



**Augmenting Nature by Green Affordable New-habitat (ANGAN)**  
*- A courtyard for revolutionary change in Building Energy Efficiency*  
 An International Building Energy Efficiency Conference  
 9<sup>th</sup> – 11<sup>th</sup> September 2019 | The LaLiT, New Delhi

## CONFERENCE AGENDA

### 9<sup>th</sup> September, 2019 (Monday)

08:30 – 10:30	Registration & Tea		
10:30 – 10:40	Inauguration of Exhibition on Energy Efficient Building and Walk through Building Exhibition (Venue: Plaza Terrace)		
10:40 – 11:00	Exhibition Walk Through		
11:00 – 12:30	<b>Curtain Raiser &amp; Inaugural Session</b> (Venue: Crystal Ball Room)		
11:00 – 11:10	Welcome Address by Mr. Abhay Bakre, Director General, Bureau of Energy Efficiency		
11:10 – 11:20	Theme address by Dr. David Goldstein, Energy Co-Director, NRDC, USA		
11:20 – 11:50	Keynote address Dr. Ajay Mathur, Director General, The Energy and Resources Institute		
11:50 – 12:05	Inaugural address by Mr. Raj Pal, Economic Advisor, Ministry of Power		
12:05 – 12:25	Special address by Mr. Saurabh Kumar, Managing Director at Energy Efficiency Services Limited		
12:25 – 12:30	Vote of Thanks by Mr. Saurabh Diddi, Director, Bureau of Energy Efficiency		
12:30 – 13:00	Exhibition Walk	Role of Media in Promoting Building Energy Efficiency (Venue: Plaza Terrace Room)	
13:00 – 14:00	Lunch		
Parallel Sessions	Thematic Track 1 (Venue: Plaza Terrace Room)	Thematic Track 2 (Venue: Crystal Ball Room)	Thematic Track 3 (Venue: Regal)
14:00 – 15:30	Meeting Two Ends: Heritage and Indigenous Construction Practices	Policy Framework for Energy Efficiency in Buildings (Codes and Standards)	Circular Economy (Waste or Resource)
15:30 – 16:00	Tea/ Coffee Break		
Parallel Sessions	Thematic Track 4 (Venue: Crystal Ball Room)	Thematic Track 5 (Venue: Plaza Terrace Room)	Thematic Track 6 (Venue: Regal)
16:00 – 17:30	Smart Cities and Smart Readiness Indicators (SRI) for Buildings	Climate Resilience in Buildings	Affordable and Sustainable Development: Priorities for India

## 10<sup>th</sup> September, 2019 (Tuesday)

10:00 – 11:00	<b>Address 2: Mr. Sonam Wangchuk, Founder-Director, SECMOL</b> (Venue: Crystal Ball Room)		
11:00 – 11:30	Tea/ Coffee Break		
Parallel Sessions	Thematic Track 7 (Venue: Plaza Terrace Room)	Thematic Track 8 (Venue: Crystal Ball Room)	Thematic Track 9 (Venue: Regal)
11:30 – 13:00	Emerging Construction Practices & Technologies	Policy Framework for Energy Efficiency in Buildings (Rating and Labelling System)	Integration of Renewable Energy in Buildings in India
13:00 – 14:00	Lunch		
14:00 – 15:00	<b>Panel Discussion on Roadmap of Sustainable and Holistic Approach for Energy Efficient Built Environment by 2030</b> (Venue: Crystal Ball Room)		
Parallel Sessions	Thematic Track 10 (Venue: Plaza Terrace Room)	Thematic Track 11 (Venue: Regal)	Thematic Track 12 (Venue: Crystal Ball Room)
15:00 – 16:30	State-of-the-art Cooling Systems, including District Cooling System	Analytical Tools to Estimate Building Performance	Market Development & Financing Mechanisms for Energy Efficiency
16:30 – 17:00	Tea/ Coffee Break		

## 11<sup>th</sup> September, 2019 (Wednesday)

Parallel Sessions	Thematic Track 13 (Venue: Regal)	Thematic Track 14 (Venue: Crystal Ball Room)	Thematic Track 15 (Venue: Plaza Terrace Room)
10:00 – 11:15	Contemporary System Solutions (Lighting, Air Quality, Heat and Cold Recovery)	Embodied Energy and the Life Cycle Approach	Entrepreneurship & Innovative Business Models
11:15 – 11:30	Tea/ Coffee Break		
Parallel Sessions	Thematic Track 16 (Venue: Plaza Terrace Room)	Thematic Track 17 (Venue: Regal)	Thematic Track 18 (Venue: Crystal Ball Room)
11:30 – 13:00	Steps towards Net Zero Energy Buildings	Occupant Comfort: Thermal, Visual, Acoustic, Indoor Air Quality	Policy Implementation and Enforcement
13:00 – 14:00	Lunch		
14:00 – 15:00	<b>Address 3: Ar. Prem Nath, Architect and Interior Designer</b> (Venue: Crystal Ball Room)		
15:00 – 16:00	<b>Valedictory Session</b> (Venue: Crystal Ball Room)		
16:00 – 16:30	High Tea		

<b>Media Session</b>	<b>9<sup>th</sup> September, 2019, 11:40 – 13:15</b> <b>Venue – Plaza Terrace Room</b>
<p>The building sector in India consumes over 30% of the total electricity consumed in the country annually and is second only to the industrial sector as the largest emitter of greenhouse gases.</p> <p>The level of awareness on building energy efficiency amongst key stakeholders such as policy makers, builders, building design professionals, home buyers, residents is rather low, and media can play an important role in creating this awareness.</p> <p>To address this issue, Bureau of Energy Efficiency under its Indo-Swiss Building Energy Efficiency Project (BEEP) has initiated the “Media Engagement Program on Energy Efficient Buildings” which aims to engage media in creating awareness, sustaining debate through accurate information and enabling them to do quality reporting.</p> <p>This session aims to put forth the building energy challenge and the role that can be played by media in creating awareness on the subject. The “Media Engagement Program on Energy Efficient Buildings” shall also be launched during this session.</p>	<p><b>MODERATOR:</b></p> <p><b>Ms. P.N. Vasanti</b>, Director General Centre for Media Studies (CMS)</p> <p>“Launch of the Media Engagement Program on Energy Efficient Buildings” by Hon’ble Minister of State (IC) (Power, New &amp; Renewable Energy) &amp; media interaction</p> <p><b>SPEAKERS:</b></p> <p><b>Welcome Address &amp; Introduction to the Media Engagement Program</b></p> <p><b>Ms. P.N. Vasanti</b>, Director General Centre for Media Studies (CMS)</p> <p><b>Building Energy Challenge and Solution</b>  <b>Dr. Sameer Maithel</b>, Project Head, Indo-Swiss Building Energy Efficiency Project (BEEP)</p> <p><b>Indo-Swiss Building Energy Efficiency Project (BEEP)</b>  <b>Dr. Anand Shukla</b>, Senior Thematic Advisor- Swiss Agency for Development &amp; Cooperation (SDC)</p> <p><b>Government of India’s Building Energy Efficiency Program</b>  <b>Mr. Abhay Bakre</b>, Director General – Bureau of Energy Efficiency (BEE)</p> <p><b>Panel Discussion on “Bridging the Gap”</b>  Senior Journalists</p> <p><b>Vote of Thanks</b>  <b>Mr. Saurabh Diddi</b>, Director, Bureau of Energy Efficiency</p>

<p><b>Thematic Track 1– Meeting Two Ends: Heritage and Indigenous Construction Practices</b></p>	<p><b>9<sup>th</sup> September, 2019, 14:00–15:30</b> <b>Venue – Plaza Terrace Room</b></p>
<p>A vestige of distinctive traditional building practice still survives and thrives in regions of India. Be it Dhanis of Rajasthan, Kath-Khuni architecture of Himachal Pradesh or Dhajji-Dewari of Kashmir region, these solutions from our past can help us achieve sustainable development in the present.</p> <p>A natural extension to the knowledge of local climate, availability of local materials and tools, and the resultant building practice is deeply rooted to the environment and the cultural practices and traditions of the region. Having pointed that out, they have proven to be more resilient to the harsh spells of natural anomalies.</p> <p>Having evolved over a large span of time, passed on by generation after generation, it demonstrates a profound understanding of building science that responds to the region. This session highlights the various construction practices, materials and details in indigenous construction and the resulting compositional richness in the built form that reflect the uniqueness of the regional architecture of India</p>	<p><b>MODERATOR:</b></p> <p><b>Ar. Sanjay Prakash</b>, Principal Architect, SHiFt (Studio for Habitat Futures) Design Studio, New Delhi</p> <p><b>SPEAKERS:</b></p> <p><b>Prof. Dr. Deepika Shetty</b>, Director - Faculty of Architecture, MAHE, Manipal Academy of Science, Karnataka</p> <p><b>Ms. Revathi Kamath</b>, Principal Architect, Kamath design Studio, New Delhi</p> <p><b>Mr. Ripu Daman Singh</b>, Associate Professor, GZS School of Architecture and Planning, Punjab</p> <p><b>Prof. Uta Pottgiesser</b>, Chair of Heritage &amp; Technology, TU Delft, NL and Chair Building Construction &amp; Materials, TH OWL, Detmold, Germany</p>
<p><b>Thematic Track 2– Policy Framework for Energy Efficiency in Buildings (Codes and Standards)</b></p>	<p><b>9<sup>th</sup> September, 2019, 14:00–15:30</b> <b>Venue – Crystal Ballroom</b></p>
<p>Currently accounts for a third of the nation’s energy As per international commitments, India plans to reduce its energy intensity by 33-35% by 2030. Given its current booming economy and the growing building energy consumption, which use, it will be integral to achieve this reduction through efficient use of energy in buildings. To enable a paradigm shift in the sector, it is essential to support an enabling ecosystem through effective policy frameworks.</p> <p>In this regard, the Energy Conservation Building Code has set the ground rules for achieving energy efficiency in commercial and residential buildings of India. Through incentives and mandates, India aspires to increase the adoption of ECBC.</p> <p>This session shall highlight the work done with energy efficiency codes for the buildings sector and how to strengthen them further in order to reduce energy consumption during the operation of a building.</p>	<p><b>MODERATOR:</b></p> <p><b>Dr. Winfried Damm</b>, Cluster Coordinator, IGEN - GIZ</p> <p><b>SPEAKERS:</b></p> <p><b>Mr. Abdullah Nisar Siddiqui</b>, Technical Expert, IGEN-EERB, GIZ</p> <p><b>Dr. David Goldstein</b>, Natural Resources Defense Council, San Francisco, USA</p> <p><b>Mr. Mario Schmidt</b>, President, UWDMA, New Delhi</p> <p><b>Mr. Saurabh Diddi</b>, Director, Bureau of Energy Efficiency, New Delhi</p> <p><b>Mr. William Prindle</b>, Director, ICF USA</p>

### Thematic Track 3– Circular Economy

9<sup>th</sup> September, 2019, 14:00–15:30  
Venue – Regal

Over the years, mankind has emerged as the most dominant force shaping the world’s physical, economic and social environment. This anthropocentric approach has led to the depletion and in some cases exhaustion of natural resources. With the world population moving towards the 9 billion mark, increase in demand for natural resources is inevitable.

However, the world has already reached limits of most resources, with oil reserves remaining only for the next four decades and natural gas for the next five decades. Further, the new year came in with the alarming news of Cape Town going dry, clearly a sign of climate change and resource scarcity that the world would face in the coming times.

India has traditionally been a frugal society eschewing wastefulness, reusing and recycling products, making these last beyond its intended purposes. However, with the advent of consumerism, growing purchasing power and higher standard of living, it is a challenge to sustain Indian population (which is 17% of the global population), on 2% of world’s landmass with 4% of total freshwater resources. In a world of finite resources, it is crucial to identify and innovate a new and restorative economic model for the world. The concept of circular economy promises a way out, through improved longevity of products, waste minimization, sharing, renting, repair and reuse to maximize product value before returning it to the environment safely. Given its USD 4.5 trillion global opportunity, innovative businesses and start-ups are already venturing into this space.

The session would try to establish the business case for adopting this model by presenting economic arguments, beyond the environmental considerations and good corporate citizenship.

#### MODERATOR:

**Dr. Shailesh Agarwal**, Executive Director – BMTPC, New Delhi

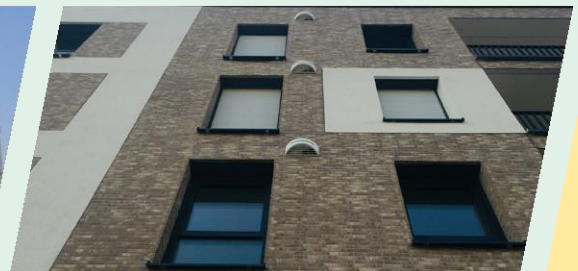
#### SPEAKERS:

**Dr. K. Vijaya Lakshmi**, Vice-President, Development Alternatives, New Delhi

**Mr. Pekka Huovila**, 10YFP SBC Coordinator, Finland - Ministry of Environment

**Mr. Satish Kumar**, President & Executive Director – AEEE, New Delhi

**Mr. Siddharth Singh**, Lead India Analyst, IEA, New Delhi



**Thematic Track 4– Smart Cities and Smart Readiness Indicators (SRI) for Buildings**

**9<sup>th</sup> September, 2019, 16:00–17:30  
Venue – Crystal Ballroom**

Number of people in India’s cities will overtake rural population in next three decades. Furthermore, the rapid growth of cities in the developing world, coupled with increasing rural to urban migration, has led to a boom in mega-cities. In 1990, there were ten mega-cities with 10 million inhabitants or more which has grown to 28 mega-cities, home to a total of 377.1 million people.

To ensure that our cities cater to ever citizen and are efficient and green in doing so, Smart Cities and Buildings have taken the spotlight in recent years. However, discourse regarding what SMART cities mean is still growing. Do SMART cities mean ensuring efficiency through technological advancement or is a city which provides safety, sustainability and security to all? How do we measure the SMART-ness of a city? Can India make all its cities SMART? How do we do so?

This session will focus on the above questions and delve into what SMART cities in India should look like and how to achieve the same.

**MODERATOR:**

**Mr. Kunal Kumar**, Joint Secretary & Mission Director (SCM), MOHUA, New Delhi

**SPEAKERS:**

**Mr. K. K. Joadder**, Former Chief Planner, Town and Country Planning Organisation

**Mr. Samit Ray**, Director - Government Affairs, United Technology Corporation (UTC), New Delhi

**Mr. Swayan Chaudhary**, Managing Director & CEO, Imagine Panaji Smart City Mission Director, Goa

**Ms. Vaishali Nandan**, Project Head, Climate Smart Cities, GIZ, New Delhi

**Mr. Edwin Koekkoek**, Counsellor, Energy and Climate Action, Delegation of the European Union to India

**Mr. Anand Iyer**, Chief Programme Manager, NIUA



<b>Thematic Track 5– Climate Resilience in Buildings</b>	<b>9<sup>th</sup> September, 2019, 16:00–17:30</b> <b>Venue – Plaza Terrace Room</b>
<p>Decades of irresponsible consumption and production patterns have led to adverse effects on the climate of the planet leading to unpredictable weather patterns, natural disasters, loss of livelihood and damage to life and property. In 2017 alone, there were 2,726 deaths in India that was directly related to extreme weather-related events — heat waves, storms, floods and droughts. India suffered an economic loss of about USD 13.8 billion in the year. Given the gravity of the situation, immediate action and farsightedness is essential.</p> <p>At the same time, India is expected to increase the current building stock by nearly four times by 2030. This provides a great opportunity to provide for resilient habitat which can cater to the changing conditions and provide for safe structures for all citizens.</p> <p>This session shall focus on identifying existing challenges and putting forth solutions to ensure climate resilience, battle climate change, enhance adaptability, and reduce vulnerability of habitats in the face of changing environmental conditions.</p>	<p><b>MODERATOR:</b></p> <p><b>Mr. R R Rashmi</b>, Distinguished Fellow and Programme Director, Earth Science and Climate Change, The Energy and Resources Institute (TERI), New Delhi</p> <p><b>SPEAKERS:</b></p> <p><b>Ms. Alokanda Nath</b>, Technical Expert, Climate Smart Cities, GIZ, New Delhi</p> <p><b>Dr. Anir Upadhyay</b>, Architect and Urban Planner, Faculty of the Built Environment, UNSW, Sydney</p> <p><b>Mr. Ashish K Jain</b>, Partner, AEON Integrated Building Design Consultants, New Delhi</p> <p><b>Prof. Hina Zia</b>, Dean, Faculty of Architecture and Ekistics, Jamia Millia Islamia, New Delhi</p>
<b>Thematic Track 6– Affordable and Sustainable Development: Priorities for India</b>	<b>9<sup>th</sup> September, 2019, 16:00–17:30</b> <b>Venue – Regal</b>
<p>While India undergoes rapid urbanization, a lack of readiness in terms of providing housing to all becomes more conspicuous. Recent government pushes including the PMAY scheme has targeted bridging the projected gap of 19 million affordable housing units in urban areas in India by 2020. Fallouts in terms of proliferation of slums, high prices of land and building materials render houses unaffordable for the segment at the bottom of the pyramid. It does not help that the urban population is growing exponentially which will further aggravate the situation.</p> <p>One of the key reasons for urban migration has been climate change and other impacts of environmentally hazardous practices. Sustainable development is not a negotiable front and needs to be addressed immediately. Unfortunately, more often than not affordability and sustainability is perceived as at odds with each other.</p>	<p><b>MODERATOR:</b></p> <p><b>Ms. Jessica Grove-Smith</b>, Physicist Senior Scientist, Passive House Institute, Germany</p> <p><b>SPEAKERS:</b></p> <p><b>Prof. Ashok B. Lall</b>, Principal Architect, A.B. Lall Architects, New Delhi</p> <p><b>Ms. Janhavi Parab</b>, Deputy General Manager—Sustainability, Mahindra Lifespaces, Mumbai</p> <p><b>Mr. Chinmaya Kumar Acharya</b>, Chief of Programmes, Shakti Foundation, New Delhi</p>

The session shall focus on how affordability and sustainability can be addressed coherently to achieve sustainable and inclusive development through efficient, healthy, green and resilient habitat.

## Keynote Address #2

10<sup>th</sup> September, 2019 | 10:00 – 11:00 | Venue – Crystal Ballroom

**Mr. Sonam Wangchuk**

Founder-Director

Students' Educational and Cultural Movement of Ladakh (SECMOL)

### Thematic Track 7– Emerging Construction Practices & Technologies

10<sup>th</sup> September, 2019, 11:30–13:00  
Venue – Plaza Terrace Room

Recent government pushes have highlighted the need to identify, scale-up and define feasible business models for replicable solutions for fast construction at a large scale to meet the rapidly growing demand for infrastructure. Initiatives like Global Housing Technology Challenge and an array of pilots undertaken by Government of India is the first step towards achieving the need of the hour.

The need to tackle the environmental impacts of construction is as urgent as catering to the needs of a growing urban population. The construction industry serves almost all other industries, as all economic value creation occurs within or by means of buildings or other “constructed assets”. As an industry, it accounts for 6% of global GDP. It is also the largest global consumer of raw materials, and constructed objects account for 25-40% of the world’s total carbon emissions.

This session shall focus on deliberations on the emerging construction practices & technologies and how they can provide a solution to mitigate the environmental impacts of the construction industry and provide feasible, reproducible and fast construction.

#### MODERATOR:

**Prof. Ashok B. Lall**, Principal Architect ,  
AB Lall Architects, New Delhi

#### SPEAKERS:

**Er. C.K.Varma**, Chief Engineer, Central  
Public Works Department, New Delhi

**Ar. Neeraj Kapoor**, Managing Director,  
Kalpakrit Sustainable Environments Pvt.  
Ltd., New Delhi

**Ar. Poorva Keskar**, Director, VKe  
environmental, Pune

**Ar. Sanjay Prakash**, Principal Architect,  
SHiFt (Studio for Habitat Futures) Design  
Studio, New Delhi

**Mr. Pramod Adlakha**, Managing  
Director, Adlakha Associates Pvt. Ltd. &  
Adlakha Affordable Homes

**Dr. Soumen Maity**, Team Leader –  
Technology, Technology and Action for  
Rural Advancement



<p><b>Thematic Track 8– Policy Framework for Energy Efficiency in Buildings (Rating and Labelling System)</b></p>	<p><b>10<sup>th</sup> September, 2019, 11:30–13:00</b> <b>Venue – Crystal Ballroom</b></p>
<p>Improving energy efficiency is the best way to simultaneously meet all of our sustainable development goals in the energy sector. It helps economies grow, frees resources for other objectives and reduces negative environmental impacts, including greenhouse gas emissions. Consumers are often inclined to buy the cheapest product on the market. This burdens them with much higher running cost for years to come, and countries with the need to invest much more in energy supply networks than would be needed if all products would comply with minimum energy performance requirements.</p> <p>Neither one customer nor one manufacturer alone can alter this situation. Ratings and labels work best as part of a holistic market transformation strategy. One such strategy is Minimum Energy Performance Standards (MEPS). MEPS establish standards for energy performance that products must meet or exceed before they can be sold to consumers. It improves the average efficiency of products available on the market and raises the performance of the least efficient products.</p> <p>This session brings together industry experts to exchange knowledge on the policies to be framed and intervened for energy efficiency in buildings.</p>	<p><b>MODERATOR:</b></p> <p><b>Mr. Sanjay Seth</b>, CEO GRIHA Council, New Delhi</p> <p><b>SPEAKERS:</b></p> <p><b>Ms. Camille Sifferlen</b>, Project Manager, Passive House Institute, Germany</p> <p><b>Ms. Mili Majumdar</b>, Managing Director, GBCI, New Delhi</p> <p><b>Mr. M Anand</b>, Principal Counsellor-IGBC, Hyderabad</p> <p><b>Mr. S. Vikash Ranjan</b>, Project Manager, GIZ, New Delhi</p> <p><b>Dr. Ian Hamilton</b>, Consultant Energy Efficiency Division – IEA, France</p> <p><b>Mr. Spondon Bhagowati</b>, Green Building Consultant, International Finance Corporation (IFC)</p>
<p><b>Thematic Track 9– Integration of Renewable Energy in Buildings in India</b></p>	<p><b>10<sup>th</sup> September, 2019, 11:30–13:00</b> <b>Venue – Regal</b></p>
<p>Globally, the energy related carbon dioxide (CO<sub>2</sub>) emissions can be reduced by 70% by 2050 with a net positive economic outlook, says a joint study conducted by IRENA and IEA in 2017. When purchased together, EE and RE result in higher shares of renewable energy, a faster reduction in energy intensity, and a lower cost for the energy system. The integration of renewable energy in building has a high potential to complement the efficient design of high-performance new buildings.</p> <p>Internationally buildings are being designed with a low energy demand, which is met by renewable energy sources. Distribution of load with the use of renewables or achieving the status like net zero or zero</p>	<p><b>MODERATOR:</b></p> <p><b>Mr. Joerg Gaebler</b>, Principal Advisor, GIZ, New Delhi</p> <p><b>SPEAKERS:</b></p> <p><b>Mr. Anand Shukla</b>, Senior Thematic Advisor, Swiss Development and Cooperation, New Delhi</p> <p><b>Mr. Sanjay Dube</b>, Chief Executive Officer, International Institute for Energy Conservation (IIEC), New Delhi</p> <p><b>Mr. Daniel Magallon</b>, Managing Director, BASE – Basel Agency for Sustainable Energy, Basel, Switzerland</p>

energy buildings presents unique challenges as well as opportunities for improving the efficiency of buildings in India.

The session will demonstrate that the greater use of renewable energy reduces the demand for energy, and greater energy efficiency results in higher shares of renewable energy and also focus on identification of the potential of measures to increase both the share of renewable energy and the level of energy efficiency improvement.

**Mr. Nabeel Ahmad**, Associate Director, Environmental Design Solutions, New Delhi

**Mr. Sameer Kwatra**, Climate Change and Clean Energy Policy Analyst, Natural Resources Defense Council, USA

**PANEL DISCUSSION:**

**10<sup>th</sup> September, 2019, 14:00–15:00**

**Venue – Crystal Ballroom**

**Roadmap of Sustainable and Holistic Approach for Energy Efficient Built Environment by 2030**

Mr. Mahadev Rudrappa Kamble, Chairman, Karnataka RERA

Mr. Bhanu Pratap Singh, Member, UPRERA

Ms. Shyama Agarwal, Director, JOP

Mr. Praveen Jain, Vice Chairman, NAREDCO

Dr. Winfried Damm, Cluster Coordinator, IGEN, GIZ

Mr. Saurabh Diddi, Director, Bureau of Energy Efficiency



<b>Thematic Track 10– State-of-the-art Cooling Systems, including District Cooling System</b>	<b>10<sup>th</sup> September, 2019, 15:00–16:30</b> <b>Venue – Plaza Terrace Room</b>
<p>India and other nations in South Asia and Southeast Asia are on track to record the world’s biggest increases in demand for air conditioning. Sales of air conditioners in India rose an estimated 17% over the past three years, with sales raising fastest among residential users. A research professor at the University of Michigan, estimated the potential demand for cooling in Mumbai alone at about 24% of the entire U.S. demand.</p> <p>District Cooling systems typically require about 15% less capacity than conventional distributed cooling systems for the same cooling loads due to load diversity and flexibility in capacity design and installation. The key challenges are high initial investment, lack of technical expertise for design, little policy level support, and absence of favorable financial and business mechanisms. This session reviews current energy code adoptions and their requirements for cooling systems, discuss design challenges as they pertain to different cooling system types, review the effectiveness of equipment based on system type, building and application and assess potential benefits.</p>	<p><b>MODERATOR:</b></p> <p><b>Mr. Markus Wypior</b>, Deputy Cluster Coordinator, IGEN/GIZ</p> <p><b>SPEAKERS:</b></p> <p><b>Ms. Shikha Bhasin</b>, Program Lead, CEEW</p> <p><b>Mr. Bakulesh Kanakia</b>, Business Development Manager, National Central Cooling Company PJSC</p> <p><b>Mr. Rajeev Ralhan</b>, Executive Director, Clean Energy, PwC India</p> <p><b>Mr. Saurabh Diddi</b>, Director, Bureau of Energy Efficiency, New Delhi</p> <p><b>Prof R. S. Agarwal</b>, Professor, IIT Delhi</p> <p><b>Mr. Sanjay Dube</b>, Chief Executive Officer, International Institute for Energy Conservation (IIEC), New Delhi</p> <p><b>Mr. Daniel Magallon</b>, Managing Director, BASE – Basel Agency for Sustainable Energy, Basel, Switzerland</p> <p><b>Mr. Bali Singh</b>, Associate Director, Namdhari Eco Energies Private Limited</p>
<b>Thematic Track 11– Analytical Tools to Estimate Building Performance</b>	<b>10<sup>th</sup> September, 2019, 15:00–16:30</b> <b>Venue – Regal</b>
<p>Analytical tools have become acceptable means of predicting building performance within the major sets of standards and rating systems concerning sustainable design. The purpose of these tools is to provide the right people with the right information in order to influence decision making where and when it is most effective.</p> <p>In order to alter the building’s geometry to create a more efficient use of energy, the designer must be able to compare the effect of different forms of the building quickly and efficiently. In the era of analysis, it is all about comparison, first in making the systems more</p>	<p><b>MODERATOR:</b></p> <p><b>Mr. Tanmay Tathagat</b>, Executive Director, Environmental Design Solutions (EDS), New Delhi</p> <p><b>SPEAKERS:</b></p> <p><b>Ms. Jessica Grove-Smith</b>, Physicist Senior Scientist, Passive House Institute, Germany</p>

efficient and then in comparing those numbers with required building codes or voluntary certification such as ECBC, ASHRAE, ISHRAE, etc.

Currently there are many analytical tools with different levels of complexity and response to different variables. The session will demonstrate the various analytical tools to estimate building performance and applications.

**Mr. SMH Adil**, Director, GEED, New Delhi

**Ms. Swati Puchalapalli**, Founder, Terra Viridis, Hyderabad

**Prof. Vishal Garg**, Professor, IIIT Hyderabad

**Thematic Track 12– Market Development & Financing Mechanisms for Energy Efficiency**

**10<sup>th</sup> September, 2019, 15:00–16:30**  
**Venue – Crystal Ballroom**

The International Energy Agency has predicted that without concerted push from policy, 2/3rds of the economically viable potential to improve energy efficiency in buildings will remain unexploited by 2035. Addressing the challenge of climate change, and achieving the goals set out in the Paris Agreement will require a significant global effort and a significant increase in current levels of funding. Much of this funding will need to come from domestic and private sources.

The low carbon growth planned at a global level to mitigate climate change requires financing opportunities, which are often constrained leading to requirement of innovative financing mechanisms to keep fueling the growth with reduced investment requirement. With the passing years, decisions are made that will lock the world in to high carbon development paths for years to come.

The deliberations will focus on development of market and financing mechanism for energy efficiency and funding opportunities to meet the sustainable goals.

**MODERATOR:**

**Mr. Saurabh Kumar**, Managing Director, Energy Efficiency Services Limited, New Delhi

**SPEAKERS:**

**Mr. Monu Ratra**, Chief Executive Officer, IIFL Home Finance Ltd., Gurgaon

**Mr. Sivaram Krishnamoorthy**, Operations Officer, International Finance Corporation (IFC), New Delhi

**Smt. Vineeta Kanwal**, Joint Director, BEE, New Delhi

<p><b>Thematic Track 13– Contemporary System Solutions (Lighting, Air Quality, Heat and Cold Recovery)</b></p>	<p><b>11<sup>th</sup> September, 2019, 10:00 – 11:15</b> <b>Venue – Regal</b></p>
<p>Energy efficiency must be at the heart of the clean energy transition in order to ensure a safe, healthy, reliable, affordable and sustainable energy system for our common future. Energy efficiency is the one energy resource that every country possesses in abundance and is the quickest and most cost-effective way of addressing energy security, environmental, health and economic challenges.</p> <p>However, implementing energy efficiency aggressively across an economy is extremely challenging because the decisions affecting efficiency are dispersed across vast numbers of buildings and facilities and are made by a diverse group of end users, individuals, and facility managers. This track will explore the multiple benefits of energy efficiency policies and programs, highlighting key challenges and new innovations.</p> <p>The sessions will focus on how the stakeholders and practitioners attending ANGAN can collaborate to achieve a greater pace and scale of efficiency improvements across the Asia region.</p>	<p><b>MODERATOR:</b></p> <p><b>Mr. S. Vikash Ranjan</b>, Project Manager, GIZ, New Delhi</p> <p><b>SPEAKERS:</b></p> <p><b>Mr. Richie Mittal</b>, President, ISHRAE Headquarters, New Delhi</p> <p><b>Mr. Yash Shukla</b>, Technical Director, Building Systems and BEPL, Centre for Advance Research in Building Science and Energy, CEPT, Ahmedabad</p> <p><b>Dr. Kaviraj Singh</b>, Managing Director, Earthood Services Private Limited (ESPL)</p>
<p><b>Thematic Track 14– Embodied Energy and the Life Cycle Approach</b></p>	<p><b>11<sup>th</sup> September, 2019, 10:00 – 11:15</b> <b>Venue – Crystal Ballroom</b></p>
<p>The construction and operation of buildings require huge amounts of resources and contribute to climate change and resource depletion. Growing demand for urban built spaces has resulted in unprecedented exponential rise in production and consumption of building materials in construction, which require significant energy and contributes to pollution and greenhouse gas (GHG) emissions.</p> <p>Efforts aimed at reducing energy consumption and pollution involved with the production of materials fundamentally requires their quantification. Embodied energy (EE) of building materials comprises the total energy expenditure involved in the material production including all upstream processes such as raw material extraction and transportation.</p>	<p><b>MODERATOR:</b></p> <p><b>Prof P. S. Chani</b>, Head of Department, Department of Architecture and Planning, IIT Roorkee</p> <p><b>SPEAKERS:</b></p> <p><b>Dr. Ashok Kumar</b>, Chief Scientist – CBRI, Roorkee</p> <p><b>Dr. B. V. Venkatarama Reddy</b>, Professor, Dept of Civil Engineering, Indian Institute of Science, Bangalore</p> <p><b>Mr. Cesare Saccani</b>, Managing Director, ICMQ Certification India Pvt. Ltd., Mumbai</p>

Life cycle energy analysis clearly identifies optimum strategies for reducing both energy demand and greenhouse gas emissions. Life-Cycle Assessment (LCA) is one of various management tools for evaluating environmental concerns.

This session brings together industry experts to exchange knowledge and showcase approaches for Embodied Energy (EE) and life cycle analysis that will ultimately help practitioners how embodied energy and GHG emissions should be defined, calculated and assessed.

**Dr. Sameer Maithel**, Head, Indo-Swiss BEEP/Greentech Knowledge Solutions Pvt. Ltd, New Delhi

**Mr. Shailesh Ranjan**, Head – Business Planning & Operations, Asahi India Glass, Navi Mumbai

**Thematic Track 15– Entrepreneurship & Innovative Business Models**

**11<sup>th</sup> September, 2019, 10:00 – 11:15**  
**Venue – Plaza Terrace Room**

At the heart of business models lies its value proposition. Sustainable business models distinguish themselves by building on the principle of multiple value creation. The underlying idea is that new business models are able to affect not just their own operations, but render positive ecological and social impacts also outside of the organizational boundaries, and doing so economically.

The world hangs in balance with challenges, issues at every front. Change in processes, products, production, design is picking up the pace with stress being given to innovative solutions rather than the slow, transformative solutions as the upheaval being caused by climate change, greenhouse emissions, global warming is dynamic and erratic.

With the surge in start-ups working on issues from the macro level to micro level, this session will showcase exemplary initiatives in the field of sustainability and bring their issues, challenges and the success to the forefront. The aim of this session is to develop practical tools and methods that can support businesses and value chains to concretize and quantify decision-making for business model design, adaptation, evaluation, and up scaling.

**MODERATOR:**

**Dr. Ashok Kumar**, Director – Bureau of Energy Efficiency, New Delhi

**SPEAKERS:**

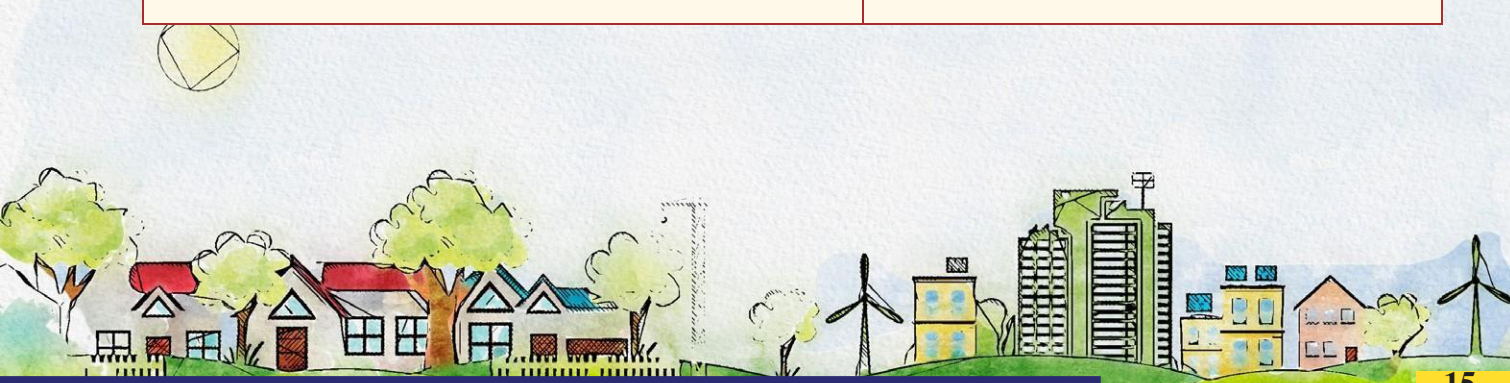
**Mr. Amarjeet Singh**, Co-Founder & CTO, Zenatix, Gurgaon

**Ar. Gaurav Shorey**, Director, PSI Energy, New Delhi

**Mr. Kanagaraj Ganesan**, Founder and Director, Integrative Design Solutions Pvt. Ltd., New Delhi

**Mr. Vedant Vijay Pujari**, Managing Partner, Accures Legal, New Delhi

**Mr. Abhijeet Sinha**, Program Director, EODB



## Thematic Track 16– Steps towards Net Zero Energy Buildings

Achieving India's climate change targets will require deep emission reductions from the building sector. This is a considerable challenge, especially considering India's growing population and projected increase in total building floor area. Global Building Performance Network analysis showed that a deep efficiency path, featuring both retrofit targets and a broad adoption of state of the art technology for new buildings within 10 years, would allow building sector energy use and emissions to decrease even as floor space increases.

By reasonable passive design, including high performance envelope, good airtightness, and passive heat gains, the building energy consumption can be cut 30% off; By appropriate active approaches, including high efficiency appliances, the building energy consumption can be cut 20% off and reach ultra-low energy building; Replacing 10-30% of the energy with renewable energy, the building can reach net zero energy status.

This session shall focus on the steps of the net zero energy buildings (NZEB), the issues, challenge and way forward.

11<sup>th</sup> September, 2019, 11:30–13:00  
Venue – Plaza Terrace Room

### MODERATOR:

**Ms. Henriette Faergemann**, EU Delegation to India Counselor (Environment Energy & Climate Change), New Delhi

### SPEAKERS:

**Dr. David Goldstein**, Energy Co-Director, Climate & Clean Energy Program, Natural Resources Defense Council (NRDC), USA

**Mr. Edwin Koekkoek**, Counsellor, Energy and Climate Action, Delegation of the European Union to India

**Ms. Isha Anand**, Director Projects, Morphogenesis, New Delhi

**Dr. Peter Graham**, International Secretariat, REEEP, Vienna, Austria

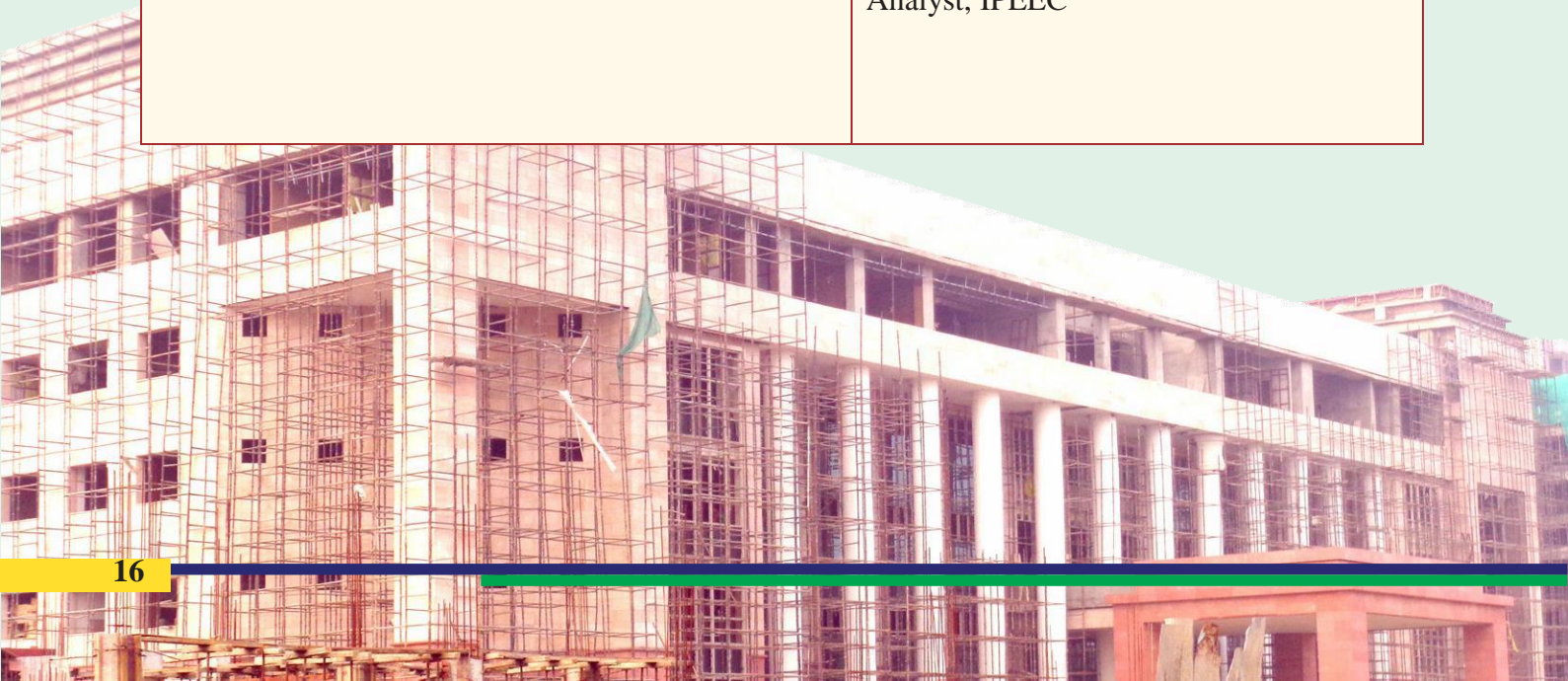
**Prof. Prasad Vaidya**, Energy Consultant, ZENERG, Mumbai

**Mr. Sriram Kuchimanchi**, Founder & CEO, Smarter Dharma, Bangalore

**Dr. Sunita Purushottam**, Sustainability Head, Mahindra Lifespace Developers Ltd., Mumbai

**Dr. Vinod Gupta**, Principal, Space design consultants, New Delhi

**Ms. Rashmi Jawahar Ganesh**, Policy Analyst, IPEEC



**Thematic Track 17– Occupant Comfort: Thermal, Visual, Acoustic, Indoor Air Quality**

**11<sup>th</sup> September, 2019, 11:30 – 13:00**  
**Venue – Regal**

Space cooling is an important component of the total energy requirement in the country. Indoor thermal comfort, essential for physiological and psychological well-being, can be typically provided by active heating or cooling or a combination of both – this is contingent mainly on the local weather and the seasonal variations therein.

The weather conditions vary across the country. The overarching goal of India Cooling Action Plan is to provide sustainable cooling and thermal comfort for all while securing environmental and socio-economic benefits for the society. According to ICAP Government support for the vulnerable communities should include strategies such as: enforcing efficient building envelope guidelines from ECBC-R in the design and construction of housing for EWS and LIG to enable thermal comfort for all; funding and support for initiatives led by local municipalities and NGOs, such as cool-roof programs, off-grid micro-systems for cooling, and localized heat-action plans.

This session shall provide a platform for various agencies to come together & discuss the challenges, probable solutions and approach for occupant comfort: Thermal, Visual, Acoustic, IAQ

**MODERATOR:**

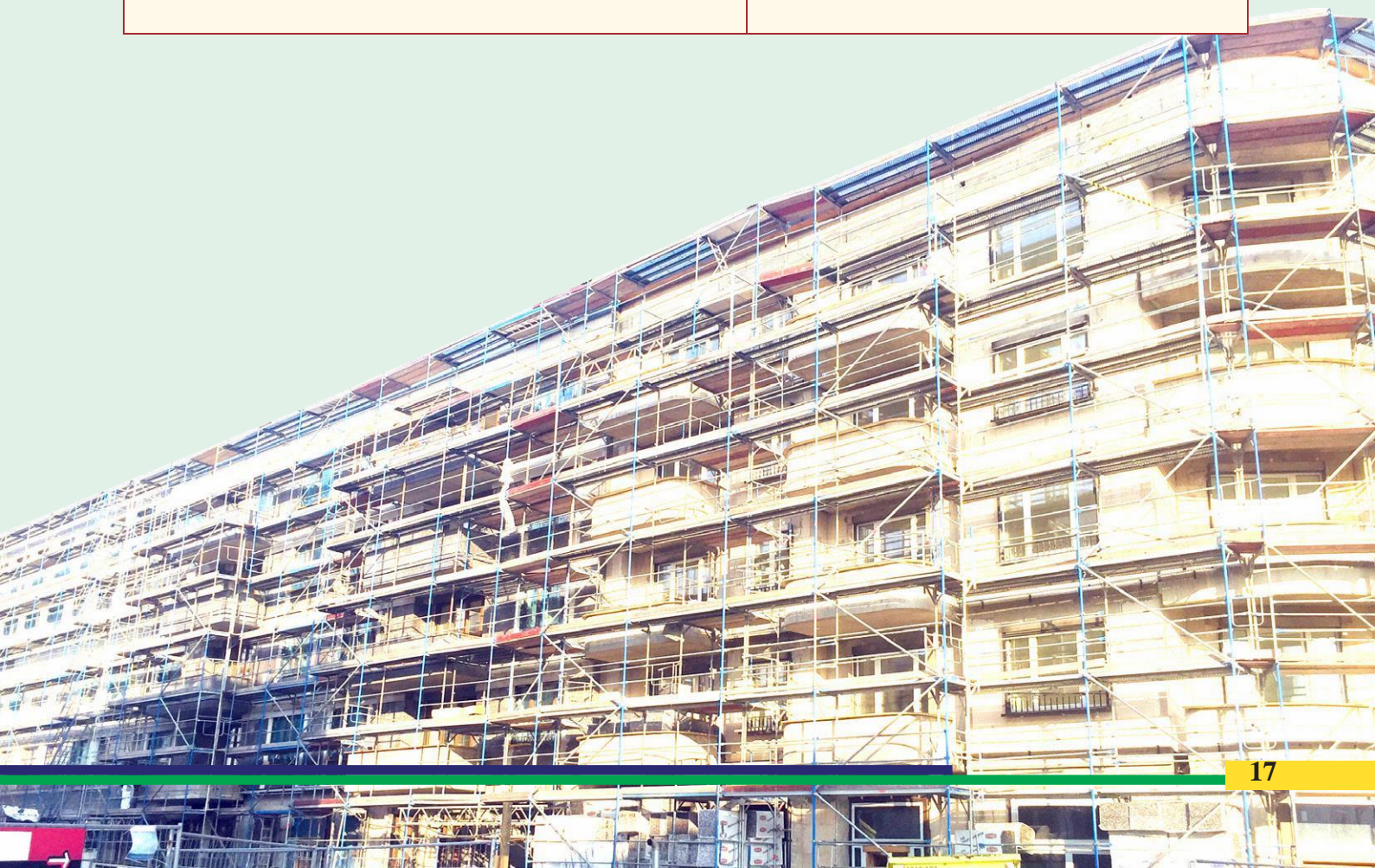
**Mr. Pierre Jaboyedoff**, Energy Design Consultant and Associate at Effin’art, Lausanne, Head of PMTU, Switzerland

**SPEAKERS:**

**Prof. Vishal Garg**, Professor, IIIT Hyderabad

**Prof. Rajan Rawal**, Executive Director, Centre for Advanced Research in Building Science and Energy, CEPT University, Ahmedabad

**Dr. Ian Hamilton**, Associate Professor, UCL Energy Institute, London





### Thematic Track 18– Policy Implementation and Enforcement

11<sup>th</sup> September, 2019, 11:30 – 13:00  
Venue – Crystal Ballroom

Robust policies, action plans are impactful mechanisms to inculcate energy efficiency at various levels. Various standards and labelling programs for equipment, appliances, and buildings play a major role in this. Energy Conservation Building Code is one such example.

Policies correlate the climate change issues and their impact on the national economy and society with an emphasis on energy efficiency, if implemented well. Community engagement, adequate human and material resources bridge the gap between policy creation and implementation.

The impending sense of doom due to global warming, disturbed weather due to climate change requires dedicated action plans, strategy documents to execute the policies derived from the SDGs, and other global agendas.

Additionally, a more dynamic and evolved outlook is required towards policy formulation. The deliberations in the session shall focus on the policy framework for energy efficiency in the country, execution mechanisms, challenges and issues.

#### MODERATOR:

**Mr. Saurabh Diddi**, Director, Bureau of Energy Efficiency, New Delhi

#### SPEAKERS:

**Mr. Hanumanta Ayeppa**, Karnataka Renewable Energy Development Limited (KREDL), Karnataka

**Prof. Rajkiran Bilolikar**, Associate Professor in Energy Policy, Administrative Staff College of India (ASCI), Hyderabad

**Shri Ram Kumar**, Uttar Pradesh New and Renewable Energy Development Agency (UPNEDA)

**Ms. Prima Madan**, Lead, Energy efficiency and cooling, NRDC India Program

**Mr. Abdullah Nisar Siddiqui**, Technical Expert, IGEN-EERB, GIZ

### Keynote Address #3

11<sup>th</sup> September, 2019 | 14:00 – 15:00 | Venue – Crystal Ballroom

**Ar. Prem Nath**,  
Architect and Interior Designer

#### Valedictory Session (Panel Discussion)

15:00–16:00  
Venue – Crystal Ballroom

Dr. Winfried Damm, Cluster Co-ordinator, GIZ  
Shri Abhay Bakre, Director-General, Bureau of Energy Efficiency  
Shri Prabhakar Singh, Director-General, Central Public Works Department  
Shri A.K. Jain, Special Secretary, Ministry of Environment, Forest and Climate Change