

iFOREST

INTERNATIONAL
FORUM
FOR ENVIRONMENT,
SUSTAINABILITY
& TECHNOLOGY



**SHAKTI
SUSTAINABLE ENERGY
FOUNDATION**



**COP28
UAE**

SIDE EVENT

Promoting Green Cooling in India and the Global South

**Saturday, 9th December 2023
5:00 PM to 6:30 PM (GST)**



SPEAKERS & PANELISTS



Philipp Denzinger
Project Manager,
GIZ Proklima
International



Thomas Spencer
International
Energy Agency



Jayanta Chaudhuri
Director, Alliances &
Partnership · Alliance
for an Energy
Efficient Economy



Sachin Kumar
Director, Shakti
Sustainable Energy
Foundation



Mridula Pandey
Manager (India –
Climate), Children's
investment Fund
Foundation



Chandra Bhushan
CEO & President,
iFOREST



India Cooling Action Plan

Lessons so far, and the way forward

Chandra Bhushan
CEO & President, iFOREST

December 9, 2023

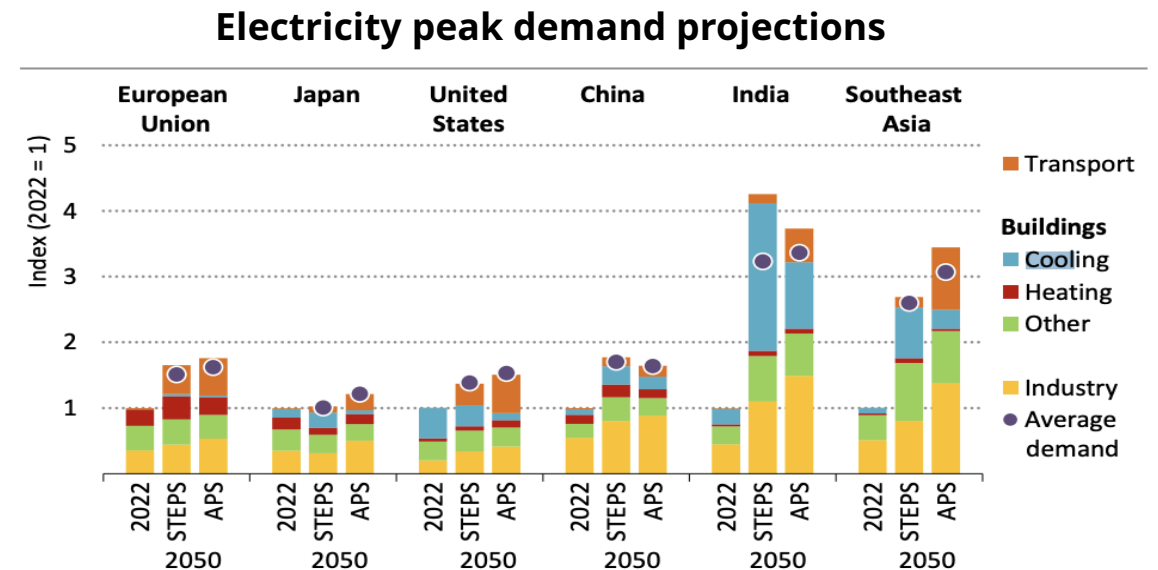
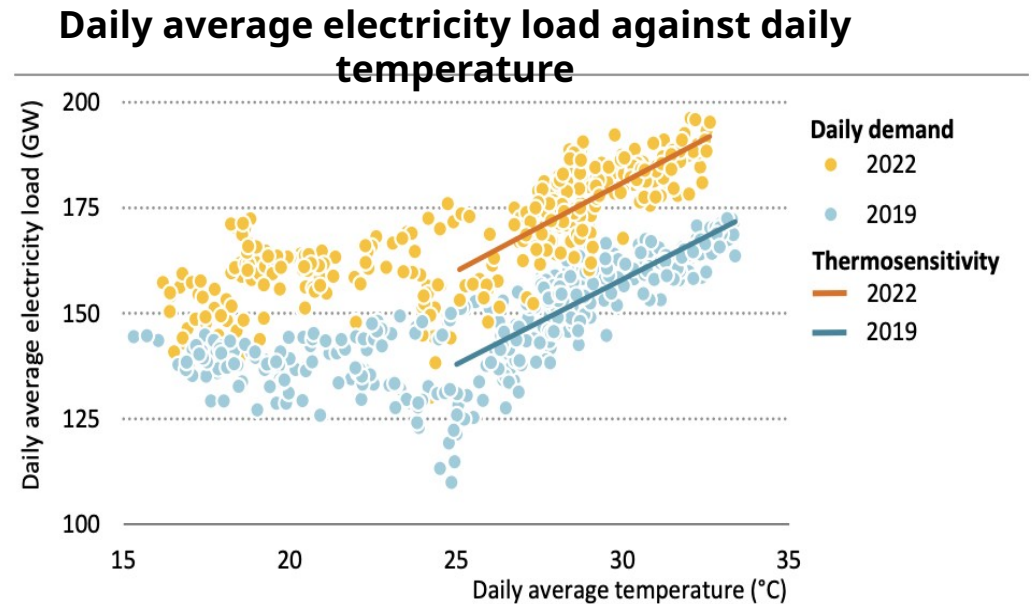
COOLING ON COP28 AGENDA



- COP28 pledge to curb cooling emissions backed by 63 countries.
- Countries commit to reduce their cooling-related emissions by at least 68% by 2050 compared to 2022 levels, along with a suite of other targets including establishing minimum energy performance standards by 2030.

India Cooling Action Plan – Requirement

- Increasing incidences of heatwaves and rising humidity – Access to Cooling an Equity Issue
- Ownership of ACs tripled since 2010 to reach 24 units per 100 households.
- Space cooling now accounts for 10% of the total electricity demand (21% higher than its 2019 share).
- By 2050, the household AC ownership is projected to increase nine-fold, leading to a nine-fold increase in cooling demand – maximum among major countries.



Source: World Energy Outlook 2023

ICAP Targets

- Reduce cooling demand across sectors by 20-25% by 2037-38.
- Reduce cooling energy requirements by 25-40% by 2037-38.
- Reduce refrigerant demand by 25-30% by 2037-38.
- Recognise cooling and related areas as a thrust area of research.
- Train and certify 100,000 servicing sector technicians by 2022-23.

Lessons from ICAP, & the way forward

Short-term target
vs. Long-term Goal

- Long-term goal important, but breakdown actions into clear, measurable and short-term targets (3-5 years)

Synergy is the key
word

- Link synergies across different sectors – green building, DSM, appliances, energy price, DRE, smart-grid, refrigerant, carbon finance, technology transition, public procurement.
- Leverage existing policies and programmes.

Localisation is
crucial

- Cooling action plan at a local-level (state and municipality).
- Integrate sustainable cooling under green building efforts at the municipal-level.
- Optimise cooling demand under demand side management.
- Leverage existing environmental legislations for installation, use and maintenance of cooling equipment.

Lessons from ICAP, & the way forward (cont..)

Refrigerant transition

- Natural Refrigerant standards in India -- Adoption of IEC 60335-2-40, ISO 5149-1:2014 & Ammonia for cold chains.
- 77% RAC can be converted to natural refrigerant with the existing technology = emission saving of 50 MTCO₂/year between 2025 and 2030.
- Important for leapfrogging the 'Chemical Treadmill' and IPR stranglehold of few companies.

Pooling together finance

- Clubbing national and international finance
- National: incentives for EE, Green buildings, DSM, public procurement etc.
- International:
 - Multilateral Fund on the Montreal Protocol – Refrigerant transition
 - Carbon market – Energy Efficiency
 - Other bilateral and multilateral

Lessons from ICAP, & the way forward (cont..)

NIK technology

- Alternative to vapor compression essential to reduce energy demand
- Need for dedicated funding under Montreal
- R&D and demonstration.

Skilling and Reskilling

- All new generation refrigerants have higher risk
- Reskilling for newer refrigerant and new technologies