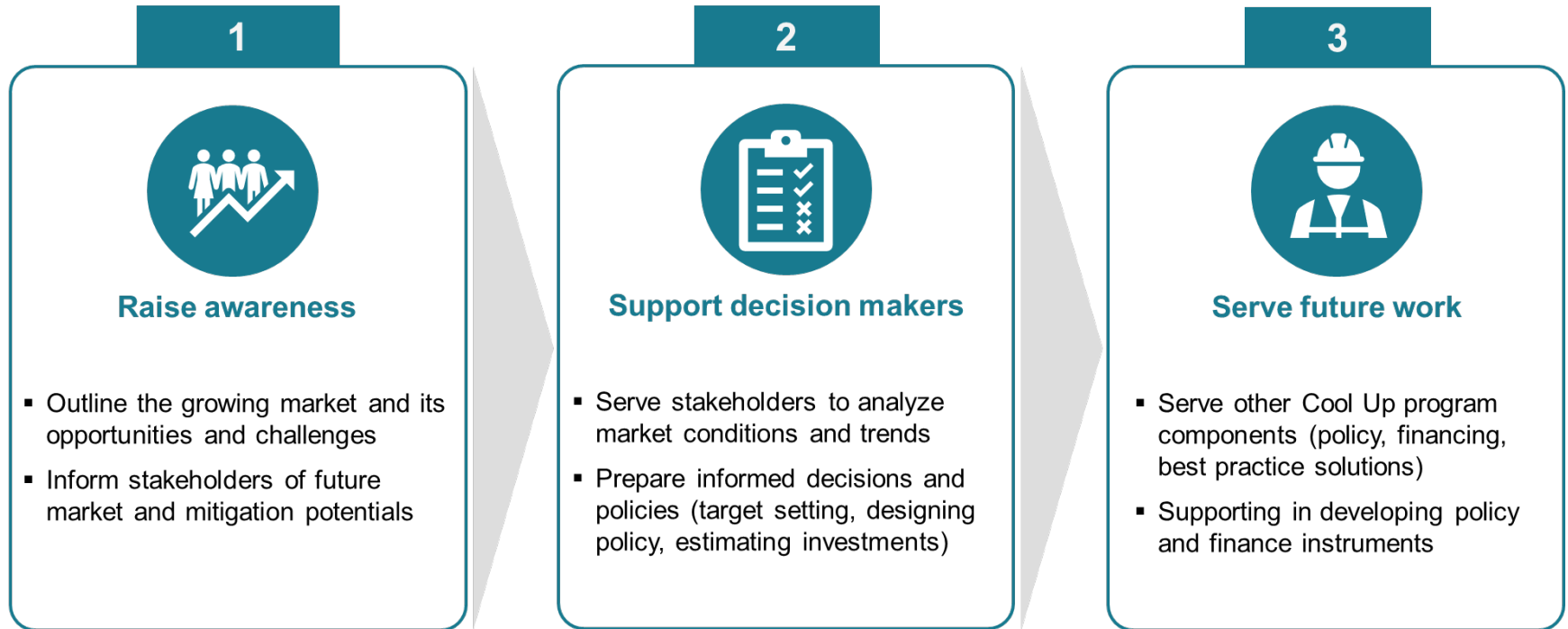


Egypt:



Transition to sustainable cooling provides an unlocked opportunity to reduce energy consumption and GHG emissions.

# The sustainable cooling transition requires effective implementation to realise its multi-level benefits



## Cool Up tackles barriers and facilitates opportunities to sustainable cooling investment



- Reduce information asymmetries
  - Help commercial banks and their end-users **understand the technical and economic attributes** of sustainable cooling solutions and illustrate superiority vis-a-vis high GHG emitting alternatives
- Unlock capital and financial flows
  - Awareness-raising, **capacity building** across end-users and financiers, and explore engagement with international funders
- Collaborating with financial institutions
  - Via dedicated sessions with banks and end-users to **develop new business models** and unique financing strategies
- Connecting and engaging with international funders
  - Cool Up seeks to **work closely with IFIs** to develop and structure “Regional Financing Initiative” to deploy the sustainable cooling solutions (with an active role of the local financial institutions and commercial banks)



## The way forward...



Developing an integrated approach: Targets and policies for cooling emission reduction aligned with NDC targets and strategies



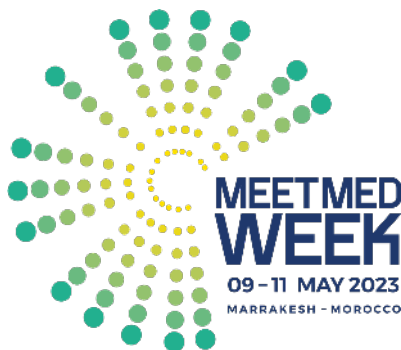
Integrating commitments under the Montreal Protocol and Kigali Amendment helps identifying synergies and mainstreaming policies



Positioning of the sector from the beginning of the NDC update process



Access to international climate finance is given, if the cooling sector and specific targets and measures are mentioned in the NDCs



# Jordan: Highlights developments in transition to sustainable cooling

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Manager of Energy Efficiency and Solar Thermal Energy Division  
Cool Up National Project Manager, Royal Scientific Society

**11 May 2023**  
**Marrakech**

## Why sustainable Cooling Matters

### Energy Transition

- By 2050 an additional three billion new air conditioners (ACs) are expected to have been installed around the world. This will increase the cooling demand and requires electricity grids to supply these units to operate.

### SDG2-Zero Hunger

- A lack of access to sustainable cooling and cold chain threatens to put SDG2 out of reach and prevent the ability of agricultural economies to grow sustainably.
- The lack of a cold chain causes losses in food production and leads to an increase in food waste.

### Refrigerants Transition

- Refrigerants can leak out of air conditioners, both during use and more commonly when ACs are discarded. CFCs were phased out by the Montreal Protocol and eventually replaced by HFCs which are Greenhouse gases that in the short term, are thousands of times more potent than carbon dioxide. An amendment to Montreal has HFCs set to phase down reaching 80% reduction by 2048.

Cooling equipment is currently responsible for more than 7% of all global GHG emissions and without switching to clean and sustainable cooling technologies and a full renewable energy transition, the cooling sector's GHG emissions would double by 2050



## Jordan's Economic Modernization Vision

- Jordan Government has published in 2022 Jordan's Economic Modernization Vision which centers on the slogan of "A Better Future", and is based on two strategic pillars:
  - accelerated growth through unleashing Jordan's full economic potential
  - improved quality of life for all citizens, while sustainability is key to this future vision.
- Through the Vision and its Roadmap, Jordan will continue its efforts to tackle needs related to climate change (including delivering on the Paris Agreement).
- Sustainability will be a key element in Kingdom's economic future, in particular: expanding on renewable energy, including new sources of energy, and continuously promoting improved energy efficiency.

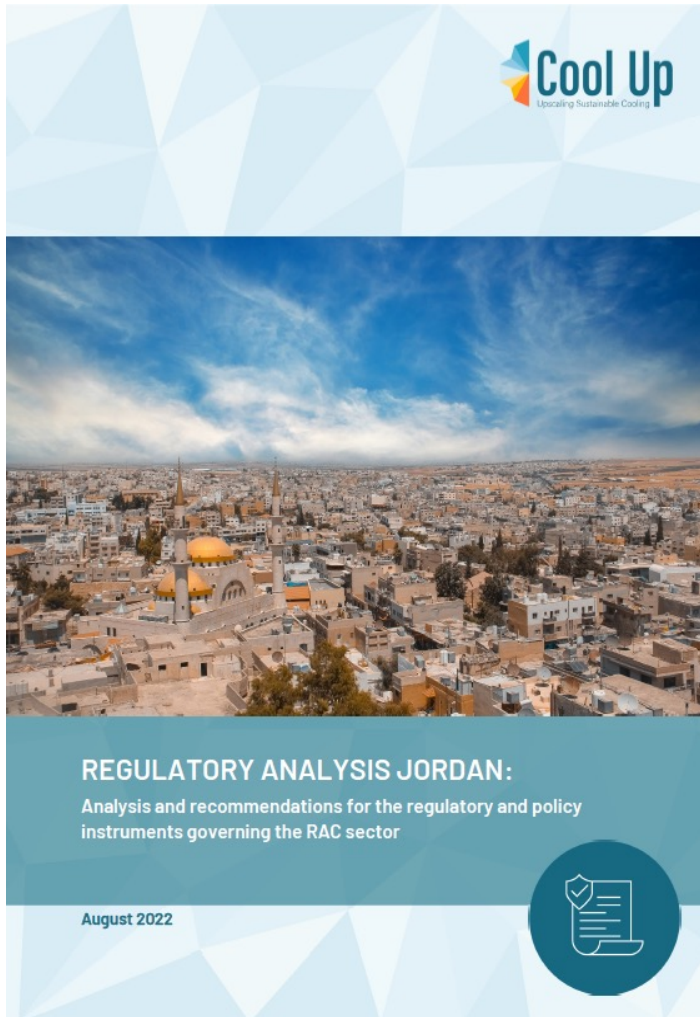


### المبادرات والأولويات لقطاع الاقتصاد الأخضر

الدولة المسؤولة	2025	2024	2023	المبادرة
وزارة البيئة	إعداد خطة عمل لتحسين مرتبة الأردن في مؤشر الأداء البيئي (EPI) Environmental Performance Index			تحسين مرتبة الأردن في التقارير الدولية
وزارة البيئة	GAIN	تعزيز الأنشطة الخضراء في المنشآت الصناعية		تطوير سياسات وتحفيز التحول نحو الاقتصاد الأخضر في القطاعات الاقتصادية والاجتماعية المختلفة
وزارة البيئة	Upscaling Sustainable Cooling (تطوير التبريد والتكييف المستدام)			
سلطة المياه	تطوير وتنفيذ مشاريع زراعية نوعية حول محطات المعالجة			
وزارة البيئة	زيادة عدد منشآت إدارة النفايات المربوطة على نظام الرصد والمعلومات الوطني الخاص بالنفايات ليصبح 18 منشأة			

أهداف التنمية المستدامة 

## COOL UP- Upscaling Sustainable Cooling Programme



- ❑ Supporting NEEAP III by including sustainable cooling measures such as updating MEPS to cover commercial RAC sector
- ❑ Supporting the update of the National certification scheme for RAC technicians working on natural refrigerants
- ❑ Supporting the development of National Cooling Strategy and National Cooling Action Plan

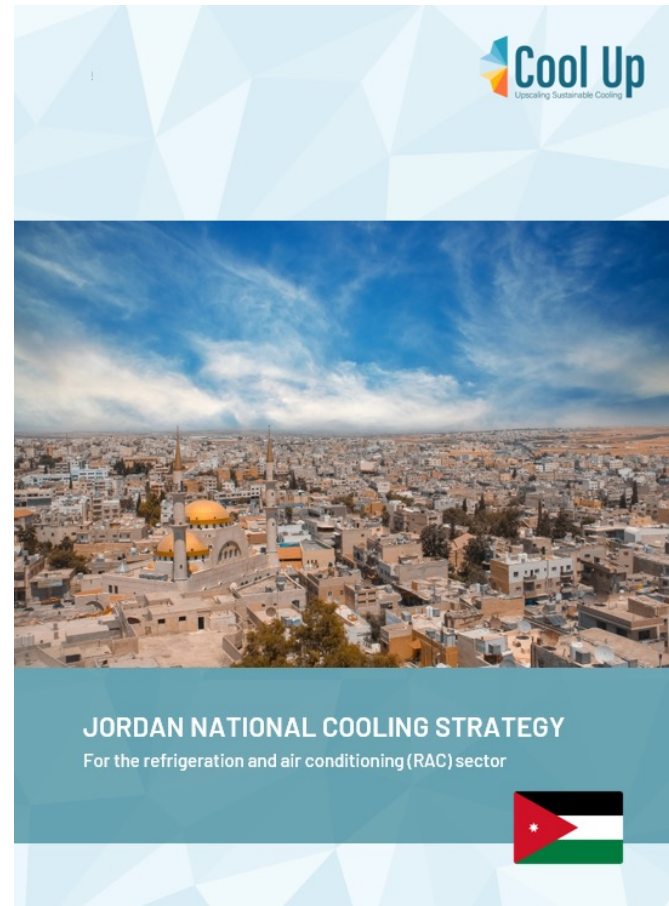
# Policy & Regulation Recommendations - National Cooling Strategy and National Cooling Action Plan

A meeting was held in August 2022 and COOL UP Programme recommended developing a cooling strategy and plan that will support sustainable cooling in Jordan. The ministry of Environment adopted this recommendation.



## Vision & Mission of the National Cooling Strategy (NCS)

- Establishment of a **long-term cooling strategy** for Jordan that aims at **sustainable cooling**
- **Integrating** energy efficiency & renewable energy and transition to natural refrigerants
- Provides **high level recommendations** aligning with existing strategies and sector priorities
- Identifies **priority interventions** to address Jordan's growing cooling needs
- Sets the basis for developing a National Cooling Action Plan (NCAP)



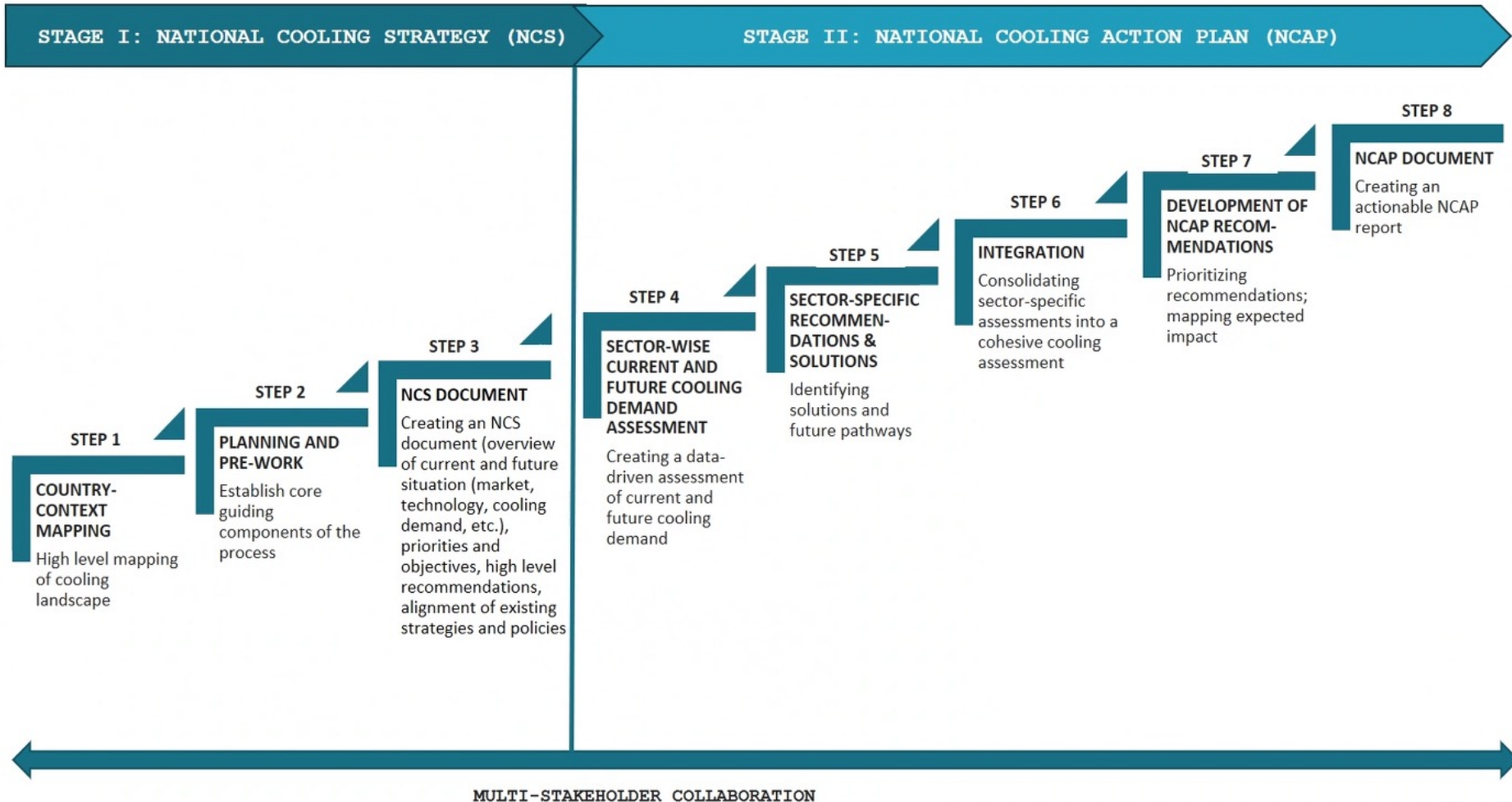
## Benefits of National Cooling Action Plan (NCAP)

Developing a NCAP can offer major benefits for Jordan, including:

- Integrating policies that otherwise addressed separately and,
  - to advance three internationally agreed goals simultaneously: UNFCCC, SDGs, Montreal Protocol/ Kigali Amendment.
- Delivering cost savings through enhanced energy efficiency for businesses and consumers.
- Reducing emissions that cause climate change.
- Enforcing technical skills, creating opportunities in the local job market.
- Support manufacturers through research and development and increase local manufacturing competitiveness.
- Improving access to safe and sustainable cooling, i.e.
  - Increasing productivity through improved access to cooling.



# Roadmap to NCS and NCAP



## National kick off for the steering Committee and the working Group of the NCS & NCAP

□ On 20<sup>th</sup> March, 2023 a kick off for the National cooling Strategy was held at the Royal Scientific Society led by the ministry of Environment, with the steering committee.


- The following sectors will be covered :
  - 1) Air-conditioning,
  - 2) Commercial, domestic & transport refrigeration
  - 3) Industrial refrigeration

□ On 3<sup>rd</sup>, May, 2023 a kick off for the working group of the NCS & NCAP was held at the Royal Scientific Society led by the Ministry of Environment.






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