



U.S.-India Standards and Conformance Cooperation Project (SCCP), Phase II



## Green Data Centers: Codes and Standards for Enhanced Energy Efficiency in Data Centers

Agenda

## 16 July 2019 | Imperial I, Vivanta Begumpet, Hyderabad

| 09:00am – 09:30am                                                                                              | Registration & Networking                                                      |  |
|----------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------|--|
| 09:30 am – 10:40 am: Session I                                                                                 |                                                                                |  |
| Inaugural and Introduction to Energy Efficiency in Data Centers                                                |                                                                                |  |
| Inaugural session and introduction to Energy Efficiency in Data Centers. Dignitaries welcome the group and set |                                                                                |  |
| the stage for the workshop.                                                                                    |                                                                                |  |
| 09:30am – 09:40am                                                                                              | • Opening Remarks: Ms. Mehnaz Ansari, USTDA Country Representative-South Asia, |  |
|                                                                                                                | Embassy of United States of America                                            |  |
| 09:40am – 09:50am                                                                                              | Welcome remarks:                                                               |  |
|                                                                                                                | Ms. Aileen Nandi, Minister Counselor, Commercial Affairs, U.S. Embassy         |  |
| 09:50am – 10:05am                                                                                              | Green Data Center Rating to Address Sustainability in DCs:                     |  |
|                                                                                                                | Mr. S Karthikeyan, Principal Counsellor, CII-IGBC                              |  |
| 10:05am – 10:10am                                                                                              | Journey Towards Green Data Centers: Mr. Sunil Khanna, Past Chairman, Cll       |  |
|                                                                                                                | Maharashtra State Council and President and MD, Vertiv Energy Private Limited  |  |
| 10:10am – 10:25am                                                                                              | • Data Centre Design Build and Delivery (DBD): Mr. Syed Mohammed Beary,        |  |
|                                                                                                                | Chairman, IGBC Bangalore Chapter and CMD, Bearys Group                         |  |
| 10:25am – 10:40am                                                                                              | Energy Efficiency in Data Centers – Association between IGBC and LBNL:         |  |
|                                                                                                                | Mr. Dale Sartor, Staff Engineer, LBNL U.S.                                     |  |
| 10:40am – 11:10am                                                                                              | Health Break and Networking                                                    |  |
| 11:10 am – 12:10pm: Session II                                                                                 |                                                                                |  |

Prevailing Practices in Data Centers for Energy Efficiency – In View of Standards and Codes

Prevailing practices in data centers for energy efficiency in view of standards and codes. Coming from an international perspective, experts will discuss emerging efficiency codes and standards and their application to practice. Experts including leaders from the U.S., multinational data center owner/ operators, and an audit and certification organizations will illuminate the state-of-the-art in energy efficiency standards and their application internationally and in the Indian context.

| 11:10 – 12:05pm   | Moderator: Mr Henry M Wong, Chief Technologist, E3HS IT Consulting, LLC   |
|-------------------|---------------------------------------------------------------------------|
|                   | Panel Members:                                                            |
|                   | • Presentation (15 min): Mr. Henry M Wong followed by panel discussion    |
|                   | • Mr. P C Lohia, Senior Vice President, HVAC, Reliance Industries Limited |
|                   | Mr. Sandeep Dandekar, Executive Vice President, Netmagic Solutions, NTT   |
|                   | Mr. Mahesh Trivedi, Data Centre Expert                                    |
|                   | Mr. Siddharth Jain, Managing Director, epi-India                          |
| 12:05pm – 12:10pm | Q&A                                                                       |





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## 12:15 pm – 1:35 pm: Session-III

## ECBC Code for Energy Efficiency in Data Centers – Recommendations by IGBC and LBNL

| Bureau of Energy Effici<br>advisors are develop<br>efficiency, the te | <ul> <li>Conservation Building Code (ECBC) 2017 and its application to data centers. The Indian iency (BEE) recently included data center in the ECBC. IGBC, LBNL, and a group of industry ing guidelines and recommendations for implementation. Besides setting a base level of am is making recommendations for higher levels of performance and best practices.</li> <li>I cover data center cooling, chiller plant performance, the electrical "chain" (e.g. UPS efficiency), and IT equipment and management.</li> <li>Mr. P C Lohia, Senior Vice President, HVAC, Reliance Industries Limited</li> </ul> |
|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 12:35pm – 12:55pm                                                     | <ul> <li>Mr. Raghuveer Singh, Director -Thermal Management, b</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 12:55pm – 01:15pm                                                     | • Will Ragituveer Singh, Director - mermai Management, b                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| 01:15pm – 01:35pm                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 01:35pm – 02:35pm                                                     | Lunch and Networking                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                       | 02:35 pm – 03:20 pm: Session IV – Panel Discussion                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|                                                                       | Role of Code Compliance in Achieving Higher Energy Efficiency                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                       | r, practitioners, and others will reflect on the day's sessions and lead a discussion with all garding how codes and standards can help India achieve much higher levels of energy efficiency performance in data centers.                                                                                                                                                                                                                                                                                                                                                                                      |
| 02:35pm – 03:15pm                                                     | Moderator: Mr. Ashish Rakheja, Managing Director, AEON Consultants & ASHRAE Board of Directors<br>Panel Members:                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|                                                                       | Mr. Dale Sartor, Staff Engineer, LBNL, U.S.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                       | Mr. Pankaj Wadhwa, Principal Architect, VastuNidhi Architects                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|                                                                       | Dr. Shivraj Dhaka, Counsellor, CII-IGBC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 03:15pm – 03:20pm                                                     | Mr. Debashish Chakraborty, General Manager, Schneider Electric, India Operation     Q&A                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 03:20pm – 03:50pm                                                     | Health Break and Networking                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| Perf                                                                  | 03:50 pm – 04:50 pm: Session-V<br>formance Optimisation for Code Compliance and Operational Benefits                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Deploying innovatio                                                   | n and best practices to achieve high energy efficiency performance in India. While some                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|                                                                       | e unique issues with climate, power quality, and air quality, innovative best practices can                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
|                                                                       | on performance and save significant energy and money. Still, performance optimisation in                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|                                                                       | design would offer maximum operational benefits.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 03:50pm – 04:10pm                                                     | Mr. Tony Gaunt, Senior Director, Colocation, Cloud & BFSI, Vertiv Asia & India,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|                                                                       | Code Compliance in Data Centers – Key Challenges and Way Forward                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 04:10pm – 04:30pm                                                     | Mr. Mario Dias, Manager-Fac Operations Workplace Resources, NetApp,                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| 04:30pm – 04:50pm                                                     | Free Cooling to Optimise Operational Expenditure                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 04.50pm                                                               | Mr. Biju Jacob John, Associate Vice President - Solutions Engineering & Bids                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                                                       | Management, Solutions Engineering, Netmagic (An NTT Company)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|                                                                       | Energy Efficiency in Netmagic Data Centers                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 04:50pm – 05:00pm                                                     | Conclusion: Mr Henry M Wong, Chief Technologist, E3HS IT Consulting, LLC                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |





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