Holistic Report of the Regional Workshop of National Cooling Plans (NCAP) in the MENA Region

Tunis, October 28-29, 2026



Table of Contents

INTRODUCTION 3

Overview and Objectives 3
Regional Project Overview 4
Agenda 5

DAY (1) PART 1: REGIONAL NCAP METHODOLOGY AND FRAMEWORK 7

Session (1) Opening and Welcoming Remarks 7
Session (2): The Global NCAP Methodology 8
Session (3): Roadmap for MENA NCAP Implementation: Operational steps, sector scope, and integration pathways 9
Session (4): Setting the NCAP Regional Scene: Cross-Country Analysis & Priority needs for MENA NCAPs 10

DAY (1) PART 2: KNOWLEDGE SHARING FROM THE IMPLEMENTED NCAPS IN THE REGION 11

Session (5): Insights from Tunisian NCAP 11
Session (6): Insights from Moroccan NCAP 12

DAY (1) PART 3: REGIONAL ROUNDTABLE DISCUSSIONS WITH ALL COUNTRIES 13

DAY (2) PART 1: IMPLEMENTATION OF NCAP AND THE WAY FORWARD 18

Session (7) Recap of Day 1 18
Session (8) Potential Business Models for Sustainable Cooling and Best Practices 19
Panel Discussion: Available Financing Mechanisms for the Cooling Sector & Funds Matchmaking 20

DAY (2) PART 2: KNOWLEDGE SHARING FROM THE IMPLEMENTED NCAPS IN THE REGION 24

Session (9): Insights from Cool Up Program (Lebanon and Egypt's NCAPs) 24
Session (10): Insights from The Kingdom of Jordan's NCAP 25
Session (11): Insights from Djibouti's NCAP 26
Session (12): Heat Resilience Starts Before the Air Conditioner: Lessons from Brazil's National Cooling Action Plan. 27
Session (13): NCAP results and connections to NDC 28
Session (14): Closing Remarks 29

SUMMARY, CONCLUSIONS, RECOMMENDATIONS FOR NEXT STEPS 29

Executive Summary 29
Strategic Conclusions 29
Recommendations for Next Steps 30

ANNEX 32

Photos 32
Presentations of the Workshop 32
Attendance 29

Introduction

Overview and Objectives

This report documents the proceedings, key outcomes, and strategic directions established during the Second Regional Workshop on National Cooling Action Plans (NCAPs) in the MENA Region, convened on 28–29 October 2026 at the Mövenpick Hotel du Lac in Tunis, Tunisia.

Organised by the Regional Center for Renewable Energy and Energy Efficiency (RCREEE) in cooperation with the Energy Department of the League of Arab States (LAS), with support from the United Nations Environment Programme (UNEP) and the Cool Coalition and hosted by Tunisia's National Agency for Energy Conservation (ANME), the two-day gathering brought together 45 high-level experts, delegates representing 15 Arab nations, in addition to representatives from United Nations programs, international financing institutions, and relevant international and regional projects.

Building upon initial regional milestones, this second regional workshop marks a pivotal transition from framework design to operational execution. Its primary focus was to consolidate the tailored MENA NCAP methodology, evaluate implementation progress across pilot and replicating countries, establish operational frameworks for governance, set the direction for the next round of implementation (NCAP 2.0), and unlock bankable financing mechanisms for climate-friendly cooling solutions.

The workshop objectives are as follows:

- Global and Regional NCAP Methodology: Presenting the global methodology and explaining its purpose as a holistic framework for developing national cooling strategies and introducing the regional NCAP methodology while highlighting how it has been tailored from the global methodology to address MENA region challenges such as high ambient temperatures, access gaps, cold chain needs, and refrigerant transition.
- Regional Governance and Continuity: Consolidating the regional NCAP committee and advisory group, and defining how the methodology will be maintained, updated, and extended to new countries beyond the project.
- Financing Mechanisms: This section provides an overview of available financing mechanisms to support the preparation and implementation of NCAPs, with a focus on mobilising resources for sustainable and climate-friendly cooling solutions and matching available funds with next-step cooling projects.
- Knowledge Sharing and Lessons Learnt from Pilot NCAP Project: Sharing relevant experiences from the MENA region countries with a focus on sectoral assessments, stakeholder engagement, and key findings for replication across the region. Fostering regional collaboration and knowledge exchange to accelerate the adoption of sustainable cooling pathways across MENA countries.

- Towards a second Round (NCAP 2.0): Setting out how countries can deepen their plans in a second round, covering investment planning, MRV and Biennial Transparency Reports (BTR) integration, passive cooling and demand reduction, cold chains for food and health, and access for heat-vulnerable populations.

The workshop program featured a comprehensive series of technical presentations and thematic discussion sessions. Key segments were dedicated to showcasing national experiences in NCAP development, exploring actionable implementation and financing pathways, and examining methodologies for aligning cooling strategies with Biennial Transparency Reports (BTRs) and Nationally Determined Contributions (NDCs).

During the event, delegates were invited to join the Regional Technical Advisory Group (RTAG), established under this Regional Cooling Initiative, to express their interest in adopting the NCAP methodology and outline their country-specific technical and institutional needs. The RTAG operates as a central advisory body aimed at:

- Coordinating strategic project activities across the MENA region;
- Facilitating information exchange as a liaison to national Ministries of Energy and Environment;
- Supporting the establishment of National Cooling Committees within participating countries;
- Providing technical guidance aligned with national priorities; and
- Representing the regional project in relevant international and regional cooling forums.

Regional Project Overview

The NCAP is a long-term framework designed to advance sustainable cooling through targeted policies, programs, and technologies, and to address the country's growing cooling demands in a sustainable, equitable, and climate-resilient manner while minimising environmental impacts. Within the framework of the Cool Coalition, UNEP, in Collaboration with RCREEE, has initiated a regional cooling program supporting the preparation and implementation of the NCAPs across the MENA region around three core outputs:

- Output 1: Preparing a regional NCAP methodology for the MENA region.
- Output 2: Adapting the NCAP in two MENA countries: Morocco and Djibouti.
- Output 3: Capacity building and policy integration

The workshop further strengthened regional cooperation and knowledge exchange, aiming to accelerate the adoption of sustainable cooling pathways across Arab countries.

Agenda

Day 1-Theme: Regional NCAP Methodology Framework & Countries' Experiences

Day 1		
09:30 - 10:00	**Registration**	
10:00 – 10:20	Welcoming remarks, context setting, and event objectives	▪ **Mr. Roberto Borjabad**, Programme Management Officer, UNEP, Cool Coalition - Climate Change Division. ▪ **Dr. Maged Mahmoud**, Executive Director, RCREEE. ▪ **Dr. Abderrahmene Belhout**, Director - Energy Department - League of Arab States. ▪ **Dr. Nafaa Baccari,** General Director, ANME.
10:20 – 10:30	Online Participation (Video Record)	▪ **Martina Otto,** Head of Secretariat, Climate and Clean Air Coalition (CCAC), UNEP.
Regional NCAP Methodology and Framework		
10:30– 10:50	The Global NCAP Methodology	**Dr Lorena Carvalho,** Passive Cooling and Energy Specialist, Cooling and Buildings Unit, Climate Change Division, UNEP
10:50– 11:20	Setting the NCAP Regional Scene: Cross-Country Analysis & Priority needs for MENA NCAPs	**Eng. Alshimaa Hussein**, Senior RE/EE Specialist, RCREEE
11:20 – 11:45	Roadmap for MENA NCAP Implementation: Operational steps, sector scope, and integration pathways	**Dr Mostafa Hasaneen,** Senior Expert, RCREEE
11:45– 12:00	**Coffee Break**	
Knowledge sharing from the implemented NCAPs in the region: Focus Areas: Country context, cooling sectors, baseline data gaps, assumptions, technical hurdles, modelling, BAU and projected scenarios, governance, implementation roadmaps, prioritisation strategy solutions and governance lessons.		
12:00 – 13:30	Knowledge sharing from the implemented NCAPs in the region: ▪ Tunisia ▪ Morocco ▪ Djibouti ▪ Somalia Moderator: **Omar Alrosan,** RCREEE	**Country representatives** **Tunisia: Eng. Abdelkader BACCOUCHE** Director, Renewable Energy and Energy Efficiency Senior Expert, ANME **Morocco: Eng. Hanan Radouane** Head of the Gas Emissions Service at the Ministry of Energy Transition and Sustainable Development, Morocco **Djibouti: Eng.Ali Adaweh** Directeur de l'Efficacité et de la Maîtrise de l'Energie **Somalia: Mr. Hassan Isaq Hassan** Ministry of Environment and Climate Change
13:00 – 14:00	**Networking Lunch**	
14:00– 15:00	**Regional Roundtable Discussions with all countries:** 7 tables, 1 Moderators/ table, 1 presentation per table	All participants Moderators: **RCREEE/UNEP**
15:00- 16:00	**1 presentation per table**	**All participants**

Day 2-Theme: From Planning to Action: Unlocking Finance, from Development to Bankable Projects

Day 2		
09:30 - 10:00	**Registration**	
10:00 – 10:15	**Feedback from Day 1: Dr. Maged Mahoud**, RCREEE, Executive Director	
Part 1: Implementation of NCAP and the way forward		
10:15 – 11:00	Potential Business Models for Sustainable Cooling and Best Practices	**Zhuolun Chen,** Senior advisor, district and building energy systems and green finance, UNEP
11:00– 11: 30	Open Discussions	
11:30 – 11:45	**Coffee Break**	
11:45 – 13:00	**Panel Discussion:** Available financing mechanisms for the Cooling Sector & funds Matchmaking Moderator: **Amr Sleem,** Country Engagement and Climate Policy Lead, Cool Coalition, Cities Unit Mitigation Branch, Climate Change Division	**Jalel Chabchoub**, Chief Investment Officer, AFDB (online) **Yousri Helal,** Team Leader, Climate Change, Environment, Energy and Disaster Risk Reduction, UNDP **Akram Hamza,** German Agency for International Cooperation (GIZ) **Nidal Abdallah,** Energy Division Manager, Royal Scientific Society (RSS)
13:00 – 14:00	**Networking Lunch**	
Part 2: Knowledge sharing from the implemented NCAPs in the region:		
14:00 – 14:45	Knowledge sharing, best practices and insights from NCAP implementation Moderator: **Omar Alrosan,** RCREEE	**Ahmed Abdelrasoul,** Senior Environmental Expert, Cool Up Project ▪ Lebanon ▪ Egypt **Robin Adel Robin Assaf** - Ministry of Environment – Jordan
14:45 – 15:15	Heat resilience starts before the air conditioner: lessons from Brazil's National Cooling Action Plan.	**Dr Lorena Carvalho,** Passive Cooling and Energy Specialist, Cooling and Buildings Unit, Climate Change Division, UNEP
15:15 – 15:45	NCAP results and connections to NDC	**Zhuolun Chen,** Senior advisor, district and building energy systems and green finance, UNEP
15:45 – 16:15	Closing Remarks	▪ **Roberto Borjabad**, Programme Management Officer, UNEP, Cool Coalition - Climate Change Division. ▪ **Dr. Maged Mahoud**, RCREEE, Executive Director ▪ **Dr. Nafaa Baccari,** ANME, General Director

Day (1) PART 1: Regional NCAP Methodology and Framework

Session (1) Opening and Welcoming Remarks

The session included opening remarks from:

- **Mr Roberto Borjabad** – Project Management Officer, Climate Change Division, United Nations Environment Programme (UNEP)
- **Dr Maged Mahmoud** – Acting Executive Director, Regional Centre for Renewable Energy and Energy Efficiency (RCREEE)
- **Mr Abdelrahman Belhout** – Director, Energy Department, League of Arab States
- **Dr Nafaa Baccari,** General Director, National Agency for Energy Conservation (ANME).



The opening remarks underscored the vital strategic importance of cooling across the Arab region, highlighting that sustainable cooling has officially transitioned from a luxury into an essential life necessity critical for public health, food security, economic productivity, and climate resilience. The speakers outlined the intense climate vulnerabilities facing the MENA region, where summer temperatures regularly surpass 50°C in high ambient temperature (HAT) zones and regional temperatures are rising at more than twice the global rate.

With space cooling currently responsible for nearly 50% of peak electricity demand and 25% of annual power consumption across Arab countries, the welcoming speakers stressed the urgency of breaking the vicious cycle of heat stress and power grid overload. Consequently, the opening addresses called for a unified regional push to prioritise sustainable cooling within national development agendas, unifying fragmented ministries under a single framework, promoting passive building design, enforcing strict energy performance standards, and accelerating the low-GWP refrigerant transition under the Kigali Amendment and NDCs.

Session (2): The Global NCAP Methodology

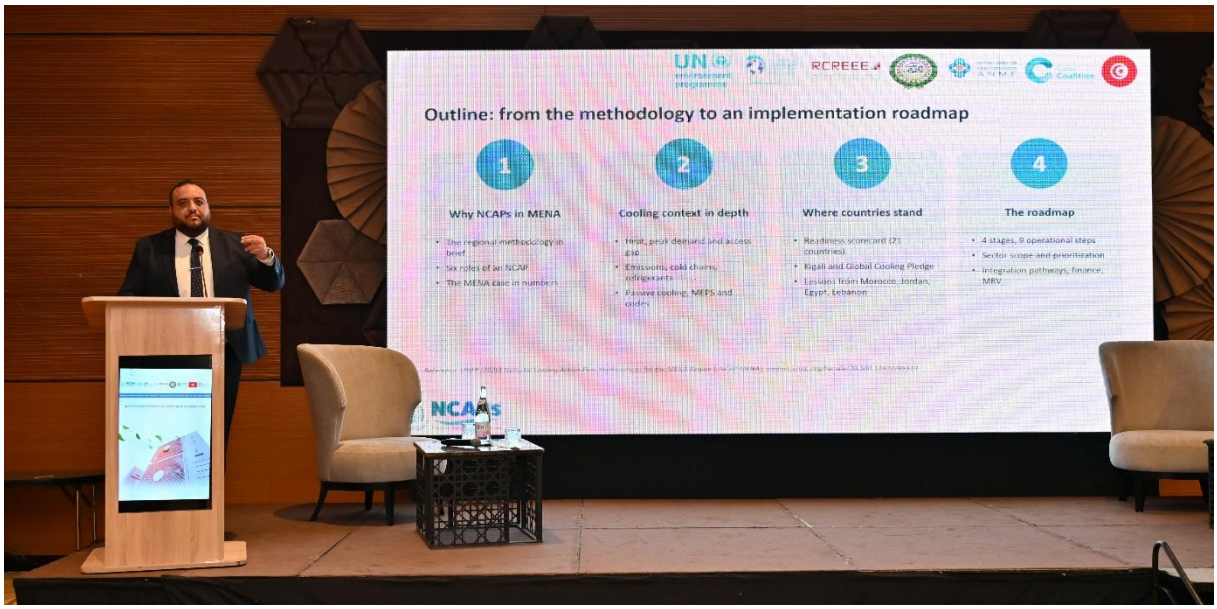


Dr. Lorena de Carvalho Araujo's (Passive Cooling and Energy Specialist, Cooling and Buildings Unit, Climate Change Division at the United Nations Environment Programme – UNEP) introduces the National Cooling Action Plan (NCAP) as a strategic framework to address rising extreme heat and rapidly escalating cooling energy demand across the MENA region. As space cooling represents the fastest-growing energy user in buildings, the NCAP coordinates policies, technologies, and investments across multiple sectors, including buildings, agriculture, healthcare, and transport, to sustainably meet growing cooling needs while aligning with national climate targets.

Key Takeaways

- Climate Urgency: Rising temperatures pose severe risks in the MENA region, where unmitigated emissions could expose up to 600 million people (over 90% in urban areas) to extreme heat by the end of the century.
- Five Policy Pillars: Successful NCAPs build on five reinforcing pillars: technology pathways (passive cooling and low-GWP refrigerants), regulatory standards (MEPS and building codes), equity and cooling access, institutional coordination, and financial mechanisms.
- Cross-Government Governance: Action requires a designated lead ministry (e.g., Environment or Energy) supported by an inter-ministerial steering committee to unify fragmented efforts across energy, health, housing, finance, and customs.

Session (3): Roadmap for MENA NCAP Implementation: Operational steps, sector scope, and integration pathways

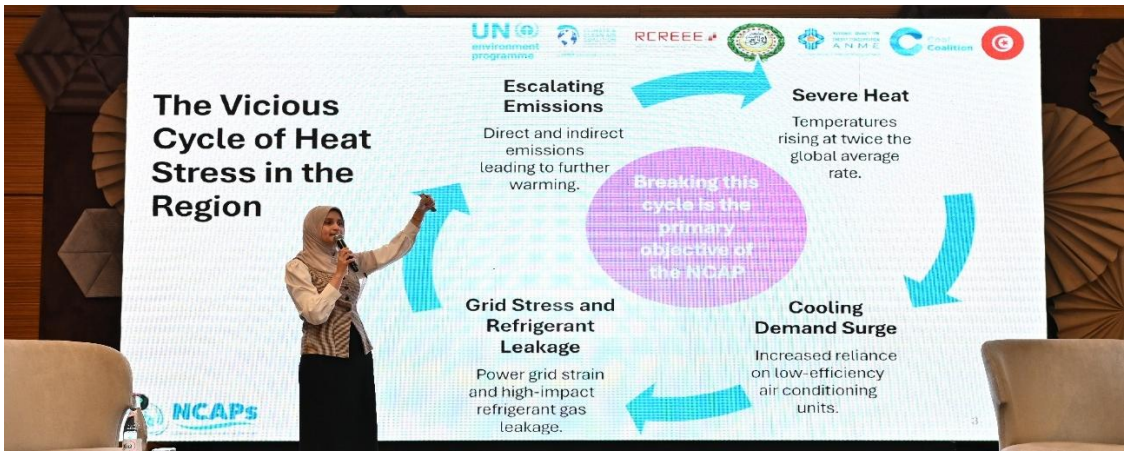


Dr. Mostafa Hasaneen (Senior Expert at the Regional Centre for Renewable Energy and Energy Efficiency – RCREEE) presented the operational roadmap for translating the MENA NCAP methodology into actionable national strategies. Setting the regional context through stark energy and climate data, where summer temperatures routinely exceed 50°C and space cooling accounts for nearly 50% of peak electricity demand, the presentation details a structured 4-stage, 9-step implementation framework tailored specifically to MENA challenges, including extreme ambient heat, intense cooling access gaps, refrigerant servicing leakage, and building energy code enforcement.

Key Takeaways

- The MENA Cooling Context in Numbers: Extreme heat (>50°C) leaves 78% of the regional population at cooling-access risk, while space cooling drives around 50% of peak power demand and produces 132 Mt CO2e annually.
- 4-Stage, 9-Step Operational Roadmap: Guides countries through Contextual Assessment & Planning (Steps 1–2), Cooling Demand Assessment & Scenarios (Steps 3–4), Synthesis & Strategy Creation (Steps 5–7), and Implementation, Governance & MRE/MVE (Steps 8–9).
- Lifecycle Refrigerant Management (LRM): Addresses regional servicing dynamics (where around 75% of refrigerants are used in servicing) by establishing leak prevention, recovery, reuse, and destruction protocols to support Kigali Implementation Plans (KIPs).
- Climate & Governance Integration: Connects NCAP baselines and Monitoring, Reporting, and Verification (MRV) systems directly to NDCs (NDC 3.0), BTRs, and bankable investment pipelines.

Session (4): Setting the NCAP Regional Scene: Cross-Country Analysis & Priority needs for MENA NCAPs



Eng. Alshaimaa Shafey (Senior RE/EE Specialist at the Regional Centre for Renewable Energy and Energy Efficiency – RCREEE) presented a regional cross-country assessment diagnosing the MENA heat crisis and detailing shared action priorities. It analyses the structural gaps, policy fragmentation, and data deficits across Arab nations, while presenting an integrated cooling hierarchy and prioritisation matrix to guide NCAP development and align with NDC 3.0 targets.

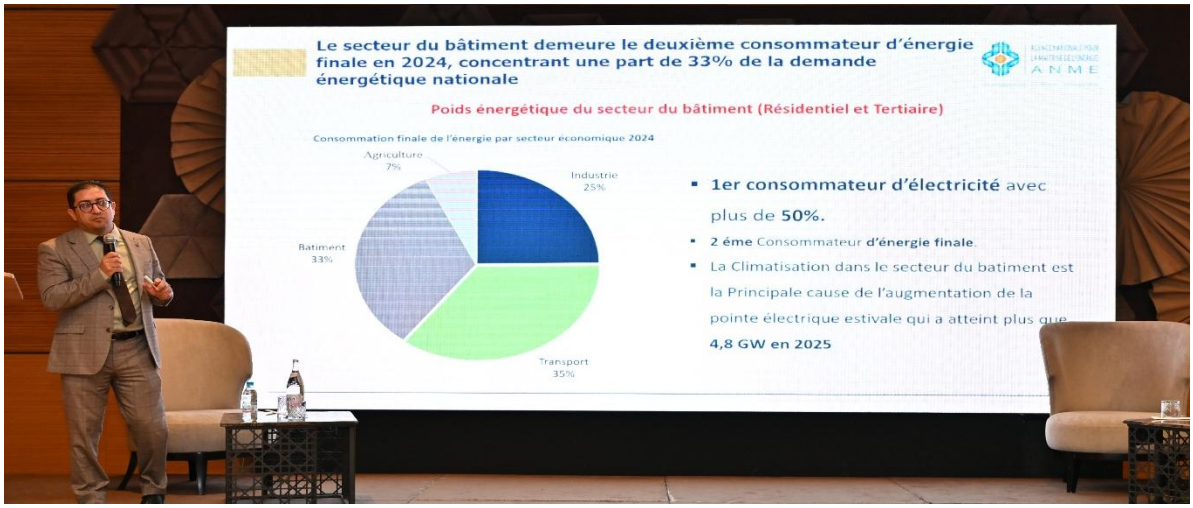
Key Takeaways

- Shifting Paradigm & The Heat Crisis: Frames sustainable cooling as a vital life necessity, aiming directly at breaking the region's vicious cycle of heat stress, sharp rise in power demand, and climate risk.
- Regional Progress & Commitments: Highlights that while 15 Arab countries have signed the Kigali Amendment and 6 have ratified the Global Cooling Pledge, high upfront costs and fragmented policies remain key obstacles to scaling implementation.
- Diagnosis of Core Gaps: Identifies four primary regional bottlenecks: weak inter-sectoral policy integration, uneven enforcement of Minimum Energy Performance Standards (MEPS) and building codes, persistent data deficits in sub-sector baselines, and technical expertise shortages.
- The Integrated Cooling Hierarchy: Advocates a bottom-up approach that prioritises cooling load reduction (passive design, shading, cool roofs) first, before upgrading appliance efficiency and transitioning refrigerants.
- Prioritisation & Transition Benchmarking: Uses a Strategy Grid (Need vs. Feasibility) to sequence national actions, recommending regional MEPS harmonisation with GWP labelling, establishing 3R infrastructure (Recovery, Recycling, Reclamation) for refrigerants, forming inter-ministerial Steering Committees, and utilising NCAPs to drive NDC 3.0 ambition.

Day (1) PART 2: Knowledge sharing from the implemented NCAPs in the region

This session included presentations on the experiences of Tunisia and Morocco in developing and implementing their National Cooling Action Plans, to share knowledge, lessons learned, and best practices.

Session (5): Insights from Tunisian NCAP



Eng. Abdelkader Baccouche (Director and Senior Renewable Energy & Energy Efficiency Expert at Tunisia's National Agency for Energy Conservation – ANME) presented Tunisia's country experience in developing and operationalising its National Cooling Action Plan (NCAP). The presentation details Tunisia's sectoral cooling assessment, baseline data collection, and modelling of Business-As-Usual (BAU) versus decarbonization scenarios across key sectors, including residential buildings, commercial facilities, public infrastructure, and cold chains. It highlights how ANME is leveraging the NCAP to unify national energy efficiency policies, enforce appliance labelling standards, and accelerate the low-GWP refrigerant transition under the Kigali Amendment.

Key Takeaways

- National Context & Cooling Demand: Addresses Tunisia's escalating electricity peak demand driven by expanding space cooling adoption across residential and commercial sectors.
- Sectoral Baselines & Data Gap Management: Establishes detailed inventory baselines across space cooling, refrigeration, and agricultural/medical cold chains, providing practical methodologies for overcoming data gaps.
- Integrated Policy Alignment: Connects NCAP targets directly with Tunisia's national energy transition goals, building energy codes, appliance Minimum Energy Performance Standards (MEPS), and Kigali HFC phase-down roadmaps.

- Governance & Cross-Sectoral Coordination: Demonstrates ANME's leadership in coordinating inter-ministerial Steering Committees, engaging private sector stakeholders, and securing institutional buy-in.
- Replication & Action Plan: Outlines Tunisia's implementation roadmap for translating national cooling strategies into investment-ready, bankable projects.

Session (6): Insights from Moroccan NCAP



Eng. Hanan Radouane (Head of the Gas Emissions Service at the Ministry of Energy Transition and Sustainable Development, Morocco) presented Morocco's pilot National Cooling Action Plan (NCAP), designed to feed directly into the country's NDC 3.0 targets and 2050 Long-Term Low-Emission Development Strategy. The presentation details Morocco's sectoral cooling baseline modelling across five key sectors, residential, commercial, industrial, transport, and agriculture/fisheries, diagnosing business-as-usual (BAU) growth and outlining a strategic action plan capable of reducing national cooling emissions by up to 32% by 2050.

Key Takeaways

- BAU Emissions Projection & Hotspots: Without intervention, Morocco's cooling GHG emissions are projected to rise from 7.5 Mt CO_{2e} in 2015 to 15.8 Mt CO_{2e} by 2050.
- The Single Most Powerful Lever: Energy labelling and Minimum Energy Performance Standards (MEPS) for residential ACs, refrigerators, and freezers under Law 47-09 deliver over 80% of all avoided emissions in 2050 (cutting 4,216 kt CO_{2e}/year), effectively halving residential cooling emissions by 2040–2050.
- Refrigerant Transition & Kigali Phase-Down: Enforces HFC import quotas and completes the total phase-out of R22 imports by 2029 under the Kigali Amendment, targeting near-zero residual refrigerant emissions by 2040 through low-GWP alternatives (HFOs and hydrocarbons).

- Sectoral Measures & Renewable Energy: Combines building thermal insulation, HVAC upgrades in commercial/public buildings, vehicle cooling fleet renewal, and solar renewable energy integration across energy-intensive agro-food branches like fish freezing and dairy processing.
- Total Reduction & Health Co-benefits: Energy efficiency measures reduce BAU emissions by 18% in 2035 and 32% in 2050, with combined energy and refrigerant measures reaching a total reduction potential around 55% by 2050.
- Dedicated MRV & Governance Unit: Establishes an inter-ministerial Steering Committee and a specialised NCAP MRV unit to manage data collection, QA/QC, indicators, and annual reporting for BTRs.

Day (1) PART 3: Regional Roundtable Discussions with all countries





Question 1

"NCAPs integrate Energy, Environment, Industry, Agriculture, Housing, and Finance. Which national entity is best positioned to lead and maintain the NCAP implementation and updates post-project, and what inter-ministerial mechanism (e.g., National Taskforce) is required to ensure long-term governance continuity?"

Answers & Country Discussion Points:

- **Djibouti:** The **Ministry of Energy** is identified as the lead entity for NCAP implementation.
- **Tunisia:** The **Ministry of Energy** leads the process, with operational activities executed by the National Agency for Energy Conservation (**ANME**), which handles certification and engagement with cooling brands. Governance is managed via a Steering Committee comprising the Ozone Focal Point, ANME Focal Point, International Institute of Refrigeration, General Director of the Energy Transition Fund, Ministries of Industry, Environment, Agriculture, Housing, STEG (electricity utility), and the Waste Management Agency.
- **Jordan:** The **Ministry of Environment** takes the lead, supported by a sectoral working group and the Ministry of Energy (linked with NREAP and NEEAP).
- **Morocco:** The **Ministry of Energy** acts as the lead entity, supported by an inter-ministerial Steering Committee to ensure long-term continuity.
- **Libya:** Led by the **Ministry of Environment**, with direct participation from the Ministries of Electricity, Commerce, and Industry.
- **Mauritania:** The **Ministry of Environment and Sustainable Development** is proposed to lead NCAP implementation, in close coordination with the Ministry in charge of Energy. The National Ozone Unit (NOU), alongside energy efficiency departments, will serve as the technical secretariat. Long-term governance will be ensured through a permanent Inter-ministerial Committee (spanning Environment, Energy, Finance, Commerce, Industry, Vocational Training, Housing, Agriculture, Fisheries, Health, and Customs) backed by an official mandate, dedicated focal points, an operational budget, and annual joint reviews.
- **Egypt:** Designated the **Ministry of Environment** (through the Egyptian Environmental Affairs Agency - EEAA and National Ozone Unit) as the primary lead entity responsible for national cooling oversight and NCAP coordination.
- **General Consensus Across Remaining Countries:** Participating nations affirmed that leadership is anchored within either the Ministry of Environment or Ministry of Energy, with unanimous agreement on establishing dedicated National Cooling Committees / Taskforces to drive multi-sectoral coordination and ensure post-project implementation continuity.

Question 2

"How are cooling-related priorities currently integrated into your national energy and climate strategies (e.g., NDCs)? Where does your country stand regarding international commitments like the Kigali Amendment and the Global Cooling Pledge, and how can an NCAP help bridge the gap toward meeting these targets?"

Answers & Country Discussion Points:

- **Morocco:** A signatory to the Kigali Amendment and Global Cooling Pledge (GCP). Morocco's first step was establishing an inter-ministerial Steering Committee to align NCAP measures directly with **NDC 3.0** climate targets.
- **Tunisia:** NCAP directly drives NDC goals. Since 2005, Tunisia has implemented concrete financial mechanisms integrated into electricity bills (covering subsidies and credit for solar water heaters, PV systems, and high-efficiency appliances). Over 1 million solar water heaters, 450,000 homes with PV systems, and 1,000 Class-1 ACs have been deployed. In 2022, Minimum Energy Performance Standards (MEPS) were updated to cover motors, lighting, TV, and RAC appliances (<12 kW) using SEER/EE metrics.
- **Jordan:** Cooling priorities are integrated into its NDC (led by the Ministry of Energy with a 60% focus on RE/EE). Jordan has active MEPS and is addressing data centre energy use, though financial mechanisms remain a key bottleneck.
- **Mauritania:** Sustainable cooling priorities are integrated into Mauritania's NDC 3.0, which explicitly includes energy efficiency measures for residential air conditioning. The NCAP will provide the quantified operational roadmap, costings, and tracking indicators for these targets. Following its ratification of the Kigali Amendment, Mauritania is combining HFC phase-down schedules with appliance MEPS upgrades, low-GWP refrigerant promotion, and technician training. Alignment with the Global Cooling Pledge is currently under formal evaluation by national authorities.
- **Syria:** Prioritises the development of comprehensive cooling and energy efficiency strategies, emphasising the urgent need for technical capacity building—particularly in cooling demand modelling to bridge historical data gaps and baseline deficits.
- **Bahrain:** Currently undergoing institutional restructuring where sustainable cooling has been elevated to a top national priority. Bahrain possesses robust technical expertise in building thermal insulation and passive cooling techniques and welcomes active regional knowledge exchange and best-practice sharing with fellow Arab states.

Question 3

"What are the major regulatory bottlenecks in updating and enforcing Minimum Energy Performance Standards (MEPS), energy labelling, passive cooling and building codes? How does your country address challenges like the informal market and non-compliant imported appliances?"

Answers & Country Discussion Points:

- **Algeria:** Established EE programs and MEPS for RAC and lighting, alongside appliance taxes. **Bottlenecks:** Major challenges in market verification due to lack of testing laboratories (only have lighting testing labs; urgent need for RAC labs). Highly subsidised electricity and low oil prices result in long payback periods, making EE projects less attractive to private/public investors. Exploring gas-fired absorption chillers as an alternative.
- **Tunisia: Bottlenecks:** Human resource capacity constraints and lack of specialised studies/terms of reference (TOR). Market surveillance is enforced by 45 sworn inspectors checking procurement and compliance. National laboratories require urgent upgrades to test low-GWP refrigerants (replacing R410 by 2026, R290, and R32).
- **Djibouti:** MEPS for RAC appliances is currently voluntary (following EU standards). **Bottlenecks:** Absence of accredited testing laboratories to enforce compliance. Collaborating through the Be Cool project (supported by GIZ and EFD) on building energy codes, roof insulation, solar ACs, and capacity building.
- **Jordan:** Requires accredited testing laboratories and structured financing. Uses multiple data platforms, access to finance, and requires a unified national energy data centre.
- **Mauritania:** Key bottlenecks include inter-agency coordination gaps, absence of accredited energy performance testing labs, and unmonitored equipment imports. Mauritania proposes:
  - Updating and enforcing Minimum Energy Performance Standards (MEPS) and energy labels on a phased schedule.
  - Establishing a verified national registry for authorised equipment models.
  - Strengthening border inspection and customs controls with clear penalties for non-compliant equipment.
  - Integrating thermal insulation, shading, and passive ventilation into national building codes.
  - Formalising the informal RAC servicing sector through structured training, certification, registration, and access to proper tooling.
- **Core Regional Bottleneck (Awareness & Sectoral Identity):** A major systemic bottleneck identified across countries is the critical gap in public and institutional awareness regarding sustainable cooling solutions, driven by the lingering misconception of viewing cooling as a passive service rather than a distinct, standalone energy and environmental sector requiring targeted policy measures.

Question 4

"If your country were to accelerate its cooling action plan today, which sub-sector requires immediate intervention and scaled-up support (e.g., agricultural cold chains for food security, health sector cold storage, residential AC demand, or district cooling for urban expansions)?"

Answers & Country Discussion Points:

- **Tunisia:**
  - **Building Sector (>60% of cooling demand):** Primary focus for immediate NCAP reinforcement.
  - **Fishing & Agricultural Cold Chains:** High raw potential to accelerate EE technologies and preserve food security.
  - **Healthcare Cold Chains:** Identified as a critical priority sector; active project proposals (GEEF 8 / IKI) are submitted to secure funding for sustainable medical cooling. Pilot sites for district cooling are also being tested.
- **Djibouti:** Immediate focus on governmental buildings and Health and Food Security cold chains, renewable energy integration, and space cooling energy efficiency to curb emissions.
- **Algeria:** Immediate priority on residential/commercial building cooling efficiency and industrial gas absorption cooling.
- **Jordan:** Priority placed on building space cooling demand, commercial refrigeration, and data centres.
- **Mauritania:** Identifies Food Cold Chains—specifically across the Fisheries, Agriculture, and Livestock sectors, as the immediate national priority. This targets food security, post-harvest loss reduction, producer income protection, and population supply. Interventions will focus on priority transport corridors and cold storage facilities, combining high-efficiency equipment, low-GWP/natural refrigerants, reliable maintenance, and solar-powered cooling integration where feasible. Health sector cold storage (vaccines and medicines) is designated as a secondary immediate priority.

Day (2) PART 1: Implementation of NCAP and the way forward

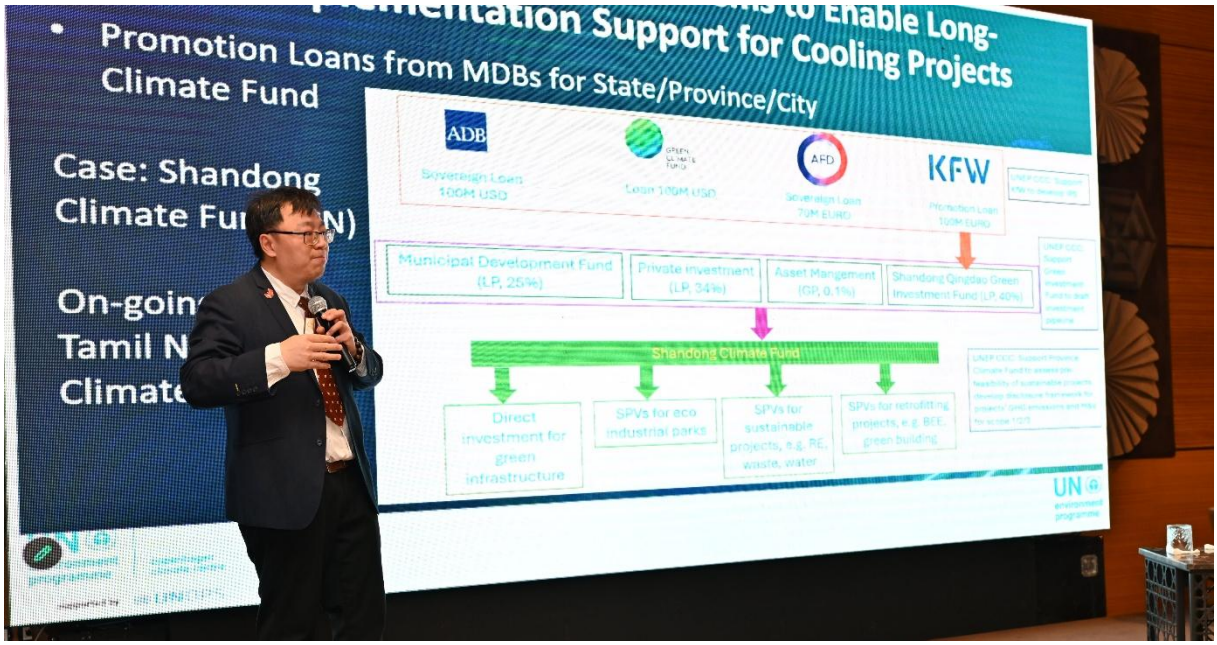
Session (7) Recap of Day 1



Opening the second day, Dr. Maged Mahmoud (Executive Director, RCREEE) delivered a recap of Day 1, highlighting the regional momentum built during the inaugural sessions of the Second Regional NCAP Workshop in Tunis. He emphasized that sustainable cooling has officially transitioned from a luxury into an essential life necessity across the MENA region, where rising extreme heat directly impacts public health, grid stability, and food security.

- **Strategic Rationale & Governance Alignment:** High-level opening addresses from LAS, UNEP, ANME, CCAC, and RCREEE underscored the urgency of breaking the region's vicious heat-energy cycle, where space cooling accounts for nearly 50% of peak electricity demand. Delegates affirmed that establishing permanent inter-ministerial steering committees led by Energy or Environment Ministries is essential to unify fragmented national policies and maintain long-term institutional governance.
- **Methodological Frameworks & Technical Roadmaps:** Technical presentations detailed the 4-stage, 9-step MENA NCAP methodology, advocating a "passive-first" approach (building design and shading) combined with Minimum Energy Performance Standards (MEPS) and Kigali Amendment refrigerant phase-downs. Pilot and replicating country experiences, including Tunisia and Morocco, demonstrated how sectoral baseline modelling and data gap management translate regional framework goals into operational national roadmaps.
- **Roundtable Takeaways & Immediate Priorities:** Insights gathered across seven regional roundtables with representatives from 15 Arab nations confirmed a shared commitment to embedding NCAP priorities directly into updated NDCs (NDC 3.0) and international climate commitments. Participants designated residential space cooling alongside agricultural and healthcare cold chains as the immediate priority sub-sectors requiring scaled-up policy enforcement, testing laboratory upgrades, and bankable investment pipelines.

Session (8) Potential Business Models for Sustainable Cooling and Best Practices



Dr. Zhuolun Chen (Senior Advisor of Energy Efficiency & Green Finance at the United Nations Environment Programme – UNEP) presented a strategic financing framework to bridge the global cooling investment gap, which exceeds USD 1 trillion. The presentation emphasises that sustainable cooling must be treated as essential energy infrastructure rather than retail appliances. To unlock private capital and overcome high upfront equipment costs (15–30% higher) and bank tenor mismatches (5–7-year loans vs. 20–25-year asset lifespans), national cooling plans must transition from traditional debt-financed equipment purchases to bankable, long-term service cash flows backed by creditworthy off-takers.

Key Takeaways

- Infrastructure Mindset: Sustainable cooling is vital energy infrastructure that directly impacts grid stability and fiscal health, requiring financial models to back long-term contracted service cash flows rather than individual appliance sales.
- Strict 3-Step Sequencing: Project development must strictly follow a three-step order: 1) Segment the load, 2) Select the delivery model, and 3) Structure the finance. Reversing this sequence is the primary reason cooling proposals fail to reach financial close.
- Segment-to-Model Matching:
    - Public Buildings & Hospitals: Suited for ESCO / Super ESCO performance contracts paid through energy bill savings (e.g., Saudi Arabia's Tarshid).

- Hotels, Commercial & Data Centres: Suited for Cooling-as-a-Service (CaaS), where customers buy cooling output per unit/m² without upfront CAPEX, cutting customer costs by around 23% and emissions by approximately 49%.
- Dense Urban & Industrial Corridors: Suited for long-term District Cooling concessions secured by public anchor loads (e.g., Tabreed's 30-year concession).

- Explicit Risk Allocation: Projects become bankable only when every downside risk (demand, technical performance, payment credit, tariff, and currency) is assigned to a specific contractual owner before approaching lenders.
- Blended Finance & Portfolio Pipeline: Concessional capital and public grants should be used strategically to fund project preparation, buy down early risks, and provide partial risk guarantees for initial demonstration assets. Standardised contracts then allow individual assets to be aggregated into bankable portfolios for commercial banks and bond markets.

Panel Discussion: Available Financing Mechanisms for the Cooling Sector & Funds Matchmaking



Mr Amr Sleem (Country Engagement and Climate Policy Lead at the UNEP Cool Coalition) delivered an introductory presentation outlining the operational framework for turning NCAPs into bankable investment pipelines across the MENA region. He detailed the four core pillars of the NCAP methodology: Governance, Baseline, Actions, and Delivery. Adapted by UNEP, RCREEE, the League of Arab States, and CCAC to unify fragmented ministerial mandates under a single national table. Highlighting that over one billion people globally lack adequate cooling, he emphasised that sustainable cooling serves a dual purpose by financing both climate adaptation (health and cold chains) and mitigation (energy efficiency and low-GWP refrigerants), unlocking a $600 billion private sector market. Mr Sleem mapped concrete entry points to access climate finance through programs like GEF-9 ($3.9B pledged) and the GCF Cooling Facility ($157M), stressing that public funds must be used to de-risk investments while private markets deliver large-scale market transformation. He concluded by inviting Arab nations to co-develop the Heat Resilience Advisory Roadmap targeting COP31 and COP32. Following his presentation, Mr Sleem moderated the workshop's financial panel discussion focused on unlocking finance for sustainable cooling.

Moderator:

- **Eng Amr Sleem**, Country Engagement and Climate Policy Lead, Cool Coalition, Cities Unit, Mitigation Branch, Climate Change Division, United Nations Environment Programme (UNEP)

Panellists:

- **Mr Jalel Chabchoub**, Chief Investment Officer, African Development Bank (AfDB) - Online
- **Mr Yousri Helal**, Team Leader, Climate Change, Environment, Energy and Disaster Risk Reduction, United Nations Development Programme (UNDP)
- **Dr Maged Mahmoud** – Acting Executive Director, Regional Centre for Renewable Energy and Energy Efficiency (RCREEE)
- **Mr Akram Hamza**, Representative / Expert, German Agency for International Cooperation (GIZ)
- **Eng Nidal Abdallah**, Energy Division Manager, Royal Scientific Society (RSS)





The panel session, moderated by **Eng Amr Sleem** (UNEP Cool Coalition), focused on turning NCAP priorities into bankable investment pipelines and achieving large-scale market transformation across the MENA region. Bringing together key international organisations, development agencies, and financial institutions, the discussion explored strategic mechanisms to de-risk investments, leverage blended finance, establish upstream market prerequisites, and transition from ad-hoc project funding to structured, long-term market implementation

Key Discussion Highlights & Panel Takeaways

- **Development Banking, Subsidy Reform & Sector Pipelines (Mr. Jalel Chabchoub – AfDB):**
  - Energy Subsidy Reform: Identified energy subsidy reduction as a crucial prerequisite to shorten payback periods and make energy efficiency projects financially feasible for private investors.
  - Market Engagement & Risk Sharing: Called for transparent market hearings, clear operational performance standards, and risk-sharing mechanisms across public and private stakeholders.
  - Targeted Sector Programs: Urged countries to define explicit priority needs (mapping specific sectors, sub-sectors, and facilities) and design structured financial programs tailored for food and health cold chains.
- **Strategic Climate Finance & Market Transformation (Mr Yousri Helal – UNDP):**
  - Demand-Reduction Priority: Emphasized that responding to escalating cooling demand must begin with load reduction, building thermal efficiency, passive design, and high-performance cooling systems, rather than solely expanding power generation capacity.
  - De-Risking vs. Indefinite Subsidies: Highlighted that climate finance should be deployed strategically to remove market barriers and de-risk private capital, rather than funding individual cooling equipment indefinitely.
  - UNDP Portfolio & Regional Approach: Outlined UNDP's ongoing initiatives, including the GEF-7 project in Kairouan (Tunisia) and the GEF-8 proposal developed with ANME targeting sustainable agricultural cold chains. Reaffirmed UNDP's support for NCAP/NEEAP preparation, municipal energy efficiency programs, building insulation, and a regional investment framework combining standardised solutions with country-specific financing windows.
- **Technical Cooperation, Standards & The PEEB Cool Strategy (Mr. Akram Hamza – GIZ):**
  - Upstream Bankability: Stressed that project bankability is established long before financing arrives—requiring robust policies, Minimum Energy Performance Standards (MEPS), MRV protocols, and technician certification.

- Combining Grants & Larger Finance: Urged packaging technical assistance and grant funds (e.g., GCF, IKI) alongside commercial debt to offset the upfront costs and risks associated with shifting to low-GWP refrigerants.
- PEEB Cool Framework in Tunisia: Reframed the discussion to highlight the PEEB Cool program (jointly implemented by ANME, GIZ, and the French Development Agency - AFD), detailing the concrete operational support being rolled out to mobilize finance and implement Tunisia's NCAP on the ground.

- **Technology Transition, Technician Capacity & Multilateral Support (Eng. Nidal Abdallah – RSS):**
  - Equipment Economics & Training: Noted that while AC equipment costs have declined significantly (halving in recent years), high upfront investment for sustainable tech remains a barrier. Highlighted extensive engineer and technician training programs for safe low-GWP/natural gas handling.
  - Multilateral Assistance: Highlighted ongoing support from UNIDO for chiller replacement and the Cool Up programme, emphasizing the role of GCF and IKI grants in facilitating technology adoption.
- **Cooling Infrastructure, Data Accuracy & Country Insights (Dr. Maged Mahmoud – RCREEE):**
  - Working Cooling Infrastructure: Highlighted RCREEE's technical work on data accuracy, project aggregation models, anchor demand models, and practical implementation toolkits to aggregate small projects into bankable portfolios.
  - Refrigerant Transition Acceleration: Emphasised accelerating the transition from high-GWP refrigerants (e.g., R410A) to natural alternatives like Propane (R290).
- **Country Case Highlights:**
  - *Libya:* Noted that 95% of domestic water heaters in Libya are electric, presenting a massive opportunity for solar water heating and EE interventions, while highlighting Libya's strong interest in establishing its NCAP.
  - *Tunisia:* Highlighted energy tariff dynamics (1kWh > 10xm^3 gas), strengthening the economic case for solar heating and cooling efficiency.
  - *Proven Regional Successes:* Cited scalable regional benchmarks, including lighting replacement programs, high-efficiency AC initiatives, Super ESCO support, rooftop PV, solar water heating, and RAC/fan efficiency programs.

Day (2) PART 2: Knowledge sharing from the implemented NCAPs in the region

This session included presentations on the experiences of Egypt, Jordan, Djibouti and Lebanon in developing and implementing their National Cooling Action Plans, intending to share knowledge, lessons learned, and best practices, as follows:

Session (9): Insights from Cool Up Program (Lebanon and Egypt's NCAPs)



Ahmed Abdelrasoul (Senior Environmental Expert, Cool Up Project) presented practical insights, sectoral baselines, and emissions reduction pathways from National Cooling Action Plan (NCAP) implementation in **Lebanon** and **Egypt** under the **Cool Up Programme**. Funded by the International Climate Initiative (IKI), Cool Up addresses escalating cooling demand across four target countries (Egypt, Jordan, Lebanon, and Türkiye) by integrating policy, financial models, natural refrigerants, and capacity building. The presentation outlines baseline emission inventories, business-as-usual (BAU) versus mitigation scenarios, and phased national roadmaps designed to meet Kigali Amendment phase-down targets and Paris Agreement commitments.

Key Takeaways

- The Cool Up Strategic Pillars: Operate across four main pillars: 1) Reducing cooling demand, 2) Supporting HFC phasedowns, 3) Replacing/safely disposing of inefficient equipment and refrigerants, and 4) Improving appliance operation, technician training, and public awareness.
- Lebanon Case Study (Emissions & Targets):
  - *Grid & Emission Impact:* Air conditioning and refrigeration consume around 26% of national electricity (6.0–6.2 TWh in 2024) and generate 8.2 Mt CO_{2e} annually. Unitary AC (53%) and Mobile AC (18%) represent the largest emission drivers.

- *Mitigation Impact:* Proposed interventions can save 1,220 GWh of electricity annually and avoid 0.85 Mt CO_{2e} per year by 2035.
- *Policy Levers:* Establishes mandatory MEPS with LIBNOR, tighter building energy codes (target <150 kWh/m^2, cool roofs, and HCFC phase-down progress).

- Egypt Case Study (Scenarios & Phased Roadmap):
  - *BAU vs. Mitigation Scenarios:* Without intervention, Egypt's cooling emissions are projected to rise by 68% by 2050 (from approximately 35 Mt CO_{2e} in 2020 to 59 Mt CO_{2e}). An ambitious mitigation scenario can reduce cooling emissions by 81% relative to 2020 levels (around 7 Mt CO_{2e}).
  - *Kigali HFC Phase-Down:* Mandates a consumption freeze (2024–2028), followed by reductions of 22% (by 2029), 50% (by 2040), and 80% (by 2045), alongside an R410A manufacturing end by 2028.
  - *3-Phase Implementation:* Phase 1 (2026–2028) builds foundations (building codes, F-gas safety rules, cold chain pilots); Phase 2 (2029–2033) scales MEPS, technician certification, and youth/women workforce inclusion; Phase 3 (post-2033) integrates smart-grid demand response and natural refrigerants.
  - Institutional Governance: Egypt's NCAP execution is led by the National Committee for Sustainable Cooling (established under Environment Ministerial Decree No. 50/2024), co-led by MOE/EEAA/NOU in coordination with EOS, HBRC, MoERE, CBE, and CAPMAS).

Session (10): Insights from The Kingdom of Jordan's NCAP

Robin Adel Robin Assaf (Ministry of Environment, Jordan) presented Jordan's national experience, policy progress, and strategic priorities in developing its NCAP under the **Cool Up Programme**. The presentation details Jordan's baseline cooling energy demand, regulatory frameworks, and mitigation roadmaps designed to address escalating summer heat, enforce energy efficiency standards, accelerate the transition toward low-GWP refrigerants under the Kigali Amendment, and align national cooling goals with Jordan's NDCs.



Key Takeaways

- National Context & Cooling Challenge: Addresses Jordan's rising ambient temperatures and rapidly growing cooling demand, which places severe pressure on national electricity infrastructure and peak grid capacity.

- Policy & Refrigerant Phase-Down: Integrates Kigali Amendment obligations into national policy, establishing roadmaps to phase down high-GWP HFCs while promoting low-GWP and natural refrigerant alternatives across air conditioning and commercial refrigeration.
- Energy Efficiency & Demand Reduction: Emphasises mandatory Minimum Energy Performance Standards (MEPS) and appliance labelling, alongside building thermal performance codes and passive cooling techniques (e.g., shading, building envelopes).
- Priority Sectors: Focuses on high-impact subsectors, primarily residential split ACs, commercial building HVAC, and food/medical cold chain infrastructure essential for national health and food security.
- Governance & NDC Integration: Demonstrates the Ministry of Environment's role in leading cross-sectoral coordination to ensure NCAP implementation measures directly support Jordan's NDCs and climate finance mobilisation.

Session (11): Insights from Djibouti's NCAP



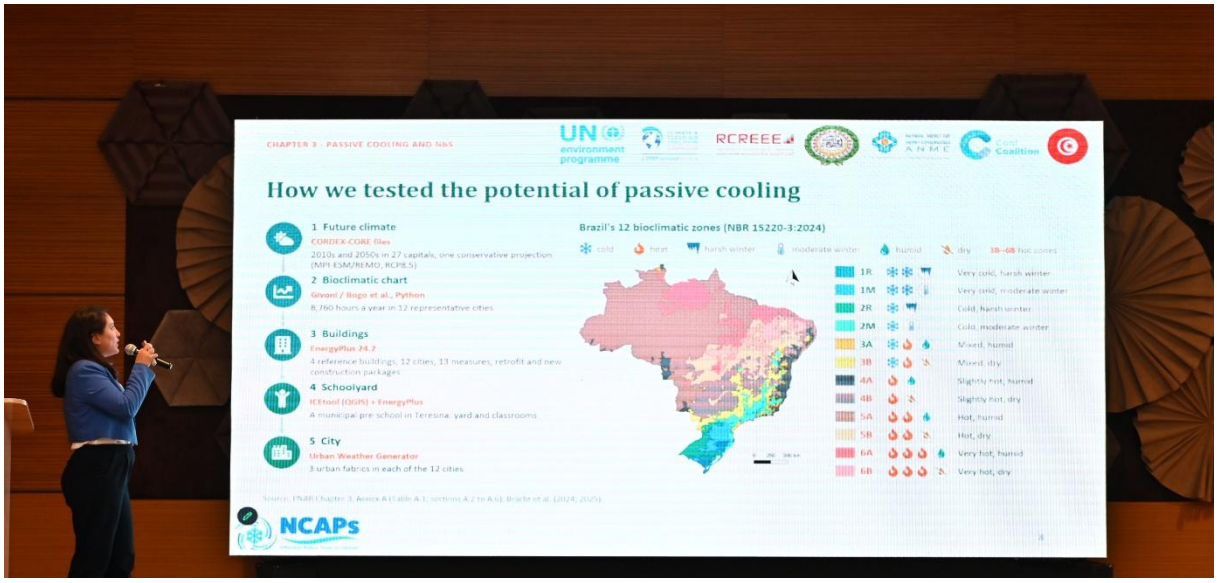
Eng. Ali Adaweh (Directeur de l'Efficacité et de la Maîtrise de l'Energie – Director of Energy Efficiency and Energy Management, Djibouti) presented Djibouti's experience as one of the two initial pilot countries in developing its NCAP using the regional NCAP-MENA. The presentation outlines Djibouti's baseline cooling demand assessment and sector-specific strategies across space cooling, refrigeration, and cold chains under severe high ambient temperatures, establishing an integrated roadmap to improve energy efficiency, phase down high-GWP refrigerants, and expand sustainable cooling access.

Key Takeaways

- Pilot Country Leadership: Highlights Djibouti's foundational role alongside Morocco as a regional pilot country chosen to validate and adapt the regional NCAP methodology for the MENA region.
- Extreme Heat & Cooling Access: Addresses Djibouti's severe tropical climate and high ambient temperatures, framing sustainable cooling as a critical necessity for public health, food security, and energy grid stability.
- Sectoral Baselines & Data Gaps: Establishes baseline inventories and growth projections across residential space cooling, public facilities, and health/agricultural cold chains while addressing national data constraints.

- Standards & Refrigerant Transition: Integrates appliance Minimum Energy Performance Standards (MEPS) and building envelope measures with Kigali Amendment HFC phase-down protocols.
- Governance & Implementation Roadmap: Outlines institutional coordination mechanisms to engage cross-sectoral stakeholders and connect NCAP priorities with bankable climate finance pipelines.

Session (12): Heat Resilience Starts Before the Air Conditioner: Lessons from Brazil's National Cooling Action Plan.



Dr. Lorena Carvalho (Passive Cooling and Energy Specialist, Cooling and Buildings Unit, Climate Change Division at the United Nations Environment Programme – UNEP) presented "Heat resilience starts before the air conditioner: lessons from Brazil's National Cooling Action Plan". The presentation highlights Brazil's strategic approach to urban heat resilience, emphasising that sustainable cooling begins with passive building design, thermal insulation, and urban shading to reduce thermal loads before relying on mechanical air conditioning.

Key Takeaways

- Passive-First Mindset: Prioritises demand reduction (cool roofs, natural ventilation, building envelopes, and solar shading) as the essential first line of defence before deploying mechanical AC systems.
- Heat Resilience & Equity: Frames cooling as a public health and social protection priority, ensuring heat-vulnerable populations achieve indoor thermal comfort through passive design even during power outages.
- Grid Peak Mitigation: Prevents grid overload and lowers energy infrastructure costs by reducing baseline space cooling demand across residential and commercial sectors.

- Policy Alignment: Combines passive building codes with Minimum Energy Performance Standards (MEPS) and Kigali refrigerant transition roadmaps for a comprehensive, multi-layered cooling strategy.
- Replication Lessons for MENA: Offers practical governance insights for integrating passive cooling requirements into local building regulations, urban master plans, and NDCs.

Session (13): NCAP results and connections to NDC

Dr. Zhuolun Chen (Senior Advisor of Energy Efficiency & Green Finance at the UNEP Copenhagen Climate Centre and UNFCCC Roster of Experts for BTR & Article 6.2 NIR Review) presented an operational framework for connecting NCAP evidence directly into national climate commitments. The presentation details how country baselines, scenario projections, and mitigation options can be structured into accountable delivery routes for NDCs, BTRs, and Article 6.2 cooperative approaches. By introducing a 5-step auditable results chain and four essential data controls, the framework ensures that cooling emission reductions and resilience benefits are transparently measured, verified, and reported without double counting.

Key Takeaways

- NCAP as the Delivery System for NDCs: Positions the NCAP as the operational delivery engine behind national NDC cooling targets, transforming qualitative climate commitments into evidence-based, accountable implementation pathways with named institutional owners.
- Dual Mitigation & Resilience Results: Highlights that single cooling interventions yield two distinct outputs: an *emissions mitigation result* (accounted for under GHG inventories and NDCs) and a *development/resilience result* (tracked under national adaptation frameworks).
- Four NDC Entry Points: Outlines four specific entry points for NCAP data within NDC architecture: 1) Quantified implementation measures, 2) BAU and NCAP scenario projections, 3) Progress tracking indicators with named data owners, and 4) Costed investment and support needs.
- 5-Step Auditable Results Chain: Requires every cooling measure to follow a strict 5-step chain (Baseline ➔ Intervention ➔ Physical Output ➔ Measurable Result ➔ Owner & Validation) to render projects fit for climate finance appraisal and international review.
- Four Rigorous Data Controls: Establishes four rules to maintain data integrity under UNFCCC review: 1) Stating reference baselines and cut-offs, 2) Maintaining physical metric traceability (retaining raw mass of refrigerant gas in kg/tonnes and kWh before converting to CO_2, 3) Accounting for policy interactions to prevent double counting across overlapping measures, and 4) Reporting achieved mitigation only when backed by monitored evidence.

- Inventory Crosswalk & BTR Alignment: Provides a structured crosswalk mapping cooling energy use to Energy sector inventories (1.A) and HFC refrigerant leakage to IPPU (2.F.1), while feeding policy indicators directly into BTR common tabular formats (CTF 4 & 5).

Session (14): Closing Remarks

In conclusion, the workshop underscored that moving from strategic planning to active, on-the-ground implementation is now an urgent imperative for sustainable cooling across the MENA region. As countries transition to the next phase, priority must be placed on converting National Cooling Action Plan (NCAP) roadmaps into bankable investment pipelines, enforcing Minimum Energy Performance Standards (MEPS), integrating cooling targets into updated NDCs (NDC 3.0), and establishing robust MRV frameworks. RCREEE, UNEP, the League of Arab States, and regional technical partners reaffirm their full readiness and open commitment to supporting any Arab country seeking to initiate, refine, or accelerate the implementation of its National Cooling Action Plan through technical assistance, capacity building, and knowledge exchange.

Summary, Conclusions, Recommendations for Next Steps

Executive Summary

The Second Regional Workshop on NCAPs in the MENA Region, convened in Tunis on 28–29 October 2026, brought together over 45 high-level delegates from 15 Arab nations alongside international experts, financial institutions, and bilateral agencies. Jointly organised by RCREEE, the League of Arab States (LAS), UNEP Cool Coalition, CCAC, and hosted by Tunisia's ANME, the workshop marked a strategic transition from framework formulation to operational execution. Through technical presentations, country case studies, regional roundtables, and a dedicated financing panel, the gathering established a unified MENA NCAP methodology, aligned cooling targets with NDC 3.0 commitments, and outlined concrete pathways to unlock bankable climate finance across the region.

Strategic Conclusions

- Cooling as Vital Infrastructure: Sustainable cooling has officially shifted from a luxury convenience to an essential life necessity across the MENA region, where extreme summer temperatures regularly exceed 50°C and space cooling accounts for nearly 50% of peak electricity demand.
- The "Passive-First" Cooling Hierarchy: Long-term climate resilience requires prioritising demand-reduction interventions, such as passive building design, cool roofs, and urban shading, before deploying high-efficiency mechanical systems and transitioning to low-GWP refrigerants under the Kigali Amendment.
- NCAP as the Operational Delivery Engine for NDCs: National Cooling Action Plans serve as the primary mechanism to translate qualitative climate goals into auditable, evidence-

based mitigation and adaptation outcomes, directly feeding progress indicators into NDC 3.0 updates and Biennial Transparency Reports (BTRs).

- Shift to Service-Based Financial Models: Overcoming high upfront equipment costs requires transitioning from traditional debt-financed asset purchases to contracted service models, such as Cooling-as-a-Service (CaaS) and ESCO performance contracts, backed by creditworthy off-takers and blended finance risk-sharing tools.

Recommendations for Next Steps

Area	Recommended Action
Institutional Governance & Continuity	▪ Establish Permanent Steering Committees: Formally mandate inter-ministerial Steering Committees co-led by Energy or Environment Ministries, ensuring post-project governance, budget allocation, and multi-sectoral oversight across housing, health, agriculture, and finance. ▪ Institutionalise National Cooling Taskforces: Empower technical secretariats (such as National Ozone Units and Energy Efficiency Agencies) with clear mandates to coordinate data collection, stakeholder engagement, and strategy updates.
Policy Alignment & Climate Reporting	▪ Embed NCAPs into NDC 3.0 & BTRs: Integrate costed cooling mitigation measures and 5-step auditable results chains into updated NDCs, mapping energy savings to Energy sector inventories (1.A) and HFC phase downs to IPPU (2.F.1) for BTR common tabular formats. ▪ Update & Enforce Regulatory Frameworks: Accelerate the adoption of mandatory Minimum Energy Performance Standards (MEPS), energy labelling schemes, and thermal building codes tailored for High Ambient Temperature (HAT) conditions.
Market Surveillance & Technical Capacity	▪ Upgrade Testing Laboratories: Invest in accredited regional and national testing facilities to enforce market compliance, detect counterfeit imports, and support safe testing of flammable, low-GWP natural refrigerants (e.g., R290, R32). ▪ Formalise RAC Servicing Sector: Roll out mandatory technician certification programs, safety training, and proper recovery/recycling/reclamation (3R) tooling to mitigate servicing leakage, which accounts for nearly 75% of regional refrigerant consumption.
Sectoral Acceleration Priorities	▪ Scale Building Efficiency: Prioritise energy retrofits, cool roofs, and high-efficiency AC deployment in residential and commercial buildings, which represent over 60% of regional space cooling demand. ▪ Strengthen Sustainable Cold Chains: Mobilise targeted investments for agricultural (fisheries, livestock, produce) and healthcare (vaccines and medical storage) cold chain corridors to protect food security and public health.

Area	Recommended Action
Financing & Project Preparation	▪ Develop Bankable Concept Notes: Utilise public grants and technical assistance (via PEEB Cool, Cool Up, GIZ, and UNDP) to prepare project pipelines for global climate funds, including GEF-9 ($3.9B window) and the GCF Cooling Facility ($157M). ▪ Deploy Blended Finance & Aggregation: Leverage Super-ESCOs, partial risk guarantees, and aggregated portfolio structures to bundle small-scale cooling assets into bankable investment packages for commercial lenders.
Regional Cooperation & COP Roadmap	▪ Expand Support to Next-Round Countries: Technical partners (RCREEE, UNEP, LAS) will extend the regional NCAP methodology to the next group of 10 Arab states under the Regional Technical Advisory Group (RTAG). ▪ Co-Develop the Heat Resilience Roadmap: Invite member states to contribute to the regional Heat Resilience Advisory Roadmap, scheduled for kick-off at COP31 and official launch at COP32.

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Annex

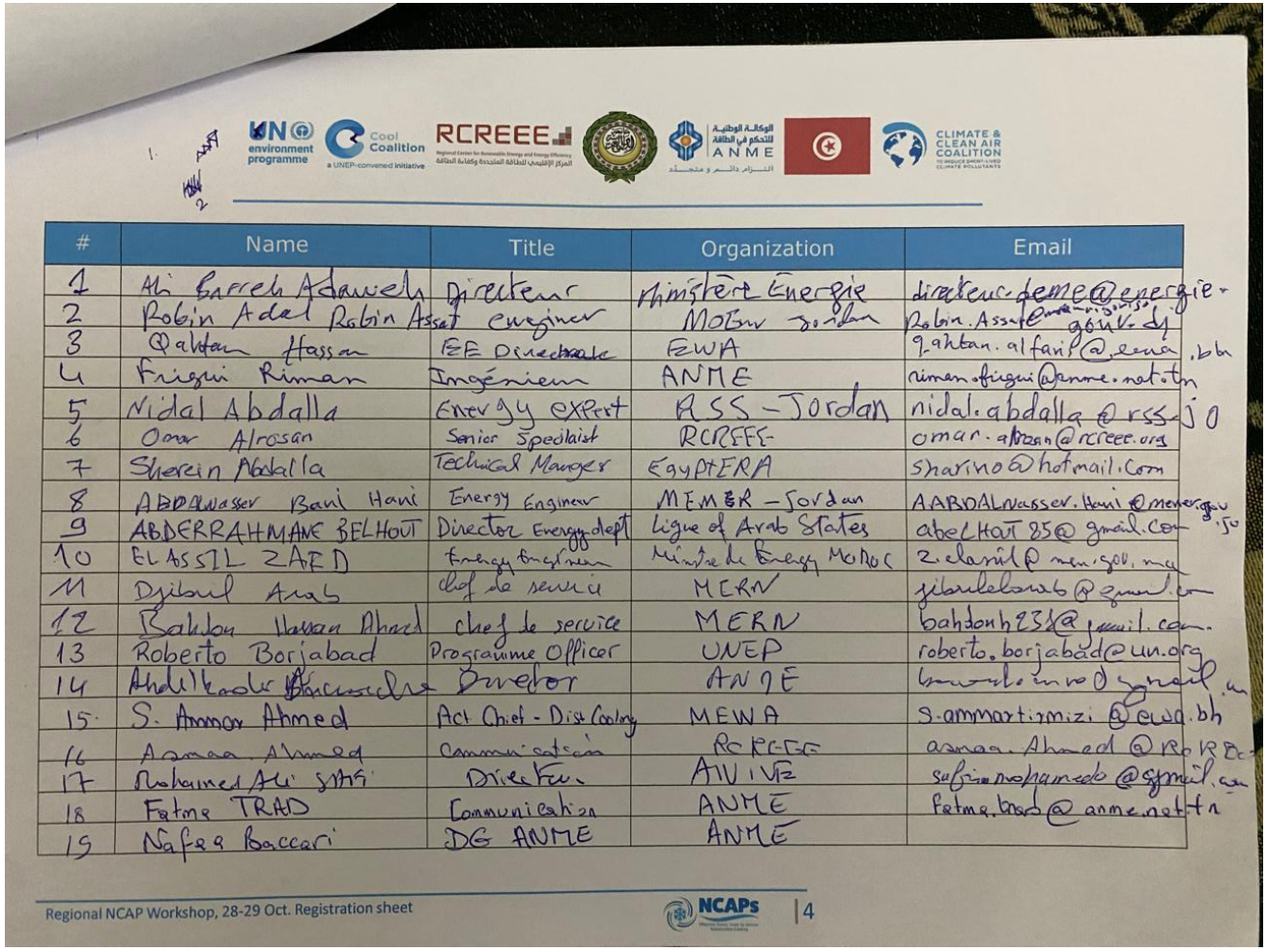
Photos

Link to the event Photos

Presentations of the Workshop

#	Session Title	Link
1	Welcoming remarks, context setting, and event objectives	-
2	The Global NCAP Methodology	1_Lorina.pdf
3	Roadmap for MENA NCAP Implementation: Operational steps, sector scope, and integration pathways	2_Mostafa.pptx
4	Setting the NCAP Regional Scene: Cross-Country Analysis & Priority needs for MENA NCAPs	3_Alshymaa.pptx
5	Knowledge sharing from the implemented NCAP in Tunisia	1_BACCOUCHE.pptx
6	Knowledge sharing from the implemented NCAP in Morocco	2_Radouane HANAN.pptx
7	Panel Discussion: Available financing mechanisms for the Cooling Sector & funds Matchmaking	2_Amr.pptx
8	Potential Business Models for Sustainable Cooling and Best Practices	1_chen.pdf
9	Knowledge sharing from Cool Up program and the implemented NCAP in Egypt and Lebanon	4_Rasoul.pptx
10	Knowledge sharing from the implemented NCAP in the Kingdom of Jordan	5_Robin .pptx
11	Knowledge sharing from the implemented NCAP in Djibouti	3_Ali.pptx
12	Heat resilience starts before the air conditioner: lessons from Brazil's National Cooling Action Plan.	6_Lorina.pptx
13	NCAP results and connections to NDC	7_chen.pdf
14	Closing Remarks	-

Attendance



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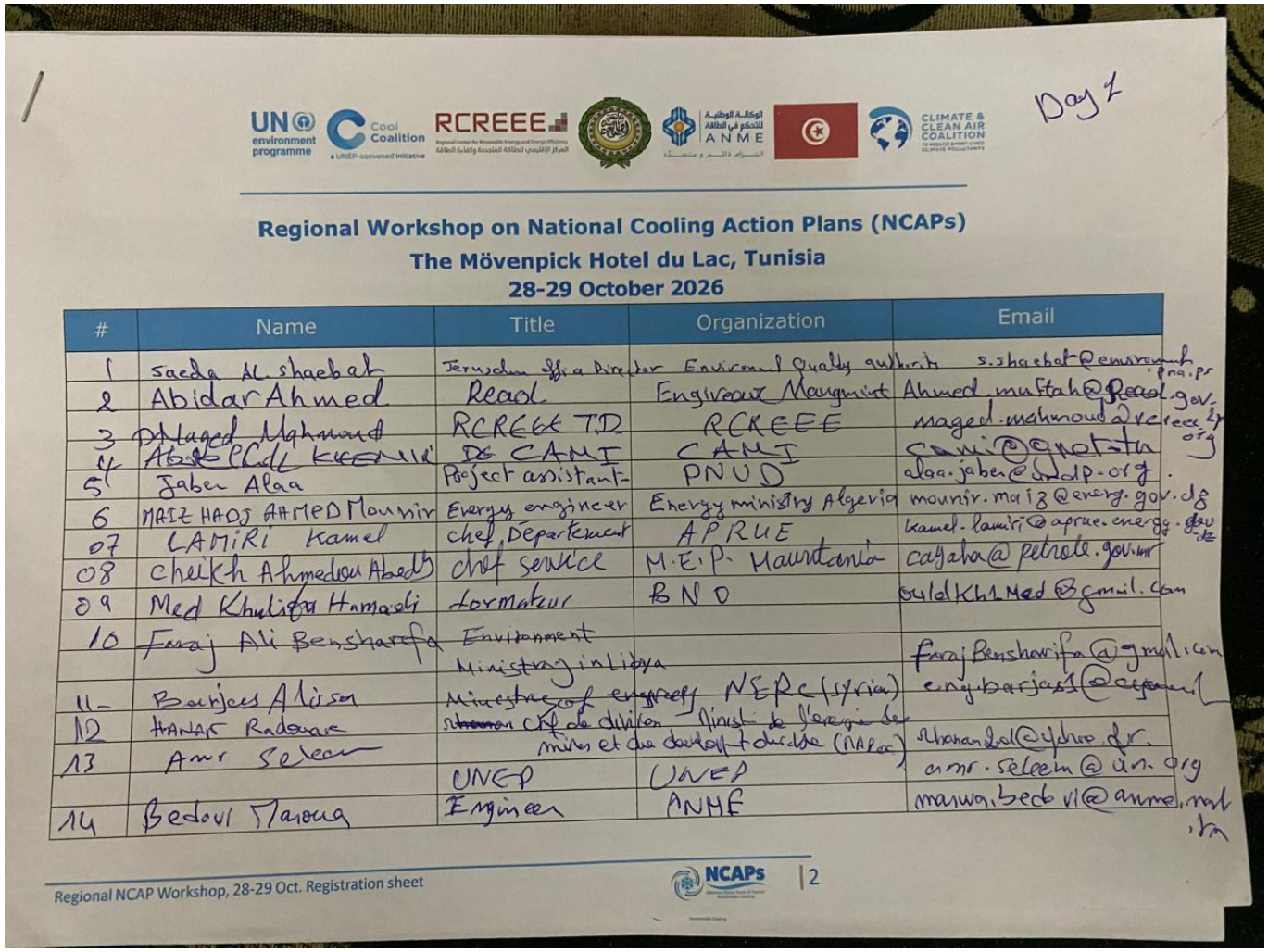
Regional NCAP Workshop, 28-29 Oct. Registration sheet

NCAPs | 4



Day 1

Regional Workshop on National Cooling Action Plans (NCAPs)

The Mövenpick Hotel du Lac, Tunisia

28-29 October 2026

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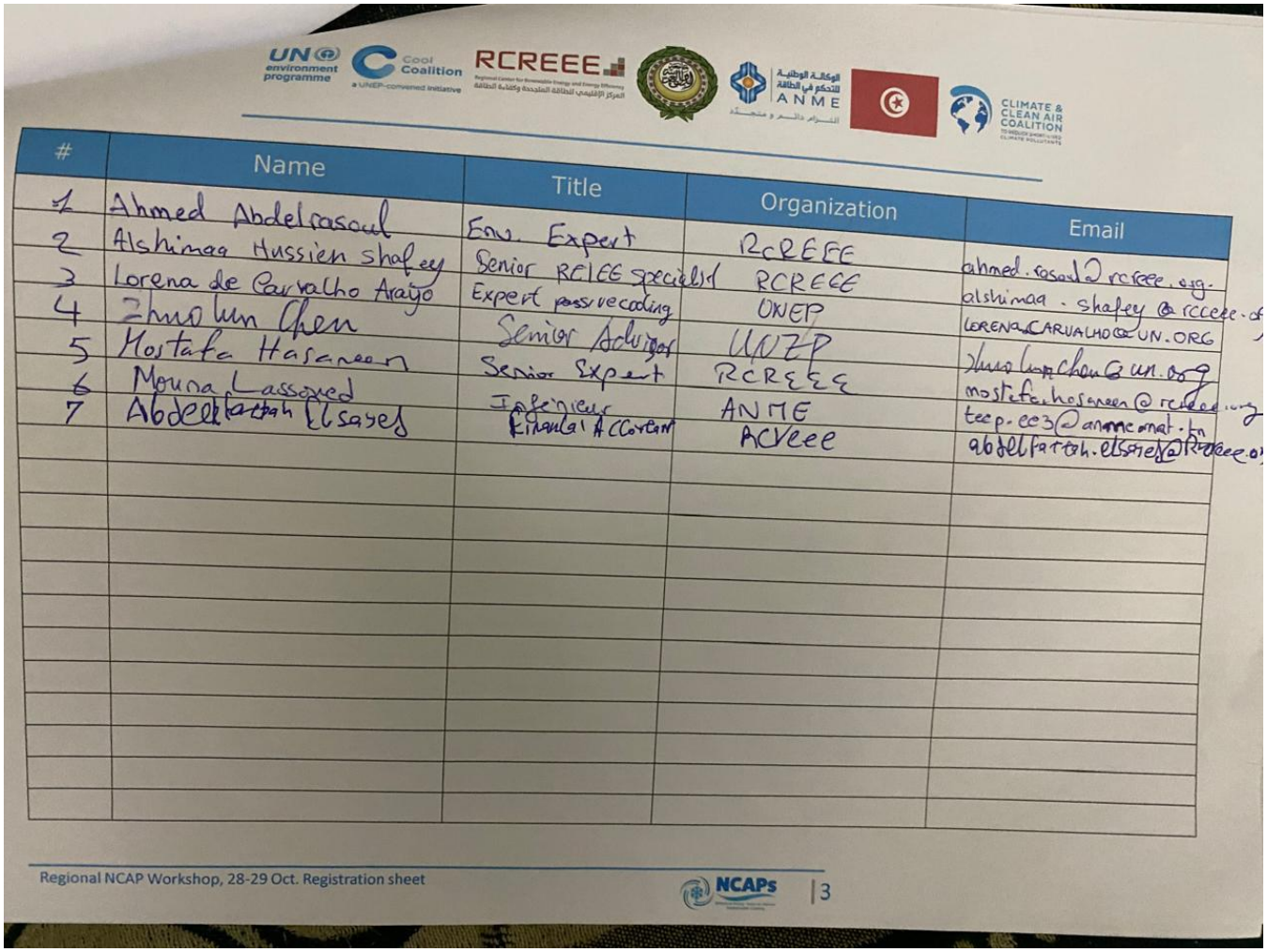
NCAPs | 2



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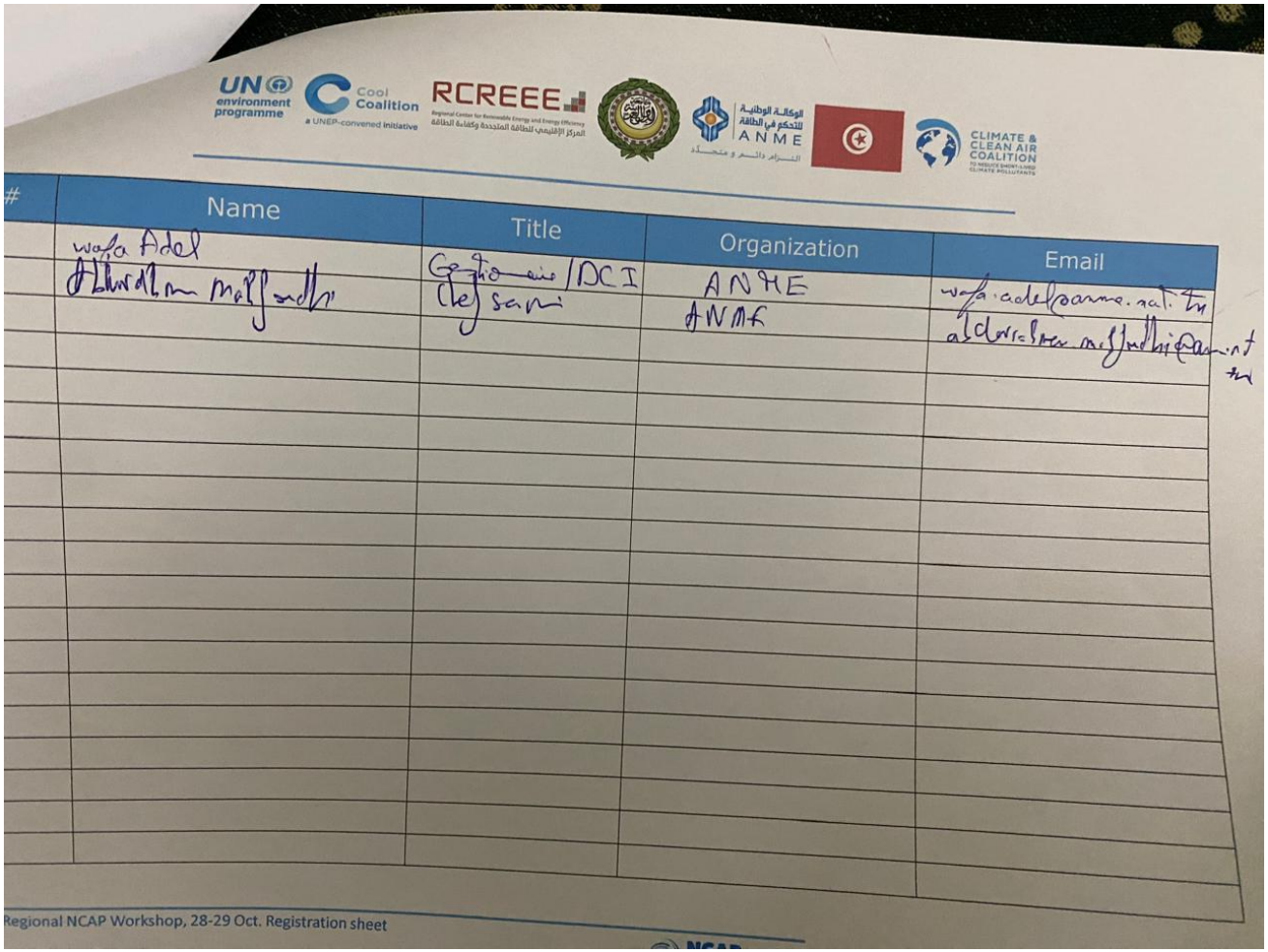
Regional NCAP Workshop, 28-29 Oct. Registration sheet

NCAPs | 3



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RCREEE

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