The rapid urbanization and population growth in developing economies have fuelled a construction boom. India’s buildings and construction sector is responsible for about a third of the nation’s energy use and related CO2 emissions. The sector is expected to nearly triple the energy use and quadruple the emissions by 2050 as the country estimates to add 21.5 billion sqm of building space by 2040 which is dominated by residential buildings. At this juncture, it is crucial to build wise and prevent hefty carbon lock-in.

Decarbonizing strategies are required to address both operational and embodied energy which contribute nearly equally to emissions in a comprehensive outlook – an ecosystem approach. While India has been addressing the operational energy with renewable offsets and standards and codes like Energy Conservation Building Code 2017 and Eco Niwas Samhita 2018, efforts for reducing embodied energy and carbon have just begun. For instance, Building Material and Technology Promotion Council has released a compendium of indigenous materials and technologies. Efforts are now needed to mainstream such materials.

Embodied energy and carbon reduction involves two key strategies: low-carbon design and construction, and low-carbon material options which further involve responsible sourcing as well as production. Processing of construction and demolition waste and use of recycled materials can enable this to a great extent. Addressing these aspects is crucial for achieving India’s net-zero commitments by 2070. CSE’s Anil Agarwal Environment Training Institute (AAETI) offers a residential course aimed at providing comprehensive knowledge on decarbonizing the built environment. This course will familiarize practitioners on low-carbon materials, design and construction, recycling of materials, current market trends, existing gaps between policy interventions and ground realities, and strategies for adopting a net zero approach in the construction sector. AAETI is a sustainable, state-of-the-art campus, designed to serve as a learning tool for sustainable building concepts and design practices.

TRAINER HIGHLIGHTS

- National policy landscape for net zero and decarbonization strategies.
- Understanding operational and embodied energy and carbon in construction cycle.
- Introduction to low embodied carbon materials, design and construction: traditional, hybrid and emerging technologies.
- Urban heat island effect and mitigation strategies.

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TRAINING METHODOLOGY

Classroom lectures, case studies, class exercises, discussions, and field visit.