

## Workshop on Energy Efficiency in Buildings – Fourth Meeting of the Joint Task Force on Energy Efficiency Standards in Buildings

(in the framework of the fifth session of the UNECE Group of Experts on Energy Efficiency (GEEE))

### Concept Note

Buildings are central to meeting the sustainability challenge. In the developed world, buildings consume over 70% of the electrical power generated and 40% of primary energy and are responsible for 40% of CO<sub>2</sub> emissions from combustion. Developing countries will need to accommodate 2.4 billion new urban residents by 2050, and in Europe 75-90% of buildings standing today are expected to remain in use in 2050. Renewable energy technology alone cannot meet those requirements, despite recent improvements. The energy performance of buildings must be managed, but the capability to meet this challenge is in place.

Two UNECE intergovernmental bodies – the Committee on Sustainable Energy and the Committee on Housing and Land Management established the Joint Task Force on Energy Efficiency Standards in Buildings (JTF) in 2015 in order to enhance market harmonization for products and technologies that increase energy efficiency in buildings and support the achievement of the global and regional commitments in the UNECE region. Representatives of member States, business community, academia, civil society and international organizations comprise the membership of the JTF.

This session will begin with the overview of the recent activities and accomplishments of JTF: studies *Mapping of Existing Energy Efficiency Standards and Technologies in Buildings in the UNECE region* and *Mapping of Technologies to Enhance Energy Efficiency in Buildings in the UNECE region* and the outcomes of the *Training Course on High-Performance Energy Efficiency Standards in Building*. It will later explore how **Framework Guidelines for Energy Efficiency Standards in Buildings** endorsed by UNECE in 2017 can contribute to transform buildings to align with the highest standards of health, comfort, well-being and sustainability, including improving energy productivity and reducing CO<sub>2</sub> emissions.

The *Framework Guidelines* go well beyond the incremental, components approach of existing building standards. Rather, they represent a principles-based performance guidance for building energy standards that is outcome-based, anchored in energy actually consumed, and that is designed to project a vision of holistically designed and operated, ultra-high-performance buildings as part of an integrated sustainable energy system.

The energy required by buildings can be reduced to a level that can be supplied largely, perhaps exclusively, by non-carbon-based energy. While further improvement in renewable energy technology and electrical and thermal storage is to be expected, the results will be more immediate and robust if buildings are transformed fundamentally in terms of their energy performance.

UNECE has also launched its **High-Performance Buildings Initiative** to disseminate and deploy the *Framework Guidelines*. The Initiative comprises three discrete but inter-related communities:

- The *Global Building Network* is a collection of academic institutions acting to improve health and life quality within buildings while simultaneously decarbonizing building related energy. Research by the institutions relate to building and energy design, technology, delivery, maintenance, improvement, life-cycle performance, management, finance, and regulation. Research will focus on the dual goals of (1) systematically articulating a new science of sustainable high-performance buildings as a foundation for both educational curricula and professional practice, and (2) supporting in-the-field efforts to drive transformation.
- A consortium of *International Centres of Excellence on High Performance Buildings* that forms a knowledge sharing framework among progressive cities to provide on-the-ground implementation assistance for building owners and developers, contractors, architects, engineers and planning officials.

- Real life case studies of the application of the *Framework Guidelines* in different climates, cultural and regulatory contexts, and economic and infrastructure environments to illustrate their universal application.

This session will provide participants with an overview of the status and objectives of the initiative and, in an interactive segment, explore how the Framework Guidelines can be a transformative movement in the UNECE region.