



SHEETAL

Alliance for Sustainable Habitat, Energy Efficiency and Thermal Comfort for All

NEWSLETTER

December 2020 to July 2021

www.sheetalalliance.com

CIFF CHILDREN'S INVESTMENT FUND FOUNDATION

teri THE ENERGY AND RESOURCES INSTITUTE
Creating Innovative Solutions for a Sustainable Future

ae ee Alliance for an Energy Efficient Economy

CEEW 10 YEARS THE COUNCIL FOR ENERGY EFFICIENCY

Facilitating the Implementation of India Cooling Action Plan

CONTENTS

- ◆ Message by Dr. Shirish Sinha **01**
- ◆ Foreword **02**
- ◆ About SHEETAL **02**
- ◆ Spotlight **03**
- ◆ Publications Under SHEETAL **05**
- ◆ Collaborations Built by SHEETAL Partners **05**
- ◆ Events by SHEETAL Partners **05**
- ◆ News from Cooling Sector **06**
- ◆ Upcoming Events **06**

MESSAGE



As parts of India continue to boil from an intense, unrelenting and unforgiving heat wave, it has once again brought out the debate on the need for sustainable cooling solutions. However, the effects of heat waves are not felt evenly by all. The poor and the vulnerable communities

are exposed to extreme warming and lack of capacity to adopt cooling solutions, hence resulting in cooling gap. As India urbanizes and economic well-being of people improves, demand for cooling solutions across sectors – residential, commercial, transport, commodity storage and supply chain – will continue to grow.

In 2019, India became the first country in the world to have an integrated and cross-sectoral 'India Cooling Action Plan (ICAP)', which was a requirement of the Kigali Amendment of the Montreal Protocol. The recognition of the need for sustainable cooling solutions for economy and people by the Government of India demonstrates strong ambition and political will.

As one of the largest global philanthropies working on children, we are seeing that future generation are fast becoming collateral damage of multiple global crises – one of them being the inter-generational burden of climate and environmental disruptions. For us at Children's Investment Fund Foundation (CIFF), investing in promoting cooling efficiency and sustainable cooling solutions has been a key focus area for last several years as part of our climate

actions. At the global level, we have been supporting Kigali Cooling Efficiency Partnership (K-CEP) to promote energy efficiency of cooling in developing countries to support Kigali Amendment of the Montreal Protocol.

Building on our global experience and capitalizing on ICAP, we have initiated a new programme – Alliance for Sustainable Habitat, Energy Efficiency and Thermal Comfort for All (SHEETAL) with three partners – TERI, AEEE and CEEW. Through SHEETAL, we aim to support implementation and acceleration of the ICAP as it provides an integrated vision of sustainable cooling solutions across sectors encompassing inter alia reduction of cooling demand, refrigerant transition, enhancing energy efficiency, ensuring access to cooling, better technology options and thermal comfort for all while offering opportunity to improve livelihoods of millions and generating green jobs for people.

Through this newsletter, SHEETAL is making progress to facilitate dialogue with cooling sector stakeholders to promote knowledge exchange, fostering innovation, technology development, and collaboration. This newsletter is our endeavour to provide regular update on SHEETAL and information on ICAP. We would love to have your feedback on the content to keep improving as we come with new edition.

Happy reading!

Dr. Shirish Sinha,
Director, Climate, India
Children's Investment Fund Foundation (CIFF)



From Left to Right: Mr Karan Mangotra, Ex- Associate Director-The Energy and Resources Institute; Ms Poonam Sandhu, Financial Sector Specialist and India Team Lead-Natural Resources Defense Council; Ms Sonia Medina Executive Director, Climate-Children's Investment Fund Foundation; Dr. Ajay Mathur, Ex-Director General-The Energy and Resources Institute; Mr. Abhay Bakre, Director General-Bureau of Energy Efficiency; Dr. Arunabha Ghosh, Chief Executive Officer- Council on Energy, Environment and Water, Dr. Satish Kumar, President and Executive Director-Alliance for an Energy Efficient Economy.

FOREWORD



MR. SANJAY SETH
Sr. Director TERI



DR. SATISH KUMAR
President and Executive
Director, AEEE



DR. ARUNABHA GHOSH
Chief Executive Officer, CEEW

Access to cooling to attain thermal comfort is no longer a luxury but a necessity. 'Thermal comfort for all' is vital for development and its importance cannot be overstated in a country like India, which is experiencing a growing population, heat stress, and rising lifestyle aspirations. Moreover, as a warming planet deepens inequalities within society, the key to helping the most vulnerable is by sustainably meeting their cooling needs.

With this being the cornerstone of the alliance, SHEETAL advocates a multidisciplinary effort to facilitate the implementation of the 'India Cooling Action Plan (ICAP)' by bringing together local stakeholders and experts to support the country in meeting its Nationally Determined Contributions (NDCs) and cutting down climate risks associated with emissions from the cooling sector.

SHEETAL recognizes 'Thermal Comfort for All' as crucial and supports national policies in harmony with global discourse around cooling by developing strategies to tighten Minimum Energy Performance Standards (MEPS) & Standards and Labelling (S&L) scheme, residential building code adoption and implementation, the development of a climate-friendly cold chain infrastructure, not in-kind low or non-refrigerant-based cooling technologies, and nudging behaviour across India's cooling sector, identifying gaps across sectors, attracting stakeholders' interest and triggering implementation of higher energy performance technologies with lesser climate impact. Further, it recognizes cooling as a developmental need and acknowledges its essential requirement in day-to-day life. It gives us immense pleasure to introduce the first newsletter of project SHEETAL.

ABOUT SHEETAL

Following the trajectory of Kigali Amendment, consortium partners TERI, AEEE & CEEW under the aegis of 'SHEETAL - Alliance for Sustainable Habitat, Energy Efficiency and Thermal Comfort for All', are facilitating the implementation of the India Cooling Action Plan since December 2019. SHEETAL's work spans across all sectors identified in the ICAP: space cooling, appliances research and development, transportation, servicing sector, cold chains, and others. [Read More](#)

SHEETAL'S OBJECTIVES:

- ◆ India enhances access to cost-effective and socially resilient cooling
- ◆ India achieves significant reduction in energy demand for cooling
- ◆ India achieves a significant reduction in cooling demand relative to a business as usual scenario, by strengthening regulations, business models and consumer awareness and implementing energy efficient technologies
- ◆ India is informed to move on HFC phase down pathways under the Kigali Amendment, based on robust research. [Read More](#)



SPOTLIGHT

INTERVIEW WITH MR. SAMEER PANDITA, DIRECTOR, BUREAU OF ENERGY EFFICIENCY



SHEETAL's project manager Mr. Ashish Saraswat interviewed Mr. Sameer Pandita, Director – Standards & Labelling, Bureau of Energy Efficiency to grab his views on future of sustainable cooling in India.



Energy Efficiency is being considered as a potential viable resource to ensure energy security in developing countries. What is your view on India's cooling demand and the role of cooling efficiency to ensure access to cooling for citizens? Also how do you see it contributing to India's fight against climate change?

SP

In terms of India Cooling Action Plan, the aggregated nationwide cooling requirement, in tonnes of refrigeration, is projected to grow around eight times by 2037-38 as compared to the 2017-18 baseline. The building sector cooling demand estimates indicate the most significant growth, at nearly 11 times as compared to the current baseline; the cold-chain and refrigeration sectors are estimated to grow at around four times while the transport air-conditioning is expected to grow at around five times the 2017-18 levels. These growth estimates are dependent on variables such as economic growth, leading to continued growth in building construction, rate of urbanisation, and improved lifestyle and aspirations.

The Total Primary Energy Supply (TPES) required for cooling across all demand sectors is expected to grow nearly 4.5 times in 2037-38 over the 2017-18 baselines. Therefore, it is imperative to provide access to sustainable cooling and thermal comfort for all citizens while securing environmental and socio-economic benefits for the society. A large part of the country's cooling requirements across sectors is met using active refrigeration and air-conditioning (RAC) technologies, which are based on the use of either refrigerants and

are energy intensive. Therefore, access of sustainable cooling to all citizens has an implication on the energy demand and energy security of the country making optimization of the energy performance of cooling appliances an important aspect from both resource efficiency and climate perspective. In this direction, BEE under its Standards and Labelling Program for appliances and equipment has taken several measures to enhance the energy performance of cooling appliances like Ceiling fans, Room Air conditioners, Chillers commercially sold in the country. Since its inception in the year 2006, the Standards and Labelling Program for cooling appliances like room air conditioners has saved 73 billion units of electricity equivalent to avoided CO₂ emissions of 60 million tonnes till 2018. The program has also succeeded in transitioning 57% of the RAC production volumes from fixed speed room to inverter-based energy efficient room air conditioners. Moreover, through the "Global Cooling Prize" an initiative under Mission Innovation Challenge IC# 7 on Heating and Cooling of Buildings, efforts are underway to design a cooling solution for a typical housing unit in a highly populous city in India with (a) at least five times more efficient per unit of cooling; (b) can operate within predefined limitations on refrigerants, water, full-load power consumption, and maintenance requirements; and (c) can be sold at no more than twice the first cost of today's standard solutions.



BEE is one of the key policymakers in the cooling sector. Could you talk about BEE's various policies working to bring enhanced energy efficiency and better technology options in cooling sectors across to achieve India's sustainable cooling objectives vis-à-vis ICAP?

SP

With an objective of optimizing the energy consumption in cooling sectors to meet India's sustainable cooling objectives, Bureau of Energy Efficiency has taken the following measures:

- (i) Launched a Voluntary Star Labelling Program for Chillers in the year 2018.
- (ii) Launched a Voluntary Star Labelling Program for Deep Freezers and Light Commercial Air Conditioners in March, 2020.
- (iii) Introducing mandatory Star Labelling Program for ceiling fans w.e.f. 1 January 2022.



How has COVID impacted the cooling sector? What can be the next steps towards recovery?

SP

COVID -19 pandemic has engulfed the entire world and India is no exception. Air conditioning industry has also been affected. According to RAMA, COVID-19 had decimated the summer AC sales and the whole supply chain got affected. Manufacturers are struggling with unused raw material, unsold finished goods inventory and liquidity crunch. The existing stock of AC is expected to continue till next year i.e. 2020 due to lean summer sales in the current year. To combat the prevailing situation and to support the air-conditioning industry, BEE has deferred the implementation of revised energy consumption standards by a period of 1 year, i.e. the revised energy consumption standards that were to be made effective from 1 January, 2021 would now be applicable from 1 January, 2022. This has been done to allow the industry recover losses due to poor sales and to provide some space for the Indian industry to reduce its dependence on the imports by investing in developing indigenous component manufacturing capacities over next two to three years. The idea is mainly to build local capacities and supply chains to manufacture air-conditioning components like compressors and heat exchangers and motors in the country thereby scaling down the costs of refrigerant-based cooling appliances and dependence on imports.



Over the years, CSOs have played one of the key roles to support the objectives of global and climate policy initiatives. Do you believe that synergized actions of CSOs would play an important role in the implementation of ICAP?

SP

CSOs play a vital role in supplementing the policies framed by the government. Moreover, synergistic actions are always more effective than the actions taken in isolation. BEE ensures adequate CSO participation while designing policies.



What message would you like to give to cooling stakeholders regarding India's cooling scenario in the near future?

SP

In the future, it is expected that by harnessing the power of innovation, India and the world will be able to provide access to sustainable cooling to all without warming the planet. For Indian cooling industry in particular, I must emphasize that the time is opportune to take a lead in indigenizing various cooling technologies and invest focused resources in research and development and indigenization of cutting edge cooling technologies. To make this happen, the industry has to come forward and support MSMEs to develop sustainable local supply chains. Efforts should be made to identify and commercialize novel designs and technologies related to cooling appliance which have the potential of commercialization. Indian Air-conditioning Industry under the "Atmanirbhar Bharat" vision of the Hon'ble Prime Minister of India must capitalize on economy of scales through indigenous demand for cost-effective energy-efficient cooling appliances to turn India into a global manufacturing hub for world class energy efficient cooling appliances that can be exported globally.

PUBLICATIONS UNDER SHEETAL

★ TERI report on Understanding perceptions: a behavioural study in the Indian cooling sector by TERI

[Read more](#)

★ TERI report on Mobile air conditioning (MAC) summarizing the landscape of the MAC system in India

[Read more](#)

★ TERI policy brief on Super-efficient AC deployment: opportunities through business models in India

[Read more](#)

★ AEEE report on Decoding evaporative air coolers

[Read more](#)

★ CEEW report on Collaborative R&D for sustainable cooling in India

[Read more](#)

COLLABORATIONS BUILT BY SHEETAL PARTNERS



- ◆ Memorandum of Understanding (MoU) between TERI & Kerala Infrastructure Investment Fund Board (KIIFB): To implement ICAP through adoption of ECBC- in infrastructure developments.
- ◆ MoU between TERI and Glazing Society of India (GSI) to help improve resource and energy efficiency in buildings, ensuring thermal and visual comfort
- ◆ MoU between AEEE and Climate Smart City Alliance Framework (CSCAF), MoHUA to facilitate the implementation of Eco Niwas Samhita across India's residential sector and to enhance capacity building & knowledge sharing
- ◆ MoU between AEEE and Passive House Institute (PHI) to promote passive measures for enhanced energy efficiency in buildings
- ◆ MoU between AEEE and EESL which focusses upon diagnostic studies and developing a policy roadmap for cold storage retrofit
- ◆ MoU between AEEE and Eurovent Certita Certification (ECC) for the development of Minimum Energy Performance Standards of Evaporative Air coolers.

In addition, consortium partners are closely working with Union Ministry of Environment, Forest and Climate Change, Energy Management Centre-Kerala, Bureau of Indian standards, Bureau of Energy Efficiency and other government departments. Partners have also built ties with the International Energy Agency (IEA), United for Efficiency (U4E), Consumer Information Programme (CI-SCP), and One Planet Network.

EVENTS BY SHEETAL PARTNERS



TERI - **12th GRIHA Summit**, on the theme 'Rejuvenating Resilient Habitat' – inaugurated by Shri M. Venkaiah Naidu, Hon'ble Vice President of India (Chief Guest) on 15th December, 2020 [Read More](#)



TERI - Industry dialogue 'Towards Sustainable Urban Cooling Solutions' at the World Sustainable Development Summit 2021 [Read More](#)



TERI - International Cooling Forum: 'Multi-Country Industry Dialogue: Towards Low Carbon Cooling Access'- April 2021 [Read More](#)



CEEW's side-event at the 43rd meeting of the OEWG of the Parties to the Montreal Protocol (OEWG43): Can international collaborative R&D solve the world's cooling conundrum? [Read more](#)



TERI - Industrial dialogue on 'Mobile Air Conditioning (MAC): A technology landscape, challenges and opportunities for sustainable cooling' [Read More](#)



Parishad: CEEW's webinars –How can Collaborative R&D transform the Cooling industry? [Read more](#)



While Resilience has been thought of in the context of extreme events the REALITY OF CLIMATE CHANGE is that it is creeping upon us almost imperceptibly on three fronts

RISING LOCAL TEMPERATURES
DROUGHTS and
SEA LEVEL RISE

AEEE-Webinar under the Solar Decathlon India on "Resilient Design for your Building" in December 2020. [Read more](#)

NEWS FROM COOLING SECTOR

- ◆ Government of Karnataka integrates Karnataka Energy Conservation Building code (KECBC) compliance requirements in Municipal Corporation Model Building (Amendment) Bye-Laws, 2021. [Read more](#)
- ◆ Government of Madhya Pradesh mandates Madhya Pradesh Energy Conservation Building Code Rules. [Read more](#)
- ◆ Government e-Marketplace (GeM) adds specific category to procure efficient and environment friendly green air conditioners for government buyers. [Read more](#)
- ◆ Global Cooling Prize was awarded to Gree Electric Appliances Inc. of Zhuhai, China with their partner Tsinghua University; and to Daikin with their partner Nikken Sekkei Ltd. [Read more](#)
- ◆ Convergence Energy Services Limited (CESL) inks Memorandum of Understanding (MoU) with The Collaborative Labelling and Appliance Standards Program (CLASP). [Read more](#)
- ◆ Government of India announces Production Linked Incentive (PLI) Scheme for White Goods (Air Conditioners and LED Lights). [Read more](#)

UPCOMING EVENTS

- ◆ Under the flagship of SHEETAL project and the multi country cooling forum established by TERI, the webinar on Multi-Country Industry Dialogue: Towards Low Carbon Cooling Access will be organized in August- September 2021.
- ◆ Side event to Meeting of Parties 33 by partners of SHEETAL alliance – October 2021.
- ◆ Webinar on "Analysis of Potato Value Chain in West Bengal - Roadmap for retrofitting-cum-modernizing existing cold storages" by AEEE in August 2021

For more details, [explore](#) here