

Sustainable Buildings in India: Energy Efficiency, Resource Efficiency, Green Cooling and Green Design

SPEAKERS OF THE SESSION:

- Mr. Sanjay Seth, Senior Director and Senior Fellow, TERI
- Mr. Edwin Koekkoek, Counsellor, Energy and Climate Action, Delegation of the European Union to India
- Mr. Nicolas Fornage, Country Director India, Regional Director for India and Bangladesh, AFD
- Mr. Rajeev Ralhan, Director, Clean Energy, PwC
- Mr. Saurabh Diddi, Director, BEE
- Mr Cornelius Rhein, DG CLIMA, European Commission
- Mr. Jake Schmidt, Managing Director, International Program, NRDC
- Prof. Ashok B. Lall, Ashok B Lall Architects
- Ms. Shruti Narayan, Lead Green Building Program- India, IFC
- Shri Manohar Miryala, AGM, NHB

India needs to build around 900 million square meters of real-estate per year in next two decades. Currently the building sector in India accounts for 29-30% of the total electricity consumption and around 437 million tonnes of CO₂ emissions. The commercial sector is growing with 8% and the residential sector with 5% per year. The Housing for All Scheme of the Government of India schedules to build 20 million houses by 2022. The global stock of room air conditioners is scheduled to grow from about 1.2 billion units today to 4.5 billion units by 2050, of which around 1 billion in India.

The session aimed at providing a holistic overview of the main challenges for ensuring sustainable buildings that are resource and energy efficient, thereby resulting in reduction of energy use, pollution, waste and greenhouse gas emissions.

The tone of the session was set by Mr. Sanjay Seth, with sharing of the information at a glance, focussing on the fact that the total energy consumption in residential sector is expected to grow to 75% from the current 63%. Green Building market is set to double its expanse by 2022. One of the biggest stigmas that we need to face and overcome is green building material market investments do not have a favourable payback and thus pertains to the high income sector only. If the users do not get aware of the true scenario, and do not ask for green materials and technologies for the buildings that they invest into, developers may not supply with green options. Hence, consumer awareness is important.

Mr Saurabh Diddi shared with the current plan of action at BEE, that they are coming up with 'Building Passport' for individual buildings that would be available online for the registered buildings, specifying their energy performance in terms of the EPI values and how can the same improvised further by taking energy efficient measures.

Mr Jake Schmidt shared the current scenario at Telangana and Andhra Pradesh, of buildings being ECBC compliant and the same data being available online for reference. He mentioned that this is a unique initiative being taken up India by making the data available in public domain and will further push the market towards more energy efficient buildings.

Increasingly, cooling is recognized as a developmental need that is linked with achieving many Sustainable Development Goals. A large part of the cooling demand is catered through refrigerant based cooling globally across sectors, buildings being a large shareholder in it. Mr. Satish Kumar discussed green cooling and how Thermal Comfort for All should be one of sustainability goals for a largely tropical country like India. This should also govern public and private policy making. It was studied at AEEE that national energy savings estimates with increase of per degree Celsius in the Air-conditioning set point lead to 6-8% energy savings.

Mr. Cornelius Rhein stressed on the fact that how cooling becomes a blind spot when it comes to formulation of energy policies globally. In the present scenario, retrofitting to achieve better cooling performance is any day tougher than new implementation. Consumers need to be introduced to benefits of the better cooling and how it is much better for their health.

Prof. Ashok B. Lall pointed towards the fact that new constructions face an embodied energy explosions. A fact that goes unnoticed is that taller buildings are inherently heavy on embodied energy because of their steel content. Consumers should learn and know how to demand greener sustainable designs from the developers.

Ms. Shruti Narayan stressed on the fact that more collaborative work needs to take place between the stakeholders, and government and private sector, so that the uptake and upscale of green sustainable technologies becomes more viable and feasible in the Indian construction market.

Mr. Manohar Miryala talked about the different programmes that the National Housing Bank is coming with for the uptake of the nascent technologies to help the development in building sector, enhance green practices and support development of sustainable habitats.

Mr Sanjay Seth concluded the session and stressed on the need of greener alternatives in cooling technologies for India. He further added that adoption of amalgamation of greener cooling technologies that could reduce the energy consumption for space cooling in India. Both solar air-conditioning and trigeneration are emerging technologies that are relatively unexplored in our country. The government should consider publishing technology alerts from recognised research bodies to increase awareness of these technologies. Additionally, the work of industry experts and organizations should be leveraged to drive the industry towards green refrigerants.