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ENERGY

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Energy Efficiency and High Performance Buildings

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Training Workshop on High Performance Buildings

Yerevan, 21-22 November 2019

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Environmental impact of buildings

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In the developed world, buildings are responsible for:

- consuming over **70%** of the **electrical power generated**
- consuming **40%** of **primary energy**
- **40%** of **CO_2 emissions** from combustion

Environmental impact of buildings

- Developing countries will need to accommodate **2.4 billion** new urban residents by 2050

Joint Task Force on Energy Efficiency Standards in Buildings

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- Committee on Sustainable Energy and the Committee on Housing and Land Management
- Sustainable Development Goals – SDG7 (and others)
- Sustainable Energy for All Initiative
- Geneva UN Charter on Sustainable Housing
- Framework Guidelines on Energy Efficiency Standards in Buildings

http://www.unece.org/energywelcome/areas-of-work/energy-efficiency/activities/energy-efficiency-in-buildings.html

Joint Task Force on Energy Efficiency Standards in Buildings: Tasks for 2020-2021

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- Preparing gap analysis based on previously conducted mapping of energy efficiency standards and technologies in buildings
- Evaluating options for the development, adoption or promotion of energy efficiency standards in buildings
- Preparing guidance materials
- Promoting partnerships with other international organizations
- Establishing a network of experts on EE in buildings
- Developing and organizing training programmes

In 2017-2019 activities were supported by funding from Denmark, Russian Federation and Black Sea Economic Cooperation Organization (BSEC)

Joint Task Force on Energy Efficiency Standards in Buildings: Completed Activities

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- ✓ JTF established by the decisions of UNECE CSE and CHLM, November-December 2015 and extended for 2018-19 in November 2017 and for 2020-2021 in September 2019
- ✓ First meeting of JTF, 30-31 October 2017, Geneva
- ✓ Workshop on mapping of energy efficiency standards in buildings in the UNECE region – second meeting of JTF, **14-15 May 2018, Yerevan**
- ✓ **Training seminar on high-performance energy efficiency standards in buildings in the UNECE region, 5-7 September 2018, Saint Petersburg**
- ✓ Workshop on mapping of technologies – third meeting of JTF, 3 October 2018, Geneva

Joint Task Force on Energy Efficiency Standards in Buildings: Completed and Current Activities

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- ✓ Workshop on energy efficiency in buildings – fourth meeting of JTF, 13-14 November 2018, Kiev (in the framework of the Ninth International Forum on Energy for Sustainable Development, 12-15 November 2018)
- ✓ Energy Efficiency Standards and Technologies in Buildings in UNECE Region. Outcomes of the UNECE project on Energy Efficiency Standards in Buildings – fifth meeting of JTF, **14-15 March 2019, Yerevan**
- ✓ **Workshop on Energy Performance Buildings Standards, 12 April 2019, Tbilisi, Georgia (joint with Energy Community Secretariat)**
- ✓ Workshop on energy efficiency in buildings – sixth meeting of JTF, 7 October 2019, Bangkok (in the framework of the Tenth International Forum on Energy for Sustainable Development, 7-8 October 2019)
- ✓ Training Workshop on High Performance Buildings, 21-22 November 2019, Yerevan

Joint Task Force on Energy Efficiency Standards in Buildings: Completed and Current Activities

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- ✓ Mapping of energy efficiency standards in buildings in the UNECE region: http://www.unece.org/energywelcome/areas-of-work/energy-efficiency/activities/energy-efficiency-in-buildings.html
- ✓ Mapping of existing technologies to enhance energy efficiency in buildings in the UNECE region: http://www.unece.org/energywelcome/areas-of-work/energy-efficiency/activities/energy-efficiency-in-buildings.html
- ✓ Compendium of best practices on standards and technologies for energy efficiency in buildings in the UNECE region: http://www.unece.org/fileadmin/DAM/energy/se/pdfs/geee/study/Compendium_of_best_practices_final_2103_DC.pdf
- ✓ Publication on energy efficiency standards and technologies in buildings
- ✓ Development of project proposals to continue activities that support objectives of JTF based on the accomplishments so far

Activities under New Project Proposal

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- ✓ Conducting a gap analysis between the performance objectives set forth in the Framework Guidelines for Energy Efficiency Standards in Buildings and current energy efficiency standards and their implementation
- ✓ Developing four national studies with a more detailed gap analysis
- ✓ Organizing national training seminars in the four selected UNECE member States on high-performance energy efficiency standards in buildings

Framework guidelines for EE standards in buildings

A holistic, systems approach

to building design,

delivery,

and operation

Framework guidelines for EE standards in buildings

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Energy required by buildings can be supplied largely, perhaps exclusively, by *non-carbon-based energy*

High Performance Buildings

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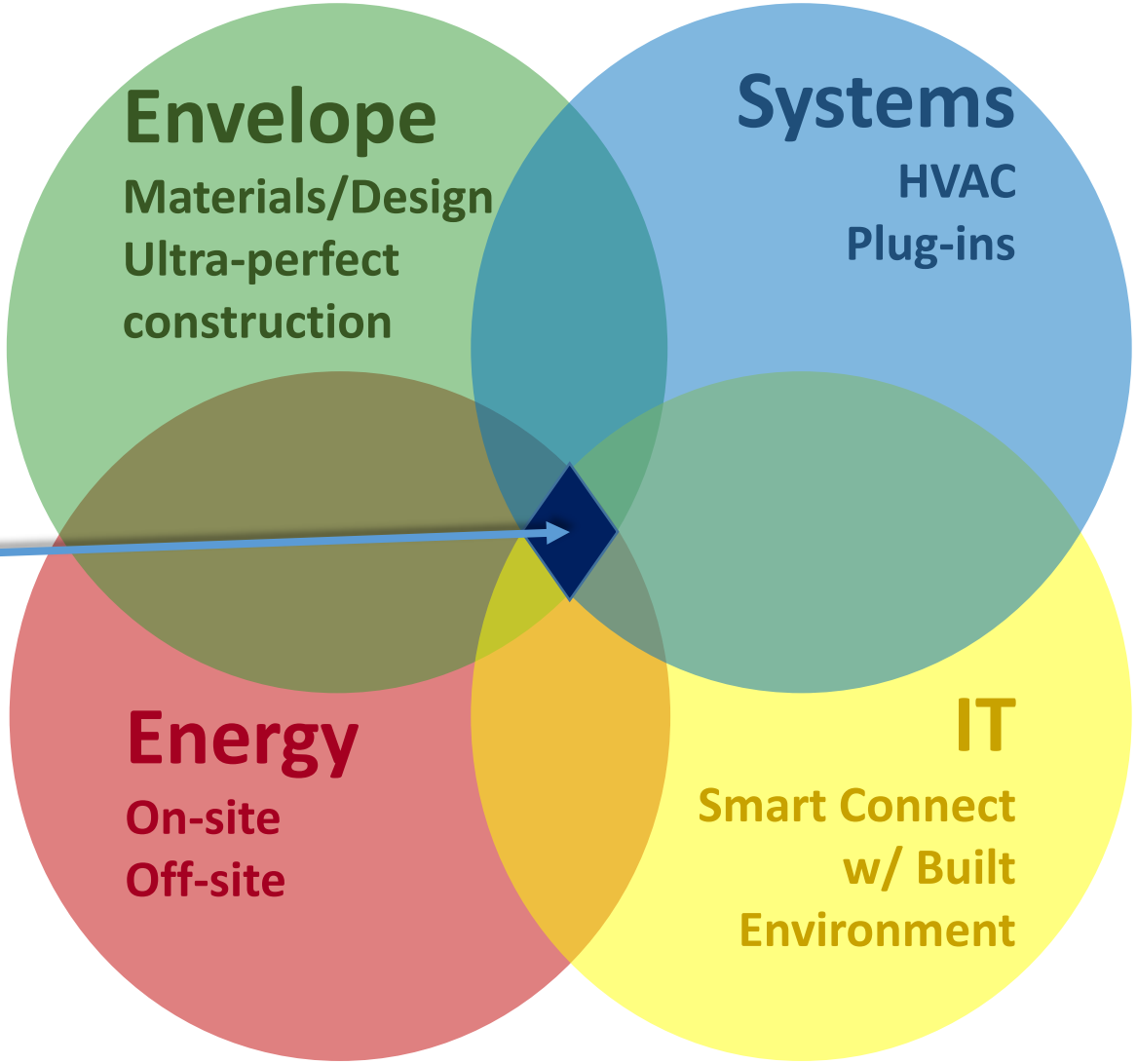

Sweet Spot

Framework guidelines for EE standards in buildings

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UNECE Framework Guidelines for Energy Efficiency Standards in Buildings:

https://www.unece.org/fileadmin/DAM/energy/se/pdfs/geee/geee4_Oct2017/ECE_ENERGY_GE.6_2017_4_EEBuildingGuidelines_final.pdf

Framework guidelines for EE standards in buildings

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Implementation

- Dissemination
- Education
- Research
- Consultation
- Participation

High Performance Building Initiative

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Objectives

- Move the dial on building energy performance
- Move the dial on GHG emissions and indoor air quality
- Improve the global supply chain for the construction business
- Extend the network

High Performance Building Initiative

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Practical steps

- Global research consortium
- Research and demonstration projects
- International Centers of Excellence

http://www.unece.org/fileadmin/DAM/energy/se/pdfs/geee/Booklet_HPBI_June19/HPBI_Brochure.pdf

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Thank you!

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