Side Event

Cooling the Cities of Future

22 July 2023 | 16:45 hrs -18:15 hrs | Salao 3
Grand Hyatt, Goa, India

Agenda

Timing	Session details *
16:45 to 16:50	**Welcome Remarks** - Reprentative from Bureau of Energy Efficiency (BEE), Ministry of Power
16:50 to 16:55	**Welcome note and Setting the Scene: A brief intro of District Cooling as a technology and EE-Cool project** - Anneli Stutz, Principal Advisor, GIZ (Program Manager, EE-Cool)
16:55 to 17:00	**Keynote Address** - Dr. Winfried Damm, Program Director, Indo-German Energy Programme, Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
17:00 to 17:05	**District Cooling Guidelines Launch** **(Launch and photo-op)**
17:05 to 17:15	Introduction to District Cooling Guidelines and way forward - Sandeep Kachhawa, Consultant, AEEE *Video Presentation: GIFT City, Gandhinagar, Gujarat – A live example from India*
17:15 to 17:25	Audience Interaction/viewpoints/questions on the DC Guidelines
17:25 to 18:00	Panel Discussion - Adoption of District Cooling in Indian cities, with a focus on its inclusion into city planning framework, regulatory body and business models *The aim of the session is to discuss strategic directions and action points from regulatory and planning perspective for promotion of DCS.* Moderator: Dr Satish Kumar, President and Executive Director, AEEE Panellists: 1. Arijit Sengupta, Director, BEE - *DCS can be viewed as a utility similar to electricity, natural gas, and water. What support can be expected from the Ministry of Power / BEE side to mainstream DCS adoption in India? How would you regulate cooling tariffs in the country?* 2. Rajiv Sharma, Vice President, Mechanical Engineering Construction, GIFT City - *From a private developer's viewpoint, how is DCS profitable in the long run? Is financing DCS system possible from own funds?* - *GIFT City was able to mandate customers to take up DCS connections?*

	How feasible is it for other cities to mandate similar requirement as per the current rules and regulations? 3. Sudheer Perla, Country Manager, Tabreed India - *What are the global perspectives and policies favouring DCS adoption? From the private sector, how can you support mainstream adoption of DCS? What additional support would you expect for scale-up?* 4. Vikram Murthy, National President, ISHRAE - *How can DCS be mainstreamed in the buildings landscape in India? How can we incorporate DCS design in URDPFI guidelines / building byelaws / Master Plan documents? What do you envision to be the major challenges in doing the same?* 5. Rahul Agnihotri, Advisor, UNEP - *What are the barriers that we need to overcome for implementing DCS in India – both from an implementation point of view and also from a consumer point of view?* - *Do you think that to promote DCS, the country needs to mandate DCS in new developments where it is promising to be set up?* Open ended questions: - *How important is it for electricity utilities and municipalities to work together in promotion of DCS?*
18:00 to 18:10	Audience questions for the Panelists
18:10 to 18:15	Closing Reflection and Vote of Thanks

Background Note:

India, with a population of 1.3 billion, more than 3,000 annual cooling degree days, and an air-conditioner penetration of 5-10%, is very vulnerable to the impacts of rising and extreme temperatures. in march 2019, india escalated the opportunities and challenges in cooling to a national priority level in the India Cooling Action Plan (ICAP) – a flagship initiative of the ministry of environment, forest & climate change (moef&cc). as per icap, the building sector's cooling demand shows the most significant growth at nearly 11 times by 2037-38 from the 2017-18 baseline. also, the energy consumption from space cooling in buildings is estimated to be ~135 TWh in 2017-18. Projections show this will increase to 4 times (~585 TWh) in the next two decades. This lays down the context for India's overwhelming need for space cooling. Multiple technologies and range of options are available for addressing the future cooling demand. One of ICAPs recommendations for the buildings sector is to promote the use of not-in-kind technologies such as trigeneration systems, district cooling, thermal energy storage etc. The proposed plan of R&D activities mentioned in ICAP also discusses district cooling using low-grade energy from thermal power plants, waste heat, and harnessing other low-grade energy sources.

District cooling system (DCS) is a modern and efficient way to air-condition clusters of buildings in cities, commercial/ real estate establishments, industrial parks as well as on educational campuses. In a DCS, a large central plant produces chilled water for supply to multiple buildings through an insulated underground piping network. It avoids the capital costs of installing chillers and cooling towers at the building level and frees up valuable rooftops and building space.

Under the Indo-German bilateral energy partnership, the Ministry of Power in India and the German Federal Ministry of Economic Affairs and Climate Action are leading by example and committed to upscaling energy-efficient cooling solutions and implementing India's Cooling Action Plan. India's Bureau of Energy Efficiency and GIZ have collaborated to specifically look at pathways for scaling

up district cooling systems in India with technical support from the Alliance for an Energy Efficient Economy (AEEE) and KPMG. A Disctrict Cooling Guidelines has thus been prepared for paving the pathway for DCS adoption in India.

About the District Cooling (DC) Guidelines

The objective of the DC Guidelines is to provide overall guidance on all significant aspects of DCS related to scope, planning, construction, business models, and measurement and billing systems. This guide should act as an information handbook intended to be used by various stakeholders, including state and city development authorities, developers, and investors, as a comprehensive reference on district cooling (DC) system implementation. However, this guideline is not to be used as a design reference. Normative references on technical specifications related to design aspects are provided throughout the document and should be accessed for design guidance. The guideline document has been developed to define DCS and identify the associated benefits of implementing DCS in India. This guideline provides information on DC system technology, associated benefits, key components, and operations and maintenance (O&M) requirements. The guideline document strives to capture the roles and responsibilities of stakeholders involved in decision-making throughout the different stages of the DC project cycle, such as project planning, execution & operations, and evaluation. Furthermore, the guidelines provide information on the relevant DC system business models successfully applied globally.

This document aims to:

1. Define the DCS specific to India's context, and its associated environmental, societal and economic benefits
2. Provide an overview of the key DC system components and technologies
3. Present information on different stakeholder's roles and levels of involvement
4. Discuss the selection criteria and prerequisites for a DC project
5. Provide information on the different project development cycle stages
6. Discuss the economics of DCS, business models, and enabling mechanisms
7. Present bidding choices that can be adopted for the execution of DC projects
8. Recommend state-level actions that can be adopted to promote DCS

The development process of the DC Guidelines considered documents and support from some of the highly reputed organizations/associations in the industry such as the Indian Society of Heating, Refrigeration, and Air-conditioning Engineers (ISHRAE), United Nations Environment Programme (UNEP), American Society of Heating, Refrigerating, and Air-conditioning Engineers (ASHRAE), International District Energy Association (IDEA), and Energy Efficiency Services Limited (EESL).

Register here: https://cem-mi-india.org/registration

Contact details:

Vibhu Saxena at vibhu@aeee.in (T: 011 4123 5609; M: +91 9999574363)