



GLOBAL COOLING PLEDGE ASSEMBLY

SINGAPORE 15 - 18 SEPTEMBER 2026

Parallel Session: Regional Country Dialogues

Asia-pacific Dialogue: Heat Resilience and Cooling Action

13:30 – 14:30, 15 September 2026



Ministry of Sustainability
and the Environment
— SINGAPORE —



Opening remarks



Calvin Chong

Divisional Director
Energy and Climate Policy, Ministry of
Sustainability and the Environment
Singapore



Shaun Seow

CEO
Philanthropy Asia Alliance (PAA)



Lily Riahi

Head of Unit
Buildings and Cooling, UNEP

Delivering on Cooling Ambitions through Public, Private and Philanthropic Partnerships - Cambodia Case Study



H.E. Pak Sokharavuth

Under Secretary of State
Ministry of Environment
Cambodia



H.E. Chhann Sorphal

Deputy General Director
Ministry of Land Management Urban
Planning and Construction



Mark Low

Director
Design Strategy and Climate &
Sustainability, Lead at ISI Land, ISI
Group Developer

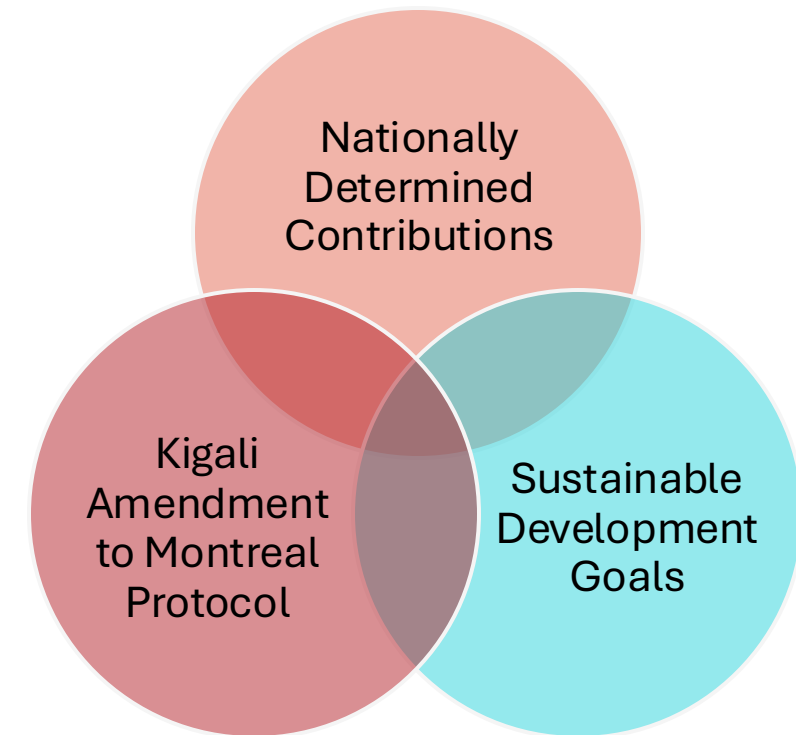
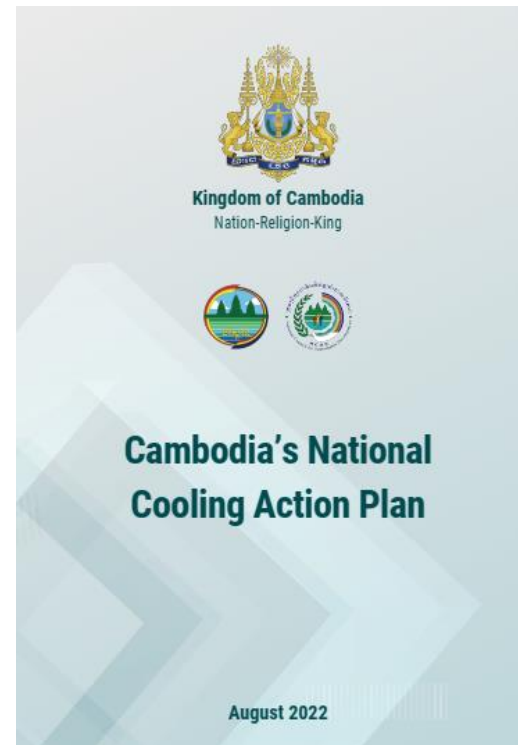
Development of NCAP for Cambodia



Cambodia in collaboration with UNEP and ESCAP started the development of the **National Cooling Action Plan for Cambodia** in the context of Cool Coalition

The NCAP identifies comprehensive actions to reduce **energy use** and **emissions** from cooling, aligned with plans related to emissions from **refrigerant transition**.

- Cambodia: **First country to pilot** the Cool Coalition comprehensive methodology
- NCAP for Cambodia covers the following important cooling sectors:
 - Space cooling in buildings
 - Cold-chain & refrigeration (food and healthcare)
 - Mobile AC
 - Industrial process cooling
- **Access to cooling** is particularly important for Cambodia, as it is presently quite low across cooling sectors, but is likely to expand, driven by economic growth and increasing incomes



Overview: Passive Cooling Strategies for Sustainable Development in Cambodia



- Launched in December 2022
- Implemented by the Ministry of Environment with support from UNEP and ESCAP
- Technical support from ITC
- Collaboration with the Ministry of Land Management, Urban Planning and Construction (MLMUPC), Ministry of Mines and Energy (MME), Development partners (UNDP, GGGI, Geres), and private sector developer (Urbanland)

Passive Cooling Strategies = building design and construction approached to reduce the need for active cooling, support greater thermal comfort for occupants

Leading National Entities



ក្រសួងបរិស្ថាន
MINISTRY OF ENVIRONMENT

In Partners with



In Cooperation and Coordination with:



Ministry of Land
Management
Urban Planning and
Construction



Ministry of Mine and
Energy



Partner: UNDP, GGGI,
WWF, Geres, etc



Institute of
Technology
of Cambodia



Key Area and practical implementation model



Demonstration

Demonstration of passive cooling strategies

Data gathering and assessment of energy and emissions savings

Understanding of market readiness and scalability



Policy Enhancement

Integrated to NDC 3.0, CCCSP 2024-2033, environmental frameworks, and National Building codes

Minimum performance provisions for passive cooling outlined



Tools for Practitioners

Publishing the Compendium of Passive cooling strategies

National Design Guidelines for Passive Cooling Strategies in Cambodia



Awareness and Capacity Building

Inter-governmental and multi-stakeholder workshops

Community of Practice training programme

Website and toolkits

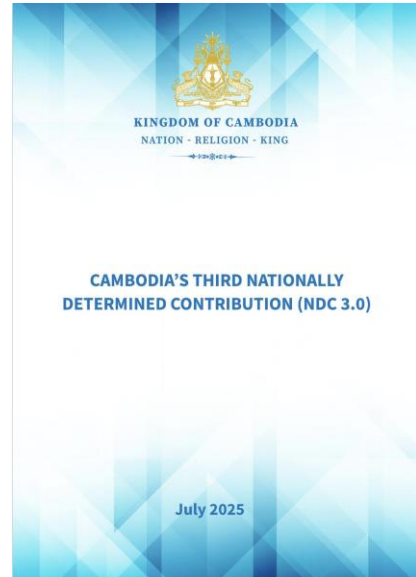
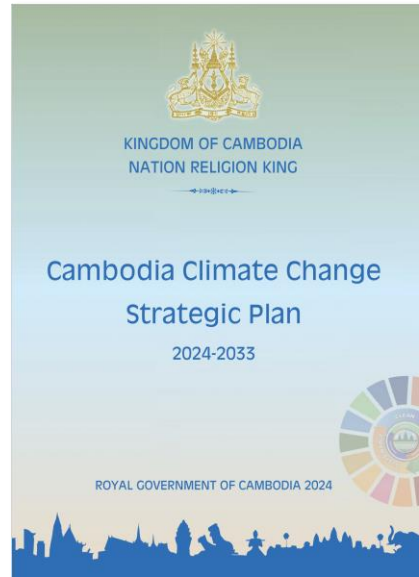
Demonstration

The project deployed and tested key passive technologies on actual commercial and residential buildings in Phnom Penh:

- **Demonstration of passive cooling strategies** by applied cool roof paint, Solar window film, cool pain on elevations.
- **Data gathering and assessment of energy and emissions savings:** Sensor monitoring to validate thermal comfort and reduce HVAC load.
- **Understanding of market readiness and scalability**

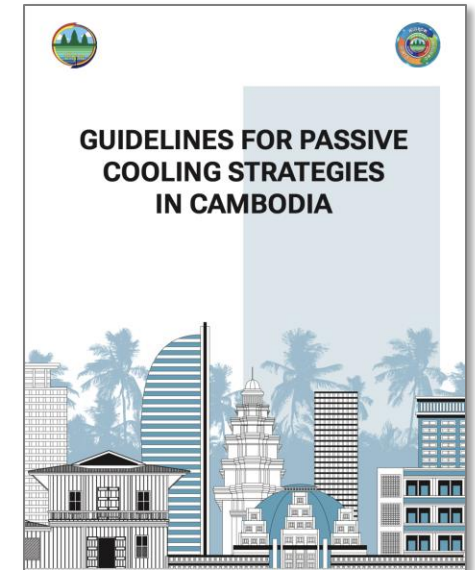
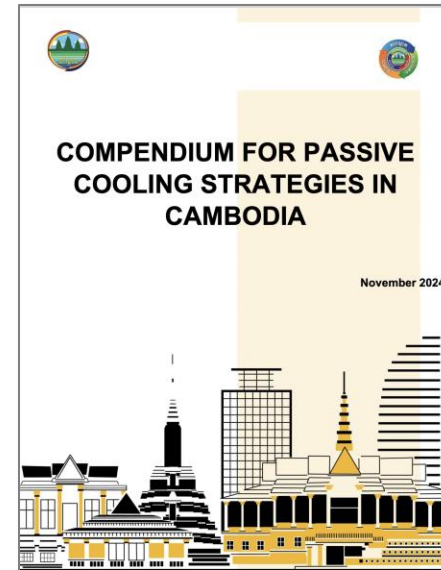


Policy Enhancement



- Embedding passive cooling commitments directly into Cambodia's Third Nationally Determined Contribution (NDC 3.0), Cambodia Climate Change Strategic Plan 2024-2033, the Environmental Impact Assessment (EIA) framework and Forthcoming Building Regulation
- Minimum performance provisions for passive cooling outlined

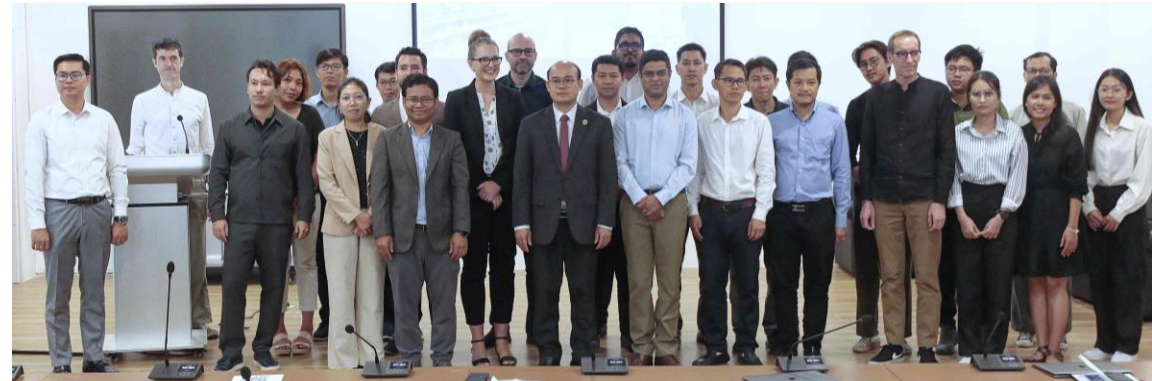
Tools for Practitioners



- Technology mapping: Compendium of applicable and available passive cooling strategies
- Guidelines for Passive Cooling Strategies in Cambodia

Capacity Building

- Inter-governmental and multi-stakeholder workshops,
- National Community of Practice training Programme



Awareness

- Website
- Tools for practitioners & decision-makers
- Augmented reality



Anticipated Impacts



Passive cooling is considered a priority by building sector stakeholders.



2% of the existing building stock is retrofitted and 20% of new stock utilizes passive cooling strategies.



Unlocked energy savings potential of 10%–20%, compared to conventional buildings.



Performance requirements are integrated into new building energy regulation, resulting in an increase on the uptake of these solutions.



PCS policies and practices are accounted and monitored in the GHG inventory and contribute to achieving NDC commitments.



Based on estimates, the project implementation would contribute cumulatively around nearly 3 MtCO₂eq reduction by 2035.



CHILL

Cooling Home-Innovative & Low-Impact Living



Objective

The CHILL Project aims to enhance living conditions and climate resilience for urban populations by implementing cost-effective, energy-efficient retrofitting solutions and practices for cooling.

April 2025 - March 2027

Funded By



In Collaboration with



Implemented By



Project Overview and Scope



Duration

24 Months

(April 2025 - March 2027)



Geography

Phnom Penh, Cambodia



Direct Beneficiaries

560 Individuals

100 households

15 SMEs & **2** MFIs

50 Government stakeholders

15,000 Individual

Target Building Types and Beneficiaries



Target Building Types

Low- to middle-income residential buildings, including single-family homes and multi-family units.



Target Beneficiaries

The targeted households predominantly fall within the low- to middle-income brackets between \$1,026 - \$4,035.

Project Objective



Enhance Thermal Comfort

Implement energy-efficient retrofitting practices in urban residential sectors.



Demonstrate and Raise Awareness

Establish 3 demonstration sites and conduct behavior change campaigns to raise awareness about the benefits of energy efficiency and thermal comfort.



Increase Market Adoption

Promote the adoption of energy-efficient retrofitting solutions among local SMEs, financial institutions, and households.



Promote Financial Access

Collaborate with local financial institutions to develop and provide affordable financing options for retrofitting projects.



Build Capacities

Train and empower 30 craftsmen from 15 SMEs to implement energy-efficient retrofitting techniques.



Support Policy integration

Integrate energy-efficient retrofitting practices into national and municipal housing policies.



Usage and maintenance

Promote usage of energy-efficient solutions to ensure long-term benefits and user engagement.



Develop a replicable model

energy-efficient retrofitting that can be scaled to other urban areas in Cambodia.

Project Outcomes



20%

Energy demand is reduced in urban housing through energy-efficient retrofitting.



9

Energy-efficient cooling solutions are implemented in Phnom Penh's urban residential areas.



480

Improved thermal comfort for 480 people benefitting from retrofitted households.



5 °C

Diminution of at least 5°C of inside temperature compared to outside temperature during warmest periods in retrofitted households.



15000

Increased awareness among 15 000 people about the benefits of energy efficiency and thermal comfort, through targeted campaigns.



15

Enhanced capacity of 15 SMEs and 30 craftsmen in the construction sector.



9

Making available quick guidance products for passive Cooling. with 9 Technical Brief Solutions.



2

Sustained collaboration with 2 local financial institutions.



Demonstrated potential for scalability, including estimated size of the pipeline/market, accompanied by a proposed framework.

Project Progress



Output 1

Initiation of the demand for efficient and performant solution for better comfort in housing through situation analysis and identification of technical solution.

R1.1 Identification of domestic use of energy in urban area

R1.2 Identification of existing appropriate usage solutions

R1.3 Identify the levers to trigger the demand for retrofiting

Output 2

Enhanced energy efficiency and thermal comfort through private sector capacity building and demonstration sites showcasing practical technical solutions.

R2.1 Characterization of the retrofiting and maintenance offer in the sector

R2.2 Co-develop and design the solution for maintenance and retrofiting

R2.3 Identify the levers to trigger the demand for retrofiting

Output 3

An inclusive framework for multi-stakeholder operationalization to disseminate solutions is developed, tested, and deployed embedded with financial options.

R3.1 Financing Options & Credit Pathways

R3.2 Disseminate the solutions

Output 4

A framework for scaling up energy-efficient practices and sustainable cooling solution is created

R4.1 Characterization of the retrofiting and maintenance offer in the sector

- **Project steering committee:** 1st steering committee meeting launched.
- **Mongolia study tour:** Coordination with stakeholders and preparation for the upcoming visit are ongoing.

ISI Land × Passive Cooling Strategies

Scaling green infrastructure across Borey Chankiri and the
Prek Tnoat River corridor



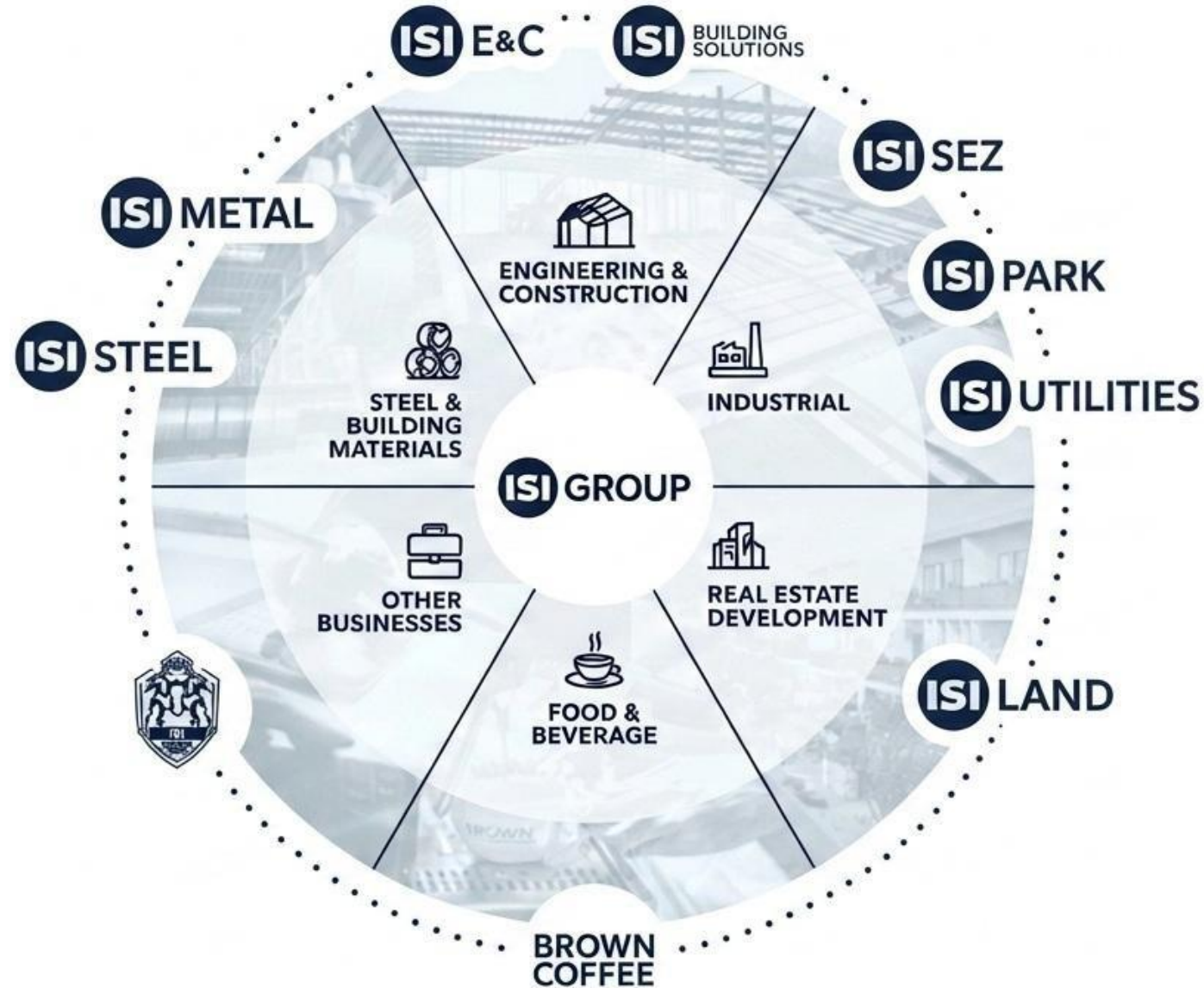
Phnom Penh, Cambodia

Creating Inspirational Spaces

Creating inspirational spaces for people to live, work and play in, with absolute attention to craft, quality, and durability.

- Meaningful spaces to grow and thrive in
- Exceptional investment opportunities that strengthen communities and leave a lasting impact in Cambodia
- Design inspired by how we live today, defining how we will live tomorrow
- Award-winning developer, and a member of the wider ISI Group





CREATE BUILD BETTER

Together with other member companies of the ISI Group, we are committed to building our human capital, investing in technology and bringing the most innovative products and services to market.





Portfolio at a Glance



RAINTREE



KMHPARK ISITOWER



Condominiums · offices · malls · shophouses · hotels · landed homes · business parks — a diversified footprint across Phnom Penh & Siem Reap

WHO WE ARE

Portfolio at a Glance



Industrial Parks · Special Economic Zones · Water and Wastewater Treatment · Utilities · Infrastructure · Integrated turn-key customization and delivery



Portfolio at a Glance



50 stores and counting in standalone buildings, offices, malls, across Cambodia, deep mindshare and a massive social media presence.

Our Passive Cooling Journey



Borey Chankiri & the Prek Tnoat River

Three gated communities plus a commercial frontage, directly adjacent to the river — our test platform for testing and implementing passive cooling strategies



Our Passive Cooling Journey



Prek Tnoat Riverside Park

The “adoption” of a stretch of Prek Tnoat River extends our efforts to create meaningful and sustainable public spaces extends beyond the Borey Chankiri gated communities into the broader surrounding communities of small villages, temples and schools.

ប៊ុរី
ប៊ុនគិរី
BOREY CHANKIRI

Chankiri: Commitment to Sustainable & Human-centric Developments



Simple and easy to construct, structurally robust and easy to maintain therefore,
Can be sold at a reasonably affordable price.



Naturally lit and cross-ventilated, reducing reliance on air-conditioning and artificial lighting, while improving indoor air-quality.



Double-brick external walls that reduce heat gain.



LED-fixtures as default in the landscape and homes. Solar powered streetlights.

Water-efficient fittings in homes.



In-development sewerage treatment.



Long-term flood-risk mitigation.



Lush landscaping brings back nature to the city, Greenery Improves the microclimate, and stimulates psychological/physical well-being,

While attracting and supporting biodiversity,



Using locally endemic plants requiring minimum care and maintenance.



Development-wide barrier-free access, with amenities and facilities for all age-groups and physical conditions.



Physical activity facilities so residents can keep physically fit.

Spaces for relaxation, meditation, and reading for mental well-being.



Collaborations with partners like ESCAP, UNEP, GGGI C ITC to advance the SDGs.



Our Passive Cooling Journey



1G
Plous Toch



2G
Link Laor V2



3G
Plous Vista

Design for performance gains across generations of homes without compromising spatial or aesthetic quality.

Our Passive Cooling Journey



Unit Type	S2 (BRBU)	S1Y (IRBU)	PTv2 (3G House)	
Simulated EE improvement	Baseline	+5%	+15%	Initial rough estimate on EDGE App
Simulated envelope thermal performance improvement on Design Builder	Baseline	+20%	?	
Construction Cost per sqm (USD)				\$10/sqm more for PTv2 because PTv2 had an additional toilet and extra boundary walls.

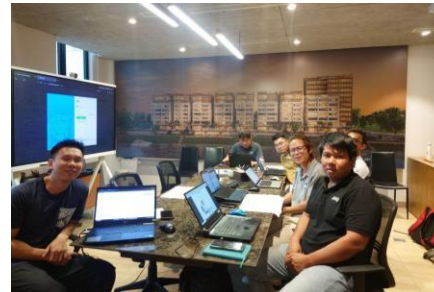
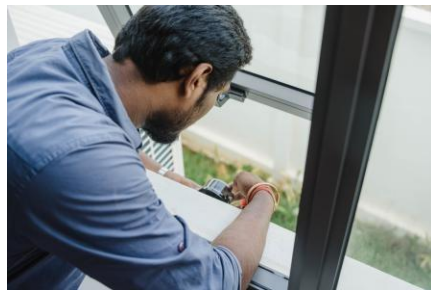
Improvements of thermal and energy performance and cost efficiency over generations.

Our Passive Cooling Journey



How did we do this?

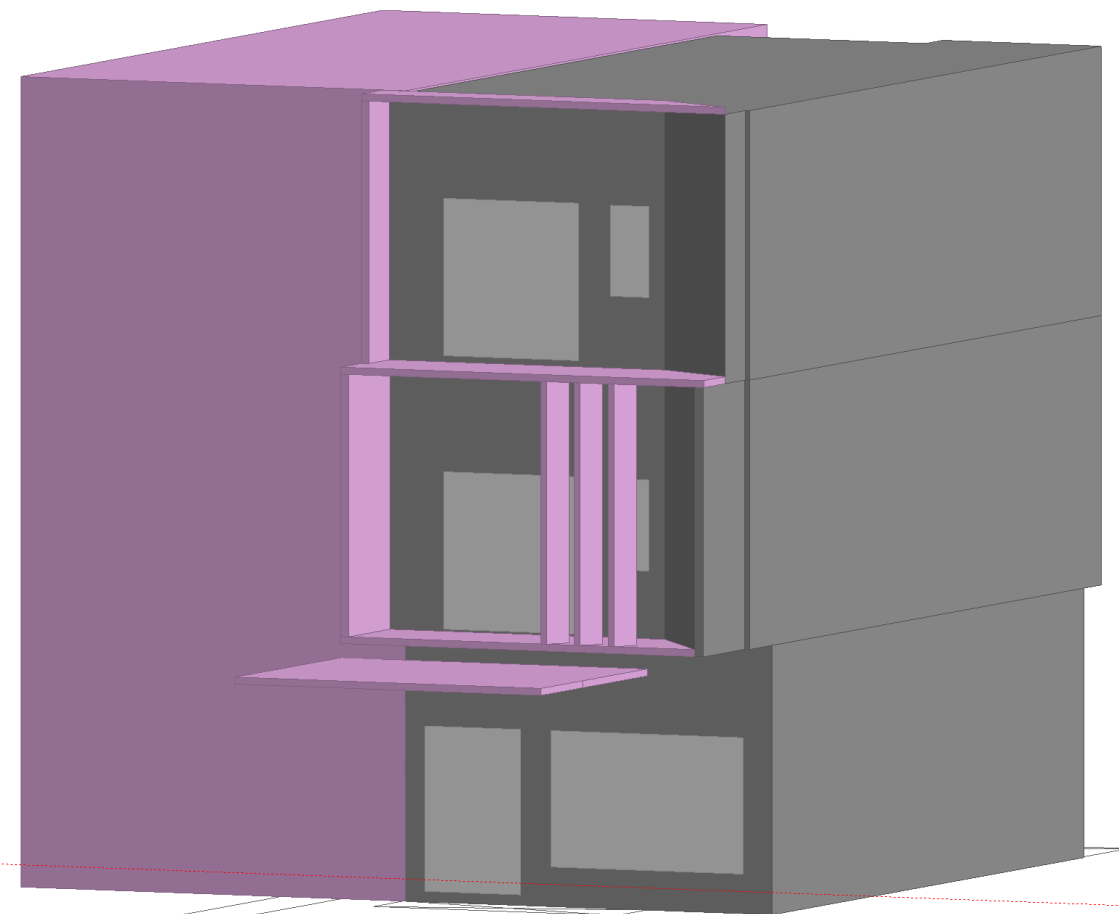
We asked for help and got quite a lot of it.



from top, left to right:

1. IDS, India – PCS Charette
2. ISD, Vietnam – PCS Charette
3. ITC - Instrumentation & monitoring
4. Bridgethings, India – IOT stack
5. BEE/Grant Thornton/GGGI – Energy Audits
6. ISI Group / HKA – knowledge sharing
7. CEMAT / ITC – CEM training
8. ESCAP / ITC / ISD - EDGE training
9. ESCAP / UNEP - PCS Charette

- Building Name - Borey Chankiri
- Builder - Urbanland
- Location - Phnom Penh, Cambodia
- Building Type - Residential Typology
- Occupied Floor Area - 133.2 m²
- Number of Floors - Three (Ground +2)
- Occupancy Schedule - 8.00 am to 6.00 pm
- HVAC
 - First floor - ceiling mounted
 - Second floor - split AC
 - Third floor - Naturally ventilated
- Materials
 - wall - 10 mm plaster + 115 mm brick wall + 50 mm air gap + 115 mm brick wall + 10 mm plaster
 - roof - cool paint 1 mm + metal sheet with PUF + 50mm rock wool + board 10 mm



Modeling in Design Builder by IDS



IoT Stack Deployment.



Constantly trying new means to solve heat gain through roofs.



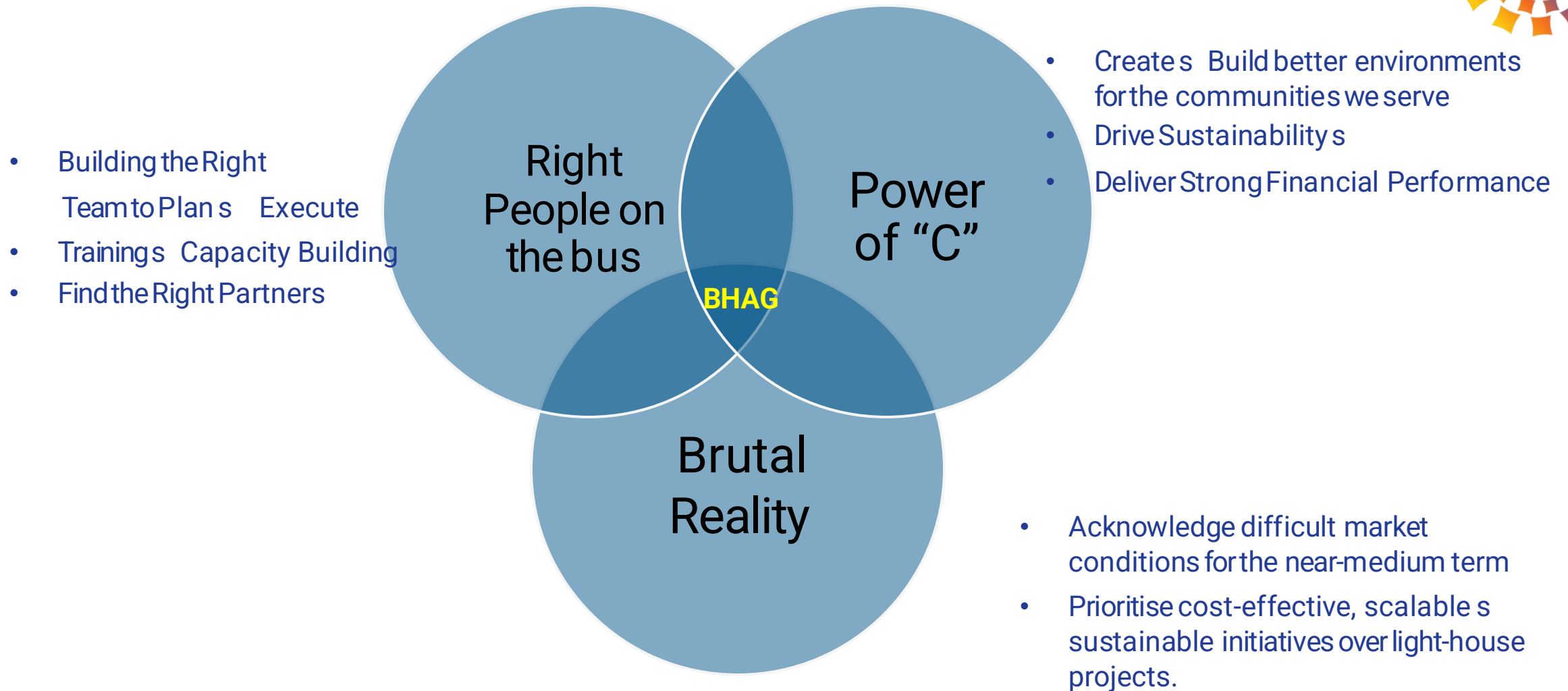
Onsite measurements. Testing additional measures.

Why are we doing it?



1. We want to take a data driven approach to improving our building designs.
2. We want to be able to track and measure improvements and set the right KPIs
 - to make sure we are moving in the right direction
3. Data allows us to effectively communicate the performance of our buildings to different audiences both internal and external.
4. Establish a culture of data and business case driven approaches to sustainability and financial performance.

How we do it?





Rather than idealism, social responsibility, moral conscience, or feeling good,

Corporate Sustainability

is

Resource Optimization

s

Finding New Business Drivers

to

Achieve Sustainable Business Value

**Move only when there is a business case.
Profits. People. Planet. In that order.**



Moderator



Open Discussion



Hongpeng Lei

Chief of Mitigation Branch,
Climate Change Division,
UNEP

Presenting the Challenge briefs



Lubna Yasmine

Joint Secretary (Planning),
Ministry of Environment, Forest and
Climate Change, Bangladesh



Lana Rose A. Manaligod

Assistant Director,
Department of Energy, Philippines



Miruza Mohamed

Deputy Director General
Ministry of Climate Change,
Environment and Energy
Maldives

Challenge Brief- Central and South Asia

Lubna Yasmine

Joint Secretary (Planning),
Ministry of Environment, Forest and Climate Change,
Bangladesh



Sustainable Cooling at Scale

Rising demand, tightening grids, and a shared challenge across our sub-region — the case for deploying not just more cooling, but sustainable cooling.

~0.5% GDP

Lost annually across our sub-region to lost productivity and health emergencies from extreme heat

+60%

Projected rise in active cooling demand across the region over the next decade

Our priority cannot simply be to deploy more cooling — it must be to deploy sustainable cooling at scale.

Two Barriers Between Our Plan and Its Delivery

Bangladesh's National Cooling Action Plan and refrigerant transition roadmap are not aspirations — they are already moving. The question this Assembly can help answer is not whether Bangladesh will act, but how fast we can scale what has already begun.

Energy Efficiency Integration

Refrigerant transition alone is not enough — the climate benefit of the Kigali Amendment depends on pairing it with real efficiency gains across the cooling stock.

Technology Cost & Availability

Low-GWP and natural refrigerant technologies are proven — but remain costly, and not yet fully accessible to the small and medium manufacturers who make up most of our market.

PROOF THIS IS ALREADY MOVING: Walton Hi-Tech • Elite Hi-Tech • AC Bazar Industries • Supreme Air Conditioning • Cooling Point Engineering — five Bangladeshi manufacturers already converting production lines to R-290 and R-32.

Energy Efficiency Integration

What's Already in Place

- Minimum Energy Performance Standards (MEPS)
- SREDA Standard and Labelling Regulation, 2018
- Energy Labelling & Star Rating Programme
- A new Energy Efficiency Project for the RAC sector now being prepared with UNIDO technical support

What We Need From This Assembly

- Technical & financial support to strengthen MEPS and expand testing/certification infrastructure
- Support to fully realize the planned UNIDO RAC efficiency project — from design through market transformation
- Coordinated assistance so refrigerant transition and efficiency upgrades happen together — not as two separate agendas competing for the same factories' attention

Technology Cost & Availability

The Barrier, In Practice

- Higher investment cost for converting a factory to R-290/R-32 — redesign, charging systems, explosion-proof safety equipment
- High cost of finished low-GWP products for the end consumer
- Limited technicians trained for flammable refrigerants
- SMEs in particular lack access to advanced manufacturing technology & specialized equipment

What We Need From This Assembly

- Technology transfer of proven, affordable low-GWP solutions and manufacturing know-how on favourable terms — especially for SMEs
- Financing for demonstration projects (R-290, R-744) that prove viability under Bangladesh's own climatic and market conditions
- Expanded technician certification & training for safe handling of flammable refrigerants
- South-South cooperation to transfer lessons already learned elsewhere, rather than relearning them from zero

From Aligned Policies to Working Partnerships

Our governments are ready to enforce standards, mandate passive cooling in building codes, and require technician licensing. But governments cannot walk this path alone.

Philanthropies

Early-stage risk-mitigation capital

Implementation Partners

Scaling technical capacity

Manufacturers

Affordable technology transfer

Reconvening at the Global Cooling Pledge Ministerial — COP31, November 2026 — to evaluate progress against these exact indicators

*Let us leave Singapore not just with aligned policies, but with working partnerships.
Let us build a resilient, cool future for all our citizens.*

Challenge Brief- ASEAN

Lana Rose A. Manaligod

Assistant Director,
Department of Energy, Philippines



Challenge Brief- SIDS

Miruza Mohamed

Deputy Director General,
Ministry of Climate Change, Environment and Energy,
Maldives



Country Challenges



What makes Maldives (SIDS) context unique?

GEOGRAPHY

- Scarce land and widely dispersed islands

POLICY / STANDARDS

- No mandatory MEPS

CAPACITY

- Limited financial and technical capacity
- Upfront investment
- High equipment cost and availability



Current Cooling Priorities



**SAFE AND
AFFORDABLE**

**ENERGY EFFICIENT
EQUIPMENT**

**STRENGTHEN
STANDARDS, LABELS
AND INFORMED
PURCHASING**

Areas of Collaboration



Technical design and
assessment for a
school pilot

Finance for efficient
cooling retrofits /
replacements

Capacity building



Thank you





Coffee Break

14:30-15:00 15 September 2026



GLOBAL COOLING PLEDGE ASSEMBLY

SINGAPORE 15 - 18 SEPTEMBER 2026

Parallel Session: Regional Country Dialogues

Asia-pacific Dialogue: Heat Resilience and Cooling Action

15:00 – 16:30, 15 September 2026



Ministry of Sustainability
and the Environment
— SINGAPORE —



Cooling Delivery Lab Facilitators



ASEAN



Claire Oei

Climate and Nature Lead
Philanthropy Asia Alliance
Temasek



Rio Jon Piter Silitonga

Senior Officer for Energy Efficiency
ASEAN Centre for Energy (ACE)

Central and South Asia



Cynan Houghton

Deputy Regional Program Director
TARA Climate Foundation

SIDS



**Manoj Kumar
Muthumanickam**

Programme Management Officer,
Global Funds Mitigation and
Transparency Section (GFTMS) Climate
Change Division, UNEP, Bangkok

Breakout Group Discussion

15:00 – 16:00

1. ASEAN Cooling Delivery Lab
2. Central and South Asia Cooling Delivery Lab
3. SIDS Cooling Delivery Lab





GLOBAL COOLING PLEDGE ASSEMBLY

SINGAPORE 15 - 18 SEPTEMBER 2026

Panel: Reporting back on Cooling Delivery Labs

Moderated by
Hongpeng Lei,
Chief of Mitigation Branch,
Climate Change Division, UNEP



Ministry of Sustainability
and the Environment
— SINGAPORE —



Closing remarks



Hongpeng Lei

Chief of Mitigation Branch
Climate Change Division
UNEP



Claire Oei

Climate and Nature Lead
Philanthropy Asia Alliance (PAA)